



# TRANSPORTATION TODAY™

YOUR WISCONSIN  
TRANSPORTATION CONNECTION

WINTER  
2013-14

→ HIGHWAY → RAILROAD → AVIATION → MARITIME → PERSONAL/RECREATIONAL → PUBLIC TRANSIT

## Dedication + Growth = Success: Two Generations and Still Growing!

The physical classroom and shop in 1972 was part of the original high school building addition in the 60s. It was pretty standard for its day, with the exception of a paint booth. The current auto shop was built during a remodeling and addition of the tech ed wing in 1996. The new auto shop was an upgrade in size and style to 5700 sq ft and a brand new classroom. My father and myself have both done well over the years staying current with industry trends and repair techniques. Myself and my father before me have also maintained strong industry connections to people who keep us up to date on tools, materials, and repair procedures to meet the needs of current vehicles.

Bob Abitz began teaching collision repair at Freedom High School in 1972. Over a successful and highly decorated 35 year career Bob put Freedom High School on the map as a state and national leader in collision repair education.

How did he do this—what did he do? Really important for other educators to know. My father made lots of industry connections through networking and belonging to a number of professional organizations. Industry con-

nections outside of education is what gave him the edge, he understood what was actually going on in the industry, not just relying on what he learned 20 years prior like so many other teachers. He took all kinds of professional development opportunities at tech schools, conferences and high tech weekends, as well as college classes for his licensure. They get their curriculum direct from industry and he got it from them!

What makes Freedom High School Automotive [www.fhsautomotive.com](http://www.fhsautomotive.com) special is its ability to do not only run of the mill auto mechanics, but full collision repair including refinishing. Students at FHS learn to paint using cutting edge spray equipment and top of the line refinishing materials. Students learn skills such as metal straightening, dent repair, metal fabrication, welding, filler work, and plastic repair, leading up to painting. Every student in the collision program learns to apply primer, base coat, and clear coat. Projects range from late model collision repairs, to rare restorations, and even customizing motorcycles. We have even restored museum quality cars such as the 1967 Mohs Opera Sedan. Students supply



much of the work themselves, always wanting to customize, repair, and restore their own vehicles and Mr. Abitz also brings in projects from a variety of other sources to ensure students always have something new to experience.

Over 40 years later, Freedom High School Automotive has undergone a transformation. Unlike many programs of its kind, it has not faded away after the retirement of Bob Abitz.

The program has grown under the new instructor with the same last name; Jay Abitz. Bob's son Jay who studied in the program at FHS took over in 2007. Jay has blended the old with the new by doing many of the same things his father did as well as adding his own flavor. Jay injected FHS automotive with digital technology

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## Report: Transportation Logistics Industry to Create 1 Million Jobs by 2016



As many transportation companies struggle to find qualified truck drivers, a new report has found that the industry is facing yet another challenge — the need to find professionals with logistics training on their resumes to fill a grow number of job openings.

The Georgia Center for Innovation for Logistics released a report that identifies the gaps between the demand for logistics-related jobs and the current supply of industry programs being offered to students through postsecondary training. The study, "The Logistics of Education and the Education of Logistics," found that the nation's 7,642 educational institutions are not generating enough qualified workers who are formally trained, degree or certified to keep pace with growing industry demand, the Savannah Morning News reports.

"The logistics industry is growing at an ever-increasing pace and facing new challenges and opportunities like never

before," Page Siplon, executive director of the Center of Innovation for Logistics, told the news agency. "Conditions created by new technology, government regulations and increasing demands from consumers to always deliver products faster, better and cheaper will require a workforce that has the skills and real-world training to meet this demand. This will have a profound impact on companies of all types and sizes."

According to the Bureau of Labor Statistics, logistics-related jobs opening in the U.S. will increase by 270,000 per year to reach 1.1 million by 2016.

So what does this mean to you as a job seeker if you are looking to find work in the emerging transportation and logistics field?

In order to advance in the industry, you will need to have a number of relevant skills on your resume to attract potential employers. Those qualifications may

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CVTC is the Chippewa Valley's leading hands-on educational institution for transportation. If your students enjoy working with their hands, taking apart engines, problem solving, and working independently, encourage them to consider the educational opportunities at CVTC.

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Average annual salaries are based on the 2011-2012 CVTC Graduate Follow-up Survey data.



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# Spooner High School Taking Flight

In 2005, Principal Robert Kinderman (retired) approached Spooner HS Tech Ed teacher Jay Cornell with the idea of adding aviation to the curriculum. Within two years Cornell had his students doing a feasibility study and putting together their recommendations to build a two-seat airplane. A STOL (Short Take-off/Landing) plane and work began in the summer of 2008.

Now, six years into the project, the plane is in the home stretch with its initial flight scheduled for some time in July of 2014. “It’s been a very interesting and exciting experience,” said Cornell. “The kids involved in this summer program have gained experience that is invaluable to their futures. I’m excited to see the plane get off the ground.”

A former SHS student and pilot, Jeff Fox, has added technical support as well as offering to be the “test pilot” as part of the licensing procedure. Several area “builders” have also offered knowledge and experience as the project progressed. “It’s been a great project for the community and school,” Cornell said, “and has bridged the gap between the two.”

Students are selected based on their knowledge and interest from the nine week aviation class offered during the school year. Then, in the summer, the kids show up for six weeks of plane building. “Two years ago I had a boy who was particularly good and wanted to be a manufacturing engineer. I knew he’d be missed and so I asked the administration if we could hire

him to assist in the coming summers.” Now, Kyle Okonek is involved in the final stages as instrumentation and electronics are completed. “Kyle is so smart on this stuff it is unbelievable,” Cornell said. “Without him I’m not sure this plane would have ever gotten done.”

The first summer the tail section of the plane was completed. The next summer, ’09, they began work on the wings. Aside from fabricating the wings, jigs and fixtures had to be built to assist in the bending and setting of parts. The wings actually took all six weeks of ’09 and most of 2010. Then in 2010 and 2011 the fuselage was started and much of that was completed by the end of the summer. In 2012, Cornell and his students began putting together the instrument panel, landing gear, mounting the engine and getting control surfaces set and connected. “This past summer of 2013, we’ve spent a great deal of time fine-tuning instruments and control surfaces. We also had seats made, fabricated things such as door latches, battery boxes and radio mounts. The kids did a great job with all the wiring as well.”

Cornell hopes to show off the plane to the public at one of Spooner High School’s home football games early in the next school year. “My plan is to have all the kids who have worked on it over the past seven summers, including my own son, come back for a reunion of sorts and I’ll introduce them at half time as the plane flies over.”

“We’re doing a Star Spangled Banner-look



with a white base and red and blue control surfaces as well as blue stars on the nose,” Cornell said. “I’m proud of what we’ve done and really look forward to the first flight.”

Once complete and properly licensed, the Spooner School District hopes to sell the plane and offset some of the cost of building it. The lion’s share of the project was paid for through grants and donations so the burden on the school budget has been minimal.

“These are the kind of authentic tasks that foster real learning in kids. In our current climate, standardized tests are all the rage and, truthfully, teaching to those tests does very

little in my opinion, to increase the level of knowledge and retention in anyone.” These types of programs are tangible and beneficial. Aside from teaching the technical part of building a plane, kids are learning the importance of patience, persistence, attention to detail and what team work is all about. None of which is easily measured on any written test and according to business and industry, is of colossal importance.”

[www.spooner.k12.wi.us](http://www.spooner.k12.wi.us)

# Cardboard Boats and Aquatic Invasive Species?



*Al Votis  
Three Lakes High School*

What do cardboard boats and aquatic invasive species have in common? Maybe not very much, unless you are a student at Three Lakes High School. For some of our Three Lakes students though, the two concepts end up being closely tied together.

Students at Three Lakes have a number of elective courses they can take. Two of these courses are Technical Math (which is

actually a STEM class), and a class we name Global Science. The STEM class focuses on engineering solutions to problems, and encourages students to think outside the box when solving problems. One of our projects in this class is to design and build a cardboard boat that can hold at least two people, and perform various tasks, including running a slalom course, race in a time trial, and to compete in an endurance race. Students are learning about boat design, trying to design a

boat that can accomplish a number of different tasks, as well as working with materials, to create a design that will last long enough to complete the races. Concepts of displacement, buoyancy, load, and the calculations to show these are used, as the students work through research, small scale design and testing, and then scaling their designs up to full size models. Students are also gaining experience in overcoming obstacles that they encounter as they go from their small scale to full scale size models. This project culminates in a half a day of boat races and trials on a lake in town, at which time, the whole high school and junior high comes to watch and cheer on the participants.

