

## U.S. OPTIONS FOR A SYRIA NO-FLY ZONE

The U.S. can and should act decisively in Syria in order to protect its national security interests and those of its allies. The current exodus of refugees from Syria presents significant economic and security challenges to America's allies in Europe and the Middle East, and directly benefits the Syrian Assad regime, Iran, Hezbollah, Russia, the Al-Qaeda affiliate Jabhat al-Nusra (JN), and the Islamic State of Iraq and al Sham (ISIS). Continued U.S. inaction in the face of these strategic challenges will only exacerbate the security situation and empower America's enemies and strategic competitors. The White House announced on October 30 small adjustments to U.S. implementation, such as adding less than fifty special operations forces to train and assist the Kurdish-Arab Force in northern Syria. These changes are insufficient to meet the strategic challenges. Continued U.S. inaction and half-measures will only exacerbate the security situation and empower America's enemies and strategic competitors.

One course of action for the U.S. in the near term is to establish a No-Fly Zone over select areas of Syria. U.S. Secretary of Defense Ashton Carter and Chairman of the Joint Chiefs of Staff General Joseph Dunford testified on U.S. strategy in the Middle East before the Senate Armed Services Committee (SASC) on October 27, 2015. Carter stated that he does not have a concept of operations for a no-fly zone in Syria to recommend. Dunford stated that it is possible to implement a no-fly zone in Syria but highlighted political and legal challenges, adding that a no-fly zone would divert resources from fighting ISIS. U.S. Secretary of State John Kerry is said to have asked his staff to explore this option and its implementation.

The Assad regime has used the Syrian Arab Air Force (SAF) to indiscriminately and deliberately bomb civilian neighborhoods. Establishing a No-Fly Zone over certain locations in Syria will significantly reduce the Assad regime's ability to conduct widespread bombing attacks against civilian areas. Establishing a No-Fly Zone is more difficult with Russian aircraft engaged in Syria. It is not impossible, however, and can be reasonable and plausible if certain conditions are set.

This backgrounder details three separate Courses of Action to establish a No-Fly Zone, as well as two additional courses of action for potential action other than a No-Fly Zone. The suggested No-Fly Zones are limited in geographic scope, covering only a relatively small portion of Syrian air space, and are examined to minimize resource requirements and risk to U.S. equipment and personnel while still presenting a viable and enforceable No-Fly Zone. These are technical studies that explain in practical terms how the U.S. could establish No-Fly-Zones. The options presented here assume the support of Jordan and Turkey in order to put forth a set of options that minimize both cost and risk.

Tactically, establishing a No-Fly Zone would eliminate the use of barrel bombs from helicopters and gravity bombs from fixed wing aircraft against civilian population centers located in the No-Fly Zone. Barrel bombs are improvised explosive devices filled with shrapnel or Chlorine gas and dropped on civilian population centers. Eliminating Assad's use of barrel bombs would immediately decrease civilian deaths caused by barrel bombs and gravity bombs, and would decrease pressure on civilian populations in rebel held areas to emigrate. Strategically, establishing a No-Fly Zone could deprive the Assad regime of its ability to continue its kill and depopulate strategy.

If the U.S. established a No-Fly Zone, the Assad regime might be forced to reassess its options. Although the Assad regime is publicly committed to a negotiated end to the conflict, and did participate in the Geneva II conference, in reality, Assad simply leverages his participation in peace talks to legitimize and extend his rule. If the U.S. is genuinely committed to a negotiated end to the conflict in Syria, establishing a No-Fly Zone could have the strategic impact of forcing Assad and his outside supporters to recalculate politically. Assad is unlikely to concede on political accommodations sufficiently to gain the support of opposition power-brokers as long as Russia's support to Assad continues unabated. The current framework for negotiations does not favor U.S. interests because it will not produce a durable solution. The U.S. must therefore take action to change the parameters of ongoing negotiations for a political settlement. Establishing a No-Fly Zone is one option.

The situation in Syria is extremely dynamic, which makes developing detailed technical evaluations and recommendations of different possible U.S. actions difficult. This paper was drafted largely before the Russian military intervention in Syria. It has been substantially modified to reflect the escalation of Russian and now Iranian direct military involvement in Syria, but it is not possible

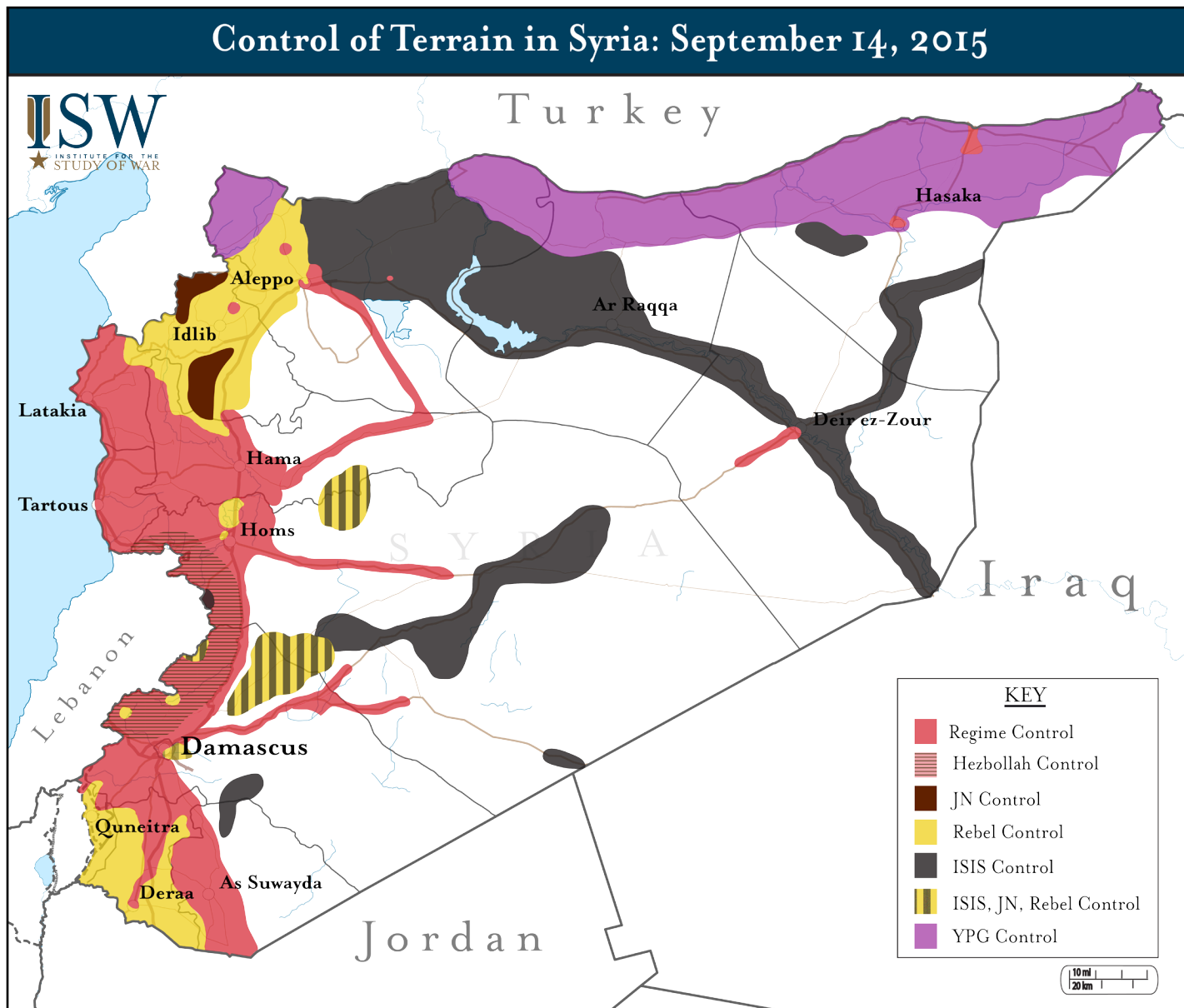
to keep pace fully. It now appears, for example, that the Russians are using cluster munitions in Aleppo, which have reportedly driven an additional 75,000 civilians from their homes. If Russian aircraft continue to use this or similar techniques that victimize innocent Syrians, then the strategic impact of stopping or reducing the Assad regime's use of barrel bombs may well be considerably lessened.

It is not clear how long the Russians will continue this approach or sustain the current level of direct military support to Assad. It should certainly be a primary objective of the U.S. to persuade President Vladimir Putin to cease his military adventure in Syria.

The U.S. must not allow Russia to define the parameters of negotiations in Syria through the use of force. The U.S. should therefore consider options to constrain Russia in Syria in order to achieve leverage in negotiations.

Any attempt to set up a No-Fly Zone that risks direct military conflict with Russia must of course be considered most carefully. It is not enough to design methods of mitigating the risk of escalation or escalation counter-measures, although this paper considers both. The U.S. must also weigh the probable benefits of a partial No-Fly Zone against the probable costs of limited conflict with Russia at the moment when the decision must be made.

## Control of Terrain in Syria: September 14, 2015



## TABLE OF CONTENTS

<b>Issue</b> .....	<b>4</b>
<b>Background</b> .....	<b>4</b>
Assad Regime Air Operations: Barrel Bombing and Depopulation	
<b>Justification and Intent for Establishing a No-Fly Zone</b> .....	<b>4</b>
Establishing a No-Fly Zone: United Nations (UN) Authorization, Explicit and Implied	
Establishing a No-Fly Zone: Explicit UN Authorization Preferred, Not Essential	
Establishing a No-Fly Zone With Russian Opposition at the UN	
Establishing a No-Fly Zone with Implied UN approval: UNSCR 2170 as Model	
Establishing a No-Fly Zone with Implied UN Approval: UNSCR 2118 as Basis	
Establishing a No-Fly Zone with Implied UN Approval: Responsibility to Protect (R2P) as Basis	
<b>Establishing a No-Fly Zone With Russian Presence: Resource Requirements</b> .....	<b>6</b>
Potential Russian Response Options (RO) to No-Fly Zone: Cooperation, Deconfliction, Opposition, Escalation	
Russian Response Option 1: Cooperation	
Russian Response Option 2: Deconfliction	
Russian Response Option 3: Minor Opposition	
Russian Response Option 4: Major Escalation	
Non Lethal Options for Deterring Russian Interference with No-Fly Zone	
<b>Suppressing Syrian Integrated Air Defense System (IADS) Not Required for No-Fly Zone</b> .....	<b>9</b>
Graphic: Syrian Air Force and Air Defense Overview	
<b>Suppressing Russian Air Defense System in Syria Not Required for No-Fly Zone</b> .....	<b>9</b>
Graphic: Russian Air Force Base at Basel Assad Airfield / Russian Air Strike Locations	
Non Traditional No-Fly Zone Options	
<b>COA 1: Ground Based “Offset” No-Fly Zone over Northern and Southern Syria</b> .....	<b>10</b>
Graphic: Ground and Sea Based “offset” No-Fly Zone over Northern and Southern Syria	
COA 1 Requirements:	
COA 1 Pros:	
COA 1 Cons:	
<b>COA 2: Partially / Intermittently Patrolled No-Fly Zone, Northern and Southern Syria</b> .....	<b>12</b>
Graphic: Partially / Intermittently Patrolled No-Fly Zone, Northern and Southern Syria	
COA 2 Requirements:	
COA 2 Pros:	
COA 2 Cons:	
<b>COA 3: Constantly Patrolled No-Fly Zone; Northern and Southern Syria</b> .....	<b>14</b>
Graphic: Fully Implemented, Constantly Patrolled No-Fly Zone: Northern and Southern Syria	
COA 3 Requirements:	
COA 3 Pros:	
COA 3 Cons:	
<b>Non No-Fly Zone Options</b> .....	<b>16</b>
<b>COA 4: No No-Fly Zone; Persistent Full Spectrum Radar Coverage of all Syrian Airspace</b> .....	<b>16</b>
Graphic: No No-Fly Zone: Persistent Full Spectrum Radar Coverage”	
COA 4 Requirements:	
COA 4 Pros:	
COA 4 Cons:	
<b>COA 5: Preemptive Strike against SAF Airbases, Destroy Runways</b> .....	<b>17</b>
<b>Conclusion</b> .....	<b>17</b>

