NLOS-LS LAM Engine Uses Automotive Parts

Technical Directions (TDI) has been selected to supply the propulsion system for the Non-Line-of-Sight - Launch System (NLOS-LS) Loitering Attack Missile (LAM). The company had offered a low-cost engine whose compressor and turbine wheels are based on automotive turbocharger parts. Fuel is used to lubricate and cool the bearings, eliminating the need for heavy lubricating oil.

"After an exhaustive and rigorous evaluation of all engine options available today, this was the only micro-turbojet engine on the market that demonstrated the ability to meet the NLOS-LS LAM performance requirements," said Dennis Stalmach, senior propulsion engineer at Lockheed Martin Missiles and Fire Control. "The cost of this engine is a fraction of the cost of other similar engines, which will result in a much lower-cost product for our customer."

The TDI engine has design features intended to make it compact, low cost and easy to assemble. It was designed to be assembled in 15 minutes, while the total time allocated for assembly, acceptance testing and packaging for shipment is under two hours. Altitude-chamber tests and flight testing of the engine system have already confirmed its full operational capability.

The LAM is an integral part of the army's Future Combat Systems. The LAM and its LADAR (laser radar) seeker were successfully demonstrated under the previous DARPA NetFires and US Air Force Low-Cost Autonomous Attack System (LOCAAS) programmes.

NLOS-LS LAM is a ground-launched, canistered tactical missile intended to attack high-value targets or report their target locations for attack by other weapons systems. It is 157 cm (62 in) long, weighs 53 kg (117 lb) and can search a wide area or loiter for 30 minutes at a range of 70 km. Its LADAR seeker will provide three-dimensional analysis of potential targets, while two-way datalinks will allow the down-linking of images and in-flight retasking.

TDI already provides propulsion systems for the LOCAAS and the Surveilling Miniature Attack Cruise Missile (SMACM) programmes. The company has developed a manufacturing plan that will allow initial production of up to 1,500 engines per year, and a growth plan to accommodate up to 7,000 per year.

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