

The Eroding Shield: Air Defenses Against Iran





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I. Executive Summary

U.S., Israeli, and Arab air defenses have intercepted over 90 percent of Iranian missiles and drones fired during the ongoing war, thanks to years of deliberate preparation and cooperation. The deliberate surge of additional U.S. THAAD batteries, Patriot systems, carrier strike groups, and 200 fighter aircraft into the theater before the war substantially bolstered existing layered defenses and enabled the architecture to absorb Iran's opening salvos. Offensive U.S. and Israeli strikes have significantly degraded Iran's ability to even launch ballistic missiles and drones, and linked warning systems and shared sensor coverage allows more than a dozen U.S. partners to work together to defeat Iranian projectiles.

However, Iran entered this war with a plan to dismantle the architecture that enables that impressive intercept rate. That plan achieved early successes and continues to deliver. Strikes on major radar systems and their communications links to interceptor batteries have eroded the detection and warning network required for effective air defense. Drones, Iran's cheapest and most abundant projectiles, frequently drawing on Russian tactical innovations from the Ukraine war, have proven far harder to detect and defeat than its missiles, and produced more than double the hits. Ballistic missiles armed with cluster munitions, making up more than half of Iranian missiles fired at Israel, have scattered damage across wide areas even when the missile itself is intercepted. Smaller, more frequent Iranian salvos keep civilian populations under constant alert even as ballistic missile fire has declined. Iran's sustained attacks on Gulf energy infrastructure and shipping have driven oil prices sharply higher and effectively shut the Strait of Hormuz, imposing economic costs that high interception rates alone cannot prevent.

Although U.S. air defense systems have performed well, the defensive architecture shows signs of deterioration. Gulf nations and Israel both reportedly have warned that interceptor stocks are approaching critical levels. Meanwhile, fragmented national air defense inventories and Iranian damage to radars and sensors are degrading the regional air defense architecture's ability to sustain effective operations. Air defense support from America's allies from outside the Middle East have added marginal capability but are coming too slowly to address the core shortfalls.

The United States must act now to address each of these pressure points before the defensive architecture erodes further. Washington should reposition assets toward the points of greatest pressure, prioritize counter-drone defense by fielding legacy point-defense systems, transfer interceptor stocks from other theaters, clear the procurement and fielding barriers that have kept capable systems from reaching the fight, intensify offensive strikes against Iranian launchers in eastern Iran, devote a greater number of naval and air assets to escort shipping through the Strait of Hormuz, and formalize the regional air defense coordination that wartime improvisation has proven essential but that remains ad hoc. Over the long-term, the United States should pursue defense industry co-production with Middle East partners to expand the industrial capacity available to replenish the interceptors and munitions this war is consuming.

II. Key Reasons for Air Defense Success

Iran's missiles and drones have failed to consistently penetrate defenses across the region. U.S.-led regional coordination, offensive strikes against Iranian launchers, Iran's dispersal of fire, and Israel's geographic advantages combined to enable the high interception rates that have defined the war's opening weeks.

A. Region-wide Air Defense Years in the Making

Years of U.S.-led efforts under Central Command (CENTCOM) improved coordination among regional partners by linking warning systems, sensor coverage, and defensive planning for integrated air and missile defense (IAMD) against Iranian threats. As CENTCOM Commander Admiral Brad Cooper noted during a briefing on March 21, the United States and its partners “have built the most extensive air defense umbrella in the world over the Middle East right now. This is thanks to years of investment alongside our allies and partners to build a robust and integrated air and missile defense architecture. For more than a decade, books have been written about the concept of a Middle East air defense. Today, it’s alive and well.”¹ When Iran began launching large numbers of missiles and drones, those preparations became critical to helping countries detect threats earlier and coordinate responses more effectively.

Israel’s transfer into CENTCOM’s area of responsibility in 2021—a recommendation that JINSA spearheaded since 2018—enabled this cooperation.² Moving Israel into CENTCOM from European Command (EUCOM) placed Israel and Arab partners within the same U.S. command structure for the first time, allowing U.S.-led regional planning, exercises, and operational coordination targeting Iranian threats. Over time this improved warning coordination and made it easier for countries to share information about missiles and drones moving across regional airspace.

Each of Iran’s direct attacks have demonstrated the operational value of IAMD in the Middle East, as JINSA’s reports on the 2024 and 2025 wars detailed.³ In April 2024, Iranian drones and missiles flew toward Israel through regional airspace, prompting coordinated warning and interceptions, including Jordan shooting down drones passing through its territory. The attacks in October 2024 and June 2025 relied more heavily on ballistic missiles and required sustained coordination between U.S. forces and Israel to maintain warning coverage and intercept incoming threats.⁴ These events showed that regional coordination built under CENTCOM allowed partners to respond more effectively when Iranian attacks crossed multiple countries. CENTCOM deepened this coordination with the establishment of the Air Defense Combined Defense Operations Cell at Al Udeid Air Base in January 2026 and by embedding U.S.⁵ officers in Gulf partner command and control centers, improving real-time information sharing and joint engagement decisions between U.S. and host-nation air defenses.

The ongoing war has underscored the benefits of a multinational mix of fighter aircraft, missile defense ships, and ground batteries to sustain interception rates across a theater too large for any one nation or layer to cover alone. Widespread coordination of U.S. and Arab air defenses enabled coverage across multiple countries at once, instead of leaving each state to absorb volleys alone. Gulf states and U.S. forces positioned Patriot batteries around major bases and ports in the United Arab Emirates (U.A.E.), Kuwait, Bahrain, and Qatar, with a smaller number of Terminal High Altitude Air Defense (THAAD) covering the highest value areas. U.S. Aegis guided-missile destroyers (DDG) added air and missile defense coverage from the Gulf of Oman, the Arabian Sea, the Red Sea, and the Eastern Mediterranean. U.S. and partner fighter aircraft also flew defensive combat air patrols and engaged Iranian drones and cruise missiles that ground batteries are less suited to defeat at long range and low altitude.

