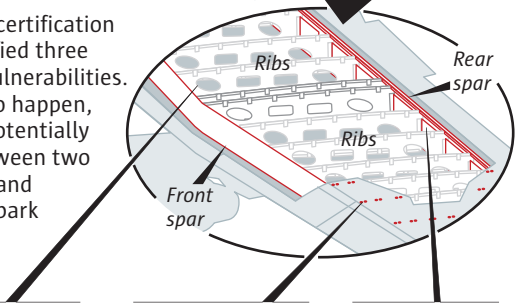
Proposed FAA safety policy shift

A proposed FAA policy shift would reinterpret existing rules for preventing fuel tank explosions to allow some "known single failure conditions." Those are features that if they alone failed could bring down the airplane. The FAA policy memo lists three areas where complete protection is described as "impractical."

The potential 787 trouble spots

On the 787, FAA certification engineers identified three corresponding vulnerabilities. All are unlikely to happen, yet each could potentially create a gap between two pieces of metal, and thus a possible spark in a lightning storm:



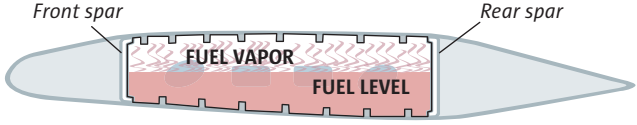
On fasteners inside the fuel tank, a coat of sealant covering a gap between fastener head and sleeve could deteriorate.

A wing-skin fastener could break, popping the sealant on the head and leaving a gap in the snug fit.

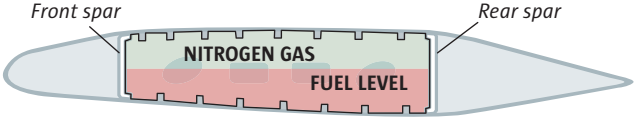
The aluminum shear-ties that attach the wing ribs to the spars could crack.

An extra layer of protection

Even if a spark were triggered by lightning, a new inerting system reduces the risk.



As the fuel is used and the liquid level drops in the main tank, fuel vapor rises to fill the open space. The fuel vapor is sometimes flammable and a spark could ignite the vapor.



A nitrogen-generating system fills the space above the fuel with nitrogen, an inert gas, causing the mixture to be non-flammable.

Sources: FAA, Boeing

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