



OIL STRIKES

Timothy Compston considers the ramifications of the devastating drone and cruise missile attacks on the Saudi oil infrastructure

The vulnerability of large-scale critical infrastructure sites like oil refineries to drones, when they are deployed as weapons of war by rebel groups, terrorists, and state actors, was brought into sharp relief on 14 September when Abqaiq – the world's largest crude oil stabilisation plant – in Eastern Saudi Arabia and the Khurais oilfield, which produces one-million barrels of crude oil every day, were targeted simultaneously by surprise attacks from the air. Added to this, at the more sophisticated end of the scale, both the US and Saudi authorities said cruise missiles were also involved in what were carefully planned and extremely accurate strikes.

In the immediate aftermath of the incidents the damage caused and subsequent fires to the facilities run by state-owned company Aramco stopped around half of Saudi Arabia's crude oil production (5.7-million barrels a day) – representing five percent of global supplies – and led to a corresponding spike in oil prices. With the facilities off-line for repairs running into millions of dollars the Saudis were forced to tap into their substantial oil reserves to stabilise the situation. This was not the first time that the Abqaiq facility had been in the firing line having been targeted in a failed suicide bombing by al-Qaeda in 2006.

Drilling down into more of the detail on the recent attacks, in a press conference by Saudi Arabia's defence ministry, where debris from the weapons involved

Oil fields remain vulnerable to surprise attacks from the air

including the wing of an Iranian-designed UAV (Unmanned Aerial Vehicle) was on prominent display spokesperson Col Turki al-Malki confirmed that 18 UAVs or drones were fired at the Abqaiq oil facility and that seven cruise missiles were launched at both targets. Of the seven cruise missiles, Col Turki al-Malki noted that four had struck the Khurais oilfield while a further three fell short of Abqaiq. The cruise missiles in question were identified as Iranian-built Ya-Al.

In the immediate aftermath Houthi rebels based in Yemen, where the Saudi military are in action, were quick to claim responsibility. For their part the Saudi authorities pointed the finger of suspicion at their regional rivals Iran, who back the Houthis, feeling that the precision and direction of travel of the strikes was beyond the capabilities of the rebel group. The US concurred with this assessment, given where the structures in the oil facilities were impacted and that the drones and cruise missiles were likely to have been launched from a West-North-West direction rather than Yemen to the South-West.

US Secretary of State Mike Pompeo dismissed the Houthi claims that the drones came from Yemen and instead blamed Iran directly for what had transpired, describing the developments as “an unprecedented attack on the world's energy supply.” Interestingly, satellite images from DigitalGlobe – an American vendor of space imagery – of the damage show how particular parts of the sites were targeted for maximum effect. Specifically, in the pictures released it is evident that ‘spheroids’ used to process crude oil were hit with pinpoint accuracy and, alongside this, at the Khurais oil field two towers were taken out. Many security analysts suggest that this attention to detail by the attackers is more in keeping with input from a state actor like Iran rather than a rebel group operating on its own.

What happened needs to be weighed up in the context of wider events in the region. Where the oil industry is concerned this year alone there have been a series of worrying developments. We saw for example, a series of incidents involving tankers, including: two Saudi Arabian-registered oil tankers, a Norwegian-registered oil tanker and an Emirati-registered bunkering ship being damaged by what may have been explosive charges on or below the waterline while anchored off the Port of Fujairah in UAE territorial waters. One month later two oil tankers – one Japanese and the other Norwegian operated – were allegedly attacked by limpet mines while transiting the Strait of Hormuz, with the US blaming Iran. Following on from this in July the British flagged Stena Impero was seized by Iran's Islamic Revolutionary Guard Corps (IRGC) after a boarding by helicopter in what may have been a tit-for-tat action after the Royal Marines took control of an Iranian vessel off Gibraltar. Although the Impero was subsequently released, the situation in the region remains volatile. In October there were two explosions on the hull of an Iranian tanker off the Saudi Arabian port of Jeddah with some suggesting this was a Saudi response to the earlier oil installation incidents.

Returning to the threat posed by missiles and drones, whether or not the Houthis were behind what happened at Abqaiq and Khurais, there is evidence that the group has targeted Saudi Arabia from Yemen in the past. A case in point being the claim by the Houthis in July 2018 that one of their drones was launched at

an ARAMCO refinery in Riyadh. Fast forwarding to May 2019 and two oil pumping stations were attacked by drones putting an oil pipeline out of action for a day. The following month a projectile hit Abha International Airport in the South-West of Saudi Arabia, 70 miles from the border with Yemen, injuring 26 civilians. Away from the conflict between the Saudis and Houthis, IS has deployed commercially available drones on numerous occasions to deliver small explosive devices against Government and coalition forces in Syria and Iraq.

