

Has the landmark commercial agreement signed between IATA and CFM opened up the aftermarket to increased competition? Can we expect attitudes to change towards PMA parts and DER repairs? Is there any noticeable difference since the agreement came into effect?

An initial appraisal of the agreement between CFM & IATA

CFM International (CFM) is a 50:50 joint-owned company formed by Safran Aircraft Engines of France, known as Snecma until 2016, and GE Aviation (GE) of the United States (US).

The product line-up comprises the CFM56 and LEAP single-aisle commercial jet-engine families.

On 24 April 1982, the CFM56 engine entered service aboard a Delta Airlines DC-8-71 powered by a CFM56-2.

As of June 2019, with seven variants having been developed over 37 years, CFM reports that upwards of 33,400 CFM56 engines have been delivered to more than 600 operators globally. Moreover, the CFM56 is the first engine family in aviation history to accumulate one billion flight hours (FH), which equates to more than 200 billion miles flown.

Variants include: the CFM56-3B and -3C designed to power the 737 Classic family; CFM56-5A and -5B for the A320 family; CFM56-5C for the A340 family; and the CFM56-7B for the 737 Next Generation (NG) family.

On 31 July 2018, CFM and the International Air Transport Association (IATA) signed a commercial settlement agreement concerning CFM's maintenance, repair and overhaul (MRO) policies and activities.

Under the terms of this agreement, CFM reaffirmed its commitment to maintain and foster robust and open competition within the MRO market, and published its Conduct Policies and associated Implementing Measures. These specify its product support policy and guidelines related to licensing, warranties, servicing, technical support, repairs,

communication and contracting. These documents confirm, clarify and complement CFM's aftermarket practices, and facilitate CFM's customers awareness of its principles. IATA intends to expand the application of such policies to other stakeholders in the aerospace industry.

The commercial agreement was due to come into effect on 28 February 2019, seven months after it was signed.

The prelude to the agreement stems from a formal complaint filed by IATA with the Directorate-General for Competition (DG-COMP) of the European Commission (EC) in March 2016. The DG-COMP had contacted industry stakeholders, including IATA member airlines, in 2015 to corroborate claims that CFM was abusing its dominant market position in relation to the control of aftermarket services and anti-competitive practices. Having reached a voluntary agreement with CFM, intended to address IATA's concerns effectively, IATA later withdrew the complaint, and in doing so eliminated the call for the EC to intervene.

The landmark agreement has implications beyond CFM, and is intended to be an example for other engine manufacturers to follow. CFM will apply the terms to all of its commercial engines, including the new LEAP series. GE has ratified the Conduct Policies by agreeing to apply them to its proprietary product line-up of commercial aircraft engines.

Beneficiaries of the agreement include IATA, CFM's airline customers, aircraft lessors, third-party MRO facilities and parts manufacturers.

The Conduct Policies provide greater transparency into CFM's aftermarket practices. CFM has agreed to hire a trustee,

to which it will be accountable. CFM will be liable to fines should there be a breach of policy.

A change in attitude?

The following excerpts from the Conduct Policies and Implementing Measures highlight the contentious areas that led to the establishment of the agreement and CFM's stance and commitments to uphold the terms.

- The mere installation of non-OEM parts and/or repairs in the engine does not in itself render the warranty void.

- CFM does not refuse to service engines because they contain non-OEM parts or repairs.

- Parts approved by the Federal Aviation Administration (FAA) under 14 CFR Part 21, and 14 CFR Part 43, and/or approved by the EASA under Part 21.A.109 and Part 21.A.451, are eligible for installation in CFM engines.

- CFM agrees to waive fees (both upfront fee and royalty) for engine overhaul shops for the use of its engine shop manual (ESM), which encloses overhaul instructions and fully disclosed repairs. These fees are charged under CFM's purchase licence agreement (PLA) and will not require any other form of financial compensation for such use by shops overhauling CFM engines.

- Parts that have been repaired with a repair approved by an FAA-designated engineering representative (DER) under 14 CFR Part 183 and/or an EASA DOA holder in accordance with Part 21, Subpart J and related Acceptable Means of Compliance and Guidance Material, are eligible for installation in CFM engines.



