

POGO



Report

The American Military's Center of Gravity

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About POGO

Mission

The Project On Government Oversight (POGO) is a nonpartisan, independent watchdog that investigates, exposes, and champions reforms on systemic corruption, abuse of power, and waste.

Vision

We envision a federal government that is effective and accountable — governed by just laws, operating with integrity, and committed to serving the public.



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Research Review and Editorial

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Introduction

The Secretary of Defense says there is no munitions crisis.¹ Some members of Congress say there is one.² The available data suggests both can be true at once: The United States had the munitions on hand to engage in what the administration deemed “successful” strikes in support of Operation Epic Fury, and the cost of doing so – in dollars, in stockpile depth, and in the four-to-seven-year lead time for replacing what was fired – is large enough that whether you call it a crisis is now a matter of what you think the next conflict looks like.

Munitions are the backbone of our nation’s warfighting capabilities, and the cost of them is a significant portion of every year’s Pentagon budget request. Operation Epic Fury served as a concentrated case study of how the U.S. is likely to utilize munitions in modern war. The operational success of Epic Fury may be an open question, but the fact remains that the conflict has raised concerns about the established structure of the U.S. munitions industrial base. Or, at least, it highlighted them explicitly in a way that now cannot be ignored.

At the start of Operation Epic Fury, the Project On Government Oversight (POGO) realized that the cost of the conflict had the potential to rapidly balloon at a speed that outpaced any other recent military operation. The Center for Defense Information began exploring ways of tracking likely munitions expenditure in the hopes of assessing the financial cost of the key tool of U.S. combat power. Quickly, we and many others realized that U.S. defensive munitions specifically faced an asymmetrical disadvantage when pitted against Iran’s low-cost Shahed drones. As the operation drew on, the question of stockpile depletion also rose to the top. This brought up more questions regarding the split between offensive and defensive munitions, their expenditure, and their overall cost.

The goal of our research was not to reach a specific conclusion about Operation Epic Fury, but rather to develop a deeper understanding of what the operation’s munitions use means for defense budgets and national security concerns.

Combining third-party, open-source reporting and analyst knowledge of military planning and strategy, we tracked likely munitions use, estimating low, medium, and high rates of expenditure. We also reviewed procurement data to develop estimates of munitions stockpiles. This data – while likely imperfect – provides a foundation that analysts and policymakers can use to shape general understanding and debate around how the U.S. should handle munitions and their procurement going forward.

¹ Kaia Hubbard, "Pete Hegseth Says It's a 'Manufactured Story' That U.S. Faces Munitions Stockpile Shortage," *CBS News*, June 14, 2026, <https://www.cbsnews.com/news/pete-hegseth-stockpile-shortage-senate-armed-services-testimony-face-the-nation/>.

² Ellen Mitchell and Filip Tomotija, "Congress Confronts New Questions About US Stockpiles, Iran Firepower," *The Hill*, May 14, 2026, <https://thehill.com/policy/defense/5877148-us-iran-war-munitions-stockpiles/>.

To support this understanding, we further calculated munitions burn rates, which show how quickly the existing stockpile depletes. We also identified cost ratios comparing offensive and defensive munitions, to show where taxpayer dollars actually go. Finally, we anticipated replacement timelines, highlighting when newly produced munitions will actually reach our military. Congress needs to pay precise attention to the likely expenditure burn rates, cost ratios, and likely replacement timelines of all munitions it appropriates funding for to ensure the U.S. is developing and procuring the most impactful and cost-effective weapons for national defense.

Operation Epic Fury's munitions expenditure is not a novel subject, and there have been contributions from many notable organizations. A few recent publications stand out.

The Center for Strategic and International Studies (CSIS) has contributed extensively to the discussions of Operation Epic Fury's munitions expenditure, with Mark Cancian and Chris Park's reports *Last Rounds? Status of Key Munitions at the Iran War Ceasefire* and *Rebuilding U.S. Missile Inventory: A Multiyear Project*.³ They focus on seven critical munitions and their estimated expenditure rates over 39 days of Operation Epic Fury and the delivery schedules for replenishment telegraphed in the FY27 Defense Budget.

Together, the reports conclude that the U.S. has created a multiyear "window of vulnerability" in the Western Pacific that will persist until munitions inventories are restored.⁴ They posit that the production timelines for high-end interceptors and long-range strike munitions cannot be compressed below industrial base constraints. While the reports recognize the potential impact of the frameworks in increasing production capacity, they also lay out a timeline that shows the capacity expansion promised in these framework agreements will not take effect quickly enough to contribute to near-term deterrence efforts.

Another notable work on the subject that bears mentioning is the *New York Times* piece, "Iran War Has Drained U.S. Supplies of Critical, Costly Weapons," by Eric Schmitt and Jonathan Swan.⁵ Schmitt and Swan provide their own expenditure estimates, grounded in internal reporting they obtained from Department of Defense (DOD) sources and details they obtained about information the DOD shared with Congress. Beyond the expenditure estimates, the article also reports on the Pentagon's redistributions of munitions globally to

³ Mark F. Cancian and Chris H. Park, "Last Rounds? Status of Key Munitions at the Iran War Ceasefire" (Washington, DC: Center for Strategic and International Studies, April 2026), <https://www.csis.org/analysis/last-rounds-status-key-munitions-iran-war-ceasefire>; Mark F. Cancian and Chris H. Park, "Rebuilding U.S. Missile Inventory: A Multiyear Project" (Washington, DC: Center for Strategic and International Studies, 2026), <https://www.csis.org/analysis/rebuilding-us-missile-inventory-multiyear-project>.

⁴ Mark F. Cancian and Chris H. Park, "Rebuilding U.S. Missile Inventory: A Multiyear Project" (Washington, DC: Center for Strategic and International Studies, 2026), <https://www.csis.org/analysis/rebuilding-us-missile-inventory-multiyear-project>.