## ISSUE

U.S. Secretary of State John Kerry raised the idea of establishing a No-Fly Zone in a small portion of Syrian airspace near the border with Turkey at a National Security Council meeting held on October 1, 2015. Secretary Kerry instructed his staff to develop the idea further and examine options for implementation. President Obama did not categorically reject the concept of a No-Fly Zone, but he has not chosen to implement one. White House Press Secretary Josh Earnest stated at a press conference on October 7 that a No-Fly Zone is “not something we’re considering right now.” State Department Spokesman John Kirby stressed at a separate briefing that one of the obstacles to establishing a No-Fly Zone is “the issue of resources.” During a press conference that same day, President Obama stated that the Syrian Civil War is “not a conflict between the United States and any party in Syria” while characterizing Russian and Iranian intervention as an indication of the true weakness of the Assad regime and evidence that it will eventually fall. Obama pointed out that American intervention in Iraq and Afghanistan has been costly and that unidentified, low-cost, easy answers in Syria are unrealistic, describing them as “half baked” and “mumbo jumbo.” He later backtracked from this statement after former U.S. Secretary of State Hillary Clinton publically endorsed the proposal. Policy makers and the public would benefit from a review of discrete, clearly formulated military options that identify technical requirements associated with establishing a No-Fly Zone as well as potential benefits and risks.

## BACKGROUND

This backgrounder explores technical requirements for establishing a No-Fly Zone over a relatively small area of Syria in order to reduce the Assad regime’s ability to conduct air operations against civilian populations and rebel forces. Establishing a No-Fly Zone is a necessary but not sufficient precondition for ultimately establishing a humanitarian safe zone in Syria. In order to have the desired effect, the No-Fly Zone must be part of an overall strategy that results in the removal of the Assad regime from power and the establishment of an interim government with meaningful participation of armed and political opposition that excludes radical terrorist groups.

### *Assad Regime Air Operations: Barrel Bombing and Depopulation*

In the early stages of the Syrian Civil War, the Assad regime used ground forces – including both security personnel and infantry using mortars, rockets, and artillery – to punish and depopulate areas sympathetic to the Syrian opposition.<sup>1</sup> The regime increased its use of airpower to attack the civilian population in an effort

to break the will of the armed opposition as the regime gradually lost the ability to maneuver ground forces sufficiently to defeat a growing insurgency. The first documented, coordinated use of helicopters against civilians occurred in April 2012 in Idlib and Aleppo Provinces, followed by the widespread use of jet aircraft in August 2012 in Aleppo.<sup>2</sup> Syrian opposition figures, however, claimed the Assad regime had been using airpower much earlier; in October 2011, Muhammad Sarmini of the exiled Syrian National Council led calls for an international No-Fly Zone, stating that “the main aim from calling for a No-Fly Zone is to secure protection for the civilians after it has been proved that the regime is using warplanes to suppress the demonstrators.”<sup>3</sup> This call for a No-Fly Zone in the earliest stages of the civil war demonstrates the recognition that the Assad regime’s airpower is an asymmetric advantage that the Syrian opposition was unlikely to overcome alone. Four and a half years later, Assad retains this advantage.

The Syrian Arab Air Force (SAF) is a fraction of its prewar strength, but it is still capable of offensive operations. While the SAF cannot perform close air support for pro-regime fighters, it is highly capable of targeting civilian population centers defended by limited anti-air capabilities. The most visible element of the regime’s strategy to punish civilian populations through air power is the indiscriminate use of “barrel bombs.”<sup>4</sup> Helicopters typically deliver barrel bombs. Fixed wing sorties conducted by SAF aircraft usually employ non-precision gravity bombs, although instances of fixed wing barrel bomb attacks have been documented.<sup>5</sup> Both barrel bombs deployed from helicopters and gravity bombs deployed from fixed wing aircraft continue to be used indiscriminately to punish, depopulate, and demoralize the civilian population in rebel-held areas.<sup>6</sup>

## JUSTIFICATION AND INTENT FOR ESTABLISHING A NO-FLY ZONE

The Assad regime’s use of airpower has been effective at depopulating rebel-held terrain and inflicting high casualties within pro-rebel populations. The Syrian Observatory for Human Rights (SOHR) estimates that civilians represent a third of the 310,000 deaths in the Syrian Civil War as of April 2015. The Syrian Network for Human Rights (SNHR) reported that pro-regime forces were responsible for over three-quarters of recorded civilian deaths in Syria over the first half of 2015.

The United Nations High Commissioner for Refugees (UNHCR) also estimates that there are 3,883,585 Syrian refugees and 7,632,500 Internally Displaced Persons (IDPs) inside Syria as of October 15, 2015. The IDPs are concentrated on the borders with Turkey and Syria which is why the discussion of potential No-Fly Zones is centered in these areas. A large portion of



this forced displacement is a direct result of the Assad regime's punitive air campaign. By dislocating approximately half of the pre-war population, the Assad regime has significantly decreased the potential support available to moderate rebels and created an unsustainable refugee crisis. In October 2015, many regional and European states have begun to consider options to alleviate this crisis by resettling refugees inside of "humanitarian zones" in Syria.

As long as the Assad regime has unlimited access to Syrian airspace, the Syrian Air Force will continue to punish and depopulate Syrian civilians. As a result, prospects for a negotiated or political settlement to the Syrian Civil War are extremely limited, as are the prospects for moderate rebels regaining primacy in the anti-Assad coalition. If the U.S. intends to lead a sustainable negotiated settlement to the Syrian Civil War or to reinvigorate the moderate rebels, establishing a NFZ is the necessary first step.

#### *Establishing a No-Fly Zone: United Nations (UN) Authorization, Explicit and Implied*

The intent of a No-Fly Zone is to protect civilian life, empower moderate rebels, and put pressure on the Assad regime to reach a negotiated settlement to the Syrian Civil War. As a matter of precedent, U.S. participation in previous No-Fly Zones, including Operation Provide Comfort I (Iraq), Operation Provide Comfort II (Iraq), Operation Northern Watch (Iraq), Operation Southern Watch (Iraq), Operation Sky Monitor (Bosnia and Herzegovina), Operation Deny Flight (Bosnia and Herzegovina) and Operation Odyssey Dawn (Libya) were based at least partially on United Nations Security Council Resolutions (UNSCR). Some of the UNSCRs regarding No-Fly Zone were explicit. In the case of Operation Odyssey Dawn, UNSCR 1973 specifically authorized a No-Fly Zone over Libya.<sup>23</sup> In other cases, UN authorization was merely implied. During Operation Northern Watch and Operation Southern Watch, UNSCR 688 was cited as legal authority for the No-Fly Zone, although the resolution made no explicit reference to a No-Fly Zone.<sup>24</sup>

#### *Establishing a No-Fly Zone: Explicit UN Authorization Preferred, Not Essential*

There is no explicit requirement in the U.S. Code to get specific approval from the UN in order to implement a No-Fly Zone. A 2013 Congressional Research Service Report titled "No-Fly Zones: Strategic, Operational, and Legal Considerations for Congress," concludes that "Express authorization from the U.N. Security Council provides the clearest legal basis for imposing a no-fly zone."<sup>25</sup> That same report however, concludes that in terms of legal authorization, there is no "single, clear, agreed model."<sup>26</sup>

Having a UNSCR that explicitly authorizes a No-Fly Zone is thus desirable, but not essential, for U.S. action.

#### *Establishing a No-Fly Zone with Russian Opposition at the UN*

The U.S. is unlikely to get a UNSCR specifically authorizing a No-Fly Zone with Russia as a permanent member of the United Nations Security Council (UNSC). In January 2012, the UN was considering options for a negotiated end to the Syrian Civil War. Russia insisted that regime change was beyond the scope of responsibility of the UN. Sergey Lavrov, the Russian foreign minister, said that "The international community unfortunately did take sides in Libya and we would never allow the Security Council to authorize anything similar."<sup>27</sup> Additionally, Lavrov specifically addressed Russian opposition to a No-Fly Zone in 2013, stating that "There have been leaks from western media regarding the serious consideration to create a No-Fly Zone over Syria through the deployment of Patriot anti-aircraft missiles and F-16 jets in Jordan. You don't have to be a great expert to understand that this will violate international law."<sup>28</sup> Finally, immediately after Russia's recent deployment to Syria, Deputy Foreign Minister Mikhail Bogdanov, Russia's special presidential envoy to the Middle East, said regarding a No-Fly Zone in Syria, "Of course, we are against this. You need to respect the sovereignty of countries."<sup>29</sup>

At the beginning of the Syrian Civil War, Russia insisted it was not defending the Assad regime, with Lavrov saying "we are not friends or allies of President Assad. We never said that Assad remaining in power is a precondition for regulating the situation."<sup>30</sup> Since then, Russian support for the Assad regime has increased. Although Russia has stated its military operations in Syria target ISIS and other radical terrorist groups, in reality, its operations support the Assad regime's drive to recapture lost territory.<sup>31</sup>

Given Russia's previous opposition to No-Fly Zone over Syria and its current significant military support for the Assad regime, it is unlikely that Russia will support any new UNSCR that explicitly authorizes a No-Fly Zone over Syria or could be seen as granting implicit authority to establish a No-Fly Zone.

