10-20-2011

# Connections: Inside and Out (2011)

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Imagine this: it is disturbingly loud, so loud that you can barely hear yourself think, let alone try to formulate the words that are coming out of your fellow worker's mouth. Your ears will never recover from the amplified sound waves that make their way through your intricate ear canals and they ring long after you have gone home for the day. If you can formulate the sound of 10,000 cars revving their engines at once while someone simultaneously fires shotguns, this is the sound. It is hot. You can feel the sweat as it drips down off of your limbs and face, sinking into the heavy and full-bodied coveralls that you are forced to wear, making the helmet on your head slick with perspiration. The furnace that turns the items in it a bright cherry red burns day and night around you making everyday feel like a blistering day in July. It smells funny. The chemicals that are used in your workplace everyday are poisonous, hazardous. They have crippled people, even killed people on contact, and yet you breathe it in on a daily basis infiltrating the delicate tissue in your lungs. The acrid smell in your nose never leaves, no matter how much you sneeze or try to clean it out. Your feet and back ache from literally climbing thousands of steps daily and wedging yourself into the smallest of crevices that at any moment could collapse, wrenching your body over, so that you can fix the things that other people have broken. Your hands hurt from the constant scrapes and dings. The repeat of washing them leaves them red and dry, very susceptible to cracks and painful breaks in your once velvet-like skin. Are you scared, concerned, or disgusted perhaps? I am. This is what my dad, Tony Albertson, goes to work in everyday.

My dad is a foreman in Equipment Control for ArcelorMittal's I/N TEK steel mill in New Carlisle, IN. When I was growing up, my dad often talked about his job, explaining things to my sister and I. He is like that; very descriptive and thorough when he teaches us anything. It is nice because it helps to be able to picture certain things in your head when you are trying to visualize or configure something new. But until a couple years ago, I never realized the magnitude of the things he was talking about when he told me how loud it was, how dangerous it was. In 2008 alone, there were seventeen fatalities that occurred in the steel mills of Indiana (Friend 5 print). I had him take me on a tour around I/N TEK when I was seventeen and since that tour, I pray for my dad every day that goes to work. I have seen some of the dangers firsthand and I do not believe that they were even among the worst; it terrifies me.

The steel industry has been around for a long time. It is the concept of taking iron ore alloy and processing it into usable metals. Technological advances in the steelmaking industry

during the 19th century played a large role in formulating economies that were dependent on rails, automobiles, girders, bridges, and many other products. Many tricks and inventions have been made such as the Bessemer process, which was created by Henry Bessemer in England and William Kelly in the United States during the 1850s. This allowed for the mass production of low-cost steel and was often referred to as the open-hearth process. First introduced in the United States in 1888, this invention made it easier to use domestic iron ores (Steel Industry 1 print).

The United States became the world's largest steel producer during the 1880s because of the demand for steel and its products. Although the open-hearth process ruled the steel market between 1910 and 1960, it was soon converted to the basic-oxygen process. Logically, it produces steel faster and more efficiently. The electric-arc furnace process was also an extremely useful idea because it makes it easier to produce alloys such as stainless steel and allows other steels to be recycled (Steel Industry 1 print).

After World War II, the steel industry in the United States faced increased competition from Japanese and European producers. Other countries were also becoming more technologically advanced and were catching up to the U.S.'s clever methods. Heightening the competition, many third world countries, such as Brazil, built their own steel mills to reduce costs and gain hefty profits of their own. These mills were much smaller, nonunion mills referred to as "mini-mills" that recycled scrap steel but they still had an impact on the amount of steel that was requested from the U.S. The U.S. produced about half of the world's steel products in 1945 and in 1999 it was considered the second largest producer, running approximately twelve percent of the world market, closely behind China and just keeping ahead of Japan and Russia (Steel Industry 1 print). Albertson commented, "Being competitive in the market is very serious, we have been lucky so far with how much steel is requested from the United States."

