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Armed, unmanned, and in high demand: the drivers behind combat drones proliferation in the Middle East

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ABSTRACT

Current dynamics in UCAV proliferation in the Middle East signal that combat drones have become key strategic enablers for state actors in the region, and are no longer seen as an optional asset. With the development of a multitude of indigenous UCAV projects, and the arrival of Chinese-made armed drones on the international market, military procurement in the Middle East has entered a new phase, in which possessing armed drone capabilities is becoming the norm. This article examines the operational and strategic considerations driving Middle Eastern states' UCAV procurement policies, analysing those countries who have been focusing on armed drones for combat purposes and additional intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) needs. The main drivers behind this trend are the operational and strategic advantages brought about by UCAVs, where the benefits related to cost, reliability, and operational risk mitigation are matched by the increased ability to project power that the platform allows, either through deniability or by making UCAVs available to proxies and allies.

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Introduction

Once a niche capability owned exclusively by the world's most advanced militaries, over the past decade unmanned aerial vehicles (UAVs)[1] have witnessed an unmatched growth – both in terms of technological sophistication and diffusion. The Middle East, in particular, has emerged as a leading region in the acquisition, deployment, and, at times, indigenous development of their combat variant, known as unmanned combat aerial vehicles (UCAVs).[2] This article examines the operational and strategic considerations driving Middle Eastern state actors' UCAV procurement policies, analysing emerging regional powers who have been focusing on armed drones for combat purposes and additional intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) needs.

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The article's main proposition is that current dynamics in UCAV proliferation in the Middle East signal that combat drones have become key strategic enablers, and are no longer seen as an optional asset. In other words, procurement in the Middle East has entered a new phase, in which possessing armed drone capabilities is becoming the norm: in the eyes of Middle Eastern powers, the acquisition of UCAVs is no longer a matter of 'if', but merely a matter of 'when'.[3]

Benefits and advantages such as substantial cost reductions and game-changing levels of risk reduction and operational tempo have convinced militaries worldwide of the value of UCAVs.[4] Still, in the case of the Middle East, the evolution of current security threats, coupled with the end of the United States' monopoly over advanced drone capabilities, particularly in relation to non-stealth UCAVs,[5] have contributed in dramatically accelerating this trend. Virtually all Middle Eastern countries are dealing with either internal or external security threats, and some of them are dealing simultaneously with both. In most cases, the threat is emerging from non-state actors and, as such, presents a significant degree of asymmetry, making UAVs a highly sought-after asset, due to their operational flexibility, technological refinement, and strategic contribution.

This article will discuss how, faced with a strict control regime over armed drones, Middle Eastern countries have been undeterred in pursuing the procurement of UCAVs, further consolidating the idea that possessing armed drones is a 'must'. Such idea has first manifested itself through the mushrooming of indigenous UCAV programs across the region and has been further solidified by the booming of Chinese armed drones purchases of the past few years.

It will then examine how the operational and strategic advantages UCAVs bring about are an ideal fit for the nature of the security challenges in the region's flashpoints. Cost, reliability, and risk mitigation have played a major role in fuelling the operational need for UCAVs; additionally, influence and deniability emerged as the two fundamental strategic drivers contributing to the countries' ability to achieve power projection.

The procurement dilemma

Until recently, the US and Israel held a strict *de facto* duopoly on the production and export of UCAVs, which prevented Middle Eastern countries from obtaining direct access to such capabilities. The US, who has traditionally relied on a policy of stringent export control on the transfer and subsequent use of armed drones, abides by the 'strong presumption of denial' rule set by the Missile Technology Control Regime (MTCR), which regulates the export of ballistic missiles and drones. Based on this principle, the US refuses requests of UCAVs procurement unless it has a substantive degree of certainty the

platforms will not be used against its interests, including reputational damage caused by potential human rights violations, or by the equipment or its technology falling into the hands of terrorist groups.[6]

In principle, this rationale has been motivated by the overarching goal of limiting the circulation of sensitive technologies[7]; in practice, this means that the US has rarely allowed for the export of armed drones: only the United Kingdom, France, and Italy currently have US UCAVs in their inventories.[8] In the Middle East, the implementation of these restrictions has meant that even key US allies such as Turkey (a NATO member), the Kingdom of Saudi Arabia (KSA), and the United Arab Emirates (UAE) have all been left empty-handed, despite their requests for UCAVs going back to almost two decades ago.[9] As for Israel, hostility and mutual distrust with countries in the neighbourhood have precluded its companies from selling armed drones in the region, and have also significantly limited the amount of deals on non-armed drones that have been signed.[10]

