

LINE MAINTENANCE

25%

An SIA Engineering lean pilot project on 787 A checks has improved turnaround time by 25 per cent

Left: Aero Norway added three 'hospital' repair bays during the pandemic as it adapted to a new mix of heavier and lighter checks
Below: Aero Norway CEO Glenford Marston

HOLDING THE LINE

The only certainty of the Covid-19 crisis has been change. **Jason Holland** discovers how MRO companies have adapted their line maintenance activities and ponders what the future might hold as aircraft begin to return to service

Wherever you would usually look up and watch aircraft on their journeys across the sky, it has probably become an increasingly rare sight for nearly a year now as the Covid-19 pandemic has taken hold. There has also been a resultant impact wherever you would have normally seen MRO operations taking place.

With freighters and some passenger aircraft (whether carrying actual passengers or having been converted to carry cargo) still operating, MRO work has carried on, but a shift to line and smaller repair work has taken place as heavier checks have been postponed wherever possible.

It has not been easy for MRO operations to adapt but, according to the proverb, 'when the going gets tough, the tough get going'. There have indeed been many examples of this in the MRO space. However, with the sheer size of some companies, combined with the scale of the restrictions imposed as a result of the pandemic, some difficult actions such as layoffs have had to be taken and activities, plans and strategies have been disrupted.

So how have MRO companies fared during the Covid-19 crisis? What has the impact been on line maintenance especially? Will there be a surge in required maintenance work with aircraft returning to service as restrictions around the world ease? And are MROs still in a position to manage this demand?

Coping in crisis

When Aero Norway CEO Glenford Marston returned home on a flight at the end of February 2020 – when it was largely talk of the coronavirus that was circling the globe and the World Health Organization had yet to declare a pandemic – he realised he was experiencing discomfort at the travel process. "Thoughts of Covid-19 were in the back of my head," he admits. "Nobody checked me when I came into Norway, or asked me where I had come from. So on the Monday morning I came back to work and said 'Guys, we've got to start thinking about what we are going to do here'."

The company immediately restricted visitor entry to its facility in Stavanger and set up Covid-19 protocols. That set the tone for a series of early actions that Marston believes has positioned Aero Norway to cope with the pandemic. The CFM56 engine specialist (covering the -3, -5B and -7B) saw "a lot of commitments getting tentative in April and then

falling over", but in response added three 'hospital' repair bays during the pandemic to the four it already had, enabling it to perform a greater amount of smaller repair work.

"Initially, we had a fairly healthy backlog, so we were managing okay," he says. "But soon we were roughly 40 people overmanned compared to the number of engines coming in, so we needed to make savings. We wanted to keep all our people so we tabled an unorthodox proposal to the board.

"Every employee took a 20 per cent pay cut, from myself down to the cleaner. All the managers would still work five days a week, as would the commercial department, but would only be paid for four. Mechanics and technicians had a day off per week. That's still running today but we're hoping the market's going to pick up – and there are some positive green shoots – so we'll go back to 100 per cent work from March."

The smaller repairs have kept the company going. "From 8-9 engines per month we went down to 5-6; out of these, four were smaller repairs and only two would have been core performance





Lufthansa Technik's customers are increasingly turning to parking and storage service offerings

restoration. It's not the US\$5 million shop visit, it's less than US\$1 million in most cases." But the work done now could put Aero Norway in a good position in the future, as many customers who had not used its services before have done so during the pandemic and might return once heavier maintenance work is needed.

While Marston believes Aero Norway's size meant it could take this flexible approach, other MRO companies have had to adapt their line maintenance operations depending on their own set of circumstances.

For one of the industry's powerhouses, Lufthansa Technik, the lack of aircraft movements has meant a sharp decline in its line maintenance business. "Due to the high level of uncertainty in the MRO market, our customers are increasingly turning to parking and storage service offerings," says Andreas Drosdowski, head of Maintenance Europe and CEO of Lufthansa Technik Maintenance International. "As a result, the employment of our staff can only take place on a reduced scale."

Another of the industry's larger players, Singapore's SIA Engineering Company, focused on remaining nimble. "While the volume of flights handled has reduced, we redeployed our staff to other work activities where there is still demand such as aircraft disinfection and preservation maintenance," a spokesperson explains. "For aircraft in parking or storage condition, dedicated teams are assigned to carry out preservation checks as well as to ensure that all pitot probes, engines and air inlets/exhaust are properly covered and protected."

