

Shockwave image 'bends light' around F-35C

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According to expert Thomas Newdick, thanks to the Schlieren photography technique that allows us to record things that are almost invisible to the human eye, we see sound waves thanks to the change in air density and the accompanying variation in the atmosphere's refractive index of light.



When the aircraft moves at subsonic speeds, the air moves evenly around the fuselage. But when it reaches supersonic speed, the speed of air moving in some local areas on the fuselage reaches the speed of sound, the formation of supersonic wave regions causes pressure changes to create pulse waves. size, representing the position where air moves at subsonic to supersonic speeds.



As a result of the shock wave, the density of the air changes, creating a change in the refractive index of the air, resulting in light distortion. And humans can observe this phenomenon.

A good understanding of the location and magnitude of the shock waves generated by the aircraft is essential for military manufacturers to help determine the aerodynamic performance of the aircraft when operating at high speeds. supersonic. From there, they can design future planes and improve their performance.

The F-35C is the carrier-based version of the F-35 fighter jet. This is the second most expensive fighter line of the US Army after the F-22 Raptor stealth fighter, priced at more than 117 million USD, if including weapons, the price can reach more than 140 million USD.

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