#### *Establishing a No-Fly Zone with Implied UN approval: UNSCR 2170 as Model*

Current U.S. military operations against the Islamic State of Iraq and al Sham (ISIS) in Iraq and Syria are not specifically authorized by UNSCR, although the U.S. Department of State cites UNSCR 2170, which condemns "Gross,

Widespread Abuse of Human Rights by Extremist Groups in Iraq, Syria,” as authorization for U.S. military operations against ISIS.<sup>32</sup>

At least 17 countries have accepted the U.S. interpretation of UNSCR 2170 as sufficient authorization for military action against ISIS and have joined Combined Joint Task Force – Operation Inherent Resolve (CJTF–OIR), with 11 countries – Australia, Bahrain, Canada, Denmark, France, Jordan, Saudi Arabia, Turkey, the Netherlands, UAE, and the UK – providing air strikes against ISIS in Iraq and / or Syria.<sup>33</sup>

### *Establishing a No-Fly Zone with Implied UN Approval: UNSCR 2118 as Basis*

Following the Assad regime’s use of chemical weapons in August 2013, the UNSC passed UNSCR 2118. While it did not specifically authorize military action against Assad’s forces or the establishment of a No-Fly Zone over Syria, it stated in part that

“The members of the Action Group are committed to the sovereignty, independence, national unity and territorial integrity of the Syrian Arab Republic. They are determined to work urgently and intensively to bring about an end to the violence and human rights abuses, and to facilitate the launch of a Syrian-led political process leading to a transition that meets the legitimate aspirations of the Syrian people and enables them independently and democratically to determine their own future.”<sup>34</sup>

While this text was originally passed as a communique’ from the UN Action Group for Syria following a conference in Geneva in June, 2012, it was also included verbatim as an Annex to UNSCR 2118.<sup>35</sup>

### *Establishing a No-Fly Zone with Implied UN Approval: Responsibility to Protect (R2P) as Basis*

The U.S. can also act under the responsibility to protect. The Outcome Document of the 2005 United Nations World Summit states in part that “If a State is manifestly failing to protect its populations, the international community must be prepared to take collective action to protect populations, in accordance with the Charter of the United Nations.”<sup>36</sup> Not only is the Syrian state manifestly failing to protect its populations, it is deliberately targeting them for death and depopulation.

French President Francois Hollande spoke shortly after the use of chemical weapons by the Assad regime in August 2013 regarding the role of international law as justification for military strikes against the Assad regime. Hollande stated that international law “must evolve with the times. It cannot be a pretext for allowing large-scale massacres to be perpetrated. This is why I recognize the principle of “the responsibility to protect” civilians, which the United Nations General Assembly voted for in 2005.”<sup>37</sup>

Taken holistically, UNSCR 2118 and R2P could be considered sufficient legal authority to establish a No-Fly Zone especially if Congress votes to approve it, and if the U.S. leads an international coalition with participation from North Atlantic Treaty Organization (NATO) and Gulf Cooperation Council (GCC) members.

## **ESTABLISHING A NO-FLY ZONE WITH RUSSIAN PRESENCE: RESOURCE REQUIREMENTS**

The U.S. has sufficient deployable forces and experience to patrol / enforce a No-Fly Zone on its own, or in a lead role of a coalition with NATO and Gulf Cooperation Council participation. Since 1991, the U.S. has led NATO centric coalitions in patrolling and enforcing No-Fly Zones in Iraq, Bosnia, and Libya. In terms of force generation, the U.S. does not need Russian assets to patrol and enforce a No-Fly Zone in Syria.

### *Potential Russian Response Options (RO) to No-Fly Zone: Cooperation, Deconfliction, Opposition, Escalation*

Planning for a U.S.-led No-Fly Zone must take into consideration the impact of Russian presence in Syria. The following potential Russian Response Options (RO) do not cover every possible Russian response to a No-Fly Zone established by a U.S.-led coalition, but do provide a basis for policy and planning considerations with respect to a No-Fly Zone.

**Russian Response Option 1, Cooperation:** Russia agrees with the U.S. on the parameters of a No-Fly Zone, and actively cooperates with its implementation. RO 1 would represent the smallest risk to U.S. and coalition partners in the No-Fly Zone. However, it seems highly unlikely that Russia would cooperate with a No-Fly Zone given Russian opposition to the No-Fly Zone and its ongoing commitment to conducting

coordinated military operations with the Assad regime. There is an additional risk that if Russia agreed to the No-Fly Zone it would use its participation in the No-Fly Zone to continue to prosecute an aerial campaign on behalf of the Syrian regime.

**Russian Response Option 2, Deconfliction:** Russia does not cooperate with the U.S. on establishing a No-Fly Zone, but “deconflicts” its operations with the U.S. This is the model currently being used in Syria by the U.S. and Russia. Current simultaneous U.S. and Russian air operations over Syria are not cooperative, but are deconflicted and do not interfere with each other.<sup>38</sup> U.S. aircraft fly sorties primarily against ISIS targets, and Russian aircraft fly sorties against any rebels engaged against Assad regime forces.

A recent Memorandum of Understanding (MOU) between the U.S. and Russia specifies actions for U.S. and Russian aircraft to deconflict their operations. While the exact text of the MOU has not been released publicly, U.S. Department of Defense Press Secretary Peter Cook said that “The MOU includes specific safety protocols for aircrews to follow. These protocols include maintaining professional airmanship at all times, the use of specific communication frequencies and the establishment of a communication line on the ground.”<sup>39</sup>

Given that Russia is currently deconflicting its air operations in Syria with the U.S., the technical framework is in place for Russia to deconflict its air operations with a U.S.-led No-Fly Zone. Russia could reject the deconfliction option. If the U.S.-led coalition implements a No-Fly Zone without Russian cooperation, and Russia decides not to deconflict its air operations with the No-Fly Zone, there are a number of potential Russian ROs that fall broadly into two categories, minor opposition and major escalation.

**Russian Response Option 3, Minor Opposition:** Russia actively opposes the establishment of a No-Fly Zone politically, and, once established, does not deconflict its operations with the No-Fly Zone but instead interferes with U.S. patrol and enforcement of the No-Fly Zone. There are numerous actions Russia could take which would amount to minor opposition but would not necessarily lead to significant escalation. The word minor in this context describes Russian actions intending to introduce friction into the No-Fly Zone without necessarily escalating into open conflict.

Russia could enhance the static, fixed site Syrian Integrated Air Defense (IADS) with new equipment, spare parts, training, and even Russian personnel manning components of the Syrian IADS. While the Syrian IADS is old and is probably in a state of significant disrepair, it could potentially be upgraded with

Russian assistance to the point where it is again a significant threat to aircraft enforcing the No-Fly Zone. Any upgrade to the Syrian IADS would have to be taken into consideration and would at least temporarily affect enforcement of the No-Fly Zone, though the U.S. has a number of options to degrade the Syrian IADS, both kinetically and through electronic Suppression of Enemy Air Defenses (SEAD). Russian personnel manning Syrian IADS sites would be a significant deterrent to taking kinetic action against those sites.

Russia could enhance Syrian mobile air defenses by providing modern, truck mounted, mobile Surface to Air Missile (SAM) systems, such as the S-300. In a properly functioning IADS, all nodes of the system are connected and able to share sensors, command and control, intelligence, and weapons.<sup>40</sup> The Syrian IADS has probably lost much of its interconnectivity, but the S-300 does not require centralized coordination. While less effective than a full IADS, it is extremely capable, dangerous, and difficult to target because of its mobility.<sup>41</sup>

Russian aircraft could patrol just outside the No-Fly Zone, using ground- and air-based radar to search and track U.S. aircraft. Depending on what level of risk the Rules of Engagement (ROE) permit U.S. aircraft to take, this could have the effect of deterring U.S. patrols of the No-Fly Zone.

While Russia might not intend these relatively minor actions to escalate, the potential for escalation is always present. Additionally, there are virtually unlimited options available to the Russians to engage in minor opposition.

**Russian Response Option 4, Major Escalation:** Russia actively opposes the No-Fly Zone and engages in operations designed to force the U.S. to abdicate the No-Fly Zone or escalate military options to enforce the No-Fly Zone. In this RO, Russia has the ability to escalate directly against the U.S., as well as encourage sympathetic countries like Iran to take proxy action outside of the No-Fly Zone.

Russia could openly and intentionally violate the No-Fly Zone with its own manned aircraft or drones. This would force the U.S. to abdicate enforcing the No-Fly Zone, pursue non-lethal options to deter Russian violations of the No-Fly Zone, or kinetically enforce the No-Fly Zone by shooting down a Russian aircraft.

Russia could escort SAF aircraft into the No-Fly Zone. Modern U.S. phased radar systems, especially in an integrated construct where air and ground based radars are fused together to provide a common operating picture, can theoretically differentiate between different types of aircraft in close proximity.<sup>42</sup> With that

said, since the SAF inventory of combat aircraft and helicopters consists primarily of Russian sourced aircraft, as a practical matter, it would be impossible for U.S. pilots and ground control personnel to differentiate between a SAF aircraft of Russian origin being flown in close proximity to a Russian aircraft.<sup>43</sup> Even if it were possible for U.S. pilots and ground control personnel to differentiate between Syrian and Russian aircraft in close proximity, there is no way to selectively engage a Syrian aircraft flying in close proximity to a Russian aircraft with any degree of confidence that the targeted aircraft will be hit, rather than the escorting aircraft.

Russia could provide standoff weapons to the SAF. This would theoretically enable the SAF to operate outside the No-Fly Zone, while still targeting civilians inside the No-Fly Zone. Russia could provide long range, high accuracy surface to surface rockets, or Short Range Ballistic Missiles (SRBM) that would increase the Assad regime's ability to target civilians inside the No-Fly Zone without using aircraft.

Russia could accept the No-Fly Zone but retaliate against the U.S. elsewhere. Russia could encourage or enable Iran to direct Shi'a militias in and around Baghdad to target the U.S. embassy with mortars, rockets, or Vehicular Borne Improvised Explosive Devices (VBIED). During Operation Iraqi Freedom, Iran's Islamic Revolutionary Guards Corps (IRGC) supplied weapons and encouraged Shi'a militias in southern Iraq to target U.S. personnel.<sup>44</sup> This action would represent the latest example in a long history of Iranian proxy attacks against U.S. personnel.

In an attempt to fracture NATO, Russia could instigate some type of minor offensive action by Syria against Turkey. If Turkey invoked Article Five of the North Atlantic Treaty, calling on all members of NATO to react to an attack against Turkey, individual NATO members could claim that Turkish participation in a No-Fly Zone not specifically authorized by the UN was responsible for the reaction by Syria, and therefore Article Five does not apply.

This potential effort to fracture NATO in this context would represent a continuation of the anti NATO, anti EU policies that President Putin has pursued throughout his time in power. Russia has repeatedly threatened to cut off its supply of natural gas to Europe, delivered via overland pipelines.<sup>45</sup> On a recurrent basis, Vladimir Putin continues to question the legal authority for the Baltic States – all members of NATO – to even exist as independent nation states.<sup>46</sup> Throughout the ongoing financial crisis in Greece, Russia has made various offers of financial and materiel assistance in an attempt to undermine political and financial negotiations at the EU. Those efforts were at least partially successful, as Greek Prime Minister Alexis Tsipras, during a summit with President Putin in Moscow, praised the “springtime for Russian-Greek

relations” and called on the U.S. and EU to “leave behind this vicious cycle of sanctions,” levied against Russia in response to actions in Ukraine.<sup>47</sup>

Given the overwhelming technical and numerical superiority of U.S. forces and the ability to surge additional forces on short notice, it is unlikely that Russia would decide to engage in intentionally escalatory actions against a U.S. No-Fly Zone. With that said, the U.S. must plan to have sufficient forces to deter any Russian action against the No-Fly Zone and if necessary respond to such action with overwhelming military force.

