Headquarters U.S. Air Force

Integrity - Service - Excellence

4th Annual Conference on Biofuels

November 14, 2012

Dr. Kevin Geiss
Deputy Assistant Secretary
Energy

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Why We Fly

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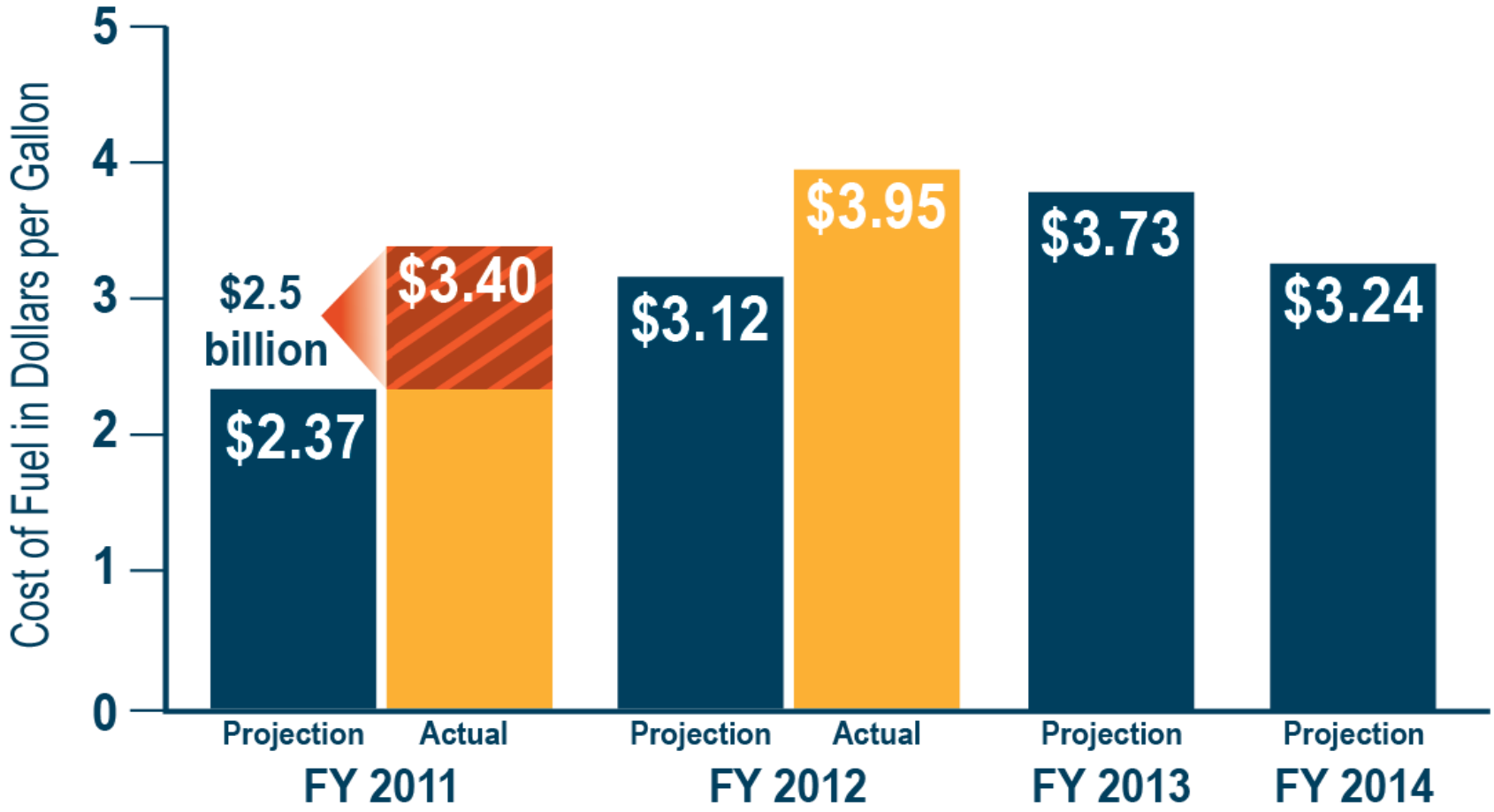
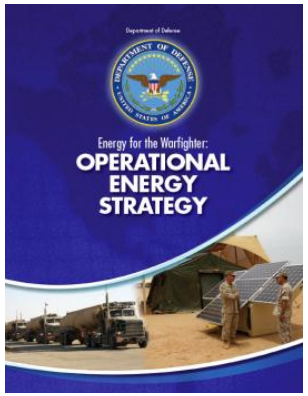
Fuel Price Volatility



