

PUMPS AND COMPRESSORS CONFERENCE

DESIGN, MAINTENANCE AND RELIABILITY

Featuring Keynote Speakers:

RAY BEEBE

Pumps Expert, Developer of Condition Monitoring, Rated Best Presenter at the 2007 & 2009 Pumps Conferences - Australia



and

AMIN ALMASI

Rotating Equipment Consultant, Author of 60 Published Papers, Expert for International Turbo Machinery Magazine and Website



26th & 27th
June 2013

Mercure
Perth, Australia

WHAT YOU WILL GAIN FROM THIS EVENT:

- Gain practical solutions to common pump and compressor challenges such as seal and bearing failures, leakage, motor burn out and component wear
- Receive expert advice on pump and compressor selection, correct speed calculation, alignment and mitigating inconsistent flow and blockages
- Learn techniques to maximise the value of your pumps and compressor systems
- Understand the life cycle cost of compressors
- Learn the ins and outs of condition monitoring to achieve savings
- Discover new techniques for energy efficiency
- Hear real world case studies from your industry
- Increase your knowledge of the latest technologies
- Network with experienced experts and your peers

WHO SHOULD ATTEND:

- Process Control Engineers and Supervisors
 - Mechanical Engineers
 - Reliability Engineers
 - Maintenance Managers, Engineers and Technicians
 - Control and Instrumentation Engineers
 - Chemical Engineers
 - Plant Engineers, Supervisors and Managers
 - Plant Operations and Maintenance Personnel
 - Production Engineers
 - Consulting Engineers
 - Process Technicians
 - Pump Service Contractors
 - Pump Sales Engineers
 - Training Managers
- And all other professionals working with pumps and compressors

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INTRODUCTION TO PUMPS AND COMPRESSORS


This conference is essential for anyone involved in pump and compressor design, specification, installation, commissioning or maintenance.


Pumps and compressors account for a large percentage of the world's electric energy demand, and studies have shown that improved energy efficiencies and matching to system curves can save from 15% to 40%. This conference will focus on lessons learnt from current installations and the future potential in applying new pump and compressor technologies. Consideration will also be given to life-cycle costing (including maintenance, energy and disposal costs) as opposed to the more traditional capital

cost. Figures suggest that 85% of total cost is attributed to energy consumption.

This conference will provide you with the latest know-how and best practice in pumps and compressors. You will have an opportunity to discuss selection, design applications, operations, maintenance and management issues with our speakers and will be provided with the most up-to-date information on the subject. The conference will be attended by those who are interested in technical solutions to their problems, industry trends and new techniques to solve common everyday pumps and compressor challenges.

