

WHY ARE THERE “SPIRALS” ON JET ENGINE INLET DOMES?®

by Dan Pemble, Kissimmee, Florida – February 8, 2025

Following is an interesting link that addresses the above subject.

<https://www.msn.com/en-us/news/opinion/the-reason-why-jet-engines-have-spirals/ar-AA1vGyT0?ocid=msedgdhp&pc=U531&cvid=46f32a18ef9c4c59a24d786bb167c05d&ei=75>



Typical CFM56 Engine Inlet Dome Spiral

As discussed in the above link, the primary purpose of the “spirals” is a safety measure to alert ground crews that an airplane’s engines are running and they need to maintain a safe distance from the engine’s inlets to avoid being ingested into the engine! (It has in fact happened on far too many occasions and can result in death!) A secondary, but mostly-unproven, belief is that the spinning spirals repel birds that could otherwise be ingested.

During my 40.5-year aviation career, first with the Douglas Aircraft Co. division of McDonnell Douglas and finally at Boeing, as a Field Service Representative assigned to Customer airlines, I attended many Technical Engineering And Maintenance (TEAM) conferences, as hosted in the Long Beach, CA area by the Douglas Aircraft Co. The attendance at these meetings often reached almost 500 - including Customer airline engineering and maintenance personnel, Douglas engineers, and the Douglas Field Service Representative assigned to Customer airlines.

At my current age of 80 I cannot now remember all the details, but, at one TEAM meeting that I attended some years ago, there was a dedicated presentation about a potential solution related to repelling birds away from airplanes. As I recall, the concept was to add additional high-intensity strobe lights on the forward part of airplanes that could be flashed at varying rates such that birds would be basically “confused and frightened away”! I’m not sure that such concept was ever tested but, to this day, it has never been implemented on any airplane that I am aware of!

It should be noted that even in today’s high-tech aviation arena, bird ingestions that have led to engine failures and in-flight emergencies continue to be of major concern to airlines and are frequently occurring! (Does “Miracle on the Hudson” come to mind?) Of course in-flight bird strikes can also lead to airplane windshield failures and structural damage.

Today a solution to curtailing the frequency of bird strikes on airplanes is basically non-existent. Of course there are some measures taken at airports that are frequented by large bird populations such as periodically firing noise-making “cannons” to scare the birds away; however, the potential for bird strikes on airplanes is mostly unchecked!

Certainly if there is some “wizard” out there that can resolve this problem, they could be “laughing all the way to the bank” in the future! Unfortunately, I am unaware of any current efforts related to dealing with this long-present issue!