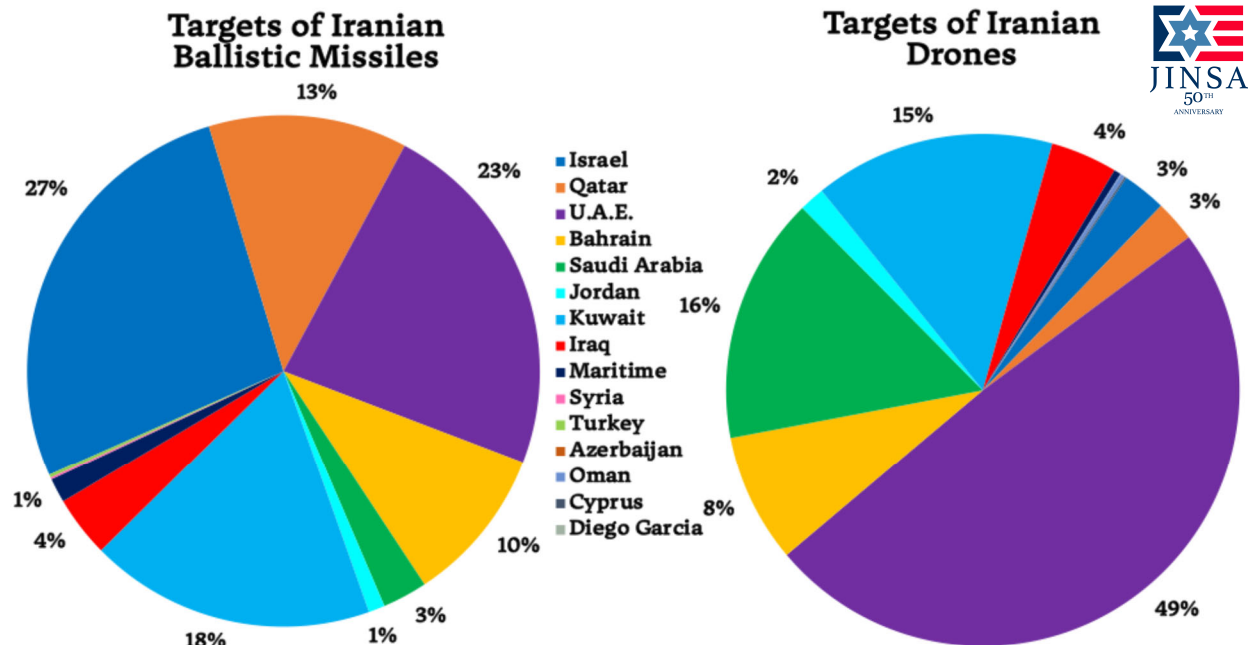
B. The Massive U.S. Force Buildup Before the War Proved Critical

The deliberate surge of U.S. air and missile defense assets into the theater in the weeks before the war began directly enabled successful defensive performance far beyond what would have been possible without these added forces. The Pentagon moved additional THAAD batteries and Patriot systems to Jordan, Kuwait, Bahrain, Saudi Arabia, and Qatar ahead of the operation, positioning upper- and lower-tier defenses at the bases and ports most exposed to Iranian fire.⁶ That pre-positioning created the layered architecture that absorbed Iran's opening salvos and bought time for offensive strikes to reduce the launch rate before interceptor stocks faced serious pressure. Two aircraft carrier strike groups and 200 fighter aircraft have also been in theater, giving the air defense architecture offensive reach to target Iranian weapons before they launch and conduct air-to-air operations against drones.

C. Dispersing Fire Enabled Defense Burden-sharing

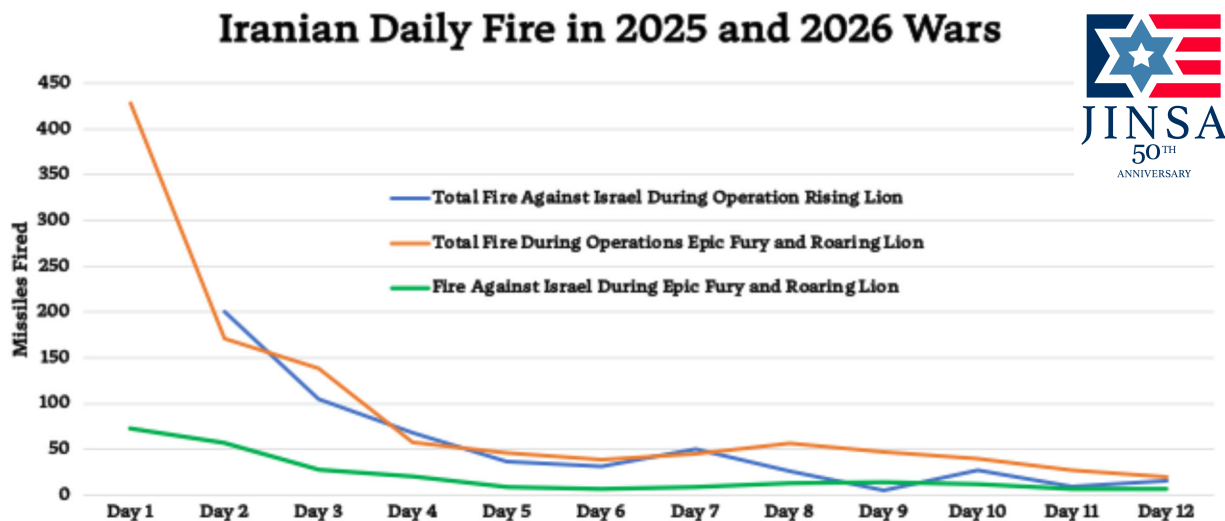
Unlike its attacks in 2024 and 2025 against Israel, in the current war, Iran has dispersed its fire, launching roughly 5,400 projectiles—roughly 1,560 ballistic missiles, 3,770 drones, and 28 cruise missiles—at more than a dozen countries. Iran's dispersal of fire created widespread impact but reduced concentration, making it unable to maintain enough pressure on one country to overpower defenses consistently or fully exhaust interceptors.

Iran's initial dispersal of fire may have been due to its pre-war plan for a mosaic doctrine of decentralized command-and-control to push decision making towards lower-level commanders. With Israel decapitating its senior leadership in the opening moments of 12-Day War and the ongoing conflict, Iran's approach would have given the authority to regional air commanders to fire on predetermined targets with the objective of spreading fire throughout the region. However, Iran has also shifted the focus of its fire throughout the war, for example by retaliatory strikes against energy targets after the Israeli strike on the South Pars natural gas field, suggesting greater recentralization of firing decision-making as the war proceeded.⁷



D. U.S. and Israeli Strikes Drove Iranian Attacks Down Quickly

Offensive strikes against Iranian missile forces rapidly reduced Iranian fire and made air defense easier by shrinking the number of missiles in each wave. Iran launched over 430 ballistic missiles on the first day of the war but averaged fewer than 30 per day over the second week, a decline of over 90 percent. Medium-range ballistic missile (MRBM) launches against Israel fell from 73 on the first day to single digits in most waves since March 10. U.S. and Israeli forces achieved that reduction by targeting launchers and the crews and support equipment that keep them moving and firing. Israeli officials said Iran had about 300 missile launchers by March 3, and 160 by March 11, which severely cut Iran's ability to sustain salvos.



