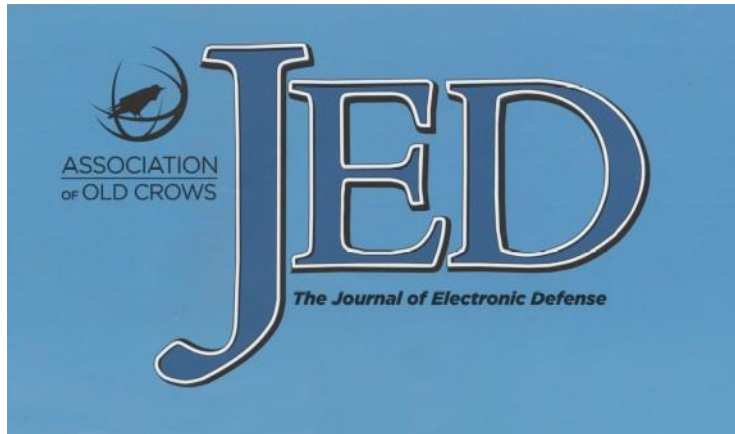


Missile threats posed by violent non-state actors



By Doug Richardson

**Threat Systems Editor
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Malaysia Airlines Flight MH17



BBC 'Newsnight'



Buk-M1-2 (SA-11 'Gadfly') TELAR



So what is a violent 'not-state actor'?

An organised group that has:

- a command structure
- operates outside state control
- sees force as a method of achieving its goals
- is involved in armed conflict

What type of missiles do they have?

Long-range ballistic – e.g. ‘Scud’

Medium & short-range ballistic – e.g. Qassam & Grad

Shoulder-fired & short-range anti-aircraft

Anti-tank

Anti-ship

9K32M Strela-2M (SA-7 'Grail')

[313 Brigade Syria 2014]



9K34 Strela-3 (SA-14 'Gremlin')



9K310 Igla-1 (SA-16 'Gimlet')



9K38 Igla (SA-18 'Grouse')

[Kurdish PPK]



9K338 Igla-S (SA-24 'Grinch')



Igla hybrid



9K338 Igla-S (SA-24 'Grinch')

