

EDITOR'S NOTE

The year 2019 seems to be getting more eventful with each passing quarter. The shooting down by Iran's Islamic Revolutionary Guards Corps (IRGC) Aerospace Force, on June 20, 2019, of the American drone – an RQ-4A Global Hawk High Altitude Long Endurance (HALE) Unmanned Aircraft System (UAS) – that Iran insists had violated its sovereign air space, almost became the tipping point for a military conflagration in West Asia. It is now believed that, in retaliation, US fighter aircraft that were airborne for a mission to strike Iranian targets were asked to stand down barely ten minutes before the strike when President Trump realised that the strike by US aircraft could lead to 150 plus civilian deaths; not a fair exchange for the loss of an Unmanned Air Vehicle (UAV). President Trump had, instead, imposed additional sanctions on Iran in an effort to create a greater financial strain on Iran's already fragile economy

In this quarter, the world has witnessed the beginning of an entirely new type of asymmetrical warfare that was just waiting to happen, and that has possibly heralded a change in the nature of future wars. The attack by eighteen drones and seven cruise missiles on Saturday, September 14, 2019, on the Saudi Aramco oil facilities was so deadly and so accurate that almost 50 per cent of the kingdom's oil production was knocked out; it accounted for almost 5 per cent of global oil production, or 5.5 million barrels per day! Crude oil prices saw a hike of 15 per cent when the markets opened on Monday, September 16. Stability was restored in a few days as strategic oil reserves held by the US were released by President Trump.

Abqaiq is considered the world's largest oil processing facility and crude oil stabilisation plant, with a processing capacity of more than 7 million barrels per day (bpd). The second target – Khurais – is the country's second

largest oil field. Half of Saudi Arabia's oil production had been knocked out as a result of these professionally executed strikes that hit the separation towers (where the oil and gas are separated), the large spheroid containers that drain off the water, and various other pieces of steel superstructure, all essential for stabilising the crude oil ready for export.

The drones that were used for the attacks were likely the 'Houthi Qasef-1', a loitering munition that is an upgraded version of the Ababil-II family of UAVs, produced by Iran's Aircraft Manufacturing Industrial Company (HESA). The upgrade has likely been carried out by Houthis trained in Iran. The Houthis are believed to have been using this variety of drone against Saudi air defence units that employ the sophisticated US-supplied MIM-104 Patriot Surface-to-Air Missile (SAM) system, targeting its radar in a classic Suppression/Destruction of Enemy Air Defence (SEAD/DEAD) mission; once the missile system is 'blinded', other strikes then follow. This appears to have been their *modus operandi* in recent times too and is believed to have been successful.

The other weapon system employed for the attacks was possibly the Ya-Ali land attack cruise missile, or its variant, the Quds-1.

The very fact that the cruise missiles and drones (loitering munitions) hit critical nodes in the oil and gas extraction and export process facility, signified that the attack was not just another rebel attempt at hitting a big target like an oil field, hoping to cause 'some damage'; it was a well-planned mission with precise Desired Mean Point of Impact (DMPI) identified for each drone/cruise missile. The accuracy of the drone/cruise missile to engage 17 targets with pin-point accuracy (as seen from the pictures that have been doing the rounds post the strike) indicates a very high degree of sophistication in the terminal navigation and attack system employed. The accuracy of the attacks does suggest that advanced guidance systems such as terrain contour matching, or a digital scene-matching area correlator, could have been used.

Were the air defences employed for protection of these vital assets of the Saudi kingdom not adequate to meet the threat? Of course, they were. The Royal Saudi Air Defence Force boasts of a robust layered air defence shield

around all of its economic targets as well as the capital city with a mix of long range, medium range and point defence weapons linked to radars. The 'Peace Shield' is considered to be the most advanced Integrated Air Defence Command and Control system in the world.

In view of the success of the drone/cruise missile attack, this event is a stark reminder of how wars in the future are expected to play out. 'Hit-and-run' tactics by a perpetrator who, by all accounts, is nameless – a non-state actor – and who uses low cost, low technology weapons to upend a thriving military force armed with some of the most sophisticated weapon systems in the world, and succeeds in imposing grievous economic costs on the latter, is surely a cause for reflection by militaries across the globe. The threat of retaliation using overwhelming force has not cut ice with the Houthis as they have not been deterred by the continuous onslaught of Saudi and coalition air forces carrying out attacks against them since March 2015, using some of the world's most advanced aircraft – the Typhoon (Eurofighter), F-15, F-16, Su-24, Tornado, etc. Also, the coalition that is engaged in Operation Decisive Storm consists of Saudi Arabia, Egypt, Morocco, Jordan, Sudan, the United Arab Emirates, Kuwait, Qatar, and Bahrain. What is noteworthy is that although the Saudi-led coalition operates with impunity over Yemen – as it has absolute air dominance over the area – it is challenged occasionally by Houthi SAMs that are mostly air-to-air missiles adapted to fire in the surface-to-air role.