E. Depth Helped Defense of Israel

Israel's distance from Iran provided it with greater warning time than Gulf nations to defeat missiles and drones, and its defenses proved more resilient than those of Gulf partners. Israel paired active defense with passive protection through nation-wide warning, shelters, and rehearsed procedures, which reduced casualties and disruption when debris fell or when a small number of missiles penetrated its active defenses. Israel's strong defenses also enabled U.S. assets in the Middle East to better reinforce Gulf partners under heavier ballistic pressure.

F. Layered Defenses Enabled Defeating a Variety of Threats

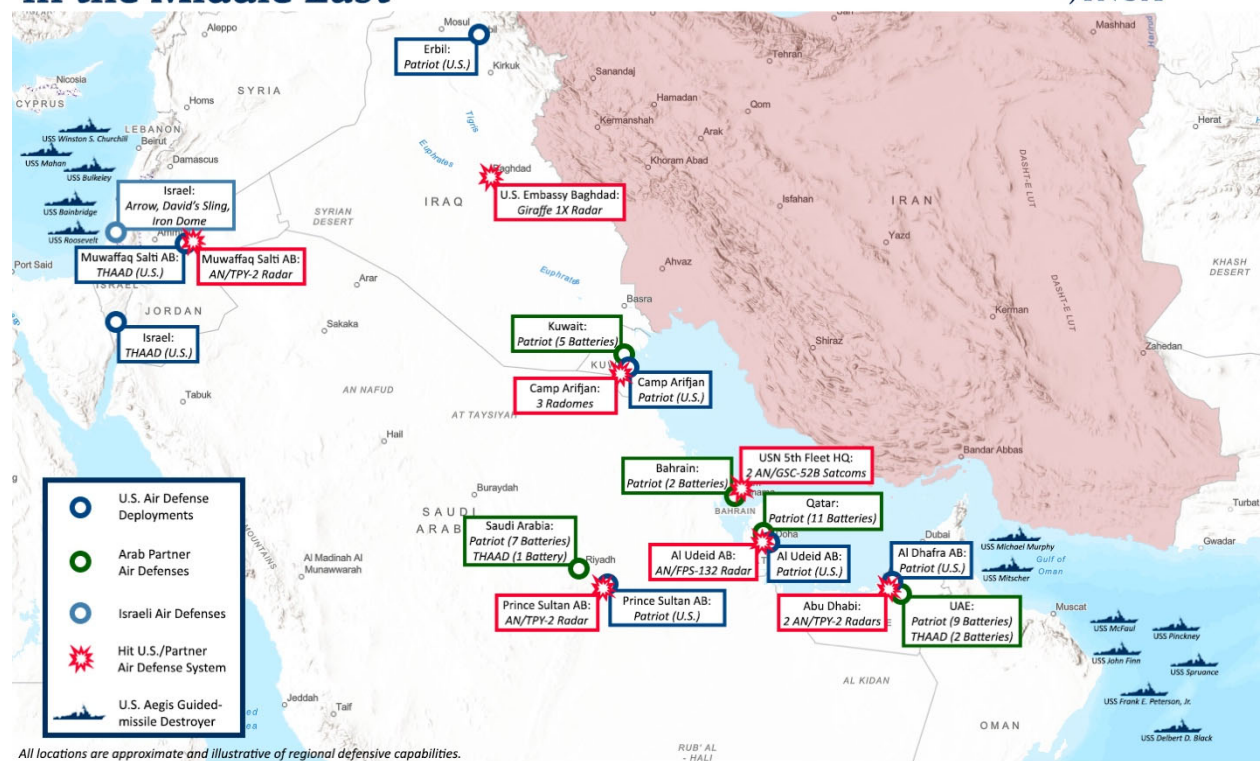
High interception rates across the region reflected the combined effect of multiple defensive tiers engaging threats simultaneously rather than the performance of any single system. Both Israel and Gulf partners sustained effective defense because they employed their full depth of air defense systems against the volume and variety of Iranian fire, with ballistic missile defense, medium-range, short-range, and point defense systems all firing in parallel. As a result, Israel, Arab nations and U.S. forces have shot down over 90 percent of Iranian ballistic missiles and kept critical military sites functioning under attack.

Israel fields the most capable layered air defense architecture in the world, with Arrow-3 and Arrow-2 intercepting ballistic missiles outside and inside the atmosphere, respectively, David's Sling covering the middle tier, and Iron Dome defending against short-range threats. Israel has continued to advance these systems, upgrading Iron Dome to serve as a last line of defense against ballistic missiles that penetrate upper

tiers and pushing David's Sling to engage MRBMs beyond its original rated range. Israel layers multiple intercept attempts from different tiers against the same incoming threat, improving the probability of interception but accelerating stockpile depletion across every layer of the architecture.

Gulf air defenses maintained high interception rates because multiple systems engaged threats simultaneously across every available tier. Iran directed over 3,000 drones at Gulf nations alongside roughly 1,000 ballistic missiles, forcing defenders to employ their full inventory rather than relying on any single system. These nations have Patriot PAC-3 and THAAD batteries capable of engaging ballistic missiles while Patriot GEM-T, Pantsir, NASAMS, and Barak-8 systems can defeat drones and cruise missiles. Fighter aircraft added an additional layer, firing air-to-air missiles or guns against drones at further distances from targets.

Ballistic Missile Air Defenses in the Middle East



III. Iranian Fire Stressed Air Defenses

Iran's attacks have imposed mounting costs on every component of the defensive architecture, not just the interceptors at the end of the kill chain. Air defense success depends on several interlocking elements, including sensors that detect and track incoming threats, a battlespace for viable operations, the ability to intercept the threat away from targets, and adequate interceptor stockpiles to continue operations.

Iran entered this war with a deliberate plan to degrade U.S. and partner capabilities by attacking each element of their air defense architectures. Iranian strikes targeted the specific radars that feed tracking data to upper-tier interceptors, exposing gaps in the ballistic missile defense layer that the architecture was built around and destroying some of the most capable and expensive sensors in the U.S. inventory.