Budgets lock two years in advance

Operational Energy Strategy and the Air Force Energy Plan



OSD OPERATIONAL ENERGY STRATEGY

MORE FIGHT, LESS FUEL	1	REDUCE DEMAND
MORE OPTIONS, LESS RISK	2	INCREASE SUPPLY
MORE CAPABILITY, LESS COST	3	CULTURE CHANGE: Increases energy awareness

AIR FORCE ENERGY PILLARS

Ensure that the armed forces have the energy resources they require to meet 21st century challenges

Reduce Demand –
Aviation Operations

GOAL Reduce Aviation Fuel Consumption 10% by 2015

PROGRESS:

- Fuel consumption reduced 4%
- $165M saved
- Cost to move 1 ton of cargo 1 mile by air down 21%

NEXT STEPS:

- Expand AMC initiatives
- Develop new technologies

Increase Supply –
Aviation Operations

GOAL Acquire 50% of domestic aviation fuel requirements via alternative fuel blend by 2016

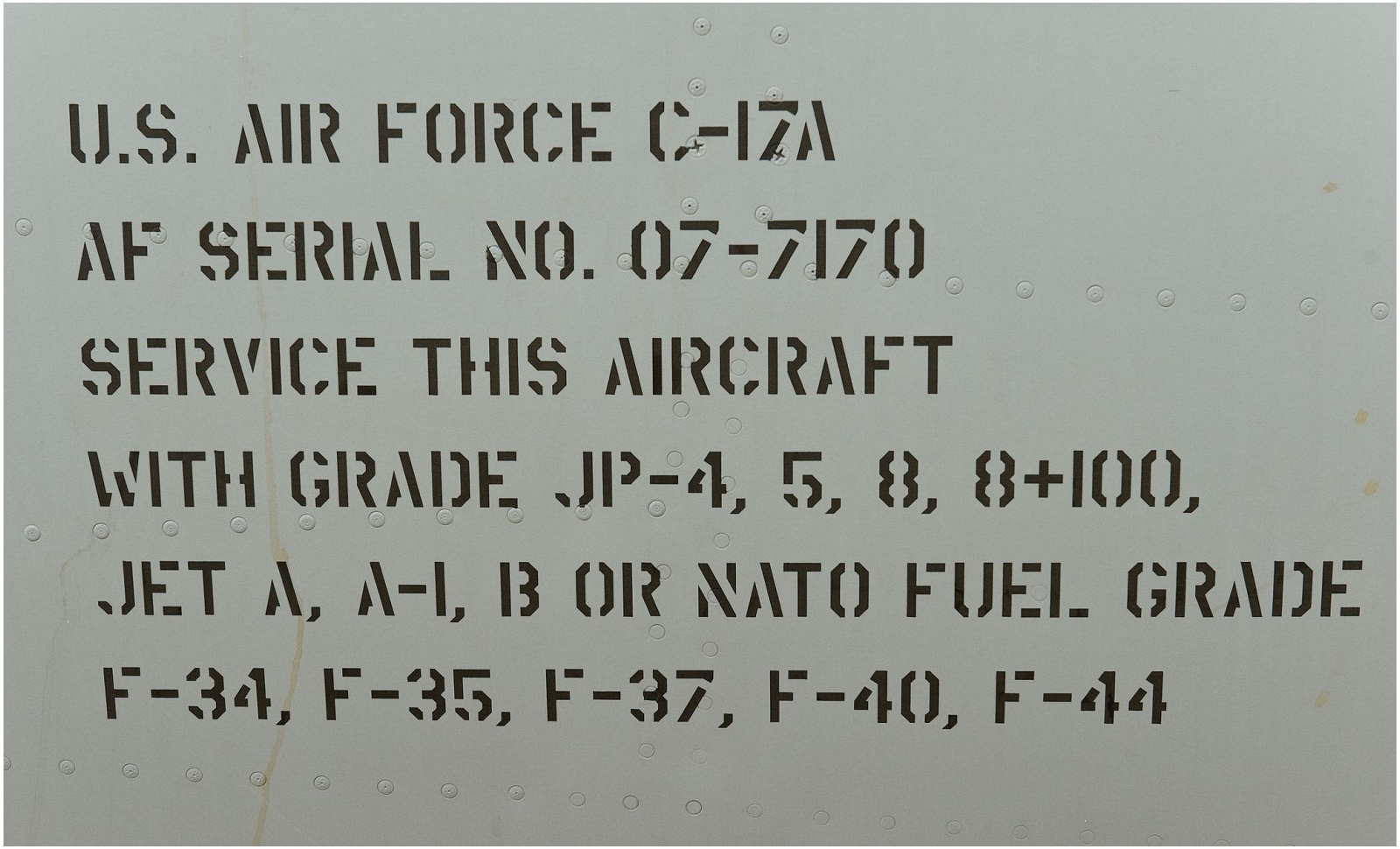
PROGRESS:

