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INSIDE

Visitors flock the show on Day 2

Skyrocketing fuel prices;

Farnborough strategizes on alternatives

- July 2017 - $66 per bbl of Jet a1
- July 2022 - $ 143 per bbl of Jet a1
- Farnborough puts sustainability as top agenda

Need we say more on how skyrocketing prices of jet fuel is bleeding airlines. And mind you, irrespective of the status of the ongoing Ukraine-Russia war, fuel prices are not likely to come down to comfort levels of the aviation sector. The need to step on alternatives has never been so immediate and this can be seen at Farnborough where aerospace companies, irrespective of their size, are working towards becoming less dependent on fossil fuel. It is going to be one uphill task, but the first steps have been taken.

Why we need to switch to sustainable aviation fuel (SAF) is as lucid as it can get. Fossil fuel reserves are not for ever. According to a 2015 research, oil will be over in 51 years; coal in 114 years; and natural gas in 53 years.

Fuel bill to reach $192 billion in 2022

And what is the requirement of the aviation sector. According to IATA, the global airline industry's fuel bill is estimated to reach the total of $192 billion in 2022 (accounting for around 24% of operating expenses at an average price of $101.2/barrel Brent). This is an increase of 28% over the $103 billion fuel bill for 2021, which accounted for 19% of operating expenses at $70.7/bbl Brent. Fuel consumption is expected to be 84 billion gallons in 2022, up from 60 billion gallons in 2021. There is no abatement of fuel prices which has gone up by 85.7% in one year as per the Platts Jet Fuel Price index.

The aviation sector has put ambitious goals on increases in fuel efficiency for the aviation fleet. Traffic is predicted to grow by 5% per year to 2026, fuel demand by about 3% per year. At the same time, aviation fuel production is predicted to decrease by several percent each

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PTI offers Bleed Air Filtration for ECS and FTIS

With smaller components playing a critical part on any important project, Bleed air is used on commercial aircraft today for many applications including Fuel Tank Inerting Systems (FTIS) and the Environmental Control Systems (ECS). Bleed air contains many contaminants including carbon monoxide (CO), carbon dioxide (CO_2), ozone (O_3), hydraulic fluids, engine oils, pyrolysis products, Volatile and Semi-Volatile Organic Compounds (SVOC/VOC) and particulates.

In a FTIS, removing contaminants extends the life of the air separation module. In the ECS, removal of contaminants is essential to improve Cabin Air quality for the safety and well-being of crews and passengers. Today, commercial aircraft have High Efficiency Particulate Air (HEPA) filter systems for the recirculated air, but there is no filtration of the bleed air used in the cabin air. As we start to think of air quality based on safety, instead of just comfort, the decision making by airlines dramatically changes regarding how we attain clean air in the cabin of the aircraft. This is even more important today as we work to provide a safe cabin environment to remove bacteria and viruses. The proceedings of the past two years have made the airlines, OEM's and the traveling public, how important cabin air quality is.

PTI Technologies' feels that they have the answer since a long time as their first application of Cabin Air filtration technology was in the 1980's for the Northrop Grumman B-2 program, paving the way for their continued work on a number of other military and manned space programs today. PTI has continued to invest in the development of special filter media and customized proprietary adsorbents to meet the challenging requirements and specifications for air filtration from customers.

HEPA Test

This continued investment has allowed PTI Technologies to develop patented integrated filter technology for the aviation industry to capture bleed air contaminants. They applied this technology to FTIS filtration applications with flows of 0.07 cfm and temperatures up to 160 °F (71 °C) to provide significant weight and envelope savings for FTIS, as well as extending the life of the air separation module.

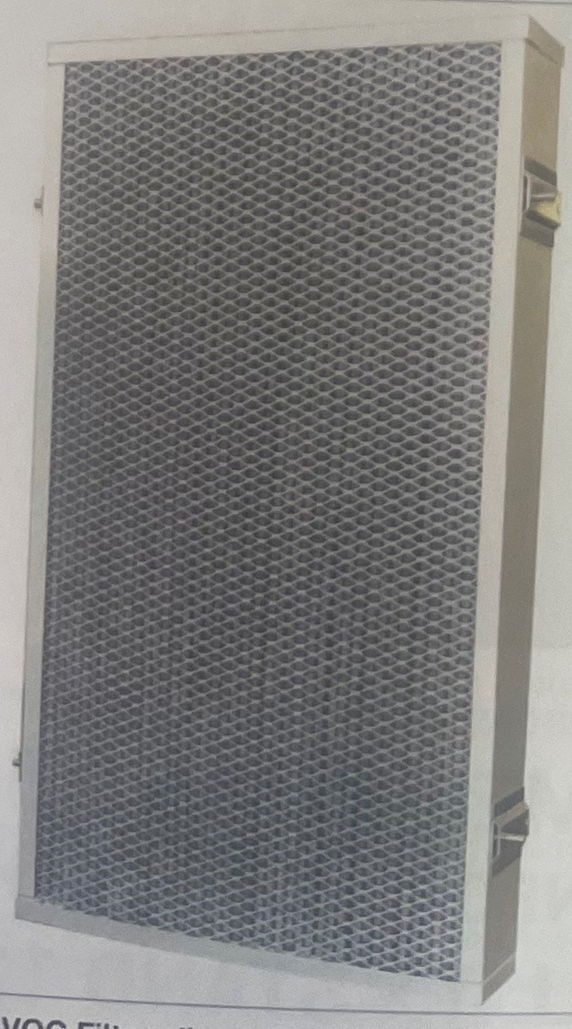
They are now applying this technology to design bleed air filtration for the ECS where the filter must handle high flows up to 1,200 cfm and high temperatures up to 500 °F (250 °C). We are currently testing at ambient temperatures (70 °F/21 °C) and challenging the filter with various contaminants including Toluene, engine oils, carbon monoxide, ozone and propylene glycol. The initial test results are very positive and given their 60 years of experience in filtration design, they feel confident that the integrated filter design for bleed air application will provide clean bleed air to the ECS for our OEM customers.

PTI is also investing in developing filter systems for the recirculated cabin air on aircraft. Today's standard HEPA filters clean recirculated cabin air impurities originating from having a confined space with lots of people. HEPA filters are only designed to capture particles (dust, fibers, bacteria, fungal spores and pollen), not gases and vapors. PTI is developing the next generation of cabin air filters combining HEPA with activated charcoal imbedded into the weave to remove particles, gases and vapors from recirculated cabin air with encouraging filtration performance results exceeding current options in the market.

PTI Technologies say that they are committed to developing the filtration technology necessary to provide aircraft manufacturers and airlines with the best possible cabin air quality, as well as clean bleed air to extend the life for the on-board FTIS.

Visitors can learn more about these technologies at the ESCO Aerospace & Defense booth in Hall 3, #3331. ■

FTIS Filter clipped



HEPA VOC Filter clipped