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Q3 2024



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Solving Supply Chain Challenges



USED SERVICEABLE MATERIAL HELPING SOLVE MATERIAL SUPPLY CHAIN CHALLENGES

WITH THE INDUSTRY STILL SUFFERING AFTERSHOCKS FROM COVID, USED SERVICEABLE MATERIAL IS PROVIDING A VALUABLE RESOURCE FOR AIRLINES AND MROS AND AIRLINES ALIKE. IAN HARBISON SPOKE TO THREE OF THE LEADING PLAYERS.



Staff shortages and material supply problems are still lingering after the pandemic, resulting in increased turnaround times for overhauls and repairs. Companies are taking different approaches in resolving the situation.

Vallair

Armando Filho, director of trading and material management at Vallair, says the market has changed a lot after Covid, with growth in demand for used serviceable material (USM) and green time

material. This has been caused by the OEMs suffering lots of constraints due to supply chain problems with material availability. They, and airlines, are even looking, in a limited way, at PMA parts, despite reservations about them by leasing companies, and designated engineering representative (DER) repairs. In addition, staff shortages remain and companies are setting up their own training schools, as Vallair has done with the Aircraft Academy at its French MRO facilities at Châteauroux and Montpellier.

Another change has been increased cooperation between companies. Where, before, they would only deal with the OEMs, MROs or trading companies like Vallair, they have had to accept



Vallair dismantles A330 for Danish spare components specialist, CORAX in Châteauroux, France. Vallair image.

that brokers and distributors now have a role to play by buying and selling surplus material. However, he cautions that, for safety reasons, the parts need full traceability.

He says that the market was talking about a couple of years to have solutions for supply chain and staff problems. That is not the reality, he says; he believes it is a long-term problem that might take 7-8 years or more to be stable. While the component OEM production rates will recover, the increase will not be enough to meet demand, which means aircraft dismantling is here to stay. And PMA/DER solutions are likely to stay at a low level to resolve crises that cannot be solved in a conventional way.



Armando Filho

An aircraft teardown can produce 700-1,000 parts removals, he says, which can be repaired or refurbished for reuse, while high value and scarce items like landing gear, nacelles, APUs, wheels and brakes are good for green time use, getting an aircraft to the next overhaul when, hopefully, newer replacements will be available and can be installed. More aircraft are being purchased for part out and he expects that trend to continue for the next few years. This is because flying hours are back to normal and growing, including on Airbus A350 and Boeing 777, which were expected to be used less after Covid, so there is an increased need for maintenance. This has had an effect on availability for freighter conversions — the company was an early mover on Airbus A321, delivering the first aircraft to Qantas in 2020 — and the market has become more stable.

The company's latest teardown, at Châteauroux in July, was a 23-year-old Airbus A330 previously operated by Hongkong Airlines, with over 1,500 parts removed as USM for Danish spare components specialist CORAX: the Vallair logistics team is responsible for processing, listing, and packing all parts for assessment prior to repair by CORAX. While A318/319 part outs can help A320/321 operators because of good commonality, he notes that A330/340 commonality is much lower.

The company's worldwide activities are split between North America (48%), Europe (42%) and Asia Pacific (10%), although, he says, Asia Pacific needs more consideration as it is such a huge market, especially China and India.

VAS

VAS Aero Services is celebrating 45 years of aircraft transition management, used serviceable materials (USM) parts supply

and aviation aftermarket services. Founded in 1979 as the AGES Group, the company was acquired by Volvo Aero in 1999, eventually becoming VAS Aero Services. In 2022, it became part of the Airbus Group when the company was acquired by Airbus's Satair USA subsidiary. Today, VAS is a wholly owned, independently operated subsidiary of Satair, with locations in North America, the U.K., Europe, southeast Asia and Australia.

Its most recent activities have included the acquisition in July of seven Airbus A330 aircraft that had been operated by China Southern Airlines. The airframes will be designated for placement or possible teardown.

The Pratt & Whitney PW4170 engines will be made available for lease, as well as harvested for in-demand USM parts. They will also become part of VAS's long-term supply program agreement with SR Technics. That agreement was extended in June for the PW4000-100" variant, which allows VAS to position engines at SR Technics' facilities for teardown and whole asset leasing. It guarantees the availability of spare engines to SR Technics customers while their engines are undergoing maintenance as well as a minimum stock level of serviceable spare parts, enabling a lower material cost and quick turnaround service for those customers.

Also in July, it acquired 17 Airbus A320 airframes for teardown and USM parts redistribution, following the acquisition of six aircraft in the previous six months. VAS will manage the teardown of the North America-based aircraft at various U.S. locations over the next 12 to 18 months.

