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Determining the Military Capabilities Most Needed to Counter China and Russia

A Strategy-Driven Approach

The 2018 National Defense Strategy belatedly but unambiguously recognized that the military balance between the United States, its allies, and partners, on one hand, and China and Russia, on the other hand, has eroded. As a consequence, so has the credibility of U.S. security guarantees. Left unaddressed, these trends will almost certainly result in reduced U.S. influence and security and increased regional instability and conflict. Force planners in the United States and allied nations are, therefore, confronted with the urgent task of rebuilding credible deterrent and warfighting capabilities to confront highly capable and adaptive adversary states—a task that will require not only fielding new military hardware and software but also developing novel regional postures and warfighting concepts.

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The Need for Change

The resources and time available for meeting these force-development challenges are finite. Although the United States, along with its allies and partners, possesses greater overall economic wherewithal than either China or Russia, the mission assigned to U.S. forces—namely, to project power rapidly and at scale across great distances to defeat aggression in the adversary's "neighborhood"—is considerably more difficult than the adversary's forces' mission. It is therefore imperative that decisionmakers make wise choices about investing scarce resources into the capabilities that have the greatest potential to thwart adversaries' designs. This Perspective offers a blueprint for doing that. Specifically, it

- suggests priority scenarios and vignettes that can focus force development within the U.S. Department of Defense (DoD)
- describes the broad outlines of a still-nascent approach to joint power projection operations designed to confront large-scale aggression by the most-capable adversary states
- identifies initiatives available to DoD in the near to middle term that analysis suggests can, individually and collectively, bolster the ability of the United States and its allied and partner forces to deter and defend against such aggression.

Why Strategy-Driven?

History shows that important and enduring innovations in military capabilities and operations generally spring from sustained efforts to solve specific operational problems. One example is Harold Brown, William J. Perry, and other architects' second offset strategy. These decisionmakers sought ways to defeat a large-scale Warsaw Pact invasion of Central Europe without having to match the enemy tank for tank and artillery piece for artillery piece. They pursued concepts that exploited Western advantages in miniaturization, software, precision manufacturing, and other technologies to offset enemies' numerical superiority and give NATO forces the ability to delay, disrupt, damage, and destroy enemy maneuver forces beyond the line of contact (Perry, 1991). These efforts led Soviet military leaders to doubt the viability of their strategy and forces (Sterling, 1985).

Conversely, approaches to force modernization that seek, broadly, to transform capabilities without paying attention to operational needs are likely doomed to fail or, at the very least, waste time and money (Czelusta, 2008). Such approaches are especially pernicious when U.S. forces face serious and known gaps in their ability to defeat aggression by current and projected enemy forces—which is the case as of this writing.

Setting Priorities

In the context of today's planning environment, investment initiatives for new capabilities being proposed for inclusion in the defense program must earn (so to speak) their way onto DoD's budget submissions by meeting the following test: **They must make a meaningful contribution to enhancing the capability of U.S. forces to promptly defeat large-scale aggression by China or Russia.** Top priority should be placed on meeting the demands of joint and combined campaigns to (1) thwart a Chinese invasion of

Taiwan or a Russian invasion of NATO territory and (2) hold decisive points to prevent either adversary from imposing a territorial fait accompli. Initiatives that meet this test must then compete with other similar proposals on the basis of technical and operational feasibility, robustness in the face of potential enemy counters, and monetary costs.

Why These Adversaries?

U.S. forces undertake a wide variety of missions, many of which have little or nothing to do with deterring aggression by China and Russia. Is there a risk that over-focusing on these two adversaries will leave U.S. forces unprepared for other missions? The short answer to this question is yes, but the risks are modest. The greater risk, and the one that for the past ten years or more has, in fact, manifested itself, is that U.S. forces will fall short of having the capabilities that they need to counter the burgeoning power of China and the growing truculence of Russia. Because these are the only two world powers that possess both the desire and the potential ability to overturn important elements of the rules-based international order, they merit top priority in U.S. planning. Military threats from such regional powers as North Korea and Iran are, in the main, lesser-included cases; the threat from violent extremist groups is best addressed by sustaining U.S., allied, and partner capabilities for intelligence, precision strike, and special operations rather than for protracted, large-scale counterinsurgency operations.