A. Detection and Tracking: Iran Is Trying to Blind the Sensor Layer

Iranian strikes have damaged radars and communications infrastructure at seven U.S. military sites, part of a broader campaign that has hit at least seventeen U.S. bases and installations across the region.⁸ Gaps in the sensor layer left by Iranian strikes degrade the effectiveness of the entire air defense architecture.

Iran has targeted the radars, radomes, satellite dishes, and communication networks that enable air defense assets to detect, find, and track missiles and drones. Sensors and communication networks in the Gulf provide early warning not just for nearby countries but for threats targeting Israel as well. Iran struck the AN/FPS-132 early-warning radar at Al Udeid Air Base in Qatar, valued at approximately \$1.1 billion, reducing the capacity for long-range detection of ballistic missiles.⁹ Iran also hit the U.S. AN/TPY-2 radar at Muwaffaq Salti Air Base in Jordan early in the war and struck a radar base tied to missile defense in the U.A.E. Iran likely was able to strike several of these radar sites because sensors built for high-altitude air surveillance cannot reliably detect persistent low-altitude Iranian Shahed drones. Iran also struck several sites more than once, indicating Iran prioritized these targets to degrade the sensor and communications layer rather than opportunistically hitting targets of convenience.

These attacks exposed the sensor layer as the most vulnerable component in the regional air defense architecture. The radars and communications networks that feed tracking data to Patriot, THAAD, and DDGs remain few in number, expensive, slow to replace, and have little to no mobility. Destroying or degrading even a small number of them weakens the entire defensive network because delayed detection leaves less time to respond and diminished tracking quality can require firing more rounds per threat or result in missing entirely. Several U.S. bases in the Gulf have sustained significant damage, and U.S. air defense batteries must now also focus on sufficiently defending those installations to create the conditions for additional assets and repair teams to flow into theater.

B. Battlespace Geography: Small and Crowded Airspace Limits Engagements

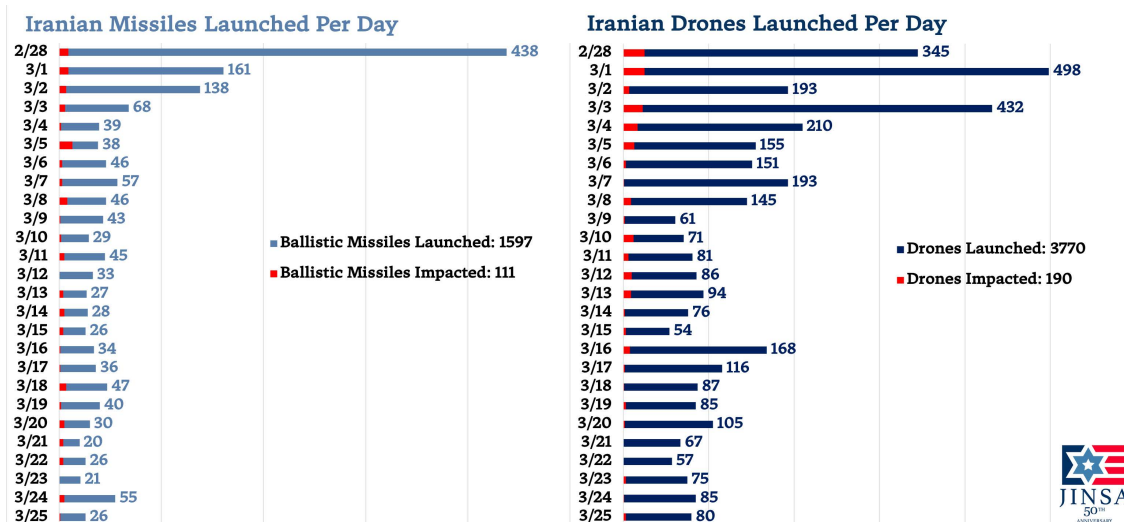
Geography makes defending the Gulf significantly harder than when the United States and Israel faced Iran in 2024 and 2025.¹⁰ Most Gulf bases, ports, and cities sit only a short distance from Iranian launch areas, which reduces the time defenders have to detect, track, and engage incoming threats. Iranian ballistic missiles launched toward Kuwait, Bahrain, Qatar, or the U.A.E. can reach their targets within three to ten minutes, a fraction of the already short twelve to fifteen minutes that ballistic missiles take to reach Israel.

Multinational air defense operations in the current war have improved coordination across the region but still create significant operational risks when defending alongside numerous countries. U.S., Israeli, and Gulf forces defend against missiles and drones in crowded airspace where friendly aircraft, interceptors, and incoming threats move at the same time. These risks materialized on March 1 when Kuwaiti air defenses shot down three U.S. F-15E Strike Eagles during Iranian attacks. The shootdown occurred during the heaviest period of Iranian fire, when defenders were tracking incoming threats while U.S. aircraft operated near major bases and engagement zones in Kuwait, showing how quickly coordination can break down when multiple countries operate air defenses and aircraft in the same congested battlespace.

C. Interception: No Defense Is Perfect, and Iranian Tactics Create Complications

Even with high intercept rates, any missile or drone hit could create devastating effects. A Pentagon assessment put the cost of the single strike on the U.S. Navy Fifth Fleet headquarters in Bahrain at approximately \$200 million, illustrating how Iran can impose enormous infrastructure costs even when most of its weapons are intercepted.¹² Large warheads make each hit potentially devastating, as the March 1 strike in Beit Shemesh demonstrated when one missile killed nine people in a residential area.¹³ Nearly 200 Israelis sustained injuries in Dimona and Arad on March 21 when Israeli air defenses failed multiple attempts to intercept two Iranian ballistic missiles with large conventional warheads, leading to direct impacts on the southern cities.¹⁴

Iranian fire against shipping in the Gulf has proven even harder to stop than attacks on land targets, with 14 of 26 known projectiles fired at vessels in the Gulf and Strait of Hormuz hitting their targets. In particular, several Iranian weapons have posed distinct challenges to defeat.¹⁵ Drones have evaded intercept at higher rates than ballistic missiles, and ballistic missiles armed with cluster munitions require earlier interception or have caused damage even when an intercept succeeded. Iran has used both weapons to keep hitting targets even against air defenses that have otherwise performed at a high level.



