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Research Report

Turkey's nuclear onset: Military policy, techno-nationalism trends and defence industrial capabilities

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Turkey's Nuclear Onset

Military Policy, Techno-Nationalism Trends and Defence Industrial Capabilities

Can Kasapoğlu

President Recep Tayyip Erdoğan has recently stated that there is no reason why Turkey should not have nuclear warhead-tipped missiles, at a time when other nations also possess such a deterrent. The Turkish president's remarks sparked heated debates as to Ankara's possible military policy shifts and related nuclear objectives. In the 2010s, Turkey accomplished a number of outstanding achievements in the defence sector, especially in unmanned systems development. Ankara is also pursuing a ballistic missile programme (the Bora missile) which saw its operational debut back in May 2019. However, in the short term, the Turkish defence technological and industrial base (DTIB) lacks the capacity to support military-grade nuclear proliferation, nuclear warhead design and strategic ballistic missile production. More importantly, present indicators suggest no backtrack from Turkey's non-proliferation commitments. Rather, the 'nuclear missile' rhetoric essentially highlights Ankara's geopolitical worldview.

One cannot grasp the importance of strategic weapons for regional powers without developing a good understanding of the intra-war deterrence concept, namely, the ability to control the trajectory of an armed conflict. Andrew Terrill's 2009 US Army War College monograph defines intra-war deterrence as the "process of explicit and tacit bargaining within an ongoing war" to control the escalatory patterns. Thus, the concept is centred on drawing deterrent red lines around the mode of warfighting by signalling dire consequences to the adversary, in case it crosses certain thresholds. The essential instruments of maintaining intra-war deterrence are strategic weapon systems, namely, weapons of mass destruc-

tion (WMD) along with ballistic missiles as the most convenient means of delivery.

On a separate note, as techno-scientific developments enable new capabilities over time, one could consider additional arms (*i.e.* AI-empowered offensive cyber agents), to be strategic weapons, should these arms become capable of inflicting catastrophic damage. Some of the literature also includes a secondary segment entitled 'defensive strategic weapons'. Long-range air and missile defence systems fall under this category.

Although it traditionally fields a robust conventional warfighting force, Turkey faces significant shortfalls in its strategic weapon systems and intra-war deterrence

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capacity which hinder Ankara's geopolitical ambitions.

To address the shortcomings, Turkey is pursuing several projects, including a co-operation with EUROSAM to jointly produce a long-range air and missile defence system, the S-400 deal and efforts to develop deep-strike capabilities. Yet, none of the current programmes suggest a military-nuclear agenda.

No easy way out in the military-nuclear sphere

A non-nuclear state, which plans to develop military-grade nuclear capability, must meet several conditions, unless it plans to procure off-the-shelf nuclear weapons (there has long been speculation that this scenario may apply to Saudi Arabia and Pakistan). Firstly, in a hypothetical case, the aspirant non-nuclear state builds a techno-scientific base. It subsequently acquires weapons-grade fissile material (either Uranium or Plutonium based). Then, it develops a simple nuclear device. Yet, obtaining a nuclear device would not guarantee having a nuclear warhead suitable for ballistic missiles, which is the best solution for WMD delivery. Designing, and more importantly, miniaturising a nuclear warhead is a daunting task.

In terms of furtiveness, a nuclear weapons programme is a far cry from chemical and especially biological warfare programmes. Biological weapons proliferation can easily be hidden away under the guise of zoonotic, marine biology, microbiology, vaccinology, or genetic engineering research. However, building military-grade nuclear capacity cannot go under the radar so easily.

Turkey's ballistic missile programme remains solely conventional

A closer look at Turkey's ballistic missile programme gives a hint as to Ankara's most

probable motives with regard to its nuclear rhetoric.

The Bora line forms the core of Turkey's missile programme. The line can be traced back to Ankara's initial defence cooperation with Beijing in the late 1990s. Based on the Chinese B-611 tactical ballistic missile as a baseline, Turkey has made significant progress, especially in developing the missile's accuracy. Bora is a road-mobile missile that carries a 480 kg high-explosive warhead, has an operational range of around 280 km and is reported to have a CEP (circular error probable) of 50 metres. Notably, ROKETSAN, the primary manufacturer of the weapon system, claims Bora's CEP is as small as 10 metres or even less. If true, this would make the missile one of the most precise in its class.

Bora saw its combat debut in May 2019 during Operation Claw in Northern Iraq. Its maiden operational launch was widely publicised in the Turkish press, showcasing yet another milestone for Turkey's burgeoning defence industries. After all, a road-mobile (enables better survivability on the battleground), solid-fuel (minimises the launch-cycle, supporting launch at short notice) tactical ballistic missile, carrying half a ton of high-explosive warhead with precision strike capability within 280 kilometres represents a game-changer for Turkish military operations. Now, Ankara must walk a fine line in missile proliferation, as Turkey is a party to the Missile Technology Control Regime (MTCR, a non-binding yet effective exports control regime focusing on systems able to deliver at least 500 kg payload to 300 km and beyond). The Bora line's further roadmap remains a critical issue. In this matter, only limited open-source input is available. In 2018, the Turkish defence minister spoke of a second batch, Bora 2, without detailing the administration's plans for areas of improvement. Notably, back in 2012, the Turkish press reported that then Prime Minister Erdoğan had set the bar high for the country's national research and development efforts and had called on the industry to produce missiles with a range of around 2,500 km,

probably with the Middle Eastern military strategic balance in mind.