The Covid-19 crisis has had both positive and negative impacts on MRO operations, according to USA-based StandardAero's Glenn Hawley. "On the plus side, we have been kept busy



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JACCO KLERK
MAGNETIC MRO DIRECT
MAINTENANCE GROUP CEO

with supporting operators' requests for aircraft storage preparations, in terms of engine preservation, and more recently a growing number of requests for return to service support," says Hawley, who is director - service center network, StandardAero Airlines & Fleets. "On the negative side, our ability to support customers' line maintenance requests has on occasion been hamstrung by Covid-related travel regulations, both with regards to post-visit quarantines and even with regards to national travel restrictions in some areas."

SAMCO Aircraft Maintenance, an independent MRO based in The Netherlands, saw a reduction in activities

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but, as many aircraft were placed in short-term storage at line stations, the company continued to man its stations in the different regions of the world. "This was quite a challenge due to the travel restrictions and lockdown in some countries which lasted for a prolonged period of time," reports CEO Constant van Schaik.

"Our staff have been coping well and have shown a commitment to pull all of us through this period. During the second half of 2020 and into 2021 we have seen a modest increase in activities, but this was dependent upon certain regions in different continents where road or train transportation are not real options and airlines continued operations but at a reduced rate. Besides this we have seen a number of aircraft being returned to the lessors to immediately reduce operational costs for the airlines, which reduced the demand."

In Estonia, the story of disruption to plans and operations is no different to anywhere else. Magnetic MRO attempted to change the challenges into a new set of opportunities to revamp and improve its processes and future development strategy. "We have strongly driven increased co-operation between direct maintenance and Magnetic MRO's line maintenance operation, providing an expanded suite of tailored support to our customer base and welcome new customers," says the company's Direct Maintenance Group CEO Jacco Klerk.

"We see in parallel how our personnel globally put their best effort forward and showed great flexibility to support our customers across our stations. Examples of how our teams during the pandemic have gone above and beyond range from a bumpy 2,400km drive across African countries to release an aircraft, to providing aircraft storage in extreme winter conditions, to assembling a mobile repair team for severe lightning strike structure repairs."

Returning to normal?

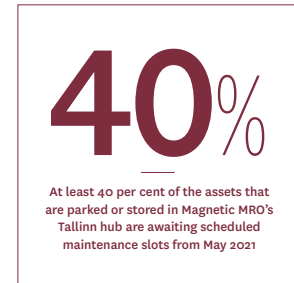
With the global roll-out of vaccines providing a light at the end of a long tunnel, aircraft that have been parked or stored will begin to return to service so MRO work will be required. According to SIA Engineering, aircraft will undergo de-preservation checks before returning to regular service, after which line maintenance activities such as flight handling, cabin services and A checks will increase with the recovery in flight

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volume. "As airlines increase their aircraft utilisation, so will the heavier checks and overhaul requirements even in tandem," the spokesperson states.

StandardAero's Hawley thinks the most obvious demand for line maintenance will be in "assisting with returning engines from preservation and undertaking precautionary borescope inspections". He says: "There have already been a number of incidents reported internationally relating to aircraft which have been returned to service, and many operators are therefore being especially careful to ensure that these activities are undertaken with scrutiny."

"As the industry recovers we do also anticipate a wave of heavy engine maintenance events, since some



operators have been operating in a 'cash conservation' mode for the past year, avoiding capital outlays such as engine overhaul events and instead utilising spare engine assets whenever possible. While some older aircraft and engines may eventually be parted out, we do anticipate a significant volume of deferred maintenance events once passenger numbers begin to return to normal." Lufthansa Technik's Drosdowski



StandardAero hopes for a near complete return to 2019 levels of mobile repair activities by end 2022

believes his company is prepared for a possible surge in work, but says that significantly more vaccinations will be needed before it can occur, while there must also be no restrictions or quarantine obligations slowing down travel. "The whole industry, especially in Europe, continues to suffer massively from the pandemic. We don't know when the vaccines will be distributed to the necessary extent and take effect so that we can talk about something like normality in travel again. From summer onwards, a significant recovery may be possible and with it the demand for line maintenance services."

The most important factor in transitioning from limited to significant demand is a high degree of flexibility, he notes. "In addition, close networking with flight operations is required in order to be able to react to unexpected route changes. At the same time, it is important to support airlines in optimising their business within the framework of suitable maintenance concepts. Our digital maintenance services support our customers in ensuring aircraft availability and flight schedule stability. And from the point of view of a successful MRO service provider, this is the central issue that ultimately moves us all - stability."

