Another Aerojet Rocketdyne Hypersonic Engine Makes History

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HUNTSVILLE, Ala., Dec. 15, 2020 (GLOBE NEWSWIRE) -- Aerojet Rocketdyne and the Air Force Research Laboratory (AFRL) have achieved record levels of thrust by a scramjet engine 10 years after making history by powering the first hydrocarbon-fueled and cooled air-breathing hypersonic flight test. The AFRL-Aerojet Rocketdyne team recently completed a successful series of hot-fire tests of an advanced air-breathing hypersonic engine under the United States Air Force’s Medium Scale Critical Components (MSCC) program.

“Our scramjet engine powered the United States Air Force X-51A Waverider when it made history in 2010 by completing the longest air-breathing hypersonic flight ever and we continue to propel the technology,” said Eileen P. Drake, Aerojet Rocketdyne CEO and president. “Our Generation-3 scramjet delivers increased performance and affordability because of our significant investments in our skilled workforce, advanced technologies and innovative manufacturing processes.”

The 18-foot Aerojet Rocketdyne scramjet engine produced record levels of thrust, in excess of 13,000 lbs. The testing occurred over 12 months with more than an hour of sustained combustion at several hypersonic flight conditions. Tests were conducted across a range of Mach numbers demonstrating performance to accelerate a vehicle approximately 10 times the size of the X-51, at hypersonic speeds.

“Aerojet Rocketdyne successfully demonstrated the scalability of their air-breathing scramjet engine, proving its applicability to platforms ranging from missiles to high speed aircraft,” said AFRL Program Manager Paul Kennedy. “Years of preparation paid off as the completion of the MSCC test program sets the foundation for design of hypersonic propulsion systems across a broad range of vehicle scale and Mach operability.”

Testing was accomplished by the ground test team operating the Arnold Engineering Development Complex (AEDC) Aerodynamic and Propulsion Test Unit (APTU) at Arnold Air Force Base.

“AEDC and the APTU facility have been proud to partner on this challenging and rewarding test program. The test team has worked through COVID-19 restraints, shared base resources and hardware limitations to make the test successful,” said Kirk Butler, director of Operations for the AEDC’s Hypersonic Systems Test Branch and Ground Test Team Section Lead. “The knowledge gained from this testing will be studied for years and will drive future designs.”

Aerojet Rocketdyne has continued to improve the aerothermal performance, affordability, scalability and rapid manufacturability of scramjet engines to meet emerging needs. The company’s innovative design incorporates numerous advanced technologies and manufacturing materials and processes. With ongoing investments in facility modernization, retention of highly-skilled personnel, and decades of expertise in scramjets, solid rocket motors and warheads, the company is well-positioned to meet a range of defense operational requirements.

About Aerojet Rocketdyne: Aerojet Rocketdyne, a subsidiary of Aerojet Rocketdyne Holdings, Inc. (NYSE:AJRD), is a world-recognized aerospace and defense leader that provides propulsion systems and energetics to the space, missile defense and strategic systems, and tactical systems areas, in support of domestic and international customers. For more information, visit www.Rocket.com and www.AerojetRocketdyne.com. Follow Aerojet Rocketdyne and CEO Eileen Drake on Twitter at @AerojetRocketdyne and @DrakeEileen.

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