Over the years, as Middle Eastern governments had to face both Israel's and the United States' refusal to provide them with armed drones, they were left with only two viable alternatives: embarking upon ambitious domestic projects for the production and procurement of indigenous UCAV, or, more recently, the purchase of armed platforms from China. Some earlier UAV programs were upgraded to add lethal payloads to existing ISTAR platforms, effectively turning them into armed drones.

Indigenous programs have faced the technological challenges posed by the development (or, in the best case, acquisition) of critical components such as remote flight controls, sensors, software, and payloads. This has led the sophistication of domestically produced UCAVs to vary massively, depending on factors such as access to technology and engineering skills, as well as prospective end use. Models on the advanced end of the spectrum have been earmarked for national armed forces and the international market, while less sophisticated (or downright outdated) platforms and technology have been made directly available to proxy forces and allies lacking the manpower and technical expertise to operate advanced platforms autonomously.

With the exception of Israel, in the short term, strategic patience seems to have favoured those countries that only looked into acquiring UCAVs once Chinese platforms were made available: while far from performing anywhere close to high-end armed drones such as the Israeli *Eitan* or the US *MQ-9 Reaper*, Chinese drones exported to the Middle East such as the *Wing Loong I/II*, and the *CH-4*, perform comparatively close to the *Hermes 450*, the *MQ-1 Reaper*, and the *Hermes 900* respectively.[11] On the other hand, domestically developed UCAVs such as the Turkish *Bayraktar TB2* or the Emirates' *Yabhon United 40* are either less performing or less sophisticated.

Developing indigenous UCAV programmes

Of the seven Middle Eastern countries that currently operate armed drones, four have been developing their own domestic UCAV program: Israel, Turkey, Iran, and the UAE.

Israel has been a trailblazer in the field of drones, spearheading the development of modern UCAVs since the 1970's: originally concerned by the need to safeguard its aircrews after the deployment of Soviet antiaircraft capabilities around the Suez Canal, it has consistently invested significant manpower and resources, in tandem with the United States, to develop unmanned platforms.[12]

While until mid-2001 Israeli military simulations were concerned with whether the country's UCAV fleet could single-handedly deal with Syrian tanks, changes in threat priorities (such as the rise of Hamas and Ariel Sharon's decision to expand Israel's targeted killings) inaugurated a new era, with armed drones technologies reconfigured for asymmetric conflict, and Israeli UCAV strikes becoming a daily occurrence.[13] Despite the *de facto* absence of Israel from the UCAV market in the Middle East, until 2014 its drones retained their supremacy in global exports, before Chinese UCAVs started flooding the region.[14] Israel currently operates three main indigenous UCAVs: the *Eitan*, the *Hermes 450*, and the *Hermes 900*, originally developed as an ISTAR platform and subsequently upgraded and equipped with combat capabilities. All three platforms have been employed in operations in the Gaza Strip, in the 2006 Israel-Hezbollah War, in the Syrian civil war, as well as in a series of airstrikes in Sudan carried out between 2009 and 2011.[15]

Turkey has also successfully developed an ambitious program for the deployment of indigenous UCAV capabilities. After relying exclusively on US-made and Israeli (unarmed) platforms for almost two decades, the collapse in diplomatic relations with Israel in 2010,[16] coupled with US Congress reluctance to provide armed drones,[17] have led Turkey to focus its efforts on the development of a domestic drone program. As a result, Turkey now operates its own indigenous UAV and UCAV fleet: the *Bayraktar TB2*'s armed version, considered one of the crown jewels of Turkey's drone fleet, has been operative since 2015; it has been deployed to carry out airstrikes on Turkish soil and Northern Iraq against the Kurdistan Workers' Party (PKK), in Northern Syria as part of Turkish military operations in the region, as well as in Libya, where Turkey has been shipping UCAVs and other military equipment to support Al Sarraj's Government of National Accord.[18]

