

## What's Your Engine's Temperature?

BY LEE PATZA

Using QC data to gauge how hot your operation is running is far better than waiting for the idiot light to come on.

**THINK ABOUT THE LAST TIME** you drove your car. Chances are that just a few minutes into your journey you glanced down at the temperature gauge to make sure you were operating within the normal range.

Your vehicle's temperature gauge is an important measure you observe every day. So important that when vehicle manufacturers tried to replace the gauge years ago with a red warning light, drivers quickly rejected the concept, dubbing it an "idiot light." The fact is we like to know where our engine temperature is compared to normal so we know if we can keep driving or need to "pop the hood" to see what's wrong. Now compare this approach to the fabrication business and think about what aspect of your business can provide that kind of information on how well things are running. Probably the most useful single indicator is information coming from your quality control system.

First, consider your business's "temperature" as the daily errors and repairs made at your fabrication facility. In our industry, we accept that some errors and repairs will occur as part of fabrication. The errors fit several types including such things as a weld needing to be repaired, a clip installed backward, the wrong steel arriving on the service center route truck, not detailing a no-paint zone, etc. As a matter of fact, there are many of these process type errors that happen each month in your business but you may not know how many or what's normal. I have traveled around from fabricator to fabricator on audits, and I ask this question of each facility manager to give me an "off the top of their head" guess. The guesses are all over the place. I have only encountered a few fabrica-

tors who know what this is and are monitoring the temperature gauge of the errors and repairs caught in their facilities. They know when they need to pop the hood in their business because the error rate is too high. Wouldn't you like to know what your business's normal operating temperature is?

Let's take a brief look at how this is done. First, understand that for every repair dictated by the Quality Control (QC) person or shop supervisor, an error occurred somewhere in the process to cause the repair to be necessary. Using the analogy of the temperature gauge, it's these process errors that contribute to your operating temperature. Each of these errors causes waste, delay, and extra hours, and adds cost to the overall project. We can all agree we need to keep added costs to an absolute minimum if we're to make any money on a project, or sometimes to just break even.

Begin by identifying the source area for each error found and tracking that through your QC. Common areas include:

- ▶ Estimating/Project Setup
- ▶ Detailing
- ▶ Purchasing
- ▶ Parts/CNC/Piece Prep
- ▶ Fit Up
- ▶ Weld
- ▶ Quality Control
- ▶ Coating

When QC or the facility supervisor catches an error needing repair, just tally it in the category in which it belongs and total on a weekly or monthly basis. Don't do anything more than tally in the category for this temperature gauge input. At the end of the first period, look at the total in each of the process categories you selected. Remember, earlier I referred to an "off the top of your head" guess. This is going to be your first eye opener because you will begin to see the actual totals. In fact, there may be an emotional reaction, such as: Who made all these errors? Or, somebody should get fired! Instead of acting on that kneejerk reaction, begin to review the totals in each area until you develop an actual average number. This is your normal operating temperature. You will be surprised at the numbers and will learn two very important facts from the gauge:



*Lee Patza is the owner of EQS Services, Mt. Vernon, Wash. He is an ASQ-Certified Quality Auditor, ISO 9001 Quality System Lead Auditor, and ISO 14001 Environmental Management System Auditor. He can be contacted at [lpatza@eqsservices.com](mailto:lpatza@eqsservices.com).*

**Quality Corner** is a monthly feature that covers topics ranging from how to specify a certified company to how long it takes to become a certified company. If you are interested in browsing our electronic archive, please visit [www.aisc.org/QualityCorner](http://www.aisc.org/QualityCorner).

- ▶ All the repairs made in the shop aren't the fault of the shop. The operating temperature is not just a scorecard of how the shop is doing.
- ▶ The error total varies by complexity of the job, experience of the individuals in the area, thoroughness of estimating and project management in planning the job, etc.

Team buy-in is the next important part of using the temperature gauge effectively. In order for the information to make sense to your team, convert the total number of errors to a fraction of hours worked. For example, your business has 50 total employees and everyone works 40 hours per week, and you determine after a few months that your average weekly error total in all categories is 10. Then your average error rate is 10 per 2,000 hours worked or 1 error per 200 hours worked.

This is the key—once you know your business's error rate, you'll have your normal operating temperature. Once you have it, compare each period's results from then on. What do you do when the error rate goes up? Pop the hood and find out why. You know that an increased error rate means increased waste and costs affecting the bottom line, which no facility can afford in this tough construction market.

Sometimes when you pop the hood, the reason is very obvious. It may be a new welder or detailer, the late return of approved drawings, QC missed catching the error at fit up, etc. But sometimes it isn't obvious. When that is the case, you should initiate a corrective action to determine why. This becomes the primary driver of your corrective action process. It's when your engine is running too hot, causing too much waste, delay and money that you want to nip the problem in the bud.

By the way, if you embrace this idea, you have implemented a process quality monitoring system as good as any industry, and of course, also a key component of an effective quality management system (QMS). As you begin to manage the cost of quality by tracking your normal operating temperature, you will be working together as a team to drive the temperature down. And finally, challenge your entire team to work together to bring the error rate down; challenge them with each new project or job to beat the error rate and then recognize them when they do. This is a great way to build staff engagement as they learn to reduce waste and work more cohesively as a team.

MSC