⁵ Eric Schmitt and Jonathan Swan, "Iran War Has Drained U.S. Supplies of Critical, Costly Weapons," *New York Times*, April 23, 2026, <https://www.nytimes.com/2026/04/23/us/politics/iran-war-cost-military.html>.

account for Operation Epic Fury, explicitly tying the expenditure in the Middle East to broader, global deterrence implications.

This work differs from preceding reports in its purpose, which is not to reflect on past munitions expenditure but rather to craft better plans for the future. Putting burn rates into conversation with cost disparities and replenishment timelines, we hope to provide Congress with a system it can use to inform future budget and procurement decisions.

We recognize that our estimates and the procurement data we've collected in this report are incomplete. However, the data we've compiled for each munition is enough to assess and identify real areas of concern when it comes to munitions usage and procurement.

Methodology

At the start of Operation Epic Fury, researchers and analysts throughout the national defense sphere began attempting to make sense of the military conflict. Between information drawn from limited U.S. military releases and from open sources, a picture began to develop of an operation dominated by munitions, as the U.S. military and its allies exchanged strikes with Iran.

POGO was immediately concerned about the cost of such a campaign, and we began collecting information in an attempt to assess expenditure and generate a price tag. What started as a tracker for logging different estimates from open-source aggregators and the limited information being released by U.S. Central Command quickly turned into POGO's own estimated expenditure matrix.

We then combined the data from our munitions expenditure matrix with public DOD budget and procurement data to identify burn rates for munitions and to calculate cost disparities between offensive and defensive weapons.

Our Munitions Expenditure Matrix

The expenditure matrix is broken into three phases, to mirror the standard planning frameworks used by the U.S. military in situations like Operation Epic Fury. Phase One encompasses the first 24 hours of Epic Fury (H+0 to H+24), beginning with the commencement of operations and ending with what POGO assessed to be the start of permissive air superiority being achieved, based on open-source reporting. Phase Two pushed from 24 hours to 100 hours (H+24 to H+100), beginning with the permissive air superiority being achieved and ending with pre-planned target sets having been hit. Phase Three was structured as a 30-day rolling window of expenditure for sustained air operations, nominally labeled as H+100 onward.

Within each phase, we calculated a low, mid, and high estimate of munitions expenditure. We developed these estimates through analyzing open-source reporting, expenditures from past conflicts using similar munitions, past analytical work from other research organizations, and through assumptions regarding likely military planning decisions. For defensive interceptor estimates, stockpile estimates from past budget documents and a

2025 CSIS report were used as hard ceilings, while engagement-rate assumptions were calibrated against the June 2025 Twelve-Day War.⁶ The volume of Iranian missiles likely fired (and thus countered with defensive interceptors) were drawn from Foreign Policy Research Institute open-source tracking and cross-checked against factsheets released by U.S. Central Command (CENTCOM).⁷ These inputs shaped the by-phase assessments. Offensive munition quantities were grounded in floor counts from open-source aggregators, including missilestrike.com and its dual-source corroboration threshold, and supplemented by CENTCOM's primary-source confirmation for LUCAS drones and PrSM.

Munitions We Tracked for This Report

Tomahawk TLAM	AGM-158 JASSM
GBU-31 JDAM	AGM-114 Hellfire
GBU-38 JDAM	AGM-84L Harpoon
GBU-39 SDB	MK-48 Torpedo
GBU-57/B MOP	RGM-184A NSM
AGM-88G AARGM-ER	AGM-179 JAGM
LUCAS Drone	Patriot PAC-3 MSE
HIMARS – ATACMS	THAAD Interceptor
HIMARS – GMLRS	SM-3 Block IIA
HIMARS – PRsM	SM-6 Block I/IA

⁶ Missile Defense Agency, *Missile Defense Agency Procurement: Fiscal Year (FY) 2026 President's Budget*, vol. 2b (Washington, DC: Department of Defense, 2025), 90 (THAAD), 148 (SM-3 Block IIA), https://comptroller.war.gov/Portals/45/Documents/defbudget/FY2026/budget_justification/pdfs/02_Procurement/PROC_MDA_VOL2B_PB_2026.pdf; Wes Rumbaugh, "The Depleting Missile Defense Interceptor Inventory," Center for Strategic and International Studies, December 5, 2025, <https://www.csis.org/analysis/depleting-missile-defense-interceptor-inventory>.

⁷ Macdonald Amoah, Morgan D. Bazilian, and Lt. Col. Jahara Matisek, "Over 5,000 Munitions Shot in the First 96 Hours of the Iran War," Foreign Policy Research Institute, March 16, 2026, <https://www.fpri.org/article/2026/03/over-5000-munitions-shot-in-the-first-96-hours-of-the-iran-war/>; US Central Command, "Operation Epic Fury: 24-Hour Fact Sheet," March 1, 2026, <https://www.centcom.mil/MEDIA/igphoto/2003881835/>; US Central Command, "Operation Epic Fury: 72-Hour Fact Sheet," March 3, 2026, <https://media.defense.gov/2026/Mar/03/2003882557/-1/-1/1/OPERATION-EPIC-FURY-FACT-SHEET-260303.PDF>; US Central Command, "Operation Epic Fury Fact Sheet: The First 7 Days," March 6, 2026, <https://media.defense.gov/2026/Mar/06/2003894889/-1/-1/1/Operation-Epic-Fury-Fact-Sheet-First-7-Days.PDF>; US Central Command, "Operation Epic Fury Fact Sheet: The First 10 Days," March 9, 2026, <https://media.defense.gov/2026/Mar/09/2003896756/-1/-1/1/OPERATION-EPIC-FURY-FACT-SHEET-THE-FIRST-10-DAYS.PDF>; US Central Command, "Operation Epic Fury Fact Sheet: The First 13 Days," March 12, 2026, <https://media.defense.gov/2026/Mar/12/2003898258/-1/-1/1/OPERATION-EPIC-FURY-FACT-SHEET-THE-FIRST-13-DAYS.PDF>; Center for Strategic and International Studies, "\$3.7 Billion: Estimated Cost of Epic Fury's First 100 Hours," March 2026, <https://www.csis.org/analysis/37-billion-estimated-cost-epic-furys-first-100-hours>.