In a similar manner, the UAE launched its own UCAV program after US Congress rejected its original request for the purchase of *Predator* armed drones in 2002. In fact, even in 2004, when the UAE attempted to use its special forces deployment within NATO's International Security Assistance Force (ISAF) in Afghanistan as hard evidence for the need for armed

drones, the US did not budge.[19] By then, however, the UAE was already committed to its indigenous program, which eventually led to the introduction of the *Yabhon United 40* in 2013: its armed version is currently in UAE's Air Force inventory and, since 2018, has also been exported to Algeria.[20]

While the US did not hinder the development of indigenous armed drones programs by Israel, Turkey, and the UAE to various degrees, Iran has managed to establish a domestic armed drones program, integrating its own engineering work with reverse engineering carried out on captured US and Israeli drones, despite decades under US sanctions and an arms embargo. It now relies on at least six different indigenous UCAVs[21] that have been operative at least since 2016, when a drone strike against Syrian anti-regime militias near Aleppo was first reported.[22] Since then, its two main UCAVs, the *Shahed-129* and the *Mohajer-6*, have carried out strikes on Iranian soil, as well as in Iraq and Syria.[23]

Turning to Chinese armed drones

China has further contributed to the breaking of the US–Israel duopoly in the field of UCAVs in the Middle East, and since 2013 has been 'selling the hell out of'[24] its armed drones to countries in the region.[25] China imposes far fewer restrictions on who can buy its armed drones or how these can ultimately be used; in fact, by virtue of not being a member of MTCR, China is not bound by its international standards, and, unlike the United States, does not impose conditional end-user agreements preventing weapon systems' retransfer. Neither did the Asian power's emergence on the UCAV market come as a complete surprise to the US, which as early as 2012, described China's growing spending and research on drones as a 'worrisome trend' and its military significance as 'alarming'.[26]

Iraq spearheaded the arrival of Chinese armed drones in the Middle East with a contract signed in 2015, when it acquired *CH-4* UCAVs from Beijing, after being refused access to US *Reapers*, effectively paving the way for all other deals that followed.[27] Since entering the Iraqi inventory, the *CH-4* has carried out more than 200 air strikes against Islamic State targets in the northwestern regions of the country.[28]

Soon after, other countries followed suit: between 2015 and 2017, the UAE secured two separate agreements with China for the provision of *Wing Loong I* and *II* to supplement its *Yabhon United 40* fleet, which does not perform as well as its Chinese equivalents[29]; as a consequence, the Emirati armed forces rely more extensively on their imported drones, which over the past two years have been deployed consistently both in Yemen and in support of general Haftar's military advance in Libya.[30]

The KSA is also on the list of countries that were refused armed US drones, despite its interest in acquiring *Predator* UCAVs to be deployed in the conflict

against Houthi rebels in Yemen.[31] Lacking, at least for the time being,[32] an indigenous armed drones program, the KSA formally entered the UCAV owners' club between 2015 and 2016, after signing an agreement with China for the provision of an unspecified number of armed *Wing Loong II* and *CH-4* for its Air Force.[33] In addition, in 2017 KSA has also signed an agreement for the establishment of a *CH-4* factory on Saudi soil.[34] Similarly to the UAE, since the reception of the drones, the KSA has been deploying its Chinese-made UCAVs in the Yemen conflict.[35]

By virtue of another deal with China, since 2015 Egypt has been employing its *Wing Loong II* in support of special forces operations against *Wilayat Sinai* (the Egyptian branch of ISIS), both in a combat and ISTAR role.[36] Since 2017, the *Wing Loong II* has also appeared at the Uthman Airbase, some 40 km from the border with Libya, where it is employed in the fight against militants and smuggling activities.[37]

Today, all key state actors in the Middle East possess UCAVs. The urgency dictated by ongoing conflicts and the relevant operational needs related to the asymmetric nature of the threats, coupled with the strategic considerations enabled by the extensive degrees of deniability and power projection that UCAVs allow help understanding why the procurement or development of armed drones have become a priority in the region.

Operational and strategic drivers

Operational drivers

Three main operational factors have influenced UCAV procurement in the region: cost, reliability, and risk mitigation.

