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Steve Minter, Allied Aviation's Maintenance Manager at George Bush Intercontinental Airport (IAH) in Houston, safely servicing one of the airport's numerous jet-fuel hydrant pits with the help from an OPW Kamvalok® Dry Disconnect System.

Houston's George Bush Intercontinental Airport increases efficiency and safety of its fueling system with upgrade to Kamvalok® Dry Disconnect System

Allied Aviation Services, Inc., New York, NY, is the largest domestically owned provider of fueling services to the commercial aviation industry in the United States. Allied Aviation currently



is the designated into-plane service provider and/or fuel-storage facility operator at 24 major airports in North and Central America. In that role, the company manages the receipt, storage and delivery of jet fuel used in the operation

of airport fuel-distribution systems that throughput in excess of 6 billion total gallons of Jet-A fuel every year. This means that Allied Aviation has a hand in fueling approximately 1.6 million commercial flights a year.



Steve Minter services one of the IAH airport's pump pads. Once a month, Minter services the hydrant system at IAH, which consists of more than 200 service points.

One of the shining lights in Allied Aviation's vast operation is George Bush Intercontinental Airport (IAH) in Houston. Originally built in 1969 as the Intercontinental Airport of Houston, IAH has grown from its two original terminals to a total of five in order to meet increased domestic demand, as well as international traffic to and from destinations in South and Central America, Europe and the Far East. That demand equates to a daily fuel throughput that peaks at around 1.6 million gallons a day during the summer months. In all, Allied Aviation helps fuel 97% of the aircraft that depart IAH on a yearly basis.

With its 55 years of expertise in fuel handling, Allied Aviation played an important role during IAH's years of expansion, helping design an underground hydrant system that supplies jet fuel to all of the terminals. The company has also assisted in building new jet-fuel storage tanks at the airport that added an additional 200% to IAH's storage capacity over the years. This commitment to the growth and success of IAH was rewarded in 2007 when Allied Aviation received the prestigious Silver Nozzle Award for Organizational Excellence from the National Petroleum Management Association.

The Best Gets Better

Allied Aviation and the airlines that call IAH home measure performance based on their timeliness, quality, safety, accuracy and professionalism. When you're responsible for a fueling system that handles more than 1.5 million gallons of jet fuel a day, there is immense pressure on both the personnel in charge of delivering it and the equipment that is used to complete the process to get the job done correctly and safely.

Steve Minter knows the challenges on both ends. For the past nine years, he has been Allied Aviation's Maintenance Manager at IAH, but for the 10 years prior to that, he worked on the maintenance

crew's midnight shift. Among his responsibilities was servicing the airport's hydrant system into which jet fuel is injected then delivered to the various terminals and gates, from where it is pumped into the airplanes awaiting departure. Once a month, Minter would help service the hydrant system, which has 134 low-point, 46 high-point and 56 service-point locations, and 10 tanks and two pump pads.

In order to do this, the pressure in the hydrant system would have to be brought down to a workable point and an assortment of adaptors of varying sizes and types would be used to drain the hydrant points of any water that could potentially contaminate the jet fuel. While the system was able to meet the needs of IAH, it was full of any number of inefficiencies that would increase the chance of operator injury or fuel spills, which would have deleterious affects on both the bottom line and the environment.

"We didn't have any dry breaks, we just had connections onto a butterfly valve where the pressure would be built up to around 150 to 180 psi. If the valve wouldn't hold when the connections were unhooked, you'd have to shut the whole system down, or otherwise you'd have an overflow," explained Minter. "Sometimes, because of the pressure, the caps would pop off and almost hit the operators' heads. There were incidents where people got hurt, where there were fuel spills, and we just couldn't depend on the standard quick connects that we were using at that kind of pressure."

When Minter became Maintenance Manager he knew that one of his main tasks would be finding a better way to service the hydrant system. For a solution, Minter turned to Ray Lingo of Raco Industrial Products, Houston, TX, a representative of OPW Engineered Systems. Lingo recommended Kamvalok® Dry Disconnect System from OPW Engineered Systems, Lebanon, OH.



It's A Lock

“Ray Lingo introduced me to the Kamvaloks and they’re the best thing since sliced bread,” said Minter. “They are absolutely working like we expected them to.” The Kamvaloks meet the needs of Allied Aviation and its operations at IAH because they are designed with a unique poppet action that virtually eliminates spillage of any residual liquid that remains in the line after disconnection. They have also been designed to shut off in the event of an accidental disconnection of the coupler and adaptor. In other words, should the Kamvalok be accidentally disconnected due to operator error or accident while the lever is in the open position and product flow is in progress, the poppets in the adaptor and coupler will automatically close and immediately stop fuel flow through both, the coupler and adapter.

Other standard-setting features of the Kamvaloks include a locking cam-and-groove design that makes connection and disconnection smooth and easy; open/close locking lever action



The Kamvalok's unique poppet action design eliminates virtually any spillage of residual liquid that remains in the line after disconnection.

that ensures liquid flow can only begin once the coupling and adaptor are securely connected, even in high-pressure applications; and 360-degree orientation that allows the coupling to be connected to the adaptor in any position.

