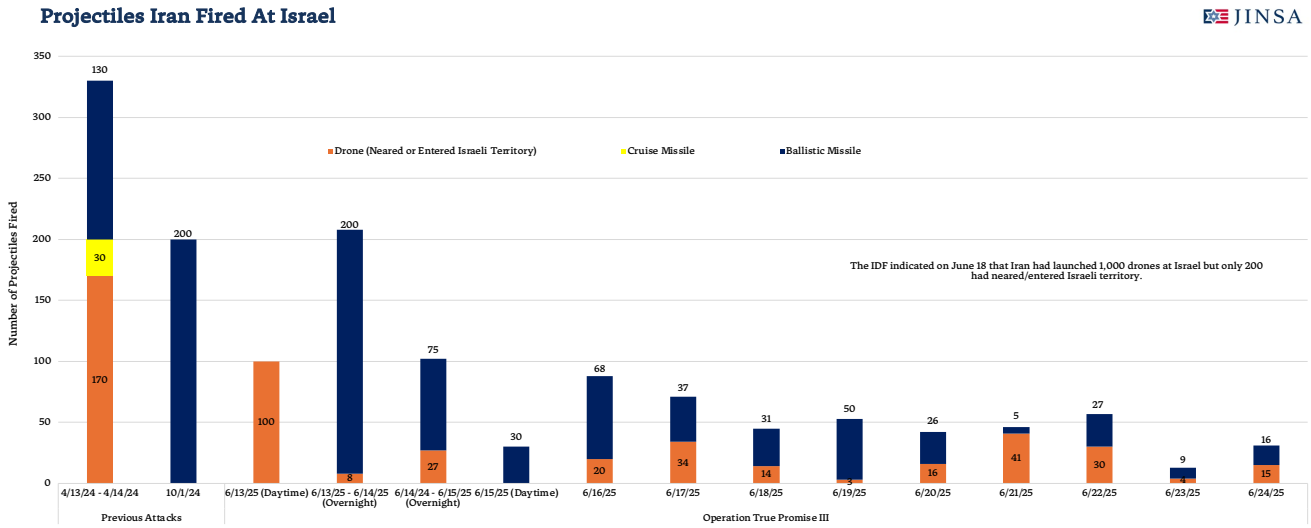
JINSA
The Jewish Institute for National Security of America

Iranian Ballistic Missile Estimates

Ari Cicurel
Associate Director of Foreign Policy

While Iran continued to launch ballistic missile attacks against Israel from June 13-24, its fire severely fell after June 17 because Israel degraded its launch capabilities. On June 16, JINSA released an estimate of Iran's future rate of fire that closely predicted this drop in Iranian ballistic missile launches. The analysis below provides an updated estimate of Iran's missile launch and stockpile capacity, an explanation for its decreased number of missile launches, and an analysis of how the fighting would have likely proceeded if it continued.

According to JINSA estimates based on Iran's attack strategy and the degradation of its launch capabilities, Iran would likely have fired an average of fewer than 20 ballistic missiles per day had the conflict continued and fewer than five missiles per day as soon as June 30. However, Iran would likely have been able to hit Israeli population centers an average of one to two times per day because of its use of advanced ballistic missiles and change in firing tactics. Based on IDF estimates, Iran's missile stockpile diminished from 2,500 missiles pre-conflict to between 1,500-1,000 missiles, and the IDF degraded its launcher capacity from 350 to roughly 100 launchers.