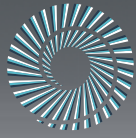
SAMCO's van Schaik sees several operators restructuring the composition and size of their fleet as they prepare for the future. "This means that the 'surplus' aircraft are being returned to the lessors and often placed into extended storage programmes at our base maintenance facilities whereby we provide the CAMO services," he says. "The remaining aircraft often remain 'in service' at a reduced utilisation rather than being placed in storage. We immediately adjust staffing levels up or down following the demand which helps our customers to reduce cost at times when there is less flying"

Magnetic MRO says it is already preparing for its customers' aircraft to return to service, starting in mid-March. "Customers' wishes are well analysed and reviewed together with planning and logistics teams to arrange all necessary materials and consumables," says the company's heavy line maintenance unit head Kaspars Podins. "It's the same for components - with on-time necessary shop visits either with the Tallinn-based workshop or Magnetic Group's range of partners. At least 40 per cent of the customer assets that are parked or stored in our Tallinn hub are awaiting scheduled maintenance slots in May 2021 and onwards in summer. Those will undergo heavier check and cabin reconfigurations and livery change to meet high-quality service."

For Podins, the main factors to consider as work ramps up are response times to requests, meeting set deadlines and turnaround times with customers, as well as quality of service, the accuracy of the final paperwork and delivery to the customer or CAMO department. "The pandemic raises many unique challenges and innovative approaches are needed to find suitable solutions for both customer and MRO provider," he says.



SAMCO says its geographical spread enables it to support customers at short notice



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Adapt to survive

The outlook for line maintenance – and for heavier work – remains uncertain in 2021 and beyond. “In line with most industry forecasts, we are hopeful of an uptick in activity in the second half of 2021, as passenger confidence returns with the widespread introduction of vaccines,” comments StandardAero’s Hawley. “Many surveys have identified a strong pent-up desire for travel, though the recent emergence of new coronavirus variants does add some concern regarding the outlook. Given the relative strength of domestic markets and regional aviation, which are our main focus, we would be hoping for a near complete return to 2019 levels of mobile repair activities by the end of 2022, barring any new pandemic.”

The second half of 2021 is also the target for SAMCO, according to van Schaik. “We are committed to supporting our customers and locating to stations anywhere in the world,” he affirms. “Our geographical spread enables us to be agile and support at often short notice.”

SIA Engineering points to forecasts by industry analysts that full recovery to pre-pandemic levels is not expected

till 2024. To boost competitiveness in the post-Covid-19 MRO landscape, the company is investing in digitalisation and automation, with the aim of bringing about greater efficiencies in operations and adding more value for customers.

A recently launched digitalisation initiative has provided line maintenance engineers with immediate access to information and decision support, while a lean pilot project on Boeing 787 A checks has improved the turnaround time for the check by 25 per cent, the company notes.

In another example, SIA Engineering is investing in the development of an engine lifter which is expected to reduce required manpower and turnaround time for changing the engines of widebody aircraft by 50 per cent. “At the same time, we are focusing on proliferating lean process improvements across the company, upskilling our staff to broaden their expertise, and developing a culture of continuous improvement,” the spokesperson states.

Change is certainly in the air – or more literally on the ground – at many MRO companies. While providing “flexible solutions” for the time being across its stations, Magnetic MRO’s

Klerk foresees a shift taking place within line maintenance in the wake of the pandemic. “Airlines will seek more independent line maintenance network service providers for innovative and reliable services to maximise aircraft utilisation and seek new adaptive solutions to minimise ground time,” he explains. “In response, we will integrate Magnetic MRO’s line maintenance unit within the direct maintenance operation to expand to 20+ stations across 10 countries in Europe and Africa.”

At Aero Norway, some change was already planned as the company has been preparing repair capabilities for CFM’s LEAP engine, although the timetable has been pushed back due to Covid-19.

Reflecting on lessons learnt over the past year, Marston’s thoughts will echo those of many in the MRO community. “You need to be agile and stay flexible. You need to have a strong relationship with customers in the bad times when they are struggling,” he says. “We had to think of our own survival too, of course, but we always want to support our customers. Although we had all these things in mind already, the pandemic has shown us how much more they are all required.”