

A WING AND A PLOW



Pictured at left, Bill Hylton stands beside the cart he designed which makes it as easy as 1, 2, 3 to install snow plow side wing blades.

When snowstorms hit Nevada, quick response to clear the roads is an absolute necessity. That's what prompted Bill Hylton of Wells Maintenance Crew 332 to put his welding expertise to work, designing and building a time and labor-saving device that makes installation and removal of snow plow side wings a snap.

The side wings are additional, secondary plows mounted to the passenger side of the snow plow, extending the plow's ability to remove a wider path of snow. Hylton says it previously took up to three hours to mount the 800-pound side wing onto a snow plow.

"The wings are so heavy that three workers had to use chains to hoist the wings to the side of the plow," he explains. "The process was not only time consuming, but dangerous as well."

Now, with Hylton's invention, two people can hook on a wing plow in about 15 minutes. The design is basically a cart with wheels that houses a wing plow upright. To install the wing, NDOT

maintainers simply roll the cart to the snow plow and hook the wing onto the plow's hydraulic arm. The multi-purpose device has the added benefit of storing the plows during the off season as well.

"The cradle will save the department time and money," says Buzz Jackson, Wells Maintenance Supervisor. "These cradles will quicken our response time during snowstorms and keep our maintenance workers safe while installing the wings."

Materials for each cradle cost approximately \$150. So far Hylton, who joined NDOT three years ago after extensive structural welding experience with his own welding business and the local school district, has made four cradles for District III. Eighteen more are in the works for use on all plows in the Elko subdistrict with wing plows.

"Necessity is the mother of all invention," Hylton says. "I'm glad I could put welding experience to good use!"

PROFESSIONAL ENGINEERS



From left to right, Peter Aiyuk, Derek Ridenoure and Seth Daniels stand proud as some of NDOT's newest certified Professional Engineers.

NDOT engineers Peter Aiyuk, Seth Daniels, Boniface Njoroge and Derek Ridenoure have recently reached a milestone in their professional career by becoming certified as Professional Engineers.

The PE license is given to those who have undergone rigorous engineering training and received a bachelor's degree and Fundamentals of Engineering certification along with certain professional engineering experience.

Then comes the PE exam itself. The exacting eight-hour test demands a breadth of knowledge of all civil engineering areas, with a particular emphasis on transportation. The federally-mandated PE licensure standards ensure both engineering education and expertise for all of those designing our nation's infrastructure. And, the new NDOT engineers worked hard to fulfill the high standards for certification.

"The test is so broad, you really have to study everything," Njoroge explained. "I started preparing for the test last December and I was putting about four hours every day into studying. On weekends, I was putting in nine hours of studying at the library."

Studying with him many times was friend and NDOT Highway Safety Coordinator Peter Aiyuk, who credits the NDOT Research Library's wealth of reference textbooks and sample problems as being extremely helpful in exam preparation.

After the many hours of studying comes the exam itself.

"It's intense," Daniels explains. "You have an average of six minutes for every question. Once you read the question, you have to figure out very quickly which reference material you need."

Ridenoure passed the exam two years ago, just months after receiving his master's degree in civil/environmental engineering, although he had to fulfill two years of work experience before being certified. While taking the test so soon after his college education left the information fresh in his mind, Ridenoure agreed that the test was challenging no matter when taken.

Following the grueling test is the equally grueling wait to see if the test was passed.

"I was doing field work in Winnemucca when Boniface called me to let me know that he had received his letter that afternoon," Aiyuk recalled. "I had to wait the whole drive from Winnemucca to Reno to see if I also received a letter. The first thing I did was open my mailbox, and my letter was there. I had passed!"

The new NDOT Professional Engineers all agree that the license has been a long-term personal goal that will help open doors to future professional opportunities and advancement.

For Ridenoure, passing his PE exam gave him the ability to work in the NDOT Hydraulics division, underfilling the Staff III Senior Hydraulic Engineer position until he received the two years of work experience required for those who pass the PE exam and hold a master's degree.

"The PE was my stepping stone to be able to be in Hydraulics, right where I want to be," Ridenoure said.

"When you have a PE, you can move higher professionally," Njoroge explained. "That's the ambition of those taking the test. If a job opportunity requiring a PE shows up, you will be able to take advantage of it."

"In the public sector, it is crucial," Daniels agreed. "With the competitiveness within this economy, it gives you an edge."

Beginning in June 2010, Nevada's PE license now requires a bachelor's degree in engineering instead of the 10 years of professional engineering work experience that previously fulfilled the experience requirement.

LET THERE BE LIGHT



Before

Pictured at right, lights are brighter in the District 2 equipment shop after lighting upgrades.



After

Turning up the lights, increasing safety and reducing costs is what NDOT Architecture's energy-efficient and safety-conscious programs are doing across the state.