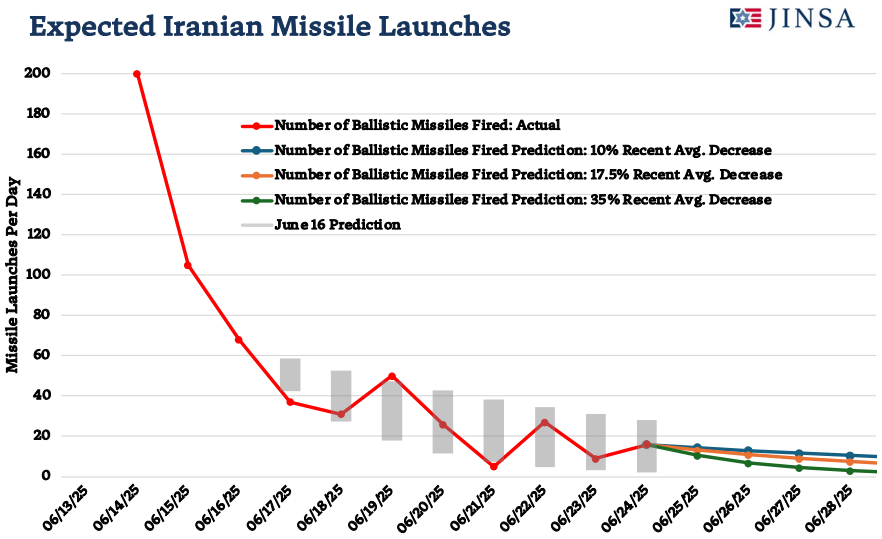


- Iran likely diminished the volume of its ballistic missile attacks against Israel and wanted to end the conflict because Israel degraded Iranian launch capacity by eliminating missile launchers and stockpiles.
  - » Each Iranian missile launch gave away the location of a missile launcher. Even with mobile launch platforms, persistent Israeli surveillance and attack aircraft presence enabled Israel to identify, track, and target the launchers.
- JINSA's June 16 estimate of Iran's future ballistic missile attack closely predicted the size of Iranian ballistic missile attacks for each day afterward. If the fighting had continued, the regime would have likely launched fewer than 20 missiles per day for the remainder of the conflict.

» From June 16-24, Iran launched more than 20 ballistic missiles on only five days. JINSA had assessed on June 16 that for the remainder of the conflict Iran would only fire over 20 missiles on two to five days due to its lost launcher and stockpile capacity.

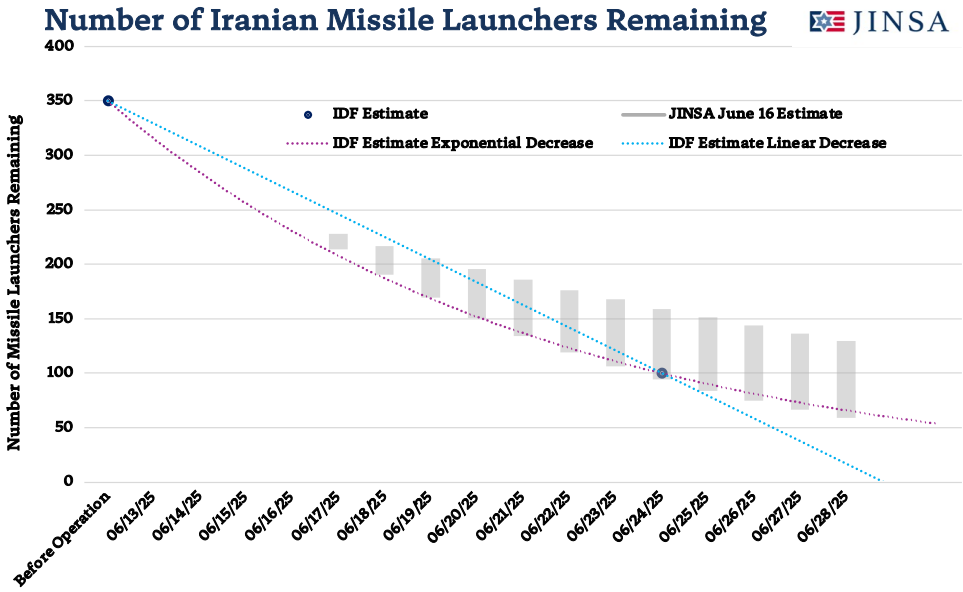
» According to JINSA's updated estimates, if the conflict had continued and Iranian missile barrages fell at the typical rate (35 percent), the scale of Iranian ballistic missile attacks would have fallen below five missiles per day by June 27.

– At a much smaller reduction in Iranian missile launches (10 percent), perhaps because it became increasingly harder for Israel to find and eliminate Iranian launchers or missiles, Iran would have continued launching at least five missiles per day until July 7.