Why These Scenarios?

Large-scale invasions are not the only threats with which U.S. and allied forces must contend. Both China and Russia use their growing military capabilities to try to intimidate neighboring states and, in different ways, establish spheres of dominance in their regions. Both undoubtedly hope to advance their objectives without crossing the threshold of overt military aggression. Does it not follow that the United States also has to compete effectively in this gray zone, being just short of war? Here, the answer is clearly yes, but there are important reasons for posturing forces for success in the most-stressing plausible scenarios. Put simply, if the United States doubts (and its adversaries doubt) that it lacks either the will or means to defeat them at the high end, the United States will be poorly positioned to thwart their activities in the gray zone. When push comes to shove, as it were, the United States is likely to demur. Conversely, if the United States and its adversaries know that it has the ability to prevail at the highest levels

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of conflict that the adversaries can impose, adversaries are likely to temper the threats that they pose short of that. And it is highly likely that any force postured to provide a prompt and effective defense against large-scale attacks will also be well suited to respond promptly and appropriately to a wide variety of lesser challenges.

Why Blunting and Holding?

Related to this is the need for a deterrent and defense posture that is based on rapidly blunting invading forces and holding decisive points—that is, preventing an adversary from seizing the primary objectives of the invasion, to wit, Taiwan or significant terrain within one or more NATO nations. The 2018 National Defense Strategy called for this denial approach, and for good reasons. First, reversing a fait accompli could come at the cost of loss of human lives and would be extremely dangerous if the adversary is armed with strategic nuclear weapons. A rapid fait accompli would leave the U.S. president and allies with a terrible choice of relying on coercive measures, such as economic sanctions, to reverse aggression or taking months to deploy sufficient forces to liberate lost territory with a counteroffensive campaign that would likely be fraught with escalatory risk.

Second, preventing the early loss of the territory being defended gives U.S. forces time to prosecute more-deliberate attacks against high-value forces to raise the costs to the enemy of continued hostilities and set the stage for negotiated cessation of hostilities. Chinese and Russian strategies are designed to exploit those countries' geographic advantages and strike before the United States can muster sufficient power to thwart such attacks. Should deterrence fail, defeating that initial thrust would do much to neutralize the adversaries' geographic advantage.

Third, deterrence based on denial is self-evidently the most credible way to convince an adversary not to challenge one's interests. Wargames have consistently revealed the deficiencies of strategies that threaten to impose costs on the adversary via other means, including through the threat of escalation, through military strikes on targets outside of the theater of the adversary's aggression, or through indirect means of cost imposition, such as economic sanctions or blockades. In the case of a Chinese invasion of Taiwan, advocates of such indirect approaches have yet to define anything that the United States and its

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allies can reliably and credibly hold at risk that a Chinese leadership might value more than success in forcibly incorporating Taiwan into the Peoples' Republic (Ochmanek, 2015).

Moreover, even if U.S. strategists could identify one or more core enemy strategic centers of gravity that U.S. forces could hold at risk (for example, the national-level leadership itself or essential levers of power), acting on such a strategy would inevitably carry grave risks of escalating the conflict, perhaps to the point of driving the enemy to threaten to use or to use nuclear weapons. Focusing efforts on defeating the invasion, on the other hand, appears to offer the best hope of keeping the conflict limited in scale and scope.

Finally, a strategy of deterrence predicated on cost imposition rather than on an ability to defeat the aggression that one seeks to deter offers little in the way of assurance to one's security partners that they would be protected if attacked.

In short, unless or until U.S. leaders are convinced that a strategy and accompanying posture of denial are beyond the nation's means, such that they would be compelled to revise U.S. national goals or adopt a more risky approach to deterrence, defense planners should continue to use denial of fait accompli in these two scenarios as the central test of the adequacy of U.S. general purpose forces.