In April, it was given the task of breaking down four Airbus A380s owned by Dr Peters Group. Three will be dismantled at Tarmac Aerosave in Tarbes, France, the fourth by Asia Pacific Aircraft Storage in Alice Springs, Australia. It had previously

dismantled another four A380s for the Dortmund-based investment fund management firm and lessor with assets in aviation, real estate and shipping.

Dale LeClair, vice president programs at VAS Aero Services, says narrowbody commercial aircraft will continue to be the most popular for teardown due to MRO activity on both the airframe and engines. The CFM56-5B/7B engine parts are in high demand for spare serviceable material for use in engine shop visits, so customers are turning to VAS to satisfy this need. Widebody aircraft are starting to have more demand post-Covid as well.

In addition to the usual high value items that are recovered, there are some parts that airlines have a need for that have a long lead time from the manufacturer. Often, though, these parts need repair so VAS will work with some of the repair vendors to restore the parts to airworthiness.

Post-Covid staff shortages meant OEM production was slow while MRO shops had increased turnaround times for the same reason. She says this is being resolved very slowly. The MRO turn times are coming down but they are still significantly higher than pre-Covid turn times. Shop delays due to raw material shortages continue as well.

She says the customer base remains stable for VAS. Airlines with MROs tend to retire and cannibalize their legacy aircraft but, after those parts have been harvested, they are back in the USM market looking for affordable spares for their fleet. Loans and exchanges are an



Dale LeClair

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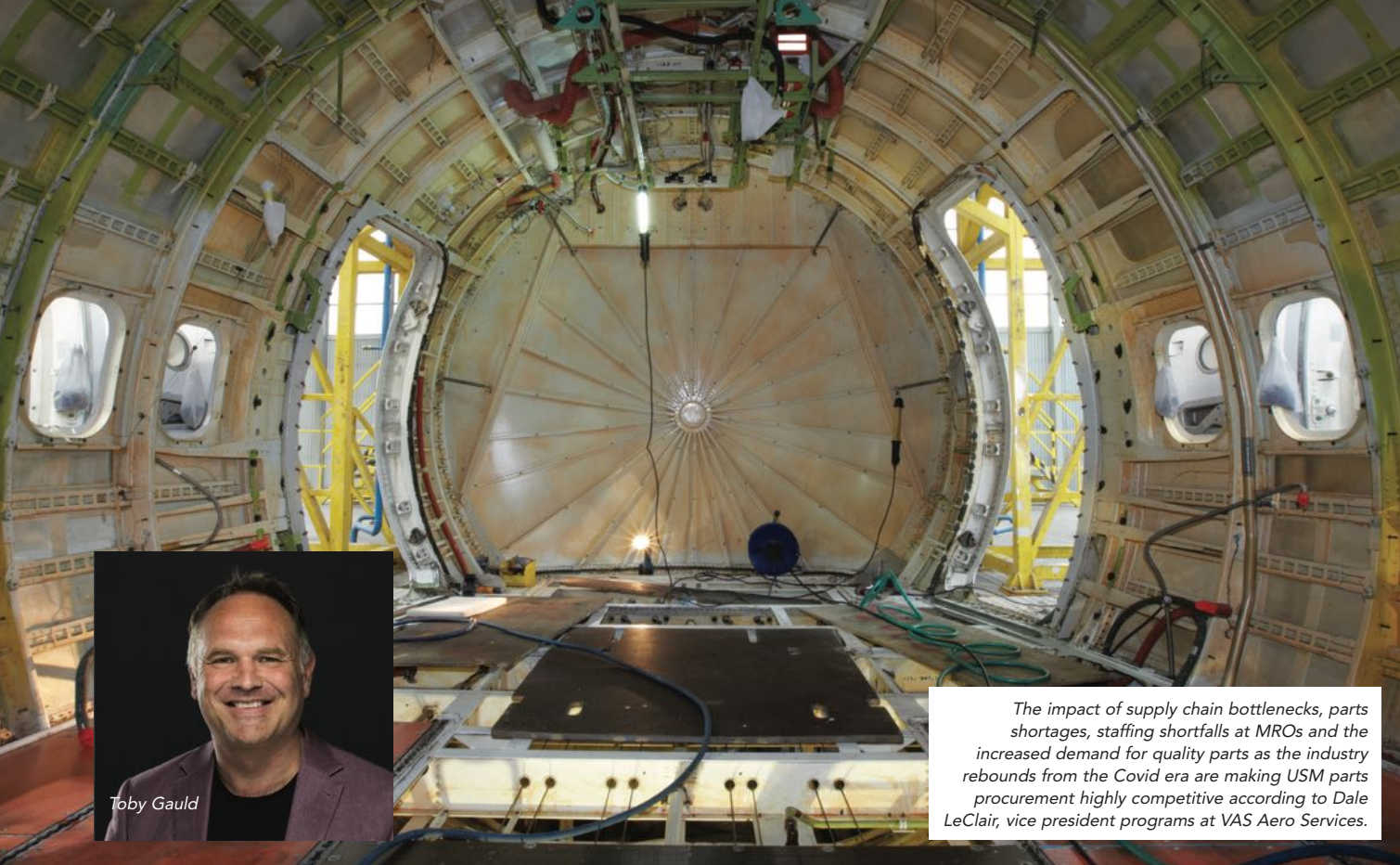
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Toby Gauld

