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## **Air-Sea Battle**

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When U.S. and coalition forces ejected Saddam Hussein's army from Kuwait in 1991, a new American era of military power projection began. During the Cold War, America's military became an increasingly static force, forward based around the world to deter warfare, dampen regional security competitions and contain Soviet expansion. With the collapse of the Soviet Union, and the end of its moderating grip on aggressive client states, U.S. forces made adjustments designed to maximize their ability to project power to "hot spots" where armed conflict could threaten allies and friends. The goal was to reassure allies and others concerning the safety and stability of an increasingly interconnected system of global trade and security. Today, these core expeditionary missions are increasingly jeopardized by the advancing military capabilities and strategic orientation of other states. In response, the Departments of the Air Force and Navy have developed the "Air-Sea Battle" concept to ensure that U.S. forces remain able to project power on behalf of American interests worldwide.

The transformation of U.S. power projection in the immediate aftermath of the Cold War was dramatic. Less than ten days after Iraqi military forces entered Kuwait, the U.S. military responded with five Air Force fighter squadrons, two aircraft carrier strike groups, dozens of airborne warning aircraft and two battleships. By the end of Operation Desert Storm about six months later, airlift had moved more than 500,000 troops and 540,000 tons of cargo into the theater, and sealift transported an additional 2.4 million tons of equipment. The magnitude of this accomplishment comes into better focus when we consider that it took the Allies nearly two years to position forces for the D-Day invasion during World War II.

Operations Desert Shield and Desert Storm not only heralded a new epoch in U.S. power projection; they also reflected the new post-Cold War security reality. A static focus on the Fulda Gap, or on any other fixed geographical location on land or at sea, was rendered obsolete. Since security challenges to core U.S. interests could now arise in any of several regions, including some in which prepositioned U.S. forces were not at hand, the U.S. military reduced its reliance on large, expensive, Cold War-era overseas garrisons, fleet stations and forward air bases, focusing instead on developing the means to rapidly deliver combat power whenever and wherever U.S. strategy required. This transformation delivered remarkable successes over the next two decades, as demonstrated in Operations Deliberate Force, Allied Force, Enduring Freedom, Iraqi Freedom and Odyssey Dawn.

Potential adversaries were clearly mindful of this transformation. They observed the inability of Soviet-era doctrine and weapons to blunt American power and reconsidered their approach to resisting U.S. military intervention. Competitors with the will and means gradually shifted from planning to fight American forces when they arrived and instead focused on denying U.S. access to the theater. The fruits of these modernization efforts, many of which incorporate technologies developed by the United States and allied countries, are now materializing. Today, the development, proliferation and networking of advanced weapon systems specifically built to circumvent U.S. defenses threaten America's freedom of action and its ability to project military power in strategically significant regions. This development could erode the credibility of U.S. security commitments to partners and allies, and with it their political stability and economic prosperity. Air-Sea Battle responds to this concern.

After a decade of war in Afghanistan and Iraq, the United States finds itself at a strategic turning point not unlike that at the end of the Cold War. When Secretary of Defense Leon Panetta introduced the new strategic guidance for the Department of Defense, he stated that the "smaller and leaner" Joint Force of the future must be prepared, in conjunction with allies and partners, to confront and defeat aggressors anywhere in the world, "including those seeking to deny our power projection." The new strategic guidance directs U.S. forces to maintain the "ability to project power in areas in which our access and freedom to operate is challenged" and to be "capable of deterring and defeating aggression by any potential adversary." As service chiefs, we are responsible for organizing, training and equipping air and maritime forces so that current and future combatant commanders can effectively execute this power projection mandate in support of U.S. national strategy.

With Air-Sea Battle, we are reinvigorating the historic partnership between our two departments to protect the freedom of the commons and ensure operational access for the Joint Force. Air-Sea Battle provides the concepts, capabilities and investments needed to overcome the challenges posed by emerging threats to access like ballistic and cruise missiles, advanced submarines and fighters, electronic warfare and mines. By better countering these military threats, Air-Sea Battle will improve the credibility and effectiveness of the entire Joint force as a key element of Joint Operational Access Concept implementation directed in the new defense guidance. Air-Sea Battle relies on highly integrated and tightly coordinated operations across warfighting domains—for example, using cyber methodologies to defeat threats to aircraft, or using aircraft to defeat threats on and under the sea.

