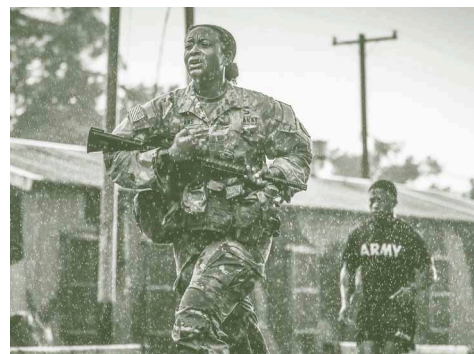


20
21

RAND ARROYO CENTER
ANNUAL REPORT



LETTER FROM THE DIRECTOR

In 2021, many of the challenges of the previous year continued. The COVID-19 pandemic continued to limit many day-to-day interactions both at the RAND Corporation and in the U.S. Army. At home, the United States continued to manage unrest, whereas abroad, near-peer competitors have remained persistent strategic challenges. But as we look back on the year, we also reflect on positive changes that 2021 brought. Despite continued physical distancing and remote operations, RAND Arroyo Center maintained its tradition of delivering high-quality, objective analyses to the Army to support its mission. The success of our efforts has been reflected in the Army's renewal of its contract with RAND Arroyo Center, maintaining its relationship as the Army's sole federally funded research and development center for studies and analysis.

In this RAND Arroyo Center Annual Report, we provide highlights of work published in 2021. During the year, the Secretary and the Chief of Staff of the Army continued to make a focus on "People First" their top priority. This focus is reflected in some of the ques-

tions they have asked of RAND Arroyo Center, with topics ranging from acquiring and retaining talent (e.g., the causes of first-term attrition and incentives for performance) to health and well-being (e.g., sexual assault and gender discrimination). Competition with Russia and China has driven analyses intended to provide better pictures of these countries' strategies and capabilities and to highlight the importance of focusing on gray zone aggression and deterrence. Other topics we highlight in this report include understanding the Iran threat network, advancing Army analytic capabilities, and measuring multinational interoperability.

We also include a full list of publications from the past year on pages 24–25.

I encourage you to share this Annual Report with anyone who would be interested in its contents and messages. Please contact me at any time if you wish to receive more information regarding any aspect of RAND Arroyo Center or its research activities.

With best wishes,



Sally Sleeper
DIRECTOR, RAND ARROYO CENTER



A UNIQUE ARMY RESOURCE

RAND Arroyo Center is the U.S. Army's sole federally funded research and development center (FFRDC) for studies and analysis. FFRDCs are government-owned, contractor-operated research institutions approved by Congress to provide ongoing analytic support to a federal agency. As an FFRDC, Arroyo enables the Army to maintain a strategic relationship with an independent, nonprofit source of high-quality, objective research and analysis that can sustain deep expertise in domains of direct relevance to perennial Army concerns.

MISSION

Arroyo's mission is to conduct high-quality, objective research and analysis on major policy concerns, with an emphasis on mid- to long-term policy issues; provide short-term assistance on urgent problems; help the Army improve its effectiveness and efficiency; and be a catalyst for needed change.



RESEARCH PROGRAMS



Arroyo's research plan is managed and executed in three programs: Forces and Logistics; Personnel, Training, and Health; and Strategy, Doctrine, and Resources.

The **Forces and Logistics Program** analyzes how advances in technology, management practices, and organizational theory can be applied to Army organizations to improve operational effectiveness in current and future conflicts against adaptive adversaries, enhance logistical support to Army units, continually improve efficiency, and ensure technical and

logistical readiness. The program sustains research streams in eight policy domains: understanding past, current, and possible future Army operations; understanding and improving cyber and network capabilities; improving Army acquisition and modernization; assessing and applying technology to Army combat and support operations; improving Army supply chain operations; maintaining and managing Army equipment; improving Army capabilities to deploy and sustain in operational theaters; and ensuring technical and logistics readiness.



The **Personnel, Training, and Health Program** focuses on policies that help the Army attract and retain the right people, train and manage them to maximize their talents, and promote their health, safety, financial security, and quality of life. The scope of the program's analyses encompasses not only soldiers and officers and their families but also Army civilians, contractors, veterans, and retirees. The program sustains research streams in five policy domains: total workforce management, recruiting and retention, leader development, training readiness and effectiveness, and soldier and family wellness and support.