The CFM56-5B is the engine of choice for the A320 family, having been selected to power nearly 60 percent of the aircraft ordered. The CFM56-7B is the exclusive engine for the Boeing Next-Generation single-aisle airliner. In total, over 8,000 CFM56-7B engines are in service on 737 aircraft

- CFM will include in relevant policies and procedures for departure record (DR) requests, an explicit statement that the presence of non-OEM parts and repairs is only relevant to a DR request to the extent that it affects CFM's ability to perform the relevant engineering analysis, and that the mere presence or use of non-OEM parts, or repairs unrelated to the DR request, do not preclude a DR consideration.

- CFM will regularly train its customer support organisation, and other departments that make official statements on behalf of CFM that are related to non-OEM parts or repairs, to ensure that communications related to non-OEM parts or repairs are based on data that validates the proposed communication.

Will this agreement lead to the desired increased competition in the aftermarket; acceptance of parts manufacturer approval (PMA) parts and components, and DER repairs in light of CFM's warranty policy based on cause-and-effect; and so contribute to lower maintenance costs per engine flight hour (EFH), and ultimately airline operating costs? Will market perceptions of the use of alternate parts alter, and is there any indication of new opportunities for third-party providers of engine parts and MRO services?

Wencor Group is an aftermarket aerospace company offering total material solutions, by providing replacement PMA components across more than 30 ATA chapters and with heavy emphasis on new PMA development, distribution, and MRO. The strategic focus is on lowering airlines' cost of ownership.

Andy Shields, vice president of engineering at Wencor, deems it too early

to judge any effects. "For aftermarket companies, it is a great marketing tool," he says. "One of the largest OEMs has answered a lot of long-standing customer issues concerning the use of PMA parts and components. The agreement's general acknowledgement of ceasing the practice of denying warranty and access to manuals is a totally transferrable discussion with any customer, and that has additional growth opportunities and hurdles for OEMs."

Tom Davis, executive vice president of product management at Wencor has seen an uptake in the acceptance of, and wish to use, PMAs across the world, although this is not necessarily attributed to the IATA/CFM agreement. Instead, it is largely driven by OEMs' inability to support customer needs. Availability is one of the leading reasons that airlines are looking to use PMAs.

"The aftermarket PMA produced by Wencor will, at a minimum, have the same level of engineering, performance and durability as the OEM part," says Davis. "Quite often the PMA will include reliability fixes at a price far below the OEM's part. In addition, PMA parts are almost always available for sale and fill the gap for OEM stock-out issues. Availability is currency."

Davis highlights that the agreement addresses certain aspects of the commercial attacks that were deemed unacceptable by the EC, such as denying warranty, and limiting availability of Instructions for Continued Airworthiness (ICA).

"Pricing pressure in the business is constant. The OEMs have been matching prices where competition is fierce from PMAs, but then escalating prices on parts where there is no or limited competition. In

addition, the OEMs' latest counter to PMA is to bundle services by offering significantly reduced pricing on material support through a Next Higher Assembly (NHA). Under an NHA, an assembly of parts and components is sold as one item, rather than being supplied as single spare parts. An OEM will offer heavy discounts on a particular NHA that faces heavy competition from PMAs. This is where the customer agrees to buy all the other parts they provide, at full list price and at a modest yearly price escalation, because the other NHAs they offer may not have any competition from PMAs," says Davis.

Graeme Crickett, executive vice president, head of technical at SMBC Aero Engine Lease B.V., a global aircraft engine leasing company specialising in medium- and long-term leases, does not foresee much, if any, change in response to the agreement.

"It was not such a big issue before the investigation, and still does not appear to be a big discussion point in the industry, that I know of," he says.

He expressed surprise, however, at the exclusion from the investigation process of a certain industry-leading engine OEM that is widely known to operate a closed MRO system.

"Whether or not non-OEM-approved PMA parts and DER repairs will play a major role in the future development of engine maintenance will probably depend on how much penetration can be achieved in the MRO market. There is a growing aircraft and engine leasing market today, as the latest technology and assets are becoming increasingly expensive, so it makes more sense to lease rather than own. Lessors are particularly keen to maintain asset value and have caveats against PMA parts and DER repairs in their agreements, so the potential market is smaller than some people realise," explains Crickett.

