

Absolute precision

at Aero Norway

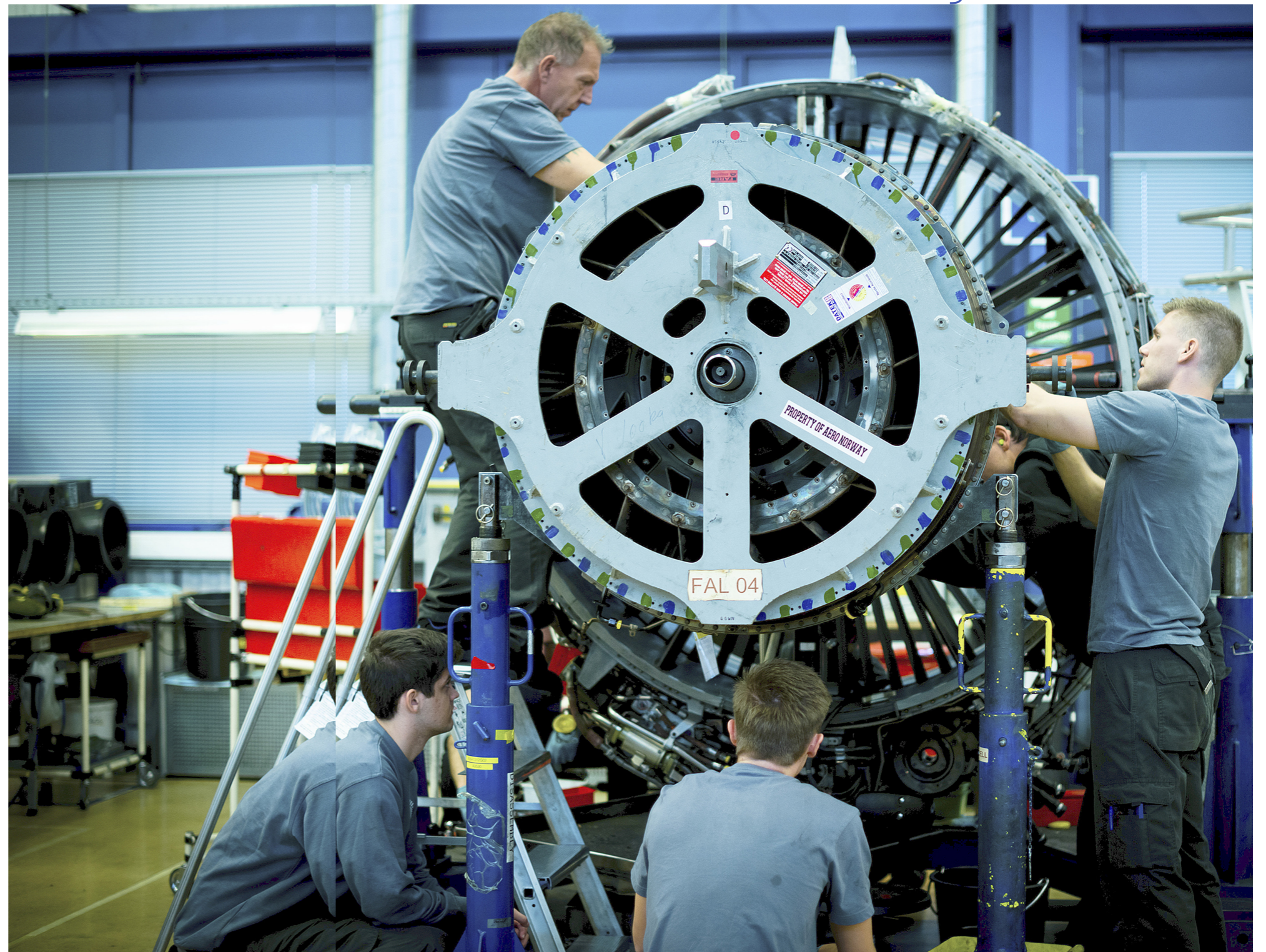
Air International spoke with **Neil Russell**, CEO of Aero Norway, a leading global engine MRO provider, about how the sector has bounced back after some lean years and the challenges ahead

