

INNOVATIVE SOLUTIONS IN ACTION

F-22 Demo Delivers New Guidance



FLY-FAST, SAVE GAS

An energy optimization initiative led by the Deputy Assistant Secretary of the Air Force for Operational Energy (SAF/IEN) generated momentum for new guidance for fighter speeds. F-22 and F-35 fighter sorties are now planned to fly closer to fighters' maximum range airspeed, while still within tanker boom limits, during trans-oceanic fighter relocation (Coronet) missions. The faster speed reduces overall fuel consumption while conserving essential flying hours.

In August 2017, SAF/IEN conducted a proof-of-concept demonstration to show that increased speeds during this type of aircraft redeployment decreases fuel consumption. One cell of F-22s and an accompanying tanker for refueling, flew at a higher airspeed, while the other cell acted as the control group by flying the standard profile. Throughout the five hour flight, researchers aboard the tankers collected the sortie data in order to compare results from both cells. The faster cell was able to cut about 10% of the total flight time and 6% of the fuel required for this type of aircraft movement.

The faster speed parameters are within the Aerial Refueling Flight Envelope for F-35 and F-22, as well as the KC-135 and KC-10.



WHY IT MATTERS

The Air Force is interested in energy-informed solutions, and one way this is achieved is through innovative thinking. In this example, a cost-free alternative to flying Coronets was identified that can **decrease flight time by 10% and provide a 6% fuel savings**. Adjusting flight speed, in this case, means more hours for flight training and less wear on the aircraft.

The new guidance ensures this concept will be applied to approximately **130 annual F-22 movements**. If combined with the potential of other Combat Air Forces platforms, 800+ hours of flight time could be reallocated back to the platforms annually. Every innovative solution has the potential to enhance the overall readiness of the Air Force.



GUIDANCE

Updated Air Force guidance was distributed to flight operations commanders within Air Combat Command on July 2, 2018.

Deputy Assistant Secretary of
AIR FORCE OPERATIONAL ENERGY



OUR MISSION

To enhance combat capability and mitigate operational risk to the warfighter through energy-informed solutions.

OUR VISION

To create an energy optimized Air Force that maximizes combat capability for the warfighter.

OPTIMIZING OPERATIONAL ENERGY LEADS TO:



INCREASED
Combat Capability



INCREASED
Aircraft Lifespan



LOWER
Aircraft Maintenance Costs



MORE
Training Opportunities

\$5-7 BILLION

is spent on Air Force aviation fuel **ANNUALLY**

81% of the Air Force **ENERGY BUDGET** is spent on aviation fuel

2 BILLION

GALLONS of aviation fuel used by the Air Force **ANNUALLY**

8,000

additional sorties fueled from a **1% EFFICIENCY INCREASE**

#FUELMOREFIGHT



AIR FORCE
OPERATIONAL ENERGY