

Locked and loaded

LOADING Houston's George Bush Intercontinental Airport has increased the efficiency and safety of its fuelling system after upgrading to the Kamvalok Dry Disconnect System

Allied Aviation Services Inc, based in New York, is the largest domestically owned provider of fuelling services to the commercial aviation industry in the US and is currently 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 6bn gallons of Jet-A fuel every year. This means that Allied Aviation has a hand in fuelling approximately 1.6 million commercial flights a year.

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 1.6m gallons a day during the summer months. In all, Allied Aviation helps fuel 97 per cent 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 doubled 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. There is therefore immense pressure on both the personnel in charge of delivering jet fuel and the equipment that is used to complete the process to get the job done correctly and safely.



Workers are no longer exposed to everyday spills of product

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 effects 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," explains 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 Houston-based Raco Industrial Products, a representative of OPW Engineered Systems, who recommended OPW's Kamvalok® Dry Disconnect System.

It's a lock

"Ray Lingo introduced me to the Kamvaloks and they're the best thing since sliced bread," says 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 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 vapour 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," says 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. It took more than a year to convert and standardise 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," says Minter. "When you have one big spill and realise the cost in that in cleanup and lost fuel, you can appreciate the cost savings with the Kamvalok system."

Word of mouth

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 says. "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. "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," concludes Minter.

Steel appeal

TANK TRUCKS Savings in costs and weight are promised by Brenner Tank through the application of new Duplex steels



Just over three years ago, as metals costs escalated dramatically and the typical DOT 407 tank trailer doubled in price, Brenner Tank took the initiative to source a new stainless steel for the industry. Ultimately, this led to the introduction of 'Lean Duplex' to the tank trailer industry and Brenner secured the first Special Permit from the US Department of Transportation (DOT) to build DOT 407 specification tanks with this more economical material. Brenner says the switch saved its customers more than \$500,000 in the first year.

As well as being more economical than 316 stainless steel, Lean Duplex offers outstanding tolerance to wide temperature fluctuations and equivalent levels of corrosion resistance. Brenner says that all of the new tank trailers are performing well in a variety of applications.

Following this success, Brenner is addressing a different challenge that confronts the industry. "Tractor weights have grown by about 800 pounds as 2010 emission equipment is added to their drivelines," Brenner says. To counter this, Brenner Tank has introduced Lean Duplex 2, which can save as much as 700 lb on the weight of a typical tank trailer.

"We accomplished this feat by securing a US DOT Special Permit to take credit for the significant strength advantage of Lean Duplex (and other materials)," the company says. "Essentially, our Lean Duplex 2 tank trailers will be designed and manufactured with the same shell thicknesses as thousands of MC 307 units, many of which are still in service. Yet these new units will offer all of the durability demanded by the DOT 407 specification and the corrosion allowance of 0.010" discriminating customers have come to expect."

Brenner Tank is currently the only manufacturer using this material. Those looking for more information can see the tanks in the flesh at the company's 2010 Expo on June 16.

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