CONFERENCE DAY ONE - 26th June 2013

8.00am	Registration
8.15am	Opening Address
8.30am Session 1 WORK SHOP	<p>Condition Monitoring of Pumps - How to Save Three Ways</p> <p>Ray Beebe - Pumps Expert & Developer of Condition Monitoring</p> <p><i>Rated BEST PRESENTER at 2007 & 2009 Pumps Conferences - Australia</i></p>  <p>Dismantling of pumps (or any major machinery) on a time-basis is rarely the lowest cost option. But, what is the alternative? Condition monitoring can reveal the extent of internal wear and can be used to help decide the optimum time for an overhaul. In this workshop, Ray will explain the several technologies available for condition monitoring of pumps and how to apply them. Activities will be used to explain and practise the optimum overhaul methodology he has developed. Participants will be encouraged to share their experiences in this dynamic learning experience.</p>
Morning Tea - 10.30am	
11.00am Session 2	<p>Increasing Reliability and Life of Vertical, Multistage Pumps Using Focused Repair Processes</p> <p>Chandra Verma - Chief Engineer, Hydro Australia</p> <p>Reliability and life of a multistage vertical pump, depends on the straightness of the rotor and stator components. To keep cost down, this aspect is often overlooked by the Original Equipment Manufacturer (OEM). A typical life for a vertical pump is about 3 to 5 years. Often, the pump rebuild is focused on bringing back the limits and tolerances to OEM standard. Thus, expected pump life remains the same as supplied by OEM between overhauls. In this presentation, you will learn about a focused repair process and upgrading of the design. One that can improve the life of a pump up to three to four times, increase reliability and provide an attractive return on investment.</p>
11.45am Session 3	<p>Do You Really Know Your Pumps' Health? Machinery Monitoring Technologies that Deliver Reliability Improvement</p> <p>Alfons Graaf - Applications Engineer – Online Monitoring, Alstom MSC</p> <p>Condition Monitoring (CM) of pumps is generally well understood in many industries, however there are frequently shortcomings in what a CM program is able to deliver. This can be due to technological issues, cost constraints and difficulties converting data into actionable information. In this presentation, Alfons will explore pump failure modes, and how they can be detected rapidly and efficiently. You will learn how new technologies such as wireless monitoring, offer simpler ways to comprehensively monitor pump health. Examples and an interactive demonstration will show how seamless integration of process and vibration data can provide simple, actionable information for operations staff.</p>
Lunch 12.30pm	
1.30pm Session 4	<p>Simplifying Softfoot Using Laser Alignment</p> <p>Bryan Rodgers - Managing Director, Aquip Systems</p> <p>Softfoot correction is crucial as part of best alignment practice and yet is regularly abandoned in an effort to reduce alignment times. Topics covered in this presentation will include; pre alignment preparation and checklist, measuring softfoot, recognising and correcting different types of softfoot, avoiding creation of softfoot conditions, and timely completion of the alignment task.</p>

2.15pm Session 5 KEY NOTE	<p>Overcoming Typical Challenges for Pumps and Compressors in Australia</p> <p>Amin Almasi - Rotating Equipment Consultant</p>  <p>In this keynote address Amin will discuss a range of typical issues that are faced by engineers dealing with pumps and compressors in Australia. Delegates will gain knowledge in areas such as the vital considerations for correct selection of vertical pumps, fire water pumps and air compressors. The pros and cons for contentious issues such as: centrifugal pumps vs. positive displacement pumps; integrally-gearred compressors vs. conventional compressors; a hot-gas-bypass valve vs. a short excursion into the surge and gas turbine: aero-derivatives vs. frames will be demystified. Amin will also touch on modern, variable-speed electric motor drivers and will share his vast experience in dealing with solids/contaminations in pumped liquids. This keynote address is packed with useful tips which you will be able to immediately apply in your workplace.</p>
Afternoon Tea - 3.15pm	
3.45pm Session 6	<p>Pump Minimum Flow Protection Using Automatic Recirculation Valves</p> <p>Matthew Thompson - Technical Engineering Manager & Principle Consultant at Renroc Group Pumps & Engineering Australia</p> <p>A major cause of pump damage is due to incorrect operation and operating below minimum flow. Operating pumps below minimum flow leads to overheating, cavitation and loss of hydraulic balance. There are multiple ways to keep a pump above its minimum flowrate including using orifice plates in minimum flow lines and complex control valve systems. This paper will outline the operation of an automatic recirculation valve and will compare the results with other traditional minimum flow techniques.</p>
4.30pm Session 7	<p>Rotary Vane Vacuum Pumps Applications</p> <p>Jason Ward - Manager, Becker Pumps Australia</p> <p>There is an increasing awareness of energy saving and efficiency improvements that can be gained by using variable frequency drives. Before sizing any vacuum system plant, it is important to understand what is rarefied flow and what is free air flow. The difference is the ability to control an oil free vacuum pump with variable speed drive technology. Depending on the demand of the vacuum system, this allows the pump to speed up and slow down between 30hz and 60hz. This presentation will demonstrate that the vane life in an oil free pump can be greatly increased by running the pump at a slower speed and well within the operating parameters.</p>

Closing - 5.15pm	
<p>NETWORKING SESSION: Cocktail Hour - 5.15pm to 6.15pm An hour dedicated for all attendees to meet and socialise with speakers and fellow delegates.</p> 	

All forum papers are reviewed and selected for their high quality and technical value by our specialists experienced in the theory and practice of pump and compressor maintenance, design and reliability.

