



FUEL SUPPLY & PRICE

We provide technical support for our clients. This often involves helping them achieve improved fuel supply costs through our network of trusted suppliers.

We have a network of established suppliers who deliver quality aviation fuels from reputable sources, in fully compliant vehicles, with well-trained drivers, using good procedures.

When aviation storage and refuelling organisations tell us they can't afford training, we are, understandably, disappointed that we don't get the opportunity to save them more than the training costs and benefit the business as a whole by improving competence, lowering risk and business liabilities, and helping them achieve a more sustainable business.

As with our trusted network of engineers, maintenance providers and spare parts suppliers, we only deal with organisations that we trust and know will deliver for our clients.



We charge nothing for the service and get nothing from the suppliers. We do it because we are keen to see our customers grow their business and, ultimately offer their customers the best pricing they can. We are experts in aviation fuels having come from the aviation fuels industries. We have a good network, good contacts and know how to access the best for our customers.

MICROBIOLOGICAL GROWTH



Microbiological growth in Jet fuel is an indication that an aviation facility lacks understanding and procedures.

Microbiological growth is a fungus. It grows in water and feeds on Jet fuel so will sit in the interface between the water and fuel.



When tanks, filters and pipeline low points are not regularly drained to remove any water, the fungus.

Good consistent draining and sampling procedures remove water and therefore, remove the environment for the fungus to grow. The problem with water is that it can enter tanks through venting and condensation in humid conditions or move in and out of solution during wide temperature variations, so it is not possible to say that Jet fuel will always be dry.

Microbiological growth is a major concern for the following reasons:

- It produces microscopic spores smaller than the micron pore size in filter elements. These can travel through to aircraft fuel tanks where they can grow in the moisture drawn into the fuel tanks in cooler ambient air (particularly at altitude) as fuel is drawn into the engines.
- Growing inside aircraft fuel tanks, the fungus and their associated waste product can block aircraft fuel filters, in turn becoming a flight safety risk.

- The waste product from the growth is highly corrosive causing assets to deteriorate far more quickly than they otherwise would.
- Once it takes hold in an aviation fuels facility or aircraft fuel system, the only viable treatment is a cleaning and or biocide application which is very expensive and can generate significant waste fuel that has to be treated a hazardous waste with the associated costs.

Prevention is simple and reliable. It is simply to regularly water-drain tank sumps, filter sumps and low points drains in pipework to remove all water. The recommended draining frequency is daily and after any new delivery has settled so any free water can settle out to be removed. Where a site is unmanned, the draining frequency should be at least 3 times per week unless water is detected – in which case, the frequency must be daily until no water is present in the drains again.

Good clean assets produce good clean fuel.

AUDIT CHECKLIST

When auditing facilities and refuelling operations, we use our audit checklist that is consistent with all the requirements of the

Joint Inspection Group (JIG) and the Air Transport Association (ATA103) requirements.

We maintain this so it always meets the latest requirements and make practical



recommendations for sites to be able to modify their operation to comply with the industry standards where applicable. With the expected changes to JIG in 2021, we will be

reviewing the audit checklist against the latest requirements.

customers get the highest quality audits meeting all the relevant standards.

THE LATEST ON FILTRATION

Note: This article is in a different font

We promised to keep you updated on the latest developments in the ever-changing world of aviation fuels filtration so here we are again.

Parker-Velcon have recently advised that they now have completed development of their CDFX filter elements. These elements are 'drop-in' replacements for the current Filter Monitor elements that most airports and refuelling operations use as the final form on filtration into aircraft.

This is a new technology that performs much like a separator element in a Filter Water Separator filter. It is a water defence element.

The Filter Monitor elements detected any water and absorbed it using the Super Absorbent Polymer bound inside the elements. This operated in much the same way as a baby's nappy absorbing and trapping the water within the element swelling until it blocked the fuel flow.

This SAP media had one downfall. It could leach fibres or the media under certain conditions so that these could pass through to the aircraft affecting the fuel flow and/or engine spray nozzles in flight.

A 'drop-in' replacement filter element for the current Filter Monitor elements is the most practical and cost-effective solution for all but the

largest refuelling operations that may choose to fit the Dirt Defence Filter and Electronic Water Sensor. These units are likely to cost in excess of \$A25,000 per vehicle or fixed filter.

Parker-Velcon's new Water Defence Barrier filter elements appear to be costing about the same price as the current Filter Monitor elements and are now awaiting trail completion with JIG and the Airlines 4 America (A4).

Once the technology has been proven to these organisations, the elements will be qualified.

While Parker-Velcon advertise that the elements are now available to airports that do not need to meet the JIG or A4A requirements, it would be our recommendation that airports wait until the new technology has been subjected to the quality and operational testing and associated industry approvals before changing to the new elements.

In-field trials of the Parker Velcon elements have shown some tendency for blocking indicating ultra-fine particulates are being removed but the usable life of the elements is significantly shortened. This is being investigated.

Until then, continuing to use the current Filter Monitors is acceptable providing the following conditions are met:



- The elements are thoroughly flushed after installation and before use;
- The Differential Pressure is monitored to ensure it remains below 15 psi (100 kPa);
- The elements are changed annually or once they reach the 15 psi (100kPa) differential pressure.

The other technology still being developed is from Peko-Facet. This technology is hoping to have a 'drop-in' replacement for the Filter Monitor elements also but lags the Parker-Velcon developments.