The Emerging Approach to Forward Posture and Power Projection

Returning to the test posited earlier in this Perspective for initiating new investment programs, the next task is to identify the most-important gaps in U.S., allied, and partner capabilities. Before addressing this, however, it is important to understand a few fundamentals about operational concepts. The predicate for determining the capabilities needed by one's force is an understanding of what that force will need to do to accomplish the missions assigned to it. One part of that, of course, requires knowing what the enemy might do to thwart the mission, and another requires an understanding of how one's own force will operate in its pursuit. This sounds obvious, and when the concept governing future operations is well understood and widely shared, it is largely implicit. Today, however, the United States lacks a consensus regarding the approach to be used by its forces to defeat aggression by the nation's most capable adversaries. Wargames and accompanying analyses have shown repeatedly and conclusively that the legacy approach to power projection that U.S. forces employed with great success against regional adversaries in places like Iraq, Serbia, and Afghanistan very likely would fail against China or Russia. DoD has yet to devise a new approach, though its broad outlines are beginning to emerge.[1]

U.S. forces should focus on determining and then fielding military capabilities and postures capable of supporting the following overall approach to defeating large-scale aggression in highly contested environments:

- **Posture forces, enablers, and sustainment assets to allow for effective forward defense and strikes at scale with hours or days of preparation (as opposed to weeks or months).** U.S. operations occurring between Desert Storm in 1991 and Iraqi Freedom in 2003 were essentially expeditionary in nature: The bulk of the forces and assets employed in the fight had to be deployed from outside the

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theater. This approach was satisfactory when U.S. forces had the initiative—that is, they determined the timing and pace of the conflict—and when the adversary had, at best, limited means for disrupting the deployment and marshaling of U.S. and allied forces in the theater. Neither of those conditions would apply in a future war with China or Russia. DoD must therefore find ways to posture forward forces and logistics to defend, even with short warning, and make bases harder to target and suppress, while also maximizing the contribution of platforms that can be effectively employed from beyond the reach of most enemy strike systems.

- **If deterrence fails, reach into the contested battlespace from the outset of hostilities to find, track, and target the adversary's invasion force.** U.S. forces are accustomed to using the opening phase of a conflict to establish superiority in all relevant domains of operations, especially the air, maritime, space, and information domains. Having achieved this, they then exploit that dominance to pursue assigned operational objectives at modest risk. In the scenarios of greatest concern today, neither China nor Russia will allow for this enabling phase; therefore, this is a new and challenging requirement. China's and Russia's anti-access and area-denial capabilities are expressly designed to keep U.S. and allied forces at arm's length and to suppress U.S. and allied operations for a period of time that is sufficient to allow the imposition of a fait accompli. In a Taiwan scenario, the decisive phase of the war could conclude within a matter of only 10 days or so (Shlapak et al., 2009). Notwithstanding Russia's recent poor showing in Ukraine, in a Baltic scenario, the decisive phase could occur within an even shorter time frame.[2] It is therefore imperative that joint forces somehow effectively engage the invasion force without first establishing domain superiority.
- **Rapidly and survivably generate combat power from both within and beyond the reach of enemy strike systems.** Chinese and Russian forces have the means to disrupt, damage, and destroy U.S. and allied forces at poorly hardened and poorly

protected locations within 1,000 miles or more of the adversaries' borders by using large salvos of accurate ballistic and cruise missiles. The problem is particularly acute in scenarios involving conflict with China because of the paucity of air bases in the Western Pacific and China's large and growing inventory of missiles; and although they are mobile, aircraft carriers and surface combatants are not immune from such attacks. U.S. forces must therefore find ways to generate combat power without subjecting themselves to excessive risks of attack by such systems.

