

## **To work in tight places**

Photostory by Senior Airman Francine St Laurent

168th Air Refueling Wing Public Affairs

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Donned with his headlight, Tech. Sgt. Jeffrey Skaggs, 168th Fuel System Maintenance shop fuel system mechanic, enters a fuel tank in the wing of a KC-135, March 10, 2015. "Sometimes when we ask for a tool and someone's getting it and we know it's going to be a minute, we're not going to climb out. We're going to wait there," Skaggs said. "Sometimes I just turn my headlamp off. We're bladders away, 90 degree angles, from the door. The only light we get comes up from the floor and we aren't getting any of it. It's scary and strange, but kind of peaceful. You can't see your hand in front of your face. You can't see anything. It's pitch black and your eyes never adjust."

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Airman 1st Class Benjamin Davis, 168th Fuel System Maintenance shop fuel system mechanic, prepares his tool bag before climbing into a fuel tank in the wing of a KC-135, March 10, 2015. The fuel shop Airmen take turns working and inspecting each other's work. Manifolds — a collection of pipes funneling fuel from one tank to another — are removed and installed in layers, said Master Sgt. Fred Adams, 168th Fuel System Maintenance shop supervisor. It is difficult to correct any errors if Airmen wait until all the manifolds are installed, he said.

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Fuel system mechanics practice scraping away sealant on this tool. Sealants on the bolt fasteners prevent leaks. A leak is usually the result of a sealant malfunction, said Master Sgt. Fred Adams, 168th Fuel System Maintenance shop supervisor. Most sealants on the KC-135 are original from when the aircraft was built. It wears away and must be replaced when a leak occurs.

To find a leak, fuel system mechanics pressurize the fuel tank — blow it up like a balloon — and cover the surface with soapy solution, said Tech. Sgt. John Phoenix, 168th Fuel System Maintenance shop fuel system mechanic. Soap bubbles form where air is leaking out. To find the source, Airmen shove air into the tank from the outside and air bubbles form on the inside where air is leaking in. "It's like looking for a needle in a haystack," said Senior Airman Milford Sweat, 168th Fuel System Maintenance shop fuel system mechanic.

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Large tubes create a ventilation system in the plane by blowing air in one tank opening and vacuuming it from another, said Master Sgt. Fred Adams, 168th Fuel System Maintenance shop supervisor. This helps remove residual fumes, though every Airman wears an oxygen mask when working inside the fuel tank.

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Airmen in the 168th Fuel System Maintenance shop have been working on this KC-135 for one month, removing manifolds and troubleshooting to locate the leak. The leak is the result of a large crack between two fuel tanks in the wing. It will be sent to a depot in Oklahoma to be repaired.

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Tech. Sgt. Jeffrey Skaggs, 168th Fuel System Maintenance shop fuel system mechanic, puts on an oxygen mask before climbing into the fuel tank. Fuel system mechanics take turns working, for an hour or more at a time, because the environment requires focus and concentration. "You've got to hunt," said Tech. Sgt. John Phoenix, 168th Fuel System Maintenance shop fuel system mechanic. "You can't follow a wire down the line to find a problem. It takes a lot to be in there and crawl around and eyeball it when finding a leak." This can be especially difficult when working with your arms scrunched in front of your face. "It looks kind of like a T-Rex when you're working up there," Phoenix said.

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Fuel system mechanics must be unafraid of small spaces. Senior Airman Julia Meyer, 168th Fuel System Maintenance shop fuel system mechanic, enjoys them. "Before I joined the Guard, I was doing a tour of all the shops and when we came in they had an engine open," Meyer said. "I got to stick my head up there and it just reminded me of a little clubhouse. That was the kid in me. That's what I like about it."

But the spaces are not comfy. "There's no getting comfortable. You get past it," said Tech. Sgt. John Phoenix, 168th Fuel System Maintenance shop fuel system mechanic.

Except when you get stuck. "You're never supposed to freak out," said Senior Airman Milford Sweat, 168th Fuel System Maintenance shop fuel system mechanic, who once got stuck for a few minutes. "I've got wide shoulders. It's difficult to work around. I have to work and move differently than people like Julia. John basically had to tell me how to get unstuck."

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