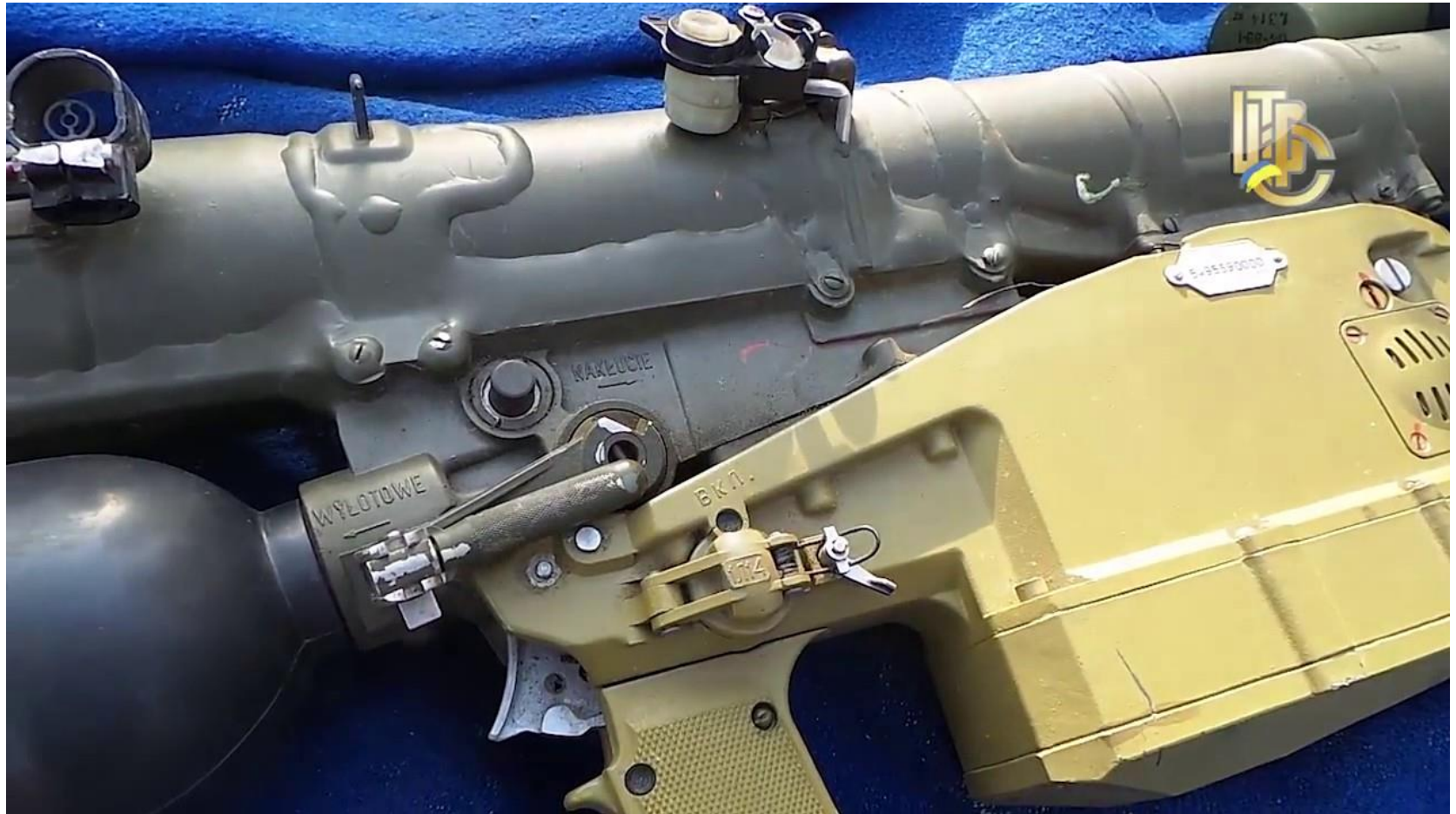


Grom captured from Ukrainian separatists

18 May 2014



A Polish/Russian 'hybrid'



Iranian Misagh 1 & 2



North Korean HT-16PGJ MANPADS [Syria]



Chinese FN-6



Pakistani Anza Mk II [Libya]



SA-7 component parts



Launch Tube



Missile



Gripstock



Thermal Battery

External battery pack for SA-7 [Bashaer al-Nasr Brigade]



External battery pack for SA-7

[Bashaer al-Nasr Brigade]



SA-7 with external battery pack



SA-7 with external battery pack [SYRIA - Ahrar al-Sham]