The Global Science class is more of an environmental class, where the focus is on conservation, wise use of our natural resources, and caring for the environment. One recurring theme throughout the year is invasive species, both terrestrial and aquatic. We go through several projects in conjunction with the community to battle invasive species, from working on removing buckthorn in the school forest, to partnering with the town to remove invasive Japanese barberry along town right of ways. The most important skills the students learn is that it is

easier to keep invasive species out instead of trying to control or eradicate them once they have been introduced. They are learning an appreciation of our native, natural environment, and learn how to make wise choices as consumers in society.

Three Lakes is located on the largest chain of inland lake in the world. With the local economy dependent on tourism that these lakes bring in, the students learn how important keeping our environment healthy is, not just for economical reasons, but also for our health. We have students who work at the local boat landings to help boat owners clean their boats, check for invasive plants, and educate everyone on procedures to follow to keep our environment clean and healthy.

Many of our students take both classes, as well as spend quite a bit of time on our lakes. So between these classes, they are getting a heavy dose of learning about the concepts of how to build boats and use them, but also to know how to use them wisely and protect our natural resources.

[www.threelakes.k12.wi.us](http://www.threelakes.k12.wi.us)

## Grants

### Air Force Junior ROTC Grants

The Air Force Association Junior ROTC (AFJROTC) grant program was established to promote aerospace education throughout classrooms and units. Applications will be judged by the importance and the impact the selected aerospace activity will have on students. Funds may be used for any aerospace education related activity from purchasing textbooks or videotapes, to going on a field trip to an aerospace museum, Air Force base, or other aerospace facility. Grants may not be used for uniforms, or honor guard and color guard activities.

**Deadline:** February 10, 2014

**Website:** [www.afa.org/informationfor/teachers/k12grants/airforcejuniorrotcgrant](http://www.afa.org/informationfor/teachers/k12grants/airforcejuniorrotcgrant)

### PPG Education and Community Grants

The PPG Industries Foundation favors projects that promote academic excellence and prepare the next generation of leaders in business, science, and technology. Support for students of high academic achievement and programs that attract young people to the study of science remain priorities for the foundation. PPG's strategy for support of science, technology, engineering, and mathematics (STEM) initiatives is defined by the emerging macro trends that predict core markets, product offerings, and technology needs.

**No deadlines:** Applications are accepted year-round

**Website:** [www.ppg.com/en/ppgfoundation/Pages/Education.aspx](http://www.ppg.com/en/ppgfoundation/Pages/Education.aspx)

### Alternative Fuel Foundation Grants

The Alternative Fuel Foundation is heavily committed to developing and strengthening green education programs, while also helping to promote the use and study of alternative fuels. There is a preference for funding requests that promote the awareness and use of alternative fuels or promote the concept of sustainability. Projects that encourage parent involvement and build stronger community spirit will be favored.

**Awards:** Awards range from \$250 to \$500

**No deadlines:** Online applications are accepted on an ongoing basis

**Website:** [www.alternativefuelfoundation.org/grant\\_application.html](http://www.alternativefuelfoundation.org/grant_application.html)

### Shell Oil Grants

Grant requests related to education must focus on Shell's funding priorities. These include increasing interest in technical careers among students, and professional

development in science and mathematics for educators. Funding is provided to support programs in kindergarten through grade 12 that are designed to boost students' mathematics and science skills. Shell also funds projects at vocational and technical schools where chemical and refinery operators and technicians are trained. At the university level, Shell supports programs that aid engineering and geoscience students and departments. Of particular interest are programs in mathematics, science, and technology that engage women/girls and minority students, and within academic institutions that have ethnically diverse enrollments.

**No deadlines:** Grant applications are accepted year-round

**Website:** [www.shell.us/environment-society/grant.html](http://www.shell.us/environment-society/grant.html)

### Improving Undergraduate STEM Education Grants

*Sponsored by National Science Foundation, Division of Undergraduate Education*

The Division of Undergraduate Education (DUE) supports improvement of STEM education in kindergarten through grade 12 by funding research on design, development, and widespread implementation of effective STEM learning and teaching knowledge and practice, as well as foundational research on student learning. Proposals should describe projects that build on available evidence and theory, and will generate evidence and build knowledge.

For the current grant opportunity, National Science Foundation (NSF) is seeking projects that increase student retention in STEM; prepare students to participate in science for tomorrow; improve students' STEM learning outcomes; generate knowledge on how students learn and on effective practice in undergraduate classrooms; and broaden participation in STEM. NSF also is accepting proposals for developing Ideas Labs in biology, engineering, and geosciences that will bring together relevant disciplinary and education research expertise to produce research that addresses discipline-specific workforce development needs.

**Deadline:** Proposals are due February 4, 2014

**Website:** [www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=504976](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504976)

### Innovative Technology Experiences for Students and Teachers (ITEST)

*Sponsored by National Science Foundation*

The Innovative Technology Experiences for Students and Teachers (ITEST) program, through research and model-building activities, seeks to build understandings of best practice factors, contexts, and processes contributing to kindergarten through grade 12 students' motivation and participation in STEM core domains along with other STEM cognate domains (e.g., information and communications technology, computing, computer

sciences, data analytics, among others) that inform education programs and workforce domains. The ITEST program funds foundational and applied research projects addressing the development, implementation, and dissemination of innovative strategies, tools, and models for engaging students to be aware of STEM and cognate careers; and to pursue formal school-based and informal out-of-school educational experiences to prepare for such careers.

Approximately 15 to 20 Strategies grants, with durations up to three years and total budgets up to \$1.2 million each, will be awarded. Approximately five to 10 SPrEaD grants, with durations of three to five years and total budgets up to \$2.0 million each, will be awarded.

**Deadline:** Full proposals are due February 11 and November 6, 2014

**Website:** [www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5467](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5467)

### Innovation in Education Grants

*Sponsored by Canvas by Instructure*

Canvas is offering \$100,000 in grants to help spur innovation in education. The most innovative ideas in specific categories for both higher education and kindergarten through grade 12, as judged by a panel of experts, will receive grant money to help get their difference-making ideas off the ground. Submissions may include (but are not limited to) content, applications, classroom techniques, and tools.

**Focus:** Engineering, General Education, Special Needs, STEM, Technology, Technology Ed

**Awards:** Five grants of \$10,000 each are awarded for Higher Ed, and ten grants of \$5,000 each are awarded for K–12. Winners will be announced at SXSWedu in March of 2014

**Deadline:** Submissions are accepted through January 20, 2014

**Website:** [www.instructure.com/canvasgrants/](http://www.instructure.com/canvasgrants/)

## Resources

### JetStream, the National Weather Service Online Weather School

JetStream, the National Weather Service Online Weather School, is designed to help K-12 educators and emergency managers learn about weather and weather safety. The information contained in JetStream is arranged by subject, beginning with global and large scale weather patterns followed by lessons on air masses, wind patterns, cloud formations, thunderstorms, lightning, hail, damaging winds, tornadoes, tropical storms, cyclones, and flooding. "Learning Lessons" interspersed in

JetStream can be used to enhance the overall educational experience.

**Website:** [www.srh.noaa.gov/srh/jetstream/index.htm](http://www.srh.noaa.gov/srh/jetstream/index.htm)

## Competitions

### Science and Engineering Apprenticeship Program (SEAP)

*Sponsored by American Society for Engineering Education*

The Science and Engineering Apprenticeship Program (SEAP) provides an opportunity for students to participate in research at a Department of Navy (DoN) laboratory during the summer. The goals of SEAP are to encourage participating students to pursue science and engineering careers, to further their education via mentoring by laboratory personnel and their participation in research, and to make them aware of DoN research and technology efforts, which can lead to employment within the DoN. SEAP provided competitive research internships to over 265 high school students in 2012. Participating students spend eight weeks during the summer doing research at 24 DoN laboratories. The competition is open to high school students who have completed at least grade 9. A graduating senior is also eligible to apply.

**Deadline:** Applications are due January 6, 2014

**Website:** [seap.asee.org/program\\_details](http://seap.asee.org/program_details)

### The Christopher Columbus Awards

The Christopher Columbus Awards is a national, community-based science, technology, engineering, and mathematics (STEM) program for middle school students. The program challenges the students to work in teams of three to four, with an adult coach, to identify a problem in their community and apply the scientific method to create an innovative solution to that problem. Entries are evaluated based on creativity, innovation, scientific accuracy, relevance to the community, feasibility, and clarity of communication.