Burn Rates

We used our munitions expenditure data to estimate low, mid, and high burn rates, which show how quickly the operation burned through U.S. munitions stockpiles.

While the true stockpile values prior to Operation Epic Fury are classified, the DOD's own publicly available procurement data, combined with full-lot production delivery estimates, provides a realistic picture of what has been procured by the DOD in recent years and serves as a starting point when considering what the munitions expenditure of Operation Epic Fury actually meant to stockpile health.

We began by aggregating a procurement history for each munition. While the procurement data for all but two of the selected munitions we included in this report is publicly available, it is not made available in a convenient format by the DOD. We reviewed budget request documents, starting with FY24 and going through the most recently released documents for FY27, and aggregated the procurement data for 20 different munitions.⁸

Likely pre-Epic Fury munitions delivery was then estimated by totaling the procurement numbers for FY22 through FY25. When possible, public information regarding lot production timelines, gathered from public releases and announcements regarding past munitions contracts, was also inputted and used to assess potential pre-Epic Fury procurement and likely stockpile replenishment timelines.

We recognize that these values do not reflect an accurate estimate of stockpile amounts, which would require accounting for decades of procurement and expenditures for training and operations prior to Epic Fury. However, an assessment of recent procurement provides a deeper understanding of the realities surrounding munitions concerns as a whole.

Cost Disparity

We also identified the cost disparity between offensive and defensive munitions.

For each munition, we identified a "unit cost." These costs are pulled from publicly available DOD budget documents (see note 8) that reflect the procurement costs for each munition. We multiplied these costs by the total low, mid, and high expenditure estimates for each munition to provide total low, mid, and high estimated costs for Phases One, Two, and Three of the operation. The rolling, 30-day window of Phase Three can be repeated to encompass continued operations, if required for analysis.

To calculate the cost disparity, we ranked the munitions in order of expense and totaled the cost of offensive munitions and defensive munitions at the low, mid, and high expenditure estimates.

⁸ Data was derived from Department of Defense Budget Estimates and procurement Justification Books from the U.S. Navy, Army, Air Force, and Pentagon, for fiscal years 2024, 2025, 2026, and 2027.

Key Findings

Burn Rates

We found that the three defensive interceptors with usable procurement data – PAC-3 MSE, THAAD, and SM-6 – are subject to unusually high burn rates. The defensive side of the operation shows disproportionate stockpile pressure relative to the offensive side. These findings, especially for THAAD, SDB I, SM-6, and PAC-3 MSE, align with assessments from other organizations that Operation Epic Fury consumed potentially half of our total defensive interceptor stockpiles.⁹ Congress must keep this asymmetry in mind as money and time are appropriated towards stockpile replenishment.

In Operation Epic Fury, High Burn Rates Observed in Three Defense Interceptors

Of the U.S. stockpile, PAC-3 MSE, THAAD, and SM-6 – all defensive systems – are showing unusually high burn rates.

Category	System	Low Burn %	▼ Mid Burn %	High Burn %
Offensive	Tomahawk TLAM	291.4%	478.2%	709.1%
Defensive	THAAD Interceptor	91.5%	183.1%	302.2%
Offensive	GBU-31 JDAM/GBU-38 JDAM	40.8%	84.6%	147.9%
Defensive	SM-6 Block I	27.3%	54.9%	79.9%
Defensive	Patriot PAC-3 MSE	24.5%	43.4%	65.8%
Offensive	RGM-184A NSM	4.3%	17.0%	38.3%
Offensive	AGM-88G AARGM-ER	10.1%	15.1%	21.8%
Offensive	GBU-39 SDB I	4.0%	10.1%	21.3%
Offensive	AGM-158B JASSM-ER	2.5%	5.2%	10.4%
Offensive	HIMARS – PrSM	1.2%	4.2%	8.7%
Offensive	AGM-179 JAGM	0.9%	4.0%	9.5%
Offensive	MK-48 Torpedo	0.6%	3.7%	11.0%
Offensive	HIMARS – GMLRS	1.1%	3.1%	6.2%

POGO used published, publicly available budget data from DOD (including requests for next fiscal year) to assess procurement from FY22 through FY27. For systems where procurement has not been reported since FY22, procurement data is classified, or procurement data is unreported, POGO was unable to assess burn rates.

Table: Project On Government Oversight • Source: Department of Defense; Expenditure estimates by POGO account for the first 34 days of Operation Epic Fury • [Get the data](#) • Created with [Datawrapper](#)

⁹ Cancian and Park, “Last Rounds?” The report estimates that for four of the seven munitions studied, the United States may have expended more than half of its prewar inventory.

When adjusted to account for munitions likely delivered prior to the start of Operation Epic Fury, one system, the Tomahawk Land Attack Missile, exceeded a 100% burn rate at the lowest expenditure estimate. At the lowest estimate, Tomahawks are used at a burn rate of 291.4%. At the mid expenditure estimate, the Tomahawk burn rate jumps to 478.2%.

THAAD crosses a 100% burn rate with a midrange expenditure estimate: At that point, the burn rate is 183.1%. At high expenditure estimates, three systems have a burn rate above 100%: the Tomahawk at 709.1%, THAAD at 302.2%, and JDAM at 147.9%.