SA-14 component parts



Launch Tube



Missile

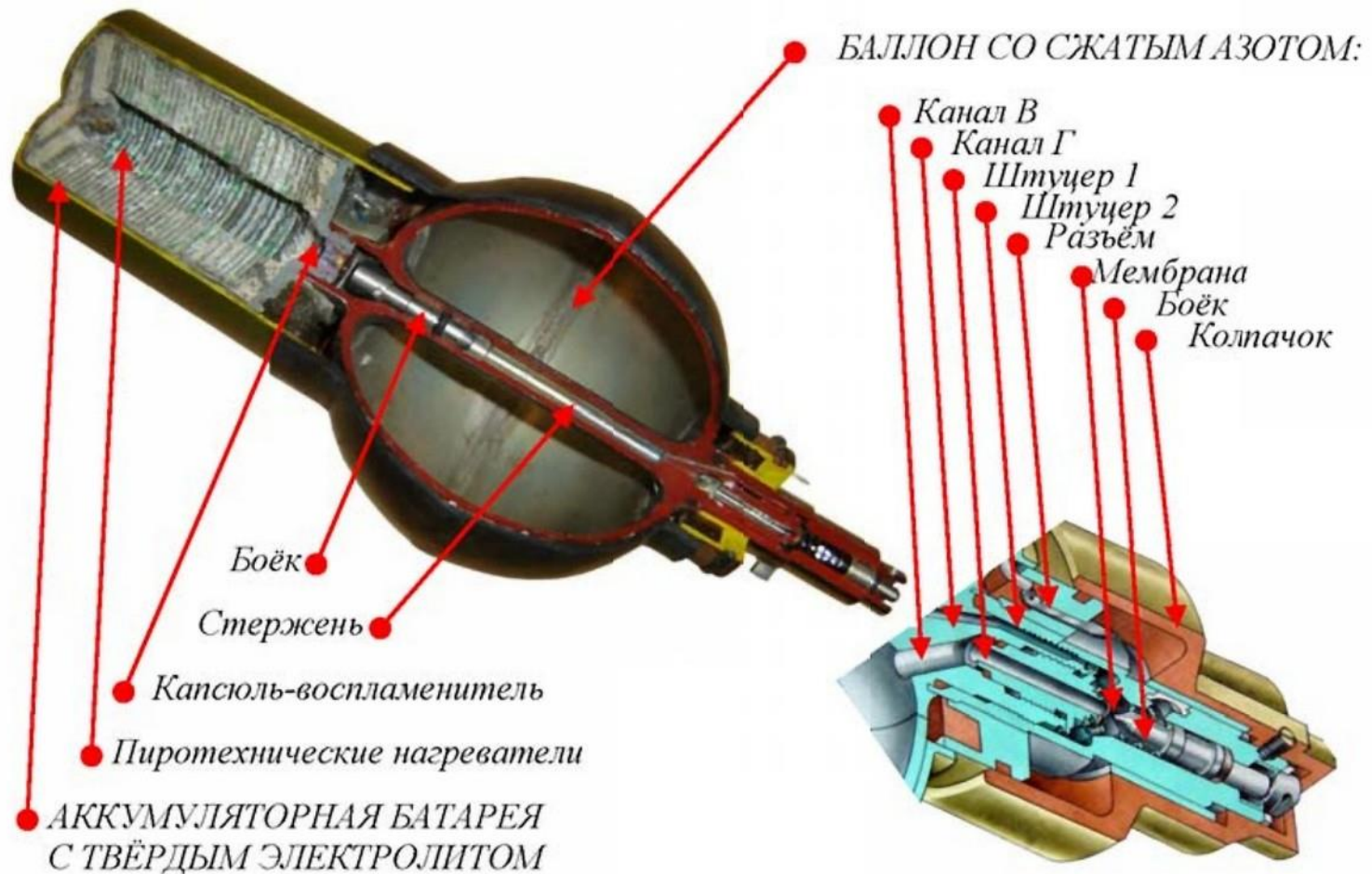


Gripstock



Battery Coolant Unit (BCU)

Nazemnyy Istochnik Pitaniya (‘Ground Power Unit’)



9K33 Osa (SA-8 'Gecko')



K-3 ('AA-2 'Atoll')



K-3 ('AA-2 'Atoll')



Improvised SAM [ISIL video]



ATGMs – the insurgent's friend

Requires recce to locate a suitable location.

Launcher can be in a semi-concealed position, so is hard to detect.

High vantage points such as rooftops often used.

Engagement range can be several km - operator is outside enemy's direct fire range.

No ranging shots needed, so no warning that an attack is about to occur.

Malyutka (AT-3 'Sagger')



Iranian I-RAAD-T [Al-Tawhid Brigade - SYRIA]



9K111 Fagot (AT-4 'Spigot')



9M113 Konkurs (AT-5 'Spandrel')



Kornet (AT-14 'Spriggan')



Kornet (AT-14 'Spriggan')



Fagot v. Kornet



Dehlaviyeh – the Iranian Kornet copy



HJ-8 Red Arrow

[Banner of the Glories of Islam - SYRIA]



Bulsae-2

[Hamass & Al-Nasser Salah al-Deen Brigades]



BGM-71 TOW (USA)



TOW versus T-90



Euromissile/MBDA MILAN

[Syria]



Lockheed Martin / Raytheon Javelin [N. Syria]



Lockheed Martin / Raytheon Javelin



Dragon - or Saeghe?

[known to be available to Hezbollah]



Toophan



INS Hanit



C-802 / Noor



Yakhont



Future threat? – Mobile SAM systems

SA-9



SA-13



SA-15



SA-22

Future threat? - Bulsae-3 [Feb 2016 test]



Future threat? – HJ-12



Syrian T-72 with Sarab-1 EO jammer



Syrian AA gun with EO jammer



Questions?

