25th AIST Crane Symposium

10–12 June 2018

Omni William Penn Hotel
Pittsburgh, Pa., USA

About the Program

The symposium will deliver practical information and experiences from crane maintenance personnel, crane manufacturers, equipment manufacturers, and engineering consultants who strive to make electric overhead traveling (EOT) cranes and their runways the safest, most reliable, durable machinery and equipment in the industry. This two-day program will include presentations focused on safe work practices and ergonomics; electrical, mechanical and structural maintenance techniques; crane inspection technologies; and best practices in EOT crane modernizations. As part of the Crane Symposium program, the Crane Innovator of the Year Award winner will be announced, recognizing the individual who has brought forth the latest in technology, or increased efficiencies in operational and maintenance practices for the continuous improvement of heavy industrial cranes.

Who Should Attend

Plant maintenance staff; applications, electrical, mechanical, safety, service and design engineers; operations and maintenance personnel and management; and those people who supply parts, equipment and services to the industry. Anyone who has responsibility for cranes and crane service and is interested in improvements and incidents in this area should attend.

Professional Development Hours

This course may qualify for up to 14 Professional Development Hour (PDH) credits. Each attendee will receive a certificate listing the quantity of PDH credits earned for the course. This course is not approved for PDH credit in New York, Florida, North Carolina and Oklahoma.

Organized By

AIST's Cranes Technology Committee.

Registration Includes

Registration includes Sunday reception, breakfasts and lunches Monday and Tuesday, a dinner Monday evening, and a course workbook or flash drive including presentations.

Hotel Accommodations

A block of rooms has been reserved at the Omni William Penn Hotel. Please call the hotel at +1.800.843.6664 by 16 May 2018 to secure the AIST discount rate of US$169 per night for single/double occupancy.

AIST Members	
US$895	US$995
by 30 April 2018	after by 30 April 2018

Non-Members	
US$1,110	US$1,210
by 30 April 2018	after 30 April 2018

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Schedule of Events

Sunday, 10 June 2018

4 p.m.
Registration

5 p.m.
Welcome Reception

Monday, 11 June 2018

7 a.m.
Registration and Breakfast

8 a.m.
Introductions and Opening Remarks

8:15 a.m.
You May Think You Know, but You May Not
Heath Hooker, Nucor-Yamato Steel Co.
This discussion will focus on rigging safety for all types of applications.

8:45 a.m.
Reduce the Cost of Ownership of Below-the-Hook Lifting Equipment
Bill Hofmann, Bradley Lifting Corp.
This presentation will discuss methods of operation, maintenance, inspection and modification that can reduce the cost of ownership of below-the-hook lifting equipment, as well as improve their service life.

9:15 a.m.
Material Handling
John Novak, Primetals Technologies USA LLC
This presentation will focus on safety with the customization of lifting devices and plant-wide evaluations.

9:45 a.m.
Break

10 a.m.
High-Speed Bridge Conductors — Trials, Tribulations and Solutions
Bill Fillmore, ArcelorMittal Dofasco G.P.
This presentation covers numerous challenges involving the AC power collector system, while introducing higher-speed AC VFD cranes. Keeping up with coil movement compared to DC contactor-controlled cranes required faster bridging speeds than those normally experienced.

10:30 a.m.
Continuous Conductor Crane Electrification Systems
Adrian Sanchez and Nick Funyak, U-S Safety Trolley
Personnel with extensive crane experience recognize that electrical joints are one of the most common sources of crane electrification problems. Due to several physical conditions such as overheating, constant expansion and contraction, etc., electrical joints become loose over time. This causes loss of power, high maintenance and repair costs, and extended downtime. In contrast, continuous conductor crane electrification systems provide an innovative, jointless alternative solution, while maximizing reliability and reducing costs to the end user.

11 a.m.
High-Speed Data Transmission Rails for Process Cranes
Pete Kirst, Conductix Inc.
In the new generation of process cranes, the possibility of remote control operation is a critical component. The emergence of new rail developments, where a bar system can deliver high-speed data transmission, video and data, can safely solve these requirements. The system fits within the same dimensions of a standard four-pole electrification rail system.

11:30 a.m.
Cracking of Ladle Spreader Beams at the U. S. Steel – Mon Valley Works, Edgar Thomson Plant
Steven Bianculli, U. S. Steel Research and Technology Center
At United States Steel Corporation's Edgar Thomson Plant, spreader beams are used to transport 250-ton ladles of molten iron. The beams are fabricated steel weldments with a box cross-section. Large cracks, 3 and 5 feet in length, were found in fillet welds at the top of the cross-section of one spreader beam. Subsequently, indications of long subsurface cracks were found in a second spreader beam. The cracking was found to have initiated internally at weld roots and propagated outward, making crack detection difficult. The presentation describes inspection and repair techniques employed and metallographic and finite element analyses used to identify the cracking mechanism.

