



**23<sup>rd</sup>**  
**Annual**

## AIST Crane Symposium

The 23rd Annual AIST Crane Symposium was held on 21–23 June 2016 in Indianapolis, Ind., USA. More than 200 attendees traveled from nine different countries: Argentina, Belgium, Brazil, Canada, P.R. China, France, Germany, the Netherlands and the U.S. Nearly half of the attendees were crane users who represented 36 different facilities from companies such as Nucor Steel, Steel Dynamics Inc., ArcelorMittal, CMC, United States Steel Corporation, Ternium, Tata Steel Europe, Carpenter Technology Corp., Precision Steel and Chicago Heights Steel. This year's program delivered 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, and most durable machinery and equipment in the industry.

During the program, the 2016 Crane Innovator of the Year Award was presented to Brad Hebert and Ray Hofecker, ArcelorMittal Burns Harbor, for their presentation, "Installation of Computers in Steelmaking DC Crane Cabs

for Data Collection and Improved Communication," which detailed how inverters and touch-screen computers have been installed in cab-operated cranes in the company's steel producing department. These devices are linked wirelessly to networked programmable logic controllers and display data related to hoist weights, positions and an accurate production schedule for the crane operator. The computers also allow the operators to enter pre-shift inspections, which are then sent to management personnel so that problems that have been identified can be resolved.

Stijn Droessaert, ArcelorMittal Gent, delivered a presentation on the use of predictive maintenance tools such as vibration analysis to gather data and to develop maintenance schedules for ArcelorMittal Gent's 314 overhead cranes and 22 miles of crane runways. Future steps will be to use the data gathered by computer models to create maintenance profiles for the equipment. A tool such as vibration analysis establishes a vibration profile for motors and bearings. If the vibration profile changes, a potential issue may be developing. For equipment that operates at



*Bobby Askew (right) presented the 2016 AIST Crane Innovator of the Year Award to Bradley Hebert (left) and Raymond Hofecker (center).*



*Attendees enjoyed a reception as part of the 23rd Annual Crane Symposium.*



*More than 200 attendees gathered in Indianapolis for the 23rd Annual Crane Symposium.*

very low speed, such as crane wheels, it is more difficult to detect issues because of background noise. Accelerometers can be used to establish the frequencies of the background noise where filters can be added to the program to clarify the bearing signal.

A presentation on runway structures was given, which discussed the different types of girders and connections used to distribute the load on the crane runway into the building structure. The automation of cranes and visual assistance devices were also discussed. Automation systems remove personnel from potentially dangerous environments during crane operation. Camera systems provide an extra angle of vision to crane operators to ensure safe engagement of loads and safe movement of the crane around potential obstacles. Additional safety items presented were safety sensors such as GPS, radar and drive encoders; the proper selection of industrial magnets to particular operations; fall protection devices for crane maintenance personnel and the location and engineering considerations for safety lines; and the proper inspection and timing of the main hoist of a hot metal crane to

ensure balance between the two motors driving two worm gearboxes and to ensure that the load is shared equally between the two hoists.

The symposium also included presentations on wire rope inspections and drum and sheave wheel maintenance; conversion of a DC crane to AC power and AC digital drives; and a case study on improving meltshop crane reliability practices to make the cranes one of the most reliable assets in the plant. The final presentation provided a historical review of the many different companies associated with steel industry cranes since the late 19th century and how many of those companies still exist today as part of other crane companies.

Special appreciation was given to the sponsors of the 23rd Annual Crane Symposium, SES Engineering, NACB and Morgan Engineering, for their support of the program. ♦