Six finalist teams and their coaches will receive an all-expense-paid trip to Walt Disney World to attend National Championship Week and compete for valuable US Savings Bonds, plus a \$200 development grant to further refine their idea. These teams will also participate in the Christopher Columbus Academy, an interactive behind-the-scenes look at the science and technology at Walt Disney World.

**Deadline:** Applications are due February 3, 2014

**Website:** [www.christophercolumbusawards.org/](http://www.christophercolumbusawards.org/)

## Freedom High School Continued from Page 1

Bob worked closely with I-CAR to receive continuing education and training and was the first Youth Apprenticeship collision instructor in the state. Bob is one of five state master teachers in collision repair and was recognized by his community receiving a golden apple award nomination as well as the Outstanding Community Service award in 2009.

The greatest compliment of his career is the well over 20 independent shop owners that have come out of the program at Freedom High School and the countless number of careers in the automotive industry that started at FHS. Anywhere Bob goes he will run into a former student who will appreciatively greet their former instructor.



in the classroom and the shop. With shrinking budgets in schools today, Jay has made it his goal to raise money and donations for his program. Through the generosity of local businesses and supporters Jay has purchased many new tools and pieces of equipment to support his program. Working with the Collision Repair Education Foundation and applying for their annual make-over grant has also netted a large sum of donated tools, equipment, and materials for FHS. Students use lap top computers for estimating, researching, and using online repair databases. Curriculum is delivered through a variety of digital and web based sources including others that cost money but are donated to freedom high school and others through the Collision Repair Education Foundation.

Jay has worked hard to grow the program through improving tools, equipment, curriculum and technology. His students are excited to learn and are always looking forward to the next project. Students spend lots of time outside of school hours working in the shop as members of the Freedom High School Auto Club [www.freedomautoclub.com](http://www.freedomautoclub.com) The auto club

works on project cars, attends field trips and car shows, and even host their own show in May each year to showcase the students work. Participation in competitions have resulted in his students winning at the state level and finished inside the top ten at nationals including the only female to win at the high school level in Wisconsin (Liz Moore 2011).

One thing Jay has tried to improve during his tenor is getting the word out about the great work his students do. Since 2007 FHS automotive students have been featured in national publications such as Hot Rod, Street Thunder, and Max Chevy and were recently interviewed for an upcoming feature on LMCtrucklife.com.

Jay's goal is to continue to grow his program, serve his students and his community, and represent Freedom High School the best he can for another 30 years. He hopes that at the end of his career the Abitz family legacy continues at FHS and that nothing changes even if the name on the door does.

[www.freedomautoclub.com](http://www.freedomautoclub.com)



## Competitions

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### DOT calls on kids for annual poster contest

Kids between the ages of 7 and 17 have the opportunity to showcase their artistic skills by participating in a statewide poster contest. The Wisconsin Department of Transportation's Bureau of Aeronautics holds the contest each year with specific themes, according to a release. This year's theme is Flying Saves Lives; examples include medical helicopters, relief transport planes and aircraft used to put out wildfires.

The top three entries in three different age groups will go to a national competition and could possibly be entered in an international aviation contest, according to the release. Prizes will be awarded to the top three winners statewide. First place gets \$100 art supply gift certificate or an airplane ride for two. Second place gets a \$75 art supply gift certificate. Third place gets a \$50 art supply gift certificate.

All artwork must be original and cannot be computer-generated, according to the release. Visit the contest's website for complete rules and the entry form.

Entries must be postmarked by Jan. 17 and mailed to Nicole Wiessinger, WisDOT — Bureau of Aeronautics, P.O. Box 7914, Madison, WI 53707-7914.

**Website:** [www.dot.wisconsin.gov/travel/air/art.htm](http://www.dot.wisconsin.gov/travel/air/art.htm)

### State Troopers Art & Essay Contest

The Wisconsin Troopers' Association is currently accepting entries for the 2014 Art & Essay Contest. Winners, honorable mentions and the director's award recipients will be honored at an Awards Ceremony on Saturday, May 10, 2014 at the Kalahari Water Park Resort and Conference Center in Wisconsin Dells.

The WTA established the Arts and Essay Contest as a way of giving back to the community of Wisconsin. The contest inspires healthy competition and fosters creativity, while providing Wisconsin students the opportunity to share their dreams and visions through artistic expression.

Cash prizes of \$4,250.00 will be awarded. There will be a total of 53 winners and one Director's Award.

Students in Grades K to 5: \$50.00 each

Students in Grades 6 to 8: \$75.00 each

Students in Grades 9 to 12: \$125.00 each

Director's Award: \$150.00

**Deadline:** February 15, 2014

**Website:** [www.wisconsintrooper.org/programs/state-trooper-art-essay-contest.html](http://www.wisconsintrooper.org/programs/state-trooper-art-essay-contest.html)

## 1 Million Transportation Jobs

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include distribution center management, supply chain management, sales, purchasing, materials coordination and production management.

Many community colleges and technical schools offer 2-year certificates in logistics, which will help graduates find entry-level work. Common courses in these programs include distribution and warehousing, planning and scheduling, marketing and domestic transportation. Graduate certificate programs from 4-year universities may include business and economics, facilities operations, and logistics analysis.

The American Society of Transportation and Logistics (AST&L) and the International Society of Logistics (SOLE) also offer a number of certification programs, which may increase your employment potential or help you find work in international trade.

You may want to take an online aptitude test to determine if you will need additional training to qualify for in a logistics-related position. You will also need a broad base of business and soft skills if you want to advance into a middle management-level job, which are often referred to as grey-collar positions.

Four-year degrees in logistics management include programs on budget reviews, forecast shipping demands, storage and distribution, warehousing, billing, inventory control and freight transportation. You may also need advanced experience with computer software such as Quickbooks or PeachTree for accounting, billing and invoicing of orders.

The council of Logistics Management reports that entry-level supervisors positions average \$39,000 annually, with middle-level managers making up to \$111,000 per year. Many of these managers also can earn incentive pay in addition to their base salary, as well as insurance benefits, 401K matching funds and tuition reimbursement.

The Collegiate Employment Research Institute reports that the demand for logistics managers at all levels is excellent as the scope of the the role of these professionals expands across many sectors, including at manufacturing firms, merchandising companies, restaurants, hospitals and government agencies, all of which will need to move materials and goods to customers across the U.S.

**Website:** [www.livecareer.com/jobs/trends/](http://www.livecareer.com/jobs/trends/)

## Wisconsin Labor History Society

# Labor History Essay Contest for High School Students

Win cash prizes up to \$500 for essays of about 750 words on the topic:

*“Unions have been important to my family and my community because . . .”*

The Wisconsin Labor History Society announces its High School Essay Contest for the 2013-2014 School Year. Wisconsin high school students (grades 9–12) are eligible to participate.

Students are urged to interview family members, neighbors, friends or others for their stories about work and unions.

### Top Prizes!

- First Prize: \$500
- Second Prize: \$300
- Third Prize: \$200
- Honorable Mention: \$100 (Up to five awarded)

Rules: Essays should be approximately 750 words in length. They will be judged on understanding, evidence of original research, writing style and significance. Essays must be typed, double-spaced, on white paper. Two copies must be submitted (One may be a photocopy.) Please be sure to provide the following

information on the cover sheet: Your name, address, home telephone number, your grade in school, name and address of your school, and, if you were encouraged or assisted by a teacher, the teacher's name. (Also, list your family's union membership, if applicable.) If you have any questions, contact: Harvey J. Kaye (920-465-2355 or kayeh@uwgb.edu).