This level of integration requires that the Navy and the Air Force not only restore and institutionalize their close interdependence in the field but also support Joint efforts to better integrate the processes they use to develop, manage and prepare forces for deployment. Those processes, in turn, must translate into effective organizational, operational and acquisition strategies. Clearly, for U.S. military forces to continue protecting the freedom of international waters, skies and cyberspace we must build on our collective service histories and shared values to foster a more permanent and well-

institutionalized partnership between the departments. Air-Sea Battle does exactly that.

Preserving U.S. global freedom of action is increasingly important; American interests remain expansive, even as American resources become more constrained. Autocratic states and groups seeking to subvert the prevailing political and economic order are already leveraging their geographic advantages to employ armed coercion and political action to counter American presence and power projection, as well as to disrupt free access to key areas in the air and maritime commons. As these revisionist strategies advance, America's friends will increasingly seek the security and stability provided by comprehensive U.S. national power. If America appears unable or unwilling to counter an adversary's anti-access military capabilities, its friends and allies may find U.S. security assurances less credible, leading some of them to seek accommodation with aggressors or alternate means of self-defense, including weapons of mass destruction. Either course of action could lead to dangerous regional security competitions. Meanwhile, downward pressure on U.S. national defense spending complicates defense planning and weapon system recapitalization. Through the Air-Sea Battle concept and its mandate for improved Air Force and Navy integration, we aim to help address these challenges.

We know that increasing integration between our two services will not be easy. In a challenging budget environment, the constituent parts of the defense establishment often focus on furthering institutional self-interest, reflexively defending service prerogatives based on traditional roles and missions. As service chiefs, we are dedicated to avoiding debilitating parochialism. We will support those within our services who appreciate the evolving international security dynamic and the necessity of Air-Sea Battle. Through greater service integration and interoperability, Air-Sea Battle will benefit our services, the joint force, and more importantly, our country.

### ***Service Integration in the Past***

Air-Sea Battle does not mark the first time interservice integration was employed to solve a difficult operational problem for the U.S. military. Today, the challenge of finding, tracking and capturing or killing terrorists depends on increased integration between special operations forces and their air and naval components. During the Cold War, the Army and the Air Force partnered to develop NATO's Follow-On Forces Attack concept and the Army's AirLand Battle doctrine to counter Soviet bloc numerical advantages. Whereas the Red Army's threat to Europe demanded an air- and land-centric focus, today's paramount challenges place a premium on preserving freedom of action in the air, maritime, space and cyber domains.

Air and naval integration within the U.S. armed services has a long, albeit episodic, history. To retaliate against the December 1941 Japanese attack on Pearl Harbor at a time when the United States lacked forward military bases, Army Air Forces and naval aviators set aside their polarizing interwar rhetoric to conceive the entirely novel 1942 Doolittle Raid, which launched 16 B-25B medium bombers from the deck of the USS *Hornet*. Later that year, the Army Air Force again partnered with the Navy to use

specially modified B-24 Liberator bombers to defend cargo-laden Allied ships from *Kriegsmarine* U-Boats lurking in the Atlantic.

The rise of Soviet naval power in the late 1970s and early 1980s motivated a new Air Force-Navy partnership, one that lasted for nearly a decade. Facing threats from Soviet “Backfire” bombers armed with anti-ship “Kitchen” cruise missiles, the Navy looked to Air Force F-15 fighters and E-3 airborne surveillance and control aircraft to augment aircraft carrier air defenses. The Air Force agreed to use long-range B-52 bombers to augment Navy sea-mining capacity, and, as part of the Busy Observer program, to perform maritime surveillance. The Navy also requested that the Air Force take a more active role in maritime surface warfare. The Air Force initially elected to rely on standard bombs rather than incorporating the Navy’s new Harpoon anti-ship missile. But the rapid advancement of Soviet sea-based air defenses soon necessitated an anti-ship weapon that had longer range than the Air Force could provide. As a result, by 1982 the Air Force decided to incorporate the Harpoon, presenting an imposing threat to the Soviet navy. These efforts, however, were discontinued after the Soviet Union disbanded and the Cold War ended.

