

# ESTIMATING THE COST OF OPERATIONS AGAINST ISIL

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The logo for the Center for Strategic and Budgetary Assessments (CSBA), featuring the letters 'CSBA' in a large, red, serif font.

Center for Strategic and Budgetary Assessments

# ESTIMATING THE COST OF OPERATIONS AGAINST ISIL

With the United States now engaged in military operations against the Islamic State of Iraq and the Levant (ISIL), there are many questions regarding the cost, duration, and scope of these operations. This CSBA Backgrounder provides a range of estimates for the cost of military operations against ISIL to date and how much these operations may cost over the coming months.

## Bottom Line Up Front

The cost of U.S. military operations against ISIL through September 24 is likely between \$780 and \$930 million. The cost of future operations depends primarily on how long operations continue, the intensity of air operations, and whether additional ground forces are deployed beyond what is already planned. Assuming a moderate level of air operations and 2,000 deployed ground forces, the costs would likely run between \$200 and \$320 million per month. If air operations are conducted at a higher pace and 5,000 ground forces are deployed, the costs would be between \$350 and \$570 million per month. If operations expand significantly to include the deployment of 25,000 U.S. troops on the ground, as some have recommended, costs would likely reach \$1.1 to \$1.8 billion per month. On an annualized basis, the lower-intensity air operations could cost \$2.4 to \$3.8 billion per year, the higher-intensity air operations could cost \$4.2 to \$6.8 billion per year, and deployment of a larger ground contingent could drive annual costs as high as \$13 to \$22 billion.