6333 W. Blue Mound Rd.  
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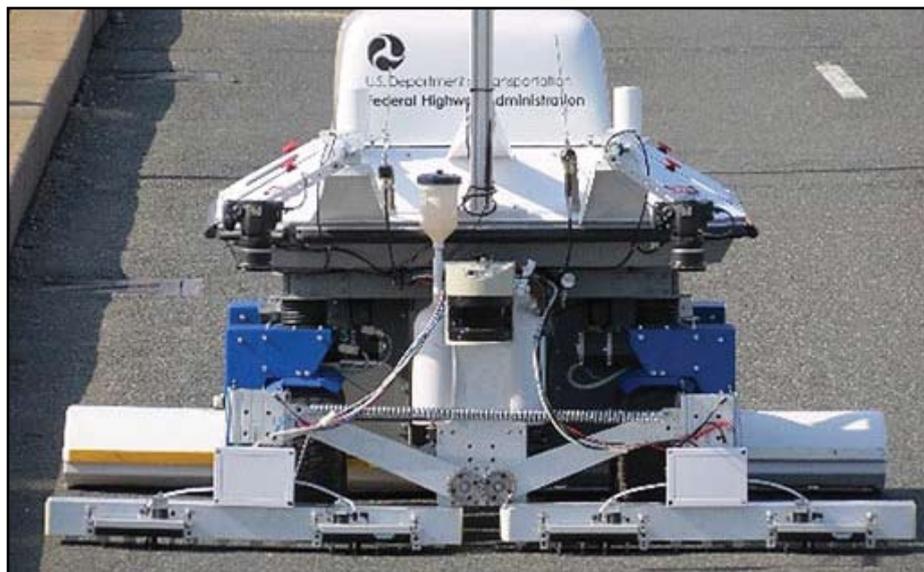
**E-mail:** info@wisconsinlaborhistory.org

**Deadline:** Submissions must be posted by February 14, 2014 or before

Read winning essay from 2012–13 contest at the website below:

**Website:** wisconsinlaborhistory.org/contests/high-school-essays

## RABIT™ Bridge Deck Assessment Tool



In the United States, the stewardship and management of approximately 600,000 bridges present ongoing planning, operational, maintenance, and economic challenges for Federal, State, and local transportation agencies. Bridge condition assessments help us plan and prioritize structure rehabilitation plans. Collecting data on the health of these bridges, however, can be a time-consuming, labor-intensive, and costly process.

The Federal Highway Administration

Long-Term Bridge Performance (LTBP) program developed a multifunctional non-destructive evaluation (NDE) platform to enhance assessment of bridge decks. The RABIT™ bridge deck assessment tool was developed to deploy a suit of NDE technologies simultaneously. The technologies incorporated into the robot-assisted, remote controlled RABIT™ bridge deck assessment tool include:

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Laborers' International Union of North America

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**Ray Wiatt, Apprenticeship Coordinator**  
(608) 846-5768 or rwiatt@wilaborers.org

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[www.wilaborers.org](http://www.wilaborers.org)

# Construction Machines Names and Pictures

Those who are in construction business would know very well that there are three major types of construction machines used for constructing buildings, roads, dams, bridges and the likes. These are earthwork machinery like excavators, dozers and loaders etc; roadwork machinery like road paver, chip spreaders, and compactor etc; and lifting machinery like cranes. Here in this article, you will come across the most popular and most widely used construction machines names and pictures with short descriptions about them.

## Excavators, Dozer, Loaders — Construction Machines



These three are perhaps the most common construction machinery- excavators, dozers (bulldozer is the most famous name) and loaders.

**Excavators:** Excavators are the heavy construction and engineering machines that are used for digging and moving large objects on construction sites. Used heavily for making roads, buildings, highways, skyscrapers etc. excavators are indispensable for any project.

**Dozer:** A dozer is also a heavy equipment used to clear and grade land. These machines have continuous treads and a broad

hydraulic blade in their front portion and are classified functionally on the basis of types of blades in a dozer. The two most popular dozers are the bulldozers and the scrape dozers.

**Loader:** Loaders, as the name suggests, are used on building sites to upload sand, debris, dirt and mud into other vehicles. Their end aim is to clear rubble and digging materials on the sites.

## Chip Spreader, Road Paver, Compactor — Road Machines



While the excavators, dozers, and loaders can be seen on any construction site, there are certain specific machines that are only used while making roads.

**Chip Spreader:** This self-propelled road machine is used for pre-coated chipping surface treatments. It is also used in repairing works. Stone chipping gives quality and durability to roads and chip spreader is the main equipment used for this.

**Paver:** Also called road paving machine, it is used for laying pavement. Screed, tractor and lorry are its main component parts. It gets the material from lorry and places it in correct dimensions onto the prepared surface forming a mat like structure. This mat is then compacted by roadrollers.

**Compactor:** The compactors reduce the size of waste materials

through compaction and are found in different shapes, sizes and configuration. Plate compactors, vibratory compactors, sheep's foot compactors, steel rollers compactors with rubber tires, etc. are some of the popular types of this construction machinery.

## Cranes — Lifting Machines



**Cranes:** Cranes are also an indispensable equipment for constructing purposes. These are huge tower like machines having provisions for lifting and lowering materials. They are operated by cab operator or with the help of infrared or radio signals. There are many types of lifting cranes such as tracked cranes, vehicle cranes or the truck mounted cranes and crawler cranes.

For information on all the other types of construction equipment go to Construction Machinery <http://www.theconstructionmachinery.com/>

Reprinted from [www.articlesbase.com/industrial-articles/construction-machines-names-and-pictures-5420873.html](http://www.articlesbase.com/industrial-articles/construction-machines-names-and-pictures-5420873.html)

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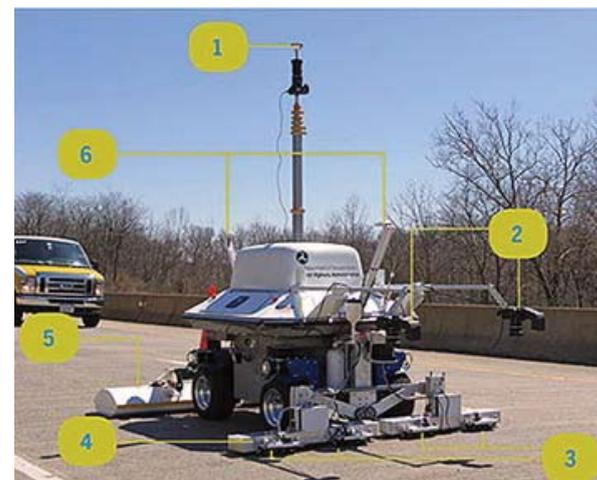
Operating Engineers Local 139,  
Terrance E. McGowan  
President/  
Business Manager



## RABIT™ Bridge Deck Assessment Tool

Continued from Page 6

- 1 Panoramic Camera to collect high-quality, 360-degree images around the bridge deck.
- 2 High-Definition Imaging to capture high-resolution images of the deck surface using professional-grade cameras.
- 3 Electrical Resistivity to characterize the corrosive environment of the concrete.
- 4 Impact Echo and Ultrasonic Surface Waves to evaluate concrete delamination and concrete deck strength.
- 5 Ground Penetrating Radar (GPR) to “map” rebar and other metallic objects below the surface using electromagnetic waves. GPR also provides a qualitative assessment of concrete deck deterioration.
- 6 Global Positioning System (GPS) to record and mark location data, making testing grids virtually obsolete.



Quantitative information on concrete deck performance may lead to policies and procedures that help bridge managers make data-driven decisions and improve efficiency, speed, and cost-effectiveness of maintenance and rehabilitation measures.

Ultimately, improved understanding of concrete deck performance will promote the safety, mobility, longevity, and reliability of the Nation’s highway transportation assets.

Data gathered from the RABIT™ bridge deck assessment tool will improve understanding about the service life and performance of concrete decks on specific bridge types.

# Recycling is an Everyday Thing in the Concrete Industry

Kevin W. McMullen, P.E.  
President, Wisconsin Concrete  
Pavement Association

Recycling and reuse has become a common business practice in the concrete and road building industry for the same reasons it has become entrenched in many other industries. First, it is the right thing to do. And second, we can find cost savings and efficiencies when doing it.

Have you ever wondered what happens to the old pavement that is removed as part of the first operations on a new road construction project? It is too valuable to go to a landfill. The concrete pavements are crushed and processed to be returned to the new roadway for use as base for the new pavement or as aggregate in the new concrete pavement. By weight concrete is the most recycled material in the United States with an estimated 140 million tons of concrete recycled each year in the United States. The concrete recycling operations are becoming more interesting with the new portable crushers being purchased by the contractors. They are saving the large fuel and trucking costs by crushing the concrete on site and using it as base for the new pavement.

The steel in the old pavement is removed during the crushing and processing and sold

to steel recyclers. A very interesting statistic was just published by the Concrete Reinforcing Steel Institute. The vast majority of domestically produced reinforcing steel used in our concrete pavements and bridges has recycled material content greater than 97 percent. Everything that is made of steel that is discarded including cars, appliances, old building materials, etc. is being recycled in the United States. And, the steel reinforcing materials we are using in the road building industry is one of the key products produced from the recycling efforts.

Beneficial secondary reuse of historically landfill bound industrial materials is also very prevalent in our industry. The coal burning electric power plants supplies our industry with their flyash. We use this ash as a replacement for Portland cement and it actually produces better and more durable concrete. The Wisconsin Department of Natural Resources recently reported that Wisconsin has beneficially reused more than one million tons of coal ash byproducts each year. Over the last 14 years reuse of this material has avoided the need for seven or eight landfills. The concrete industry is proud to be a partner in this effort.