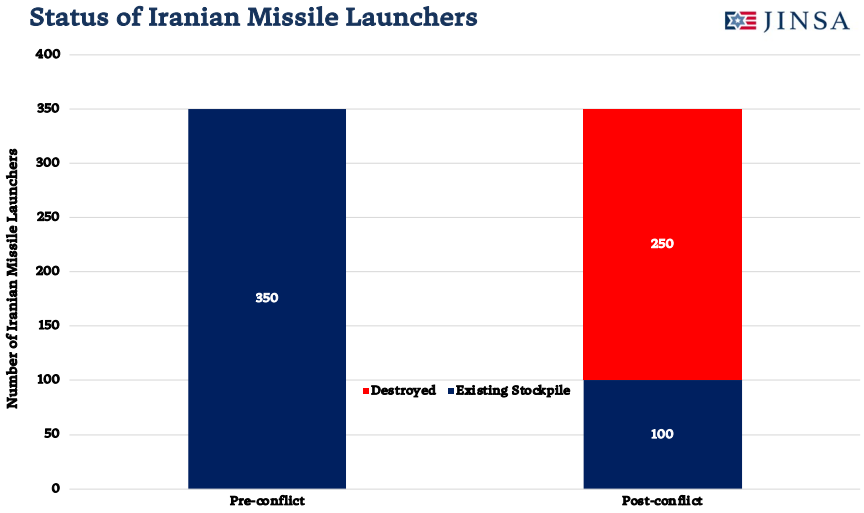
- JINSA's June 16 prediction for Iran's missile launcher losses throughout the conflict also closely aligned with the IDF estimate of Iran having only 100 launchers left on June 24. Based on an updated JINSA estimate, if the fighting continued for roughly four more days, Israel may have degraded Iran's missile launcher capacity to between approximately 20 to 65 launchers remaining.

» This would have prevented or severely inhibited Iran's ability to launch the large waves of over 30 missiles that it fired at the beginning of the war.



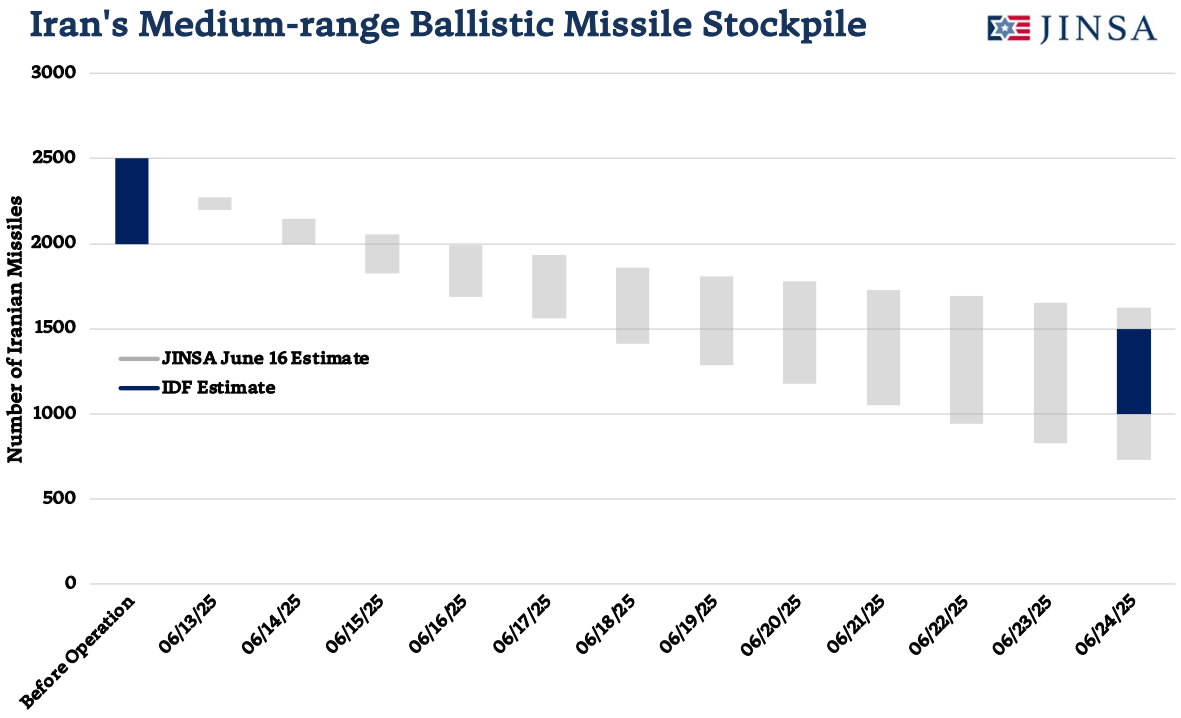
» Having already lost roughly 71 percent of its medium-range ballistic missile launch capacity, Iran likely wanted to end the conflict to prevent Israel from further degrading its arsenal.

