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## **Biobased aircraft soap doesn't cause bumps, does a boffo job**

Master Sgt. Gene Smith at Pope Air Force Base in North Carolina had a big problem—an irritating, itchy, unsightly and hazardous problem.

When he first became the environmental and safety manager for the 43<sup>rd</sup> Maintenance Group about three years ago, Smith had a line of troops at his desk complaining about the aircraft soap that they were using. The main complaint was that the soap caused them to break out in rashes, but one airman was losing his hair and another had an asthmatic-type reaction.

An estimated 10 percent of the 80 aircraft workers at Pope were unable to wash airplanes because they couldn't tolerate having the soap on their skin, according to Master Sgt. David Jones, who supervised the group for two years before he also became an environmental specialist. These workers had to seek medical help and some had to slather cortisone cream on the affected areas.

That wasn't surprising given that the old soap's Material Safety Data Sheet listed numerous hazardous ingredients. The Air Force has aircraft washers wear protective gear, but the clothing isn't completely watertight, especially when they have to lift their arms to scrub a plane's high surfaces.



**Master Sgt. Gene Smith**

“It set you on fire in the armpit area,” recalled Master Sgt. David Todd, who currently supervises 12 Pope AFB aircraft washers. “It got the plane clean but it's not as friendly to the individual as the soap we have now.”

The amount of soap and water required to clean aircraft is significant, given that it takes 75 to 100 gallons of soap and water, 12 to 15 hours and a dozen airmen to scrub a single aircraft. Smith estimated that Pope AFB uses nearly 220 gallons of aviation soap a month.

On the lookout for a better alternative, Smith discovered a non-hazardous and biodegradable aircraft soap in March 2006 at a military-sponsored environmental symposium in Pittsburgh—appropriately held at the David L. Lawrence Convention, touted as the first green convention center and the world's largest “green” building, and featuring numerous vendors.

Subsequently, a company representative from the Spray Nine Corporation of Johnstown, New York, came to Pope AFB and conducted a side-by-side demonstration of its aircraft soap, AV-8, and the skin-irritating rival.

AV-8, a biobased product made from sugar and plant oil derivatives, passed with flying colors. Since the aviation maintenance group switched to AV-8, Smith hasn't received even one health-related complaint from Pope's aircraft workers. Smith and his counterparts said AV-8 is a lot kinder on the skin and much more friendly to the environment, plus it cleans just as well as the toxic soap that it replaced. An extra bonus is that it's comparable in cost to the old product.

AV-8 is the only biobased product that Spray Nine has on the market, but the company, which has sold products to the military for more than 30 years, plans to introduce others in the near future, according to Patti Ackerknecht, Spray Nine government sales division manager. The corporation currently has three other products that have been tested at the University of Georgia and now qualify as biobased, although they're not yet available commercially. Another product is still in the testing phase.

"The initial emphasis for Spray Nine is to market biobased products to the military and to commercial customers in the janitorial field," she said. "More education must be done with the home consumer, who doesn't fully understand the difference between biobased and biodegradable and also holds some false notions about environmental-friendly products." She mentioned how consumers sometimes assume that green products don't work as well as their conventional counterparts and believe they're more expensive.

Master Sgt. Smith also attributed any resistance to lack of knowledge and to something far simpler. "The biggest challenge is environmental awareness with people. People are afraid of change," he said. But, in the case of the aviation maintenance crew at Pope, change has been good. Their skin may not be as smooth as a baby's, but at least it doesn't cause them any aircraft-related aggravation.

For more information about AV-8 contact Patti Ackerknecht of the Spray Nine Corporation at [packerkn@spraynine.com](mailto:packerkn@spraynine.com).

***This USDA BioPreferred program success story was prepared by Iowa State University Extension's Center for Industrial Research and Service (CIRAS), [www.ciras.iastate.edu](http://www.ciras.iastate.edu).***