LEAP AND GTF FLEET INTRODUCTIONS DRIVE RENEWED DEMAND FOR MID-LIFE CFM56 AND V2500-POWERED AIRCRAFT

As LEAP and GTF-powered aircraft are introduced into airline fleets, their impact on mid-life CFM56-5B/7B and V2500 aircraft is increasingly evident. Freighter Trends learnt that while airlines continue to place orders for new-generation aircraft, they are simultaneously investing in the refresh of existing fleets, resulting in sustained demand for legacy engine platforms. Although demand for LEAP and GTF engines continues to grow, supply constraints, pricing, and limited OEM support make these engines less viable for smaller lessors. Ongoing supply chain challenges and extended timelines for component redesign further reinforce the continued importance of established engine types. Here are the details .....

How are current fleet renewal trends influencing demand in the engine leasing market?

Neil Russell, CEO – Aero Norway - With the introduction of LEAP and GTF powered aircraft into fleets we are seeing the effect on mid-life aircraft powered by CFM56-5B, 7B and V2500. In Aero Norway's case, this has affected the demand on the 5B and 7B in various ways due to the delivery delays of the 737 Max and A320 NEO aircraft. We have seen for stability, airlines securing engine leases for 737NGs and A320 whilst they accept delivery of the new aircraft. This has meant extending leases that mean a shop visit is required or delaying the need for a shop visit to use up green time. From a shop visit perspective it means we have seen some of instability around timing and workscopes such as delays, limited workscopes, or heavy shop visits.


Neil Russell

Bruce Ansell, Technical Manager Engine Division- APOC Aviation - It is interesting to see airlines placing orders for new aircraft, but at the same time they are having to refresh their existing fleets, 5B/7B/V2500 powered aircraft are still in high demand. APOC observes that available 7B & V2500 engines are being leased within a matter of days of becoming available. Airlines are now considering unserviceable engines that they can overhaul or repair themselves to ensure that they have sufficient engines to support their operations until the LEAP & GTF reach a level of maturity.

Abdol Moabery, President and Chief Executive Officer of GA Telesis - Fleet renewal is no longer a straight-line story. Passenger growth is back, cargo demand is normalizing from the pandemic peak, and airlines are also dealing with delivery delays and technical issues on some new-generation platforms. That mix is creating a structural need for flexible engine capacity rather than a simple transition from old to new.

For us, that is driving demand in three directions at once. First, there is still a strong appetite for green time solutions on mature engine types that support both legacy passenger fleets and converted freighters. Second, there is a growing demand for short to medium-term leases to bridge gaps created by extended shop visits and new aircraft delivery delays. Third, cargo operators, in particular, are looking for ways to extend the useful life of their engines in a controlled, predictable way, rather than running them to failure.

Remko Bruinsma, VP of Asset Management Solutions at MTU Maintenance Lease Services - The most obvious fleet restructuring is happening in the narrowbody engine sector. That is where the largest installed engine fleets are due for renewal. There, we see a strong performing leasing market both for current and new generation engines.

On the one hand, the in-service issues with newer engine technology are driving lease demand for those models. However, there are not enough of those engines in circulation yet in order to bridge operators' service gaps in a satisfactory manner. On the other hand, delays in deliveries and

certifications of new aircraft force operators to fly and lease their older equipment longer, including current generation engines such as the V2500, CFM56-5B and CFM56-7B.

As most of the green-time of those engines has been flown out or absorbed, engines coming fresh off maintenance are leased out again almost immediately. The engine leasing market is, therefore, quite healthy at the moment and will remain so over the next couple of years.

As the LEAP and GTF fleets grow, are you noticing a shift in the market? What does that mean for your leasing strategy?

Bruce Ansell - The demand for LEAP & GTF engines is growing, however, the supply and pricing does not make these viable for smaller lessors at this time.

Bruce Ansell

Abdol Moabery - Yes, the shift is real, but it is not a simple drop off in demand for mature engines and a clean handover to LEAP and GTF. What we see is a prolonged period in which airlines are forced to operate mixed fleets for longer than planned due to reliability issues, parts scarcity, and limited MRO capacity on the newest platforms. That creates an extended window where mature engines remain economically relevant, especially in the freighter and secondary markets.

From a strategy standpoint, GA Telesis is intentionally balanced across three buckets. We continue to invest in mature engines that support narrow-body and wide-body freighter operations. We selectively expand our exposure to new-generation engines through sale and leasebacks, short- to medium-term leases, and module support. And we build technical and data capabilities that enable us to price risk accurately for younger assets where behavior is still evolving.

Remko Bruinsma - We currently do not see a shift in the market, although we are preparing our engine lease portfolio for future spare demand, for example, by implementing LEAP-1A and -1B as they approach their first scheduled shop visits. Although MTU does not offer GTF engine for leasing, those interested can contact the OEM for access.