Aero Norway, the independent engine MRO provider and trusted partner for customers operating CFM56-3, CFM56-5B and 7B engines, is focusing on a dedicated strategy that will see stability and investment deliver tangible customer benefits. The plan is underpinned by a rigorous evaluation of processes and procedures, covering all areas of the business, from the development of its people to the augmentation of its industry-renowned capabilities. “By continually assessing and improving our processes, we can offer the best service provision to our customers as well as strong support for our team,” says CEO Neil Russell.

Aero Norway aims to keep its customer base as wide as possible across all global regions. The primary focus has always been on smaller airlines operating at most 40 aircraft because they can customise programmes and inductions according to their needs. The CFM56-5B is the engine choice of the global A320 family due to its high reliability and durability, and the CFM56-7B is exclusively powering the B737 NG – making it the most popular engine combination in commercial aviation.

To amortise the impact of COVID-19, extensive measures were put in place during 2020/21 to ensure that the engine MRO specialist was well placed to flex with prevailing market forces and sustain its commitment to fast turnaround times. Maintaining a premium service for its customers – airlines, MROs, independent engine owners and leasing companies – Aero Norway took steps post-pandemic to underpin the business in three ways: financial support to deliver working capital; sourcing of repair partners to complement the flexibility of the lighter workscopes; and the development of a highly trained workforce to ensure continuity of skill sets. Investment in people and processes was, and still is, perceived as a critical expenditure to safeguard the organisation’s future.

In addition to sustained investments in operations, Aero Norway is



Speed and cost-efficiency combine with Aero Norway's inherent flexibility to reduce turn-around-times and bring tangible commercial benefits to operators and lessors
All images via Aero Norway

always looking to augment its -5/-7 customer portfolio, which is now the facility's primary focus, while building its competitive edge. "We are pledged to support our airline and lessor customers as they transition from -3 to more -5B/7B types over the coming years," says Russell. "Simultaneously, we are committed to bringing our LEAP support programmes online in the coming months."

