The Power of Flight

PRESS RELEASE

MRO and additive manufacturing

In an issue dated October 14, 2016, and as part of a special report on MRO and additive manufacturing, the weekly magazine Air & Cosmos published an interview with Thierry Thomas, Vice President of the industrial skills center Safran Additive Manufacturing within Safran Tech. Below we have reproduced the interview with the kind permission of Air & Cosmos.

Air&Cosmos – What are your thoughts on additive manufacturing?

Thierry Thomas – Additive manufacturing is a technological breakthrough which will enable us to offer improved or new products and services to our customers since this technology will allow us to realize some of our engineers' "dreams". In technical terms, additive manufacturing techniques means we will be less limited by production means and we will be able to be guided by physics until product completion. From a production point of view, additive manufacturing will result in greater flexibility as regards logistics because the deadlines for raw material procurement, which currently span several months, are no longer needed. Additive manufacturing also provides a means of further improving environmental footprint by limiting the amount of material used and by further optimizing our products. For me, additive manufacturing will not replace the other processes but instead will offer new possibilities to design departments and industrial teams for optimizing their creations. It will spur on conventional processes to progress even quicker. Ultimately, it's the cost/performance ratio which dictates everything.

A&C – In your opinion, could it change a lot of things for various stakeholders in maintenance, for both aircraft and engines?

Th. Thomas – From the point of view of maintenance, additive manufacturing will, given the specific features of this technology, provide a means of offering new repair solutions as well as getting hold of parts more quickly. This, of course, will only be a reality once the part's additive manufacturing version has been certified. Certification is a pressing issue in our business sectors because only holders of type certificates, their delegates and designers supervising the design criteria and rules are in a position to justify, in accordance with well-established rules, that the new methods used are compatible with the original intention.

A&C – As regards CFM engines, what will it change?

Th. Thomas – CFM - LEAP engines already benefit from this technological breakthrough. During development, additive manufacturing was very largely used to get the most flexibility for test facilities and adapt to last-minute designer needs. This also provided a means of testing more configurations that are difficult to distinguish digitally. As regards mass production, it is well known that GE has introduced parts made using additive manufacturing techniques.

A&C – How are you going to prepare yourself and to what extent will it change or revolutionize your processes?

Th. Thomas – Once again, it is the cost/performance ratio (performance in the broad sense of the term) which will be the main driving force. As a result, additive manufacturing technology will be introduced in instances where it will enable us to be effective, more agile and more efficient in the way we support customers. We have spent over ten years working on metal additive manufacturing, and we have already got several parts on board aircraft as part of our latest developments at Safran Helicopter Engines, especially with the inclusion in the mass production of the Arrano engine.

We have consolidated our research by setting up Safran Additive Manufacturing, an industrial skills center, within Safran Tech, which is tasked with conducting research at our Saclay platform, forming appropriate partnerships and supporting the Group's companies to adopt this technology in design departments, plants and supply chains. Furthermore, we are working closely with the AESA and FAA certification bodies to ensure the data as well as justification and control processes will be in place and in phase with the operational needs. The changes will be supported in our plants and supply chain in line with our processes and commitments regarding authorities and partners. It should not disrupt our processes more than it has already done so recently when new materials or new processes, such as surface treatment, were introduced. It is a matter of consciously applying the rules governing our business sectors: safety, meticulousness, anticipation, justification and traceability. However, we are clearly counting on this technology to continue to improve our products and services in support of our customers' needs by incorporating it into other innovations brought about by our integrated systemic approach.

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