- Testing multiple alternative fuels
- 1.3M gals of alternative fuels purchased

NEXT STEPS:

- Testing third ATJ fuel pathway
- 400M gals of alternative fuel by 2016

Fuel Flexibility



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Aviation Firsts

Alternative Fuel Testing

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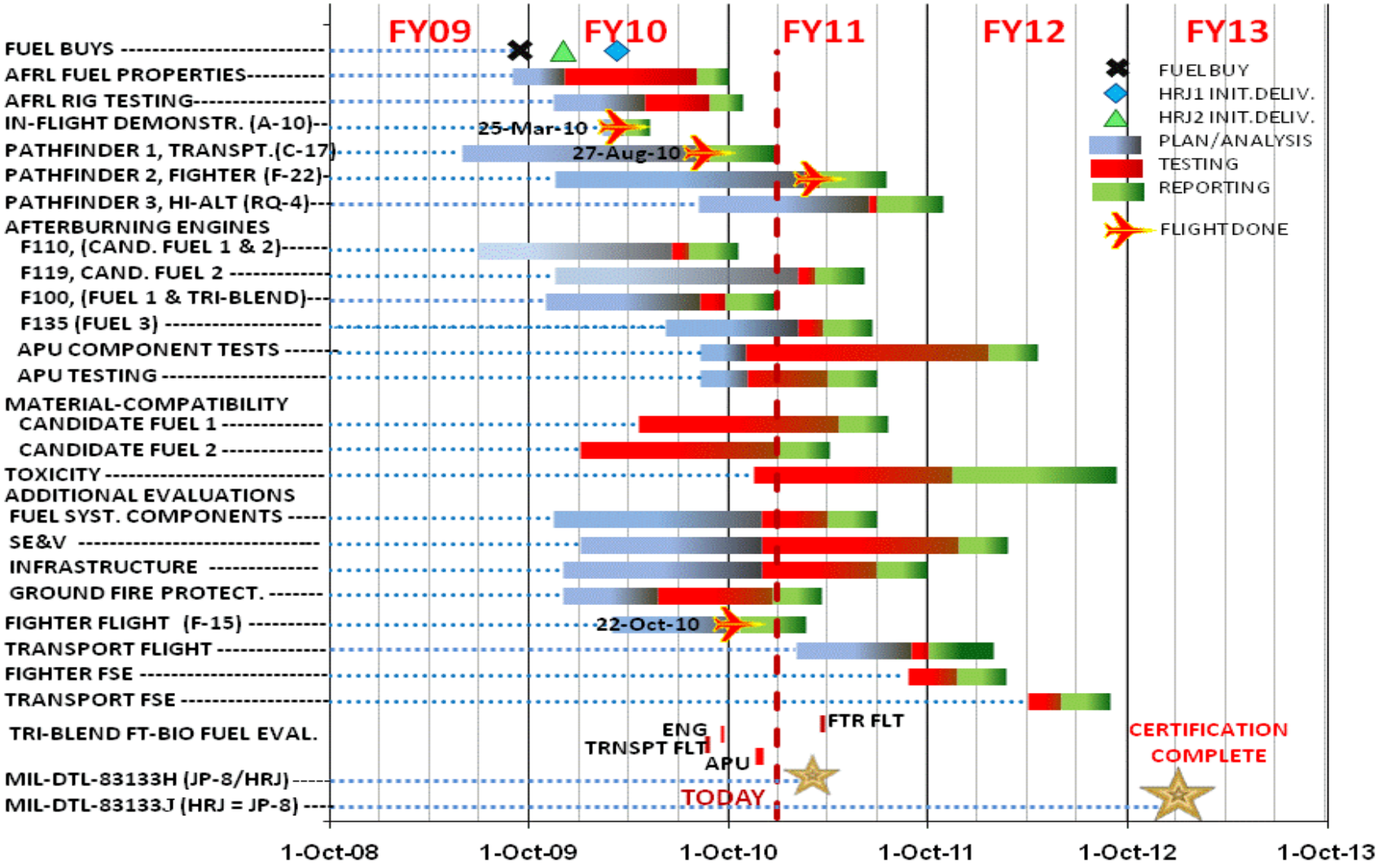
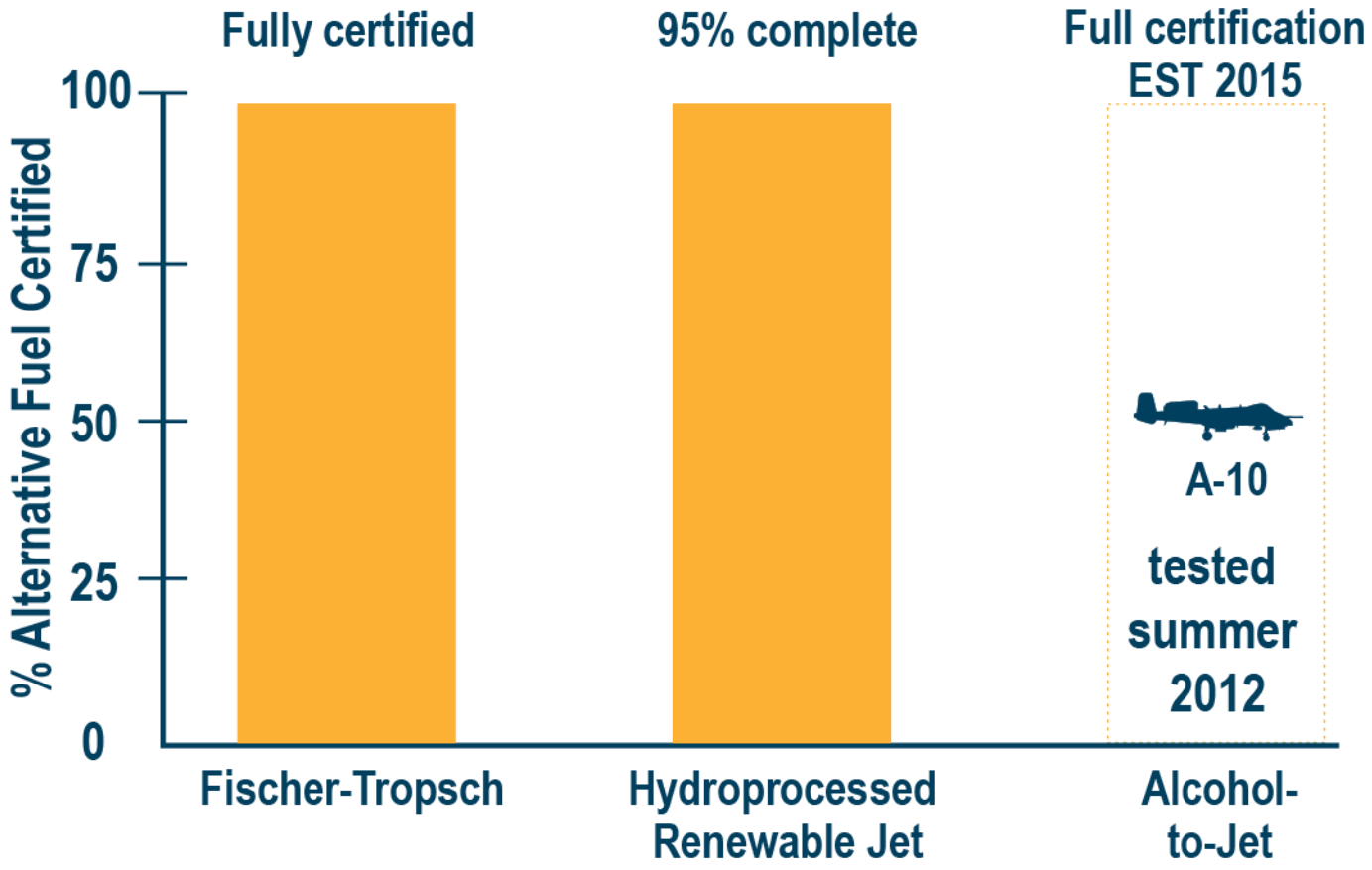