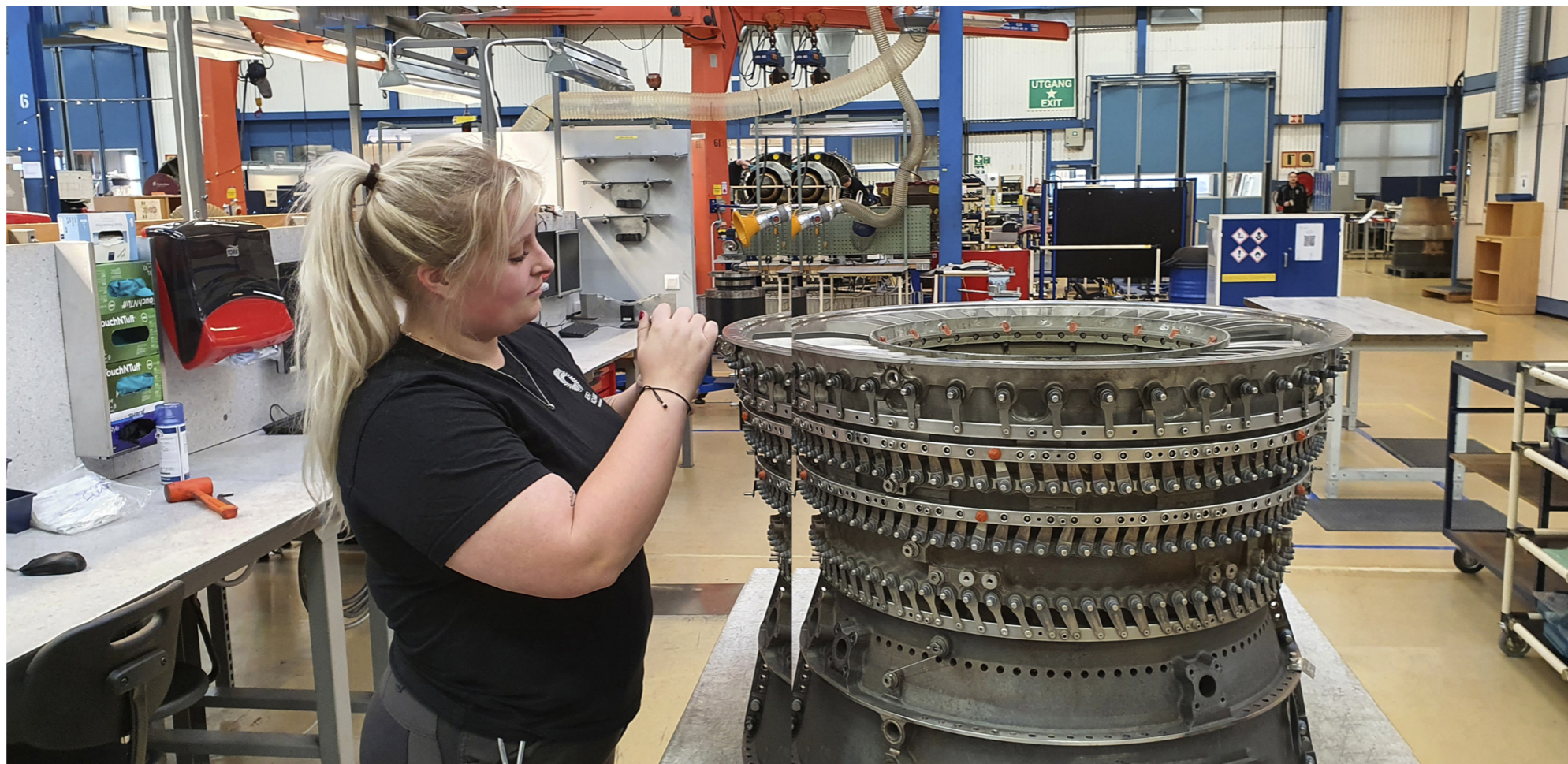
The company is also committed to lean excellence, implementing a path towards digitalisation, and expanding its internal repair capabilities.

Future fit

The road to transition needs one eye on the past and the other firmly focused on the future. Can Aero Norway support customers' legacy engines with increased efficiency as they manage their evolution to embrace the new-technology LEAP models? "It's vital that we do," says Russell.

Engine upgrades to the narrowbody aircraft of Airbus and Boeing have created an enormous impact over recent years, lengthening the lives of airframes, which continue to be central to air transport. While the CFM56 from CFM International has begun to make way for its LEAP engines on the A320 and the 737, there is still a vast MRO market for the former powerplant. Independent engine MROs like Aero Norway must manage ongoing maintenance and repair programmes to support the record-breaking CFM56 engine family and have a streamlined process for its successor, the LEAP engine range.

"Aero Norway is an independent engine MRO provider and we are focusing our energies on a dedicated strategy that will build on stability and investment to deliver our LEAP 1A and 1B light services before the end of 2024," explains Russell. "This transition has been underpinned by a



rigorous evaluation of all business areas, from the development of our team to the augmentation of our industry-renowned capabilities. You need the respective competencies balanced with experience. This combination truly adds value as engine repairs become more complex."

Reducing ownership cost

Operators of all CFM engines are continually seeking support packages

which benefit them in terms of price, reliability, and turnaround time (TAT). Aero Norway works with customers to understand their concerns and goals for each repair, whether they focus on cost, performance, or build life. Their engineers then develop workshops that will provide maximum efficiency and contribute towards the longevity of the particular engine in the most economical way possible. It is interesting to observe that, despite its longevity in service, new repair techniques and processes for CFM56 engines continue to be added. "We are constantly evaluating and implementing new repair capabilities that will benefit our customers and bring down the cost of ownership," Russell says.