The **Strategy, Doctrine, and Resources Program** conducts research to help the Army understand the evolving strategic context, identify and adjust to external demands, and optimize the use of its resources. The program sustains research streams in seven major policy domains: competition with near-peer adversaries, operational concepts, modernization and readiness, posture and force employment, allies and partners, risk assessment and resource use, and strategic and emerging threats.

OVERSIGHT



FFRDCs operate within the framework of the Federal Acquisition Regulation (48 Code of Federal Regulations [CFR] 35.017).

In addition, the Army stipulates oversight and management of Arroyo in Army Regulation 5-21. The regulation establishes a governing board of Army leaders known as the Arroyo Center Policy Committee (ACPC). The ACPC comprises the senior Army civilian and uniformed leadership charged with oversight of RAND Arroyo Center. The Director for Center for Army Analysis serves as the lead agent for Arroyo and oversees its daily operations.

The ACPC meets at least twice a year with Arroyo management to provide overall guidance, review the annual research plan, and approve individual projects. Additionally, each project is sponsored by at least one Army senior leader, either a general officer or a member of the Senior Executive Service. The sponsor has responsibility for helping formulate the project, providing access to needed data and other information, monitoring progress, reviewing publications for accuracy, utilizing project findings, and implementing recommendations.

ARROYO CENTER POLICY COMMITTEE

THE HONORABLE GABE CAMARILLO
(CO-CHAIR)

Under Secretary of the Army

GENERAL JOSEPH M. MARTIN (CO-CHAIR)
Vice Chief of Staff, U.S. Army**MS. KAREN SAUNDERS**

Senior Official Performing the Duties of the Assistant Secretary of the Army (Acquisition, Logistics and Technology)

MS. YVETTE K. BOURCICOT

Acting Assistant Secretary of the Army (Manpower and Reserve Affairs)

THE HONORABLE CARAL E. SPANGLER

Assistant Secretary of the Army for Financial Management and Comptroller

THE HONORABLE MICHAEL L. CONNOR

Assistant Secretary of the Army (Civil Works)

MR. PAUL W. FARNAN

Acting Assistant Secretary of the Army (Installations, Energy, and Environment)

LIEUTENANT GENERAL GARY M. BRITO

Deputy Chief of Staff, G-1, U.S. Army

LIEUTENANT GENERAL LAURA A. POTTER

Deputy Chief of Staff, G-2, U.S. Army

LIEUTENANT GENERAL JAMES E. RAINEY

Deputy Chief of Staff, G-3/5/7, U.S. Army

MR. JOHN E. HALL

Acting Deputy Chief of Staff, G-4, U.S. Army

DR. RAJ G. IYER

Chief Information Officer, G-6, U.S. Army

LIEUTENANT GENERAL JOHN B. MORRISON, JR.

Deputy Chief of Staff, G-6, U.S. Army

LIEUTENANT GENERAL ERIK C. PETERSON

Deputy Chief of Staff, G-8, U.S. Army

LIEUTENANT GENERAL JASON T. EVANS
Deputy Chief of Staff, G-9, U.S. Army**GENERAL EDWARD M. DALY**

Commanding General, U.S. Army Materiel Command

LIEUTENANT GENERAL JAMES M. RICHARDSON

Acting Commanding General, U.S. Army Futures Command

GENERAL MICHAEL X. GARRETT

Commanding General, U.S. Army Forces Command

GENERAL PAUL E. FUNK II

Commanding General, U.S. Army Training and Doctrine Command

LIEUTENANT GENERAL R. SCOTT DINGLE

Commanding General, U.S. Army Medical Command/The Surgeon General

LIEUTENANT GENERAL STEPHEN G. FOGARTY

Commanding General, U.S. Army Cyber Command

LIEUTENANT GENERAL DANIEL L. KARBLER

Commanding General, U.S. Army Space & Missile Defense Command

LIEUTENANT GENERAL SCOTT A. SPELLMON

55th Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers

LIEUTENANT GENERAL JONATHAN P. BRAGA

Commanding General, U.S. Army Special Operations Command

LIEUTENANT GENERAL JODY J. DANIELS

Chief, Army Reserve and Commanding General, U.S. Army Reserve Command

MAJOR GENERAL DUANE R. MILLER

Provost Marshal General/Commanding General, U.S. Army Criminal Investigation Command

LIEUTENANT GENERAL JON A. JENSEN

Director, Army National Guard

LEAD AGENT FOR
RAND ARROYO CENTER

DR. STEVEN A. STODDARD

Director, Center for Army Analysis

Updated February 2022

PROJECT HIGHLIGHTS

THE IRAN THREAT NETWORK

BACKGROUND

The Iran Threat Network (ITN) is a loose network of non-Iranian, nonstate fighters supported by Tehran that spreads across the Middle East and South Asia and has influence extending to Africa and Latin America. The network consists of diverse and disparate groups, which is reflected in the nature and amount of support provided and the level of command and control exerted by Tehran over each group.