Noon
Lunch

1:15 p.m.
DC-to-AC Conversion of Meltshop Ladle and Charge Crane
Steve Herron, Morgan Engineering Systems Inc., and Norm Kent, Steel Dynamics Inc. – Structural and Rail Division
For years the hoists of meltshop cranes have been driven by DC mill motors due to their torque capabilities and robust design. Today's AC motors have proven to provide reliable operation in difficult applications and environments. Pairing them with variable frequency drives and programmable logic controllers allows for enhancements that deliver high-speed accurate operation while minimizing stresses to the overall mechanical and structural systems. Morgan Engineering and Steel Dynamics Inc. (SDI) worked together to develop a solution that included new AC motors, a control house with AFE VF drives, festoon and cabling. This project had many dimensions and requirements — along with a site work plan that would require the crane to be back in service in 10 days. It proved to be a challenging feat that was accomplished ahead of schedule and continues to meet SDI's performance criteria.

1:45 p.m.
Safety, Maintenance and Reliability of Overhead Bridge Cranes for Steel Works

2:15 p.m.
Break

2:30 p.m.
Automation for Lifting Crane Magnets
David Baker, SGM Magnetics Corp.

3 p.m.
Key Considerations for the Implementation of Automatic Cranes
Edgardo La Bruna, Janus Automation LLC
This presentation will discuss key aspects to consider for the implementation of automatic cranes in the metals industry, covering areas such as hazard identification/analysis (HIRAC/PFMEA), design (layers of protection, functional safety, alternate means of protection), engineering (installations, commissioning plans, verifications/validations), manufacturing integration, change management (SIS, risk mitigation, process, equipment), decommissioning and commissioning plans, and state-of-the-art technology used for reliable automation including, positioning, anti-sway, anti-collision, safety and optimization.

Schedule of Events (cont'd)

3:30 p.m.
Open Discussion on Industry 4.0 for EOT Cranes

4 p.m.
Panel Discussion

5:30 p.m.
Dinner Cruise on the Gateway Clipper

Tuesday, 12 June 2018

7 a.m.
Breakfast

8 a.m.
Introduction and Opening Remarks

8:15 a.m.
25-Year Study of EOT Crane Wire Rope Drum Failures
Charlie Totten, T&M Equipment Co.
EOT cranes have many components in which a failure can result in the interference of operation. There are no more devastating failures then those that result from broken wire hoist ropes or wire rope drum failures. This 25-year study reveals failure modes of the drum failures and history of causes of both steel producing and rolling mill cranes.

8:45 a.m.
All About Crane Safety
Bobby Hamilton, Nucor Steel Tuscaloosa Inc.
A quick look at Nucor Steel Tuscaloosa Inc.'s overall crane program with a focus on job setup and interference, and how OSHA 1910.179 and ASME B30.2 apply.

9:15 a.m.
Know Your Crane Brakes
Jon Walters, Magnetek
In an effort to maintain awareness of the importance of crane brakes, this presentation will examine some of the fundamentals associated with overhead traveling crane brakes that can be easily overlooked. Items to be considered include appropriate brake sizing for a particular application, proper installation, maintenance and technologic enhancements.

9:45 a.m.
Break

10 a.m.
Crane Innovator of the Year Award Presentation: The Use of Drones for Crane Runway Inspections
Scott Sambuco, Orbital Engineering Inc.

10:30 a.m.
Crane Certification Association of America
John Davis, Crane Certification of America

11 a.m.
Water Weight Bags
Alex Murray, Water Weights Inc.

11:30 a.m.
Crane Safety From Radio Control Perspective
Ryan Stortz, HBC-radiomatic Inc.
The goal of this presentation is to bring awareness to wireless control safety with consideration to formal specifications, other factors to consider and safety options for radio controls in the marketplace.

Noon
Lunch

1:15 p.m.
Bearing Installation and Maintenance

1:45 p.m.
AIST Crane Maintenance, Inspection & Repair Handbook Overview
Tom Berringer, Gantrex Inc.

2:15 p.m.
Break

2:30 p.m.
How To Buy a New Crane
Randy Cantrell, Martin Casper and Ryan Dowd, Konecranes Inc.; Tim Jones, Alcoa
This presentation will discuss key points of a new crane purchase.

3 p.m.
Removing the Fog From the Crane Inspection Process
Larry Dunville, Overhead Crane Consulting LLC
The Occupational Safety and Health Administration (OSHA) only spends about 700 words on crane inspections. OSHA incorporates 197 specs by reference. Plain instructions are needed on who's responsible for what!

3:30 p.m.
Open Discussion on Maintenance Tips and Tricks

4 p.m.
Panel Discussion

4:30 p.m.
Conference Adjourn