i. Iran's Cheapest, Least Advanced Weapons Have Hit Their Targets the Most

In terms of number of successful hits, drones have outperformed every other Iranian weapon in this conflict. Unlike when Iran attacked Israel in April 2024, Iran's ongoing drone operations also target Gulf nations much closer to its borders than Israel. Iran has achieved more frequent damage with its Shahed drones costing roughly \$50,000 to \$70,000 than its ballistic missiles priced in the range of the low hundreds of thousands of dollars to several million dollars.¹⁶ Drones account for more than 180 hits across the conflict, double the over 90 ballistic missile hits, with successful strikes against U.S. bases, Gulf energy infrastructure, shipping, and civilian targets.¹⁷

Drones avoid the vulnerabilities that expose ballistic missiles to strikes on the ground. The decline in Iranian launch rates since the first day of the war reflects launcher attrition for ballistic missiles, but the same logic does not hold for drones. Ballistic missiles depend on large transporter-erector launchers, dedicated crews, and detectable preparation signatures. Drones face none of those constraints. A Shahed-136 weighs roughly 200 kilograms and launches from an angled rail mounted on a pickup truck, after which the crew

can quickly relocate. That simpler launch profile makes them easier for Iran to disperse, conceal, and fire under pressure.

Iran has also incorporated tactical innovations observed in the Ukraine conflict. Iranian forces have deployed fiber-optic guided drones that are immune to electronic warfare jamming, first-person-view drones for precision strikes against point targets, and drones that fly below the detection floor of existing counter-UAS radars.¹⁸ Some Iranian drones now use jet engines that make them significantly faster than earlier Shahed variants, complicating intercept timelines for defenders. Defeating these evolving threats requires cross-functional teams that integrate electronic warfare, kinetic intercept, and visual detection rather than relying on any single counter-drone system.

ii. Cluster Munitions Require Earlier Interception

Iran has increasingly relied on ballistic missiles carrying cluster warheads that release 24 to 80 submunitions at high altitude and scatter them over several miles, an indiscriminate tactic that violates international law.¹⁹ The IDF assessed that more than half of the Iranian missiles fired in this war carried cluster warheads, compared with only three known uses during the 12-Day War.²⁰ Individual submunitions cannot penetrate hardened shelters, but they have destroyed portions of residential buildings, damaged vehicles, and scattered debris across neighborhoods, and the wider dispersal pattern increases the number of impact points, making it more likely that civilians and exposed infrastructure are hit.

Even a successful intercept does not guarantee the bomblets are stopped. Interceptors must neutralize ballistic missiles carrying cluster munitions before they re-enter the earth's atmosphere or they will either disperse their submunitions or potentially release them even upon impact. This requirement potentially forces Israel to expend more of its Arrow-3 interceptors that can conduct exo-atmospheric interceptions or risk using Arrow-2, David's Sling, and Iron Dome systems to neutralize threats within the atmosphere, risking submunition release. Israeli officials reportedly acknowledged on March 19 that the IDF was choosing not to shoot down some cluster submunitions to conserve interceptors because the bomblets posed less of a risk than larger warheads.²¹ The fact that the only air defenses in the region capable of exo-atmospheric interception are the U.S. SM-3 and Israeli Arrow-3 limits the variety of interceptors either country can use to neutralize cluster munitions at the optimal altitude. Cluster munitions killed nine of the twenty-four civilians who have died in Israel from Iranian missile fire since the war began, although none were in shelters as required under Israeli security protocols.²²

The combined challenges of intercepting cluster munitions before they disperse and Israel's decision not to intercept all of them have driven a sharp increase in the rate of missile impacts on Israeli territory. Iran has every incentive to read both its success with cluster munitions and any Israeli rationing of its interceptor stockpiles as validation of its tactics and to double down on them. Over the first two weeks of the war, only three percent of ballistic missiles fired at Israel hit populated areas, but from March 13 to 22 the average hit rate against Israel rose to roughly 27 percent, driven largely by cluster strikes on Israel.

IV. Strategic Challenges for the Next Phase of the War

U.S. and Israeli strikes have sharply reduced Iran's ability to launch ballistic missiles, but several structural challenges will persist for the remainder of the conflict. Iran can sustain small, frequent attacks against Israel, Gulf energy infrastructure, shipping, and military targets, and no air defense system can intercept every incoming threat. The weapons, particularly drones, Iran relies on cost a fraction of the interceptors needed to stop them, and the stocks defenders have already expended cannot be replaced at wartime rates, meaning the longer this conflict runs the harder it becomes to sustain the defensive performance achieved so far.

A. The Near-term Stockpile Race

No air defense architecture will stop every incoming threat, but air defenses must hold long enough to preserve the broader campaign and prevent Iran from outlasting the region's defenses. That requires U.S. and Israeli offensive fire either to exhaust Iran's missiles and drones before interceptors run too low or to destroy enough of Iran's stockpiles through offensive strikes before the defensive architecture degrades.

Even though U.S. and partner systems have performed well throughout the conflict, the United States does not have enough batteries and interceptors to sustain defense across the region over the long-term. Fragmented national inventories mean countries with smaller stocks could run short even as interceptors sit unused elsewhere in the theater. Air defense doctrines typically include firing multiple interceptors at a single incoming threat, particularly against ballistic missiles carrying large, destructive payloads, meaning interceptors deplete faster than missiles or drones. Gulf countries reportedly warned U.S. officials that their missile interceptor stocks have nearly run out.²³ Saudi Arabia may have expended only roughly 10 percent of its various interceptors but the U.A.E. and Kuwait may have already burned through roughly 75 percent of their Patriot stocks, according to JINSA's analysis of each nation's pre-war stockpiles and potential interceptor use. Based on this evaluation, Bahrain has possibly expended 87 percent of its Patriot stocks, while Qatar has used roughly 40 percent. Actual depletion rates would vary depending on factors such as the extent of U.S. contributions to interception efforts, as well as the accuracy of underlying stockpile estimates and operational reporting.

Underscoring the urgency and rapidity of the widespread air defense capacity depletion, the United States approved on March 19 over \$16 billion in emergency arms sales to the U.A.E., Kuwait, and Jordan under an emergency waiver bypassing congressional review, including \$8 billion in air and missile defense sensor radars for Kuwait, \$2.1 billion in counter-drone systems for the U.A.E., and \$1.22 billion in advanced air-to-air missiles for the U.A.E.²⁴ However, it remains unclear how long it will take for each delivery to take place.

