

Mastery Program — Mastering our Craft

A program designed to help precision machining professionals elevate their experience and knowledge. Miles Free III, the man behind the program, shares what he hopes attendees will gain.



We have very high hopes for PMPA's newest educational offering, our Mastery Program. With this program, we are taking a cohort of PMPA member and non-member machinists, engineers, purchasing, quality and other personnel to visit a wide variety of producers of steel bars, brass and bronze, stainless and nickel, a tool maker, machine tool distributor, as well as the PMTS show and the Ford F150 assembly line. A very wide-ranging look at the entire value chain for our precision machining industry. We'll be visiting facilities across the Midwest not just in a single locale.

The Goal

Our goal for this program was to give the up-and-coming performers in our shops the opportunity to see where their feedstock comes from, understand the processes at their suppliers, and start to understand the impact of supplier processes on their own precision machining processes. Coming into the program, we expect our attendees to talk about their raw materials. After the mastery program, we expect that our attendees will have an appreciation for the unique properties that result from supplier processes in the bars that they use to produce the precision parts that make a difference. Understanding how supplier processes result in desirable properties is the first step to understanding how to ensure material and part requirements align. This will result in delighting customers and avoiding quality problems created when someone didn't know that a particular aspect of the product is a normally expected feature and not a bug.

Having experience in a single shop and working on a single or limited variety of processes is the way that many of our performers gain depth of experience and job skills. But mastery of our craft requires our performers to see that there are other ways to achieve certain production requirements — getting a view of how others do it can be eye-opening and help all of us "raise our game." While many of the attendees will come from shops that have

limited ability to make tooling in-house, they are probably not going to have a lot of exposure to the techniques and processes used by professional toolmakers to deliver the tolerances needed for today's most critical tooling applications. Yes, our production shops hold some very tight tolerances but imagine the smallest tolerances needed for the



tools to make these tight tolerance jobs! Getting a view of how others routinely hold tolerances one-tenth (or less) than our best is sure to help our attendees improve their practice and gain newfound respect for both process and metrology.

Knowledge Transfer

Collaborative problem-solvers. The attendees probably don't realize it, but for our Mastery Program, they are our product — and while in our program, our WIP (Work In Process). It is no secret that a lot of industry knowledge is leaving with the retiring baby boomers. It is tribal knowledge only when it is shared by the tribe, not locked up in one person's head. The Mastery Program is designed to get our attendees to learn and share face-to-face — and later on-line — and develop their own personal network (dare we say tribe?) of fellow craft professionals. Fellow professionals to whom they can turn when they have a question and vice

versa. PMPA's topical Listserves have always been the "secret sauce" for keeping members competitive and their equipment operating. The Listserves provide a real time channel to respectfully ask and contribute answers to questions regarding our craft. The Mastery Program is designed to "graduate" a new cohort of talent that is more knowledgeable about the broader supply chain, as well as experienced in their own areas — a new class of

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technical experts to grow our collaborative community.

What will our attendees get from their Mastery Program experience? Broader supply chain knowledge and understanding, which will lead to smarter problem-solving — and even problem avoidance

by understanding the impacts of supplier process on the materials purchased for machining. They will get their own "cohort" of fellow craft experts that they will be comfortable sharing both problems and solutions to keep our manufacturing shops operating and sustainable. They will get to see it all come together in a high-value, final product — a Ford F150 Pickup Truck — so they can truly understand their role in the entire value chain of advanced precision manufacturing. What do attendees become? Informed sensemakers and problem-solvers, contributing to the takeaway for the precision machining shops that sent them.

And what is the takeaway for the shops that are sending their talented performers who refill their bucket of industry knowledge? Here are a few for starters:

- **Increased understanding.** Someone that actually understands what they are getting when the company brings in steel, brass, stainless or other materials which results in fewer surprises now that someone at your shop knows the supplier and their processes. They know because they have seen with their own eyes.
- **Increased tribal knowledge.** Knowledge to be shared among the entire team, to upgrade the performance throughout the shop and to share with the industry through PMPA's online Listserve problem-solving community.

- **Enhanced sensemaking and problem-solving.** Because they have seen their supplier's processes, they will be able to immediately discount or dismiss those easy first "blame the supplier ideas" that come up when a process in our shop starts behaving unexpectedly. Imagine the hours NOT wasted waiting for a supplier to exonerate their material while your process is down— even over an entire career because your performers understand the process.
- **Enhanced communication.** Team members who attend will share the same experiences, learn the same concepts and be able to better communicate, which increases efficiency.

What do we get when we upgrade the knowledge and thinking of our key performers by broadening their understanding of the value chain in which they play a crucial role? English doesn't have a single word for that, but if I had to give you one, it would be "Success." ⊕

Miles Free III is the PMPA Director of Industry Affairs with over 40 years of experience in the areas of manufacturing, quality and steelmaking. He helps answer "How?", "With what?" and "Really?" Miles' blog is at pmpaspeakingofprecision.com Email: mfree@pmpa.org Website: pmpa.org.

What's good separately but even Better Together?

PMPA and You.

(Oh, and spaghetti and meatballs)



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