Rockets and Missiles in The Middle East – Global Implications

Presentation to the 17th RUSI Missile Defense Conference, April 2016

Uzi Rubin

- Iran’s post – JCPOA missile policy and programs.
- Iran’s missile proliferation in the region and beyond.
- The regional race between missile threats and missile defense.

All information herein come from open sources. Copyright Rubincon Ltd
Does the JCPOA Put Any Limitations on Iran’s Missile Programs?

- The language of the UNSC decision on JCPOA urges Iran to refrain from making and testing “missiles designed to be capable of carrying nuclear warheads” for eight years.

- This language is ambiguous and can is interpreted in two different ways.

- Iran views the limitation as applying to missiles “designed to” (i.e. specifically tailored for) carrying nuclear warheads. Hence the UNSC resolution does not apply to any of their current missiles, since none are specifically tailored for nuclear strikes.

- The West views the limitation as applying to missiles “capable of” carrying nuclear warheads, i.e. having the available volume and payload capability to carry first generation nuclear warheads. Hence the UNSC resolution applies to Iran’s larger missiles such as Shahab and Sejil families.

Soviet nuclear warheads of the venerable SCUD B
Iran’s Post JCPOA Policy

“People say that tomorrow’s world is a world of negotiations and not a world of missiles. If they say this thoughtlessly, it shows that they are thoughtless. However, if this is intentional, then this is treachery.”

Ali Khamenai, Iran’s supreme leader, March 30th 2016
Iran’s Precision Missiles: Moving Upscale

“Emad 1” – Kader F with Maneuvering RV

Range: 1700 Km
Accuracy: 500 meter
Payload: 750 Kg.
Deployment: “After 2016”

Source: Antony Cordersman, “Iran Rocket and Missile Forces, Strategic Options” CSIS October 2014
Recent Advances in Iran Missile Programs

Latest version of the Shahab 3 family: the Emad precision long range missile
Recent Advances in Iran Missile Programs

A precision version of Shahab 2 (SCUD C)? A SCUD D? An Emad Test Bed?

Courtesy Tal Inbar
Recent Advances in Iran Missile Programs

Underground "Missile Cities" Unveiled

Fars News Agency
Recent Advances in Iran Missile Programs

Underground Launching Facility Unveiled
Recent Advances In Iran’s Missile Programs

Salvo Launch of 2 Kader F Missiles, March 8 2016

“Israel Should Be Wiped Off The Face Of The Earth”
(Hebrew and Persian)
Recent Advances In Iran’s Missile Programs

Composite rocket motor casings: Fatah 313, range 500 Km
Recent Advances In Iran’s Missile Programs

Composite rocket motor casings: Fatah 313, range 500 Km
Recent Advances In Iran’s Space Program

First fully equipped Simorgh SLV unveiled August 22 2015
Iran readies another ballistic missile launch -- this time to space

By Lucas Tomlinson • Published March 12, 2016 • FoxNews.com

The missile is known as a Simorgh, and officials are watching the missile on the launch pad as it is being fueled at an undisclosed location inside Iran.
North Korea- Iran Missile Ties

Advanced Iranian Missiles Not Seen To Date In North Korea

Khalije Fars ASBM
Qiam advanced SRBM ER
Sejjil 2 stage solid propellant IRBM
Safir SLV
Sejjil’s Unique TVC System

Jet Vane TVC with long burn solid rocket stage
North Korea Tests A Long Burn Time Solid Propellant Motor, March 29th 2016
Jet Vane Control System – Towards an North Korean “Sejjil”?
Iran’s Missile Footprint Across the Middle East

Iraq: DIY Rockets of Pro Iranian Militias
Iran’s Missile Footprint Across the Middle East

Iraq: DIY Rockets of Pro Iranian Militias
Iran’s Missile Footprint Across the Middle East

Iraq: DIY Rockets of Pro Iranian Militias

Rocket motors made in Iran?
Iran’s Missile Footprint Across the Middle East

Yemen: Houtti “Scud” and Iran’s Shahab 2

Yemen Government Scud C prior to the civil war

Houti Scud in Yemen

Shahab 2 in Iran
Iran’s Missile Footprint Across the Middle East

Yemen: Houtti “Qaher” – a spitting image of Iran’s “Tondar”

“Qaher 1” in Yemen

“Tondar” in Iran
Iran’s Missile Footprint Across the Middle East

Yemen: Houtti DIY rockets and Iraqi Shi’a Militia DIY rockets

Yemen

Iraq
Yemen: DIY Rockets of Insurgent Militias – From Iran Via Gaza?

Unnamed 45 Km DIY rocket on dump truck launcher

Unnamed 70 Km DIY rocket
Hizbullah Heavy Rockets

Iranian supplied Fajer 5, range 75 Km
Recent Advances in Hizbullah Missile Capability

Naserrallah reveals that Hizbullah is now deploying Fatah 110 precision rockets. Range app 300 Km, Warhead app 450 Kg, accuracy app. 50 meters.

Hizbullah operating Russian made SS21 Tochka ballistic missiles in Syria?
Hamas Rocket Propaganda

“The Next Big Thing” (Arabic and Hebrew)
Hamas Latest DIY Heavy Rockets

- One image showing Hamas rockets with text in Arabic.
- Another image showing a map with rocket targets.
- A third image showing individuals with rockets.

The content indicates that Hamas has developed and deployed heavy rockets, indicating a strategic advancement in their missile capabilities.
aza: Production Line of Very Short Range Rockets
Gaza: The Mortar Bomb Threat


- **Mortar 120 mm**
  - Range: 7 Km
  - Weight: 12 Kg

- **Mortar 61 mm**
  - Range: 5 Km
  - Weight: 6 Kg

- **Mortar 60 mm**
  - Range: 2 Km
  - Weight: 1.5 Kg
The Race Between Missile Offense and Missile Defense In The Middle East

Saudi Patriots defending against ballistics missiles from Yemen
Update on Israel Missile Defense Programs

**Arrow 3**
- In Testing

**Arrow 2**
- Deployed

**David Sling**
- In deployment

**Iron Dome**
- Deployed, 1500 Kills to date
Israel Missile Defense Programs: Progress Report

Arrow 3 interception test December 9th 2015
Israel Missile Defense Programs: Progress Report

David Sling acceptance tests, December 25 2015
Israel Missile Defense Programs: Progress Report

Iron Dome qualified against UAVs
The New Maritime Arena: Securing Israel’s Offshore Gas Fields
Barak 8 Multirole Ship Defense System

A joint Israel – India program
Barak 8 Multirole Ship Defense System

A joint Israel – India program

Barak 8 aboard Israel Navy Saar 5 Corvette
Barak 8 Multipurpose Naval Defense System

A joint Israel – India program

Barak 8 aboard Indian Navy Ship Kolkota
C Dome Missile Defense System (Naval Iron Dome)

Recently tested successfully; To equip Israel Navy Saar 6 frigates

Meko A 100/Saar 6 Frigate
Concluding Remarks

• While the JCPOA put a temporary halt on Iran’s capability to pursue a military nuclear program, it put no halt on its missile threats – if anything, it may have had the opposite effect.

• The main missile threats within the region come from Iran and its satellites in Lebanon, Gaza and the Yemen.

• This is prompting an accelerating arms race between missile offense and missile defense in the Middle East.

LIFE IN THE MIDDLE EAST IS NOT A PICNIC