

Synfuel skies: Tennessee Air Guard Wing Helps in First Test Flights of Coal-Derived Fuel

By Wayne Risher, Memphis Commercial Appeal

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The Air Force's first coal-powered jet tested the skies over Greater Memphis this week.

A C-5 Galaxy, fueled by a 50-50 blend of traditional jet fuel and a synthetic fuel made from coal, took off and landed at Memphis International Airport and performed touch-and-go landings at Millington Regional Jetport.

The field testing, based at the Tennessee Air National Guard facility on Swinnea, was part of an Air Force effort to develop alternative fuels that lessen reliance on foreign oil.



Matthew Craig/The Commercial Appeal

Tennessee Air National Guard Senior Airman Brian Yount and other members of the 164th Airlift Wing stationed in Memphis fill a Lockheed C-5 Galaxy with fuel that is a 50-50 mixture of jet fuel and synthetic fuel derived from coal. The flights this week from Memphis International Airport tested the fuel for the Air Force as an alternative to conventional petroleum-based propellants.

"What I was told is, America is the Saudi Arabia of coal. We have an abundance of it," said Master Sgt. Fred Carver, a test director from the Air Mobility Command's Test and Evaluation Squadron at McGuire Air Force Base in New Jersey.

"This is the first time an Air Force aircraft has been tested with this coal-derived fuel," Carver said.

Carver led a team from three Air Force bases that converged on the 164th Airlift Wing last week to perform the tests.

The C-5 is a supersized military transport, capable of tipping the scales at nearly 1 million pounds when it is loaded with tanks and other cargo. Nine are stationed at the wing's new base at the northwest corner of Swinnea and Shelby Drive.

Col. Harry Montgomery, wing commander, said the 164th was honored to help with the tests.

"The offer came down and we had the availability to do it, so we volunteered to be the test site for the C-5," he said. "If it reduces our dependence on foreign oil to provide the fuel the Air Force needs, I see it as a great thing."

While coal-based fuel is an alternative to petroleum products, it's still a fossil fuel and thus subject to environmental debate. The country's commitment to developing clean coal technology was an issue in the 2008 presidential election.

The Air Force Research Lab certified a blend of up to 50 percent coal-based synthetic for testing purposes. It has been used by the British military and commercial aircraft in South Africa since at least the 1990s, with no known problems, Carver said.

The C-5 and other Air Force jets historically have burned kerosene-based jet propellant. Carver said the Air Force also has tested a synthetic fuel derived from natural gas in B-52s, C-17s, KC-135s and F-22 fighters.

A flight crew from the 164th flew a Galaxy in a preliminary test Tuesday with one of four engines fueled with the coal-based blend.

With all four engines burning the blend, the plane flew a four-hour training mission Wednesday that included the stop at Millington and attainment of altitudes up to 28,000 feet, wing spokeswoman Maj. Kris Jones said. After the second flight, Carver said early data looked good.

Carver said the Air Force would use the results from the Memphis tests to determine whether there should be more extensive evaluation.

"This is what we call an operational assessment; it's a quick look to see if further tests are warranted."

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Synthetic fuel tested

Who: Personnel from McGuire, Scott and Wright-Patterson Air Force bases

What: Air Force performs operational test on 50-50 blend of coal-based fuel and conventional jet propellant.

When: Flight testing earlier this week

Where: Tennessee Air National Guard 164th Airlift Wing, Memphis International Airport

Why: Air Force seeks to identify alternative fuels that lessen reliance on petroleum products, particularly from foreign sources.