AMC
AMERICAN METALCASTING CONSORTIUM

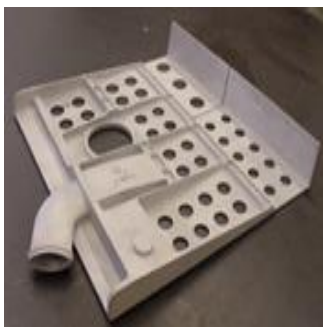
CAST-IT AND AFCAT WORK TOGETHER TO EXPAND HEAT TREATMENT ACCESSIBILITY

Introduction: The AMC CAST-IT (Casting Advanced Systems Technology-Integration Team) includes experienced casting industry subject matter experts that reconnect supply chains, identify capable casting suppliers, review DLA technical data packages with castings, and address real-time procurement problems associated with national stock numbered (NSN) items with cast content. They provide technical and procurement support as part of the Aviation Forging and Casting Assistance Team (AFCAT) at DLA Aviation and the Maritime and Land Forging and Casting Team (MetaL FACT) at DLA Land and Maritime to enhance, develop, and incorporate new processes that reduce casting procurement costs and lead times.

SUCCESS STORY

Problem: The requirement to use only third party accredited heat treatment facilities was identified as a cause of sourcing issues, long lead times, and delays in procurements and deliveries of cast components during the 2019 DLA Aviation Casting and Forging Summit. Third party organization accredited heat treaters are not typically located near metalcasters and often do not have the experience to accurately and quickly straighten castings before they stiffen and can't be further adjusted. These drawbacks cause suppliers to no-bid and increase scrap, thus reducing the supply chain for aluminum and magnesium castings by as much as 50% in some cases, and increasing the cost by 40-70%.

Solution: CAST-IT and AFCAT recommended that a Tinker AFB Drawing be amended to remove the National Aerospace and Defense Accreditation Program (NADCAP) approved heat treatment requirement and instead allow metalcasters to use the heat treater of their choice, and then certify tensile test coupons associated with the casting using a NADCAP-approved nondestructive testing (NDT) laboratory. This change to the Tinker AFB Drawing was implemented in late April 2022.



Complex shapes, lofted contours, and ranginess that are common in castings make them more susceptible to distortion during the heat treatment process and therefore require more expertise to correctly heat treat and straighten.

Benefits: The change to the Tinker AFB Drawing removes the NADCAP-heat treatment requirement for the vast majority of NSNs that previously required it - over 5,000 NSNs. This change will increase the number of supplier bids as well as reduce the costs associated with using only NADCAP-approved heat treaters.

"CAST-IT recognized one of the main issues being the need to straighten the parts prior to aging them. It often requires fixtures and/or extremely experienced workers to straighten the castings. This would eliminate that issue, save a lot of time, freight, and cost!" - Brad Prue, Sales Manager, Danko Arlington

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