Navy Tests New Fuel in Seahawk Helicopter

Demo Provides "Off Ramp" from Petroleum-Based Fuels

MOVING CLOSER TO achieving the objective of decreasing its need for petroleum-based fuels, the Navy flew an MH-60S Seahawk helicopter on a 50/50 biofuel blend on 18 November 2010.

The helicopter, from the Air Test and Evaluation Squadron Two One at Naval Air Station (NAS) Patuxent River, MD, tested a fuel mixture made from the Camelina seed, which is in the same family of plants as the mustard seed and rapeseed. Camelina needs little water or nitrogen to flourish and can be grown on marginal agricultural soil.

"These biofuels provide the Navy with an 'off-ramp' from petroleum to increased energy security," said Rear Admiral Philip Cullom, director, Navy Task Force Energy.

Today's tests focused on the MH-60S, one of the Navy's newest helicopters. The mission of the MH60S is anti-surface warfare, combat support, humanitarian disaster relief and search and rescue, aero medical evacuation, special warfare and organic airborne mine countermeasures.

Earlier this year, the Navy tested this biofuel blend on the F/A-18 Super Hornet. Results from those tests indicated the aircraft performed as expected through its full flight envelope with no degradation of capability.

"We expect today's helicopter tests will further demonstrate this fuel made from an alternative, non-petroleum feed stock is a viable option for use in Navy aircraft," said Rick Kamin, the Navy Fuels Team lead.

According to Kamin, today's flight is another step toward the certification of fuels from non-petroleum sources for use in all Navy and Marine Corps aircraft. Testing will continue across additional aircraft models in 2011 with a target of approving the 50/50 biofuel blend for use in the Navy ships and aircraft by early 2012.

The Navy Fuels Team embarked on its current path to certify many alternative sources for fuel more than two years ago. At the 2009 Navy Energy Forum, Secretary of the Navy Ray Mabus committed the Navy to a goal of decreasing its reliance on fossil fuels. The Secretary outlined five energy targets at the Forum. Closest to home for the Navy Fuels team was the idea of demonstrating a Green Strike Group by 2012.

"In October 2009, I issued five energy targets for my department, the most important of which is that by the year 2020—a decade from now—half of all the energy we use afloat and ashore, in the air, on the sea, under the sea or on land will come from nonfossil-fuel sources," said Mabus in October 2010 at the Energy Security Forum held at the Pentagon.

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–Rear Admiral Philip Cullom, Director, Navy Task Force Energy

A U.S. Navy MH-60S Sea Hawk helicopter assigned to the Blackjacks of Air Test and Evaluation Squadron (HX) 21 tests a 50/50 camelina seed-based biofuel blend at NAS Patuxent River, MD. The test demonstrates another step toward the certification of fuels from non-petroleum sources for use in all Navy and Marine Corps aircraft.

U.S. Navy photo by Sean Seremet

For More Insights

FOR MORE INSIGHTS into the Navy's use of camelina as a biofuel feedstock, read our story entitled "From Seed to Supersonic: How Camelina Powered the Navy's Premier Fighter Jet " in the winter 2011 issue of *Currents*. To subscribe to the magazine or browse the *Currents* archives, visit the Naval Air Systems Command's environmental web site at www.environavair.navy.mil/currents.

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In all, Secretary Mabus announced five energy goals for the Department of the Navy (DON) including:

1. By 2020, 50 percent of total DON energy consumption will come from alternative energy sources.
2. By 2020, DON will produce at least 50 percent of shore-based energy requirements from alternative sources; 50 percent of DON installations will be net-zero.
3. DON will demonstrate a Green Strike Group in local operations by 2012 and sail it by 2016.
4. By 2015, DON will reduce petroleum use in the commercial vehicle fleet by 50 percent.
5. Evaluation of energy factors will be mandatory when awarding contracts for systems and buildings.

"The most significant impact of a dependence on fossil fuels is on our people," Mabus said. "Getting a gallon of gasoline to a Marine at Forward Operating Base (FOB) in Afghanistan is not easy. Every single day, young Sailors, Marines, soldiers and airmen guard those vulnerable fuel convoys as they move from the logistics hubs to our FOBs. Gasoline is the single thing we import the most into Afghanistan."

"We have to change the way we operate. We have to change the way we produce and the way we use energy," Mabus said.

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