The ITN allows Iran to have a presence and project power throughout the Middle East, and to deter and harass its adversaries via proxies, without escalating the confrontation to a conventional war. Further expansion of the ITN would increase Iran's ability to use the network to undermine stability in the region, antagonize U.S. allies and partners, undercut U.S. influence, and pose a risk to U.S. military personnel.

Given these risks, RAND researchers sought to better understand how the ITN factors into Iran's political and military strategy and what objectives Iran pursues using the ITN. Researchers also examined how the regime thinks about and categorizes different ITN members.

**HELPING THE ARMY UNDERSTAND
HOW IRAN OPERATES IN THE
GRAY ZONE**

KEY FINDINGS

The ITN, which is a formidable force of tens of thousands of fighters, is Tehran's most potent deterrent against the United States. The ITN is currently—and likely to remain well into the future—Tehran's primary means of power projection and preferred instrument of influence in the Middle East.

ITN members—not Tehran—are most likely to launch attacks against U.S. and other targets.

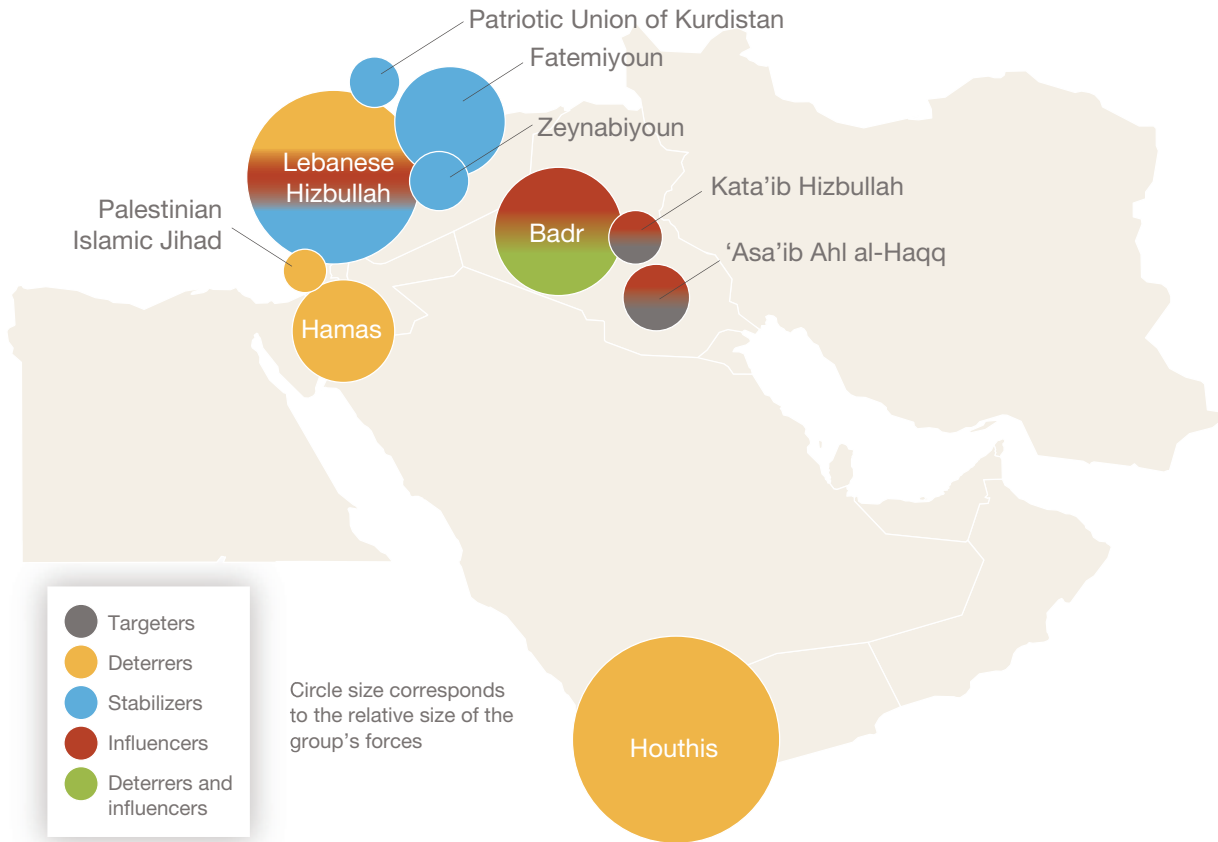
The ITN also poses a broader dilemma for the United States, because rising U.S.-Iran tensions have required the United States to increase its posture in the Middle East and decrease its resources for other U.S. defense priorities.

