# WHY ARE PLANE WINDOWS ROUND INSTEAD OF SQUARE?

**News /**


**If you've ever traveled by plane, you're likely aware that every airplane window you've ever seen has a round design, whether it be a circle or an oval.** As it turns out, there's an actually interesting engineering explanation behind the round shape of airplane windows. Suffice it to say, the design is no coincidence and is actually intended to help keep you safe up in the air.

But first, a quick bit of history. Airplane windows weren't always round, believe it or not. Back in the 1950s, the first commercial jetliner, the de Havilland Comet, experienced a handful of tragic crashes that were eventually tied to the plane's square window design. In short, square windows on a plane, coupled with a pressurized cabin, are prone to stress and cracking. Rounded corners, in contrast, help alleviate such stresses by distributing it around the circumference of the window as opposed to having it concentrated in the corner of a 90 degree square window.

Now why is there stress, you might reasonably wondering? Well, as the airplane climbs high into the sky, the outside atmospheric pressure declines. As the airplane gets even higher, the pressure within the plane eventually becomes greater than the outside pressure, thus resulting in a “pressure differential that causes the fuselage to expand ever so slightly.”

“Engineers accounted for this,” *Real Engineering’s* YouTube channel notes, “but the effects of repeated pressure cycles over time were not well known at the time. Over thousands of cycles and metal begins to fatigue becomes and cracks can form at high stress locations.”

For an informative and more visual explanation as to why airplane windows are round and not square, check out video in our video section.

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