Slag is a waste material of the steel industry and it is another reuse product that



we use in the concrete industry. Like flyash it replaces Portland cement and produces a stronger more durable concrete. It is a lesser used product in Wisconsin because we have no steel mills in our state and the cost of transporting it become too high.

Finally, the concrete industry has used many other recycled materials. These include comingled glass, the glass of all different colors that becomes impossible to separate

for recycling and it becomes a waste product; crushed porcelain from old sinks, toilets and bathtubs; and the latest has been glass from old TVs, computer monitors, etc. We will continue to look at more materials with the eye towards cost effectiveness and assuring that we have good engineering and research behind the product so that its use does not have an adverse effect on our highways.



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**Pictured Here:** STH 83 project from Mukwonago to Genesee Depot in Waukesha County that won the 2012 National Excellence in Concrete Paving Award for State Trunk Highways.

# One Tweet Funded This Full-Size, Air-Powered Hot Rod

An Australian gearhead and his equally nutty friend in Romania made all our childhood dreams come true by building an amazing hot rod out of Legos. It actually runs — on air — and the fact that it isn't any faster than a bicycle does nothing to diminish its brilliance.

The guys used more than 500,000 Legos, along with a set of tires, some load-bearing bits, and gauges, to build the suitably named Super Awesome Micro Project. Powering this yellow beast are a four orbital engines with a total of 256 pistons — all made with Legos — driven by compressed air. They can get the hot rod up to 18 mph. It could go faster, but “We were scared of a Lego explosion so we drove it slowly,” said Sammartino.

The build took place in Romania before the Super Awesome Micro Project (we love saying that) was shipped to Australia for its debut. We're not sure what's more amazing: the fact they built it, the fact it works, or the fact it was crowd-funded without anyone knowing what they were bankrolling. One thing we are sure of though is this: We really, really want to drive it.



*From Wired*

To read the entire article go here: [www.wired.com/autopia/2013/12/air-powered-lego-hot-rod/](http://www.wired.com/autopia/2013/12/air-powered-lego-hot-rod/)

**13-15%**  
expected increase  
in online sales

**140 million**  
people expected to shop  
Thanksgiving weekend

**Because Santa can't be Late**

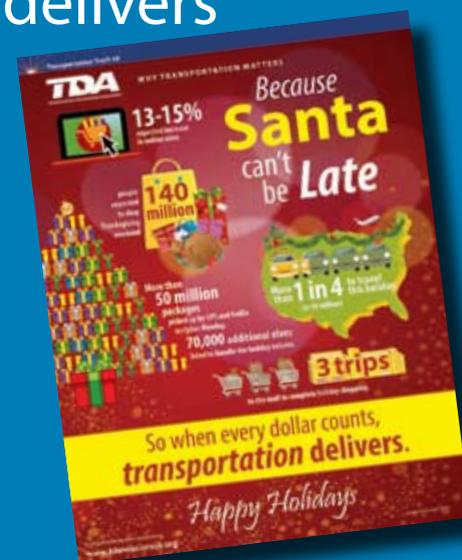
**More than 50 million packages**  
picked up by UPS and FedEx  
on Cyber Monday.

**70,000 additional elves**  
hired to handle the holiday volume.

**More than 1 in 4** to travel  
this holiday.  
(or 90 million)

**3 trips**  
to the mall to complete holiday shopping

So when every dollar counts,  
*transportation*  
delivers



**TDA**  
Transportation Development Association

[www.tdawisconsin.org](http://www.tdawisconsin.org)

# Wisconsin's County Trunk Highway System: One of the Nation's Best



## A long proud history:

The roots of the County Trunk Highway (CTH) system stemmed from state highway laws enacted in 1907. Under these laws, towns were given the opportunity to make an appropriation for road improvements and receive a match from county government. Under this system, the county was responsible for selecting the system of highways on which improvements would be made and electing a highway commissioner to carry out the improvements. Initially, only 20 counties participated in the improvement program, but the early changes created significant improvements in earlier road conditions and set the stage for the development of future advancement in Wisconsin's highways.

Later in 1917, the state legislature directed the State Highway Commission to establish a State Trunk Highway (STH) system with the goal of connecting every county seat and city with a population of 5,000 or more. In order to develop this new system, desirable routes were proposed,

mapped, surveyed and analyzed. Public hearings were held and discussion ensued regarding issues such as populations served, the alignment and grades of existing routes, and the supply of local deposits of minerals and aggregates that would be used in construction. As a result, an entire 5,000-mile system was developed and that was the public's first introduction to the (STH) system.

The first county highways were independent of the state's Trunk Highway System and lacked the state's legislative approval. By 1924, every county in Wisconsin had set up its own county highway system, with the state authorizing county highways for the first time in 1925. Since that time, County Trunk Highways have become the system of highways under complete jurisdiction of the county and maintained solely at the county level. At the local level county boards and or highway committees were responsible for laying out the system. Any CTH systems laid out prior to legislative approval became recognized as part of the official CTH system. Each county board was responsible for conferring with neighboring counties to ensure continuity and continuous lines of travel. Currently in Wisconsin, every county maintains its own CTH system.

## Labeling our County Highways:

Wisconsin Counties use letters as route designations for their county roads. Routes may be labeled with a single letter (CTH-Z), double letter (CTH-ZZ) or triple letter (CTH-ZZZ). While the designation of some county highways may cross into two or more counties, any individual letter will

appear many times in different parts of the state.

County Highways are typically labeled sequentially, though there is leeway to have the letter designation stand for the initials of a road, geographical feature, or in honor of a person. Today, there are occurrences where some imagination has gone into the designation of county highways. For example, the County Trunk Highway, which runs along the county line between Kenosha and Racine county is CTH-KR, the former US-12/US-18 in Madison running along Broadway is CTH-BW (for BroadWay), and CTH-LO (formerly STH-99 until January 1999) was named in honor of former Waukesha County Board Chairman Lloyd Owens.

Route designations may or may not be repeated within a single county, mostly depending on the size and population of the county. Designations also may or may not continue over a county line. Usually the letter designation remains the same when the route is a former Wisconsin State Highway that has undergone a "jurisdictional transfer" and has been turned over to the county.

## Funding:

Funding of the CTH system is provided through county levy dollars, generated through property tax and sales tax assessments at the county level. In addition, the State of Wisconsin provides General Transportation Aids (GTA) to assist local units of with their transportation costs. GTA is the share of funds provided to local government generated primarily through vehicle registration fees and gasoline tax collections. Payments are divided among municipali-

ties based on either a percentage of eligible highway-related expenditures or a per-mile payment, whichever results in a higher payment. Counties receive GTA payments based on a share of eligible highway-related expenditures and are not eligible for a per-mile payment.

## Importance of the County Trunk Highway System on Commerce:

We all know that Wisconsin's rural and urban economy is dependent on a vibrant and well-funded CTH system. The CTH system is critical in bringing products to and from market and for citizens traveling to work in both rural and urban areas. This system is also the backbone of Wisconsin's billion-dollar agricultural industry. Most agricultural operators depend on the CTH system whether their operation is located on a town road, county highway, or on a state highway. With the changing face of Wisconsin's agricultural industry, more heavy equipment is being used on Wisconsin's county highways in both urban and rural counties. Thus the need for increased CTH funding is rapidly rising. The use of additional heavy equipment also generates increased wear and tear on the CTH system, which has become a safety issue in many areas of the state.

The CTH system is an important for many reasons. Hopefully, this column has given you an appreciation of the history, uses, funding mechanisms and importance of the system.

## Faces of Wisconsin Counties Association



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Madison, WI 53703  
Phone: 608-663-7188  
Toll Free: 1-866-404-2700

[www.wicounties.org](http://www.wicounties.org)

# Robotic Snow Plow Wins Major Grant



*Theran Peterson  
Technology and Engineering Education  
Aaditi Naik, Senior  
Wausau West High School*

In the Spring of 2011, Wausau West High School Technology and Engineering Education teacher Theran Peterson first discovered a unique program offered through the Lemelson-MIT Foundation known as InvenTeams. Two years later, he decided the time was right to pursue the grant opportunity with his engineering capstone class at Wausau West and submitted an initial application. Wausau West was selected as a finalist for the award and Peterson was able to travel to Cambridge, Massachusetts during the summer of 2013 to experience “EurekaFest”, a celebration of invention in which current grantees present their projects to the MIT community. Throughout the course of the summer, the student group worked to develop a final application, which was accepted, and they have been awarded a \$10,000 Lemelson-MIT InvenTeams grant. Peterson’s students at West have proven themselves worthy engineers, but the

task does not end here.