– Reports throughout the conflict of the number of launchers that Israel destroyed varied, but on June 24, the IDF estimated that it had destroyed roughly 250 launchers, two-thirds of Iran's pre-conflict stockpile, leaving Iran with only 100 in its arsenal.

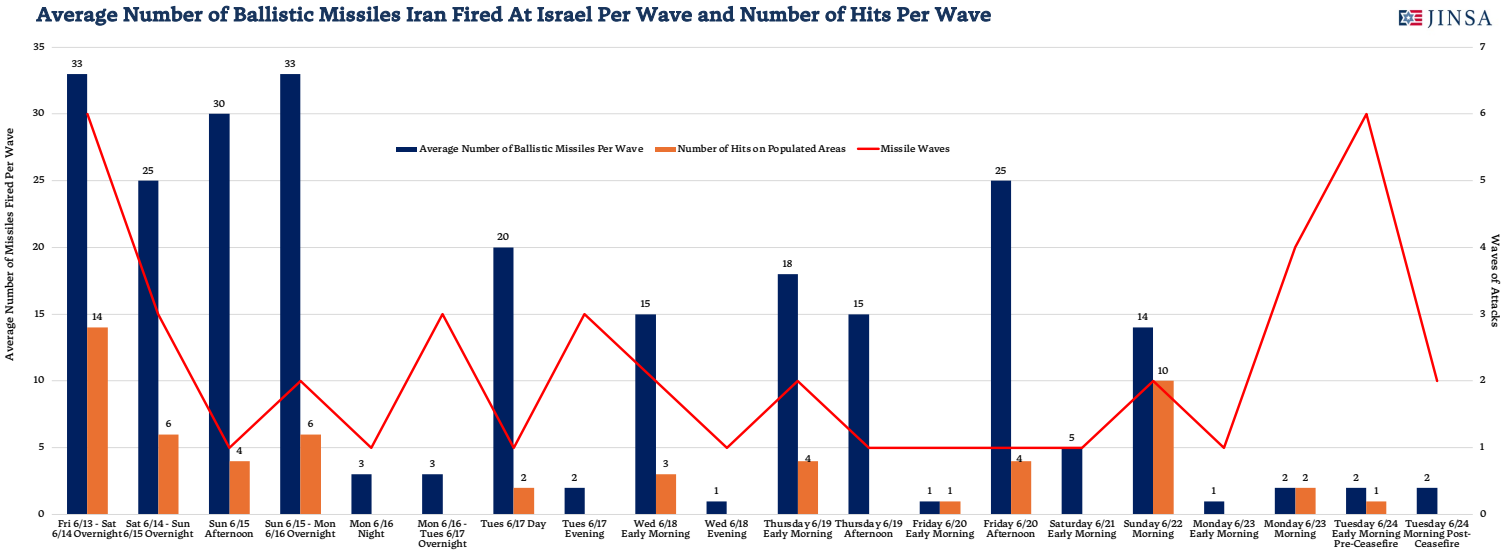


- Iran has lost 33-50 percent of its pre-conflict medium-range ballistic missile stockpile. The IDF's post-conflict estimate is that it destroyed roughly 1,000 Iranian medium-range ballistic missiles, with between 1,000 and 1,500 remaining in Iran's arsenal. This falls within the range that JINSA's June 16 estimate predicted.

» While JINSA's June 16 analysis relied upon the IDF's initial claims that Iran had 2,000 missiles, the IDF's post-conflict estimate assumed that Iran had 2,500 missiles before the start of the fighting.



- Israel's degradation of Iran's ballistic missile launcher and stockpile capacity likely drove a shift in the regime's approach to firing at Israel. Knowing it could not stop Israeli operations within Iranian territory, Iran was likely seeking to pressure Israeli population centers for longer periods of the day, evade Israeli air defenses, and exhaust Israeli missile interceptors, while also firing fewer total missiles and exposing fewer launchers to counterattack.