These examples typify past Air Force and Navy integration efforts, which tended to be episodic and *ad hoc*. Once the specific threat abated, the partnership dissolved almost as quickly as it had formed. Today, however, we face a range of increasingly complex threats that demand a more enduring, more deeply institutionalized approach. Air-Sea Battle mitigates access challenges by moving beyond simply de-conflicting operations in each warfighting domain, toward creating the level of domain integration necessary to defeat increasingly varied and sophisticated threats. As these historical examples illustrate, this integration needs to occur in the field—but it also needs to occur institutionally in our service efforts to organize, train and equip the current and future force.

### ***Growing Challenges to Security and Prosperity***

The imperative behind Air-Sea Battle, as we have argued, stems from the importance of our nation’s military capacity for protecting allies and partners as well as ensuring freedom of access to key areas of international air, sea, space and cyberspace. Our military’s power projection ability also allows U.S. statesmen to better manage the risks and uncertainties associated with changes in the distribution of power, especially when those changes empower states who challenge important international norms.

Free access to the ungoverned “commons” of air, maritime, cyberspace and space is the foundation of the global marketplace. More than two billion passengers and more than 35 percent of international trade by value transit international airspace annually. Ninety percent of global trade by volume travels by sea, and 25 percent of that, approximately 50,000 vessels a year, travels through a 1.7-mile-wide sliver of ocean at the Strait of Malacca. Financial traders around the world conduct secure banking transactions involving more than \$4 trillion per day using intercontinental communications traveling through underwater cables and precise timing signals from the space-based Global Positioning System.

Interconnected systems of trade, finance, information and security enable global prosperity and have helped lift almost a billion people out of poverty since World War II. But this interconnectedness also makes the global economy more susceptible to disruption. The fragility of chokepoints in air, space, cyberspace and on the sea enable an increasing number of entities, states and non-state actors alike to disrupt the global economy with small numbers of well-placed, precise attacks. Today, for example, Iran regularly threatens transit access through the Strait of Hormuz in response to international sanctions.

Moreover, these strategies and the weapons that support them are also no longer the exclusive province of large states. Pirates, terrorists and insurgents are increasingly able to disrupt free transit in the air, on land and at sea. The United States must be prepared to respond to these contingencies, to defend U.S. interests abroad and to preserve the freedom and security of the global commons in this rapidly changing environment.

### ***New Threats to American Power Projection***

When the Soviet Union dissolved, so did the predictability that guided U.S. force development and force posture for decades. Our predecessors recognized, however, that new adversaries would inevitably rise to challenge our national interests. They developed an improved model of expeditionary warfare demonstrated in Desert Storm, one that capitalized on and sustained American freedom of action. Thanks to their foresight and effort, the U.S. military today can surge aircraft, ships, troops and supplies from locations within the United States and across the globe to any region of concern. If conflict erupts and if called on by the U.S. national leadership, the U.S. military can seize air, maritime and space superiority, and exploit that advantage in follow-on operations.

Over the past twenty years we have executed this power projection model with great skill and effectiveness—a fact not lost on states that once sought or now seek to challenge U.S. influence. The leaders of these states believe they have found weaknesses in American military strategy and are working to exploit them through an “anti-access and area-denial” strategy focused on preventing U.S. forces and other legitimate users from transiting international waters, skies, or space.<sup>1</sup>

Anti-access and area-denial strategies are not new. The ancient Greeks exploited geographical advantages in the Strait of Salamis, scoring a decisive naval victory over the invading Persians in 480 BCE before they could land their huge army. At Pearl Harbor in 1941, the Empire of Japan attacked America’s power projection capabilities in the Pacific in an attempt to sever U.S. access to East Asia. And on the shores of France in 1944, Field Marshall Erwin Rommel and the German High Command attempted to deny Allied troops access to the European continent. Some of these strategies were more successful than others; each, however, complicated their opponent’s decision calculus and made their efforts considerably more costly in blood and treasure.