Thanks to this revolutionary design, the benefits of the Kamvalok fittings are many: they reduce the hazards associated with the transfer of corrosive, toxic, caustic and other harmful products; they completely contain volatile organic compounds that have high vapor pressures and evaporate quickly; they provide total closed-loop loading capabilities; they provide automatic closure from both directions; they contain fugitive emissions; and their simple connection-and-disconnection design guarantees ease of use.

“We wanted to make it safer for the operator and the environment, and since we converted to the Kamvaloks we can do maintenance any time we need to,” said Minter. “We no longer have to shut the system down and with the Kamvaloks it’s a lot safer, more environmentally friendly and there’s a lot less wasted fuel from spills. It definitely used to be a pretty dangerous system, and you still have to respect the system, but it’s definitely a lot safer with the OPW equipment.”

With a fueling hydrant system as complex as the one at IAH, a number of different technologies and equipment sizes were originally being used to service the system. Therefore, it took more than a year to convert and standardize the entire system, with its more than 200 service points, to the 2-inch Kamvaloks. That upgrade was completed in 2007, which is—not coincidentally—also the year that Allied Aviation won the Silver Nozzle Award.

“It was definitely a big task to get the Kamvaloks into the existing system since we had more than 200 spots where we needed them and we had to replace a variety of old equipment and valves, but it was definitely worth the wait,” said Minter. “When you have one big spill and realize the cost in that in cleanup and lost fuel, you can appreciate the cost savings with the Kamvalok system.”



Allied Aviation received the prestigious Silver Nozzle Award for Organizational Excellence from the National Petroleum Management Association in 2007. A key component of its safer system, was the incorporation of the Kamvalok® Dry Disconnect System from OPW Engineered Systems, Lebanon, OH.

Conclusion

In his role as IAH’s Fueling Maintenance Manager, Steve Minter is in regular contact with his peers at Allied Aviation’s other locations and, lately, one topic always seems to come up.

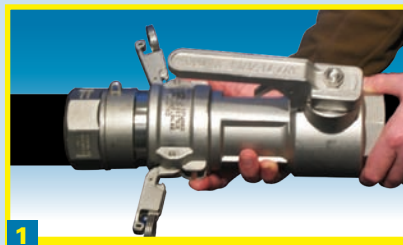
“I’m in touch with our people at our other sites and I recommend the Kamvaloks to them if they’re looking for a way to increase the safety of their hydrant-flushing systems,” he said. “It took a while to adapt our system over to them, but if they’re doing new construction I’ll tell people that they should consider Kamvaloks from the get-go.”

The services that Allied Aviation supplies to its airport clients are crucial ones, both from an economic standpoint, as well as in regards to safety. When Minter found it necessary to upgrade the equipment on IAH’s hydrant system, he turned to the leader in the engineering, design and manufacture of systems for the safe loading and unloading of critical hazardous materials—OPW Engineered Systems and its Kamvalok Dry Disconnect System. It has been a match made in safety and efficiency heaven.

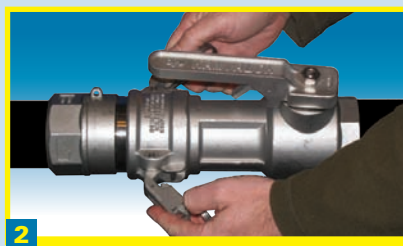
“I would highly recommend Kamvalok connections for any system that requires frequent maintenance or service where the operator is looking to reduce the risk of environmental impact, reduce the risk of personal injury, and have the flexibility to service the system under normal working pressure,” concluded Minter.

HOW DOES THE KAMVALOK® OPERATE?

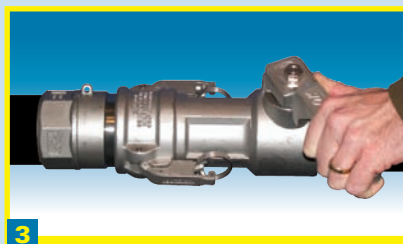
OPW Engineered Systems Kamvalok® Dry Disconnects are easy to operate. Connections and disconnects are accomplished by simply closing and opening two cam arms which lock into the machined groove around the circumference of the mating adaptor. The adaptor contains a spring-loaded poppet assembly that is actuated by the lever-action on the coupler.



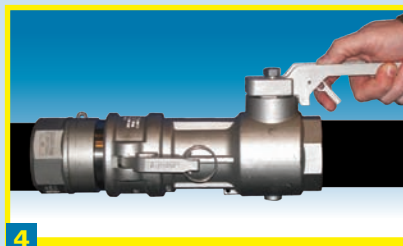
Couple In any Position



Cam Arms Lock Coupler and Adaptor Together



Locking Lever Opens Poppets



Handle Locks and Full Flow Begins

For more information on the Kamvalok® system, or other products from OPW Engineered Systems, Lebanon, OH, please contact Greg Carrino, Director of Sales & Marketing, at gcarrino@opw-es.com or (513) 696-1500.