



Houston's George Bush Intercontinental Airport increases the efficiency and safety of its fuelling system

Locked and loaded

Allied Aviation Services, based in New York, is the largest domestically owned provider of fuelling services to the commercial aviation industry in the US.

It 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 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



The Kamvalok can couple in any position

Cam arms lock coupler and adaptor together



Locking lever opens poppets



The Kamvalok handle locks and full flow begins



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.

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.

The best gets better

Among Allied Aviation's responsibilities is servicing the airport's hydrant system



The hydrant system, which consists of more than 200 service points, is serviced once a month



The hydrant system has over 200 service points



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

into which jet fuel is injected then delivered to the various terminals and gates, from where it is pumped into the airplanes awaiting departure.

For the past nine years as the company's maintenance manager Steve Minter was involved in servicing the airport's hydrant system into which jet fuel is injected. The fuel is 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 could increase the chance of operator injury or fuel spills.

'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 for the company one of his main tasks was to find a better way to service the hydrant system.

It's a lock

Allied Aviation started using a Kamvalok dry disconnect system from US-based OPW Engineering, which virtually eliminated spillage of any residual liquid that remains in the line after disconnection.

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 new system

They have also been designed to shut off in the event of an accidental disconnection of the coupler and adaptor. 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 adaptor.

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.

With a fuelling 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 standardise the entire system, with its more than 200 service points, to the 2-inch Kamvaloks.

'It was definitely worth the wait,' explains 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 new system.'

For more information:
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