Using the \$10,000 from Lemelson-MIT, the students must create a working prototype of their invention by June 2014; and their project is nothing if not ambitious. Led by Peterson, West’s InvenTeam set out to tackle a considerable challenge – they decided to invent a semi-autonomous snow removal device in order to minimize injuries faced by users when removing snow. Although facing a daunting task, the students are approaching it with the same engineering design process used by professionals. The students researched similar products on the market and approached local businesses for mentors, all while exploring technology that would make their project a reality.

Initially, the team focused efforts on replicating current technology in the residential home maintenance industry; which meant the incorporation of a small gas engine and perhaps hydrostatic drive technology. However as development progressed, and various external experts were drawn into the development, gas

engines were quickly removed from consideration in lieu of a bank of batteries powering electric motors. In fact, thanks to a generous donation from, the motors from several electric wheelchairs are being incorporated to provide drive for the machine.

The most formidable task facing the team throughout the course of the coming months will be the development of semi-autonomous, or self-guided operation. Though there are several systems currently available to address a problem of this nature, issues with precision guidance and motor control are compounded in a cold, snowy environment. To this end, the team has engaged in exhaustive product research and sought input from leaders in education and industry and has several promising avenues to pursue in the coming weeks.

Most of the work is done on the students’ own time. They meet mentors from local businesses and work on the device during their unscheduled time. Once a week, the students meet with Peterson in the classroom to discuss their progress and possible next steps. Occasionally, the people at Lemelson-MIT hold video conferences with the students to answer questions and check on their development. They plan on visiting West in December to see the students’ work in person.

The culminating experience for this project is a trip to Boston in June 2014, when students will have the opportunity to attend EurekaFest from June 19-22 at MIT. The team will travel to Boston and stay on the campus of MIT, where they will present their prototype to the campus community. In addition to the presentation, the team will have the opportunity to tour various sites in Boston, including the Museum of Science, participate in workshops, and attend presentations given by highly successful inventors and engineers. For the aspiring engineers from Wausau West, EurekaFest will be an experience of a lifetime.

Throughout this project, these students have been given a taste of their future careers as they have worked to develop a product from a concept to reality. This opportunity has been



invaluable to these young minds, fostering their curiosity and ambition.

“I have learned a lot about perseverance and teamwork. This project won’t be possible without an absolute team effort involving communication and cooperation,” says project leader Ethan Klein. “The experience with this project has shown me what it takes to be successful in a real world situation. This isn’t just a class; it is an opportunity to do something real and great. It is life changing and is something I know will influence my entire future.”

[www.wausau.k12.wi.us/west](http://www.wausau.k12.wi.us/west)



## LEMELSON-MIT InvenTeams

### About the InvenTeams Grant

*Sponsored by Lemelson-MIT*

InvenTeams is a national grants initiative of the Lemelson-MIT program that is designed to excite high school students about invention, empower students to problem solve, and encourage an inventive culture in schools and communities. InvenTeams are composed of high school students, teachers, and industry mentors. Working collaboratively, InvenTeams identify a problem to be solved, conduct research on the problem, and

develop a prototype invention as an in-class or extracurricular project with the purpose of inventing something of value for their school or local community.

Grants up to \$10,000 are awarded annually, with approximately 15 grants available

Initial applications are due February 28, 2014. If selected to continue to the next step, final applications are due September 5, 2014

**Website:** [web.mit.edu/inventeams/apply.html](http://web.mit.edu/inventeams/apply.html)

# Searching Transportation Today's Career Sections

Ok, say you want to learn more about a career as a Marine Engineer. You go to our website ([www.transportationtodaywi.com](http://www.transportationtodaywi.com)) and click on **Maritime**. Scroll down until you get to the careers section and click on Learn More under Marine Engineers, and now a new window pops up – O\*net.

This window has been customized (as are the other links to all of the careers on the website) to show you a wide variety of information about marine engineers.

You will find:

- State and National Employment Trends
- State and National Wages
- Knowledge, Skills, and Abilities Needed in this Field
- Tasks and Activities Performed on the Job
- Tools and Technology Used
- Education and Training Required
- A Video About this Career

At the bottom of the page is a box where you can find more information on

related careers and web resources to help you explore marine engineering.

Right above that box are links to:

- Find colleges, training schools and instructional programs for this occupation
- Access additional Education Resources in the Career Resource Library
- Use the Financial Aid Advisor to help find funds for financing education

When you have finished looking at marine engineers, go back to Transportation Today to find a wide variety of careers in transportation to check into and explore.

*O\*net is brought to you by the US Department of Labor/Employment and Training Administration (USDOL/ETA) through a grant to the North Carolina Department of Commerce.*



## Find a Transportation Career



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**Website:** [www.dot.gov/administrations](http://www.dot.gov/administrations)

#### Step 2: Search

- Search for Current DOT Job Announcements.

**Website:** [dot.usajobs.gov/](http://dot.usajobs.gov/)

- Learn More About Grade Levels Before You Search

**Website:** [www.dot.gov/careers/search-dot-positions](http://www.dot.gov/careers/search-dot-positions)

#### Step 3: Apply

- Review your on-line application for accuracy and click Submit.

**Website:** [www.dot.gov/careers/online-application-process](http://www.dot.gov/careers/online-application-process)

If you have further questions, please contact the DOT Jobs Help Line at: 202-366-1298, or email your applicant inquiries to: [transjobs@dot.gov](mailto:transjobs@dot.gov).

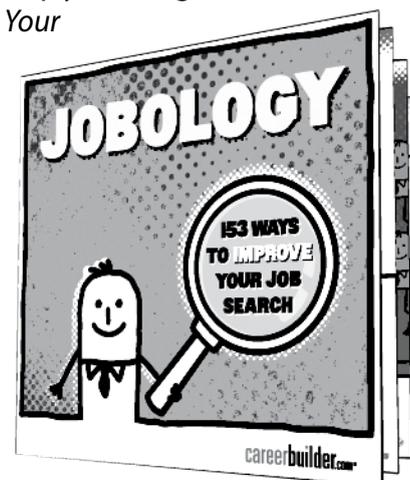
## JOBOLGY: YOUR STEP-BY-STEP GUIDE TO FINDING A JOB

Finding a new job can be many things: exciting, frustrating, eye-opening. One thing it should not be is mysterious.

We decided to create a guide to help you along.

In *Jobology: 153 Ways to Improve Your Job Search*, we take you from the first moments of your job hunt all the way to the salary negotiations. Whether you wonder how to begin your search, which résumé format to use, or when to send a thank-you note, we have the answer.

Download *Jobology* for free and take the question mark out of your job search.



[www.careerbuildercommunications.com](http://www.careerbuildercommunications.com)

# Employability What HR is Looking For

Everyone knows that work history and experience are vital to landing a job, but in today's tough economy, hiring managers are looking for more. Often, what separates the candidate who gets the job from a sea of equally qualified candidates are abstract characteristics that are difficult to convey in a resume. Your best opportunity to show a hiring manager that you possess the qualities necessary to thrive in their company's culture and become an asset to their team is during your interview. Hiring managers frequently identify top prospects based on their ability to exhibit key skills.

Forbes' Megan Casserly wrote this, "To unearth the 10 most in-demand skills of 2013 we drilled into the critical skill-sets for the top jobs of 2013 as defined by CareerBuilder as the occupations with the most jobs added since 2010 using O\*NET, the U.S. clearinghouse of occupational information. Not surprisingly, technical expertise and their various applications figure heavily on the list—but it's the less flashy skills that really dominate."