While it is not practical to detail each potential U.S. response to a potential Russian escalation, the guiding planning principle should be that if the U.S. establishes a No-Fly Zone, it must have the materiel means and the political will to enforce it. Failure to enforce the No-Fly Zone might result in worse conditions than declining to establish the No-Fly Zone in the first place.

### *Non-Lethal Options for Detering Russian Interference with No-Fly Zone*

The U.S. has a range of non-lethal options to deter Russian incursions into the No-Fly Zone airspace if Russia does not agree to the parameters of a No-Fly Zone. The amount of electronic surveillance, tracking, and warfare capabilities available to the U.S. simply overwhelms what Russia can deploy. Shortly after arriving in Syria and starting air operations in support of Assad, Russian aircraft twice approached or entered Turkish airspace. If U.S. Patriot SAM batteries were deployed in Turkey and/or Jordan, the associated search and fire control radars could lock onto any Russian aircraft approaching or entering No-Fly Zone boundaries. The fact that Patriot missile batteries are capable of detecting, tracking and engaging Russian aircraft is a deterrent to Russian incursions into the No-Fly Zone, as the Patriot SAM system presents a far greater threat to Russian aircraft than they currently face from limited rebel air defense weapons.

Additionally, if U.S. electronic warfare aircraft were deployed in Turkey or Jordan, those aircraft could electronically jam the communication systems, radar systems, and external navigation systems on any Russian aircraft approaching or entering No-Fly Zone boundaries.<sup>48</sup> While this would not necessarily prevent Russian aircraft from entering the No-Fly Zone, it would deter Russian pilots from doing so. Russian air operations are doctrinally far more dependent on ground control than are U.S. air operations.<sup>49</sup> Reducing or eliminating the ability of Russian aircraft to coordinate with their ground control elements puts Russian pilots in an operating environment that they are unfamiliar with and not well trained for, and which they will seek to avoid.



Finally, the U.S. has the option of using Precision Guided Munitions (PGM) to damage the runway at Basel al-Assad airfield where Russia bases its aircraft. Doing this at a time when no Russian aircraft are flying would probably not damage any Russian aircraft or kill any Russian personnel. This would guarantee that Russian aircraft would not interfere with the No-Fly Zone.

## SUPPRESSING SYRIAN INTEGRATED AIR DEFENSE SYSTEM (IADS) NOT REQUIRED FOR NO-FLY ZONE

Previous U.S. participation in No-Fly Zone, including Operation Deny Flight in Bosnia, Operations Provide Comfort, Northern Watch, and Southern Watch in Iraq, and Operations Odyssey Dawn and Unified Protector in Libya, all started with the premise that the first step in establishing a No-Fly Zone is Suppression of Enemy Air Defenses (SEAD).<sup>50</sup> In each operation, the enemy IADS was either destroyed by preemptive attack, deterred by threatened attack, or suppressed with electronic attack. Prior to the Syrian Civil War, the Syrian IADS was considered one of the largest and most capable air defense systems in the world despite the fact that it was old and based on Soviet era legacy systems.

It is likely that the Syrian IADS is significantly less capable in the fifth year of the war than it was prior to the war.<sup>51</sup> While it is not possible to assess the exact state of the Syrian IADS accurately from open sources, that legacy system did rely on large, heavy, maintenance intensive and very visible Soviet era search and track radars that are easily detected and easily suppressed through electronic jamming. Even if the Syrian IADS is still partially capable after nearly five years of conflict, it is not a significant threat to U.S. aircraft. While there have been persistent rumors that Russia has provided advanced air defense capabilities to the Assad regime, there is no evidence this has actually happened.<sup>52</sup> Russia has brought some advanced mobile SAM systems into Syria as part of its deployment, but has not transferred control of those systems to the Assad regime.

While a full No-Fly Zone covering all of Syrian airspace would require active electronic suppression or kinetic engagement of the remnants of the Syrian IADS, the following No-Fly Zone proposals are limited in geographical scope and do not require constant electronic jamming or active kinetic suppression of the Syrian IADS. As a matter of prudence, the capability to electronically jam the Syrian IADS on a continuous basis should be present, as well as the ability to destroy the Syrian IADS, although it may not be necessary to do so.

## SUPPRESSING RUSSIAN AIR DEFENSE SYSTEM IN SYRIA NOT REQUIRED FOR NO-FLY ZONE

The recent Russian military deployment to Syria included deploying SA-15 and SA-22 mobile SAM systems into Latakia Province.<sup>53</sup> The SA-15 is a very short range mobile SAM system with a maximum range of 12 kilometers.<sup>54</sup> While the SA-15 is capable of engaging low-flying aircraft and helicopters, its primary purpose is defense against air-launched Precision Guided Munitions (PGM) and surface-to-surface rockets. It has limited capabilities against Short Range Ballistic Missiles (SRBM), but not against longer-range ballistic missiles with higher altitude and airspeed profiles. The SA-22 has a slightly greater maximum range of 20 kilometers.<sup>55</sup>

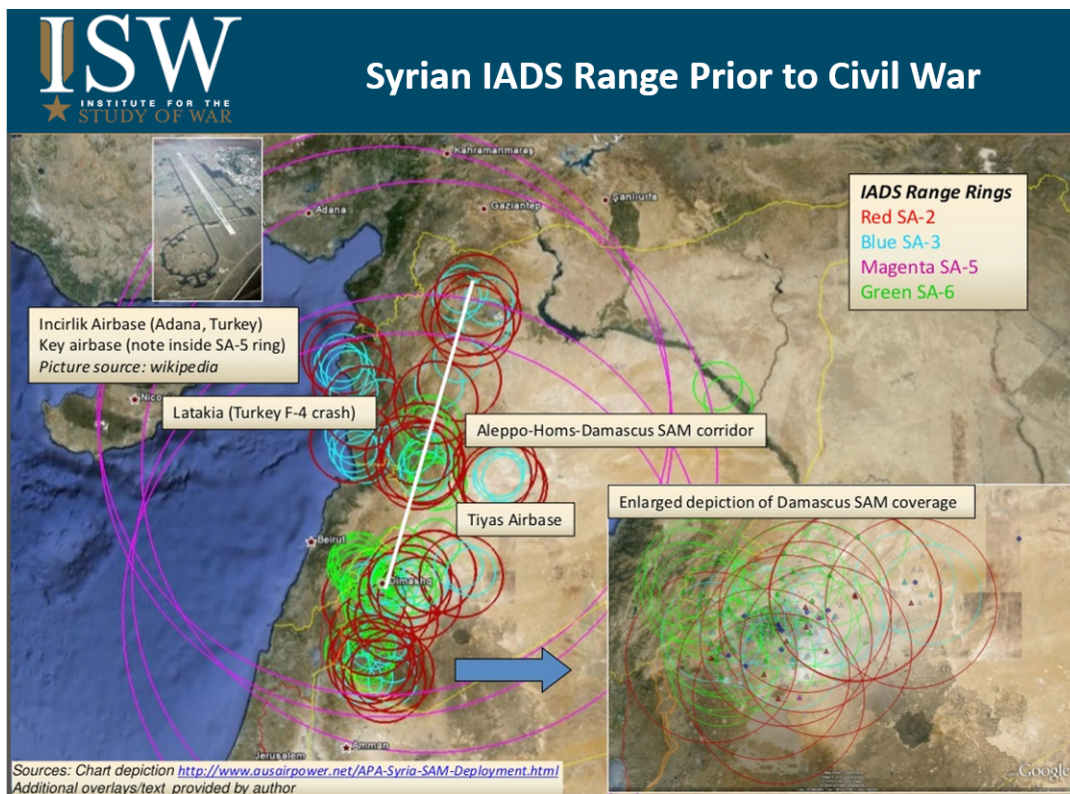
While both of these systems are intended to serve as point defense systems, protecting a limited amount of terrain, they are capable of engaging aircraft at a further range beyond point defense anywhere within their Missile Engagement Zone (MEZ). If U.S. aircraft were flying within a Russian MEZ, that system would have to be suppressed, either electronically or kinetically. Based on reported locations of the Russian SAM systems near the Russian Air Force expeditionary base at Bassel al-Assad International Airport, these SAM systems will not overlap with the following proposed No-Fly Zone. Because this plan to establish a No-Fly Zone does not require U.S. aircraft to enter into any known Russian SAM MEZ, no preemptive suppression of Russian SAM systems is required.

As a matter of prudence, the capability to electronically jam the mobile Russian SAM systems on a continuous basis should be present, as well as the ability to destroy the Russian SAM system, though it may not be necessary to do so.

### *Non-Traditional No-Fly Zone Options*

Previous U.S. participation in and leadership of No-Fly Zone operations focused on enforcing a large block of airspace completely devoid of any enemy air operations, enforced with manned aircraft carrying air-to-air missiles. U.S. No-Fly Zone operations over Iraq from 1991 – 2003, including Operation Provide Comfort I, Operation Provide Comfort II, Operation Northern Watch, and Operation Southern Watch, followed the model of a heavily patrolled No-Fly Zone over large blocks of airspace, with occasional bombing missions.<sup>56</sup> Without minimizing the significant commitment required to establish a No-Fly Zone in Syria, there are Courses of Action (COA) available that are less resource intensive than the traditional No-Fly Zone model of full airspace “patrol and control” over a large





areas. Listed here are four COAs, from least complex to most complex, that ISW assesses would accomplish the objectives of preventing the Assad regime from intentionally targeting civilian populations with airpower and setting conditions for the eventual establishment of humanitarian corridors capable of receiving refugee populations.

The following No-Fly Zone proposals are tailored to areas where the Russian Air Force is not operating in Syria. They do not impede on Russian operations in any significant way. They are therefore less likely to provoke Russian escalation. While it would be best for the U.S. and Russia to agree on the parameters of the No-Fly Zone even in areas where the Russian Air Force is not operating, it is by no means necessary.

