FRCSW Shop Saves Navy Thousands in Tooling Costs

NAVAL AIR STATION NORTH ISLAND - Would you want to pay $200 to replace one drill bit or $500 for a new reamer? No? The Navy doesn't want to either.

Many of the artisans at Fleet Readiness Center Southwest (FRCSW) routinely use a variety of drill bits, reamers and cutting tools in the course of their work.

Instead of replacing these tools as they become dull or buying new ones vice modifying to a specific task, FRCSW turns to toolmakers Luis Quiambao and Henrico Fulgencio in the cutter and tool grinder shop in Building 379 for sharpening and adapting the command's tools to meet the artisans' needs.

A department of the command's jig and fixture shop, the cutter and tool grinder shop is a sprawling area containing about a dozen grinding and milling machines where Quiambao and Fulgencio handle 200 to 500 tools quarterly.

"Both of us were machinist repairmen while serving in the Navy. We had been to Machinery Repairman 'C' School, grinding school, and we were able to revive this shop and start accepting jobs from different production shops here," Quiambao said.

Both toolmakers were previously assigned to the production shop in Building 94, repairing

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F/A-18 Hornet wings. Quiambao left in December 2014 and Fulgencio joined him in the cutter and tool grinder shop this past January.

“In the wing shop you could be told that you need to work from a half inch to five thousandths or until you remove enough corrosion from the surface so a new bushing could be installed. Since you don’t have that exact size of reamer, you would send them to this shop for modification to a new dimension specified by engineers,” Quiambao said.

In grinding reamers and cutters the work is typically within ½ of a thousandth tolerance; the thickness of copier paper is roughly 4 thousandths of an inch.

The shop recently completed work on 87 reamers for FRCSW Site Yuma, Fulgencio noted.

Another recurring customer is the production shop in Building 472 that consistently requests sharpening of milling cutters. Milling cutters are tools normally used in milling machines that remove material by movement within the machine. The production shop’s handheld teardrop cutters that are used to cut finished machining metals are also routinely modified.

“We can get an urgent request for a two or three day turnaround time. I have an urgent call now from FRCSW Site Camp Pendleton for a reamer to fix a helicopter panel. For modifying reamers we use about four different machines, one step at a time. We have each machine setup to cut a certain way so we don’t have to re-set for each step,” Quiambao said.

“Before, these were contracted out for sharpening. But Louis noticed that the company that sharpened the reamer did it at the wrong angle, which is why it wouldn’t cut properly. So the command decided to save money and bought the diamond wheels and started having us provide that sharpening service,” Fulgencio said.

The F/A-18 canopy shop in Building 250 routinely sends its one-pass drill bits to the shop for sharpening and adjustment. The bits, made of carbide, are solely used by artisans to ream holes in the Hornet canopies.

In addition to carbide, the shop also modifies and sharpens tools and bits made of high speed steel and cobalt, saving FRCSW tens of thousands of dollars annually in replacement costs.

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Toolmaker Luis Quiambao sharpens a Putnam End Mills high speed steel drill bit. (U.S. Navy photo)