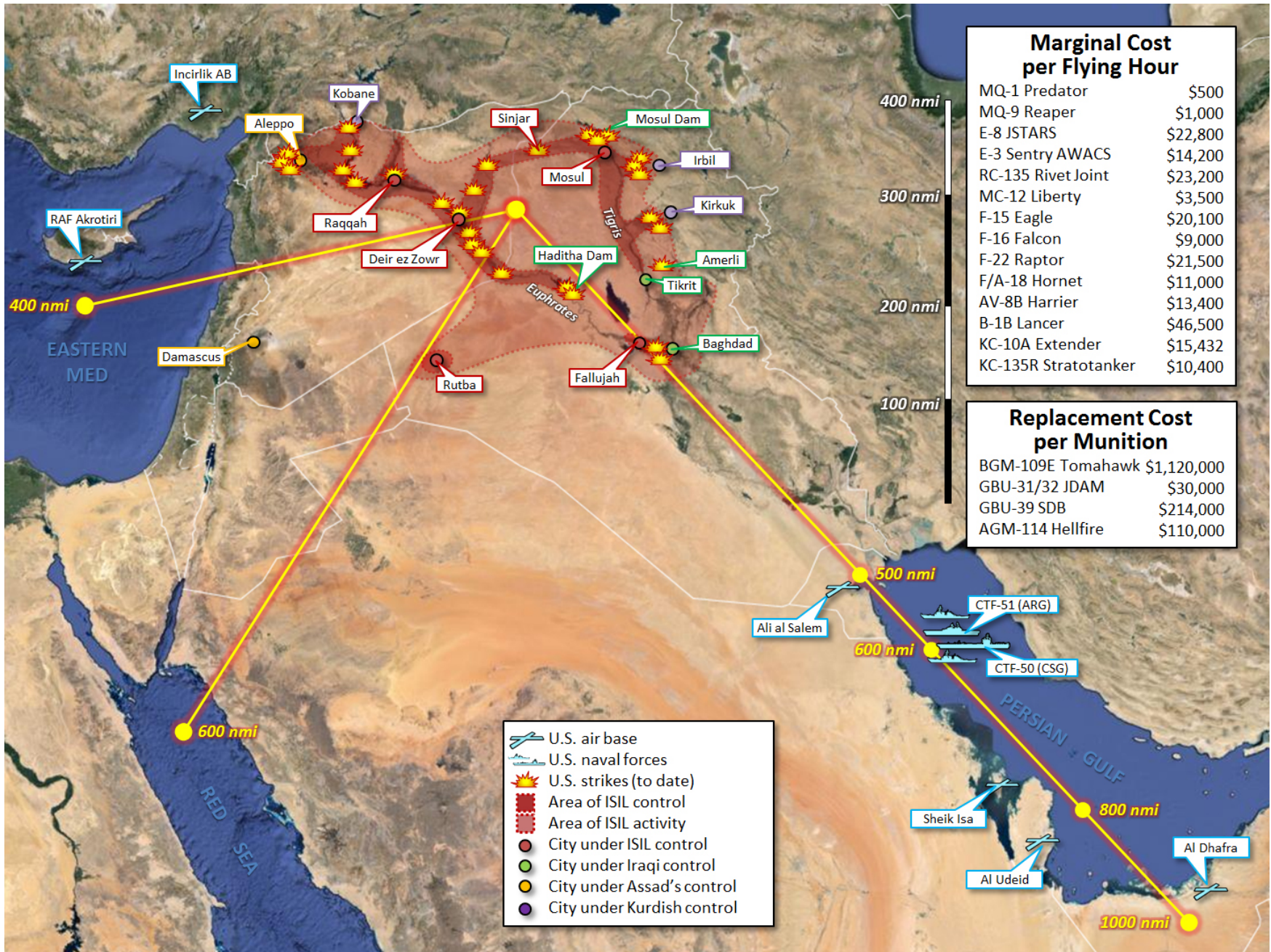
## Costs to Date

The United States commenced military operations against ISIL in June of 2014 with increased support to Iraqi and Kurdish forces fighting ISIL in Iraq. This support included a small contingent of U.S. military personnel serving in an advisory and training capacity. Air operations officially began on August 8 when the United States started flying humanitarian relief missions, conducting intelligence, surveillance, and reconnaissance (ISR) flights, and performing limited air strikes to defend civilians and friendly forces within Iraq. The Pentagon estimates that these initial operations cost roughly \$530 million through August 26.<sup>1</sup>

On September 10, 2014, President Obama announced that the United States would expand military operations with the objective of degrading and destroying the capabilities

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<sup>1</sup> Rear Admiral John Kirby, *Department of Defense Press Briefing by Rear Adm. Kirby in the Pentagon Briefing Room* (Washington, DC: DoD, 2014) available at: <http://www.defense.gov/Transcripts/Transcript.aspx?TranscriptID=5496>.





of ISIL and other terrorist organizations operating in the region.<sup>2</sup> This increased effort includes surveillance and strike operations in both Iraq and Syria and the deployment of additional military personnel to train and advise friendly forces. Given what is publicly known about the number of targets struck, the types of aircraft and munitions used, the basing options available to U.S. forces in the region, and the number U.S. ground forces in the region, the cost of air and ground operations from August 27 through September 24 is likely between \$250 and \$400 million.<sup>3</sup> Thus, the total cost to date from mid-June through September 24 is likely between \$780 and \$930 million. This is less than 0.2 percent of DoD's FY 2014 budget, and DoD has indicated that it will be able to cover these expenses from existing appropriations.

### **Estimating Future Costs**

Future costs depend, to a great extent, on how long operations continue, the steady-state level of air operations, and whether additional ground forces are deployed beyond what is already planned. Air operations generally peak in intensity within the first days or weeks of an air campaign and thus may already be at or near their peak. In the coming weeks and months, targets may become fewer and more elusive, bringing the pace of air operations to a lower, steady-state level. Operations on the ground, in contrast, may increase if additional U.S. forces flow into the region.

Three notional scenarios are presented below for the steady-state level of air and ground operations as a basis for estimating future funding requirements. These scenarios were chosen to cover a wide range of plausible U.S. force commitments and operational intensity to illuminate the potential costs that could be incurred. This analysis does not make any judgment or recommendation on the wisdom or likelihood of these scenarios and acknowledges that many other scenarios are possible. Because the operation is open-ended in duration, estimates are presented as a monthly funding "burn rate" rather than a total cost for the campaign. In each case, high and low estimates are given for the monthly cost of operations.

Costs are estimated using publicly available information on the types of aircraft and munitions involved, bases available to U.S. forces, and expenditures incurred during previous operations. The estimates of future costs include: the marginal cost of flying hours for fighters, bombers, ISR, command and control, and aerial refueling aircraft; replacement costs for munitions expended; the cost of maintaining a second aircraft carrier (and supporting vessels) in the region; and the cost of U.S. ground forces operating in Iraq and Syria. These estimates do not include the costs of humanitarian relief operations, weapons supplied to partner forces, training of partner forces out of theater, allied contributions to air and ground operations, covert operations, or the attrition and

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<sup>2</sup> President Barack Obama, *Statement by the President on ISIL* (Washington, DC: White House, 2014) available at: <http://www.whitehouse.gov/the-press-office/2014/09/10/remarks-president-barack-obama-address-nation>.