- **After thwarting an enemy's invasion, prepare to asymmetrically reduce remaining military forces.** If U.S., allied, and partner forces can bring a halt to the enemy's offensive before it achieves its primary territorial objectives, it seems likely that the United States and its allies will be able to deter a rational adversary from attempting the invasion in the first place. But if deterrence fails, preventing the fait accompli can, as noted earlier in this Perspective, provide the precondition for a negotiated settlement on terms that are favorable to the defenders. The key in this phase is to demonstrate to the aggressor that continued prosecution of the war will leave the aggressor in a worse position, vis-à-vis the defenders, and that the aggressor's relative power will continue to diminish the longer hostilities continue. Key targets might include the adversary's integrated air defenses, power-projection assets, and military facilities both outside and within enemy territory.

Building the Requisite Force

Neither today's force nor the force that will exist in 2027, at the end of the current Future Years Defense Plan, have all of the capabilities called for by the emerging joint operating concept that this Perspective outlines. Said another way, in the future, U.S. forces will need significant new investments in platforms, weapons and munitions, forward posture, concept development, and training to enable what appears to be an appropriate approach to deterring and defeating aggression by the nation's most capable adversaries. The following bullet points address what appear to be the most significant operational needs and potentially promising candidates for addressing near- to mid-term needs.

- **Throughout the duration of the blunt phase, establish and sustain a sensing and targeting grid over the battlespace.** The grid must be able to find, identify, and track ships, aircraft, and vehicles associated with enemy invasion in the face of intensive air defenses, counter-space weapons, cyberattacks, and sensor and communications jamming. The grid should be connected to air, land, and maritime operations centers via robust data links. The grid should also be capable of autonomously nominating and guiding weapons to targets in cases where those links are temporarily severed.

  Candidate systems include small, low-cost autonomous unmanned aerial sensor platforms and mission software; proliferated constellations of imaging satellites; sonobuoys (Taiwan scenario); unattended ground sensors (U.S. European Command [USEUCOM] scenarios); and jam-

resistant data links to connect networks of sensors. There is also a need for continued advances in automatic target-recognition algorithms and associated artificial intelligence protocols to allow the grid to autonomously identify targets. Commercially available lightweight electro-optical and radar sensors are adequate for this purpose (see Hamilton and Ochmanek, 2020).

- **Promptly and survivably generate, sustain, and deliver into the contested battlespace lethal force that is sufficient to cripple an adversary's offensive.** In scenarios involving either China or Russia, achieving this objective will involve reducing the vulnerability of launch platforms in forward areas, as well as increasing the effectiveness and sustainability of strikes launched from beyond the reach of enemy strike systems. If the sensing and targeting grid can accurately identify and locate the platforms and units that are most important to the success of the enemy's invasion, generating sufficient lethality to damage and destroy those targets is feasible.

The principal targets of the defender's strikes in the blunt phase will, of course, be the platforms constituting the core of the enemy's invasion forces—amphibious ships, transport helicopters, and fixed-wing transport aircraft in a Taiwan scenario, and armored vehicles, artillery, and support vehicles in a Russia scenario. Effectively attacking these assets might also involve attacks on key elements that support the invasion, including enemy air defenses, artillery units, and operational-level command and control centers.

Candidate launch systems include long-range manned aircraft (bombers and appropriately outfitted cargo aircraft), autonomous runway-independent unmanned aerial vehicles, large-diameter unmanned underwater vehicles, and land-mobile surface-to-surface missile launchers. For platforms that operate from bases within range of enemy strike systems, as fighter aircraft do, vulnerability can decrease through resiliency measures, such as dispersing forces among numerous bases and providing those bases with fuel bladders, munitions storage bunkers, expeditionary aircraft shelters, and active defenses against cruise missiles. Such measures can also help sustain sortie generation.

Another obvious but constantly overlooked need is precision-guided weapons—especially standoff weapons—in numbers sufficient to sustain a defensive fight. Candidate weapons include the Long Range Anti-Ship Missile, the Maritime Strike Tactical Tomahawk, Standard Missile 6, and Naval Strike Missile for neutralizing transport ships, as well as Small Diameter Bomb II and Joint Standoff Weapon-X with area munitions for killing armor and trucks. In both scenarios, defending forces will also need to employ fast-flying missiles to suppress and destroy enemy surface-to-air missile units before they can "shoot and scoot." Air-delivered Advanced Anti-Radiation Guided Missile—Extended Range and new hypersonic weapons, such as the Hypersonic Attack Cruise Missile, are candidates for this (see Ochmanek et al., 2017). In USEUCOM scenarios, the Army Tactical Missile System, Precision Strike Missile, and Guided

Multiple Launch Rocket System with area antiarmor munitions can also be highly effective (Ochmanek et al., 2017, pp. 31–47). Because a Chinese invasion of Taiwan could feature a large airborne or air assault component, joint forces would need many air-to-air missiles and "loyal wingman" unmanned aerial vehicles to enhance the capacity and staying power of fighter sweeps.