It is important that the U.S. government adopt a multidimensional approach to counter Iran's use of the ITN to undermine U.S. interests or potentially harm U.S. military and civilian personnel.

EXPECTED IMPACT

By providing a clear definition and understanding of the ITN and its scope, this analysis can help military planners in the United States develop a coherent strategy to counter the threat of the ITN.

Iran Threat Network Map



The ITN's revealed strategy is expressed through four models of client-patron relations: the targeters (who counter U.S. forward presence), the deterrers (who deter and harass regional rivals), the stabilizers (who stabilize allies and partners), and the influencers (who amplify the regime's influence in politics).

The Iran Threat Network (ITN): Four Models of Iran's Nonstate Client Partnerships, by Ariane M. Tabatabai, Jeffrey Martini, Becca Wasser, Santa Monica, Calif.: RAND Corporation, RR-4231-A, 2021. Available at www.rand.org/t/RR4231.

PROJECT HIGHLIGHTS

IMPROVING ARMY WAIVER POLICIES

BACKGROUND

The Army uses waiver authority to reconsider initially disqualified applicants and make them eligible to enlist. The service wants to use this authority judiciously and ensure that its waiver policies do not result in poorer future soldier outcomes and lower readiness. The Army also wants to avoid the perception that such changes reflect lower enlistment standards and, ultimately, substandard military performance.

Two social trends of interest to those responsible for Army waiver policy are the dramatic expansion of the legalization of marijuana at the state level and the rising prevalence of attention deficit hyperactivity disorder (ADHD), anxiety disorders, and depression among children. Army standards continue to stipulate that applicants who test positive for marijuana require a waiver to be eligible for enlistment, and applicants with a history of ADHD, depression, or anxiety will not meet enlistment standards and might not even qualify for a waiver, depending on their specific case.

Given these issues, RAND researchers conducted empirical analyses using waiver workflow data from the U.S. Army Human Resources Command to determine the performance of recent recruits who received waivers, including, but not limited to, recruits with a documented history of marijuana or certain behavioral health conditions, specifically ADHD, depression, or anxiety.

HELPING THE ARMY IMPLEMENT EFFECTIVE WAIVER POLICIES

KEY FINDINGS

Overall, waived recruits do not always perform worse—and sometimes perform better—than similar nonwaived recruits. Contrary to expectations, waived recruits and recruits with a documented history of marijuana or behavioral health conditions are not uniformly riskier across all dimensions. In the case of recidivism, the results most closely conform to expectations; accessions with a specific characteristic are more likely to have negative outcomes associated with that characteristic. The Army likely could do more to offset cases of adverse outcomes among waived recruits and recruits with a documented history of marijuana or behavioral health conditions.