<sup>3</sup> This analysis used data compiled by Dan Lamothe on his Washington Post blog, *Checkpoint*: <https://docs.google.com/spreadsheets/d/153eJTTqc38QKMMGJZnw2QER3rFOjr3mqzVcmpKRey9s/edit#gid=1678206115>

depreciation of major U.S. weapon platforms. The analysis focuses exclusively on financial costs and does not attempt to estimate the human costs or opportunity costs of these operations.

The cost estimates for air operations assume that the United States will employ a mix of ISR aircraft heavily weighted toward unmanned aircraft, with the MQ-1 Predator and MQ-9 Reaper UAVs flying roughly 75 percent of the ISR sorties required. Other aircraft employed would include E-3 Sentry AWACS, E-8 JSTARS, and RC-135 Rivet Joint and MC-12 Liberty signals intelligence aircraft. F-15 Eagles, F-16 Falcons, and F/A-18 Hornets are assumed to comprise the majority of strike sorties, with each fighter employing an average of 3.0 munitions per sortie and 1.8 to 2.0 munitions expended per target attacked. AV-8B Harriers, B-1B Lancers, and F-22A Raptors are assumed to be used at a lower rate. Since the cost of munitions varies significantly, the mix of munitions employed is assumed based on the types of targets attacked to date. These assumptions are based on standard U.S. practices and historical experience. Given the distances involved, strike aircraft will likely require substantial aerial refueling by KC-10 and KC-135 tankers. Aerial refueling requirements for strike aircraft are calculated based on the distances from air bases available to U.S. forces in the theater of operations (see map), fuel consumption rates, and fuel capacities for each type of aircraft. Flying hour costs use the OSD Comptroller aircraft reimbursement rates published for 2014 and include only the marginal operation and maintenance costs of flying aircraft more than currently planned.<sup>4</sup>

Operations against ISIL are likely to continue to involve U.S. naval forces. While the U.S. 5<sup>th</sup> Fleet typically maintains a large presence in the Persian Gulf, operations against ISIL may require the deployment of additional forces to the region or the unplanned retention of those already on station. This analysis assumes that two aircraft carriers will be deployed to the region, with one in the Persian Gulf supporting operations against ISIL and one in the Arabian Sea supporting operations in Afghanistan. Because this is one more carrier than the Navy had planned on deploying, it adds a cost of \$40 to \$50 million per month for the carrier, its air wing, and the escort and logistics vessels that support it.

Operations against ISIL will also continue to involve U.S. ground troops, although the scope of their mission remains unclear. U.S. experience in Iraq and Afghanistan has shown that the cost of ground forces tends to scale linearly with the size of the force deployed. In this analysis, the cost of ground operations is estimated to be between \$40,000 and \$70,000 per service member per month. These estimates are based on the cost of operations in Iraq from 2004 to 2012, which (adjusted for inflation) averaged \$66,000 per service member per month. This includes the cost of operations, support, logistics, and contractors.

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<sup>4</sup> Deputy Comptroller John P. Roth, *Fiscal Year (FY) 2014 Department of Defense (DoD) Fixed Wing and Helicopter Reimbursement Rates*, memo (Washington, DC: DoD, 2013), available at: [http://comptroller.defense.gov/Portals/45/documents/rates/fy2014/2014\\_f\\_h.pdf](http://comptroller.defense.gov/Portals/45/documents/rates/fy2014/2014_f_h.pdf).

Three scenarios are postulated below for cost-estimation purposes:

**1) Lower-Intensity Air Campaign**

The first scenario assumes the tempo of air operations in steady-state settles to a level of 90 ISR sorties per day and 100 targets attacked per month. In comparison, the United States conducted an average of 60 ISR sorties per day in Iraq before operations expanded into Syria and has struck nearly 200 targets in the past month in both Iraq and Syria. These estimates reflect the likelihood that targets will grow more scarce and elusive over time, requiring sustained levels of airborne ISR coverage but fewer strikes. This scenario also assumes that U.S. ground forces in Iraq increase to 2,000 total personnel from the current level of roughly 1,600 to account for the planned deployment of a U.S. Army division-level headquarters to command and control friendly forces. Given these assumptions, the steady-state cost of operations would likely be between \$200 and \$320 million per month.