### COA I: GROUND BASED “OFFSET” NO-FLY ZONE OVER NORTHERN AND SOUTHERN SYRIA

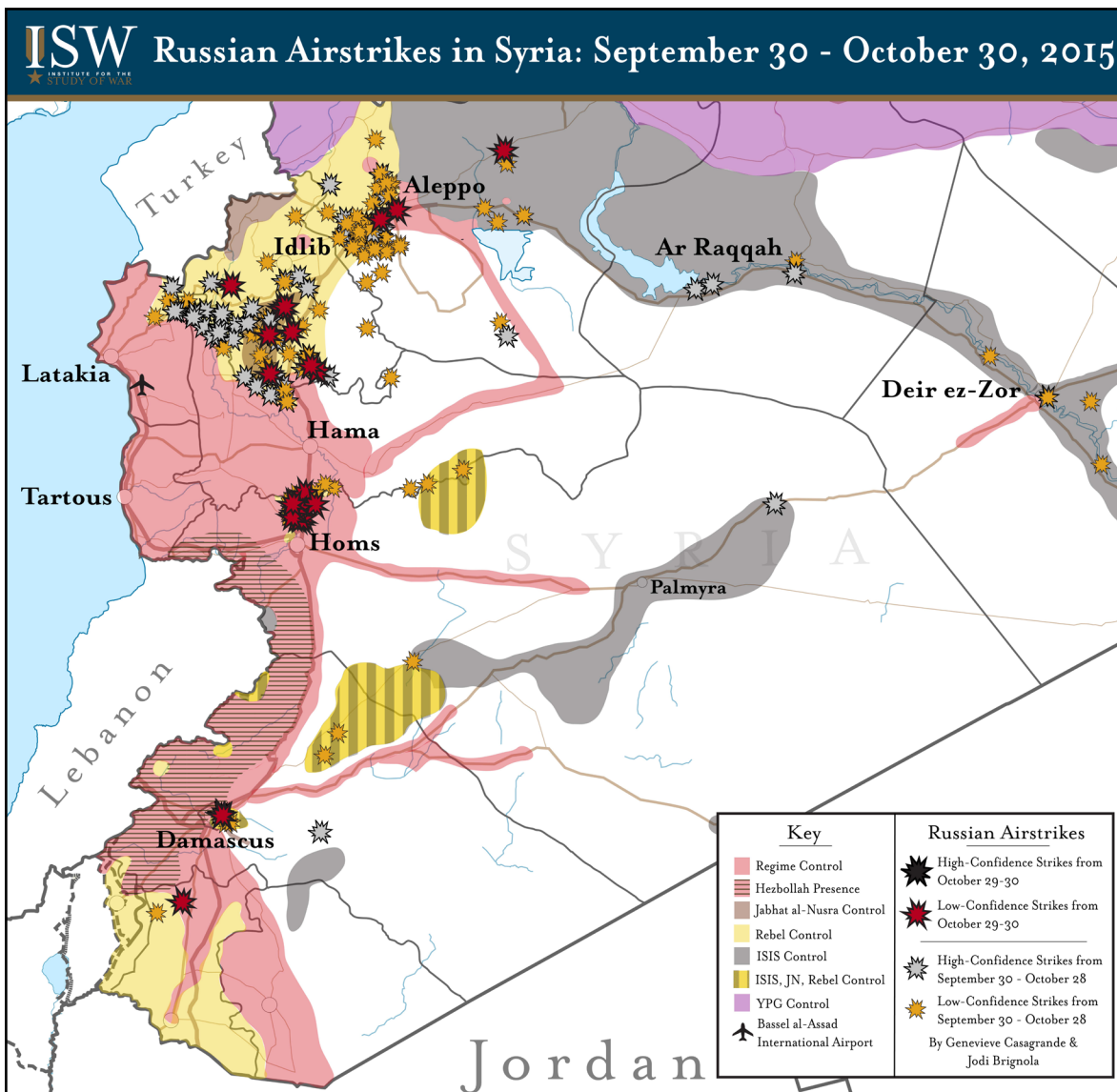
The technical capabilities of U.S. Surface to Air Missile (SAM) systems, both land- and sea-based, are significantly greater than their original intended doctrinal employment: to intercept inbound ballistic missiles or aircraft in an attack profile heading directly towards the firing unit. In this COA, U.S. or NATO Patriot missile batteries could provide a small and enforceable “offset” No-Fly Zone over some portion of Syrian airspace in the north and south of Syria if positioned just north of the Syrian border in Turkey and just south of the Syrian border in Jordan.

U.S. Aegis-class cruisers and destroyers located off shore could also provide some overland radar coverage over northern Syria. While this “offset” No-Fly Zone would not be large, extending perhaps 20 miles from the Turkish and Jordanian borders into Syria, it would provide a small No-Fly Zone with relatively low risk.

The U.S. has never implemented this type of No-Fly Zone, but it is well within the technical capabilities of the primary U.S. ground based SAM system, the MIM-104 Patriot, which reached Initial Operational Capability (IOC) in 1985.<sup>57</sup> In the ensuing 30 years, numerous technical updates have significantly expanded the operational capabilities of the Patriot system. While this COA may require retraining crews and recoding software, it is technically feasible. The ability to reprogram missiles for use outside their intended doctrinal use has been validated. In 2008, the U.S. Navy conducted Operation Burnt Frost and shot down a satellite in a decaying orbit using an SM-3 missile. The SM-3 was originally designed to intercept inbound ballistic missiles; it was reprogrammed to intercept a satellite. This modified intercept geometry and flight profile is significantly different from the original intercept geometry and flight profile, but the engagement was successful. The entire software modification was completed in just four weeks.<sup>58</sup>

#### COA I Requirements:

- 1 X Patriot Missile Battalion, with six line batteries, located just north of Syrian border in Turkey.
- 3X Ground based radars located just north of Syrian



border in Turkey.

- 1X Ground based radar blimp located just north of Syrian border in Turkey.
- 2X E-3 Sentry Airborne Early Warning and Control (AEW&C / AWACS) aircraft in Turkey.
- 4X fighter aircraft in Turkey, F-15 or F-16 for protection of High Value Airborne Asset (HVAA) aircraft.<sup>59</sup>
- 1 X Patriot Missile Battalion, with six line batteries, located just south of Syrian border in Jordan.
- 3X Ground based radars located just south of Syrian border in Jordan.
- 1X Ground based radar blimp located just south of Syrian border in Jordan.
- 2X E-3 Sentry Airborne Early Warning and Control (AEW&C / AWACS) aircraft in Jordan.
- 4X fighter aircraft in Jordan, F-15 or F-16 for protection of High Value Airborne Asset (HVAA) aircraft.<sup>60</sup>
- Dedicated force protection units to protect ground personnel in Turkey and Jordan.

- 2XAegis class cruisers / destroyers in Eastern Mediterranean.
- 1X Carrier Air Wing (CVW) stationed on aircraft carrier in Eastern Mediterranean.
  - Includes 4X E-2Hawkeye Airborne Early Warning (AEW) aircraft.
  - Includes 48X F-18 series fighter aircraft.
- With 4X total E-3 aircraft, 8X ground based fighter aircraft for HVAA, 4X total E-2 aircraft, and 48X F-18 series aircraft for HVAA, there is sufficient force structure to guarantee at least one E-3 / E-2 aircraft airborne at all times with associated HVAA escort aircraft. At altitude, these aircraft can provide full radar coverage of the entire Syrian airspace.
- In order to reduce the demand on high demand, low density assets such as the E-3 Early Warning and Control (AEW&C / AWACS), national intelligence and reconnaissance assets may be able to replicate some of the data collection assigned to this aircraft.

**COA 1 Pros:**

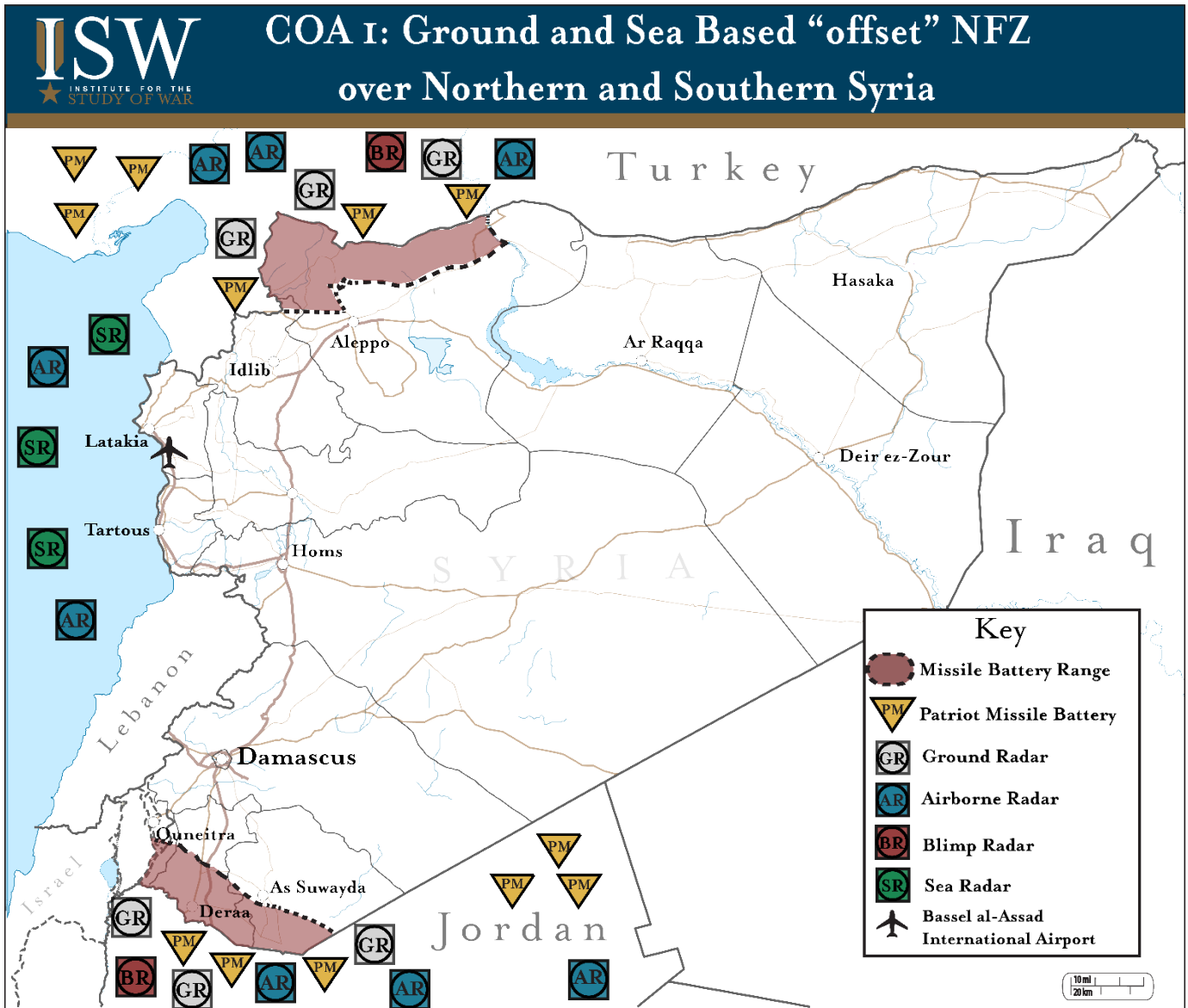
- Provides for a small No-Fly Zone enforceable with ground based Patriot SAM batteries.
- Validates U.S. capability to enforce No-Fly Zone without aircraft.
- U.S. aircraft are employed for situational awareness / radar coverage, not No-Fly Zone enforcement.
- Provides complete situational awareness of the Syrian regimes air operations.
- Allied countries have lower barrier to entry other than providing manned aircraft.
- No active patrolling of No-Fly Zone required.
- No Suppression of Enemy Air Defense (SEAD) required.

**COA 1 Cons:**

- Requires new operational norms for Patriot missile batteries.
- May require some software modification.
- May require some retraining of crews.