Throughout the steel industry, the word yield has an abundant source of meanings. Steel mills often differ greatly in the ways they use to produce steel and also in what kind of steel they produce. The definition of yield that will be used here is simply this: yield equals the output stream divided by the input stream and is recorded as a percentage to measure production. Most mills have an average of ninety percent for their yields. Included in this are the areas: pretreatment where the metals are cleaned and prepped, the furnace where they are heated and shaped, and finally metallurgy where the finished products are made or coated depending on what they may be for. For example, some steels are galvanized that may be going to automotive factories where vehicles are made while others are chosen not to be coated because buying the steel this way is cheaper. Any loss throughout these stages can be due to skimming, strip breaks, slag loss, and reheating issues (Price 483 print). "Running time or "up-time" is essential to every mill in order for them to succeed in the market. Per every minute that I/N TEK is shut down, 200 dollars are lost. So the clock stays running and repairs or "downturns" to fix problems are planned well ahead of time with much collaboration and thought," quoted Albertson. Every individual steel mill optimizes their steel production by quality steel, fast production of steel, and keeping costs as cheap as possible.

ArcerlorMittal's I/N TEK and I/N KOTE has been around for twenty-one years now and my dad was the first local person hired in when the mill opened, so he has seniority over many others in the mill. Albertson stated, "I have seniority over a lot of people out there, but that doesn't make me a better person nor do I act like I am better. In the steel industry everyone works together and you have to rely on each other. Respect is the key, because without it, there would be trouble every day." Working together is definitely important because of the high stress level dealt with in the mill due to problems and the unique schedules. Every job in the mill has to cover three shifts: days, afternoons, or midnights. My dad works nine weeks of days and then switches to six weeks of shift work. He said, "It is not an easy feat switching hours back and forth. Your body protests after so long and many find it hard to get used to the schedule, but it is necessary. The mill stays running 24/7 and downtime is extremely bad, so we avoid shutting down at all costs."

Now that we have covered some basic background information, it is time to get down to the fine details of Equipment Control and its protocols. Every day when my dad arrives at work he performs Inspection Method of Maintenance or IMM. He calls this part of his job making rounds and essentially walks around the mill checking different parts and machines to make sure that they are running properly with no glitches or problems. My dad performs many tests that required specialized training such as oil analysis, vibration analysis of machinery, and completing very important paperwork such as failure notices. Albertson discussed his training and said, "I've been through a couple training programs. Two in Ohio and I've even been to Japan to help design and fix a very important and expensive piece of machinery that they were making for I/N TEK. Essentially they teach you the basics for your area, but what they really want is for people to think on their own and bring new ideas to the table."

The Operators in the mill are also very important because they inform the Equipment Control if they have noticed a problem on the strip or with any machines (Albertson). "The steel mill has five miles of steel strip running through it and the Operators all keep track of their specific sections to let us know what's going on. When something is wrong, we can predict a failure and plan it accordingly with one of our downturns." At this point, outside contractors are hired by my dad and his crew to fix large problems or replace machinery and equipment. Four major downturns lasting for a week are scheduled a year and then eight shorter one day downturns are also scheduled in. The hope with this is that problems are fixed during this time so that additional costs will not be added by having to shut down multiple times outside of the downturns for other problems. Albertson joked, "You'd be surprised how fast you can spend $75,000 dollars just on labor costs. My area alone does this on every major downturn, and that doesn't include the rest of the plant. The machinery is vital to production and happy customers."

Upon talking more with my father, I started to ask him some deeper questions. What was his favorite part about the job, if there was one? What was his least favorite part and why? If he could do anything in the world, would he still choose to work there? I cannot say that the answers were all cheerful, but at least they were honest. My dad could not really pick out a part

of his job that he thoroughly loved. However, he mentioned that he had made some good and loyal friends working there over the years and that the pay was good along with the benefits. Also, he commented that, "I enjoy the diversity of my job because there are never the same problems and I am always fixing or replacing something new and different which requires me to think outside of the box." When I questioned about his least favorite part, I got a whole string of answers. One response said this, "My least favorite part, hmmm. Strip breaks, when we have to shut down the line to dig out a coil of steel that's a mile long out of the furnace. It's hot work, I literally come out looking like I went swimming with my clothes on. And it's dirty, a ton of bunched up burned up steel that has to be cut and torched out of places not fit for a man." There were more stories like these about some of the other workers' jobs in the mill that demonstrate out of the many jobs in the plant, my dad has it good. But, it is still very bad compared to your average behind the desk job. Next came the fun question, what would you do if you could do anything? I got a laugh at first and then the reply, "If I could've done anything I would've been a lawyer because growing up I really believed in our country's legal system and thought that everyone should have fair representation."