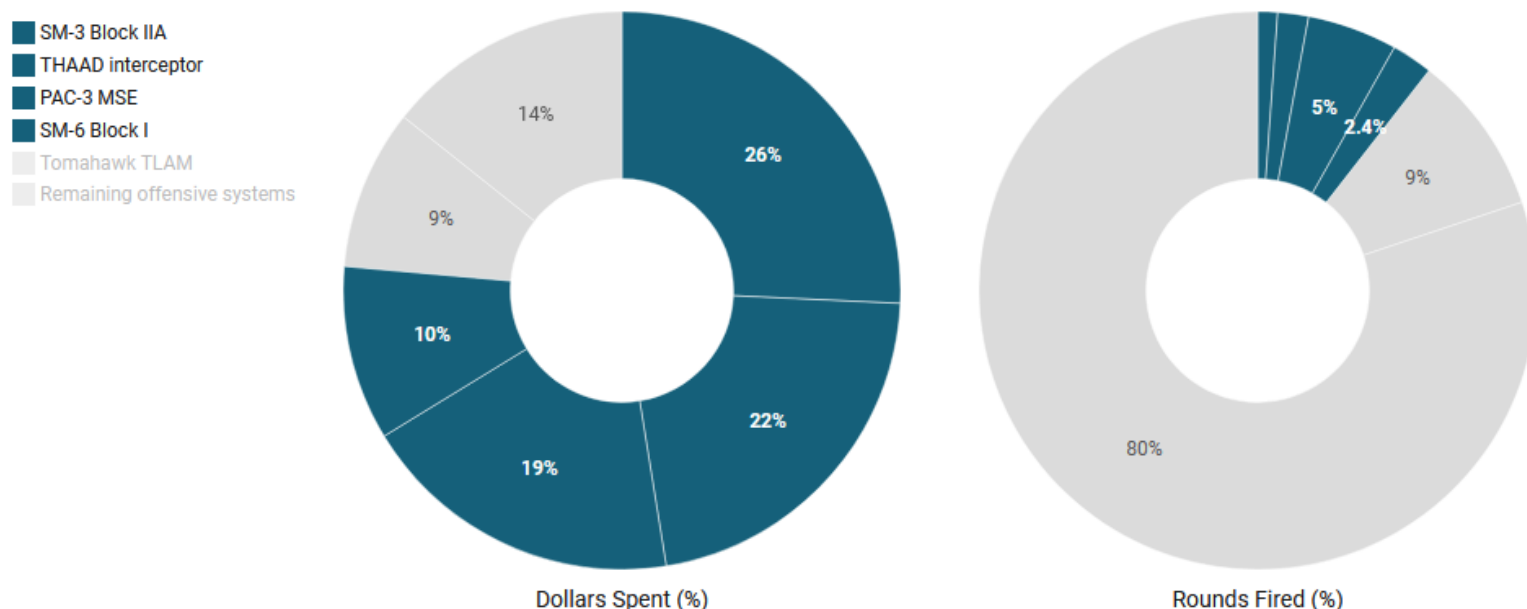
The 100% threshold separates two distinct categories of munitions. Systems with a burn rate above 100% at any estimated expenditure rate (Tomahawk at every estimate; THAAD at the midrange and high estimates, and JDAM at the high estimate) represent cases where the operation consumed more rounds than can reasonably assumed to have been delivered, according to congressional appropriations, between 2022 and the start of Operation Epic Fury. Systems below 100% represent cases where recent procurement has been sufficient to absorb the use required by the operation, though all of the systems we tracked still face multiyear replacement cycles for the rounds expended.

Cost Disparity

The next dimension of our research focused on cost disparity, the gap in per-round cost between the systems the United States uses to strike targets (offensive munitions) and the systems it uses to intercept incoming threats (defensive interceptors).

Using our middle estimate for the rate of munitions expenditure, we found that during the first three phases of the operation, the munitions cost for Operation Epic Fury was approximately \$7.58 billion. That cost is concentrated in four expensive defensive systems. Together, they account for 76.4% of spending – but only 10.5% of rounds fired. Offensive munitions, which comprised 89.5% of rounds fired, added up to only 23.6% of dollars.

In Operation Epic Fury, Defensive Interceptors Account for Over 75% of the Cost – Yet Only About 10% of Rounds Fired



Of the five most expensive munitions in the operation, four are defensive interceptors. Even at the mid expenditure estimate, SM-3 Block IIA (\$1.95 billion), THAAD (\$1.65 billion), PAC-3 MSE (\$1.43 billion), and SM-6 (\$767 million) together account for \$5.79 billion in costs. At \$705 million, the Tomahawk is the largest offensive line munition, and it ranks fifth in cost. The 14 remaining systems combined cost is close to \$1.09 billion – less than any one of the top three defensive systems.

For every dollar we spend on offensive munitions, we spend \$27.45 on defensive ones. The cost gap is a structural feature of the weapons systems rather than an outcome of how these munitions were used. Interceptors are inherently expensive because they are exquisite weapons – they require precise, mid-flight engagement of fast-moving threats – while many offensive munitions are essentially guidance kits on existing bomb bodies. In short, our defensive systems are designed and built to be complex and expensive.

Defensive interceptor costs dominate when adversaries use cheap, easily massed offense. The pattern we identified is consistent with prior operations in the Red Sea (Operation Prosperity Guardian) and Israel's October 2024 defense against Iranian missile barrages.¹⁰

The cost disparity between offensive and defense weapons also aligns with the previously discussed burn rates. The same small set of systems that most quickly depleted stockpiles also cost us the most to deploy. Of the top six systems by cost, four also appear in the top six by burn rate (Tomahawk, THAAD, SM-6, and PAC-3 MSE). Comparing data across the matrix in this way shows that cost disparity and burn rate are not two independent data points, but two ways of viewing the same system.