"The OEMs have taken a greater share of the MRO market with specialised Fleet Hour Agreements (FHAs) dominating the new engine deliveries. It would stand to reason that the OEM FHA would bar PMA parts and DER repairs," continues Crickett.

"Engine parts can be incredibly expensive to buy and the industry seems to be in a race to arrive at cheaper airfares and operations. So it is logical that airlines

would seek lower shop visit (SV) costs,” says Crickett.

SGI Aviation is an independent advisor to the aviation industry providing technical consulting and advisory services on aircraft and engine asset management, and safety regulations. Industry experts within its team have been working on PMA and DER repairs over the years, and have gained valuable insights into CFM’s practices. SGI has been solicited to advise on this issue by a number of its customers.

“We understand that the aim of the Conduct Policies is to provide a more transparent view of non-discriminatory CFM policies when dealing with an engine operated and maintained with non-OEM parts and repairs,” says Danilo Colombo, programme manager at SGI Aviation.

“When the aviation industry first learnt about the IATA/CFM agreement, there was an immediate positive wave of expectation among stakeholders, particularly airlines, independent MROs, PMA manufacturers, and DER repair developers. The impression, and hope, was that an engine OEM would officially accept a non-OEM part as an alternative to the OEM one. At the same time, several lessors had concerns about a hypothetical negative impact on the future asset value of engines that had always been maintained in accordance with OEM criteria, compared to engines with non-OEM parts and repairs,”

continues Colombo.

“SGI’s opinion is that this agreement could, in principle, contribute to having a more competitive and open engine aftermarket,” says Colombo.

IATA’s agreement with CFM was equally intended to serve as an example for other engine OEMs to follow, which SGI does not believe will happen in the near future. Additionally, SGI does not consider that CFM’s aftermarket policies and activities differ from its competitors.

“We believe that action taken by CFM is an initial step and will not have a major impact on the aftermarket environment. The current support network for CFM56 and IAE V2500 engines is huge, with many independent shops already approved to maintain those engines. In terms of PMA parts and DER repairs, we do not see an immediate benefit, especially where the aircraft and engines are leased, and the use of non-OEM parts is not permitted per the lease agreements,” says Colombo.

Aero Norway AS is a CFM-authorized independent engine MRO specialist located at Stavanger Airport on the west coast of Norway, with capabilities on the CFM56-3, -5B, and -7B engines.

Rune Veenstra, chief business officer, sees the IATA/CFM agreement as a good opportunity for Aero Norway. Since the announcement came into effect, CFM’s decision to waive licensing and royalty

fees, which were previously payable, has enabled Aero Norway to reduce its fully-burdened rates, which previously included a consideration for licence fees and a percentage of revenue per engine, with customers directly benefiting from the savings.

“We see it as a benefit since we are an independent engine shop. We hope it will open up the opportunity to expand into the LEAP engine and to perform OEM parts repairs in-house. We are not paying royalties anymore, which is of course a big benefit to our customers. It allows us to be more competitive in the bidding process and to position ourselves better in the market,” says Veenstra.

Veenstra explains that not many customers request the use of PMAs and most prefer OEM parts.

Aero Norway has held talks with CFM and hopes to obtain a licence for the LEAP engine. Veenstra expects it will take at least five years to achieve full overhaul capability. A limited number of repairs could be feasible earlier, however, but that would depend on when the licence is granted.

“CFM will need support going forward, based on the volumes, because there are a lot of these engines coming into the market,” adds Veenstra.

Jet Engine Management (JEM) in the United Kingdom provides all-



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encompassing aviation powerplant consultancy support for airlines, lessors, and financial institutions worldwide, in technical, financial and commercial jet engine management for, among others, the CFM56 engine family.

Nick Hankins, senior engineer at JEM, considers it too early for any substantial change to be noticed on the back of the agreement. In terms of exposure in the long run, he says there are two reasons why significant changes may not be seen.