Differing from the problems that my dad and other steel workers face inside the mill, are the problems outside of the mill such as the economy and dealing with government environment issues. The economy has been an ongoing issue for a long time. Steel mills greatly feel the dips and increases of the current recession because much of their product goes to automotive producers. When some people can barely get by making their current payments and having the necessities of life, the last thing they want to do is look at buying a fancy new car. Recently, in 2008, I/N TEK and I/N KOTE were ready to sign a new contract. However, the economy was doing horribly and for awhile, it was not a positive that a new contract would be signed. This would have been devastating to all of the people at the mill. Had a strike occurred if a new contract was not signed, the union workers would have had to stick together and support each other through their hardships. Albertson commented about unions that, "A union can be an extremely good thing also though because it prevents companies from singling out certain individuals because they are bound under contract to be a part of something larger. Thus, this protects everyone."

Throughout the last six years, Indiana has kept a stream of steel workers on the job. Numbers have not decreased substantially like one may think because Indiana plays an important role in the nation's steel industry. Out of the average of 94,000 employed each year for the past six years, Indiana provides around 20,000 of these people. With exact calculations, in 2007 Indiana alone made up 19.98 percent of the workers to the workforce for the United State's steel production (Friend 7 print). Although the numbers sound promising, getting into the steel worker's union is no easy feat. To begin a person must receive a recommendation and then must pass a very difficult written and objective exam. If a person endures this substantial exam, the individual will be pulled, interviewed repeatedly, and then compared with the hundreds of others that apply (Albertson). Albertson commented, "Getting in takes skill and some form of talent,

not everyone can do it. The process is extremely selective because we want workers that are assets to us, workers that help to optimize our steel production because everything is a competition in this world."

Along with the economy are environmental issues that the mills deal with. Many rules and regulations are inflicted upon steel mills regarding environmental issues and hazardous products to workers. Often even small mishaps or spills can lead to hundreds of thousands of dollars and many wasted hours to clean up a mess which is astonishing (Van Canegham 1 print). Albertson grimly stated, "We've had a couple of really bad incidents where men have fallen in the dunking acid tanks. Those stories don't ever end well, they're sad." Outside of the mill chemicals have to be disposed of properly, and if they are not, the mill is fined money. A couple of months ago the mill had a dilemma. 6,000 gallons of hydrochloric acid could not be properly processed at the Waste Water Treatment facility resulting in a spill of some of the solution on the ground (Albertson). The evolution of the impact in categories such as acidification, photo-oxidant formation, human toxicity, freshwater aquatic ecotoxicity, eutrophication, and water use are all carefully studied from each steel mill to ensure that they are following safe and standard guidelines to ensure our world's environment will stay clean (Van Canegham 1 print).

Entwined in every occupation comes connections to the rest of the world. Throughout this profile, many examples are given of how the steel mills are jointed with every day society. The steel industry is reliant on the economy and they follow similar parallel relationships. One is dependent on the other and vice versa. When the economy is in a recession, less steel is sold so both the economy and steel production drop. However, if a surplus of steel is needed it can help the economy thus boosting revenue and creating needed work for the mills. Environmental factors also depend largely on steel mills and other production companies. If the environment is polluted, not only do the inhabitants of the earth suffer, but the steel mills are fined and punished. One of the biggest relations between workers in the steel industry and society are those that involve their family and friends. Many individuals take for granted appliances that the families with workers in production companies really appreciate. The risk is thought about everyday that the loved family member and friends travel to work. Without these brilliant people the world we know now around us, would not survive.

Although you have only seen the profile of my dad's job, there are hundreds more in the steel industry. Each person requires special training and skills for their specific occupation. Following that also comes integrity, cooperation, responsibility, and bravery to complete the job correctly in this type of workplace. The steel industry is an extremely messy, dirty, and dangerous area. I am grateful of my father and proud of him for enduring these trying conditions for the well-being of my family and our communities.

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