Given recent events, the state of play of Iran's drones and cruise missile technology and that which it can offer to its proxies is high on the agenda. Iran is said to have access to platforms like the long-range Soumar, which it is speculated has a range of over 2,000km and the 1,350km Hoveyze, which was unveiled in February. On the drone front, last July, the US Navy vessel, the USS Boxer – an amphibious warfare ship – was involved in a close encounter with what President Trump said was an Iranian drone, leading to it being shot down. This was against the backdrop of heightened tensions between the two countries over the Iranian nuclear deal, events in Syria and Yemen and the fact that Iran had downed a US drone the previous month.

Israel has also voiced growing concern about the potential for cruise missile and drone attacks to

THE US HAS AUTHORISED THE DEPLOYMENT OF ADDITIONAL FORCES TO SUPPORT THE AREA

originate from Iranian-backed forces across in Syria. Over the summer its air force struck several targets across the border where it believed so-called ‘killer’ drones were being prepared by Iranian forces to hit Israel. A recent piece in the *Times* of Israel citing Army Radio said that Iran may respond to attacks on its regional proxies with cruise missile or drone strikes and that a meeting was planned by the Israeli security cabinet to discuss the issue. The report went on to say that cruise missiles and drones represent a different threat to ballistic missiles, thanks to their low altitude flight path which makes them harder to detect. It added that in a previous security cabinet meeting on 6 October an extra £290-million project was discussed in order to enhance Israel's air defences to deal specifically with cruise missile attacks, defences which thanks to platforms like Iron Dome have a proven capability against other threats like ballistic missiles.

The Middle East is certainly no stranger to cruise missile strikes. Up until now these have usually been associated with major powers flexing their muscles and protecting their strategic interests in the region. When it comes to the sheer number of cruise missiles fired – thanks to conflicts like the Gulf War, the 1998 bombing of Iraq (Operation Desert Fox), Operation Enduring Freedom in Afghanistan, the 2003 invasion of Iraq, military intervention in Libya, and the targeting of IS – the US Navy is way ahead of other forces.

Nearly three decades on from the Gulf War and it is not just the US that has access to this type of capability. Over the last few years in Syria we have seen the targeting of IS and rebel groups by Russian cruise missiles like the 3M-54 Kalibr. The first use of the Kalibr in relation to Syria was back in October 2015 when a Gepard class frigate, the Dagestan, and three Buyan-M class corvettes – Grad Sviyazhsk, Uglich and Velikiy Ustyug – based in the Caspian Sea fired 26 missiles at 11 targets 1,500km away.

In terms of the situation in Saudi Arabia, and the recent attacks on its oil infrastructure, this has obviously raised questions about the country's air defences and why the world's largest oil producer and one of the largest military spenders is so vulnerable to drones and cruise missiles. There are a number of factors which came into play here – the direction of the attack was probably unexpected with Saudi Arabia's defences likely to be positioned to deal with a threat coming across the border from Yemen and directly across the Gulf from Iran, including ballistic scud-type missiles and enemy aircraft. Drones and cruise missiles due to the nature of their low-level flight path are also harder to detect and take out. It is reported that the Abqaiq oil facility was protected by three batteries of the Skyguard – a short-range air defence system created by Oerlikon-Buehrle. The Saudis also have the US-built MIM-104 Patriot System – which has in the past managed to shoot down Scud-type missiles fired at Saudi Arabia by Houthi rebels and the French Shahine (Crotale).

Given that none of the drones or cruise missiles involved in the incidents at Abqaiq and Khurais seem to have been intercepted, what measures have

the Saudis taken since to shore up their defences? The US has announced more support, with the Secretary of Defence, Mark Esper, authorising the deployment of additional forces, including two Patriot missile batteries, radars and one THAAD (Terminal High Altitude Area Defence) system plus roughly 200 support personnel to Saudi Arabia. In addition, during the visit of President Putin to the country in October the Russians were invited to help with the investigation into the oil installation attacks and the potential purchase of the S-400 air defence missile system.

TAKING COUNTER MEASURES

It will be interesting to see if the Saudis and others in the region expand the footprint of counter drone measures. There are, of course, numerous platforms now on the market aimed at military and civilian operators. Examples range from the British AUDS (Anti-UAV Defence System), which undertakes detection using an electronic-scanning micro-Doppler radar; tracks and identifying a drone through infrared and daylight cameras and video tracking software and seeks to defeat the threat with a non-kinetic radio frequency (RF) inhibitor. There is also Drone Dome from Rafael Defense Systems, which is designed to address the threat from Low, Small and Slow (LSS) UAVs and Drone Guard from IAI Elta Systems, which allows jamming to be tailored to specific targets. Taking a different trajectory, the Skywall 300 is a solution designed to neutralise drones at range by launching a projectile that is timed to deploy in front of the target and entangle it in a net. In addition, systems like Raytheon's Howler offer the potential for UAVs (in this case the Coyote) to be deployed defensively to target and take down other UAVs ●

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Why is one of the world's largest military spenders vulnerable to attacks by drones?