- **Posture contact- and blunt-layer forces and support assets in both theaters for rapid engagement.** Prepositioning key assets forward in the Western Pacific and in Central and Eastern Europe will be needed to achieve this posture. U.S. forces should also prepare to launch and recover heavy bombers from bases in Alaska, Hawaii, and, potentially, Australia, as well as bases on the United States' East Coast, the Azores, and Iceland, by storing stocks of weapons, spares, and other assets at these locations.

  Candidates for forward-basing and prepositioning include sensor platforms, autonomous runway-independent unmanned aerial vehicles and their support equipment, large-diameter unmanned underwater vehicles, Multiple Launch Rocket Systems, High Mobility Artillery Rocket System units or other missile launch systems, base resiliency materiel, armored maneuver forces in Central and Eastern Europe, and other appropriate weapons and munitions. Stocks of fuel and other critical sustainment assets, as well as means for delivering those to distributed forces, are also essential.
- **Work with U.S. allies and partners to maximize the combined ability to contribute to the combined fight.** Taiwan, in particular, can significantly enhance prospects for its own defense by focusing on investments in affordable anti-access systems, including shallow-water and self-propelled mines, short-range anti-ship guided missiles, small unmanned aerial vehicles for targeting, Multiple Launch Rocket Systems, and mobile short-range air defenses (Shlapak et al., 2009, pp. 91–121). In tandem with these developments, U.S. policymakers should consider increasing combined training, security cooperation, and operational planning activities between U.S. and Taiwan forces.

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In the USEUCOM area of responsibility, allies in Central and Eastern Europe should be encouraged to increase their stocks of antiarmor and surface-to-air suppression weapons and to build out the multinational battalions in the Baltic states to brigade-sized formations. Moreover, frontline states should purchase and store many unattended

ground sensors for distribution along suspected main axes of advance. Jam-resistant data links can also be valuable in both theaters to help ensure sensor integration and enhance interoperability.

Table 1 summarizes these initiatives, sorting them by function and scenario. Its focus is on near- to mid-term steps that DoD can take to create the capabilities needed to enable a new, viable approach for defeating aggression by the most-capable adversary nations. Very few of the candidate systems highlighted in the table are major, new types of platforms, and most involve the application of existing or mature technologies. Yet, analysis shows that, in combination, the types of capabilities listed here can enable properly postured joint and combined forces to withstand heavy enemy attacks, deny an enemy control of the battlespace, and inflict rapid and heavy attrition on an invading force. DoD should place top priority on identifying the most-cost-effective ways of acquiring and fielding these capabilities via force-development activities.

Notes

[1] This outline of the emerging U.S. approach draws on insights derived from participation in and reviews of wargames conducted or sponsored by the Joint Staff (under the auspices of the Joint Warfighting Concept effort), Air Force (especially the Air Force Futures games), Army, Marine Corps, and Navy (especially the Halsey Alpha series).

[2] Wargames conducted between 2014 and 2021 consistently concluded that a sizable Russian armored invasion force likely could reach the capitals of Estonia and Latvia within 60 hours or less, given the posture of NATO's forces. As of this writing, Russian forces appear to be suffering heavy losses in Ukraine and might not be capable of conducting another major operation of this kind for years to come. However, it would be premature to conclude that the threat of overt Russian military aggression against NATO will disappear or that NATO's current posture is adequate to deter such aggression (Shlapak and Johnson, 2016).