**2) Higher-Intensity Air Campaign**

The second scenario assumes a higher steady-state level of air operations, with 120 ISR sorties per day and 150 targets attacked per month. It also assumes the level of U.S. ground forces in Iraq is expanded to 5,000 personnel, well above the level announced thus far. Using these assumptions, the monthly cost of operations would likely be between \$350 and \$570 million.

**3) Boots on the Ground**

The third scenario assumes an even higher level of steady-state air operations, with 150 ISR sorties per day and 200 targets attacked per month. More significantly, it assumes 25,000 U.S. ground personnel are deployed to Iraq and Syria, in line with some public recommendations.<sup>5</sup> This force is assumed to consist of several thousand special operations forces at the “tip of the spear,” supported by a combat aviation brigade, two brigade combat teams, and other forces providing logistical and medical support, all based in Iraq and/or Syria. The higher steady-state level of air operations reflects the likelihood that U.S. forces on the ground would receive additional air support. Using these assumptions, the total monthly cost of air and ground operations would likely be between \$1.1 and \$1.8 billion, with roughly 80 percent of the cost coming from the sizeable ground component involved.

**Table 1: Summary of Estimated Steady-State Costs Under Three Scenarios**

Scenario	Monthly Cost	Annualized Cost
Lower-Intensity Air Campaign	\$200M - \$320M	\$2.4B - \$3.8B
Higher-Intensity Air Campaign	\$350M - \$570M	\$4.2B - \$6.8B
Boots on the Ground	\$1.1B - \$1.8B	\$13B - \$22B

<sup>5</sup> Kimberly Kagan, Frederick W. Kagan, and Jessica D. Lewis, *Middle East Security Report 23: A Strategy to Defeat the Islamic State* (Washington, DC: Institute for the Study of War, 2014), available at: <http://www.understandingwar.org/sites/default/files/Defeating%20ISIS.pdf>.

## Conclusion

As shown in Table 1, the cost of operations against ISIL could vary from \$200 million to \$1.8 billion per month depending on the level of air and ground operations involved, or \$2.4 billion to \$22 billion on an annualized basis. In comparison, annual spending peaked at \$164 billion in Iraq in FY 2008 and \$122 billion in Afghanistan in FY2011 (in FY 2015 dollars). In its most recent budget request, the Pentagon projects it will spend \$54 billion for Afghanistan in FY 2015, although much of this funding is likely not due to operations in Afghanistan.<sup>6</sup>

While cost is certainly an important consideration, it is not the only factor to consider when evaluating military operations. The cost estimates presented here highlight the high degree of uncertainty involved in current operations. One source of uncertainty are the desired end states in both Iraq and Syria—i.e. what the United States would like to leave in place if and when ISIL is destroyed. Another source of uncertainty is what will be required of the United States to achieve its desired end state and how long it will take. The former is a matter of strategy while the latter is a matter of tactics and planning—and the enemy has a say in both. Winston Churchill noted that when a statesman makes the decision to go to war, “once the signal is given, he is no longer the master of policy but the slave of unforeseeable and uncontrollable events.” War is an unpredictable enterprise, and the ability to estimate the costs of war is correspondingly limited. Thus the precise level of resources required for operations against ISIL will likely remain uncertain for some time.

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### About the Center for Strategic and Budgetary Assessments

The Center for Strategic and Budgetary Assessments (CSBA) is an independent, nonpartisan policy research institute established to promote innovative thinking and debate about national security strategy and investment options. CSBA’s goal is to enable policymakers to make informed decisions on matters of strategy, security policy, and resource allocation. CSBA provides timely, impartial, and insightful analyses to senior decision makers in the executive and legislative branches, as well as to the media and the broader national security community. CSBA encourages thoughtful participation in the development of national security strategy and policy, and in the allocation of scarce human and capital resources. CSBA’s analysis and outreach focus on key questions related to existing and emerging threats to U.S. national security.

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<sup>6</sup> Todd Harrison, *Analysis of the FY 2015 Defense Budget* (Washington, DC: CSBA, September 2014), pp. 7-10, available at: <http://www.csbaonline.org/publications/2014/09/analysis-of-the-fy2015-defense-budget/>.