It is almost always more economical for the end customer and more profitable for the maintenance provider to repair a part rather than replace it. It's all about balancing the customer's expectations on turnaround time, price, and pedigree of the parts installed in their engine. Aero Norway has an active trading programme, including the buying and selling of used material and the teardown of engines for parts. "Crucially, our business model is based on core-performance restoration. We know what is needed and keep those parts in stock for scheduled repairs. We maintain our inventory at as low a level as possible. Still, importantly, nowadays,

we need to factor in delays in the supply of new parts from the OEMs – the stock we hold predominantly uses serviceable material (USM). This reduces customer costs, minimises supply chain issues and is perceived as better for the environment as it 'recycles'."

Sustaining spare parts supply

From an MRO perspective, CFM's approach is unique for an OEM

because its support model is open and competitive with partners like Aero Norway. The higher degree of competition creates a channel for used serviceable parts. MROs and airlines seek out these used parts to reduce maintenance costs, and the bidding market for such parts drives a high salvage value for engines. Airlines, lessors, and investors all benefit.

Aero Norway has an active

CLOCKWISE FROM LEFT:
Aero Norway's modern 14,500m² facility has a capacity for up to 120 engines per year with streamlined workflow processes to repair 16 engines consecutively

EGT refers to exhaust gas temperature, which is a measure of the performance efficiency of the engine in producing the designed level of thrust. Aero Norway provides customers with best-in-class EGT margins across the CFM56 family of engines

Skills set

Aero Norway AS is an authorised CFM repair station based in Stavanger Airport, Sola, Norway. Its modern facility offers a full range of engine MRO services for CFM56-3, -5B and -7B types including:

- Engine repair and overhaul
- Maintenance and repairs
- Engine test cell runs
- Full restoration
- Back shop parts repair
- Engine investigation
- Special customer requests
- Non-destructive testing and diagnostics



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Neil Russell, CEO,
Aero Norway



trading programme, including the buying and selling of used material and the teardown of engines for parts. The volume of material for the CFM56-3 engine has fallen less than expected over the past five years, and Aero Norway continues to complete worksopes for its customers still operating this older engine type. According to Russell, it was believed that pre-pandemic, the number of CFM56-3 engines passing through Aero Norway's facility would decline as the impetus moved towards the CFM56-5B/-7B series.

However, a significant uptick in utilisation rates by many 737 CL freighter operators translated to an urgent requirement for the completion of several maintenance tasks on the legacy engine type and the bounce back of the aviation industry with burgeoning flight demand globally, coupled with supply-chain issues affecting the delivery of new aircraft models, has seen the Norwegian specialist continue its MRO services for existing customers operating this reliable engine type.

Russell says that because CFM56 engine types are in use for longer than expected, the demand for supporting engine MRO services is increasing in tandem and is unlikely to change over

the next two to three years. The -5 and -7 models have performed particularly strongly on-wing, leading to operators delaying shop visits. However, this performance and pandemic-induced supply chain problems may mean that operators and lessors will need help to get their engines into the shop over the next year or so.

"This situation is further compounded by the current technical issues faced by LEAP and GTF engines, for example. These are good engines and the new world fleet of passenger narrowbody aircraft eagerly awaits the operational and environmental benefits they will bring. But there are difficulties to overcome, so the engine types we specialise in will be needed for the next decade or more."

All about LEAP

The LEAP engine, which only entered into service in 2016, is expected to stay on the wing longer, with heavy maintenance events at less frequent intervals. With production gradually switching from a majority of CFM56s to more LEAP engines built per year, airline maintenance departments and independent MRO suppliers will notice many improvements, notably ease of maintenance. This is a result of LEAP family engines being designed for better maintainability and cost management.

Additionally, LEAP engines are delivered with a substantial EGT margin; as that margin is consumed, the engines must be removed and restored. "A number of our existing customers are adding the LEAP engines to their fleets and we want to continue to service those customers," says Russell. "Aero Norway is renowned for delivering exceptional EGT margins, so when we look at the maintenance of these next-generation engines, we will adopt the required procedures on the technology side. All technological developments are important to us and we are moving closer to being fully paperless via digitalising all processes. This will make us faster."