Whether or not armed drones are part of the inventory, the economic cost of embarking upon a military campaign against non-state actors is generally considerable, especially when accounting for how such campaigns tend to be protracted in time and, ultimately, linger on.[38]

With UCAVs replacing jet fighters in a strike role, the procurement cost per platform can be reduced up to 10 times,[39] while expenses associated with training, maintenance, and operational costs also see a significant reduction: training via simulators is much more effective (and efficient) in the case of UAVs/UCAVs, and the cost per hour of flight is also a tiny fraction of the cost of operating a jet fighter.[40] In addition, UCAVs are generally equipped to be multirole, with payloads allowing them to carry out combat and/or ISTAR tasks.

Current and recent military engagements of Middle Eastern militaries highlight how the cost-effectiveness of armed drones cannot be understated, particularly in the context of asymmetric threats. For instance, the emergence of the First and Second Intifada, together with the campaigns carried out in Lebanon and the recurrent clashes with Hezbollah and Hamas, mean that the

Israeli armed forces have been dealing with asymmetric threats for at least forty years, with huge costs for Israeli's defence and the broader national economy.[41] In a similar vein, Turkey's fight against PKK's insurgency has been dragging on since the mid-1980's; available estimates put the cost of the first two decades of conflict alone (1984–2005) to 88 USDbn.[42]

Saudi Arabia's current campaign against Houthi rebels in Yemen is estimated to have cost 100 USDbn over three years, and, far from achieving any major military breakthrough, has recently witnessed the withdrawal of a substantive part of UAE's forces, Saudi Arabia's main ally in the campaign.[43] In Egypt, the collapse of Hosni Mubarak's regime in 2011 paved the way for the emergence of Wilayat Sinai (the Islamic State's branch on Egyptian soil),[44] whose insurgency in turn led to the allocation of a 11 USDbn military assistance fund from the US in the period 2011–2019,[45] and has witnessed Israeli military operations in the region to support Egypt's efforts.[46]

With such military campaigns being expensive and uncertain in nature, the integration of UCAVs into Middle Eastern countries' military capabilities has at a minimum mitigated the cost of the campaigns' air component: the loss of a drone, after all, is 'affordable even when military budgets are tight or in small countries'.[47] For instance, the UAE *F-16* jet fighter that crashed in Yemen in 2017 had a price tag of 200 USD m, while the Emirati *Wing Loong* shot down over Yemen in April 2019 will cost 2 USD m to replace[48]; the Saudi *AH-64* attack helicopter lost in action in Yemen in 2018 cost 35 USD m, while China offered to replace the two Saudi Air Force-operated *CH-4* UCAVs that crashed in mid-2017 for free.[49] Turkey has lost a 60 USD m-worth *T-129* attack helicopter over Syria in 2018,[50] while procurement for one *Bayraktar TB2* is estimated to cost less than one-tenth of that.[51]

While these examples show how significant the economic benefit of deploying UCAVs over manned platforms is, particularly as it might contribute in prolonging the force commitment, the cost factor alone does not explain the rush in armed drones procurement. Two additional operational advantages need to be taken into account: reliability (or the combination of persistence, speed, and precision), and risk mitigation.

The asymmetric nature of the threats faced by the Middle Eastern countries under examination also contributes to the urgency of obtaining armed drones. Absent conventional frontlines and military control of the territory, determining opposing forces' movements, locations, and operational networks is a key intelligence challenge, and the task's complexities are further exacerbated by the fact that militants might hide in extremely remote or highly populated areas, both of which present unique sets of challenges for ISTAR and strike tasks.[52]

Persistence, or 'the ability to remain on-task for very extended periods of time',[53] means that UAVs can loiter over a location for much longer than other platforms, reducing the risk of losing contact with the target. More

importantly, only UCAVs integrate both loitering ISTAR and strike capabilities into a single platform, minimising the time gap between target acquisition and the potential decision to strike high-profile or time-sensitive targets.[54]

Israel built upon its experience in UCAV strikes during the Second Intifada and made extensive use of armed drones during the 2006 conflict with Hezbollah, and in all targeted operations that followed.[55] In addition, the Egyptian government, struggling to maintain security in the Sinai, has been giving the green light to armed Israeli drones to carry out operations against the jihadist militias of Wilayat Sinai,[56] while Egypt's own *Wing Loong* UCAVs have also been employed in support of Egyptian special forces units deployed in the region.[57]