The September 14 drone/cruise missile strike raises important questions and suggests serious reflection by militaries to not only adopt suitable counter-measures against the threat from drones of the loitering munitions variety, but also from mini UAVs that could sneak in at tree-top level and cause damage to soft-skinned targets. The recent incidents of Pakistan using drones to drop AK-47s, counterfeit currency and narcotics to modules of the Khalistan Zindabad Force (KZF) in the Tarn Taran region of Punjab comprise a worrisome development that has wider ramifications for the security of the nation. Counter-measures against such a threat would need a 'whole-of-nation' approach to include the active participation of the aerospace industry, both public and private.

Close on the heels of this development, an Orange Alert was sounded by the Indian Air Force (IAF) at five airfields in the northern region of the country on September 25, in response to an intelligence input that Jaish-e-Mohammed cadres could attempt a suicide attack against these airfields. These incidents appear to be a direct consequence of the revoking of the special status of Jammu and Kashmir (J&K) on August 5, 2019, that ended its statehood as well. Tensions between India and Pakistan have spiked since then, with Pakistan even threatening India with a 'nuclear war.' With the abrogation of the provisions of Article 370 and Article 35A – that gave special autonomous status to J&K – and the creation of a separate Union Territory for J&K (with a legislature), and Ladakh region (without a legislature), the Pakistan Army has been left completely befuddled as its *raison d'être* appears to be at stake.

The list of events in the quarter does not end with West Asia or South Asia. Northeast Asia appears to have had its own share of excitement on July 23 over the Takeshima/Dokdo Islands that are claimed by both Japan and South Korea. Two Russian Air Force Tu-95 bombers entered the Korean Air Defence Identification Zone (KADIZ) at around 0700h local time and were then joined by two People's Liberation Army Air Force (PLAAF) H-6 bombers in a joint patrol over the Sea of Japan and close to the disputed islands. As these aircraft were leaving the KADIZ, a Russian A-50 Airborne Warning and Control System (AWACS) aircraft entered the KADIZ at 0900h local time and entered South Korean/Japanese territorial air space by overflying the Dokdo/Takeshima Islands. The Republic of Korea Air Force (ROKAF) scrambled F-16 and F-15 fighters to intercept the A-50. In a display of 'unwarranted aggression', the ROKAF F-16 fired warning shots against the A-50. The A-50 left the area and re-appeared about half an hour later and flew over the islands once again. The ROKAF F-16 once again fired warning shots against the intruding aircraft that left the area thereafter.

The incident is significant as it showcases the growing proximity of the militaries of Russia and China in their first ever long range joint air patrol. Also, it highlights the chances of miscalculation between the fighter aircraft from the two air forces that were scrambled to intercept the ingressing

Russian and Chinese aircraft; particularly at a time when the two nations are in the throes of an ongoing trade dispute. Both also have claims over the islands. The timing of the joint patrol, therefore, appears to have been well orchestrated (by the Russians, or was it the Chinese who were behind this?). Any untoward incident between the fighters of the Japanese Air Self-Defence Forces (JASDF) and the ROKAF was, however, carefully avoided although Japan had also scrambled its fighters in response to the violation of its own ADIZ that overlaps the KADIZ. The action of firing warning shots against the A-50 by the ROKAF aircraft was unacceptable to Japan as it lays claim to the islands; Japan lodged a protest with South Korea over the same.

The presence of the A-50, as well as the PLAAF KJ-2000 AWACS aircraft in the area appears to be not merely to provide cover to their respective bomber aircraft; intelligence gathering of the South Korean Air Defence set-up, besides mapping the frequencies of the new inductions – the JASDF F-35s – appears to have been the real motive.

As we go to press, we bid farewell to the outgoing Chief of the Air Staff, ACM BS Dhanoa, who has had a brilliant tenure leading from the front. Exercise Gagan Shakti - 2018 made the world sit up and take note of the IAF's capabilities to generate a total of 9,000 sorties by fighters alone in the two 'surge' phases of the exercise. Even the Chinese looked at the IAF with a new-found respect! The Balakot strike, of course, was the crowning glory of ACM 'Tony' Dhanoa's exceptional career; methodical planning and flawless execution helped change the narrative for tolerance to terrorist activity in the subcontinent.

We have a new Chief of the Air Staff – ACM RKS Bhadauria. Our congratulations and best wishes go out to the new chief for a meaningful and successful tenure at the helm.

Happy reading

