



Federal Aviation Administration

Memorandum

Date: June 3, 2015

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From: *for* Susan Cabler, Acting Manager, Design, Manufacturing, & Airworthiness
Division, AIR-100 *Rafun*

Prepared by: Jim Kabbara, Electrical and Mechanical Equipment Section, AIR-133

Subject: Additive Manufacturing Awareness

Memo No.: AIR100-15-130-GM39

Additive Manufacturing (AM) refers to a range of fabrication methods, both metallic and non-metallic, where basic material forms (such as metallic powders, wire, resin, etc.) are processed in a machine to produce near-net shape parts. The Design, Manufacturing, & Airworthiness Division (AIR-100) formed an Additive Manufacturing National Team (AMNT) to gather information on projects with AM applications and to serve as technical resource for on-going AM certification activities. This information will help the AMNT identify any technical concerns and develop guidance in allowing AM parts to be FAA certified.

Background

AM materials are engineered material where the final mechanical properties are established during production, similar to composite materials. Unlike conventional structural alloys, AM materials have a high number of process control parameters and are highly susceptible to process variability. AM technology is expected to rapidly proliferate the aerospace industry due to its many potential benefits such as reduction in material cost, fewer parts to be fabricated, ability to manufacture complex designs, etc.

Requested Actions

In order to be aware of the scope and application of AM projects, AIR-100 requests the following information from ACOs involved with current or past projects or applications using AM for metallic and non-metallic parts.

Please provide the following information to Jim Kabbara:

- 1) Company name
- 2) Type of application (e.g., TC/ATC/STC, PMA)
- 3) Product type (e.g., engine, aircraft part)
- 4) Make, model, component or part
- 5) Part criticality
- 6) Specify the AM manufacture methodology (e.g., polymer, metal, etc.).
- 7) ACO point of contact (e.g., project engineer)
- 8) DER involvement: *Yes* or *No*. If yes, what regulations are/were used for showing compliance?

The collected information from the ACOs will provide the AMNT a better understanding of the manufacturing processes and compliance to the existing regulations.

Learning about AM projects early in the design phase will help address any issues which may arise later in the manufacturing phase. Your participation will be instrumental. If you have any questions, please contact Jim Kabbara at jim.kabbara@faa.gov or at telephone (202) 267-1575.

AMNT Focal Points

Transport Airplane	Mark Freisthler, mark.freisthler@faa.gov, (425) 227-1119
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