Those tasked with appropriating funds for these munitions should recognize that this overlap reflects the reality of exquisite munitions and industrial base capacity, not necessarily strategic choice. The four most expensive defensive systems have lead times of 29 to 57 months.¹¹ Their unit costs reflect the manufacturing reality of exquisite, high-precision, multi-stage interceptors. The same pattern we identified in Operation Epic Fury would emerge in any operation requiring sustained defense against a saturation attack: Smaller numbers of high-cost rounds will end up costing more, regardless of the operation.

Product Replacement Timelines

It's worth noting that the single most expensive munition used in the operation was drawn entirely from an already minimal stockpile. The largest dollar line in the data is the cost of the SM-3 Block IIA, a defensive munition. This finding is important because SM-3 IIA has, according to Pentagon budget reporting, had zero recent procurement from FY22 to FY27, which means that every round expended during Operation Epic Fury came from pre-FY22

¹⁰ On the cost-exchange problem during Operation Prosperity Guardian, see "High Price of Red Sea Shootdowns Speeds Navy's Pursuit of 'Cost-Effective' Solutions," *Breaking Defense*, May 2024, <https://breakingdefense.com/2024/05/high-price-of-red-sea-shootdowns-speeds-navys-pursuit-of-cost-effective-solutions/>; "Defense Is More Expensive than Offense': The Cost of Iran's Missile Attack and Israel's Defense," *Jerusalem Post*, October 4, 2024, <https://www.jpost.com/israel-news/defense-news/article-823148>.

¹¹ Cancian and Park, "Last Rounds?"

LRIP inventory that accumulated before full-rate production was authorized in October 2024.¹²

This leads to the final category we tracked: production replacement timelines. As we look beyond Operation Epic Fury, we must consider expenditure replacement and stockpile replenishment, especially within the context of the FY27 NDAA and Defense Budget.

Four of the five systems that cost the most also carry significant replacement timelines. SM-3 Block IIA (64 months), THAAD (53 months), SM-6 (53 months), and PAC-3 MSE (42 months) all require 3.5 to 5.5 years from contract award to lot completion. These systems are also the ones with the most depleted stockpiles. Overall, defensive munitions average 53 months for total delivery time, while offensive munitions average just under 45 months.

The Pentagon has entered several framework agreements focused specifically on ramping up munitions production capacity. However, each of the frameworks announced in 2026 increases production over a seven-year period. These agreements do increase production capacity, but reported lead times remain 24-36 months for the critical interceptors and Tomahawk. The January 2026 THAAD agreement to quadruple production means more rounds delivered in 2027-2030. In fact, none of the agreements change what munitions will be available in this NDAA and budget cycle.

The Pentagon's Frameworks

The Pentagon has recently entered framework agreements with prime contractors for some of the same munitions from this report in pursuit of increased procurement.

- A PAC-3 MSE production framework was signed January 6, 2026, in which Lockheed Martin and the DOD committed to increase annual PAC-3 MSE production capacity from approximately 600 to 2,000 interceptors over seven years.¹³
- A THAAD interceptor production framework was signed January 29, 2026, in which Lockheed Martin and the DOD committed to increase THAAD production from 96 to 400 interceptors per year over seven years.¹⁴

¹² "RTX's Raytheon SM-3 Block IIA Achieves Full-Rate Production Approval," news release, RTX, October 15, 2024, <https://www.rtx.com/news/news-center/2024/10/15/rtxs-raytheon-sm-3-block-ia-achieves-full-rate-production-approval>.

¹³ "Lockheed Martin and Department of War Advance Landmark Acquisition Transformation to Accelerate PAC-3 MSE Production," news release, Lockheed Martin, January 6, 2026, <https://news.lockheedmartin.com/2026-01-06-Lockheed-Martin-and-Department-of-War-Advance-Landmark-Acquisition-Transformation-to-Accelerate-PAC-3-R-MSE-Production>.

¹⁴ "Lockheed Martin and U.S. Department of War Sign Framework Agreement to Quadruple THAAD Interceptor Production Capacity," news release, Lockheed Martin, January 29, 2026, <https://news.lockheedmartin.com/2026-01-29-Lockheed-Martin-and-U-S-Department-of-War-Sign-Framework-Agreement-to-Quadruple-THAAD-Interceptor-Production-Capacity>.

- Lockheed Martin broke ground on a Munitions Acceleration Center on January 29, 2026, creating a new manufacturing facility in Arkansas for THAAD, PAC-3, and other munitions production using advanced manufacturing techniques.¹⁵
- An RTX Tomahawk and SM-6 production agreement was announced February 4, 2026, in which production targets were set at over 1,000 Tomahawks per year and over 500 SM-6 missiles per year.¹⁶
- A PrSM production framework was signed March 25, 2026, in which Lockheed Martin agreed to quadruple PrSM production capacity. BAE Systems and Honeywell Aerospace signed parallel agreements covering subcomponents and propulsion the same day.¹⁷
- A PAC-3 MSE follow-on contract was executed on April 10, 2026, in which a \$4.7 billion undefinitized contract action with Lockheed Martin outlined in the January framework agreement was started.¹⁸

Today's munitions procurement process is still guided by the decisions made prior to Operation Epic Fury. Given POGO's expenditure estimates and the procurement values and timelines, it would be in Congress's best interest to flag these replacement timelines now and use Epic Fury as a check to assess whether it is making the most strategic and cost-effective procurement decisions for FY27 and beyond.

In short, if Congress decides to surge munitions procurement for FY27, those munitions with reported production timelines can't reach the force before 2029 or, in the case of the most depleted systems, even later. Any policy claim that the FY27 budget restores the stockpile is implicitly making a claim about 2029-2031, not about the next year.

