



Workmanship continued

temper, heat-treated) that were not heat-treated, but only cold-drawn.

It is incumbent on us as “workmanlike suppliers” to understand what may not be spelled out in the specification, but is implied and expected nonetheless.

Absence of injurious defects—While this may seem to be obvious, I am reminded of a handrail I photographed on the Great Wall of China at Badaling, northwest of Beijing. The handrail, which is obviously designed to be touched by people and provide for their safety, was fabricated from pipe



with surface defects that could cut and injure the unsuspecting user.

If something can cause harm to a person, or if it can interfere with fit, form or function, it is an injurious defect and its presence is proof that the material is not of “good workmanship.”

Absence of attributes not specifically described in purchase document—Unwanted contamination such as chips, heavy oil, sludge or even bird droppings on bundles of bars were the kinds of things that machine shop customers complained about when getting steel bars delivered from the mill.

Heavy oil, gunk, chips, burrs or metallic fines inside the machine shops’ precision parts are the kinds of “attributes not specifically

described in the purchase document.” Their presence signals that there may be a discussion over what constitutes “workmanship” with your customer regarding your precision machined components.

Understanding the end use, application and the customer’s real vision is as important as understanding and delivering all of the explicit requirements of the customer’s purchase documents. In the end, workmanship is based as much on the quality of your communication and understanding of your customer’s needs and wants as it is on your process for producing your products.

I guess that makes communication with your customer an important fifth aspect of workmanship.

“Communication with your customer is an important aspect of your company’s workmanship.”

Father’s Day – Revisited

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I can remember the first manufacturing job I had after graduating high school. I was a stockhouse and trestle laborer at a blast furnace in Warren, Ohio. My father thought it would be a good experience and maybe give me an incentive to work a little harder in college. Good thinking, Dad.

I must have been all of 140 pounds soaking wet and, believe me, in the heat of the steady afternoon shift, I was soaked with sweat. My job

was to open the bins to fill the larry car on the tracks below with various raw materials. The materials would then be dumped into a skip car, which carried them up to be dumped into the top of the furnace.

Turnings, iron ore, dolomite, sinter. These materials, often hot and steaming, were the food for the only thing I know of that has a bigger appetite than a teenage boy—the blast furnace. Opening and closing these bins were my

responsibilities. And if I didn’t get the bin closed in time? Well, guess who had to shovel up the spillage.

The smell of the sulfur fumes from the furnace was terrible. The heat was unbearable. And the physical exertion of opening and closing the bins, wedging the gates and shoveling spillage were beyond anything I had ever done.

I survived that summer, and many more thereafter, because I had great

(Continued on page 4)



Father's Day continued

foremen who knew that my job might be opening the damn bins, but their job was to assure that I didn't get hurt or killed doing it.

Orientation was conducted on day one, but safety training was not just the first couple of days on the job. Every second of every day is critical when you are little more than a 140-pound, slippery, plastic bag filled mostly with water and everything around you is steel, high voltage, a possible crush point, a slipping or falling hazard and compressed gas or fire. Not to put too fine a point on it, but that was only the walk in from the gate to the locker room.

I am grateful to the foremen who were committed to keeping their boys alive my first summer in manufacturing. Delivery of lemons, salt pills and making me go get ice and fresh water in the biggest igloo cooler I had ever seen for the trestle break station—these were more than humanitarian gestures. They were the best available safety practices in the years before Gatorade and modern understanding of electrolytes and hydration.

I'm even more grateful for foreman Don Blakely for teaching me how to safely lock out equipment, test that lockout and getting me to understand why I had to lock it out.

At the end of each shift, three of us on the stockhouse crew would have to go down the ladder into the bottom of the skip pit to shovel the spillage that hadn't made it into the pit from the larry's dumps. The engineers hadn't built any extra room in this pit. If the skip car came down while we were down there,

well, maybe a 140-pound kid might not get hit, but his two 160-pound fellow shovelers would have no place to go except under the 30-ton (empty) skip car. They would be flat. One incredible blood pressure spike would occur, then we would hear the sound of angels.

Mr. Blakely explained to me how I had to take control of the skip car power supply with my lock, so I wouldn't get crushed. He explained how everyone else going down into the pit also had to have the power locked out. We couldn't trust only him and his lock; we had to lock it out ourselves.

I remember him taking a hard hat and throwing it down to the bottom of the pit before we went down to shovel. The skip car crushed it quite easily and quite flat as it settled into position before he pulled it out of our way so we could clean. It made a little bit of a crunching noise.

How do you convince young people who have witnessed countless homicides, deaths, accidents, explosions and shootings (and that's only on their video games), but have never been in a metalworking shop, that life is different inside this place that will be their new home for at least 8 hours each day of the summer? I hope you do it as effectively as Don Blakely did back in 1970. Because last month, my son began his first manufacturing job in a precision metalworking shop.

I hope you work him hard because I want him to have an incentive to study hard when he gets to college this fall. I hope that you teach him

the satisfaction of work performed well, of satisfied customers and of being part of a team.

But most of all, I hope that you have the same passion for showing him the essential skills to stay alive and uninjured as he walks into his workplace, a place where he will face hot flying chips, splashing fluids, slippery footing and equipment with high torque, high horsepower and automatic operation.

Pinch points, sharp edges and possible exposure to compressed gases and high voltage. Your shop may not be a blast furnace, but the hazards we treat as routine in our daily work lives can be just as harmful to an unknowing and unprotected human being.

Give a damn. Train him about the hazards. Show him how he can't win a pulling contest with a machine. Make him wear his safety glasses, even when he's sweaty. Make sure he understands the life-or-death aspects of lockout-tagout.

He'll need both eyes and all ten fingers when he hits the books in the fall. And who knows, maybe he'll be back next summer to learn a little more about the cool stuff we do in our manufacturing industry with real fire, real steel, sharp tools and high voltage, all properly applied. You know, his daddy did.

