AIR TAXI NOISE COULD BE A SHOWSTOPPER… AEROBERM REDUCES GROUND EFFECT NOISE FOR AIR TAXIS

News / Manufacturer

Following landmark aeroacoustics research, the University of Bristol's world-leading team will use their state-of-the-art wind-tunnel facilities to test Aeroberm's patented fractal panel vertiport geometry — with an open invitation for eVTOL manufacturers to help optimise it for their aircraft. As the Advanced Air Mobility industry races toward commercial launch, a new collaboration between the University of Bristol, Swinburne University of Technology and Aeroberm aims to tackle what many in the industry now consider the single biggest threat to public acceptance of a vertiport ecosystem: noise.

The University of Bristol's Aeroacoustics Research Group has published a series of studies establishing that the solid ground surface beneath a rotor or propeller plays a significant role in noise generation. Research has shown that when an aircraft operates close to the ground — as every air taxi must during take-off and landing — a phenomenon called “ground effect” measurably amplifies noise.

Dr. Esmaeel Masoudi, lecturer in aeroacoustics at University of Bristol commented: "From our studies to date on various generic surfaces we believe that replacing a solid ground surface with the elevated Aeroberm pad with a perforated fractal design will likely substantially reduce that noise penalty. "While results will differ between aircraft configurations, based on the tests carried

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out in our wind tunnel facilities, we anticipate that the noise reduction could be up to 13 decibels for the first tonal component and up to 7 decibels in overall sound pressure level. At some observer angles, the elevated Aeroberm landing pad may effectively eliminate the additional noise associated with propeller–ground interaction, reducing the measured noise to the isolated propeller (baseline) level."

An open invitation to air taxi manufacturers

Every aircraft has its own distinct downwash, outwash, and noise signature — shaped by rotor count, disc loading, weight, and flight profile. Aeroberm and the University of Bristol are inviting eVTOL manufacturers to participate directly in the testing program, helping optimise the Aeroberm panel geometry for their own aircraft — and shape a landing surface standard tailored to their specific acoustic and aerodynamic characteristics.

Clem Newton-Brown, CEO and founder of Aeroberm (a Skyportz company) stated: "It is a myth that electric air taxis will be silent. While they will blend into the background noise of a city when flying at altitude, there is no escaping the aero physics at a vertiport. A lot of air needs to be moved to achieve vertical flight and while the electric motor noise will be minimal, there will still be significant noise that could render some great vertiport sites unfeasible if not ameliorated."

Noise concerns are anticipated to be among the most common reasons vertiport proposals will stall at the planning stage. Unlike aircraft certification or battery technology, noise is experienced directly by the public. A vertiport that meaningfully cuts noise doesn't just tick a regulatory box — it builds the social licence the AAM industry needs to fly where people actually want to go.

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