“On the one hand, there are those who, owing to their technical background, would never consider using non-OEM parts,” says Hankins. “On the other, we have those who are more open to the prospect. Will this agreement make any difference to the latter? Is it going to make those who are not using PMA parts now change their mind? In the case of these users, I would be surprised if I saw them making a policy change. In most cases, people choose not to use PMA parts because they lack a technical understanding of how they perform,” says Hankins.

Hankins continues that the manufacturers of non-OEM parts will consider that there is no cause for concern. The fact will always remain, however, that these parts are not tried and tested in the same way as an OEM part. There is always that potential for heightened risk by using PMA parts, which is going to make some airlines and operators wary of them.

“One of the key reasons for the limited uptake in the adoption of non-OEM parts is that most engines are traded under lease

agreements which carry clauses that prohibit their use. This is simply to protect the value of the asset. If you consider any agreement signed within the past five years, it would invariably have wording to that effect, to prevent the use of non-OEM parts, so you will see very little change in the short term. There may be some progression as and when these lease agreements come to an end and lessees start negotiating new terms on their contracts,” expands Hankins.

“If you are an OEM-aligned entity, and therefore not considering the use of non-OEM parts, you will use a certain category of overhaul shop,” continues Hankins. “If you are more open to using PMA parts, you will look for third-party shops that use them. If you have already used those shops to fit non-OEM material, the signing of the agreement will make no difference to you.

“For me, the overarching technical decision is whether or not you will be doing the right thing by fitting non-OEM parts,” adds Hankins. “That has more precedent than some of the things that the IATA agreement has defined.”

Hankins foresees a potential juncture in the future when more emphasis will be placed on minimising maintenance costs.

“In 10 years’ time, the -5Bs and -7Bs will start reaching the point where there will be more engines available than there is demand for them. It will then cost more to put an engine through an SV than to buy one on the market. You will effectively treat it like a green-time engine just to get you by for a few years,” explains Hankins.

In terms of whether CFM has behaved

CFM has set the baseline by providing greater transparency into its aftermarket practices. Will other engine manufacturers follow this example and sign similar agreements?

anti-competitively, Hankins considers that it probably has one of the most open maintenance structures in the world.

“If you look at the likes of Rolls-Royce, the access that shops have had to licensing is more stringent than with CFM. You might counter that with respect to the LEAP engine. CFM has been more resistant to granting licences for maintenance, and has restricted the market to those who invested in the product. Certainly, from the perspective of older CFM products, I see it as an open field. There are plenty of third-party options, and if you want to fit non-OEM parts, it is possible to do so.

“There is one critical aspect of the LEAP engine right now when you consider the technology,” continues Hankins. “There are a lot of unknowns around the actual repair costs of the parts. As a result, most operators are signing power-by-the-hour (PBH) agreements. By entering into this type of contract, the decision on what parts are fitted to the engine is down to the shop you signed with. In the case of the LEAP engine, it is all OEM hardware so I would be surprised to see any significant movements on the availability of new parts. In contrast, the CFM market sees a lot of time-and-material (T&M) SVs,” says Hankins.

Hankins thinks it will be unlikely for new engine shops to set up business, citing the substantial costs to come to market as a restrictive factor. He also acknowledges there is an industry-wide shortage of experienced manpower, which leaves little choice but to pay staff a premium in a new shop. In doing so, however, you run the risk of pricing yourself out of the industry in terms of winning future business.

“There are a lot of players in the CFM market already. We do not have enough slots to cover for all of the SVs. Moving forward, however, as SV demand starts to drop back down, which I am sure it will over the next few years, there should be ample capacity there,” says Hankins.

Engine Lease Finance Corporation (ELF), headquartered in Shannon, Ireland, is a leading independent spare engine financing and leasing company, specialising in the provision of flexible short-, and medium- to long-term engine lease support packages.

“The IATA/CFM agreement ticked a number of boxes for different people, but



is it really changing the fundamentals in relation to the acceptance of PMA and DER on engines and specifically the gas part of engines? Not at all,” says Richard Hough, executive vice president head of technical at ELF. “Within the leasing community, ELF’s view is aligned with the engine lessors, both independent and OEM controlled, and the aircraft lessors. This agreement does not change a lessor’s perspective, particularly on young and mid-life aircraft.