Israel likely entered this conflict with depleted interceptor stocks after heavy use during the 12-Day War because its ability to replenish them in less than a year would have been difficult under current defense industrial base constraints. Israel reportedly informed the United States that it is running critically low on ballistic missile interceptors, a shortage U.S. officials said they had anticipated for months but that Israeli officials have denied.²⁵ Hours after that report, Israel's government approved NIS 2.6 billion in emergency defense procurement, suggesting the shortage was serious enough to trigger an extraordinary fiscal response. Israel's decision not to fire against all incoming ballistic missiles carrying cluster munitions also suggests a need to ration interceptors.

Potential Gulf Nation Air Defense Burn Rate



Munition Type	Pre-War Inventory	Est. Expended	% of Stock Consumed	Est. Remaining
Saudi Arabia				
<i>Total intercepts: 38 BM, 603 drones, 0 cruise — est. 5% by U.S. systems</i>				
Patriot PAC-3 CRI	600	65	11%	535
Patriot PAC-2	1,000	117	12%	883
Patriot GEM-T	200	23	12%	177
THAAD	96	7	7%	89
Other BMD (I-HAWK)	300	35	12%	265
SHORAD (Pantsir/Shahine/Crotale/Avenger)	1,800	211	12%	1,589
AIM-120 AMRAAM (A2A)	780	43	6%	737
Non-Missile Drone Kills (EW/Guns)	N/A	143	—	—
U.A.E.				
<i>Total intercepts: 319 BM, 1696 drones, 8 cruise — est. 50% by U.S. systems</i>				
Patriot PAC-3	352	272	77%	80
Patriot GEM-T	335	141	42%	194
THAAD	144	48	33%	96
Other BMD (Barak-8/Cheongung)	234	94	40%	140
SHORAD (Pantsir/Crotale/Mistral/RBS-70)	850	343	40%	507
AIM-120C-8 AMRAAM (A2A)	922	64	7%	858
Non-Missile Drone Kills (EW/Guns)	N/A	212	—	—
Kuwait				
<i>Total intercepts: 230 BM, 527 drones, 0 cruise — est. 60% by U.S. systems</i>				
Patriot PAC-3 MSE	224	184	82%	40
Patriot GEM-T	270	67	25%	203
Other BMD (NASAMS/I-HAWK)	220	55	25%	165
SHORAD (SPADA)	80	20	25%	60
AIM-120 AMRAAM (A2A)	180	16	9%	164
Non-Missile Drone Kills (EW/Guns)	N/A	53	—	—
Bahrain				
<i>Total intercepts: 132 BM, 320 drones, 0 cruise — est. 80% by U.S. systems</i>				
Patriot PAC-3 MSE	60	52	87%	8
Patriot GEM-T	36	7	19%	29
SHORAD (Crotale/RBS-70/I-HAWK)	191	36	19%	155
AIM-120/AIM-9X (A2A)	64	5	8%	59
Non-Missile Drone Kills (EW/Guns)	N/A	16	—	—
Qatar				
<i>Total intercepts: 193 BM, 83 drones, 11 cruise — est. 15% by U.S. systems</i>				
Patriot PAC-3/MSE	768	328	43%	440
Patriot GEM-T	246	28	11%	218
Naval SAM (Aster 30 + VL-MICA)	62	4	6%	58
SHORAD (NASAMS/Stinger/Legacy)	525	30	6%	495
AIM-120/AIM-9X (A2A)	360	5	1%	355
Non-Missile Drone Kills (EW/Guns)	N/A	18	—	—
<i>BM intercepts at 2:1 fire ratio allocated to PAC-3/MSE and THAAD. Cruise at 1.5:1 to GEM-T. 25% of drones attributed to non-missile kills. Remaining drones distributed across drone-capable systems proportional to inventory.</i>				

B. Psychological Wear on Civilian Populations

With U.S. and Israeli strikes degrading Iran's ballistic missile launcher capacity, preventing it from overwhelming air defenses through massive barrages, and no ability to conduct attacks on Israeli military sites that prevent further IDF operations, Iran has turned to more frequent, but smaller, salvos, particularly against Israel, an adaptation it also adopted during the 12-Day War once its attempts to target Israeli military sites with massive barrages failed.²⁶ This indiscriminate targeting of civilian population centers triggers constant alerts and shortens the time between attacks while reducing overall lethality, trading mass effect for persistence to wear down daily life. Warheads with cluster munitions amplify these disruptions by increasing the chance that submunitions or debris fall in populated areas.

C. Market Downturn Creates Domestic and International Pressures

Air defense success does not eliminate the economic disruption caused by attacks in the Gulf. Energy markets and shipping networks depend on confidence that vessels and crews can move safely through the Strait of Hormuz, the most important energy export transit route in the world, through which roughly one-fifth of global oil supply passes daily. Even limited or failed attacks, and the perceived risks of additional strikes that they generate, can disrupt that confidence and slow commercial activity.

Iran has increasingly directed its drone attacks toward energy and maritime targets to raise oil costs and pressure Gulf governments to seek an end to the war. Over the first ten days of the war, Iran averaged roughly six drones per day against Saudi Arabia, but over March 10 to 16 that rate jumped to roughly 29 per day, concentrated on oil fields and export infrastructure. Iranian drones and missiles have struck refineries, fuel storage, port facilities, power stations, and an offshore drilling rig across the Gulf, forcing shut-downs and disrupting export schedules even when damage was limited. Projectile attacks on ships in the Gulf and Strait of Hormuz effectively stopped transit through the waterway. Brent crude spot prices have repeatedly surged past \$100 per barrel for the first time since 2022 as traders priced in the possibility of sustained disruption to Gulf exports. Iran's large remaining drone stockpile allows it to sustain this campaign at low cost even as its ballistic missile capacity declines.

The United States and Gulf nations currently lack sufficient air defenses in the Gulf to protect against Iranian attacks on shipping to alleviate market unrest, enabling Iran to use drones and missiles to effectively shut the waterway. Patriot and THAAD can help defend ports, bases, and some high-value coastal infrastructure, but they cannot neutralize every threat or provide continuous protection for every commercial vessel across the Gulf. While DDGs can defend nearby ships and contribute to defending shipping lanes, they cannot provide continuous protection to all commercial shipping in the Gulf, especially from the current U.S. posture outside the Strait of Hormuz.

