

Tooling Safety

Using the right tool for the job is essential for both the safety of Gulfstream's people and the product that will be delivered to the customer. The company's Tooling Safety and Control program ensures employees have reliable, well-maintained, clearly designated and labeled tools at their fingertips.

BY PHILIP HANYOK

You need the right tool for the job. That's been a mantra craftsmen and others who make quality products have said for generations. They know that without the right tool, product quality will suffer, they won't be as efficient and they may risk injury.

Consider a Gulfstream technician who has to drill a precise hole at a certain angle through a piece of titanium that's already mounted on an aircraft structure. In addition to using the drill, he will use other tools — measuring devices, forms, drill bits and clamps — to hold the drill in place while drilling with just the right force at the perfect angle and speed. He gets one chance to do it right. If it's done incorrectly with the wrong tools, it will be a costly mistake that would require significant additional work. Sometimes there is a lot at stake.

Across our facilities, employees use thousands of tools for every step of the manufacturing process. Gulfstream buys many of the tools, but we also manufacture our own tools, modify tools to meet our specific needs, and work with suppliers to have special tools made to our specifications.

When new tools are needed to make new parts or products, they must be bought or created, then tested and put into our inventory in a tool crib or elsewhere. Managing the tool inventory and making sure every tool is safe is a big challenge. This job is about to get a lot easier thanks to the Tooling Safety and Control program currently being developed.

"Maintaining a strong tooling safety program is critical to the safety of our employees and the success of our aircraft manufacturing and maintenance processes," says Paul Dellinger, director of Environmental Health and Safety (EHS). "Every employee who uses tools to build or maintain an aircraft has a role in making sure our processes are safe and that they result in producing high-quality

products that satisfy our customers."

The Tooling Safety and Control program helps ensure mechanics and technicians have reliable, well-maintained, clearly designated and labeled tools when and where they need them, says Jim Perdue, tooling and equipment safety manager in EHS. The program will be especially useful when new tools need to be created, because it will allow Gulfstream to manage the entire process, including tool concepts, designs, prototypes, testing, manufacturing, procurement, training and placement. Along the way are the appropriate reviews and modifications necessary to ensure every new tool is safe and can be used effectively.

Gulfstream recently launched a tooling request and repair website that takes advantage of our Enterprise Resource Planning (ERP) and uses SAP software to manage our tool inventory more efficiently. "The tooling portal creates the leading point in the cascade of items necessary to request a tool be fabricated or prepared. It's the jumping off point and starts the process in SAP," says Jeff Payne, a workstream manager on the ERP project.

The process is surprisingly simple, yet detailed enough to provide lots of data that can be used to manage safety, quality and costs associated with the tools needed to manufacture aircraft as well as repair or alter customer aircraft, including damaged aircraft that come in for service. The process also makes it easy to determine if any parts of tools can be salvaged or recycled before tools are scrapped when they reach the end of their useful life. Sometimes in the case of a damaged aircraft, specially modified tools must be created to repair the airplane properly.

Here's how the tool request process typically works. Someone who needs a new tool — usually an industrial engineer or mechanical engineer — submits a

request for a new tool through the portal. It takes less than five minutes to submit the request if they have the necessary information: description, purpose, tool classification, intended use, location where it will be used, contacts, etc.

The submission sends the information to a database (through SAP). Other employees then review the data and compare it to any similar requests to look for efficiencies that might be gained by combining efforts. If more information is needed, teams work together to refine the initial request.

Eventually the request is finalized and approved. Then a new tool is purchased or created, or an existing tool is modified. Each new tool is tested and sent to the appropriate location. Every step and all the necessary information is maintained in the database for reference. That information helps planners determine training and maintenance requirements to ensure that over time the tools are working properly and functioning safely.

"It's a tremendous time savings that also gives us a lot of data for meaningful reports," Payne says. Those reports allow different departments to know more about the thousands of tools we use, all of which helps us put the right tools in people's hands.

If a tool becomes damaged, the tooling safety and control process also enables faster repairs. The data gathered along the way when the tool is put into service helps monitor which tools might need repair most often, and that helps planners identify ways to improve tools over time.

COLLABORATION BREEDS SUCCESS

Nearly every organization in the company has had or will have a role with the Tooling Safety and Control program. Obviously, Engineering, Manufacturing and Product Support teams use it to request tools and tool modifications. In addition, teams from Human Resources, IT and Sales & Marketing participated in the creation of the portal, instructional materials, a computer-based training (CBT) module and more. Like with so many big projects, collaboration was the key to enterprise-wide success.

Some Gulfstream sites are very much involved in the process. For example, Gulfstream Appleton completes green — unfinished — Gulfstream aircraft and services customer aircraft. Before the site could begin completing green G650

Managing Gulfstream's tool inventory and ensuring the safety of each tool is a challenge that has been made easier with the recently launched tooling request and repair website. Employees who need a new tool can submit a request through the portal. The process also allows for faster repairs of damaged tools.



What is a tool?

A tool is any device used to make something. It's an object designed to do a specific task. A tool can be something used to cut, drill, shape or change a part used on an aircraft, or it can be an object or form — a jig, for example — that simply holds a part in place exactly right while another tool is used. A tool is simply something used to do your work. Every employee uses tools of some sort. Some tools are small hand-held objects; others are large contraptions that enable employees to perform several tasks without having to go



Gulfstream employees use thousands of tools during the manufacturing and service process. Here a technician tests a battery in the service center.

aircraft, a team had to make sure that the site had all the tools needed to support the aircraft efficiently. More than \$600,000 worth of tooling and equipment was purchased and sent to Appleton, says Bill Cudnowski, director of site finance and accounting. With tooling in SAP, all of those tools are tracked in a database, which enables fast searches for tool information and groups of tools by class and helps coordinate tool crib management.

In the spirit of continuous improvement, employees from many Gulfstream sites have used the Gulfstream Your Ideas @ Work process to share ideas for how to improve the tools they use. They develop their ideas and sometimes create prototypes. Now with the Tooling Safety and Control program they don't do it alone. The program guides them through the process and ensures all safety and regulatory requirements are met. The end result is a better tool that meets the needs of the craftsman using it. It's all about giving our skilled employees the right tool for the job. ←