Similarly, for the past two decades, many Turkish military operations against the PKK have been carried out through a combination of UAV-fed ISTAR to commanders, who then, when possible, would scramble jet fighters or attack helicopters to get on location and strike – a chain of actions that can rarely be contained in the span of a few minutes. With the advent of the *Bayraktar TB2*, Turkey has become increasingly reliant on UCAV strikes – both in urban and rural environments on Turkish and Syrian soil, and on the mountains along the Turkish-Iraqi border. The *Bayraktar TB2*, in fact, has become the Turkish military's 'most substantive strategic asset in its counter-terrorism operations', as, among other things, it has significantly reduced the operational tempo between the target acquisition phase and the strike.[58]

While generally there will be *manned* platforms capable of carrying out operations in a satisfactory manner, they will do so at a higher cost, with a slower operational tempo, and with more risks for the units involved. *Unmanned* operations, on the other hand, mitigate those risks, as they 'pose little to no direct risk of harm to operators'.[59] This has very important operational ramifications for countries possessing UCAVs: as operators are remotely located and physically distant from the frontline (as opposed to pilots who have to physically fly into enemy airspace), the only risk to their own safety from enemy action is in case of an attack against the ground control station (GCS) where they are located.

From an operational perspective, the reduction in risks for aircrews means that decision-makers' appetite for risk increases[60]; operations that would have been shelved due to the potential dangers to the pilots' safety can be carried out by drones, as the worst-case scenario involves losing a (relatively cheap) piece of equipment, rather than dealing with killed, captured, or missing aircrews, and with the loss of platforms with hefty price tags.

Non-state actors, however, generally do not possess air power assets; in these cases, the operational risk of air sorties is quite low. It is when adversaries possess air defence system (ADS) capabilities that the risk-mitigating impact of deploying armed drones is particularly significant, and the conflict in Yemen offers an insightful example of this.

Since 2017, Houthi rebels ramped up their ADS capabilities and anti-aircraft activities, with the number of attacks against the Saudi-UAE coalition jet fighters increasing significantly.[61] Both the KSA and UAE adapted their operations accordingly: while the KSA is now relying more extensively on its *CH-4* and *Wing Loong* squadrons flying out of two air bases located along the Yemeni border,[62] the UAE, in line with the strong casualty-aversion dictated by the small size of its force, has also increased its reliance on UCAV-centric operations,[63] and ultimately opted to focus on operations against Al Qaeda in the Arabian Peninsula and strikes against high-profile targets such as the killing of senior Houthi leader Saleh al-Samad in 2018,[64] rather than the broader military campaign in Yemen.[65]

Strategic drivers

Besides operational aspects, the impact UCAVs have on risk dynamics also has important strategic ramifications. As highlighted in a 2015 UN Report:

> "[Armed drones] can alter incentives for the use of force by lowering the risk to one's own armed forces and civilian population or by enabling new types of low-intensity conflict. Their capabilities enable armed forces to pursue new types of missions, tempting States to interpret international humanitarian and human rights law in ways that permit expanded use of force. They are attractive to covert armed forces that operate in ways that may not permit sufficient transparency and accountability."[66]

This trend in military power projection manifests itself via two elements: *influence*, by providing armed drones to allies in conflicts abroad, and *deniability*, through the deployment of UCAVs in a covert manner.

Influence can be enhanced by making armed drones available as a third-party actor to a conflict between two sides (either by selling them, or as part of direct military assistance), giving drone providers more agency on conflict dynamics without risking direct attribution and involvement, while creating a virtuous circle where influence, combined with the faction on the ground's dependency on external support, fuel each other.

Deniability, on the other hand, exploits ambiguity and delayed adversaries' responses (the '*grey zone*' factor).[67] Short-of-war strategies allow for UCAV operations to contribute to 'salami tactics'[68] in which successful action will not be destructive enough to warrant a military response by the adversary, while maintaining a sound degree of deniability will mean attribution might also be challenging, allowing the acting side to keep international scrutiny at bay. Moreover, in case of failure, 'even if these systems are intercepted by States on opposing sides of the conflict, armed UAV users would not lose their own military personnel, and thus feel pressured to retaliate or otherwise escalate' – an unachievable scenario in case manned platforms were the only option available.[69]

While most of the case studies discussed in the article combine, to different degrees, influence and deniability, Turkey's deployment of armed drones constitutes one of the few cases in which influence relies on attribution, rather than deniability, to maximise power projection.