Here is the list from Casserly's excellent article "The 10 Skills That Will Get You Hired In 2013":

**No. 1 — Critical Thinking** (found in 9 out of the 10 most in-demand jobs)

Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems

**No. 2 — Complex Problem Solving** (found in 9 out of the 10 most in-demand jobs)

Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions

**No. 3 — Judgment and Decision-Making** (found in 9 out of the 10 most in-demand jobs)

Considering the relative costs and benefits of potential actions to choose the most appropriate ones

**No. 4 — Active Listening** (found in 9 out of the 10 most in-demand jobs)

Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate and not interrupting

**No. 5 — Computers and Electronics** (found in 8 out of the 10 most in-demand jobs)

Knowledge of circuit boards, processors, electronic equipment and computer hardware including applications and programs

**No. 6 — Mathematics** (found in 6 out of the 10 most in-demand jobs)

Knowledge of arithmetic, algebra, geometry, calculus, statistics and their application

**No. 7 — Operations and Systems Analysis** (found in 5 out of the 10 most in-demand jobs)

Determining how a system or operation should work and how changes in conditions, operations and environments will affect outcomes - Understanding the needs and product requirements of a particular design



**No. 8 — Monitoring** (found in 5 out of the 10 most in-demand jobs)

Monitoring and assessing performance of yourself, other individuals or organizations to make improvement or take corrective action

**No. 9 — Programming** (found in 3 out of the 10 most in-demand jobs)

Writing computer programming for various purposes

**No. 10 — Sales and Marketing** (found in 2 out of the 10 most in-demand jobs)

Knowledge of principles and methods for showing, promoting and selling products or services Includes marketing strategy and

tactics, product demonstration, sales techniques and sales control systems

To read the entire article please go to the following website:

**Website:** [www.forbes.com/sites/meghancasserly/2012/12/10/the-10-skills-that-will-get-you-a-job-in-2013/](http://www.forbes.com/sites/meghancasserly/2012/12/10/the-10-skills-that-will-get-you-a-job-in-2013/)

*O\*NET is a truly remarkable tool for researching career fields, their requirements and skills, salary ranges, education facilities that offer related programs, and so much more!*

**Website:** [www.onetonline.org/](http://www.onetonline.org/)

## Minute with a Master

Jerry Werner,

Lean Six Sigma Master Black Belt

The most difficult problems to solve are those that cross the boundaries of an organization through departments, with names like Sales, Finance, Engineering, IT, Operations, Manufacturing and Human Resources. These are called cross-functional problems and they involve processes that flow through those areas. A process begins with a customer requesting something (product, service, or information) and ends with the customer getting what they asked for, or not. When this process is broken, it requires the coordinated effort of representatives from all of these departments to work together, as a team, to fix it.

Eight vital steps are required to solve a complex business problem and hold the gains. The project leader needs to make sure that the following are all addressed:

1. Sponsorship
2. Charter
3. Voice of Customer

4. Data Driven
5. Root Cause Analysis
6. Project Management
7. Pilot Testing
8. Process Ownership with Dashboard Controls

We discussed the Charter, last time. Today, we will focus on Step 3, the Voice of Customer.

We only exist in an organization because we have customers or clients who are willing to pay for our products or services. If we are not directly serving a client, we should be serving someone who is. We need to be very clear about the needs of our customers, internal and external. Without that knowledge, we are flying blind and may create a solution that fails to solve their problem.

Here are four key questions that help us understand what is most important to our customers:

1. What do you like? (What should we leave as it is?)



2. What don't you like? (What needs to be improved?)

3. What would delight you? (What is most important to you?)

4. Who does it better? (Whom should we benchmark?)

The responses to these questions should

guide the rest of the problem solving process. What is critical to the Customer? Focus on that!

In the next issue we will discuss Step 4, Data Driven, and why it is important.

Questions? Contact Jerry.Werner@Werner-Assoc.com.

# Transportation Education to Receive Large Improvement at Eleva-Strum High School

In a rural High School just south of Eau Claire, big changes are reshaping the Technical Education program. At Eleva-Strum Central, the Tech Ed program is considered an integral part of the curriculum. The shop itself is renowned across the Midwest for their innovative Cardinal Manufacturing program, which incorporates a fully functional student-run business into the yearly class schedule.

Tech Ed teacher Craig Cegielski has been working at Eleva-Strum for a total of nine years. When Cegielski first took the position, the shop was, to say the least, a mess. Much of the equipment was outdated and in desperate need of cleaning.

Through the help of some pioneering High school students, Cegielski gave birth to a revolutionary student business idea. The plan was to create a functioning business within the school curriculum. Over the years, the business has grown; as it improved, the shop reaped the benefits. Older equipment has been replaced without straining the yearly program budget. Cardinal Manufacturing has opened the door for this small high school shop to become one of the most up-to-date in the area.

"It's an operating, student-run business," Cegielski says of the program. "Right now we have fourteen students, some being office managers, some being marketing managers, and some being welders and machinists."

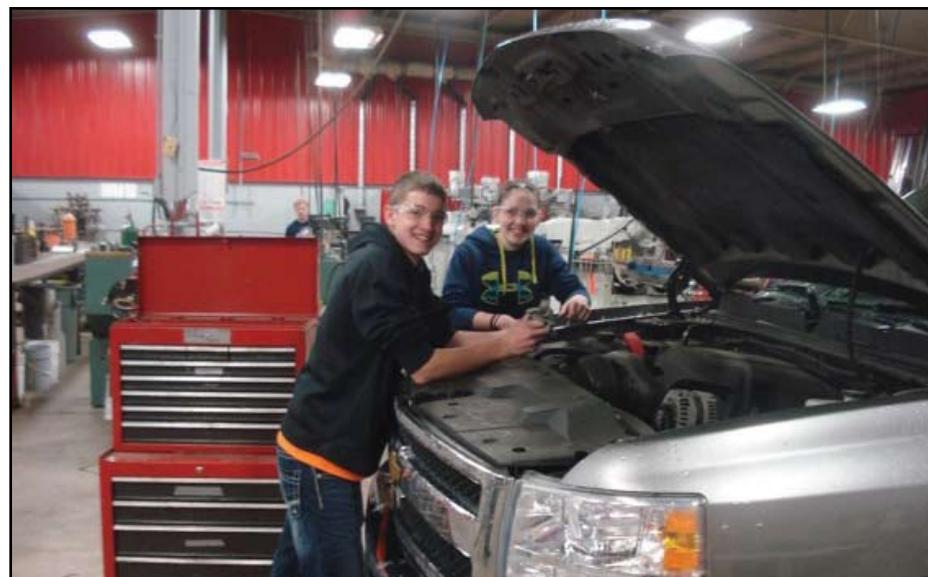
Cardinal Manufacturing has allowed the shop to expand into territories that many local shops simply don't have. "We [currently] have seven main areas," Cegielski says. "Small

Engines, the automotive area, Woodworking, Machining, Welding, CAD classes, and Construction."

Right now, there is one area that sits behind the rest. Compared to the rest of the shop, the Automotive area has been left behind the wave of improvement. The area has the required hand and power tools, but it's lacking some key components that would radically change the program. As it is, the automotive area is simply underdeveloped.

Cegielski has plans to change that. "I'd like to run a general car maintenance [class]," he says. "I'd like to interest many of the girls and guys in the school who don't ordinarily take shop classes. They're all going to own a vehicle someday and it's going to be [one of the largest] investments they'll ever make. I'd like them to be very aware of how a car operates and what to be aware of when buying [a vehicle], purchasing insurance, and performing maintenance. We're not necessarily going to be ripping out engines and transmissions. [We'll] more so work on changing headlight bulbs, checking oil and rotating tires."

Cegielski could, in theory, teach his class with the tools and space already allocated to the area. But there's one problem: with a class of fifteen to twenty students, not all of them will be able to see every demonstration. This is especially true when doing work underneath the vehicle. The shop only has so many dollies, and the undercarriage only has so much room. Such a problem could severely restrict what the program is capable of doing.



To remedy this, Cegielski and the Cardinal Manufacturing team have begun looking into automotive hoists. "[This shop] would be greatly improved with a hoist," says Cegielski. "We could use [the hoist] for fixing, but we could also use it for demonstration purposes. We're going to investigate the different brands and work with local companies to see who's going to [give us] the best fit."

Cegielski has put a general ballpark number of \$3,500 on the hoist. Such an investment would prove too bulky for most schools to shoulder. Fortunately, the program has a few options for garnering the funds. "[We can] look for donations, work with local companies, take some out of the Cardinal Manufacturing fund, or have the [District] help with it a little,"

Cegielski says. "We're [just] trying to figure out how we can get it in here."

Cegielski feels that with luck, the hoist could be purchased, installed, and ready to operate by September of 2014. The automotive class would follow soon after.

"We're trying to always improve each of our classes," Cegielski says. "This is one way we can improve the Automotive [Department]. We constantly move around the shop and we're trying to improve the shop as a whole." He pauses, adding with a smile, "It's a never-ending process."

[www.esschools.k12.wi.us](http://www.esschools.k12.wi.us)

## Memorial High School club promotes a can-do attitude



Tire iron in hand, Jessica Lavorata loosened the lug nuts on a beat-up old car Wednesday inside the auto shop classroom at Memorial High School.

The Memorial senior was practicing in case she ever needs to change a flat.

Lavorata was joined by about 25 fellow students, all female, who came to the shop room after classes to learn how to change a tire from retired driving instructor Dan Strehlau.

The students belong to a new activities club at the school called Self-Sufficient Women.