D. Long-term Sustainment Challenges

Beyond the immediate problems, the United States must consider its broader sustainment challenges. The sheer volume of Iranian drone fire drains stocks at rates the architecture likely cannot sustain. If the defensive architecture degrades far enough, the domestic and international pressure it has so far absorbed will force an end to offensive operations before the United States can remove Iran's capacity to attack. The United States must also maintain a force capable of global reach. Even if the coalition manages near-term interceptor transfers and rationing, the longer-term challenge remains that U.S. production, repair capacity, and global posture are not built to sustain a high-tempo regional air defense war without accepting growing risk in other theaters.

The Trump administration has sought to expand air defense interceptor production, but defense industries cannot do so on wartime timelines and efforts to date remain insufficient to rapidly replenish stocks, let alone move beyond the previously insufficient baseline levels. In January 2026, weeks before the war began, the Department of Defense signed framework agreements with Lockheed Martin to triple PAC-3 MSE production from 620 to 2,000 per year and to quadruple THAAD production from 96 to 400 per year, both over seven-year ramp schedules that will not reach full capacity until the early 2030s.²⁷ Yet, Congress has not fully funded either agreement. U.S. defense industry production lines cannot rapidly supply air defenses for the United States, Gulf nations, and pre-existing allied orders, creating global sustainment challenges.²⁸ Every interceptor used in this war adds to a replenishment backlog that was already years-long.

Severe interceptor depletion creates pressure to keep attacking Iran now rather than allow Tehran to rebuild as it did after the 12-Day War. If Iran rearms while allied defenses have not recovered, the next round will be harder to survive than this one. That creates a cycle where continuing the war may be necessary to prevent a worse stockpile imbalance later, even as prolonged operations keep draining defenses now.

Yet, concentrating resources and industrial capacity on winning this particular race with Iran could inadvertently undermine readiness vis-à-vis other adversaries. By prioritizing rapid depletion of Iranian capabilities, the United States and its allies risk over-extending their defense supply chains and exhausting reserves, potentially entering future confrontations, especially with major powers like China, from a position of disadvantage. The effort to gain an edge over Iran might, in effect, create a less favorable stockpile race with other strategic competitors, complicating the balance of deterrence and preparedness across multiple theaters.

E. Support from America's European Allies Insufficient

U.S. allies have deployed air defense assets, but support remains too limited to match the scale of the threat. A Greek-operated Patriot battery that had been deployed in Saudi Arabia since 2021 intercepted two Iranian missiles targeting oil infrastructure on March 19.²⁹ Since the war began, Australia deployed about 85 personnel, AIM-120 AMRAAMs, and an E-7A Wedgetail to the U.A.E.³⁰ Italy also indicated it may send air-defenses to Gulf nations that could include a SAMP/T battery capable of neutralizing ballistic missiles.³¹ U.K. fighter aircraft have also shot down Iranian drones, and the United Kingdom sent a destroyer equipped with Sea Viper anti-air missiles to the eastern Mediterranean. Although America's allies are impacted by the global market downturn caused by the war, their contributions provide only slight improvements and are too delayed to fix the main issues threatening sustainable operations.

V. Recommendations

The defensive architecture has held, but the trajectory of the conflict will become increasingly problematic unless Washington takes urgent action to reverse it. The United States must reposition existing assets from both within and outside the Middle East toward the points of greatest pressure, in particular against drones, prioritize hunting Iranian launchers and drones, convoy ships through the Gulf to protect them from Iranian attacks, and formalize the regional coordination that wartime improvisation has proven essential but that remains ad hoc.

A. Expand and Protect the Sensor Layer

Fixed ground radars are few, expensive, slow to replace, and immobile, and Iranian strikes have already degraded several. The United States should acquire additional airborne early warning aircraft. Airborne sensors can reposition, survive, and cover gaps that damaged fixed radars cannot fill, and expanding that capacity is the most viable near-term path to stabilizing the detection layer without waiting for fixed radar replacement timelines.

The Navy is already surging at least five E-2D Advanced Hawkeyes toward the Middle East, the most capable airborne look-down radar platform in U.S. service and uniquely suited to detecting low-flying drones and cruise missiles that ground-based radars have struggled to track.³² The E-2D's AN/APY-9 AESA radar can isolate smaller, slower, and lower-flying targets with greater precision than the aging E-3 Sentry AWACS aircraft currently supporting operations from Prince Sultan Air Base. The United States should accelerate and expand this deployment, positioning as many E-2Ds as possible for land-based operations across the Gulf to restore the low-altitude detection coverage that Iranian strikes on fixed radars have degraded. As JINSA recommended before the war, the United States should treat Ovda Air Base in Israel as a more resilient basing option than vulnerable Gulf locations and build on its pre-war deployment of F-22s and tankers to Israel by also positioning additional sensor aircraft and air defense assets there.³³

B. Reposition Air Defense Batteries and Radars

CENTCOM should redeploy batteries and interceptors within the region based on defensive performance and where Iranian attacks have imposed the greatest strain. With scarce radars, sensor coverage will also likely have to come mainly from repositioning limited existing assets and pairing them with airborne warning aircraft to preserve the regional tracking picture. As Iran has redirected its attacks during the war, the United States should also realign its defensive priorities by concentrating resources on areas under the greatest threat and degraded defense capacity, specifically Bahrain and the U.A.E., rather than Qatar and Kuwait. Since Saudi Arabia possesses a substantial indigenous ballistic missile defense capacity and has primarily contended with drone threats, the United States should focus on helping bolster counter-drone capabilities there, while reallocating additional ballistic missile defense resources to regions facing greater missile risks.

C. Transfer Interceptors from Other Theaters and Stockpiles

The Department of Defense should also evaluate transferring interceptor stocks from other combatant commands and from installations in the continental United States to reinforce CENTCOM's depleting inventory. Accepting temporary risk in other theaters would be preferable to allowing the defensive architecture in the Middle East to degrade to the point where it can no longer sustain operations. The United

States has already sent 10,000 Merops drones to the Middle East, which have helped Ukraine defeat Shahed drones that Russia has launched.³⁴ The United States should also reactivate and deploy legacy point-defense systems such as Land-based Phalanx Weapon System, Counter-Rocket Artillery and Mortar systems, and other close-in weapons that can provide base defense against drones and rockets without consuming the high-end interceptors needed for ballistic missile defense.

