

GE Aerospace And Lockheed Martin Demonstrate Rotating Detonation Ramjet For Hypersonic Missiles

NISKAYUNA, N.Y. and BETHESDA, Md., Jan. 14, 2026— GE Aerospace (NYSE:GE) and Lockheed Martin (NYSE: LMT) completed a series of engine tests demonstrating the viability of a liquid-fueled rotating detonation ramjet for use in hypersonic missiles, the first initiative between the companies under a broader joint technology development arrangement.

WHY IT MATTERS

This fuel-efficient rotating detonation ramjet promises to fly missiles faster—including at hypersonic speeds—and farther while decreasing costs compared to other ramjet options. Here's how:

- The compact design enables increased fuel or payload capacity and lowers the cost of production.
- Improved fuel efficiency and thrust generation extends range.
- Ignition is achieved at a lower speed, so smaller boosters can be used for ramjet start.

HOW IT WORKS

- The rotating detonation ramjet combusts fuel and air through detonation waves instead of the traditional combustion methods used in ramjet engines today.
- This propulsion system generates high thrust for super- and hypersonic speeds to engage high-value, time-sensitive targets, with a smaller engine size and weight that boosts range.

STRATEGIC PERSPECTIVES

"GE Aerospace's hypersonic capabilities continue to advance at a rapid pace, and this collaboration with Lockheed Martin is another step forward in our journey," said Mark Rettig, vice president and general manager of Edison Works Advanced Programs at GE Aerospace. "The testing on the rotating detonation ramjet and inlet exceeded expectations, and we are excited about this collaboration to continue maturing our advanced air-breathing hypersonic propulsion technologies."

"Following two years of internal investment, this demonstration is a testament to the power of collaboration, innovation and joint commitment to get affordable capability into the hands of warfighters at the speed of relevance," said Randy Crites, vice president and general manager at Lockheed Martin Advanced Programs. "This compact ramjet applies Lockheed Martin's expertise in ramjet inlets and offers extended range at extreme speeds. We're committed to delivering a propulsion system that advances America's hypersonic capability in an intensifying threat environment."

DIVE DEEPER

- The ramjet features GE Aerospace's rotating detonation combustion system and Lockheed Martin's tactical inlet that enables high-speed airflow to the combustor.
- The companies conducted direct connect tests in ramjet ignition and cruise conditions at the GE Aerospace Research Center in Niskayuna, New York, to demonstrate the operation of an air-breathing rotating detonation ramjet for missile applications.
- Engineers injected air into the inlet to represent supersonic flight at various speeds and altitudes, including high cruising altitudes where the thin air challenges robust combustion.

WHAT'S NEXT

GE Aerospace and Lockheed Martin will continue ramjet maturation in 2026.

About Lockheed Martin

Lockheed Martin is a global defense technology company driving innovation and advancing scientific discovery. Our all-domain mission solutions and 21st Century Security® vision accelerate the delivery of transformative technologies to ensure those we serve always stay ahead of ready. More information at www.lockheedmartin.com.

About GE Aerospace

GE Aerospace is a global aerospace propulsion, services, and systems leader with an installed base of approximately 49,000 commercial and 29,000 military aircraft engines. With a global team of approximately 53,000 employees building on more than a century of innovation and learning, GE Aerospace is committed to inventing the future of flight, lifting people up, and bringing them home safely. Learn more about how GE Aerospace and its partners are defining flight for today, tomorrow and the future at www.geaerospace.com.

GE Aerospace's Edison Works is an advanced design, engineering, and technology organization within the company dedicated to developing the next generation of defense propulsion and systems. With a focus on rapid prototyping, digital engineering, and groundbreaking innovation, Edison Works is where GE Aerospace pushes the boundaries of what's possible to define the future of flight.

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