Anti-access and area-denial strategies are also not exclusively combat operations. The Soviet Army's blockade around Berlin in June of 1948 was an area-denial strategy designed to achieve its aim without combat. The Berlin Airlift, however, revealed the advantages of being able to exploit freedom of maneuver in the air. That model was repeated during the 1973 Arab-Israeli war in Operation Nickel Grass, when airlifted American supplies sustained isolated Israeli forces facing a two-front attack by Soviet-supplied Arab militaries. Threats from North African states constrained airspace along the southern Mediterranean, so with only a narrow corridor of international airspace to navigate, the Air Force turned to the Navy's Sixth Fleet for help. Breaking from traditional practices, the ships of the Sixth Fleet dispersed along the flight path, stationing one ship every 300 miles along the air route to aid in navigation, with an aircraft carrier every 600 miles to provide air defense for the stream of Air Force transports that helped keep Israel in the war.

As in the past, America's adversaries today are embracing a strategy of access denial to counter American power projection. Unlike the past, however, state and non-state competitors are increasingly able to combine geographic, political and military impediments into a congruent strategy that extends across all domains to counter American power projection. This comprehensive approach is empowered by the growing national power of countries with expanding economies, increasingly sophisticated long-range precision weapons, space and cyberspace attack capabilities, and the increasing vulnerability and fragility of the global economy.

Some rising powers that appear to be seeking regional hegemony hope to employ access denial strategies to isolate other regional actors from American military intervention, enabling them to more effectively intimidate and coerce neighboring states. As already suggested, absent credible U.S. security assurances, the victims of coercion, including historic American allies, may become unable or unwilling to resist an adversary's growing influence; or they might engage in a destabilizing arms race that could include weapons of mass destruction. If this process continues, U.S. political influence will recede, aggression against our allies and partners will become more likely, and U.S. national power will degrade as our alliances weaken.

Of particular concern is the sustained effort by certain states to develop, stockpile and proliferate advanced long-range precision weapons. These advanced weapons can be networked and integrated with sophisticated over-the-horizon surveillance systems. Long-range anti-ship ballistic missiles such as the Chinese DF-21D, long-range cruise missiles like the Chinese DH-10, and improved mobile ballistic and air defense missiles, including the Russian S-300/400/500 and Chinese HQ-9 variants, allow potential adversaries to threaten air and naval freedom of movement hundreds of miles from their shores. In maritime chokepoints such as the Straits of Hormuz and Malacca, adversaries could attempt to deny access with shorter-range missiles, integrated air defenses, fast attack boats and mines.

More sophisticated adversaries can further expand the range of the denied area with growing fleets of diesel submarines, improved fighter and bomber aircraft, and surface combatants with advanced air defense and electronic warfare systems. With this

expanded anti-access envelope, adversaries can threaten U.S. aircraft, forward airfields and ports. Anticipated improvements in remote sensing and weapons guidance, maneuverable and terminally guided ballistic missile warheads, growing anti-satellite capabilities and cyber attack will amplify the military anti-access and area-denial challenge, further testing America's ability to sustain regional security.

States are not the only actors exploiting the proliferation of these weapon systems. Hezbollah's successful C-802 anti-ship cruise missile launch against an Israeli naval vessel in 2006 demonstrated that non-state actors can acquire advanced weapons and employ them against a capable military.

### *An American Response*

Air-Sea Battle is designed to sustain America's freedom of action in the face of these developments. Although Air-Sea Battle aims to create a more credible fighting force, our vision should not be mistaken for a one-dimensional combat plan against specific adversaries. Air-Sea Battle's purpose is to guide our services' efforts to organize, train and equip our forces by describing how to ensure freedom of action for the entire Joint Force. Operational plans building on the Air-Sea Battle concept will not be developed in the Pentagon but by the combatant commanders themselves. Our focus is on how to provide combatant commanders the capabilities needed to gain and maintain access as part of their plans.

We will organize, train and equip, however, with increasingly constrained resources. We cannot expect to defeat modern anti-access threats by building larger numbers of more advanced, more expensive, less-integrated ships and aircraft. The emerging geopolitical environment, the rapid expansion and proliferation of anti-access and area-denial weapons capabilities, and looming domestic budgetary constraints dictate that we must improve our power projection capabilities in smarter, more cost-effective ways.

