China shows off engine that accelerates aircraft to 20,000km/h using... kerosene

In order to meet the demand for hypersonic flight in the future, Chinese scientists have done something amazing.

They have successfully built the world's first internal combustion engine using conventional kerosene, a common fuel for aircraft. Called the Oblique Wave Engine (ODEW), the engine has demonstrated the ability to reach speeds of up to 20,000 km/h, equivalent to Mach 16, in wind tunnel tests.

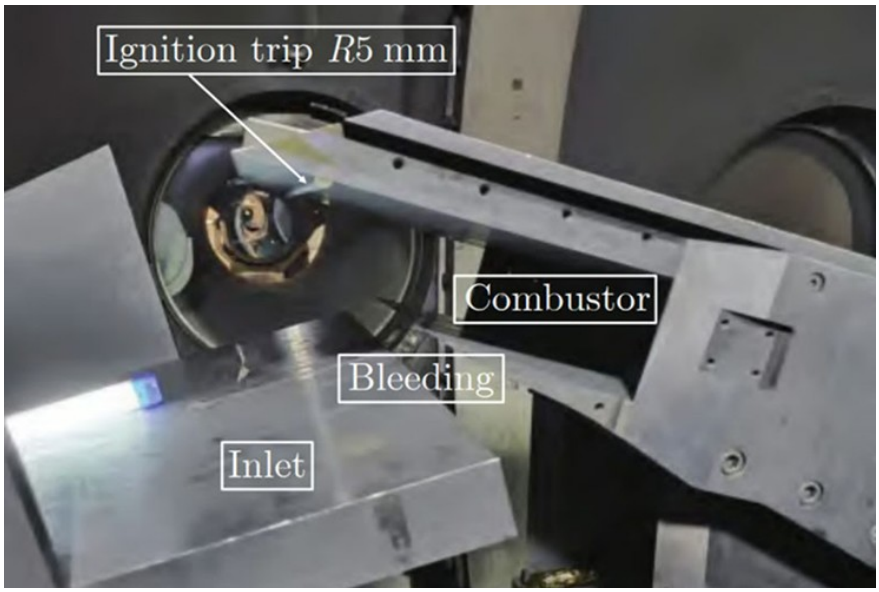
China is trying to realize hypersonic aircraft - Source: Grok 3

A similar engine was previously developed at the University of Central Florida (USA) with the ability to operate continuously for 3 seconds using a mixture of hydrogen and oxygen fuel. However, China's ODEW engine has gone further by proving that it can operate effectively even with kerosene. This brings greater safety, simplicity and reliability, which could become a breakthrough in hypersonic propulsion technology.

In experiments at the JF-12 wind tunnel in Beijing, called Hyperdragon, researchers from the Chinese Academy of Sciences (CAS) achieved stable oblique blast wave regimes using RP-3 jet fuel. The research results showed that the combustion velocity in the ODEW engine is 1,000 times higher than that of a traditional jet engine, with the ability to operate stably at speeds from Mach 6 to Mach 16.

Although the ODEW engine only maintained continuous operation for 50 milliseconds, equivalent to about 150 meters of flight at Mach 9, this was enough time for researchers to collect important data on the ignition process

and shock waves. In particular, the combustion chamber design is 85% shorter than a ramjet engine, reducing the aircraft's weight and increasing its range.



Prototype combustion chamber of the ODEW engine - Source: Chinese Academy of Sciences.

The project is part of China's ambitious plan to develop an aircraft capable of flying anywhere in the world within an hour, such as from Shanghai to Los Angeles in just one hour. The technology could also support reusable spacecraft in the atmosphere and orbit. Despite the many technological challenges, scientists have pledged to begin flight testing of the prototype before the end of 2025.

You finished reading the article "**China shows off engine that accelerates aircraft to 20,000km/h using... kerosene**" edited by the **TipsMake** team. We hope this article has provided you with many useful tech tips and tricks. You can search for similar articles on tips and guides. Thank you for reading and for following us regularly.

© 2019 TipsMake.com