

Learning for the future



With a large percentage of the railroad workforce set to retire in the next few years, education and training are becoming even more important.

The railroad workforce is aging and is expected to lose large numbers of employees to retirement in the next few years. To replace them and to keep the skills of existing employees sharp calls for top-notch education and training such as those programs described in this story.

AREMA

The American Railway Engineering and Maintenance-of-Way Association has “education” as one of its missions. The association pursues that goal through seminars and its annual conference.

While AREMA doesn’t offer classes, the association does offer seminars on various subjects at various times throughout the year. The

number of students varies, depending on subject matter and location. The length varies from one-to-three days, typically. The audience AREMA is trying to reach includes railway and transit engineering personnel.

These are not entry-level classes. Even the introduction to Practical Railway Engineering assumes an engineering degree background.

AREMA’s educational offerings are designed to provide Professional Development Hours for engineers to maintain their PE designations. The association also offers CEUs for those who might need them. Seminars are designed to increase proficiency and introduce new technology and practices.

AREMA emphasizes safety and has several seminars directly related to safety.

AREMA Committee 24 - Education & Training is responsible for a portion of the seminars that the association offers. Other technical committees are responsible for developing and conducting seminars in their specific area of expertise. For example, the AREMA Bridge Inspection Seminar is put on by one of the Structures Committees, etc.

Dallas Richards of HDR is currently Committee Chair of Committee 24.

AREMA has also embarked on a new Web-based educational program that will provide technical presentations and educational modules in 30-90 minute segments via “Webinar” tech-

AREMA offers seminars and other opportunities to learn such as the C&S Panel Discussion at the 2009 Annual Conference.

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Education & Training

nology. The first presentation to kick off the new program was on December 7, with AREMA President William E. Van Trump describing the successful Union Pacific recovery efforts after the Frazier Slide.

"We certainly see education increasing in importance, particularly as industry veterans retire and new recruits need to be trained and we intend for AREMA to be a major resource to meet that increasing need," said Charles "Chuck" Emely, executive director/ceo.

Michigan Tech

"At Michigan Technological University, we currently offer three rail specific, or oriented classes: CE 4405 International Railroad Engineering, CE 5408 Public Transit Planning and Engineering and CE 5409 Railroad Track Engineering and Design," said Pasi Lautala, director rail transportation program. "We are planning to introduce a fourth course, International Railway Seminar in spring, 2011. We're also working on establishing an undergraduate certificate in Rail Transportation/Engineering."

CE 4405 is offered as part of a 5-

week international summer program in railroad engineering and cultural studies. This is done partially in the U.S., partially in Finland. It is intensive, so students spend 2-3 hours every day on railroad lectures, unless they are on one of the multiple field visits, either in Chicago area or in Finland.

The other courses are 14 weeks, with three hours of interactive lectures and exercises per week.

For those students who don't participate in the official course work, Michigan Tech offers opportunities for extracurricular rail activities through the Railroad Engineering and Activities Club."

"Currently students don't graduate with any official recognition of their rail studies, but will get BS or MS in their discipline," he said. "However, they possess a good basic level of understanding in rail topics and companies can easily recognize that in the discussions with our candidates. Next year, we hope to introduce an undergraduate/graduate certificate in rail transportation/engineering that students can earn in conjunction with their disciplinary studies.

"People who come to the rail indus-

try have to understand the multiple alternatives offered by it," he said. "The opportunities vary from management to technical and from large Class 1 railroads to smaller regional railroads, and to consultants and suppliers. The second aspect is the importance of non-technical skills. Leadership, communication, financial and management skills are all increasingly important for any new employee entering the industry."

NARS

The National Academy of Railroad Sciences offers more than 100 courses to train potential and current industry employees in every type of railroad craft. NARS affiliation with Johnson County Community College in Overland Park, Kan., gives access to classrooms, auditoriums, libraries, and equipment, as well as the benefit of instructional experience and knowledge. People who complete the FastTrack training program also receive JCCC college credits and can apply those credits to an Associate of Arts degree.

NRC

The National Railway Construction and Maintenance Association offers a Roadway Worker Protection training program in conjunction with CANAC. The program, available online or by CD-ROM, is free to NRC members.

More than 500 people per year use this program, which is available in both English and Spanish.

The association is currently finishing up DVDs 7 and 8 in its ongoing safety DVD program. NRC has been doing two a year for the past four years. Each DVD is about 25-30 minutes long, with a professional narrator. The scripts are developed by John Zuspan of The Track Guy Consultants in conjunction with the NRC safety committee members, including Stanley Beaver of Balfour Beatty Rail. Filming is done at actual contractor worksites. NRC makes 1,000 copies of each DVD and distributes them free at its annual conference or by mail to all members.

"We mostly fund these efforts with proceeds from NRC's Contractor Equipment Auction that we do every April," said Chuck Baker, president. "Feedback has been excellent on the DVDs. Some future topic ideas include Safety on a Rail Gang, Safety on a Tie Gang, Safety around Railway Maintenance equipment, part 3, and Safety

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on Bridges and in Tunnels. We plan to continue doing two a year for the foreseeable future.”

The NRC Pocket Safety Manual is offered in both English and Spanish. It is also complementary to members.

NRC has 104 Toolbox Talks available free to members, enough for one a week for two years. NRC also has a model safety program for a contractor looking to develop a new safety program or enhance the current safety program.