In June 2019, Turkish President Recep Tayyip Erdogan openly stated that his country provides military support to the Libyan Government of National Accord (GNA) to restore the military balance in the conflict, in a direct response to UAE's deployment of armed drones to the Libyan National Army (LNA).[70] Accordingly, Turkey's *Bayraktar TB2* has been spotted carrying out operations over Libya since mid-2019, allowing GNA forces to launch, for the first time, an air strike against LNA's airbase in Jufra, an asset of strategic importance in the advance towards Tripoli.[71]

More frequently, UCAVs have been deployed to exploit plausible deniability, with varying degrees of success. While the existence of enhanced security cooperation between Israel and Egypt is a public affair, Israeli drones operating in the Sinai are unmarked, at times their flight paths are planned so that their location of origin is unclear, and 'alleged' drone strikes are regularly denied by Israeli authorities[72]; in a similar manner, responsibility for an operation against a munitions factory in Sudan in 2012 was neither denied nor confirmed by Israeli authorities.[73] In these cases, by being able to sidestep direct attribution for the operations carried out, Israel has managed to avoid scrutiny regarding the increasingly active role its military forces play in Sinai, its growing diplomatic vicinity to the current Egyptian leadership, as well as on the fact that the conflict against Hamas has quietly expanded into Sudan.

Similar dynamics have been at play in Libya's civil war. A 2017 UN report confirmed that Chinese armed drones have been carrying out operations in Libya since 2016, 'most probably [operated by] the United Arab Emirates'[74]; further UN investigations in 2019 highlighted 'the probable use of Wing Loong UAV variants by the LNA or by a third party in support of the LNA' in violation of the arms embargo[75]; as UN monitoring activities unveiled a range of manned platforms that found their way to the Libyan battlefront from UAE arsenals, there are strong suspicions that the Wing Loong operating in the conflict share the same origins, but no positive identification has been so far achieved.[76]

While countries such as the UAE and Turkey are allowed a degree of leeway in their strategic use of drones, Iran's difficult international position, coupled with its increasingly active role in the region, make deniability a critical diplomatic lifeline: asymmetrical warfare and the ability to use armed drones allows Iran to operate in skies regularly patrolled by Western and Israeli forces.[77] While Iranian authorities have consistently claimed there are no Iranian units operating in Syria, with the exclusion of some 'volunteers' and advisors,[78] over the years Iranian UCAVs have become a regular feature

within Syrian airspace.[79] In addition, in April 2019 an Israeli air strike hit the T-4 airbase, located in Homs, a facility of strategic importance for the Syrian regime;[80] 14 Iranian military officers were killed, including the Islamic Revolutionary Guard Corps (IRGC) commander of an Iranian UCAV unit and one of his subordinates.[81] Iran has also been providing armed drones to its allies in the region: while Hezbollah and pro-Iranian Iraqi militias have been receiving armed drones and operational training at least since 2014,[82] more recently Yemen's Houthis have been operating low-tech Iranian drones, which have been subsequently modified to carry out strikes such as the one that killed Yemen's head of military intelligence in January 2019,[83] and the attacks against oil pumping stations located on Saudi territory that were launched in May 2019.[84]

Still, it was the drone air strike against two Aramco oil facilities in Saudi Arabia carried out in mid-September 2019 that showcased UCAV attacks' full potential for deniability and ambiguity.[85] After the Houthis claimed full responsibility for the attack, initial Saudi and American investigations into the events failed to pinpoint the culprit, or even the location from which the attack was launched: attempts to demonstrate Iran's direct responsibility in the attack failed to provide satisfactory and definitive evidence, and even a Saudi Ministry of Defence press conference where the wreckage of the drones used in the attack was put on display only managed to prove that the platforms were Iranian models – but not necessarily Iran-*operated* UCAVs.[86] The incident also highlighted an emerging issue in armed drones proliferation: in a market where buyers are numerous and suppliers very limited, it becomes harder to identify users involved in an attack. Models and their provenance will provide little granularity regarding attribution: additional technical analysis on elements such as modifications, flight paths, and components might bring additional clarity, granted that these are available to be examined.

Even from a strategic perspective, armed drones have significantly expanded Middle Eastern countries' ability to project their power in a cost-effective manner. The degree of deniability the use of UCAVs offers has been exploited significantly, as the frequency of unattributed or undetected drone operations shows; in a similar manner, in the changing geopolitical landscape of the region, the opportunity to expand one's influence with limited direct risks has made armed drones the go-to capability to support like-minded factions in the region.