**COA 2: PARTIALLY / INTERMITTENTLY PATROLLED NO-FLY ZONE, NORTHERN AND SOUTHERN SYRIA**

This COA replicates and expands the COA 1 No-Fly Zone footprint, consisting of a band of territory across northern Syria and southern Syria. The dimensions of the No-Fly Zone would be a block of airspace stretching approximately 80 miles east to west and 50 miles north to south. This expanded scope would increase the protection of civilians achieved by the No-Fly Zone and would set conditions for larger humanitarian corridors. While COA 2 envisions ground based SAM systems in Turkey and Jordan enforcing an “offset” No-Fly Zone over Syria, this COA envisions U.S. aircraft patrolling the No-Fly Zone to actually “anchor” and orbit over Turkey or Jordan. U.S. air-to-air weapons have, at patrol altitude and airspeed combinations, a greater range than Syrian SAM systems and



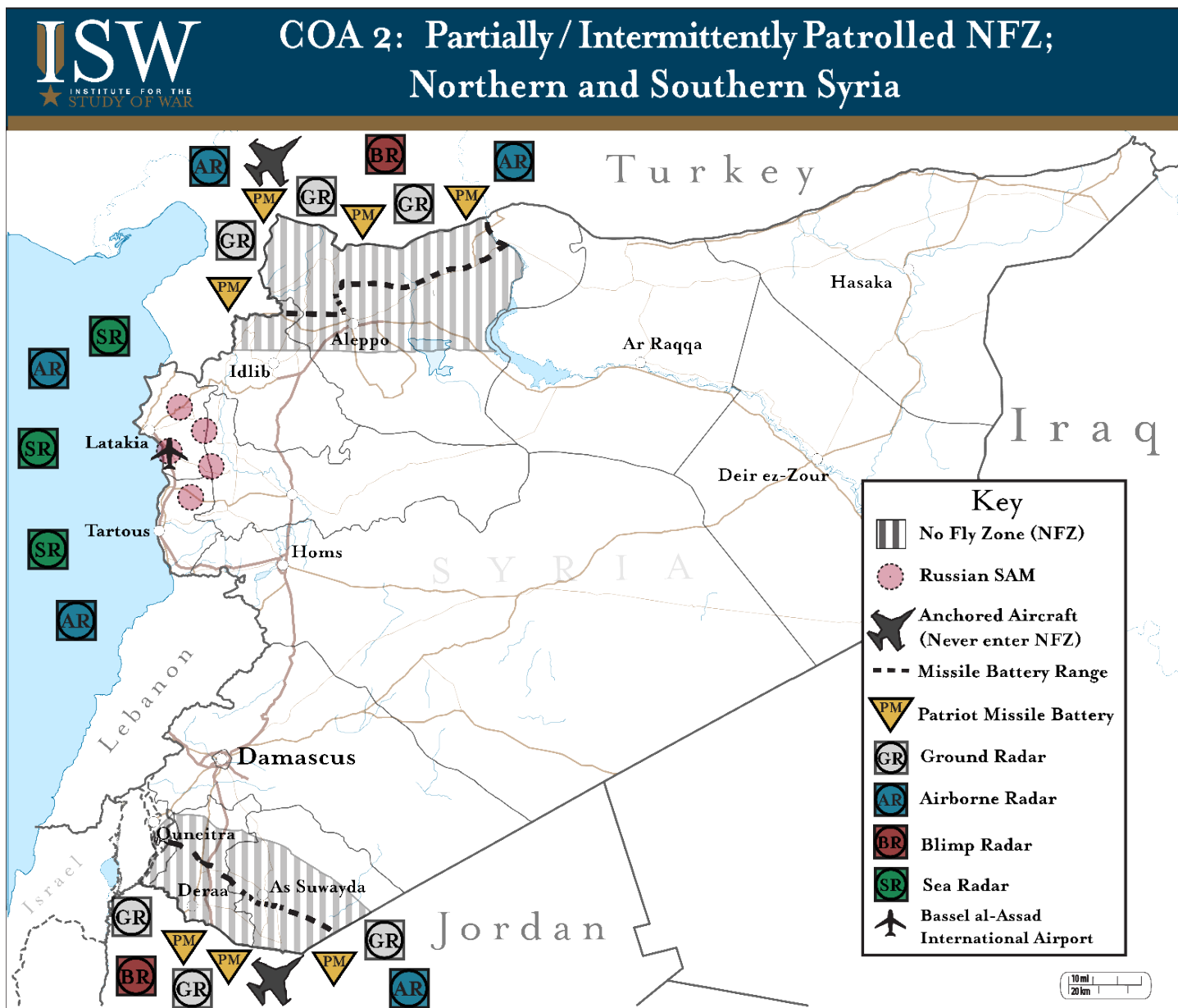


can therefore enforce a larger No-Fly Zone than ground based Patriot SAMS operating in isolation.<sup>61</sup> By flying an “offset” patrol, enforcing the No-Fly Zone from Turkish and Jordanian airspace, rather than over Syrian airspace, this COA mitigates risk to U.S. pilots. This COA would provide intermittent patrols to enforce the No-Fly Zone. This COA would therefore limit the regime’s ability to attack civilian populations, but would not prevent all such attacks. COA 4, examined in the next section, outlines an option to prevent all attacks against civilians within a declared No-Fly Zone.

**COA 2 Requirements:**

- 8X fighter aircraft in Turkey, F-15 or F-16.
- 3X E-3 Sentry Airborne Early Warning and Control (AEW&C / AWACS) aircraft in Turkey.
- 3X refueling aircraft in Turkey, KC-135 or KC-10.
- 4X F-18G Suppression of Enemy Air Defense (SEAD) aircraft in Turkey.

- 1 X Patriot Missile Battalion, with six line batteries, located just north of Syrian border in Turkey.
- 3X Ground based radars located just north of Syrian border in Turkey.
- 1X Ground based radar blimp located just north of Syrian border in Turkey.
- 8X fighter aircraft in Jordan, F-15 or F-16.
- 3X E-3 Sentry Airborne Early Warning and Control (AEW&C / AWACS) aircraft in Jordan.
- 3X air refueling aircraft in Jordan, KC-135 or KC-10.
- 4X F-18G Suppression of Enemy Air Defense (SEAD) aircraft in Jordan.
- 1 X Patriot Missile Battalion, with six line batteries, located just south of Syrian border in Jordan.
- 3X Ground based radars located just south of Syrian border in Jordan.
- 1X Ground based radar blimp located just south of



Syrian border in Jordan.

- 3X E-3 Sentry Airborne Early Warning and Control (AEW&C / AWACS) aircraft in Jordan.
- Dedicated force protection units to protect ground personnel in Turkey and Jordan.
- 2X Aegis class cruisers / destroyers in Eastern Mediterranean.
  - Includes long range Tomahawk Cruise Missile (TLAM) for potential use against Syrian Integrated Air Defense System (IADS).
- 1X Carrier Air Wing (CVW) stationed on aircraft carrier in Eastern Mediterranean.
  - Includes 4X E-2 Hawkeye Airborne Early Warning (AEW) aircraft.
  - Includes 48X F-18 fighter aircraft.
  - Includes 4X F-18G Suppression of Enemy Air Defense (SEAD) aircraft.
- With 6X total AWACS aircraft, and 4X total AEW aircraft, there is sufficient force structure to guarantee at least one AWACS / AEW aircraft airborne at all times. At altitude, these aircraft can provide full radar coverage of the entire Syrian airspace.
- With 8X land based fighter aircraft each in Turkey and Jordan, plus 4X SEAD aircraft each in Turkey and Jordan, supplemented by 48X fighter aircraft and 4X SEAD aircraft onboard U.S. aircraft carrier, this force structure can maintain 12 hours of manned aircraft enforcement of the No-Fly Zone per 24 hour period.
- Manned aircraft are “anchored” over Turkey and Jordan respectively, enforcing an “offset” No-Fly Zone, meaning the manned aircraft enforcing the No-Fly Zone never cross into the No-Fly Zone airspace.
- In order to reduce the demand on high demand, low density assets such as the E-3 Early Warning and Control (AEW&C / AWACS), national intelligence and reconnaissance assets may be able to replicate some of the data collection assigned to this aircraft.

**COA 2 Pros:**

- Provides a small, enforceable No-Fly Zone.
- Provides for active enforcement of the No-Fly Zone.
- Limits risk to U.S. aircraft by anchoring over Turkey / Jordan.
- Keeps U.S. aircraft out of Syrian airspace.
- Provides complete situational awareness of the Syrian regime’s air operations.
- Allows allied countries to provide some of the enabling forces.
- Requires no immediate, preemptive Suppression of Enemy Air Defense (SEAD).

**COA 2 Cons:**

- Increased resource burden.

- Increased risk.
- Increased cost.
- Potential for open ended commitment with no significant change in situation on ground.

**COA 3: CONSTANTLY PATROLLED NO-FLY ZONE; NORTHERN AND SOUTHERN SYRIA**

This COA replicates the COA 2 No-Fly Zone footprint, but expands the scope of operations to guarantee either constant patrol of the No-Fly Zone or alert status aircraft capable of responding within a short period of time to patrol and enforce the No-Fly Zone.

**COA 3 Requirements:**

- 8X fighter aircraft in Turkey, F-15 or F-16.
- 3X E-3 Sentry Airborne Early Warning and Control (AEW&C / AWACS) aircraft in Turkey.
- 4X refueling aircraft in Turkey, KC-135 or KC-10.
- 6X F-18G Suppression of Enemy Air Defense (SEAD) aircraft in Turkey.
- 1 X Patriot Missile Battalion, with six line batteries, located just north of Syrian border in Turkey.
- 3X Ground based radars located just north of Syrian border in Turkey.
- 1X Ground based radar blimp located just north of Syrian border in Turkey.
- 8X fighter aircraft in Jordan, F-15 or F-16.
- 3X E-3 Sentry Airborne Early Warning and Control (AEW&C / AWACS) aircraft in Jordan.
- 4X air refueling aircraft in Jordan, KC-135 or KC-10.
- 4X F-18G Suppression of Enemy Air Defense (SEAD) aircraft in Jordan.
- 1 X Patriot Missile Battalion, with six line batteries, located just south of Syrian border in Jordan.
- 3X Ground based radars located just south of Syrian border in Jordan.
- 1X Ground based radar blimp located just south of Syrian border in Jordan.
- 3X E-3 Sentry Airborne Early Warning and Control (AEW&C / AWACS) aircraft in Jordan.
- Dedicated force protection units to protect ground personnel in Turkey and Jordan.
- 2X Aegis class cruisers / destroyers in Eastern Mediterranean.
  - Includes long range Tomahawk Cruise Missile (TLAM) for potential use against Syrian Integrated Air Defense System (IADS).
- 1X Carrier Air Wing (CVW) stationed on aircraft carrier in Eastern Mediterranean.
  - Includes 4X E-2 Hawkeye Airborne Early