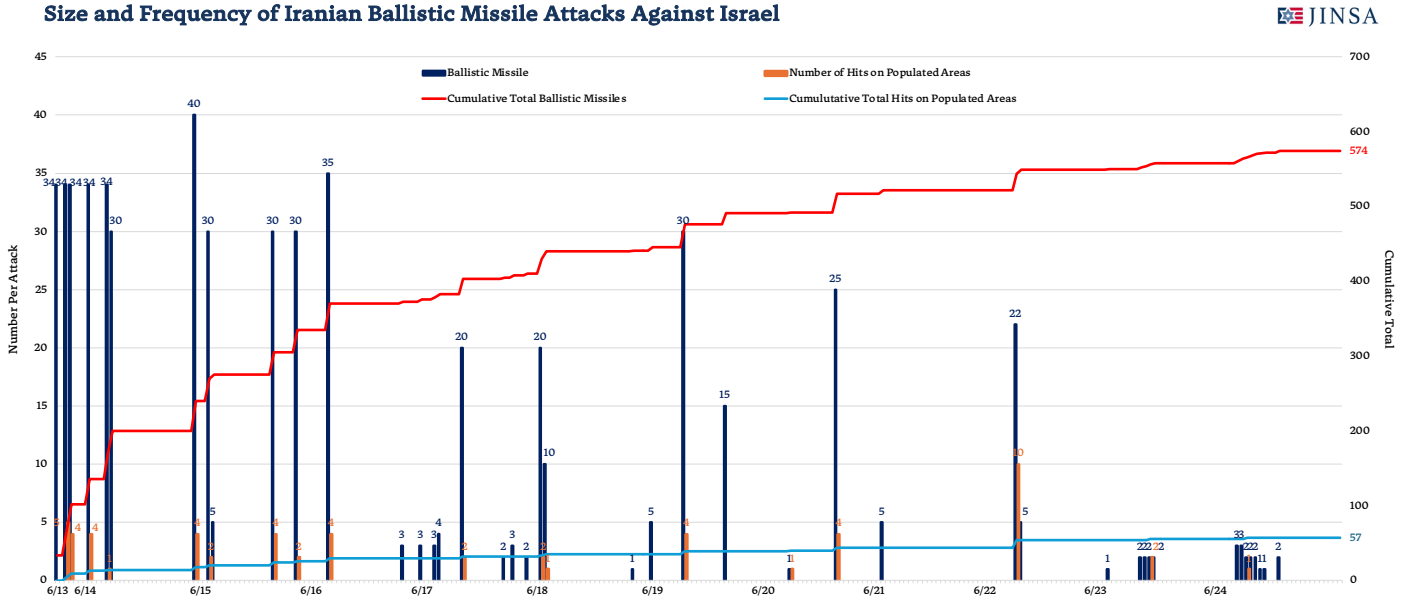


» For the first three nights of the conflict, Iran launched 12 waves of missile attacks with 20 to 33 ballistic missiles per wave, predominantly during the nighttime.

