



Doubts hang over North Korean missile launchers' vulnerabilities

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North Korea's decision to stage a massive display of military might the day prior to the opening of the 2018 Winter Olympics was shocking but unsurprising.

On the day, goose-stepping troops and other hardware did not distract observers from what has become the highlight of every North Korean military procession: missiles of all ranges – short, medium, intermediate and intercontinental. Mounted aboard mobile launchers, they roll through Pyongyang before the admiring gaze of Kim Jong-un.

With the North's Hwasong-15 intercontinental ballistic missiles, or ICBMs, having shown their capability to reach all of the continental United States, attention is now focused on the country's Transporter Erector Launchers, or TELs, which China supposedly delivered to North Korea as civilian lumber-carrying trucks in 2012, or perhaps earlier.

TELs are critical components of Kim's program. They make the missiles themselves mobile, and can be dispersed around the country, creating multiple target headaches for an attacker. Moreover, they can be easily hidden from aerial or satellite observation – under bridges, for example, or in numerous tunnels across North Korea.

The numbers of these huge vehicles are at the center of a debate. Within hours of the parade ending, CNBC was telling its readers: "North Korea parade hints at 'key vulnerability' in regime's ICBM force, say defense experts." A supposed "shortage of big vehicles" was noteworthy, CNBC claimed.

The presence of tandem or tractor-trailer-mounted missiles along with only four TELs for Hwasong-15s, prompted observers to refute North Korea's claim late last year that it is now capable of producing these very large TELs. The low number indicates that the regime is still dependent upon its original, Chinese-built TELs.

Eric Gomez, a policy analyst at the Washington, DC-based Cato Institute, declared in a blog that "no more than six of these trucks have been seen at one time." Commenting on the latest parade,

he noted: “The Hwasong-15 was carried by the TEL that was used in its November 2017 flight test, but only four TELs appeared in the parade.”

Gomez also questioned the North Koreans’ claims. “Kim Jong-un recently claimed that North Korea is capable of indigenously producing more large TELs for its missile forces. The TEL for the Hwasong-15 does have one more extra axle than the original logging truck, and the presence of five Hwasong-15s at the parade shows that the North Koreans can successfully modify their existing capabilities. However, the parade offers no evidence to substantiate Kim’s claim that the country can manufacture new TELs,” Gomez wrote.

On the other side of the debate is Joseph Bermudez, an analyst with the 38North Project at the Johns Hopkins School for Advanced International Studies, also in Washington, DC. Bermudez, an expert on the Korean People’s Army, said it was “imprudent” to label this as a key vulnerability. He writes:

“North Korea has been converting imported heavy vehicles from a number of countries since the late-1980s. Not everything that has been done, however, has been displayed during parades. During the past three years, the North has started to produce medium-sized tracked TELs based upon an existing tank chassis it manufactures for the Pukkuksong-2 (KN-15) medium-range ballistic missile and Kumsong-3 (KN-19) coastal defense missile. More recently it has modified the imported Chinese WS-51200 chassis by inserting an additional axle into the TEL used for the Hwasong-15. This was made possible by the chassis’ modular format that facilitates such modifications. While it undoubtedly aspires to produce a WS-51200 class TEL and wants the world to believe it can (that’s why they release imagery of their so-called TEL factories) North Korea’s industrial infrastructure is not presently capable of doing so using indigenous resources.”

Bermudez went one step further in his assessment:

“All nations with ballistic missiles do not simply keep producing launchers just because they can. They produce them to meet requirements that are based upon threat assessments, vulnerability assessments, force structure requirements/capabilities and other considerations. North Korea is no different. It almost assuredly has produced a requirement for the number of missiles (in inventory or scheduled to be manufactured), number of TELs and other associated equipment required by the Strategic Force based upon such assessments. It would be unwise to believe that they have not already achieved that requirement at a minimal level or that there is any “key vulnerability” with regards to the number of launchers currently in inventory.”

Road-mobile ballistic missile capabilities took shape in the USA and the USSR starting in the 1970s. In May 1980, Jeffrey Barlow, a policy analyst at the Heritage Foundation, produced a report on a then- nascent (and ultimately abandoned) US program in which he explored the survivability of so-called ground-mobile random movement basing schemes.

Among other things, Barlow outlined the vulnerability of TELs to enemy missile barrages which could render them inoperable “pending repair,” as well as the need for a very expansive highway

network – along with railroad tracks or waterways – “to adequately accommodate the missile force.”

Today’s North Korea cannot match the geographic size of Russia or the US. It also has a very limited road infrastructure – fewer than 500 miles of roadways are capable of properly supporting the weight of its fleet of huge TELs, which can top out at anywhere from 500,000 to 750,000-plus pounds of gross weight.

Even so, North Korea’s strategic plans fully embrace the use of TELs. There can be little doubt that North Korea’s leadership understands that, regardless of the scale and condition of its roadways, its TELs today are watched round-the-clock despite every effort to conceal them. By bringing them out for a quick drive through Pyongyang in the middle of winter, North Korea realizes that this means opening them up for inspection from afar, and ensures that their thermal properties or heat signatures are front and center – not just as a fleet of specialized vehicles, but individually as well.

While there are questions as to whether or not the US and its allies possess the ability to engage in round-the-clock monitoring of all connecting routes and underground depots used by its TELs, North Korea cannot rule out this possibility of consistent surveillance of key neighborhoods where TELs routinely operate. It would be foolhardy for Pyongyang to underestimate the extent of this surveillance.

Still, timing is one factor on North Korea’s side. When appropriate commands are given, TELs sprint to their assigned level launch sites. This offers US and allied forces mere minutes to render the roads used by the TELs inoperable, or to locate and destroy the TELs themselves. So, the issue of dealing with these missiles comes down to either very rapid interception, or preemption – sealing or jamming the garage doors before the missiles’ TELs can emerge from their hiding places.

Both solutions warrant careful study by allied war planners.