We will of course continue to develop superior technology, but we must also focus on improving the ability of existing platforms to operate or deliver effects in denied areas. This will include new, more integrated weapons, sensors, cyber and electronic warfare, and unmanned systems. These systems and payloads can evolve more quickly than their manned host platforms, allowing more rapid exploitation of new technologies. This is an essential element of Air Sea Battle capabilities.

We will also rely on a uniquely American capability that cannot be hacked or reverse-engineered: our skilled sailors and airmen, our long histories of success, and our shared values. We will foster a more permanent, well-institutionalized partnership, with corresponding organizational structure, operational concepts, training, readiness and acquisition strategies that will capitalize on our commonalities and maximize our collective ingenuity.

The first steps to implement Air-Sea Battle are already underway here at the Pentagon. In our FY 2012 and FY 2013 budgets we increased investment in the systems and capabilities we need to defeat access threats. We also established a new Air-Sea Battle

Office to improve integration and inter-service communication. Institutionalizing these arrangements is a key to fostering persistent and sustainable progress in Air-Sea Battle implementation and to engender the “culture of change” highlighted in the new strategic guidance to the Department of Defense. Much as AirLand Battle and its “31 Initiatives” influenced a generation of airmen and soldiers, we want Air-Sea Battle to shape a new generation of airmen and sailors. Active collaboration between our services will reveal untapped synergies in key areas such as intelligence, surveillance and reconnaissance; electronic warfare; command and control; and building and sustaining fruitful international partnerships with U.S. allies, partners and friends.

Our future investment, doctrine development and innovation will be guided by employing tightly integrated, cross-domain operations to defeat anti-access and area-denial threats and restore our freedom of action. This central idea is embodied in the construct of “Networked, Integrated Attack-in-Depth.” This construct is used to pursue three lines of effort to disrupt, destroy and defeat adversary anti-access and area-denial capabilities:

- “Networked”: By establishing resilient communications networks and reinforcing the links between people and organizations, air and naval forces will maintain decision advantage and effective cross-domain operations despite an adversary’s anti-access and area-denial efforts.
- “Integrated”: Air and naval forces will tightly coordinate their operations across each domain to defeat anti-access and area-denial threats. This will require new models for command and control to allow, for example, cyber or undersea operations to defeat air defense systems or air attacks to eliminate submarine or mine threats. Air and naval force integration will also capitalize on multiple attack pathways to increase combat efficiency and hold targets at risk that would otherwise be immune from attack.
- “Attack-in-Depth”: In traditional attrition models of warfare, forces attack the outer layer of an enemy’s defenses and deliberately fight their way in. In contrast, under Air-Sea Battle, forces will attack adversary systems wherever needed to gain access to contested areas needed to achieve operational objectives.

Using “Networked, Integrated Attack-in-Depth”, American air and naval forces will conduct operations along three main lines of effort:

- *Disrupt*. This category includes offensive operations to deceive or deny adversary battle networks, particularly intelligence, surveillance and reconnaissance (ISR) and command and control (C2) systems. This reduces the effective density of adversary anti-access systems by forcing attacks against false targets, causing adversary hesitation in the face of poor information, and preventing the cueing of adversary ships, missiles, electronic warfare systems and aircraft.
- *Destroy*. Offensive operations to neutralize adversary weapon delivery platforms such as ships, submarines, aircraft and missile launchers fall into this category. This also prevents the adversary from extending the range of the denied area, and reduces the density of anti-access and area-denial attacks.



- *Defeat.* Defensive operations to protect joint forces and their enablers from weapons launched by an adversary are important to the Air-Sea Battle concept. Our efforts to disrupt the enemy's C2 and ISR will reduce the density of attacks to enhance the effectiveness of our defensive systems.

The Air-Sea Battle operational concept will guide our efforts to train and prepare air and naval forces for combat. We already train together and share joint doctrine. Under Air-Sea Battle, we will take “jointness” to a new level, working together to establish more integrated exercises against more realistic threats. Our people will practice coordinated operations combining stealthy submarines, stealthy aircraft and remotely piloted vehicles. We will learn to deliver full-motion video directly from Air Force remotely piloted aircraft to Navy ships transiting high-threat regions. We will coordinate between Air Force and Navy operations centers to create seamless and resilient command and control networks. We will learn how to integrate naval forces into airfield defense, and we will train our Air Force aircrews to defend ships at sea. To identify and exploit these synergies, commanders will promulgate promising ideas across the services, and we will incorporate them into our budgeting, acquisition, and development of doctrine and tactics. These efforts will sustain American military credibility, enhance the expeditionary credibility of ground forces and bolster international trust in critical areas where U.S. power projection capabilities underpin regional stability and security.

