



Iran Flexes Its Missile Muscles

by Uzi Rubin

BESA Center Perspectives Paper No. 521, July 7, 2017

EXECUTIVE SUMMARY: The lethal June 7 terror attack in Teheran that left 18 people dead was carried out by ISIS. Not unexpectedly, Iran vowed revenge. On June 17-18, this revenge materialized in the form of a volley of Iranian precision ballistic missiles fired at ISIS strongholds in the Syrian town of Deir ez-Zor. The Islamic Republic exploited the event to flex its missile muscles, a display designed to broadcast that it is a force to be reckoned with on a par with Russia and the US. It can project power hundreds of kilometers away from its borders and has the willpower and resolve to use force to promote its interests in the region.

The June 17-18 nighttime launching of ballistic missiles from sites within Iran against ISIS strongholds in Syria was a meticulously staged show designed to impress both the world and the Iranian public. As a spectacle, it was superbly stage managed. Video cameras were positioned all around the launch site to capture the action from many angles. A UAV was purportedly sent from Damascus to fly over the target area and capture the missile strikes in real time. Official video showed the convoy of mobile launchers arriving at the launch site and deploying. Video was released showing the loading of missiles and their readying for action, followed by dramatic shots of missiles roaring off one by one into the night skies of Western Iran – again and again, from many vantage points. An ecstatic reporter provided blow-by-blow commentary to the home audience. Videos from the UAV showed explosions and a big fire in the targeted town. In all, it was an impressive media show, akin to the ones staged by Russia and the US when they launched their Kaliber and Tomahawk cruise missiles against targets in Syria not long ago. The message was clear: by its own lights, Iran is now in the big leagues.

The Iranians claim they fired the missiles from two sites in the province of Kermanshah in western Iran, 604 and 654 km from Deir ez-Zor. While declining to disclose how many missiles hit their targets, they claimed they killed scores of ISIS commanders and operatives. An examination of the overhead view from the UAV provided by Iranian news agencies shows two hits, one in a built-up area (starting a considerable fire) and the other in an empty lot, although the Iranian editors tried to create an impression of many more hits by repeating the same scenes from different angles.

Undisclosed military sources in Israel said that all together, seven missiles were fired, five of which missed their targets by a wide margin (some falling in Iraqi territory). Of the two remaining missiles, one hit its intended target while the other missed it by hundreds of meters. The source of this information remains unclear, but it tallies well with the overhead videos shown on Iranian websites.

As for the type of missile used for the raid, Iranian news agencies claimed it was the "Zulfikar" ("sacred sword"), the latest and longest-range member of Iran's family of "smart rockets." The Zulfikar hails from the original conversion in 2002 of a 600 mm unguided, low-accuracy "Zilzal" ("earthquake") rocket into a fully guided ballistic missile, dubbed the "Fatah 110" ("Victory 110"). This was done by the addition of a guidance section with an inertial navigation box and four air vanes, not unlike the US conversion of the unguided MLRS into the guided version, the GMLRS (alas, the US evolved away from heroic names for its missiles; they are now identified by unpronounceable acronyms).

The original Fatah 110 could carry a 600 kg warhead about 200 km with acceptable accuracy. Subsequent versions were provided with GPS for pinpoint accuracy and more powerful motors to increase their range. By replacing steel with composite materials, the range was almost doubled to 500 km.

In June 2016, the Iranians unveiled the latest version, the Zulfikar, claiming a range of 750 km – triple that of its precursor. How they did this remains unclear. An animation released by a semi-official TV channel (Press TV) hints that it was done by adding a second rocket motor to the missile and by performing an "atmospheric skip" maneuver that converts some of the speed of the missile into extra range. More likely it was done by significant reduction of the warhead's weight. Regardless, the fact that the Iranians managed to hit a target more than 600 km away (if true) indicates that the Zulfikar works.

At the same time, the apparently poor score of the Deir ez-Zor attack indicates that it is not yet mature. Two days after the attack, the semi-official Fars news agency reported that some less precise missiles were also used. According to this source, some "Quiam" liquid propellant ballistic missiles were also fired.

The "Quiam" is a souped-up version of the liquid propellant Scud C, but has no provision for pinpoint accuracy.

The rationale for launching such imprecise missiles against point targets is questionable. Perhaps the Fars news item was a cumbersome attempt to sweeten the pill for the home audience: if fewer Zulfikars were used, the score was not as dismal as it seems.

Yet the poor score should not distract from what might be a solid achievement by Iran's missile industry. To hit a single house from more than 600 km away is far from trivial. In fact, it is a very significant development. As a military operation, Iran's missile strike may have been a dud, but as a technical demonstration of the Zulfikar's inherent capability, it may have been a step forward – provided it really worked. In any case, poor reliability can probably be cured by design refinements and further testing. If its basic design is sound, the Zulfikar can still become an awesome weapon.

While Israel is threatened by Iranian missiles from Lebanon and from Iran itself, it is not the intended target of the Zulfikar, which lacks the range to reach Israel from Iranian territory. Its intended target is probably Saudi Arabia, whose capital city, Riyadh, is about 700 km away from the Iranian shores of the Persian Gulf – well within the claimed range of the Zulfikar.

Iranian officials continue to cite Israel as its chief enemy in the region, but their missiles indicate that this is not exactly the case. A drizzle of Iranian-made missiles is currently hitting Saudi towns along the Yemeni border and spreading to the Saudi interior. Houthi rebels in Yemen have already launched Iranian-supplied ballistic missiles at Saudi Arabia's largest port city of Jeddah, its summer capital of Taif, and Riyadh itself at least twice.

Saudi Arabia's Patriots are doing a workmanlike job of shooting down scores of Yemeni-launched missiles, and its recent arms deal with the US may provide it with even better missile defenses to cope with Zulfikars and the like. If Iran is unhappy about the latest US-Saudi arms deal, it has only itself, its bellicose missile programs, and its Houthi clients in Yemen to blame.

From a wider perspective, the lone success of the Zulfikar – if true – is another indicator of a changing battlefield. Pinpoint precision ground-launched missiles with ever-growing ranges are entering the armed forces of nations all over the world. This class of weapon is already prevalent in Russia and China, and is now spreading in Western military organizations. When a small target can be destroyed from hundreds of kilometers away by pushing a button in a comfortable, air-conditioned shelter, the logic of dispatching a \$100 million jet with an invaluable human pilot to do the same job becomes questionable.

The distinction between ground and air power is blurring, to the detriment of the latter. Some countries, such as Iran and North Korea, seem to be wagering on missiles rather than airpower as the key to security. They may not be wrong to do so.

Uzi Rubin was founding Director of the Israel Missile Defense Organization, which managed the Arrow program. He is now a senior research associate at the Begin-Sadat Center for Strategic Studies.

BESA Center Perspectives Papers are published through the generosity of the Greg Rosshandler Family