The impact of supply chain bottlenecks, parts shortages, staffing shortfalls at MROs and the increased demand for quality parts as the industry rebounds from the Covid era are making USM parts procurement highly competitive according to Dale LeClair, vice president programs at VAS Aero Services.

increasingly important alternative that gives operators affordable, reliable options during periods of high demand for parts. Working with a supply partner who has parts at the ready is both an efficient and economical means of keeping aircraft flying.

Prices for whole assets (aircraft and engines) are competitive and demand sensitive. Prices on USM parts are also competitive and are constantly under pressure from operators in need of quality replacement parts and spares. During periods of pricing volatility such as this, having a long-term parts supply partner can make the difference between extended AOG and generating revenue.

She adds that competition has increased. The impact of supply chain bottlenecks, parts shortages, staffing shortfalls at MROs and the increased demand for quality parts as the industry rebounds from the Covid era are making USM parts procurement highly competitive. "Thankfully, after 45 years in the business, VAS has deep industry relationships that provide us access to end-of-service aircraft and the transition management expertise to turn those end-of-life assets into a source of certified USM parts supply for the global aviation

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industry.”

Optima

Disassembly of helicopters is rarely discussed but, says Toby Gauld, president and founder of Optima Aero, there are probably more mechanical parts in a helicopter than in some fixed wing aircraft. The company has three dismantling facilities.



Anouk Wawrzyniak

Optima Aero Canada headquarters in Beloeil, Quebec, Canada, is where the company was founded in 2010 (and carries out engine maintenance and engine part out); Optima Aero Europe, in Anglet, France, which opened in 2022; and Optima Aero USA in Grand Prairie, TX, established in 2023 with the purchase of the assets of Uniflight Global, which also carries out airframe maintenance.

He believes the company is the only one carrying out dismantling and maintenance on an international basis, including Airbus Helicopters, Bell, Leonardo and Sikorsky.

The market for USM is growing as the supply chain becomes tighter for the most popular OEMs — Airbus Helicopters and Leonardo — as well as the components being cheaper and greener as they are essentially being recycled. He notes both OEMs are also customers, so it has become more of a partnership. Besides, they have no need to worry because USM only accounts for about 2% of the market — “we’re not there to take away their lunch”.

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Toby Gauld, founder and president of Optima Aero, says there are four value adds from the company's activities: cost effective parts; availability; cash flow solutions by buying from customers who can invest in their companies, as well as providing financing and assignments; and carbon footprint reduction.

He says there are four value adds from the company's activities:

- Cost effective parts
- Availability
- Cash flow solutions by buying from customers who can invest in their companies, as well as providing financing and assignments
- Carbon footprint reduction.

For the latter, Anouk Wawrzyniak, director, growth and marketing, has been working for the last two years with Le Centre International de Référence SUR L'Analyse du Cycle de Vie et la Transition Durable (International Reference Center for Life Cycle Assessment and Sustainable Transition, CIRAIG) in Montreal. Common sense tells you that it is more ecological to reuse rather than produce something, she says, but Optima is the first, to her knowledge, to have carried out a widespread study across aerospace to exactly define the value.

This has established that used helicopter (or aircraft) parts, by weight, can have an average CO2 reduction of up to 600 times that of a new part. Manufacturing includes acquiring the raw materials in the first place, transport, machining and distribution.

For used parts, factors include the type of material that is being reused, distance travelled (or not) and the repair process.

These have all been modelled and continuously refined and the study has been validated by CIRAIG.

Another study of a Pratt & Whitney component repair shop in Montreal showed that repaired parts against new shows equivalent CO2 savings of about 22,000 tons annually, or about 110 helicopters operating for a full year. In fact, the engine sector offers the greatest opportunities for savings because of the materials and processes used — an average CO2 reduction of up to 1,000 times.

There is strong interest from Airbus Helicopters but also from Leonardo and Pratt & Whitney. She notes that Europe seems to have more of a desire to change than the rest of the world at the moment. While the project started as a way to understand the Optima Aero business model, there is a possibility that it could become a commercial product to help other companies develop a greener approach. **AVM**



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