Advanced Manufacturing

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NEWS

Additive Manufacturing Trends in Aerospace

Aerospace is the industry that other industries look to for a glimpse at what's on the horizon. For example, the aerospace industry was the earliest adopter of carbon fiber, and it was the first to integrate CAD/CAM into its design process. The aerospace industry has incorporated additive manufacturing (AM) throughout all processes and functions, from the design concept to near-end-of-life repairs. As a design tool, AM — also known as 3D printing — has been used for two decades. Much like CAD/CAM, AM is no longer a tool that requires financial justification. Its value is a given. So how is AM being used in the aerospace industry today, which can predict similar use in mainstream manufacturing in the near future?

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Direct Digital Manufacturing Takes Flight

FDM technology has saved the government over $3.8 million to date with an expected 10-to-15-year saving of over $15 million. In addition to this, the versatility to manufacture any item coupled with zero hazardous waste is one of the greatest advantages to the US government and a big reason why they have started to integrate FDM technology into their manufacturing process.

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Top Five Reasons to Integrate PolyJet Technology into Your Product Development Lifecycle

Rapid prototyping has become a game-changing innovation since it was introduced two decades ago. The technology has progressed significantly over the years, improving on both cost and quality. Circa 2000, PolyJet™ technology was introduced to the market, a jetting process of photopolymer resin in ultra-thin individual layers that builds 3D models and prototypes. Combining smooth surface finish, highly accurate geometries, and a large selection of materials and material combinations, PolyJet technology enables the best representation of the intended final product. Based on a survey of users from various markets — including consumer goods, consumer electronics, medical device, education, research, entertainment and others — Stratasys crafted five reasons to integrate PolyJet technology into your product development lifecycle.

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The Ultimate 3D Production System

The Fortus 900mc is the most powerful FDM system available, delivering remarkable agility, sharp accuracy and high return on investment. With 12 real thermoplastic options and a massive build envelope, its only real competition is the old way of doing things.

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3D Printing Jigs, Fixtures, and Other Manufacturing Tools

The fundamental objectives of manufacturing — improve quality, decrease cycle time, and reduce costs — are the primary reasons that jigs and fixtures are so abundant. It doesn't matter if the operation is fully automated or entirely manual — jigs and fixtures are deployed throughout manufacturing operations with the goal of reducing costs while accelerating production processes. When expanded beyond jigs and fixtures to include all manufacturing tools that serve as operational aids, they are even more widespread. They range from organizational bins and tool holders, to templates, guides, and gauges. They include sophisticated robotic end-effectors and rudimentary bins and sorters for conveyance. No matter the name, description, or application, manufacturing tools increase profit and efficiency while maintaining quality.

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FDM Helps Bell Helicopter Build Quality Prototypes

Bell Helicopter manufactures the heavy-lift "tiltrotor" Osprey, the hybrid aircraft that combines features of both airplane and helicopter. It can lift off, hover, and land vertically, yet cruise at high altitudes at jet speeds. When the aircraft recently underwent an experimental tail-wiring upgrade, technicians at the rapid prototyping lab at Bell Xworx used a Fortus FDM system to build tough polycarbonate wiring conduits. The lab chose the process because it can model with polycarbonate and polyphenylsulfone thermoplastics that work well for functional testing, which is important for demanding applications like aerospace. FDM is essential to the lab's purpose, which is to contribute to aircraft prototype development and support Bell Helicopter's long-range plan to become the heavy-lift tilt-rotor aircraft leader.

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