Technically, unless Ankara opts for adding another stage to Bora, which would mark a burdensome difficulty in terms of know-how and defence economics, it would be safe to assume that the Bora family will remain a short-range system (meaning an operational range of less than 1,000 km). In comparison, Iran's Sejil 2 solid-fuel ballistic missile, for example, has a two-stage design (independent rocket stages with engine and propellant), setting its operational range at around 2,000 km which places it in the medium-range ballistic missile category (*operational range between 1,000 km and 3,000 km*). An educated guess suggests that Turkey would focus on minimising the launch-cycle and boosting their precision and manoeuvrability (new generation ballistic missiles, such as the Russian SS-26 Iskander, can follow unpredictable trajectories and homing manoeuvres to strengthen missile defences). Another area of improvement might be to reduce the radar cross-section of Bora by altering its design to prevent it being easily detected by early warning systems. Although such modernisation packages might furnish the Turkish Armed Forces with an even more lethal battlefield asset, it would not hint at a programme to produce delivery means for nuclear payloads, as there is no visible work on nuclear warhead design, no hint that the Bora line will be adjusted for WMD delivery and, so far, no effort to develop an airburst mode warhead detonation during the tests (airburst above ground level is preferred in ballistic missiles used in WMD dissemination).

In fact, considering the anti-access/area denial (A2/AD) zones surrounding Turkey, which pose an immense threat to manned aircraft, Ankara's decision to invest in high-precision ballistic missile capabilities for conventional roles, coupled with unmanned aerial platforms with higher payloads, makes perfect sense.

The F-35 and S-400: a wildcard?

The F-35 and the S-400 remain mutually exclusive defence procurements for Ankara for political and military-technical reasons. Interestingly, this conundrum might have an indirect effect on Turkey's role in NATO's tactical nuclear posture, and relatedly, the Turkish administration's strategic push for nuclear capabilities. Available literature shows that while the Turkish Air Force had nuclear certified platforms during the Cold War within the NATO framework, its present doctrinal order of battle does not feature such a role.

Nevertheless, open-source data suggests that Turkey still hosts some 60 to 70 B-61 tactical nuclear bombs which are awaiting modernisation under the B-61 Life Extension Program. The US does not field a permanent, nuclear certified air-wing on Turkish soil. Should a tactical nuclear weapons (TNW) mission arise, a nuclear-certified strike package would be deployed in Turkey. In this case, although the Turkish military does not have nuclear-certified platforms anymore, Turkey would still be expected to conduct support roles, such as providing fighter escort or flying tanker aircraft for aerial refuelling. Any scenario involving the forward-deployed TNW arsenal in Turkey would initiate classified Nuclear Command, Control and Communications (NC3) protocols.

Executing the tasks mentioned above would prove difficult if the engagement envelopes of the standalone S-400 systems cover Turkish airspace. Moreover, amidst strained US-Turkish bilateral relations, some Western experts have penned pieces advocating the removal of TNWs from Turkey. Any unilateral decision by the US to withdraw the B-61s from Turkey could damage relations with the Turkish political-military elite. As Elaine Bunn's famous analogy goes, these assets are like 'wedding rings'; while not wearing them from the outset might be acceptable, taking them off after a while would be a different story.

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The real meaning of 'nuclear missiles' rhetoric

In the short term, Turkey's DTIB lacks the capacity to produce a two-stage, medium-range ballistic missile, which would be a meaningful asset for building a nuclear deterrent with real regional impact, and arm it with an advanced, miniaturised nuclear warhead. Besides, any serious violations of the non-proliferation regimes, to which Turkey has committed itself, might lead to devastating economic repercussions and possibly the collapse of Turkey's peaceful nuclear energy plans, labelling it an unacceptable risk. So, if Ankara's defence policy were not to prioritise nuclear warfare in the coming years, what does the President's statement mean?

In broad terms, the speech reflects the upturn in defence sector-driven technonationalism in Turkey. Notably, in the very same text, President Erdoğan praised Turkey's success with the indigenous T-129 attack helicopter and also touched on the example of the decline of the Czech defence industry as a result of 'naïve' paralogies, probably referring to the Vaclav Havel administration's policies during the post-Cold War period.

Secondly, the discourse reflects the Turkish administration's uneasy stance on the global security architecture. Only minutes after the 'nuclear missiles' statement, President Erdoğan reacted harshly to US criticism of Turkey's procurement of the S-400. In his UN General Assembly address in September 2019, President Erdoğan said that nuclear weapons should be banned completely or be freely available to all states. Ankara's geopolitical worldview is seeking more room to manoeuvre on the international stage and nuclear issues offer a lucrative opportunity for political signalling on this matter.

Turkey's roadmap for defence modernisation is expected to remain on track and

pursue further progress on items that have been in the limelight, such as unmanned systems, blue-water naval capabilities, strategic air and missile defence and smart conventional weaponry across the spectrum. Tactical aviation and Turkey's upgrade to fifth-generation systems looms large as the biggest unknown, revolving around the F-35 issue, Russia's charm offensives and the national combat aircraft project (*Milli Muharip Uçak – MMU*). The ballistic missile programme will likely be limited to the short range (< 1,000 km) in the foreseeable future, focusing on producing tactical assets for battlefield use. Turkey can further advance its GEZGIN cruise missile project and reach a range of beyond 1,000 km. However, the GEZGIN project is designed to develop conventional long-range strike capabilities for naval platforms, mimicking the US Tomahawk and Russian Kalibr missiles.

Of course, there are certain wildcards that may turn the tables. Emergence of an irreversible decline in Turkey's transatlantic security guarantees, or a nuclear arms race coming to the fore in the Middle East could upset Ankara's defence planning calculations.

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