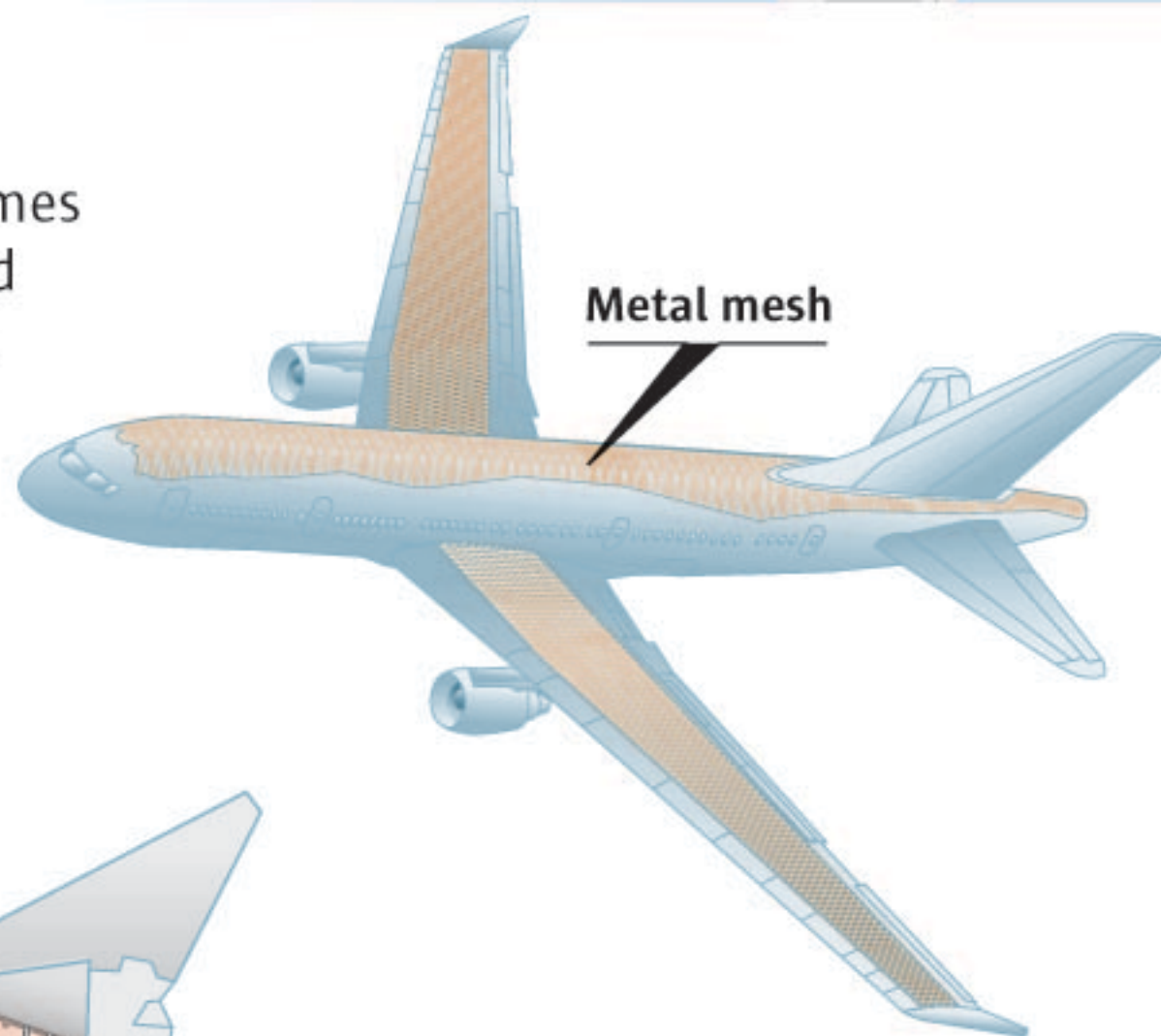


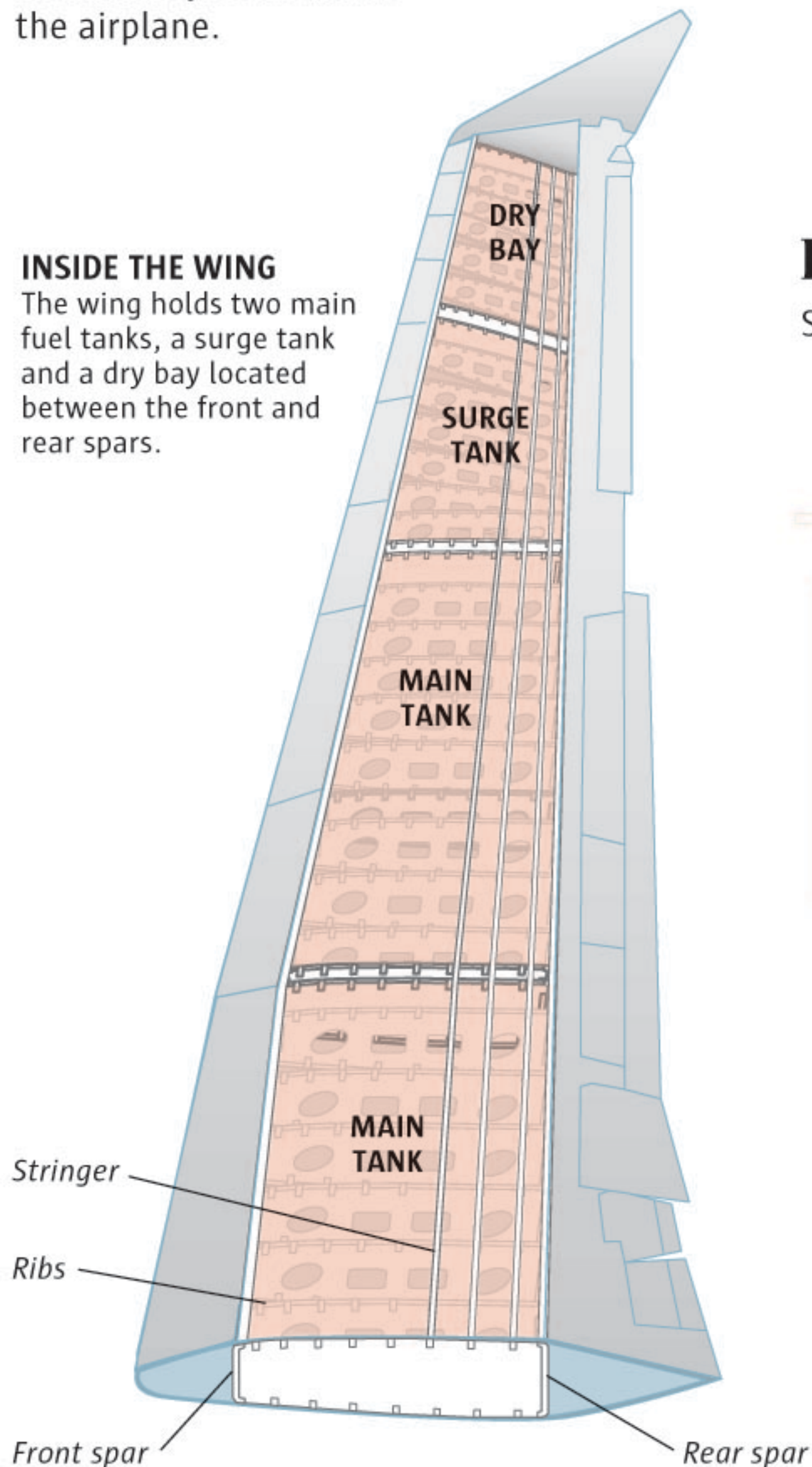
# Protecting the 787

In new composite-plastic airframes like the 787, Boeing has to build in more lightning protection. A thin metal mesh is embedded in the outer layer of the composites. This conducts away the lightning charge and also shields the electrical systems inside the airplane.



## INSIDE THE WING

The wing holds two main fuel tanks, a surge tank and a dry bay located between the front and rear spars.