The focus of MTU's leasing strategy remains on current generation engines, but, at the same time, also on the new-generation ramp-up of our lease portfolio. It is just one part of a wider initiative by the MTU network to ensure that it stays well-positioned and as capable to meet market demands as possible while global fleets restructure. With the introduction of LEAP engine MRO programs at MTU Maintenance Fort Worth and MTU Maintenance Hannover, our leasing and asset management service will be ready to support the upcoming ramp-up in shop visits.

MTU Maintenance Lease Services, our leasing and asset management arm based in Amsterdam, has expanded and garnered a lot of leasing experience on its LEAP portfolio over the last 12 months, and we have been very successful in the market adoption of our engines. Almost all are currently leased out with various customers.

What are the biggest resource allocation

challenges between supporting legacy engines and ramping up new-generation platforms?

Neil Russell - From our perspective, you have to split the answer up into some main areas; supply chain, people & talent and shop capacity. If we look at supply chain, we are already seeing a shortage of parts on the legacy engines causing delays in some areas. At the same time, parts are being produced for the newer engine types creating a strain on the supply chain that many think will last a few years. Skilled workers are a well documented challenge for the future, especially for newer engine types. At Aero Norway we have an apprentice scheme that was founded when the Company started and we work closely with the aviation schools in Norway to take on up to 10 apprentices each year. As for shop capacity, you will see movement away from older engine types to newer models with the airline and OEM shops having to focus on the capacity needs for LEAP and GTF. At Aero Norway, we have gone from a predominantly CFM56-3 shop to a 95% -5/-7 shop and we are now taking a path towards LEAP engines, albeit at a slower pace.

Bruce Ansell - For the legacy engines it is the shop visits and associated repairs. Scope increases and shortage of parts can considerably extend the time off-wing. New generation challenges relate to MTBR (Mean Time Before Removal), overhaul cost, availability of spares, and ongoing airworthiness directives.

Abdol Moabery - The biggest challenge is that you cannot starve the legacy side while you are investing in the future. Legacy engines still generate a significant share of global flying and an even higher share of freighter flying. Those engines need material, repair capacity, and technical talent just as much as the newest platforms do.

On the other hand, ramping up new-generation platforms requires significant capital, specialized tooling, and people who understand the different failure modes and maintenance philosophies of those engines. You are essentially running two overlapping industrial systems inside one organization for longer than anyone predicted before the pandemic.

Remko Bruinsma - As mentioned, green-time is almost gone on mature engines' life-limited parts and shop visits have to be done. Depending on the material supply situation, that can be cost intensive if used serviceable LLPs are not available and new ones have to be purchased. One way to manage costs is to use parts from teardown engines, which means that shop visits are completed and engines are rebuilt with parts and components from multiple different engines. That, in turn, results in lower availability of used serviceable material.

With respect to legacy engines, MTU Maintenance Lease Services is able to provide used serviceable material to our colleagues from various MTU Maintenance MRO locations from our own phased-out lease pool engines. This is one of the major advantages for an MRO with its own lease pool, which is not something many maintenance providers have. We also have a global network of parts warehouses from


Abdol Moabery

where we support our MRO customers with material.

As for new generation engines, the MTU network has the advantage of extensive engineering know-how as both an engine OEM and MRO service provider, which helps us understand new models and anticipate changes in the market, including technological upgrades. As one of the OEM partners in the GTF program, we can develop procedures and repairs, while we enjoy Premier MRO licensing on the LEAP, allowing us to implement OEM repairs in our services.

How effectively are OEMs responding to capacity constraints, and what does this mean for lessors?

Neil Russell - I think the OEMs are more transparent than they were before regarding the constraints in the supply chain. Their actions seem to be improving but it's unknown how long these problems will continue. Providing material for new engine types and legacy engines when there is a high volume of both must be a challenge. How effective their measures are will show in time. For lessors there will obviously be a difference in new engine models versus the legacy engine types due to the stage they are in their lifecycle, both with unique and common challenges.

Bruce Ansell - Support for legacy engines is reduced, both materially and technically. The OEMs appear to be challenged from a supply chain viewpoint, and also the time required to carry out redesign of components where necessary.

Abdol Moabery - OEMs are trying to address supply chain and capacity issues while also managing technical campaigns and customer commitments. Some have made real progress, but

many airlines and MROs are still experiencing extended turn times, parts shortages, and slower than expected ramps on new engine production.

For lessors, that environment creates both risk and opportunity. The risk is that lease returns, induction schedules, and residual values become harder to predict. The opportunity is that airlines need flexible, fast response solutions to keep their fleets flying while the system normalizes. That is where independent lessors and integrated aftermarket providers like GA Telesis can step in with green time leases, which we pioneered 25 years ago, module exchanges, and creative fleet support packages.

A platform like WILBUR can also help OEMs, operators, and lessors move from anecdotal conversations about constraints to data-driven collaboration. If everyone is using the same trusted lifecycle data for an engine and its parts, it becomes easier to prioritize workscopes, align on risk, and structure agreements that reflect the actual technical exposure.