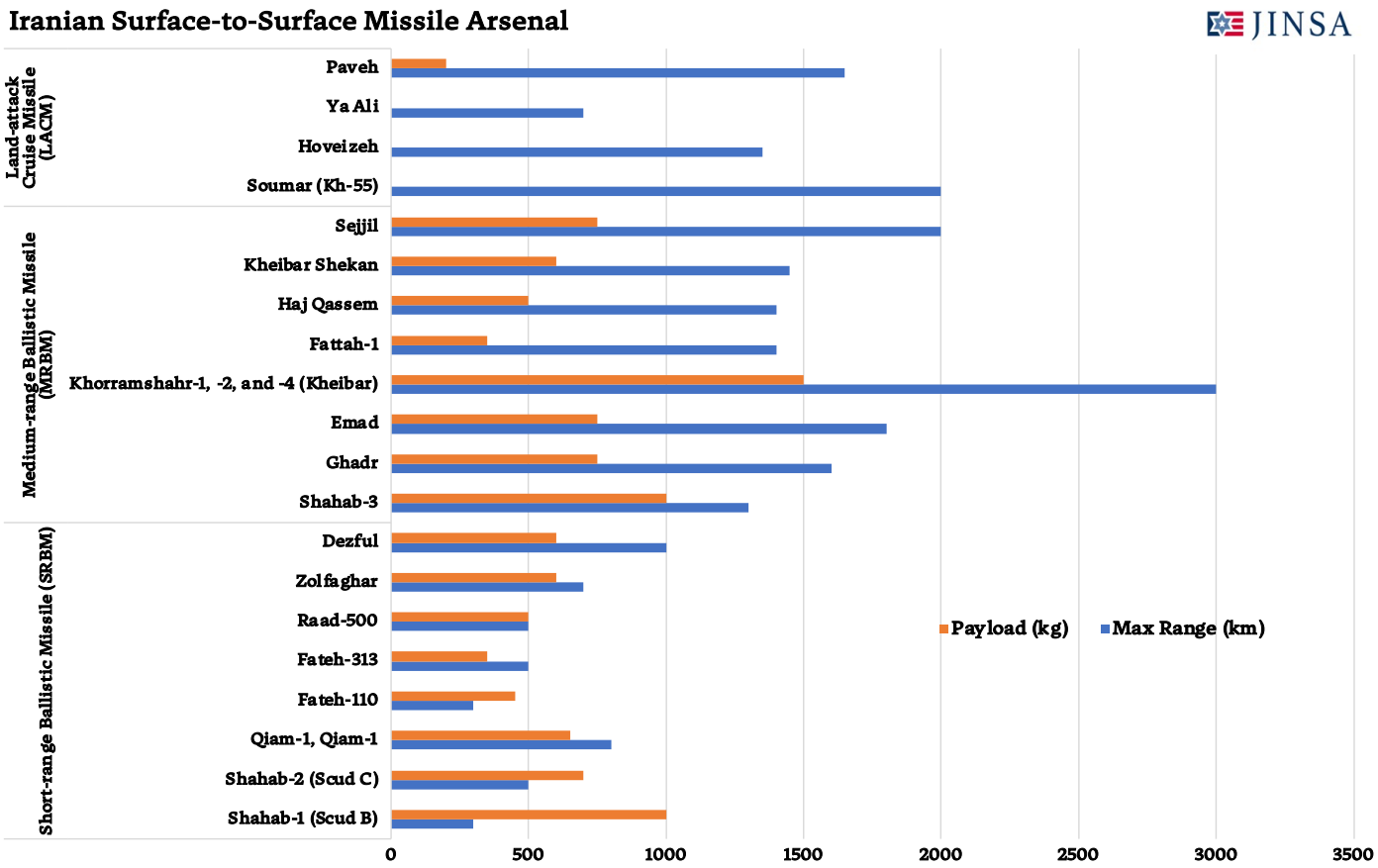
» After that, the regime shifted to a model of firing small waves of one to three missiles followed by larger waves of 15-25 missiles and began conducting attacks over a longer period of the day than its initial primarily overnight attacks.

– This likely reflects both Iran's desire to paralyze the Israeli populace over a longer portion of the day and the regime's desire to avoid exposing many of its launchers to Israeli strikes at one time.