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CONFERENCE DAY TWO - 27th June 2013

<p>8.30am Session 8 WORK SHOP</p>	<p>A Tool Box of Best Practice and Advice for Your Pump and Compressor Issues Amin Almasi - Rotating Equipment Consultant</p> <p>Building on the theme and discussions of Amin's keynote address, this workshop will engage with the audience to demystify important topics for pumps and compressors in Australia. Topics will be selected from a variety of industry sectors including energy, mining, water and manufacturing.</p> <p>Topics will include; Centrifugal pump operational considerations; Magnetic drive pump advantages and disadvantages; LCI VSD and VSI VSD advantages and disadvantages, Oil-flooded screw compressors for air services; Small/medium size compressors: Centrifugal compressors vs. oil-flooded screw compressors; Compressors for unconventional gases; Cost control of machinery installations; Dynamic simulation of turbo-compressors and the future of gas turbines. Delegates will be encouraged to share experiences and ask questions throughout the workshop to dictate the issues discussed.</p>	<p>2.15pm Session 12 KEY NOTE</p> <p>Solving Pumping Problems – A Variety of Case Studies Ray Beebe - Pumps Expert & Developer of Condition Monitoring</p> <p>Ray Beebe has long been involved with investigating and solving performance and vibration problems with pumps. The pump itself is not always the root cause. Ray will use a variety of case studies that describe some of his pumping system experiences. The solutions were not always expensive, and can be applied to other situations. Also, some issues have an amusing side. This presentation includes extracts from Ray's second book, <i>Predictive maintenance of pumps using condition monitoring</i>, which gained the George Julius Medal from Engineers Australia for the best publication in mechanical engineering of 2004.</p>
<p>Morning Tea - 10.30am</p>		<p>Afternoon Tea - 3.15pm</p>
<p>11.00am Session 9</p>	<p>The Corrosion of Centrifugal Pumps in Aqueous Environments Frank Gall - Industry Consultant, Nalco</p> <p>Centrifugal pumps constitute some of the hardest working and most critical plant components within industry. The humble centrifugal pump produces an inherently challenging environment to the materials used to construct it. Correct design and material selection is vital to ensure reliability and durability but unexpected pump failures can still occur. The cause of premature pump failure can often be traced to numerous underlying corrosion mechanisms. A failed pump contains a library of evidence, that when correctly interpreted, can be used to explore and understand the failure. Once the cause of failure is understood, strategies aimed at correction can confidently be implemented. This paper aims to identify and explore of some of the common corrosion mechanisms responsible for reduced centrifugal pump service life.</p>	<p>3.45pm Session 13 CASE STUDY</p> <p>Simplifying Predictive Maintenance Stephen Young - Director, The Asset Partnership</p> <p>It has been estimated that less than 1% of the benefits of advanced failure warnings are used to deliver the expected benefits, savings and risk reduction. Most condition monitoring systems are simply too complex and expensive for many applications or require the development and maintenance of specialist skills and technicians. Others measure at the wrong assessment intervals. This paper details emerging technology that makes it cost effective to obtain the benefits of predictive maintenance across a much wider range of plant. Using a model-based approach to detect and diagnose electrical and mechanical problems, the model works only on measurements of current and voltage taken from the supply cables. This means simple installation.</p>
<p>11.45am Session 10 CASE STUDY</p>	<p>Compressed Air Auditing: Real Results – Real Savings Justin Taylor - Senior Consultant, CAPS Australia</p> <p>With compressed air being responsible for 10-15% of industrial electricity use Australia-wide, an air audit can reveal surprising opportunities to reduce energy consumption and overall business costs. This presentation will highlight the benefits of audits by reviewing several case studies where air leak detection methodologies and usage data analysis provided significant savings. It will also discuss the possible technologies and improvements for compressed air systems as a result of an audit, including variable speed drive, two-stage compression, air treatment and advanced system controllers.</p>	<p>4.30pm Session 14 CASE STUDY</p> <p>Condition Monitoring of Centrifugal Pumps Professor Ian Howard & Dr Gareth Forbes - Department of Mechanical Engineering, Curtin University</p> <p>This presentation will outline major fault modes of a centrifugal pump and discuss the use of vibration monitoring techniques for the fault diagnosis and prognosis. Current limitations in industrial standards, such as the implementation of ISO 10816 for acceptable root mean square velocity vibrations, will be discussed and challenged. A state of the art technology in vibration monitoring for centrifugal pumps will be presented, as well as an outline of how to implement such a system so that it can easily integrate into a current SCADA system and be adaptable to future changes in technology. Case studies involving government water corporations will be given to show the need and ability to implement a vibration monitoring system.</p>
<p>Lunch - 12.30pm</p>		<p>Closing - 5.15pm</p>
<p>1.30pm Session 11</p>	<p>Life Cycle Cost of an Air Compressor Gregory Baldwin - SE Asia & Australasia Consultant, FS-Elliott</p> <p>Known as the 4th utility, compressed air constitutes a large portion of the operating costs of any facility. This presentation takes a holistic look at the life cycle of an air compressor, from selection to installation, right through to the lifetime operation, which includes energy and maintenance costs. This presentation will give the audience an in-depth and realistic understanding of the total costs of operating an air compressor.</p>	 <p>Sponsorship Opportunities</p> <p>Representing your business at the 2013 Pumps and Compressors Conference will provide you the opportunity to reach key decision makers from a multitude of industries. For more information on sponsorship and exhibition opportunities please contact IDC Technologies via email conferences@idc-online.com</p>