“The fact that I do not accept the use of PMA and DER is not a matter of principle, but simply down to economics. Yes, they are a cheaper alternative to the OEM product, but from our perspective, the overriding economic imperative is our ability to re-lease,” continues Hough.

Hough explains that ELF takes a long-term view on engines and highlights a case in point.

“An engine has a useful life of 20 years, maybe longer,” adds Hough. “Technically speaking, you can keep rebuilding an engine until you build more aircraft to fly it on. It can be stripped down to piece part level and rebuilt again. If we buy an engine and lease it to airline A for five, seven or 10 years and permit it to use a normal level of PMA and DER, when we take that engine back we will be unable to re-lease it to at least 50% of the market without paying money that we would not otherwise have had to pay. You are reducing your marketability and putting a question mark over the residual value of the asset. This uncertainty is avoided if you only permit the use of OEM parts.”

“For example, the OEMs control

about 50% of the MRO aftermarket, so there is a 50% probability that, when a lessor takes an engine back from airline A and re-leases it to airline B, the new lessee will have an existing maintenance contract with an OEM,” continues Hough. “When the engine subsequently goes through an SV, the OEM will advise that it will not reinstall the PMA and DER parts on the grounds they are not OEM-compliant, and classified as influencing parts. The lessee will also be liable for additional costs to pay for OEM replacement parts irrespective of the serviceability or repairability of the PMA and DER parts. There may also be an impact on life limited parts (LLPs) which are considered to be ‘influenced’ by the fact that they have been operated in an engine containing PMA and DER parts, adding more financial burden. The lessee will invariably seek reimbursement from the lessor, who will then have to make the commercial decision of whether to contribute with no reciprocal benefit to itself, or choose not to contribute and thereby negatively impact the relationship with the customer,” explains Hough.

“In all likelihood, the customer is going to identify this issue before they take the engine on lease. They will invariably agree to the lease but on condition that, when it needs an overhaul, either the lessor pays for the incremental cost, or takes care of managing the SV under its own contract, in which case the lessee will also request a rent holiday for the duration of the SV. Either way, it costs the lessor money and transfers the risk that normally resides with the lessee to the lessor,” adds Hough.

The decision to incorporate PMA parts and DER repairs is driven by factors such as a technical understanding of the benefits, lack of availability of OEM parts, caveats in leasing agreements, and cost savings. It is also driven by engine age and ownership.

“This OEM fulcrum in the aftermarket has resulted in us not permitting the use of PMA and DER. Re-leasing to 50% of the market is not where we want to be. That is why we cannot accept it. We are not in a position to know where that engine will be in five or seven years. Neither do we know which MRO will perform the SVs. The OEMs are, and probably always will be, in an incredibly strong position where they can dictate. They have effectively flushed PMA and DER out of the gas path area of engines,” says Hough.

“The only stage of an engine’s life where I might be less apprehensive is during its last rebuild before teardown. At this point, I am not worried about the engine going through an SV because, if it is unserviceable, it will have to be sold for parts. This does not remove my concern completely, however, because you have to take into account CFMI’s and GE’s stance on influencing parts. If I want to sell a set of low pressure (LP) turbine discs on the market, either to CFMI or otherwise, I need to be aware of the level of influencing parts that have been incorporated into those discs. And this is because at least 50% of the aftermarket is controlled by CFMI and the OEMs. The biggest parts players in the market are all OEM entities. So I cannot sell that engine for teardown and then sell 100% of the parts to the market,” says Hough.

“CFMI policy on PMA and DER has not changed. That is an overriding theme. What they have done is clarify specific areas that, in the market, were perceived to be nebulous. Probably the most significant thing to emerge from this agreement is that it forms a baseline for what is an acceptable practice by any OEM. And to that extent, CFMI has set the tone in a place where its finds it acceptable,” summarises Hough.

The future

While it may be too early to appreciate if the IATA/CFM agreement will have any far-reaching consequences, it is certain that opinions will continue to be divided. Whether this approach of transparency and accountability will be adopted by other industry leaders remains to be seen. **AC**

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