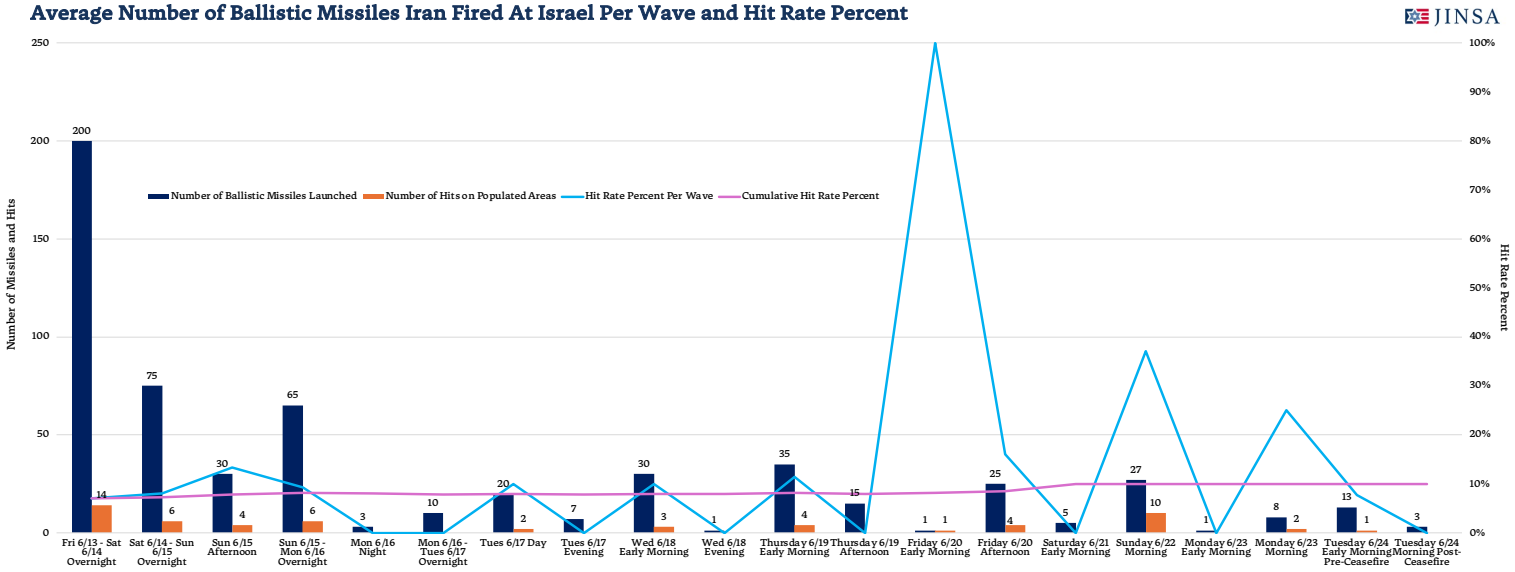
» In the final two days of fighting, Iran launched waves of only one to two missiles each but also conducted more waves of attacks over shorter time periods than at any other point since June 13-14.



- Coinciding with this shift, Iran appears to have turned to using its more advanced weaponry so that it could inflict greater damage in Israel with fewer missiles and fire from further east within its territory, after Israel degraded launch capabilities in western Iran.
  - » During the evening of June 19, Iran claimed to launch a Sejjil (2,000 km range) ballistic missile at Israel. If true, Iran may have used this weapon because Israel has degraded the regime's ability to fire from western Iran, forcing it to fire from central Iran and use longer-range munitions.
  - » Iran's use of cluster munitions during attacks on June 19 and 20 indicated a desire to hit Israel with more munitions per missile, enabling it to use fewer ballistic missiles due to Israel degrading its launch capabilities.
  - » Following the U.S. strike against Iran's nuclear sites, Iran reportedly launched a Khorramshahr-4 ballistic missile, which carries a payload at least twice as large as the missiles it previously fired at Israel.
    - – On June 22, following the U.S. strikes against three Iranian nuclear sites, Iranian state television claimed that the regime launched a Khorramshahr-4 ballistic missile, also called Kheibar. The missile has the longest range (3,000 km range) and heaviest payload (1,500 kg) of any in Iran's arsenal, and it is probably among its most accurate (30 m circular area probability). The missile is also capable of launching cluster munitions.
  - » Iran's decision to launch more advanced missiles was likely to deter further U.S. or Israeli strikes following the U.S. strikes on its nuclear facilities and because Israel has degraded Iran's capacity to launch other missiles.



- Iran's approach of firing more frequent and smaller waves, while using its more advanced and larger missiles, achieved more successful hits against Israel than its earlier attacks.
  - » Iran hit Israel with 37 percent of the missiles it launched during the strike on June 22 and 25 percent of the missiles it fired on June 23. This marked its most successful attacks since the conflict began. This increased success rate may have been due to Iran's shift to using more advanced ballistic missiles and cluster munitions.
    - The 10 missiles that struck Israel on June 22 marked the single most successful Iranian attack since the escalation began.
  - » While Israel intercepted 90-93 percent of Iranian ballistic missiles that threatened populated areas throughout the conflict, after Iran changed its firing tactics on June 18, Israel only achieved an 83 percent interception rate.



  - » Considering Iran's recent success of striking Israeli population centers with roughly 20 percent of its missiles, the regime would likely have been able to continue hitting Israeli cities and towns an average of one to two times per day until at least June 28 due to its recent shift in firing tactics.
    - If Iran had expanded its shift toward using its more advanced missiles, this hit total would likely have increased further.