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Will Composite Materials Be Attractive for the Next Generation Narrow-body Aircraft?

Abstract:

The dominant players in the market for commercial aircraft business, Boeing and Airbus, are in the process of developing/certifying wide-body planes which are characterized by 50-60% composite material content. Without any doubt, the degree of complexity of fuselage structures challenges the engineering teams to the extreme with regards to weight and production cost. Despite the absence of a solid basis of experience with robustness of design solutions, manufacturing processes details and airline operations of large composite fuselage structures a projection for the Next Generation Narrow-body aircraft families will be presented, concentrating on two paramount aspects: The first one concentrates on damage tolerance requirements impacting structural weight while the second aspect outlines requirements for competitive cost levels with regards to Advanced Fiber Placement (AFP) technology.