Group plugs brake leak

Quality circle solves mystery

by Donna Brown
Hilltop Times staff writer

The Pressure Pusher quality circle was under pressure to perform when several T-38 Talon jets were in danger of being grounded due to leakage problems with their master brake cylinders.

The Hill AFB quality circle is made up of a group of pneudraulics mechanics and testers from the hydraulic repair shop in the individual products and landing gear division, Directorate of Maintenance.

Together, they helped solve a mystery that has plagued the T-38 for more than 10 years. By finding the answer to an Air Forcewide problem with the cylinders, the Pressure Pushers will save an estimated $500,000 per year.

"This has been an ongoing problem," Jan Jackson, project leader, said. "We were really fortunate to be able to stop production and put quality first. Workers didn't used to have the benefit of the quality initiative and they felt like there was nothing they could do."

The T-38 Talon is a twin-engine, high-altitude, supersonic jet trainer. It is used in a variety of roles because of its design, economy of operations, ease of maintenance, high performance and exceptional safety record.

The jet's traditional safety record was threatened because of the leaking master brake cylinders. Although the faulty cylinders were repaired and replaced, the fixes and even new parts lasted little more than 30 hours of flight.

"The first thing we asked ourselves was, 'Is it us?' " Mike Davies, one of the mechanics, said. Mr. Davies said the group contacted the directorate's quality division to have their process evaluated. At the same time, other air logistics centers were contacting Ogden Air Logistics Center for input and advice on the same problem.

A random sample of faulty master cylinders was conducted. Five were rebuilt and tested. Four of the five failed. Each one was reworked four more times, all of them failed the test.

"We determined that it wasn't us," Mr. Davies said. "It had to be the parts."

The parts in question were sent to the quality verification center to make sure they conformed to blueprint drawings. The contractor had designed the parts to specifications. "But, the specifications weren't good enough," Jim Hardy, another team member, said. The bodies of the cylinders were also found to be poorly manufactured and in need of perfection.

"That's when we said, 'Hey, we've got a bunch of bad parts here,' " Mr. Hardy said.

The parts in the materiel inventory control center, as well as those in depot supply, were unusable. The Pressure Pushers found a way to reclaim a good portion of the parts to keep the T-38s in the air and allow time for the blueprints to be redesigned and new parts manufactured. They were the first to solve the 10-year-old mystery.

The group has not only been able to reclaim a number of parts, they have also developed a tool from a condemned cylinder body that will make the good parts even better.

"Someone came up with the idea and everybody else improved on it... so it just kept getting better. That's how the quality circle works," Mr. Hardy said. The tool that could save thousands of dollars cost the government practically nothing, he said.

The mechanics assembled a sample of five master brake cylinders using the modified parts.

At last they passed the test.

The parts were painted red, serialized and coded to monitor the new production. None of the reworked parts have been sent back with quality deficiency reports so far.

Other ALCs can heave a sigh of relief. The T-38 will stay in the air and the mechanics will soon be able to meet their mission requirements.

U.S. Air Force Photo by Donna Brown

You see that scratch there?

Mike Davies, a pneudraulics mechanic in the hydraulic repair shop of the individual products and landing gear division, Directorate of Maintenance, examines parts from a T-38 Talon jet master brake cylinder. Mr. Davies is a member of a quality circle that recently found a way to save hundreds of condemned parts for a savings of around $500,000 per year.

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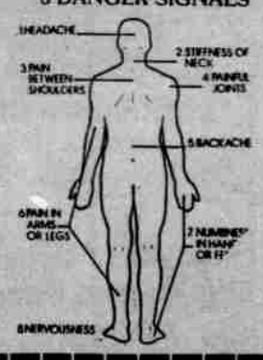

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