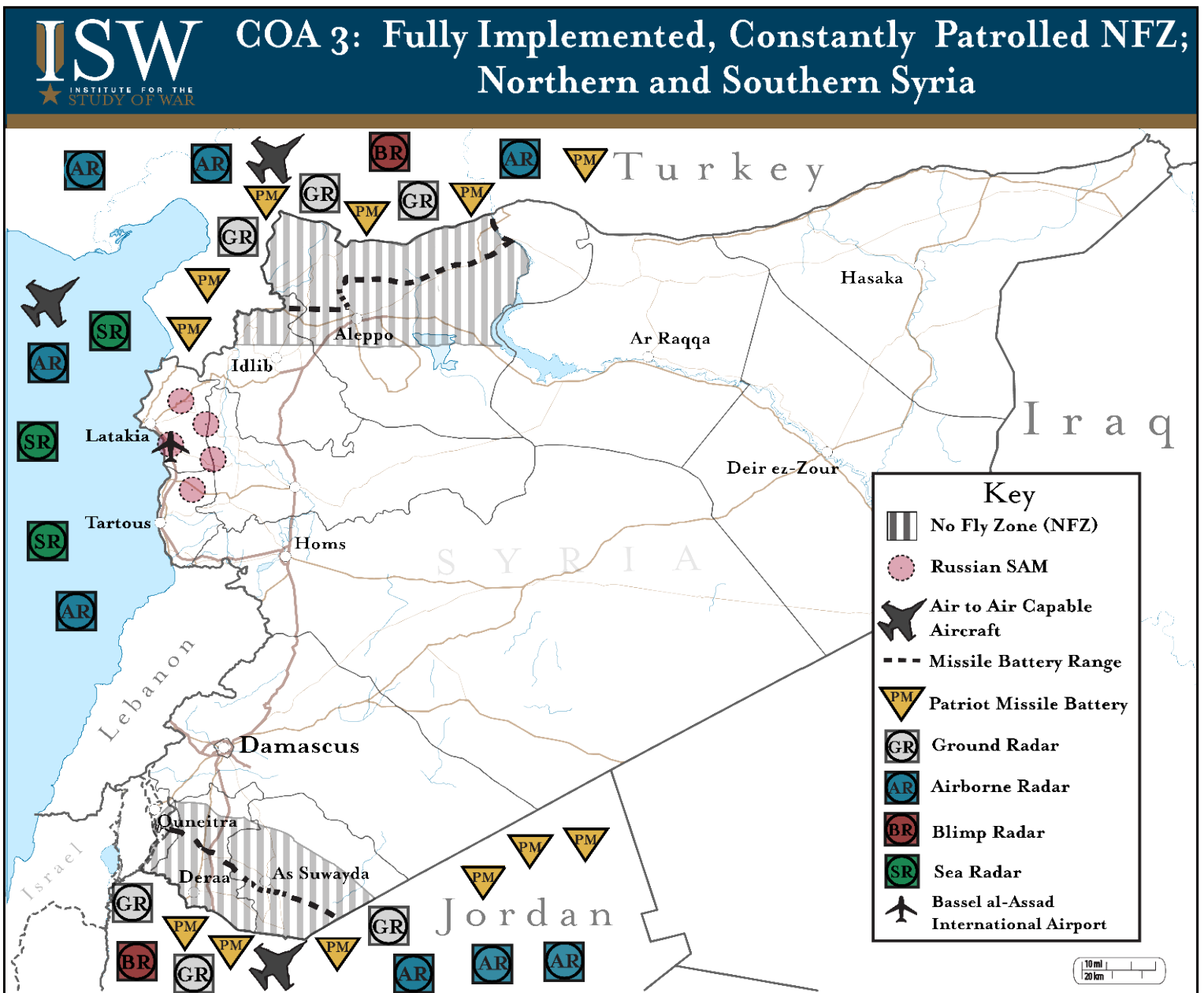


- Warning (AEW) aircraft.
  - Includes 48X F-18 fighter aircraft.
  - Includes 4X F-18G Suppression of Enemy Air Defense (SEAD) aircraft.
- With 6X total AWACS aircraft, and 4X total AEW aircraft, there is sufficient force structure to guarantee at least one AWACS / AEW aircraft airborne at all times. At altitude, these aircraft can provide full radar coverage of the entire Syrian airspace.
- With 8X land based fighter aircraft each in Turkey and Jordan, plus 4X SEAD aircraft each in Turkey and Jordan, supplemented by 48X fighter aircraft and 4X SEAD aircraft onboard U.S. aircraft carrier, this force structure can maintain continuous manned aircraft enforcement of the No-Fly Zone.

- In order to reduce the demand on high demand, low density assets such as the E-3 Early Warning and Control (AEW&C / AWACS), national intelligence and reconnaissance assets may be able to replicate some of the data collection assigned to this aircraft.

**COA 3 Pros:**

- Provides for a small, enforceable No-Fly Zone.
- Provides for constant, active patrol and enforcement of the No-Fly Zone.
- Limits risk to U.S. pilots by anchoring manned aircraft over Turkey and Jordan respectively, enforcing an “offset” No-Fly Zone. The manned aircraft never cross into the No-Fly Zone airspace.
- Provides complete situational awareness of the Syrian



regimes air operations.

- Allied countries could provide some of the enabling forces.
- Suppression of Enemy Air Defense (SEAD) aircraft are available, but not required, as aircraft are flying over Turkish, Syrian airspace.

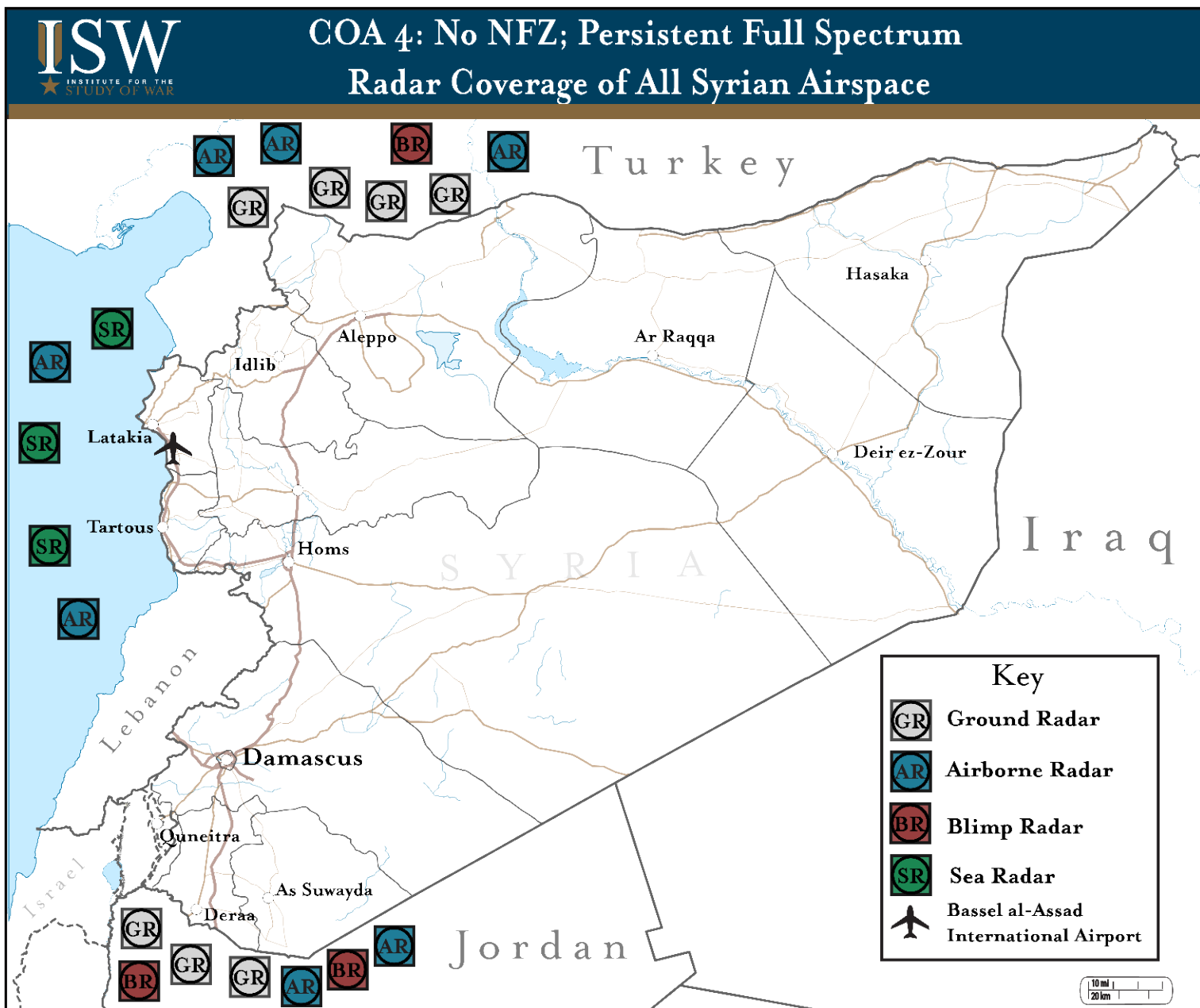
**COA 3 Cons:**

- Increased resource burden.
- Increased risk.
- Increased cost.
- Potential for open ended commitment with no significant change in situation on ground.

**NON NO-FLY ZONE OPTIONS**

**COA 4: NO NO-FLY ZONE; PERSISTENT FULL SPECTRUM RADAR COVERAGE OF ALL SYRIAN AIRSPACE**

While this COA is not a No-Fly Zone, there is significant value associated with establishing persistent, full spectrum radar coverage of Syrian airspace short of establishing or enforcing a No-Fly Zone. This is the same model that was used during Operation Sky Monitor prior to establishing a full No-Fly Zone in Bosnia Herzegovina.<sup>63</sup> Operation Sky Monitor observed all flights over Bosnia Herzegovina, but did not actively prevent any flights.



Mimicking Operation Sky Monitor in Syria would provide a technically accurate, transparent, and verifiable record of where and when the SAF and Russian Air Force flew missions, and what targets they hit. The Assad regime continues to profit from its disinformation campaign and continues to insist that it is targeting terrorist groups. The Russians continue to perpetuate the lie that their air operations in Syria are targeting ISIS, when in fact they are there primarily to support Assad regime offensives taking place far from ISIS strongholds. Gathering correlated radar data would prove that the Assad regime is targeting civilians, and that Russia is simply supporting Assad regime offensives, and not targeting ISIS. While this data is unlikely to reduce Iranian and Russian support to the Assad regime in the short term, it will increase pressure on Iran and Russia to decrease support for Assad's strategy of deliberately targeting civilians.

#### COA 4 Requirements:

- 3X Ground based radars located just north of Syrian border in Turkey.
- 1X Ground based radar blimp located just north of Syrian border in Turkey.
- 2X E-3 Early Warning and Control (AEW&C / AWACS) aircraft in Turkey.
- 4X fighter aircraft in Turkey, F-15 or F-16 for protection of High Value Airborne Asset (HVAA) aircraft.<sup>64</sup>
- 3X Ground based radars located just south of Syrian border in Jordan.
- 1X Ground based radar blimp located just south of Syrian border in Jordan.
- 2X E-3 Early Warning and Control (AEW&C / AWACS) aircraft in Jordan.
- 4X fighter aircraft in Jordan, F-15 or F-16 for protection of High Value Airborne Asset (HVAA) aircraft.<sup>65</sup>
- Dedicated force protection units to protect ground personnel in Turkey and Jordan.
- 2X Aegis class cruisers / destroyers in Eastern Mediterranean.
- 1X Carrier Air Wing (CVW) stationed on aircraft carrier in Eastern Mediterranean.
  - Includes 4X E-2 Airborne Early Warning (AEW) aircraft.
- With 6X total E-3 aircraft, and 4X total E-2 aircraft, there is sufficient force structure to guarantee at least one E-3 or E-2 airborne at all times, typically two. At altitude, these aircraft can provide full radar coverage of the entire Syrian airspace.
- In order to reduce the demand on high demand, low density assets such as the E-3 Early Warning and Control (AEW&C / AWACS), national intelligence

and reconnaissance assets may be able to replicate some of the data collection assigned to this aircraft.