A game-changing capability

The development of indigenous UCAV projects, coupled with China's entry into the armed drones export business, have signalled the end of the US-Israeli duopoly that until recently governed the global armed drones market.

Such paradigmatic change has nullified the *de facto* veto power the two countries had on allowing direct access to armed drones to military forces worldwide. Despite the (now) available alternatives, most Middle Eastern actors would still rather buy American, due to the superior technological quality, reliability, and precision US-made UCAVs offer, as well as the potential for integration with other systems. Over time, however, strategic priorities have taken precedence, and all key Middle Eastern military powers, faced with no alternative options, have opted to 'go solo' or buy Chinese UCAVs.[87]

As an additional asset to Middle Eastern military forces, armed drones have been procured due to their unmatched reliability and precision, as well as for their direct effect on improving the 'blood and treasure' cost of military campaigns.[88]

But the need to obtain armed drones has also been dictated by the manifest strategic advantages that such platforms bring to the table. These drivers have, in many cases, fed into an underlying change in strategic priorities that many Middle Eastern governments have been pursuing. If, on the one hand, armed drones are a cost-effective and operationally savvy alternative to manned options, on the other hand, they also bear the potential for an increase in the appetite for strategic risk.

Armed drones, in other words, broaden the spectrum of strategic options available to the countries owning them, truly becoming a strategic enabler and an instrument of power projection for those governments who might be seeking to expand their regional role. Testament to this principle is not just UCAVs' increased presence across battlefields in the Middle East, but, more importantly, the fact that armed drones have rapidly become the go-to asset to be provided to proxy actors, allies, and like-minded forces: the UAE–Turkey drone-centric tit-for-tat approach to the conflict in Libya echoes the provision of Iranian unmanned assets to Houthi militias in Yemen and to allied forces in Syria and Iraq.

While the type of support provided to partner factions in conflict includes a vast array of capabilities, because of their operational and strategic edge UCAVs can act as a significant force multiplier for those actors who want to project their power in the region while maintaining a degree of separation from the actions on the ground: operations such as the strikes deep into Saudi territory claimed by Houthi authorities would have been considered unachievable without an external boost in the form of unmanned combat assets; more importantly, attribution has been highly challenging, guaranteeing a degree of impunity for the perpetrators.

As much as Israel and the United States, pioneers in the development and employment of armed drones, have progressively become more proactive, dependent on and inventive in the use of armed drones, a new generation of UCAV owners is now dealing with a similar operational learning curve. Not unlike their predecessors, they are also experiencing the strategic opportunities that possessing such capability endows.

Notes

1. UAVs are also commonly referred to as 'drones'. This also includes the sub-category of *armed* drones, known as unmanned combat aerial vehicles (UCAVs).
2. New America Foundation, "World of Drones."
3. Fuhrmann and Horowitz, "Droning On."
4. Wills, *Unmanned Combat Air Systems in Future Warfare*, 17.
5. Horowitz et al., "Separating Fact from Fiction in the Debate over Drone Proliferation," 41; Sayler, *A world of proliferated drones*, 24–26.
6. Missile Technology Control Regime (MTCR) Annex Handbook, ii–iii; Zenko and Kreps, *Limiting Armed Drones Proliferation*, 17–19.
7. Weitz, "Reforming US export control reforms," 19.
8. Weingberger, "China Has Already Won the Drone Wars," *Foreign Policy*. In April 2018, the Trump administration revised the US policy on the export of armed drones, but so far this reform has not removed the 'strong presumption of denial' rule for selling the more advanced systems, thus leading to a lack of concrete results. Trump, *National Security Presidential Memorandum Regarding U.S. Conventional Arms Transfer Policy*; Seligman, 'Trump's Push to Boost Lethal Drone Exports Reaps Few Rewards', *Foreign Policy*.
9. Detsch, "Pentagon warns Middle East turning to China for drone needs", *Al Monitor*; Manson, "Trump relaxes conditions over sale of US killer drones", *Financial Times*.
10. Boyle, "The Race for Drones November," 81.
11. "Is China at the Forefront of Drone Technology?," *CSIS ChinaPower*.
12. Clark, "Uninhabited Combat Aerial Vehicles," 22–27.
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