Railway Educational Bureau

“The Railway Educational Bureau, a sister company to RT&S, has been in the business of training the railroad industry for 100 years,” said Pat Kentner, director of REB. “Our training programs span many disciplines in the rail industry, including track workers, carmen, mechanics and electricians. We deliver our training through distance training courses, workshops, on-site training and we work with clients to develop customized training programs.

“Two of our most popular distance training programs for track workers are Basic Principles of Track Maintenance and Advanced Principles of Track Maintenance,” she said. “We also have a distance training program covering FRA Track Safety Standards. Our latest course, Introduction to North American Railway Signaling, is an excellent introduction into the state of the art in signaling technology.”

Students can take their tests online and receive instant feedback and supervisors have new tools to manage and document employees’ training.

Kentner continued: “As mentioned, we host workshops and conduct on-site training sessions. Workshops are held at a specified location and require attendees to travel to that location. On-site training allows us to bring training directly to the customer plus, it gives us flexibility to tailor the presentation to their specific needs. Our workshops will generally run two to three days, depending on the subject.

“Our goal is to assist in training people to do their job more productively,” Kentner noted. “We offer diplomas and certificates of achievement for students who have successfully passed a predetermined number of distance training lessons—typically 48 lessons for a diploma and 24 lessons for a certificate. We are accredited by the State of Nebraska Department of Education.

“The main focus of our distance training programs is to provide a theoretical approach to training,” she said. “Most of our students are enrolled through company-sponsored programs, wherein they receive their hands-on experience through their job. Our distance training serves to supplement that experience by presenting a broader perspective to them. Employees don’t always have time to ask why something is done in the field. Our distance training fills that gap and gives them a deeper understanding of why things are done.

“With the weak economy, railroad personnel tend not to train people because of the expense,” Kentner said. “It’s hard for managers to understand that knowledgeable employees save money by preventing injuries, improving efficiencies, and making good decisions. We invite companies to call us with their needs so we can assist them with their training goals, to visit our Website, www.railwayeducationalbureau.com, for more information on what we do.”

Track Guy Consulting

“We offer a variety of training programs,” said John

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Zuspan of Track guy Consulting. "Our signature course is Trackwork 101, which is an introduction to the railroad industry and all the configurations of Track that we build. Our other classes, Trackwork 103, 104, 105, 106, 107 and 108 are ready made courses that pertain to building, designing and maintaining trackwork. We also offer FRA 213 Track Safety Standards training to satisfy the new rules. A very popular class is our Thermal Forces seminar where we make it very easy to understand the forces imposed by the heat of the sun, train movement and other sources, as well as the technical aspect and the consequences if not done properly. This also satisfies the new ruling. We do APTA training for the transits, as well. We also custom-build classes for owners of railroad track that are specific to their property, such as customizing the class to meet their cwr plan. We do, on average, 40-50 seminars per year.

"Our Trackwork 101 class has been approved for eight professional development hours and, in time, we will submit all our other material for review of the

board," he said. "We are on a mission to educate all that we can. Safety is throughout our programs and we help the NRC produce two Safety DVDs every year.

"We all need to keep in mind that training is not an expense; it is an investment and will help retain people," he said. "The new generation has different values from older generations and the companies that realize this will be the successful ones that survive. We must educate the newcomers and break bad habits of the old heads.

"There is so much to learn and we must continue to educate ourselves throughout our careers," he noted. "It is hard to pinpoint the most important thing. The very first and most important is Safety on the Track. The second most important is to have a mentor who has the right attitude and is willing to help the new guy or gal. The third thing is what we have been talking about: Training. We must do it the right way, the first time.

UIUC

The Railroad Engineering Program

at the University of Illinois at Urbana-Champaign is the largest railroad program in North America and offers six courses in railway engineering. The courses range from an introductory course that covers the basic elements and inherent benefits of rail transportation to a course that focuses on high-speed passenger rail system planning, design and operation. Other courses cover the design of railroad track, railway signaling and operation, and capital project planning and design. Each semester-long course has either three or four classroom contact hours per week, and class sizes range from eight to 28 students. The intended audience for the railroad courses at UIUC are upper-level undergraduate and graduate students interested in Civil and Transportation Engineering.

"While the Railroad Engineering Program is housed in the Department of Civil and Environmental Engineering, we frequently have students from other disciplines that enroll in our railroad courses," said Chris Barkan, director of the program.

In addition to teaching courses, the program is heavily involved in railroad research. There are approximately 10 graduate research assistants that are Masters or PhD candidates in the Railroad Engineering Program, and another 15 undergraduate students that work as undergraduate research assistants.

"The overall learning objective of the courses is to equip engineering students with the skills needed to effectively plan, design, operate, and manage rail transportation systems," Barkan said. "The railroad engineering coursework provides the necessary technical background that is needed to fully grasp concepts covered in management training programs and other forms of on-the-job training within the railroad industry. Additionally, students are encouraged to take courses in other areas of engineering that will widen both the breadth and depth of their engineering knowledge.

"The element of safety is incorporated into all of our classes," he said. "It would be impossible to explain the concepts behind advancements in railway technology without a discussion of the importance of safety in the railroad industry." □

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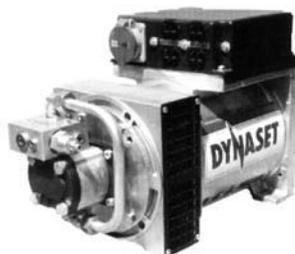
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