D. Push for U.S. Allies to Deploy Air Defenses to the Gulf

Washington should press allied nations with available air defense capacity to deploy systems to the region and integrate them under CENTCOM coordination. Greece has five additional Patriot batteries beyond what it has already deployed to Saudi Arabia and just demonstrated an ability to bolster air defenses by using a Patriot battery to shoot down Iranian missiles.³⁵ The United Kingdom has Sky Sabre ground-based systems and additional destroyers equipped with Sea Viper.³⁶ France and Italy have SAMP/T batteries.³⁷ Deploying even a portion of these systems would help reduce pressure on U.S. and Arab partner inventories.

The United States has already started shifting toward cheaper, more rapidly produced counter-drone systems by drawing on Ukrainian combat experience, and it should push that effort further by helping Gulf partners build dense interceptor-drone coverage around bases, ports, tanker terminals, and logistics hubs under repeated attack.³⁸ Ukraine has sent 228 drone defense specialists organized into dedicated units across five Middle Eastern countries, including Qatar, the U.A.E., Saudi Arabia, Kuwait, and Jordan, to advise on and directly support countering Iranian drone attacks.³⁹ Gulf nations have sought to acquire Ukrainian Sting drones that have defeated Shahed drones Russia has launched against its territory, and the Sting-2 in development would be capable of defeating jet engine Shaheds.⁴⁰

E. Remove Procurement and Deployment Red Tape

This conflict should serve as the catalyst to clear the procurement and regulatory barriers that have slowed fielding necessary weapons for years. The United States should accelerate acquisition from whatever sources can deliver capable systems fastest, including Ukraine, whose experience defending against Russian strikes has produced counter-drone solutions, such as drones that can defeat other drones, which outpace what peacetime development programs have achieved.⁴¹ The Department of Defense should also compress the timeline between successful testing and operational fielding, pushing systems that have already demonstrated capability out of acquisition pipelines and into the hands of units in theater. Where legacy systems are available but require re-certification before deployment, the Department of Defense should expedite those approvals. Washington should also actively facilitate partner acquisition from those same sources, removing barriers that slow U.S. foreign military sales.

F. Assign Intercepts to the Best Available Systems, Not the Closest National One

CENTCOM should also formalize shared firing arrangements across the region so that the optimal interceptor engages any incoming threat regardless of which nation is being targeted. Beyond connecting sensor data, CENTCOM coordination of air defenses to take the best available shot against any threat would produce greater likelihood of interception and reduce the risk that a threat gets through because the most capable interceptor happened to be owned by a different nation. This optimization should not only seek to achieve the highest likely intercept but also seek to address the stockpile challenge. To achieve this, air

defense tasking should consider how Gulf partners with larger interceptor stockpiles could aid regional defense by conducting more intercepts in defense of their neighbors who have more depleted arsenals.

G. Backstop Regional Partner Interceptor Stockpiles

To both encourage this shared firing and ensure regional partner interceptor stocks avoid severe depletion, the United States should backstop partner inventories by positioning U.S. interceptors where they can reinforce national stocks under acute pressure. Rather than treating U.S. and partner inventories as separate pools that happen to operate in the same theater, CENTCOM should hold pre-delegated authority to redirect U.S. interceptors to partner batteries before national stocks reach critical levels, supported by shared logistics nodes that allow U.S. stocks to move quickly across the theater without requiring case-by-case approval.

H. Prioritize Drone Hunting Sorties

Counter-drone defense is the most immediate operational requirement in the Gulf. U.S. fighter aircraft operations should shift a larger share of sorties toward active drone hunting, treating Shaheds as an air-to-air engagement priority rather than a problem left to regional partners or ground-based batteries. Deploying helicopters over the Gulf can provide persistent presence for counter-drone operations because of their ability to fly low and slow. Repositioning ships closer to the Gulf coastline would also give naval interceptors a higher-altitude engagement window against cluster-armed missiles before submunitions release.

I. Align Air Defense Priorities with Offensive Operations

Air defense alone will not restore public confidence or stabilize energy markets, both of which Iran continues to target through sustained drone and missile pressure on civilian infrastructure and shipping. High interception rates have not stopped oil prices from rising, major carriers from suspending Hormuz transits, or civilian populations from living under near-constant alert. Reducing that pressure requires destroying Iranian launchers, not just intercepting what they fire. The United States should intensify offensive strike operations in eastern Iran to remove the regime's ability to fire its longest-range missiles from those positions.

J. Explore Escorting Tankers Through the Strait of Hormuz

The United States, European allies, and Gulf partners should establish a coalition to escort shipping through the Strait of Hormuz to stabilize commercial traffic. Aegis destroyers and allied surface combatants should provide missile and drone defense during these transits while maritime patrol aircraft and drones monitor Iranian drone boats and fast attack craft operating from Bandar Abbas and nearby ports. Operating in the confined waters of the Gulf exposes escort forces to Iranian attacks from concealed positions along its coastline and islands, including anti-ship cruise missiles, fast attack craft, and naval mines. Mitigating those risks requires pairing escort operations with persistent overhead surveillance from MQ-9 drones and maritime patrol aircraft to identify and track Iranian coastal launchers and fast boats before they can fire, mine countermeasure vessels clearing transit corridors ahead of convoys, and helicopter gunships flying close escort to intercept fast attack craft at standoff range. Visible escort operations backed by these layered

protections would reduce the uncertainty that has driven tankers to wait offshore and pushed insurers to raise war-risk premiums.

K. Formalize Long-term Middle East IAMD

Regional air defense operations during the war have underscored the need to advance a more integrated air and missile defense architecture across the Middle East. Those operations demonstrated that regional defenses perform far more effectively when partners can share warning data and track threats across the entire battlespace rather than defend only their own territory. The United States should build on this experience by strengthening IAMD under CENTCOM through deeper, formal integration of Israeli and Gulf early-warning radar coverage and air defense platforms that extends beyond the current war.

L. Expand Defense Industrial Base Cooperation with Middle East Partners

The United States should pursue co-production partnerships with Israel, Saudi Arabia, and the U.A.E. to expand the aggregate industrial capacity available to replenish the interceptors and munitions this war is consuming, as JINSA outlined in its September 2025 report on the defense industrial base.⁴² U.S. production lines alone cannot meet the combined demand of U.S. and partner nation needs as they all try to rebuild stocks simultaneously, and Middle East partners have the capital and ambition to help close that gap. The United States should streamline Foreign Military Sales processes and reform export control restrictions that have slowed procurement and discouraged defense companies from expanding production.

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