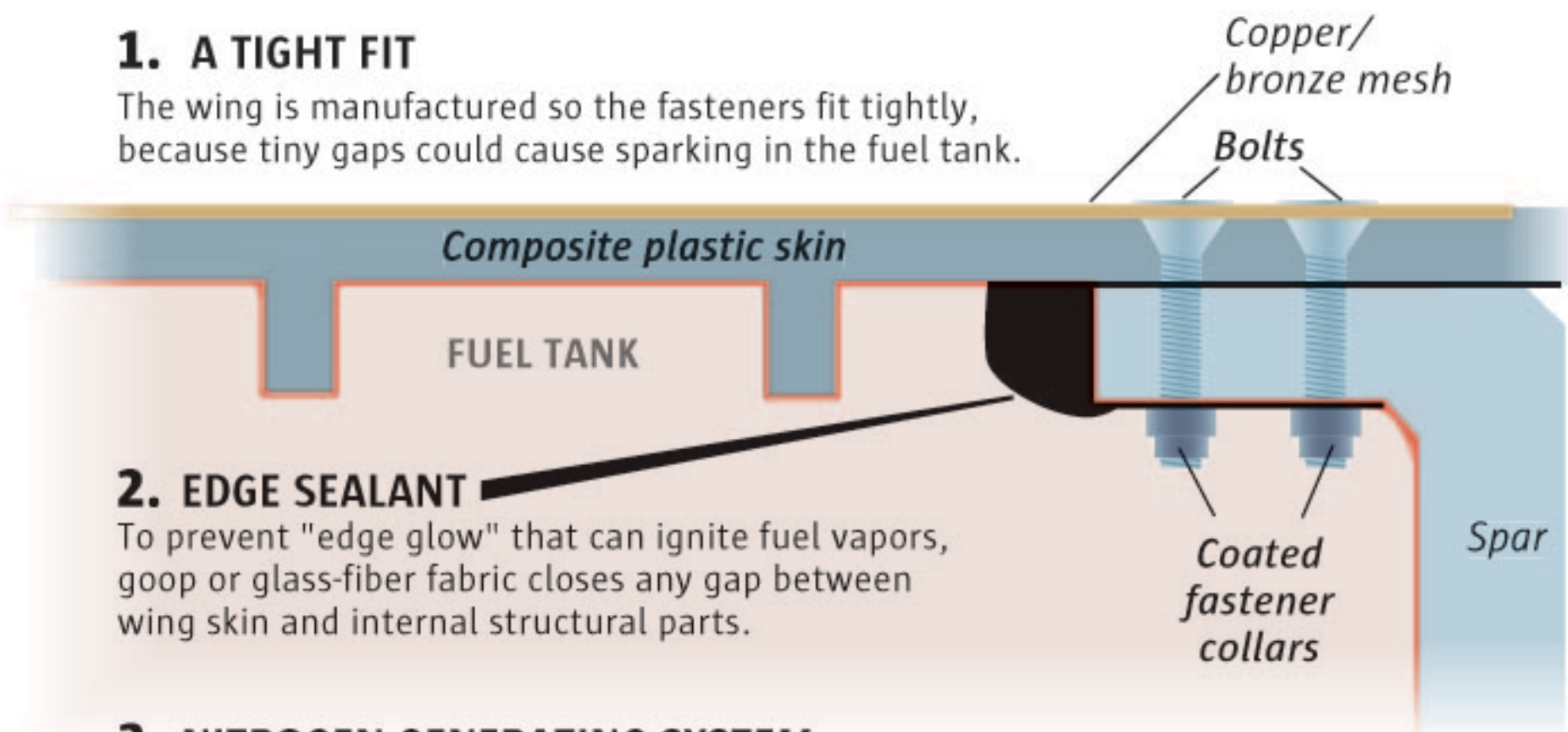


## Preventing a fuel-tank explosion in the 787

Safeguards against a lightning strike igniting the fuel in the 787 wing:

### 1. A TIGHT FIT

The wing is manufactured so the fasteners fit tightly, because tiny gaps could cause sparking in the fuel tank.



### 2. EDGE SEALANT

To prevent "edge glow" that can ignite fuel vapors, goop or glass-fiber fabric closes any gap between wing skin and internal structural parts.

### 3. NITROGEN GENERATING SYSTEM

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



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