KEYNOTE SPEAKERS:

RAY BEEBE Pumps Expert & Developer of Condition Monitoring

Ray was one of the key developers of condition monitoring. He has 28 years of engineering and management experience in power generation, with a particular interest in pump problem-solving. Many of Ray's papers have been published in technical magazines around the world. Ray was awarded the Engineers Australia's 2004 George Julius Medal for his second book Predictive maintenance of pumps using condition monitoring. Ray recently retired from Monash University where he spent 11 years leading the postgraduate programs in maintenance and reliability engineering.



AMIN ALMASI Rotating Equipment Consultant, Expert for International Turbo Machinery Magazine and Website

Amin specialises in rotating machines including centrifugal, screw and reciprocating compressors, gas and steam turbines, pumps, condition monitoring and reliability. He is an active member of organisations including Engineers Australia, IMechE, ASME, Vibration Institute, SPE, IEEE, and IDGTE. Amin is an expert columnist for International Turbo Machinery magazine and website. During his career he has authored more than 60 papers and articles dealing with rotating machines.



REGISTRATION FORM: PUMPS AND COMPRESSORS CONFERENCE

26TH & 27TH JUNE 2013, Mercure, Perth

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3. REGISTRATION & DELEGATE DETAILS

PLEASE NOTE: Full payment is required prior to the commencement of the conference.

- PUMPS AND COMPRESSORS CONFERENCE - 26th & 27th June 2013**
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GENERAL INFORMATION

Confirmation Details

An acknowledgement email will be sent to delegates within 2 days of receiving the registration. A further confirmation and invoice will be emailed prior to the conference.

Cancellation Policy

A fee of 20% will apply for cancellations received 7-14 days prior to the start date of the conference.

Cancellations received less than 7 days prior to the start date are not refundable, however substitutes are welcome.

Venue

Mercure Hotel Perth
10 Irwin Street, Perth, 6000
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Accommodation

The conference venue has accommodation available. Contact directly on (08) 9326 7000 and mention IDC Technologies when booking and receive 10% off the best room rate.

Food and Beverages

All lunches, morning and afternoon refreshments are included.

Unable to Attend

If you are unable to attend the full forum program, contact us for details to attend individual sessions or to purchase the Forum Resource Kit.

Enquiries

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REGISTRATIONS

We encourage you to register early, as spaces are limited. Your payment must accompany the registration form in order for it to be processed and confirmed.

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