Remko Bruinsma - We are sure, they are doing the best they can to mitigate the on-going capacity constraints, but we can only speak for ourselves. The MTU network has actively positioned itself as a problem solver on the matter and recently introduced additional capacities to the market: We opened a secondary MRO facility in Jinwan, China, to boost the shop visit-volume at MTU Maintenance Zhuhai, specifically on the PW1100G-JM engine. MTU Maintenance Fort Worth was licensed as a Premier LEAP MRO service provider last March and is in the midst of ramping up the program, while MTU Maintenance Hannover already supports with LEAP quick-turns. Ramp-up also continues at MTU Maintenance Serbia, our network's dedicated parts repair facility in Europe, with the aim to conduct as much of the repair volume in-house and thus help in optimizing turnaround times.

The MTU network is obviously very close to the lessor community, given that MTU Maintenance Lease Services has offices in Dublin, Dubai and Singapore, in addition to its main office in Amsterdam all of which ensure that engine operators' asset are managed correctly and shop-visit needs are covered.

What trends are you seeing in short-term leasing demand driven by ongoing shop visit backlogs?

Bruce Ansell - At APOC we see a very high demand for short-term engines for narrow-body, typically 6-12 months is the requirement. Those green-time engines coming to the market appear to have various issues which are leading to their


Remko Bruinsma

sale.

Abdol Moabery - Short-term demand is still elevated and more volatile than before the pandemic. We see airlines using short-term leases to cover three main gaps. First, unexpected extensions on shop visits, especially where parts or repair capacity are constrained. Second, delays in new aircraft and engine deliveries. Third, seasonal or cargo-driven peaks where operators want lift without committing long-term capital.

From our perspective, this has

changed the way customers think about engine leasing. They are less focused on a single long-term solution and more on a portfolio of options they can pull from as conditions change. That is why we have built our engine business to offer not just classic operating leases, but also green time leases, module solutions, and cost by the hour structures where appropriate.

Remko Bruinsma - They are the same trends as we have seen over the last 2-3 years; demand is generally strong for short-term engine leases across the spectrum, from CFM56 all the way to GE90 engines.

In terms of the freight sector, CF6-80 engines have been performing very strongly. Here, too, MTU Maintenance Lease Services has dedicated experts to support freight operators and bridge service gaps.

What factors are shaping engine asset valuations as we look toward the early 2030s?

Neil Russell - There are a few different factors but one of the main ones will be asset availability and demand. As the newer engine types are delivered then legacy platforms will either be sold for teardown, or moved on to new lessee operators.

Bruce Ansell - At this time we see premiums added to serviceable engines, whilst part-out values still result in lower residuals. Differences between engine variants i.e. V25 Non-Select vs Select, and CFM56-5B/7B vs P or /3 are now more pronounced, especially with regards to residual values.

Abdol Moabery - I see several forces converging. Technically, we will still be dealing with extended mixed fleets, ongoing reliability narratives on some new platforms, and a maturing understanding of real-world performance for LEAP and GTF engines. Commercially, we will see the full impact of narrowed delivery slots, freighter demand patterns, and the number of older aircraft that actually retire versus being converted or moved into secondary markets.

Remko Bruinsma - That is still somewhat far away and on the long horizon. However, we expect demand to stay strong until the 2030s. In the new decade, we expect current generation engine value to gradually decline.

How are new entrants, including aircraft lessors, reshaping the competitive landscape in engine leasing?

Bruce Ansell - There are a lot of smaller lessors starting out, generally with 1-3 engine. The cost of finance is high for these assets and these smaller lessors have to have a mandate already, or cherry-pick their targets with care. Aircraft lessors are now putting more resources into engines - trading or leasing - to either maximise the value of lease-end assets, or to ensure that they have sufficient powerplant life to keep the aircraft flying. If an aircraft has low engine time remaining it is often cheaper to sell that aircraft and purchase a newer, fresher one.

Abdol Moabery - New entrants bring fresh capital and different risk appetites, which is healthy for the market, but engines are not just small aircraft. They are complex, high-touch assets that require deep technical expertise, global repair relationships, and sophisticated data capabilities. We see some aircraft lessors learning that in real time.

What this is doing is forcing everyone to sharpen their value proposition. If you are simply providing capital, you will be under pressure. Customers are looking for partners who can integrate leasing, material, MRO, and data into a single solution. That is where the GA Telesis ECOSYSTEM, including our engine shops, MROS, parts business, and digital platforms, gives us an advantage. We can solve the full problem, not just the balance sheet problem.

Remko Bruinsma - We have seen various new lessors enter the market in the last 12 months, including aircraft lessors who have become more active in the engine leasing field. It is one thing entering the market, but a whole other to be able to navigate it. In that regard, MTU is uniquely positioned to support airlines and engine operators in any situation because it has the in-house technical expertise readily available from the network's global MRO operations. It helps having a direct access to MTU's ON-SITEPlus service teams to conduct engine exchanges, inspections or maintenance. In addition, we can support with logistics, storage and material solutions around the globe.