GKN AEROSPACE THERMOPLASTIC COMPONENTS FLIGHT TESTED ON BELL V-280 VALOR

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GKN Aerospace delivered a pair of thermoplastic composite, induction-welded Ruddervators and two compression-moulded Access Panels manufactured from reused thermoplastic waste material to Bell in June 2019. The newly installed components have now flown more than 12 hours on V-280 test flights, including during the recently completed autonomous flight testing.

The Bell test pilots were happy with the seamless integration of the newly installed parts, noting that the V-280 continued to exhibit excellent responsiveness through test manoeuvers. This has made the V-280, which recently celebrated completion of its second full year of flight tests, one of the first military aircraft flying successfully with thermoplastic components.

Ruddervators are the control surfaces for an aircraft with a V-tail configuration. As a partner in Bell's Team Valor, GKN Aerospace has designed and manufactured the complete thermoset composite V-Tail for the aircraft. The Bell V-280 Valor is competing for selection as the U.S. Army's Future Long Range Assault Aircraft (FLRAA). The advanced

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thermoplastic Ruddervators significantly reduce weight, cost and parts count.

“We are always looking across Team Valor for new opportunities to incorporate advanced technology to add value for our customer. GKN Aerospace’s thermoplastic ruddervators are a great example where we were able to add value and reduce risk for future programs,” said Ryan Ehinger, Vice President and Program Director for FLRAA at Bell.

In parallel to the demonstrator program, the GKN Aerospace global design team continues to work with Bell to optimize the V-Tail design to meet customer requirements for the FLRAA program.

The two compression-moulded Access Panels have been manufactured from recycled thermoplastic waste material from the two Ruddervators and have been developed in a Dutch TPC-Cycle research program led by Saxion. GKN Aerospace is a partner in the research program.

GKN Aerospace is a technology leader in thermoplastic technology with thermoplastic rudders, elevators and fuselage panels flying on a wide range of Business Jets. Injection of this technology on a military platform opens opportunities for wider application in the defense market. Thermoplastics offer significant advantages in terms of weight, costs, production time and environmental impact.

Krisstie Kondrotis, President Defence, GKN Aerospace said: ’’We are proud to be part of Team Valor and to advance our design work for the Bell V-280 Valor’s V-tail. It is very exciting that our cutting-edge thermoplastic technology is now successfully integrated and flight tested on the state-of-the-art Bell V-280 Valor.

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