¹⁵ "Lockheed Martin and U.S. Department of War Sign Framework Agreement to Quadruple THAAD Interceptor Production Capacity." The same announcement noted the groundbreaking of a new Munitions Acceleration Center in Camden, Arkansas.

¹⁶ "RTX's Raytheon Partners with Department of War on Five Landmark Agreements to Expand Critical Munition Production," news release, RTX, February 4, 2026, <https://www.rtx.com/news/news-center/2026/02/04/rtxs-raytheon-partners-with-department-of-war-on-five-landmark-agreements-to-exp>.

¹⁷ "Lockheed Martin Answers the Nation's Call and Quadruples Precision Strike Missile Production," news release, Lockheed Martin, March 25, 2026, <https://news.lockheedmartin.com/2026-03-25-Lockheed-Martin-Answers-the-Nations-Call-and-Quadruples-Precision-Strike-Missile-Production>. On the parallel BAE Systems and Honeywell agreements announced the same day, see "Pentagon, Lockheed Sign Plan to Boost PrSM Missile Production," *Breaking Defense*, March 25, 2026, <https://breakingdefense.com/2026/03/pentagon-lockheed-sign-plan-to-boost-prsm-missile-production/>.

¹⁸ "Lockheed Martin Secures First Contract for PAC-3 MSE Accelerated Production, Strengthening the Arsenal of Freedom," news release, Lockheed Martin, April 10, 2026, <https://news.lockheedmartin.com/2026-04-10-Lockheed-Martin-Secures-First-Contract-for-PAC-3-R-MSE-Accelerated-Production,-Strengthening-the-Arsenal-of-Freedom>.

Additional Considerations

To be clear, we are not arguing that future operations will consume munitions in the exact same pattern as Epic Fury. We are, instead, arguing that Epic Fury is the first sustained, well-documented case of modern U.S. munitions consumption responding to a near-peer missile and drone threat, and that the pattern it reveals – a reliance on exquisite, defensive munitions that require significant investments of money and time to replenish – is a structural feature of the U.S. military’s procurement cycle and industrial base, not artifacts of the operation.

Were the U.S. military to go against a different peer-level adversary, it stands to reason that different specific munitions and systems would be consumed. However, we would still face the same underlying problems of significant lead times for interceptors, dollar costs concentrated in a small set of exquisite systems, and a production base that can’t keep pace with sustained operational consumption. The metrics identified in this report matter because they apply across different threat scenarios.

Our thesis does not require us to have precise numbers; it requires Congress to have better numbers. We are arguing that Congress should be applying the three analytical metrics we identified – burn rates, cost ratios, and replacement timelines – to the actual classified data during budget review, regardless of what external analysts like those at POGO can or can’t see.

On the FY 2027 Pentagon Budget

Looking at the FY27 budget request from the Pentagon, it becomes clear that replacement timelines are not immediately shortened with increased funding. The FY27 request of \$3 billion for 785 Tomahawk missiles, up from \$257 million in FY26, is one of the largest single-line increases in the budget.¹⁹ The delivery time for those missiles remains unchanged, at 47 months. An 11.7-fold increase in funding (the ratio of FY26 to FY27 funding) cannot significantly accelerate production: The constraint is industrial capacity, not money. The recently signed Lockheed and RTX framework agreements explicitly address production capacity expansion over seven-year horizons – implicit acknowledgement that money alone cannot solve the lead-time problem.

As a reminder, Tomahawk is also the munition with the most depleted stockpile. Tomahawk has the highest mid-estimate burn rate (478.2%), the fifth highest dollar consumption (\$705 million), the worst combination of FY22-25 procurement quantity (145 rounds) versus expenditure (553 rounds), and a 47-month replacement timeline. This is the single most adverse combination in the dataset. No other system carries this many simultaneous

¹⁹ Office of the Assistant Secretary of the Navy (Financial Management and Comptroller), *Department of Defense Fiscal Year (FY) 2027 Budget Estimates: Justification Book, Weapons Procurement, Navy* (Washington, DC: Department of the Navy, 2026), Tomahawk line item, Exhibit P-1/P-5, https://www.secnave.navy.mil/fmc/fmb/Documents/27pres/WPN_Book.pdf. The exhibit records a FY2027 request of approximately \$3.009 billion for 785 Tomahawk Land Attack Missiles (58 in the discretionary base budget; 727 through mandatory reconciliation), compared with the FY2026 enacted figure of \$257.6 million for 55 missiles shown on page 17 of the PDF.

structural challenges. And while the majority of our discussion to this point has centered on defensive interceptors, it is worth noting these concerns surrounding Tomahawk. The Tomahawk is the backbone of the U.S. military's offensive munitions, and the problems identified with it can and should be used by Congress to flag issues and concerns surrounding munitions procurement writ large.

The Pentagon's plans for increasing production line capacity will help, but they're not sufficient to address the demand created by Operation Epic Fury in a timely way. The PAC-3 MSE line is increasing production capacity from 600 to 2,000 interceptors per year over seven years – meaning the line will reach the production capacity target set by the Pentagon and manufacturer around 2033.²⁰ The plan for ramping up production of THAAD calls for an increase in the number of systems produced from 96 to 400 over seven years.²¹ At that rate, it also reaches its target production capacity around 2033.

None of these capacity changes catch up to current consumption rates within five years, even under optimistic assumptions. If expenditures like those required by Operation Epic Fury were to repeat in 2028 or 2029, they would create stockpile pressure at even more increased intensity. In fact, what this truly suggests is no operation of similar intensity to Epic Fury can be sustained or repeated within the seven-year replenishment window.

If Operation Epic Fury required 553 Tomahawks fired in 30 days, and current production is 60 per year, then maintaining the same expenditure rate continuously without further depleting our stockpiles would require approximately 11 times our current production capacity – or roughly nine years of current production capacity to refire what was expended in one month.²² Similar math applies to THAAD, SM-3 IIA, and PAC-3 MSE.