Alternative Fuel Certification



Air Force will be a ready consumer by 2016

Alternative Fuel Pricing

Producer	Type	Amount (gals)	Total Cost (millions)	Price (per gal)
Syntroleum Corp	FT	100,000	$2.000	$20.00
Shell Malaysia	FT	281,000	$0.958	$3.41
SASOL	FT	395,000	$1.541	$3.90
Sustainable Oil	HRJ	100,000	$6.680	$66.80
Honeywell UOP	HRJ	100,000	$6.400	$64.00
Sustainable Oil	HRJ	100,000	$3.490	$34.90
Honeywell UOP	HRJ	100,000	$3.240	$32.40
Sustainable/Dynamic Fuels	HRJ	35,000	$2.056	$58.74
Gevo	ATJ	11,000	$0.649	$59.00

MQ-9 Reaper Field Test Evaluation

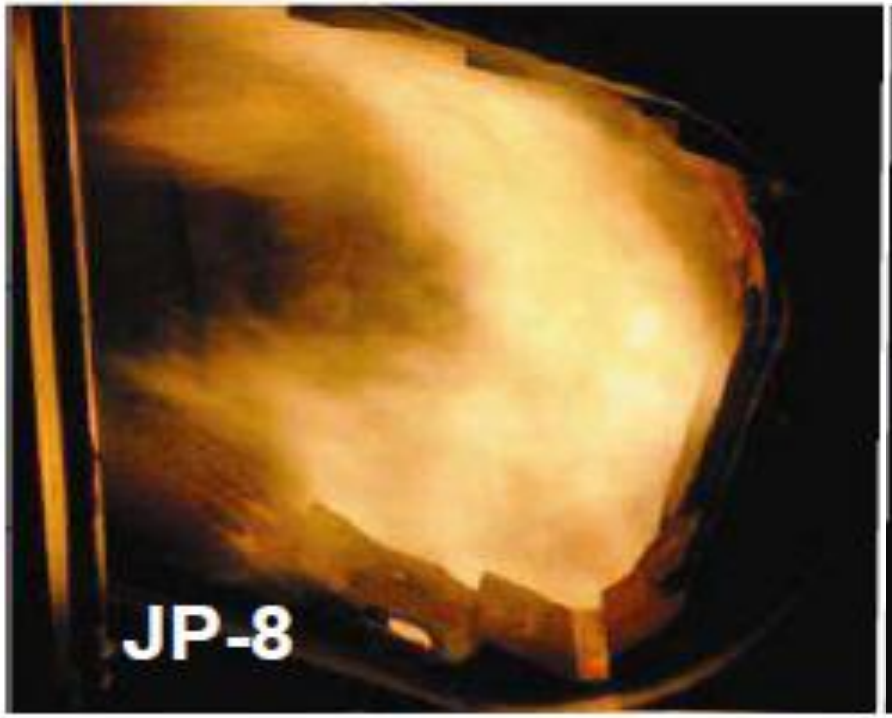
PROGRESS:

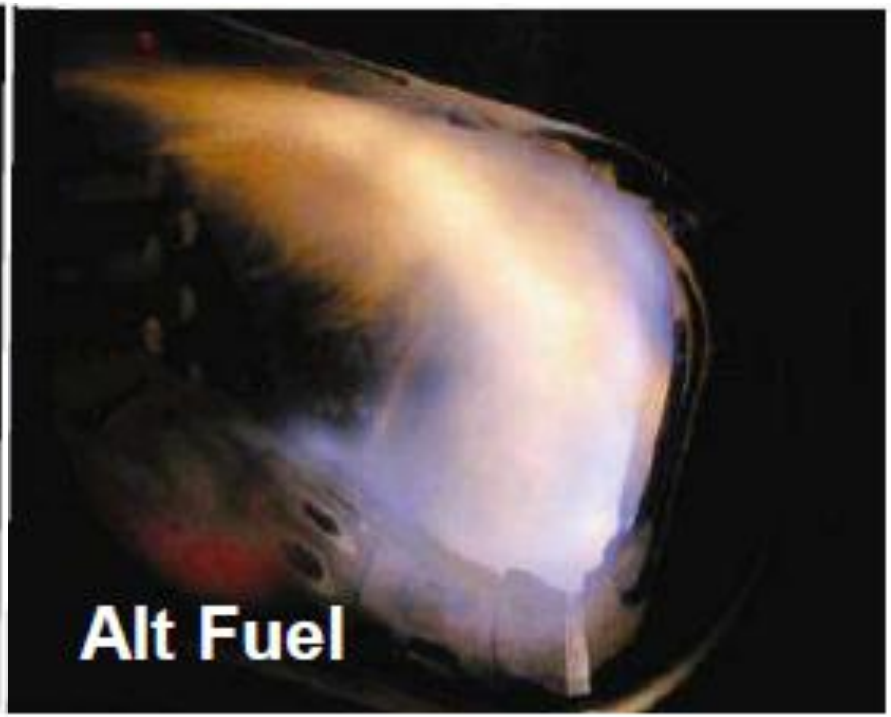
- MQ-9 Reapers: 11
- Total Sorties performed: 152
- Total fuel used to date: 40,000 gallons

NEXT STEPS:

- Project completion date: November 2012
- After Action Report 2013

Engine Longevity Testing





Partnership – Aviation

Commercial Aviation Alternative Fuels Initiative (CAAFI)

GOAL Industry and government collaborate to promote alternative fuels

PROGRESS:

- Developed fuel certification process
- Durability testing of Alternative fuels
- United, Lufthansa and Alaska Airlines using alternative fuels

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Alternative Fuel Standards

- Developed fuel certification process in MIL-HDBK-510
- Incorporated into ASTM D4054 protocol
- Harmonized MIL-DTL-83133 with ASTM D1655 & ASTM D7566
- Shared research data with government and CAAFI
- Voting members of ASTM
- Certified all commercial derivative aircraft without testing
- Provided data to support ASTM changes
- Partnered with FAA on engine endurance

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Conclusion

"Persistence and commitment will be needed to provide the energy options and flexibility our civilians and military leaders need. By improving the way DoD uses energy, we can create a more agile, lethal, adaptable, and effective force."

–Secretary Michael Donley
United States Air Force
7 August, 2012