#### COA 4 Pros:

- Provides complete situational awareness of the Syrian regimes air operations.
- Allied countries could provide some of the enabling forces.
- No active patrolling of No-Fly Zone required.
- No Suppression of Enemy Air Defense (SEAD) required.

#### COA 4 Cons:

- Radar data is useful, but no enforcement component.
- Ground based crews are high value target for terrorist attacks.

### COA 5: PREEMPTIVE STRIKE AGAINST SYRIAN AIR FORCE AIRBASES, DESTROY RUNWAYS AND/OR AIRCRAFT

This COA would destroy SAF airbase runways, thus depriving the SAF of the necessary infrastructure to conduct flight operations, and achieve the desired effect of a No-Fly Zone without actually implementing and patrolling a No-Fly Zone. It can be scaled up to completely destroy the SAF on deck, thus permanently obviating the need for a No-Fly Zone. The planning and resourcing for this COA is extensive, and has been covered thoroughly in the Institute for the Study of War publication, "Required Sorties and Weapons to Degrade Syrian Air Force Excluding Integrated Air Defense System (IADS)."<sup>66</sup>

This plan would use long range standoff weapons exclusively, including sea launched Tomahawk Land Attack Missiles (TLAM) and air launched long range Precision Guided Munitions (PGM) that have a longer standoff range than either the Syrian IADS or the mobile Russian SAM systems in Syria, with no American pilots or aircraft being placed at risk.

### CONCLUSION

It is possible to establish a No-Fly Zone over a small band of northern Syria and southern Syria that excludes airspace currently being used by Russian aircraft for basing and operations. It could result in humanitarian relief for the beleaguered Syrian civilian population and has the potential change the framework of negotiations in favor of U.S. objectives.

*Christopher Harmer is a Senior Naval Analyst at the Institute for the Study of War.*

## ENDNOTES

1. Jeffrey White, "A Willingness to Kill: Repression in Syria," Washington Institute for Near East Policy, August 16, 2011.
2. Lt Col S. Edward Boxx, "Observation on the Air War in Syria," Washington Institute for Near East Politics, March 2013.
3. Micah Zenko, "More Syrians Are Calling for a No Fly Zone - Should We Take it Seriously?" The Atlantic, November 01, 2011.
4. Christopher Kozak, "An Army in All Corners, Assad's Campaign Strategy in Syria," The Institute for the Study of War, April 2015.
5. United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Relief Web, "Syria Barrel Bomb Raids on Aleppo kill 135: Monitor" December 18, 2013.
6. Jeffrey White "Syrian Air Force Operations: Strategic, Effective, and Unrestrained." Washington Institute for Near East Policy, December 11, 2014.
7. Syrian Observatory for Human Rights, "310,000 people killed since the beginning of the Syrian Revolution", April 16, 2015.
8. Samuel Osborne, "Syrian government forces responsible for more civilian deaths than ISIS, human rights group claims," The Independent, October 7, 2015.
9. United Nations High Commissioner for Refugees, "2015 UNHCR Country Operations Profile - Turkey" accessed October 21, 2015.
10. United Nations High Commissioner for Refugees, "2015 UNHCR Country Operations Profile - Jordan" accessed October 21, 2015.
11. United Nations High Commissioner for Refugees, "2015 UNHCR Country Operations Profile - Lebanon" accessed October 21, 2015.
12. European Union Eurostat, "Asylum Statistics," accurate as of May 21, 2015.
13. United Nations High Commissioner for Refugees, "Syrian Regional Refugees Response, Europe: Syrian Asylum Applications from April 2011 to September 2015," accessed October 21, 2015.
14. 2015 UNHCR country operations profile - Syrian Arab Republic
15. Brian Michael Jenkins, "The Dynamics of Syria's Civil War," page 12, Rand Corporation, 2014.
16. U.S. Department of State, "State Sponsors of Terror" accessed October 19, 2015.
17. U.S. Department of State, "State Sponsors of Terror" accessed October 19, 2015.
18. U.S. Army War College "From Cooperation to Competition - The Future of U.S. - Russian Relations," Strategic Studies Institute, May 2015.
19. U.S. Department of State, "Foreign Terrorist Organizations," accessed October 17, 2015.
20. U.S. Department of State, "Foreign Terrorist Organizations," accessed October 17, 2015.
21. U.S. Department of State, "Foreign Terrorist Organizations," accessed October 17, 2015.
22. Michael D Shear, Helene Cooper, Eric Schmitt, "Obama Administration Ends Effort to Train Syrians to Combat ISIS," New York Times, October 9, 2015.
23. United Nations Press Release: "Security Council Approves 'No-Fly Zone' over Libya, Authorizing 'All Necessary Measures' to Protect Civilians, by Vote of 10 in Favour with 5 Abstentions," March 17, 2011.
24. Council on Foreign Relations, "UN Security Council Resolution 688, Iraq," April 5, 1991.
25. Jeremiah Gertler, Christopher M. Blanchard, Catherine Dale and Jennifer K. Elsea, "No-Fly Zones: Strategic, Operational, and Legal Considerations for Congress," Congressional Research Service May 3, 2013.
26. *ibid*
27. Neil MacFarquhar, "At UN, Pressure is on Russia for Refusal to Condemn Syria," New York Times, January 31, 2012.
28. "Syria No Fly Zone would violate international law, says Russia," The Guardian, June 15, 2013.
29. Donna Abu-Nasr and Ilya Arkhipov, "Russia Shuns No-Fly Zone for Syria as Clerics Urge Reprisals," Bloomberg, October 6, 2015.
30. Neil MacFarquhar, "At UN, Pressure is on Russia for Refusal to Condemn Syria," New York Times, January 31, 2012.
31. Genevieve Casagranda and Jodi Brignola, "Russian Airstrikes in Syria: September 30 - October 14," The Institute for the Study of War, October 14, 2015.

32. U.S. Department of State, "The Global Coalition to Counter ISIL", accessed October 19, 2015 at <http://www.state.gov/s/seci/>
33. U.S. Department of Defense Special Report, "Operation Inherent Resolve, Targeted Operations Against ISIL Terrorist," accessed October 19, 2015.
34. United Nations Press Release, "Security Council Requires Scheduled Destruction of Syria's Chemical Weapons, Unanimously Adopting Resolution 2118 (2013)," September 27, 2013.
35. UN News Centre, "UN-backed Action Group agrees on measures for peaceful transition in Syria," June 30, 2012.
36. UN Office of the Special Adviser on the Prevention of Genocide, "The Responsibility to Protect."
37. France Diplomatie, "21st Ambassadors' Conference - Speech by François Hollande, President of the Republic (27 August 2013) <http://www.diplomatie.gouv.fr/en/the-ministry-of-foreign-affairs/events/article/21st-ambassadors-conference-speech-august-2013>" obtained October 19, 2013.
38. BBC, "Battle for Iraq and Syria in maps" October 12, 2015.
39. U.S. Department of Defense Press Release No: NR-401-15, "Statement from Pentagon Press Secretary Peter Cook on Memorandum of Understanding with Russia regarding safety over Syrian air space." October 20, 2015.
40. U.S. Department of Defense, Joint Chiefs of Staff, Joint Publication 3-01, "Countering Air and Missile Threats," March 23, 2012.
41. Dr Carlo Kopp, "Almaz S-300P/PT/PS/PMU/PMU1/PMU2 Almaz-Antey S-400 Triumf SA-10/20/21 Grumble/Gargoyle, Technical Report APA-TR-2006-1201," Air Power Australia, April, 2012.
42. Northrop Grumman Fact Sheet, "AWACS Surveillance Radar" accessed October 19, 2015.
43. Jeffrey White, "Syrian Air Force Operations: Strategic, Effective, and Unrestrained," Washington Institute for Near East Politics, December 11, 2014.
44. Michael Knights, "Devils You Don't Know," Washington Institute for Near East Politics, September 8, 2015.
45. BBC, "Russia Halts Gas Supplies to Ukraine After Talks Breakdown," July 1, 2015.
46. James S. Corum, "The Security Concerns of the Baltic States as NATO Allies," U.S. Army Strategic Studies Institute and U.S. Army War College Press, August 2013.
47. Shaun Walker, "Alexis Tsipras in Moscow asks Europe to end sanctions against Russia," The Guardian, April 8, 2015.
48. Fact Sheet, "EA-18G Growler Capabilities" Boeing, retrieved October 15, 2015.
49. Yefim Gordon and Dmitriy Komissarov, "Russian Air Power: Current Organization and Aircraft of All Russian Air Forces," Crecy Publishing, September 15, 2011.
50. Karl P Mueller, "Denying Flight, Strategic Options for Employing No-Fly Zones." Rand Corporation, page 7, 2013.
51. Chandler P. Atwood and Jeffrey White, "Syrian Air-Defense Capabilities and the Threat to Potential U.S. Air Operations," Washington Institute for Near East Policy, May 23, 2014.
52. Chandler P. Atwood and Jeffrey White, "Syrian Air-Defense Capabilities and the Threat to Potential U.S. Air Operations," Washington Institute for Near East Policy, May 23, 2014.
53. Agence France Presse, "NATO General Worried About Russian Military Build Up in Syria," Defense News, September 28, 2015.
54. Dr Carlo Kopp, "SA-15 Gauntlet" Technical Report APA-TR-2009-0705, Air Power Australia, July 2009.
55. Dr Carlo Kopp, "Russian / Soviet Point Defence Weapons" Technical Report APA-TR-2008-0502, Air Power Australia, May 2008.
56. Linda D. Kozaryn, "U.S. Counters Iraq's Increased Aggression," American Forces Press Service, January 27, 1999.
57. Raytheon, "Ready For Today, Right For Tomorrow" Patriot Missile System Fact Sheet, obtained October 07, 2015.
58. Johns Hopkins University Applied Physics Laboratory Press Release, "APL Team Plays Critical Role in Destroying Errant Satellite," August 15, 2009.
59. U.S. Air Force Annex 3-01 Counterair Operations, August 18, 2014.
60. U.S. Air Force Annex 3-01 Counterair Operations, August 18, 2014.
61. Robert Hewson, "Janes Weapons: Air Launched 2014-2015: Yearbook"
62. Valerie Szybala, "Assad Strikes Damascus; The Battle for Syria's Capital" Institute for the Study of War, January 2014.
63. Professor A Walter Dorn "Air Power in UN Operations," page 165, Ashgate Publishing, August 28, 2014.
64. U.S. Air Force Annex 3-01 Counterair Operations, August 18, 2014.



65. U.S. Air Force Annex 3-01 Counterair Operations, August 18, 2014.

66. Christopher Harmer, "Required Sorties and Weapons to Degrade Syrian Air Force Excluding Integrated Air Defense System (IADS)" July 31, 2013, Institute for the Study of War.

*Follow us on Twitter @TheStudyofWar*

*Layout by Casey Jaquez.*