Operation Epic Fury was a single-use consumption event that should be understood against a multiyear replenishment capacity. The institutional response up to this point has been to restructure the production base going forward. But that restructuring will not have a notable impact for any operation that begins before approximately 2030.

On Offensive and Defensive Munitions

This report does not argue that defensive interceptors should not have been used, or that they could or should be replaced with cheaper alternatives that achieve worse outcomes.

²⁰ U.S. Department of War, "Department of War Establishes New Acquisition Model to More than Triple PAC-3 MSE Production in Partnership with Lockheed Martin," news release, January 6, 2026, <https://www.war.gov/News/Releases/Release/Article/4371320/departments-of-war-establishes-new-acquisition-model-to-more-than-triple-pac-3-m/>.

²¹ Lockheed Martin, "Lockheed Martin and U.S. Department of War Sign Framework Agreement to Quadruple THAAD Interceptor Production Capacity," news release, January 29, 2026, <https://news.lockheedmartin.com/2026-01-29-Lockheed-Martin-and-U-S-Department-of-War-Sign-Framework-Agreement-to-Quadruple-THAAD-Interceptor-Production-Capacity>.

²² Reuters, "Raytheon Secures Deal to Build Thousands of Missiles for the US, Including Tomahawks," February 4, 2026, <https://www.usnews.com/news/top-news/articles/2026-02-04/raytheon-secures-deal-to-build-thousands-of-missiles-for-the-us-including-tomahawks>.

Instead, we are arguing that Congress needs to know what the cost-exchange ratio actually is in order to make informed decisions about whether to invest in more of the same interceptors, cheaper alternative defensive systems, offensive measures that prevent the threat at the source, or some combination thereof.

The natural turn for those unfamiliar with the nuanced differences between offensive and defensive munitions may be to ask whether less-expensive offensive munitions may be used in place of their pricier counterparts.

Fundamentally, offensive and defensive munitions cannot serve as substitutes for one another – JDAMs do not intercept inbound ballistic missiles and THAAD batteries can't destroy hardened nuclear facilities. The cost differential identified within this report does not reflect choices made by operational decision makers. Instead, it describes a categorical division between systems that perform fundamentally different missions. The cost-exchange ratio is not a market signal pointing towards better procurement decisions.

That point also places the burden on the on-site commanders to consider cost when making strategic decisions. They have operational needs, and the expensive munitions are what is available to them to meet those needs. It is the responsibility of senior Pentagon leadership and Congress to address these issues and consider the most appropriate way forward at a macro scale.

On Asymmetric Opposition

The price tag for these estimated munitions expenditure merits even more attention when the cost is compared to Iran's. As POGO has already highlighted elsewhere, the cost disparity between the U.S. military's exquisite systems and Iran's low-cost, yet effective, Shahed drones is one that needs to be considered as the U.S. reframes its procurement strategy for modern war.²³

It's a structural feature of asymmetric warfare that defending against cheap, volume-heavy threats – like the Shahed – requires precise interception, and precise interception is, given the current U.S. military industrial base and its produced munitions, inherently expensive. That is one of the key issues this report identifies and asks Congress to consider.

This cost exchange, between the financial commitment of the U.S. and that of our adversaries, is a point that needs to be considered in discussions around munitions procurement. It's worth noting that this problem of asymmetry isn't new to Operation Epic Fury. In 2025, defending Al Udeid Air Base against Iranian retaliation for Operation Midnight Hammer, two U.S. Patriot batteries fired what the Chairman of the Joint Chiefs called the "largest single Patriot engagement in U.S. military history" – an estimated 28-56 PAC-3

²³ Virginia Burger, "Exquisite Defense Fails in Practice," Project On Government Oversight, May 15, 2026, <https://www.pogo.org/analyses/exquisite-defense-fails-in-practice>.

MSE interceptors at roughly \$4.6 million each to defeat what was believed to be around 14 ballistic missiles.²⁴

The operation has, however, thrown the problem into stark relief. In Operation Epic Fury, the cost of intercepting Iranian threats ran far ahead of the cost of the threats themselves: A Shahed-class drone costing between \$20,000-\$50,000 drew a PAC-3 MSE interceptor priced at over \$4 million – a cost-exchange ratio on the order of roughly 131-to-1 in Iran's favor.²⁵ Even using upper-bound Iranian munitions costs (medium and long-range ballistic missiles at \$5 to \$8 million), the per-unit cost exchange disfavors the U.S. significantly.²⁶

Conclusion

There are also those who would point out that Congress already regularly reviews these systems, with sustainment data and munitions expenditure regularly being provided by the Pentagon. Posturing hearings and SAR review do not currently apply consistent burn rate analysis, cost-disparity analysis, or replacement timeline analysis across systems. Service Chiefs testify on readiness and modernization broadly and SARs report cost growth and schedule variance per program, but do not aggregate across systems. This report is not arguing that Congress isn't acting – instead, it suggests that the analytical framework that retrospectively explained the munitions concerns of Operation Epic Fury could and should be applied prospectively to budget reviews going forward. Congress can and should request this data from the Pentagon and use it in their decision making.

Appropriating the money does not equal having the missiles within a short time horizon. And while this report does not want to suggest that Congress is unaware of this nuance, it should be a pointed discussion as procurement is decided post-Epic Fury.

This report's three metrics specifically address the gap between what the framework agreements provide and what operational consumption demands. And we maintain that Congress needs to evaluate whether the Pentagon's framework agreements are the right structural method for addressing munitions stockpiles and their associated costs.

