`A Learning Experience:
What School Doesn't Teach You

Back; Steve Olson, Chris Bahrij, Jim MeGee, Steve Garbe
Front; (insert Dottie Shoup), Jaimie Huber, Laura Perkins

Chris Bahrij
Traffic Technology Group Intern

“Would you like that super-sized?” My last job was in high school working at McDonalds. That job experience, although it has its benefits in high school, was not especially helpful in preparing me for my summer internship at TTG at NDOR (Traffic Technology Group at the Nebraska Dept. of Roads). With my admitted lack of professional work experience and having a "student mentality", I was a little nervous walking into my first day of TTG work. I was relieved to see my MATC sponsor waiting to show me around and to be introduced to everyone. After being shown my desk and receiving all my passwords my two bosses, Steve and Steve, laid out the plan for my summer internship experience. This really eased my anxiety and made me feel like a part of the team. I was ready to tackle my first task and get with the program.

Steve Garbe
MATC Sponsor
Technology Engineer

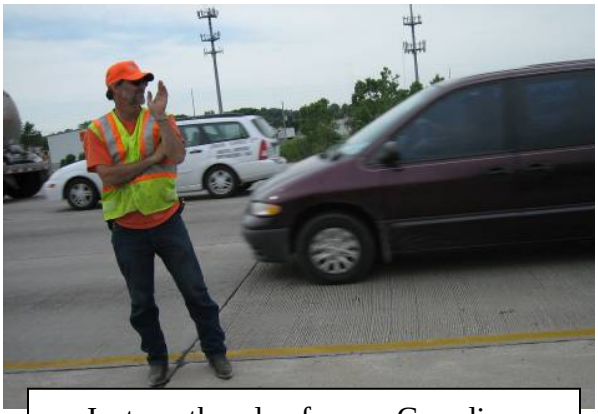
NDOR has RWIS (Road Weather Information Systems) strategically located throughout the state. In addition to sending data regarding road conditions, temperature, visibility, humidity, and moisture, 79 of these sites have cameras installed that deliver near real time pictures of the road way. My first task seemed fairly simple. Each day I was to check to make sure that the cameras were in working order and report my finding to my boss. (I also had to report if the unit was missing for some reason.) I tried to make a good impression with my first task so I sorted, organized, and color-coded each malfunction from each site. (In school it seemed, if you showed more initiative and work on a project or assignment the more points and credit you usually received.) In this

work place, however, it turned out that I was doing way more work than necessary, when all my boss required was a simple list of cameras that were malfunctioning. I learned from my first task that sometimes the directions simply needed a little clarification. On the other hand, sometimes the more complete the data perhaps patterns can be discovered and thereby problems prevented or possibly resolved more quickly. It is not a bad thing to be show enthusiasm and initiative in your work.

As with most engineers, my desk workspace was where I spent the majority of my work time. I appreciated working in an air-conditioned environment, especially when the temperatures were in the triple digits. In addition I also had several opportunities to visit various road sites and see the plan sets and designs that I had been working on. It was neat to actually see the designs transformed into reality. I also learned that just because the plan set designates the project should be carried out in a certain way, does not mean that it will always turn out that way (for a variety of reasons).

One of the missions of TTG is to research new technologies as well as assist in developing them. In June a group traveled to Omaha to hear Ron Goodall, vice president of Speed Info. of San Francisco CA, present a new highway sensor product. His presentation was excellent and he effectively answered all our questions. One question regarding hail damage sparked an interesting story. Ron explained, “In the San Francisco Bay area we had to encase some sensors in Kevlar because local gangs would shoot them, so if hail or some 'crazy farmers' were a problem, there is a solution.”

Listening to a presentation of sensors was nothing like the experience of actually installing them. Installing sensors along I-80 in Omaha on light poles in the middle of the interstate with cars zooming at 70 mph and only a 5 foot distance from the road crew was something beyond any ride at a theme park. We had a guardian with a crash truck behind us just in case "something" were to happen. It was scary being out in the middle of the heaviest traveled section of road in Nebraska, I-80 and 42nd St. (130,000 ADT Average Daily Traffic). I now have a much greater respect for those road workers. They truly must have nerves of steel!!



Just another day for our Guardian.

When not at my desk or on a site visit, I had the opportunity to experience some other aspects of NDOR. I spent a day at the sign shop helping make road signs, which was a fun change of

pace. I hung out with the traffic counters where I learned how the weigh-in-motion scales worked. I checked, sorted, and organized 205 tower sections, a drum of bolts and accessories, which were to be shipped out to each site location. During a couple of Lincoln's hottest July days, I spent my day in the electronics shop calibrating and learning about microwaves, conflict monitors, traffic lights, GPS, and lighting surge protection. (At break time I also learned how not to lose at cards-- just don't play.) In general I spent much of my work time helping manage, tag, sort, store, ship, label, calibrate, and keep track of some of the paper work that comes with a NDOR project. It seemed even when there were down times at the office, there were always one or two "other" projects on the back burner that could use a little assistance. This would involve sorting, alphabetizing, moving files, updating databases, or making copies. I even got to go wash the van one morning.

In the sign shop I helped "reflectorize" signs

My MATC internship included learning and assisting with the state-wide camera project and the automated work zone. I was responsible for much of the bench testing and checking including the wireless cameras, encoders, radios, and electronics. This equipment came from a company that had default firmware and software settings, which I was responsible for calibrating and checking

before being shipped out. I also checked that the automated work zone program was working properly and forwarding accurate alerts, as well as reviewing the processed data that the sensors picked up and made sure the alerts were legitimate. I learned that just because a vendor may state their sensors work a certain way, does not mean they actually do (or that they even work at all sometimes). I also gained hands on knowledge and experience with wireless networks, digital radios, noise, web-based software, IP addresses, and Fresnel zones. Although the camera project will not be completed for some time, I feel I have gained a greater appreciation and understanding of this important aspect of transportation engineering. As I complete my summer internship I leave with a feeling of pride and satisfaction in that in a small way I contributed to its goal. While college gives a foundation in technical knowledge, I feel I have learned much about the inner workings of the real world of business during my internship at NDOR.

My desk, which I always make full use of.

Lending a hand organizing state project from the last 50 years

Just hanging out at the tower site

Nebraska Department of Roads