



## P R E S S I N F O R M A T I O N

### Backgrounder

### **Supersonic Natural Laminar Flow Technology**

Supersonic natural laminar flow (SNLF) is the enabling technology that makes the Aerion jet practical, efficient, environmentally responsible, and flexible in terms of operational utility. It conserves fuel and reduces emissions versus other potential or proposed supersonic designs. It allows for efficient cruise just below the speed of sound and at supersonic speeds up to Mach 1.5. The technology is a breakthrough in supersonic design and is patented by Aerion. For all of these reasons, SNLF technology is the one solution that makes supersonic flight practical and efficient.

The unique Aerion unswept wing has SNLF on a majority of its surface (where it offers a reduction in friction drag by 70 percent or more). Under laminar flow conditions, air flows smoothly across wing surfaces without creating turbulent layers, as do conventional swept or delta wing designs. Achieving the precise wing contours necessary to achieve supersonic laminar flow requires new materials such as carbon fiber, and new analytical tools. In 2012, Aerion acquired Desktop Aeronautics (renaming it Aerion Technologies), a Silicon Valley high technology company that develops specialized codes for analyzing supersonic airflows and optimizing airframes for efficient operation in subsonic and supersonic realms. Performance predictions based on these computer tools have been verified in flight by NASA and in transonic wind tunnels.

Aerion's supersonic natural laminar flow (SNLF) wing reduces total airframe drag by as much as 20 percent versus a delta wing configuration such as that used by the Concorde. Less power and fuel are therefore required to sustain supersonic flight, enabling a substantial reduction in gross weight for a given mission. Moreover, the SNLF wing has excellent low drag characteristics at subsonic speeds, allowing for efficient cruise on overland routes where supersonic flight is prohibited.

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