A more skeptical assessor of this report may posit that, if the metrics that this dataset uses become standard congressional review criteria, they will eventually be gamed by the DOD and industry and lose any meaning. And while POGO welcomes all skepticism in pursuit of a more efficient and cost-effective defense procurement system, we believe burn rates, cost differentials, and replacement timelines together resist gaming because they encompass both operational and administrative considerations. Understood in concert, these metrics triangulate the issues, mutually constraining each other and making it harder to manipulate

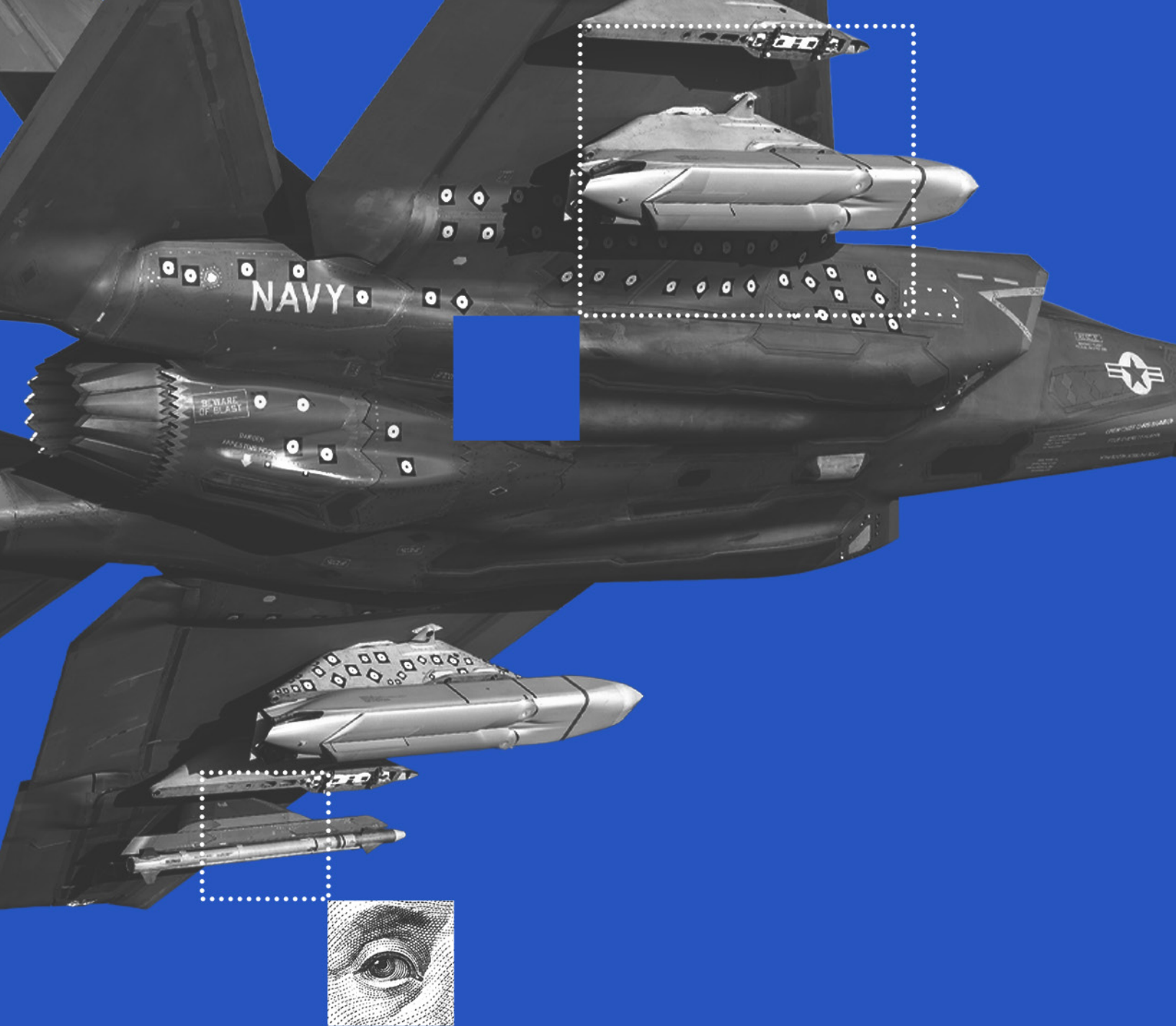
²⁴ "Largest Patriot Missile Salvo in U.S. Military History Launched Defending Al Udeid Air Base Against Iranian Attack," *The War Zone*, June 23, 2025, <https://www.twz.com/land/largest-patriot-salvo-in-u-s-military-history-launched-defending-al-udeid-air-base-against-iranian-missiles>.

²⁵ "US-Iran War 2026: Operation Epic Fury and the Hormuz Crisis," Quwa, May 26, 2026, <https://quwa.org/iran/military-news-iran/us-iran-war-2026-operation-epic-fury-the-strait-of-hormuz-crisis-and-the-limits-of-american-air-power/>.

²⁶ "The Price of Escalation: Accounting for the Military Costs of the 2025 Israel-Iran Conflict," Gulf Research Center, June 18, 2025, <https://www.grc.net/single-commentary/270>.

when compared to single-variable measurements. Programs that report favorably on all three metrics are either genuinely well managed or they're misreporting, in which case standard oversight mechanisms should detect inconsistencies between budget exhibits and operational reporting.

Concentration of cost in expensive defensive interceptors, depletion of recent procurement faster than replacement timelines allow refilling, and a multiyear window of degraded stockpiles – that no amount of FY27 appropriations can resolve within at least the next three to five years – means Congress should seriously and meaningfully consider the realities of munitions expenditure and procurement in their decision making going forward. Munitions are the clear backbone of American military strategy, and the development, appropriation, and procurement of them should be handled with the care and consideration that such a heavy task requires. Congress can and should play a bigger part in ensuring that taxpayer dollars and the requirements of modern war are being balanced appropriately.



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