A fresh Norwegian spirit

Aero Norway is recognised as one of Norway's leading aviation aftermarket businesses. The facility is multi-release FAA, EASA, TCCA, CAAC, GCAA and DGCA certified, which qualifies its worldwide appeal to operators and lessors of CFM56-type engines. If there is a business opportunity, the organisation will secure the additional approvals it needs. However, most operators and lessors find approvals from these regulators indicative of Aero Norway's credentials.

Utilising the most modern, up-to-date equipment and technology ensures that all maintenance and repairs carried out



CLOCKWISE FROM OPPOSITE: Qualified and licenced teams resolve operational issues and restore engines to serviceable conditions. Customers from flagship airlines to LCCs and aircraft leasing companies to OEMs, trust Aero Norway to solve their engine issues

Previously Aero Norway's CCO, when promoted to CEO in 2023, Russell focused on investing in more machinery, specialist equipment and training to make the business more sustainable and reduce Aero Norway's carbon footprint

Aero Norway is an authorised CFM engine repair station designed specifically for CFM56-3, CFM56-5B and CFM56-7B engines



in the Stavanger workshop, on-wing, or undertaken off-site by specialist repair vendors, are implemented with precision to the highest possible standard. Through the creation of support agreements with outstanding specialists worldwide, Aero Norway is focused on enhanced operational efficiency, enabling it to maximise the fast slot induction and quick turnaround that its global customers demand.

"We like to have a small portfolio of spare engines available to lease to customers while their other CFM56 engine undergoes a shop visit. Typically, turnaround times on the CFM56 can be between 55 and 60 days, and smaller operators cannot afford to stop flying. Other large MROs have taken this approach, and Aero Norway has found distinct benefits for its business and the operator/customer. It enables Aero Norway to offer a more complete package."

Prolonging engine green time

By 2024, the oldest CFM56-7Bs will be over 26 years old. Still, fewer aircraft are retiring due to the surge in passenger numbers and a rebounding industry where aircraft and engine OEMs need help to keep pace with demand. Classic narrowbodies fly for longer, and popular engines such as the CFM56-5B and -7B

remain on-wing. Due to the reliability of these engines, few are being released for exchange or teardown, so the market for green time assets is highly competitive. Investors and operators can trust Aero Norway's experience as they seek a partner to help them steer through the complicated variables of the CFM56 aftermarket in what is likely to be a lengthy and uneven transition over the next decade.

Human resources

The final lynchpin of Aero Norway's ongoing change programme relates to human capital, and Russell is enthusiastic about his company's approach. "Investment in our people and processes is ultimately an investment in our future; there is a huge shortage of skilled labour across all MRO operations worldwide, and we predicted this would happen. Fortunately, we have developed a strong apprentice scheme programme, and this is now yielding value because we have fully trained engineers lined up and ready to work just as some of our older people retire.

"Home-grown skills are very important to Aero Norway as we direct some of our focus towards the induction of light worksopes for LEAP 1A and 1B engines at the end of 2024. We have no

plans to enlarge our global footprint; we intend to improve what we already have continually."

Aero Norway is also expanding its apprentice scheme with the Norwegian Government, and many more ambitious young people will join the current team of trainees as they move on to technical, sales, and customer support roles. This further reinforces Aero Norway's commitment to knowledge sharing and deepening the expertise and certification of its internal resource pool.

Burgeoning demand

In a buoyant CFM56 engine market, operators are looking for more shop visits for light engine repairs, and Aero Norway is adapting to this with greater flexibility on engine induction programmes. The business is streamlining processes and building skilled resources to ensure it can sustain its flexibility and commitment to fast turnaround times.

Aero Norway plans to remain a CFM repair specialist, as this is where the organisation holds a depth of expertise and knowledge. With a heritage already spanning 30 years, the organisation is optimistic that burgeoning global operators and lesser demand for competitive and high-quality MRO support will see it at the forefront of delivering this service for decades. **AI**