We will also use Air-Sea Battle to guide collaborative efforts to develop and modernize our air and naval forces. We have historically built magnificent platforms and capabilities tailored to service-specific requirements, with the Air Force focusing on prevailing in the air and space, and the Navy in the maritime domains. However, modern technology has blurred the historical distinction between the services' traditional realms. Having a strong Air Force no longer guarantees control of the air, and having a strong Navy no longer guarantees control of the seas. Our respective warfighting domains have become intertwined such that the ability to control and exploit one increasingly depends on control in the others. We have already begun this collaboration with our work on the Global Hawk and Broad Area Maritime Surveillance aircraft, the F-35 Lightning II, and a range of sensor, network and weapon systems.

Our services will strive to institutionalize the pursuit of commonality, interoperability and joint efficiencies through Air-Sea Battle. Rather than simply identifying gaps in service-specific capabilities, we will survey our combined forces, searching for strengths and shortfalls in our aggregate capability. There should be some appropriate redundancy between the services to capitalize on the benefits of competition and the imperative to confront the adversary with multiple challenges. But redundancies must result from conscious decisions to develop capacity in key areas rather than a failure to integrate.

We are all too aware that as the Air-Sea Battle concept gains traction within the defense establishment, it could fall victim to its own success. The concept could tempt military leaders to market every new program or initiative under the banner of Air-Sea Battle. Not every worthwhile innovation will be Air-Sea Battle related, nor should it be.

There will be a simple test to determine an initiative's applicability: If an initiative does not promise any improvement in the integrated and combined ability of air and naval forces to project power in the face of anti-access and area-denial threats, then it's not Air-Sea Battle.

Even without Air-Sea Battle, the Air Force and Navy would surely have tried to answer the anti-access and area-denial challenge. But they would have done so through separate acquisition programs, tactics and procedure development, and organizational changes. Discrete Navy and Air Force partnerships might have formed, but the result would have been an array of competing efforts with little cohesion, pursued energetically but inefficiently. These traditional approaches will not work anymore. Constrained defense budgets, aging hardware and accelerating anti-access and area-denial threats demand a more effective model of developing and fielding capabilities. We cannot simply buy our way out of this predicament by investing in new technologies. To meet the demands of the President's strategic direction to the Department of Defense and respond to the evolving security environment, we must break bureaucratic chains, set aside parochialism and get down to the business of collaboratively developing power projection capabilities for this new era.

While pursuing Air-Sea Battle seems like common sense, the way ahead will be challenging. Some within the Pentagon may view our initiatives as existential threats to core service identities and beliefs, heritages and traditions. We do not see it that way. Rather than threatening service identities, we see Air-Sea Battle as strengthening them. Nobody does sea control like the U.S. Navy, and the Air Force should collaborate with the Navy to enhance American sea power. Similarly, no one does air and space control like the U.S. Air Force, and the Navy should partner with its sister service to enhance those capabilities; all within a larger joint and combined power projection context.

In a changing world that demands continued U.S. leadership, Air-Sea Battle is an essential part of sustaining America's military freedom of action and ability to project power. We will institutionalize our development of doctrine, organization, training, personnel, leadership and facilities, and ensure that Air-Sea Battle survives contact with the skeptics and entrenched bureaucracy. Air-Sea Battle is not a silver-bullet solution to our security challenges, but it is a critical line of effort that we must pursue to sustain America's military advantage, and with it, our security and prosperity.

<sup>1</sup>Anti-access strategies deny an adversary *entry into* the region of conflict. Area-denial strategies deny an adversary movement and *operations within* the region of conflict. Often, the two are pursued simultaneously using similar weapons. For example, a submarine lurking outside an adversary's ports can contribute to an anti-access strategy by disrupting ships setting sail for the region of conflict. The same submarine hunting an aircraft carrier already operating within the region would constitute an element of an area-denial strategy.

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