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TABLE 1

Summary of Priority Enhancements for U.S. and Allied Joint and Combined Forces

Scenario	Posture	Sense and Target	Strike
Versus China	• Create designs for prepositioning large numbers of autonomous UAVs, PGMs, and support assets in Guam, the Marianas, and Japan. • Procure and deploy fuel bladders and expeditionary aircraft shelters to air bases in the Western Pacific. • Assist Taiwan in acquiring sea mines, small UAVs for targeting short-range anti-ship and antiarmor missiles, MLRS, and SHORADS.	—	• Accelerate production of anti-ship PGMs that are capable of disabling large amphibious transports—e.g., a mix of LRASM, MS-TACTOM, SM-6, and NSM. • Accelerate development of LDUUVs for weapons delivery.
Versus China and Russia	• Continue to expand the number of potential operating locations and support capacity to enable distributed operations by forward-based aircraft. • Provide logistics infrastructure and assets to sustain joint operations by forward forces. • Continue to invest in capabilities to speed runway recovery. • Field mobile SHORADS systems (e.g., IFPC-2 or NASAMS) at key bases in the Western Pacific and in Central Europe.	• Accelerate development of small, autonomous, runway-independent UAVs for sensing. • Experiment at scale with autonomous integration and interpretation of sensor data. • Develop and test systems and TTPs to ensure rapid connectivity between the sensing grid and joint and combined fires platforms and weapons. • Pursue options that exploit civil-sector sensing and communications satellite constellations.	• Accelerate development of autonomous, runway-independent UAVs for weapons delivery (air-to-surface and air-to-air). • Accelerate production of PGMs for air superiority (e.g., AARGM-ER, HACM, AIM-260). • Field palletized munitions packages for U.S. and allied cargo aircraft.
Versus Russia	• Station V Corps headquarters and support elements in Poland. • Station a U.S.-armored division in Poland. • Build out the European-led Enhanced Forward Presence Battalions into full brigades in the Baltic states. • Coordinate with Sweden to prepare logistics supplies and support to allow NATO combat aircraft to operate from Swedish bases during wartime.	• With allies, field thousands of unattended ground sensors; preposition these in eastern-flank nations. • Fix sensor-to-shooter data links so that airborne sensors can send targeting data to U.S. Army rocket artillery units.	• Accelerate production of antiarmor weapons (e.g., SDB II, area munitions for GMLRS and PrSM; JSOW-X with SFW).

NOTES: AARGM-ER = Advanced Anti-Radiation Guided Missile—Extended Range; AIM-260 = Air Intercept Missile-260; GMLRS = Guided Multiple Launch Rocket System; HACM = Hypersonic Attack Cruise Missile; IFPC-2 = Indirect Fire Protection Capability Increment 2; JSOW-X = Joint Standoff Weapon-X; LDUUV = large-diameter unmanned underwater vehicle; LRASM = Long Range Anti-Ship Missile; MLRS = Multiple Launch Rocket System; MS-TACTOM = Maritime Strike Tactical Tomahawk; NASAMS = National [or, in some cases, Norwegian] Advanced Surface to Air Missile System; NSM = Naval Strike Missile; PGM = precision-guided munition; PrSM = Precision Strike Missile; SDB II = Small Diameter Bomb II; SFW = Sensor Fuzed Weapon; SHORAD = short range air defense; SM-6 = Standard Missile 6; TTPs = tactics, techniques, and procedures; UAV = unmanned aerial vehicle.

About This Perspective

The U.S. National Defense Strategy of 2018 called upon the U.S. Department of Defense (DoD) to take urgent steps to redress the deteriorating military balance vis-a-vis both China and Russia. This Perspective summarizes a wide variety of recent RAND research aimed at doing just that. Specifically, it suggests priority scenarios and vignettes that should be used to focus force development within DoD, describes the broad outlines of a still-nascent approach to joint power projection operations designed to confront large-scale aggression by the most capable adversary states, and identifies initiatives available to DoD in the near to middle term that analysis suggests can, individually and collectively, bolster U.S., allied, and partner defenses against such aggression.

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