

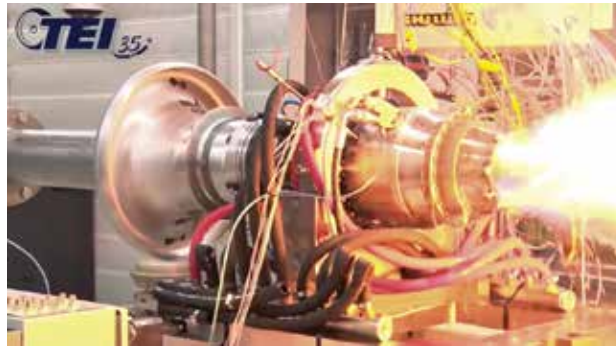
TEI's TJ-300 Engine to Power Roketsan's Medium Range Anti-Ship Guided Munition!

by İbrahim SUNNETÇİ

The TJ-300 Turbojet Engine, of which first ignition was realized at the Miniature Jet Engine Test Rig at TEI's premises on June 19, 2020 with the participation of the Minister of Industry and Technology Mustafa VARANK, will power Turkey's first Medium Range Anti-Ship Guided Munition (G/M). With a power output of 1.300N (around 400hp) the TJ-300 Turbojet Engine is able to reach Mach 0.9 at 5.000ft altitude and thanks to its compact design has an outer diameter of 240mm and weighs less than 30kg. According to TEI, the TJ-300 is the first turbojet engine able to generate a thrust of 1300N and weight less than 30kg. TEI has been working on the TJ-300 engine for the last 28 months.

Totally designed and developed locally with national means in cooperation with TUBITAK, TEI and Roketsan the TJ-300 engine is a single-shaft axial-flow type turbojet engine consisting of a 4-stage axial compressor and a fixed outlet nozzle. According to information disclosed during the ceremony the TJ-300 Turbojet Engine also has the capacity of powering a high-speed jet-powered UAV weighing 1.300kg.

On the other hand, TEI also carries out its activities on the more powerful TJ-400 Turbojet Engine, which according to our assessments will have a capacity of 1.500N, as confirmed in the images



displayed during the video of the TJ-300 ignition ceremony. As also underlined by TEI Chairman and CEO Mahmut F. AKŞİT, five TJ-300 Turbojet Engines will be manufactured this year for testing purposes. These engines will be developed fully indigenously from the scratch by TEI engineers and without any foreign dependency. The TJ-300 Turbojet Engine was a surprise in the public opinion and ranked first rank on the news on social media as well as the mainstream media.

Following these developments, the focus was shifted towards the National Medium Range Anti-Ship G/M, which is under development at Roketsan facilities.

So, what is a Medium Range Anti-Ship G/M? Which capabilities will be acquired by the Turkish Naval Forces with this missile?



The **Medium Range Anti-Ship Guided Munition Project** has been launched for the replacement of the Penguin Mk2 Mod7 Anti-Ship Guided Munitions(G/M) in the inventory of Turkish Naval Forces, which are about to reach the end of their service life in 2020s, with a new generation and indigenously designed G/M in line with the demands of the end-user authority.

According to the image displayed in the background of the official delegation during the briefing in the ignition ceremony, the new Medium Range Anti-Ship G/M, which will be powered by the TJ-300 turbojet engine developed by TEI appears as a scaled version (approximately 50%) of ATMACA Anti-Ship G/M of Roketsan. The new Medium Range Anti-Ship G/M has a smaller diameter compared to ATMACA. This new missile features a booster and a foldable wing design, and

the air intake of the turbojet engine is also mounted under the rear section of the fuselage (just behind the folding wings) similar to ATMACA.

According to the information relayed in the ceremony, the new Medium Range Anti-Ship G/M is 3.2m long and weighs 300kg. It is probably capable of reaching a range of around 100-150km depending launch speed and altitude.

A very large seeker head is mounted at the tip of the missile. This seeker perhaps features a "Dual Mode". In addition to the IIR Seeker, an active RF Seeker (ATMACA B2) or Passive RF Seeker (AKBABA ARGM) or a Semi - Active Laser (SAL) Seeker may have been used.

Similar to ATMACA, the New Medium Range Anti-Ship Guided Munition will feature a two-way encrypted data link, INS/GPS and a Radar Altimeter. New Medium Range Anti-Ship G/M is expected to be deployed at air and surface platforms of the Naval Forces Command such as Helicopters, Maritime Patrol Aircraft and Fast Patrol Boats. The New Medium Range Anti-Ship G/M is expected to feature air-to-surface, air-to-ground, surface-to-surface and surface-to-ground firing capabilities. The new Medium Range Anti-Ship G/M will be replacing the Penguin Mk2 Mod 7 G/Ms in the inventory of the Naval Forces Command.