If any of the students need to change a flat tire, "we don't want to have to call our fathers," Lavorata said Wednesday while she rubbed a bit of tire grease smeared on her hands.

Club members want to learn activities that will help them become more independent, whether that means walking in high heels or replacing a flat tire.

They plan to meet every other Wednesday at the end of the school day throughout

the year.

More than 100 students showed up for the first meeting.

The club's appeal is simple, said member Sonja Konzen, a sophomore.

"It's just to learn how to do things like (changing a flat tire) that I wouldn't know how to do," Konzen said.

School officials have said what's impressive is club members are taking the initiative to find people with expertise and ask them to share their knowledge.

"That's what business and industry is looking for: individuals who take initiative and know how to solve problems and go ahead and solve that problem. And to me this is an example of that at the high school level," said Carol Craig, Eau Claire school board president.

[www.ecasd.k12.wi.us/schools/high/memorial](http://www.ecasd.k12.wi.us/schools/high/memorial)

# Professional Truck Drivers Offer Safety Tips for Holiday/Winter Travel

Arlington, Va. – American Trucking Associations want to ensure the 94.5 million motorists traveling over 50 miles or more during the year-end holiday arrive at their destinations safely.

“This time of year should be a festive and happy occasion for Americans, not one spent remembering loved ones lost in tragic highway crashes,” said ATA President and CEO Bill Graves. “As we all hit the road, take time to learn from America’s Road Team, elite drivers with millions of miles of safe driving under their belt. By following their advice on the roads, you’ll be better able to share the road and arrive at your destination safely.”

America’s Road Team Captains, elite professional truck drivers with millions of accident-free miles, are offering advice on how to navigate through highway traffic and winter driving conditions this busy traffic season. Tips include:

- **Prepare you vehicle for long distance travel:** Check your wipers and fluids. Have your radiator and cooling system serviced. Simple maintenance can prevent many of the problems that strand motorists on the side of the road before you leave your home.
- **Plan ahead:** Before you get on a highway, know your exit by name and number, and watch the signs as you near the off-ramp. Drivers making unexpected lane changes to exit often cause accidents.
- **Do not cut in front of large trucks:** Remember that trucks are heavier and take longer to make a complete stop, so avoid cutting quickly in front of them.
- **Be aware of truck blindspots:** When sharing the road with large trucks, be aware of their blind spots. If you can’t see the truck driver in his or her mirrors, then the truck driver can’t see you.
- **Check your emergency kit:** Contents should include: battery powered radio, flashlight, blanket, jumper cables, fire extinguisher, first aid kit, bottled water, non-perishable foods, maps, tire repair kit and flares.
- **Be aware of changes in weather:** Weather conditions across the U.S. will be changing - especially during early mornings and evenings with the cold. Watch for ice, snow and other weather related obstacles.
- **Keep your eyes on the road:** Distracted driving is a major cause of traffic accidents. Even just two seconds of distraction time doubles the chances of an accident. Use your cell phone when stopped and never text while driving.
- **Leave early and avoid risks:** Leave early so you won’t be anxious about arriving late and to accommodate delays. Road conditions may change due to inclement weather or traffic congestion.
- **Avoid extreme weather conditions:** Ice, hail and snow make roads difficult to travel. Try to avoid driving through extreme weather conditions, and travel during daylight.
- **Remove ice and snow from your vehicle:** Clear your windows and roof of snow to insure you have maximum vis-

ibility and avoid creating a hazard for the vehicle behind you. Don’t allow ice and snow to create additional blindspots on your vehicle.

- **Be aware of the vehicle in front of you:** Leave extra room between you and the vehicle in front so you can avoid snow and ice blowing onto your windshield or maneuver around patches of ice.
- **Pack your vehicle smart:** With luggage, sports equipment and presents be sure to pack your vehicle so that you can see out of all of your windows and mirrors.
- **Slow Down:** With the extra highway congestion due to Holiday travel, speeding becomes even more dangerous. Allow plenty of a space cushion and reduce your speed.
- **Buckle up:** Safety belts reduce the risk of fatal injury by 45 percent and are a simple way to increase your safety on the road.

“Always buckle up,” said America’s Road Team Captain Dale Williams (Trimac Transportation). “Weather can also be a factor during this time of year so check weather conditions before you get in your vehicle,” Williams added.

“The holidays/winter are a challenging time on the highways,” said America’s Road Team Captain Bryan Wold (Con-way Freight). “Between motorists visiting families or finishing up last minute shopping there is nothing better than patience and safe driving practices behind the wheel, he added.”

The America’s Road Team, sponsored by Volvo Trucks North America, is a national public outreach program led by a small group of professional truck drivers who share superior driving skills, remarkable safety records and a strong desire to spread the word about safety on the highway. Follow America’s Road Team on Facebook or Twitter.

American Trucking Associations is the largest national trade association for the trucking industry. Through a federation of 50 affiliated state trucking associations and industry-related conferences and councils, ATA is the voice of the industry America depends on most to move our nation’s freight.

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The Georgia Motor Trucking Association awarded us their Grand Champion Safety Award honors for General Commodities Truckload Division in 2002 and 2004. We also earned top safety distinction from the Wisconsin Motor Carriers Association in 2004.

In addition to our Safety Department, we have a Safety Committee in place. This committee has representation from the Safety Department, Risk Management, Maintenance Department, and a person from each of the outlying Marten terminals. It is a ten member committee that elects a Chairman, Co-Chairman and Secretary yearly, with the Safety Manager as the advisor.

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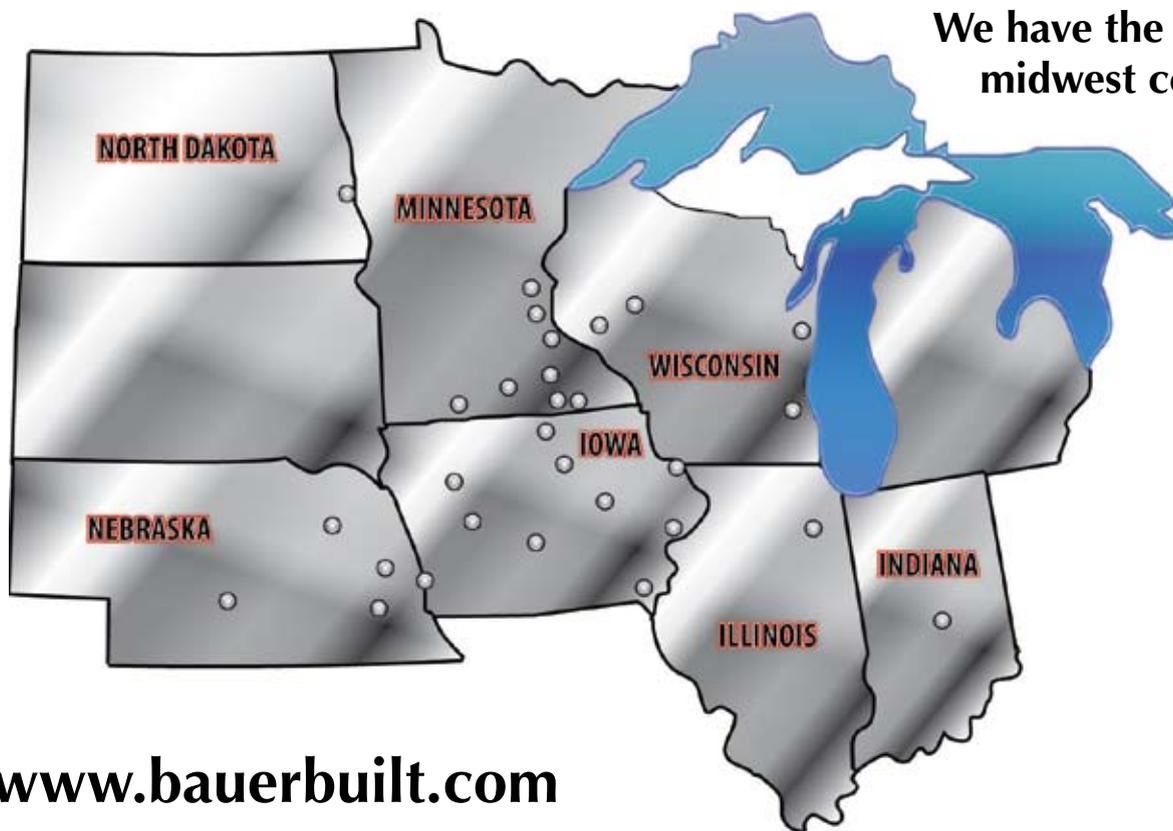
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