Biennially, NDOT utilizes up to \$600,000 to make electrical and security improvements to Department buildings statewide. Many of the improvements reduce costs by conserving energy. Most importantly, the upgrades provide better lighting for NDOT staff performing important, and exacting, mechanical work.

"Mechanics need good lighting to see things like cracks and loose bolts so we don't overlook something and endanger our safety or public safety," Fallon mechanic supervisor Gary Erskine explained of the fluorescent lighting improvements made to Fallon maintenance shops. "The shop was like a cave with the old lighting. Now, the difference is night and day."

The energy-efficient lighting upgrades overseen by NDOT Architecture's Chris Dornberger are also already in place in many other NDOT maintenance stations across the state. Lighting updates in the Ruby Valley maintenance station and Elko and Tonopah buildings are taking place this year, along with replacement of 95 percent of light fixtures in NDOT Ely offices and shops.

In the Carson City motor pool, LED light fixtures have been put in place. The fixtures can last up to 15 years compared to regular HID, or high intensity discharge, lighting needing replacement every three to five years. Another cost-saving bonus: LED lighting can reduce energy use by up to half. Further improv-

ing energy efficiency is motion sensor lighting installed in certain repair shops and records storage to turn off lights when not needed. Over and above lower electrical use, NDOT generated nearly \$20,000 in NV Energy rebates in 2009 alone through use of more energy-efficient lighting.

Also helping to save energy and money is enhanced attic installation in NDOT maintenance station residences.

In Districts 2 and 3, attics were insulated in 28 NDOT maintenance houses in rural areas such as Quinn River, Contact, Currie, Incline Village and Cold Springs. The added insulation will help improve living conditions and reduce the up to 45 percent of home heating and cooling energy that the U.S. Department of Energy reports is lost through home attics.

While helping save energy and money, Architecture's electrical safety improvements can also help save lives. Electrical circuit interrupters, outdated or faulty wiring and circuit breakers and panels are all checked and repaired if needed.

For NDOT employees wishing to improve safety, lighting or energy efficiency in an NDOT building, an architecture request form can be found on the Architecture page of the Maintenance, Operations and Architecture SharePoint webpage.

NDOT ARCHITECTURE STAFF

William Schulz - Project Manager III

Stephen Teed - Project Manager II

Don Twichell - Project Manager I

DJ Chandler - Project Manager I

Chris Dornberger - Project Coordinator II

Gene Warren - Drafter IV

Annette Ballew - Administrative Assistant IV

Carrie Morton - Administrative Assistant III

KudosKorner

HIGHWAY ANGELS

NDOT employees daily help Nevada motorists and commerce safely get to their destination. It's more important than ever when a problem occurs on the road.

"I threw a tire tread on U.S. 6 between Tonopah and Ely," California resident Linda Collins wrote. With vehicle tire and electrical damage from the blow out, Linda was left on the side of the road with no cell phone service to call for help. She was stranded until Blue Jay Maintenance Supervisor **Curtis Tollefsrud** came by. "He let me use his phone to call AAA. He came back later to check on us."

Nancy Fernandez was traveling across country when her car's fuel pump failed and she was stuck on Interstate 80 between Elko and Battle Mountain. That's when **Sheldon Forbes** of Emigrant Pass Crew 324 stopped.

"Sheldon was so nice, helpful and professional. He gave me a cold bottle of water to drink and sat there with me until the tow truck arrived."

PERMIT TO HELP

When the Boy Scouts prepared to host a Jamboree event at the Churchill County Fairgrounds, NDOT District 2 staff was there to assist with roadside safety and permit issues.

"**Cody Black of the permitting office and his staff** were eager to provide assistance in completing the permitting process," Scout Executive Marty Baldwin explained. "The **Fallon maintenance crews** (and supervisors) **Ed Ely, Andy Souza and Mike Dalluge** likewise were very helpful and professional in setting up electronic message boards."

Las Vegas Electric thanked NDOT Las Vegas right-of-way staff for help in two important projects in southern Nevada.

The Regional Transportation Commission of Southern Nevada's Boulder Highway Bus Rapid Transit project involves work on 27 200-amp power meter pedestals. It was not an easy task to gather the addresses and requirements for each agency involved, until NDOT Staff 1 Associate Engineer **Robert Musko** stepped in.

"Through his contacts and diligent efforts, Robert was able to use his connections to obtain all 27 of these addresses," Ron Riddels Jr. of Las Vegas Electric wrote.

NDOT Staff 1 Associate Engineer Lance Sundin also helped with Las Vegas Electric's work on the Federal Highway Administration's Hoover Dam Bridge project.

"Lance immediately became involved and streamlined the whole process for the Nevada pedestal inspection and is currently coordinating the account set up for Arizona services," Riddels said, also thanking Sundin for help coordinating NV Energy's quick installation of a meter.

Welcome

Alicia Hough, *Battle Mountain*
Michael Mann, *Mina*
Jennifer Riddle, *Carson*
Trevor Scottish, *Reno*



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