

Guam Leads Jet A Conversion

By Elizabeth Stoeckmann

Leading the way, Defense Logistics Agency Energy Pacific at Guam can brag about being the ideal test location for Jet A conversion on a living paradise island in the Pacific Ocean.

The 30-mile island was chosen as the first location in the Pacific to convert to JA/JA1 because of its unique, small and closed-fuel distribution network that provides aviation fuel to the island's major end user, Andersen Air Force Base.

Meanwhile, over the last couple of years, DLA Energy fuel procurement actions have converted from buying Jet Propellant 8 fuel to the more common and commercially available Jet A aviation fuel.

"The differences are simple," said Joy Griffith, DLA Energy Pacific at Guam deputy director. "Essentially Jet A performs about the same as JP8 with the same additives

and saves everyone money."

Specifically, JP8 is a grade of aviation fuel produced to military specifications that includes several additives such as fuel system icing inhibitor, static dissipater additive and corrosion inhibitor.

Unlike JP8, Jet A is a commercial grade of aviation fuel that is predominately made and used by commercial aircraft in the continental U.S.

Similarly, JA1 is the same fuel as Jet A, but predominately made and used by commercial aircraft outside the continental U.S.

Therefore, other than the inclusion

of additives, JA1 is the closest to meeting the military specifications of JP8, Griffith said.

Also, JA1 has the same freeze point as JP8 which is minus 47 degrees Celsius, while the freeze point of Jet A is only minus 40 degrees Celsius. Therefore, when JA1 is additized with FSII, SDA and CI it is routinely called JP8; hence, this is not the case with additized Jet A.

"Overall, there are many driving factors behind a fuels acquisition conversion," Griffith said. "It's always been and always will be about cost savings and quick acquisition of a more readily available product."

Not to mention, JP8 and JP5 are considered exotic fuels that are made primarily for Department of

Defense use, she added.

Griffith explained these fuels are more expensive and take longer to acquire because the commercial refineries have to stop their routine production processes in order to execute the unique and segregated production runs for these exotic fuels.

As a result, this cuts into their production efficiency of Jet A/JA1 for their largest customer base – the commercial airline business – which, in turn, cuts into their profit margin that they then try to make up via higher costs for the exotic fuels, she added.

"The fuel conversion from JP8 to Jet A with additives is the beginning of an era of fuel efficiency and financial



Sailors watch as an F/A-18F Super Hornet comes in for a landing on the flight deck of the Nimitz-class aircraft carrier USS Ronald Reagan while off the coast of Guam. Over the last couple of years, DLA Energy fuel procurement actions have converted from buying Jet Propellant 8 fuel to the more common and commercially available Jet A aviation fuel. Photo by Navy Petty Officer 3rd Class Nathan Burke



An Air Force fuels distribution operator assists members of U.S. Navy Helicopter Sea Combat Squadron 25 complete a fuel receipt during a hot refueling on Andersen Air Force Base, Guam. Defense Fuel Support Point Guam II received its initial fill of JA1, September 2010, but Guam didn't start regular JA1 tanker receipts and additization operations until spring 2013. Photo by Air Force Airman 1st Class Marianique Santos

responsibility for the fuels community," said Navy Cmdr. Tony Giles, DLA Energy Pacific at Guam commander.

In fact, several years ago, DLA Energy calculated \$40 million in savings over 40 years could be realized by simply purchasing Jet A/JA1 instead of JP8, he said.

"Granted these savings most likely didn't take into consideration the additional cost to DLA Energy for the purchase, transportation, storage and injection of additives," Giles added. "However, the flexibility and responsiveness to procure and get fuel to the warfighting quickly is far more valuable than any cost savings."

Aside from the fiscal responsibility, being the first at something doesn't always make it the easiest, said the Guam team.

For example, the contractor-owned, contractor-operated Defense Fuel Support Point Guam II received its initial fill of JA1, September 2010, but Guam didn't start regular JA1 tanker receipts and additization operations until spring 2013. Thus, timing was the factor.

"Unfortunately, the drawback to being first is there's no simple template for quick execution," Griffith said. "So dealing positively with the start-up operation is key to future conversions."

DLA Energy Pacific at Guam leadership held



An Air Force fuels facilities operator inspects a sample of fuel at Andersen Air Force Base, Guam. Guam was chosen as the first location in the Pacific to convert to Jet A jet fuel because of its unique, small and closed-fuel distribution network providing aviation fuel to the island's major end user, Andersen Air Force Base. Photo by Air Force Senior Airman Katrina Brisbin

strategic planning meetings to identify challenges, discuss lessons learned and create a roadmap for future efficient and effective fuel execution to the warfighter.

After careful planning through the year, DLA Energy Pacific's second conversion location, Alaska, successfully converted to JA1 procurement and additization operations.

"Their conversion appears to have gone much smoother than Guam's," Griffith said. "Early in the process, they identified and decided to have their [contractor-owned, contractor-operated] DFSP contractor perform and be responsible for all additization operations to include the acquisition, storage and injection of the additives."

As a result of the positive experience in Alaska, they learned an important lesson: since Guam had both contractor-owned, contractor-operated and government-owned, government-operated DFSPs involved in the additization operations on the island, it added complexity to the planning and decision-making process. Thus, the Alaska team reported it's really essential to know who will perform the additization and where (location) upfront.

"And if the 'who' and 'where' is a [government-owned, government-operated] DFSP, early and frequent collaboration with that service partner is essential," Griffith said. "In this situation, the service partner's buy-in and support are critical for timely input and progression of projects to install injectors and additive storage facilities that are needed to support the overall conversion."

Meanwhile, another conversion continues to make progress in the Pacific.

Hawaii is DLA Energy Pacific's third location to convert to JA1, and is currently involved in collaboration with the Naval Support Systems Command Energy about additization operations and the necessary facilities at DFSP Pearl Harbor.

While still in the conversion process, they are learning that early determination of the quantity of each additive needed and how much will be kept on hand at the injection location, i.e. the establishment of a mandatory inventory level.

"The determination of this inventory level is essential for accurate creation of the facility project for additive storage," Griffith said.

In calculating additive levels, a thorough analysis of each additive's supply chain must be accomplished in order to determine each additive's order and ship time – shorter order and ship time equates to quicker resupply thereby requiring less on-hand stocks, she said.

Guam continues to refine these additive inventory levels as actual order and ship times of additives differ from the initially programmed factors.

"Because of Guam's lessons learned in their JA1 conversion, the upcoming conversions for Japan and Korea should have minimal surprises," Griffith added.

The conversion from military-specification jet fuel to a commercially available jet fuel dates back to more than 10 years, when some of the first studies were piloted in a seamless effort to meet warfighter requirements and provide cost savings to the services. **ES**