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Directorate 'cleans up' with new water-based solution

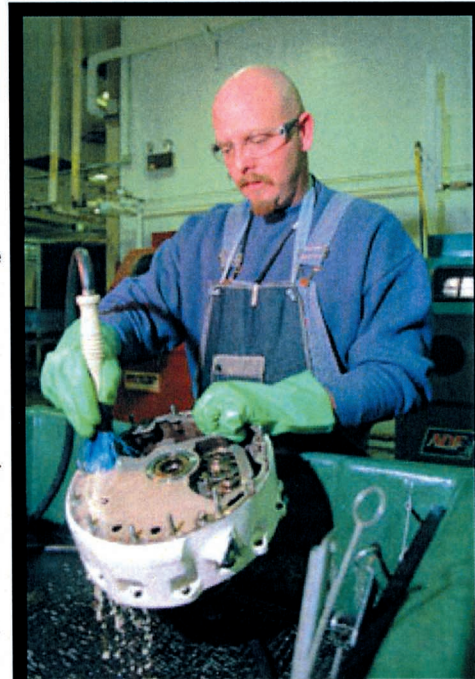
Jeanne Grimes - Staff Writer

Oil and water don't mix, which is why traditional wisdom has held for years that only a chemical solvent will cut the grease and dirt from engine parts.

But now a water-based cleaning fluid, Hurrifase 9065, is eliminating the need for the harsh PD-680 solvent at the Constant Speed Drive repair and overhaul facility at Tinker Air Force Base.

It's a change that engineers in two directorates have been working toward since the late 1990s.

Craig Hale, a commodities engineer in the Aerospace Accessories Division, Logistic Management Directorate, first encountered Hurrifase 9065 in Building 210 where it was being used to clean valves. He introduced its use on the workload in the CSD shop, where the water-based product came to the attention of Bernie Habib, a process engineer in the Maintenance Directorate's Process Control and Improvement Branch.



Randy Huff, a constant speed drive mechanic, uses a water-based cleaner that is safer for him and the environment. Huff welcomes a less hazardous solution since he cleans CSDs daily. (Photo by Margo Wright)

Hurrifase 9065, they said, meets the most critical test — performance.

Both men are realists and know that to the Air Force, mission comes first.

"We have to keep those airplanes flying," Habib said.

So the fact that the new cleaner is effective and good for workers' health and for the environment is a big bonus.

Hurrifase 9065, a product from PCI of America, is biodegradable and virtually free of the volatile organic compounds and hazardous air pollutants that were raising concerns with continued use of PD-680 Type II solvent.

"PD-680 is a combustible waste, a toxic substance and an air pollutant," Habib said, but was used because the solvent also has a proven track record as an "excellent degreaser" with good corrosion protection properties.

Tests of Hurrifase 9065 conducted over 18 months at the CSD shop, as well as the cruise missile shop, showed the water-based cleaner is more than a match for dirt, grime, grease and oil, Habib said.

Hale, who has the approval authority on the future of Hurrifase 9065 at Tinker, said he will sign the technical order that will direct the changeover from PD-680.

"I want it to be safe for them [workers] and for it to do the job," Hale explained. "I want it to be better, faster, cheaper."

Hurrifase 9065 is proven to get engine parts cleaner faster than the PD-680

solvent. Corrosion isn't a factor because of the relatively brief time that the parts are cleaned before they receive a protective coating.

"A two- to three-hour soak time gives a much cleaner product" as compared to PD-680, Habib said.

Habib explained all repair work begins with a thorough cleaning of the part, which next undergoes non-destructive testing for the presence of cracks or other flaws. Once the repair is made, the part is reassembled.

Gary Gilley, unit chief in the Commodities Production Division, sees Hurrissafe 9065 as a good answer to the military's environmental mandate to "try to get solvents out of the cleaning areas."

"I like it myself," he said. "The product seems to be OK."

Initial reactions from workers using the solution were mixed, Gilley said. But as more of the PD-680 disappears from the shop, those same workers are adapting to using the water-based product. Eventually, he added, all but one tank of PD-680 will be taken from the shop.

"Without their [employees] help, we couldn't do this," Habib added. "They understand it's really for their health."

Habib said PD-680 was used full-strength, whereas Hurrissafe 9065 is a concentrate that is mixed with water in a 1:9 ratio. Part of the product testing here was to determine cost effectiveness.

Habib explained the Hurrissafe 9065 solution recirculates constantly through special filters as parts are being washed. The filters trap the impurities, keeping the solution clean.

The filters are periodically changed. And once the dirty residue has been removed, the rinse solution can be disposed of "right into the water treatment" system, Habib noted.

Substantial savings are in the disposal and environmental compliance costs, considering the annual volatile organic compound reduction of 32,000 pounds, Habib said.

"You have to look at the whole picture," he explained. "Before we had to track the solvent used and send it off for disposal. This [Hurrissafe 9065] took many, many hours off the environmental people."

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