GULFSTREAM CONTINUES SONIC-BOOM MITIGATION RESEARCH

News / Business aviation, Manufacturer

Gulfstream Aerospace continues to pursue technologies that would enable building a supersonic business jet (SSBJ). The company has logged two new patents for sonic-boom mitigation technologies in the past two months alone. Queried about the new patents, a company spokeswoman told AIN, “Gulfstream has a small team committed to researching sonic-boom mitigation. We also continue to work to remove the ban on flying supersonically over land.”

The Savannah, Georgia-based aircraft manufacturer’s most prominent research in this field is its Quiet Spike, a telescoping nose meant to greatly reduce or possibly eliminate the sonic boom. It has previously tested the Quiet Spike on a NASA F-15.

The company, however, previously noted that the engine inlet is also a major factor in reducing sonic boom noise. On this note, Gulfstream received a petent on November for a “sentropic compression inlet for supersonic aircraft,” which shapes “the compression surface of the inlet to defocus the resulting shocklets away from the cowl lip.” This improves inlet and interference drag characteristics, according to the patent.

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Gulfstream has also developed a way to shift fuel loads to mitigate the sonic boom. In a patent issued on September 20, its engineers outline a computerized fuel redistribution system “to adjust an amount of fuel stored within a wing to minimize a twist in the wing caused by the [weight] deviation.” Such redistribution will reduce the magnitude of the sonic boom caused by the deviation, the patent notes.

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27 NOVEMBER 2016

SOURCE: AIN
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