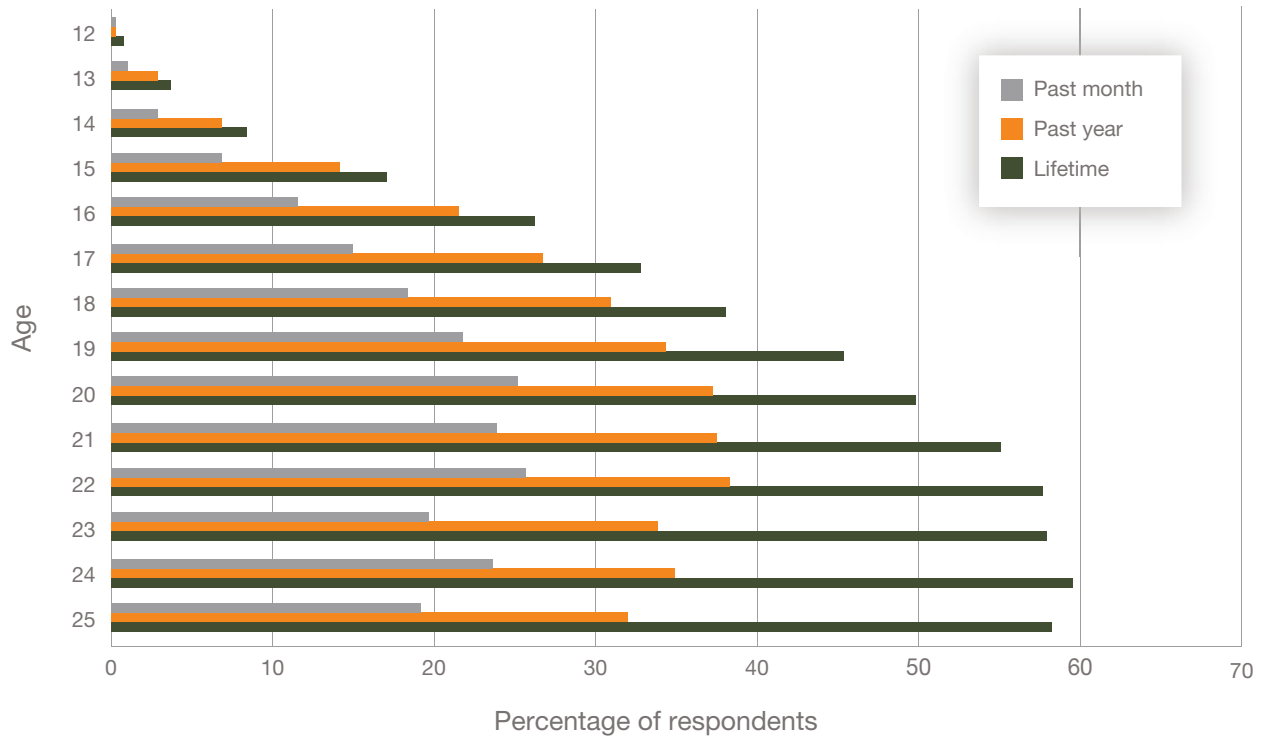
In addition, the researchers found that the performance of an accession cohort would change relatively little with an increase in the share of accessions with a documented history of marijuana or behavioral health conditions.

The researchers found no strong evidence that changes in marijuana legislation have substantially changed recruit outcomes.

EXPECTED IMPACT

Recommendations produced by this project are expected to help the Army use waivers effectively to promote recruitment while staying focused on performance.

Marijuana Use in Lifetime, Past Year, and Past Month, by Age



NOTE: Data from the 2017 National Survey on Drug Use and Health (Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration).

Use of marijuana remains relatively common among adolescents and young adults, an important population for the Army because it represents the largest share of recruits.

An Empirical Assessment of the U.S. Army's Enlistment Waiver Policies: An Examination in Light of Emerging Societal Trends in Behavioral Health and the Legalization of Marijuana, by Beth J. Asch, Michael L. Hansen, Rosanna Smart, David Knapp, Daniel Schwam, Santa Monica, Calif.: RAND Corporation, RR-4431-A, 2021. Available at www.rand.org/t/RR4431.

PROJECT HIGHLIGHTS

ADVANCING ARMY ANALYTIC CAPABILITIES

BACKGROUND

In fiscal year 2016, Army Contracting Command (ACC) awarded almost 170,000 contracts, valued at \$56.4 billion. However, ACC data scientists, limited by their information technology infrastructure, are unable to conduct analytics effectively on the basic set of structured contract data in the Virtual Contracting Enterprise (VCE) because of two analytical and management challenges. The first challenge is that contract data are often locked away in siloed and proprietary databases. The second challenge is that Army team members, such as data scientists, lack access to modern analytical tools. One potential solution to both problems is cloud migration: moving Army data to remotely accessed data environments offering scalable computer processing, data storage, and analytic services.

To assess the feasibility of this approach and gain insight, RAND researchers developed a case study within ACC to see whether there was a simple and effective way to overcome these challenges. The researchers conducted a proof of concept for data sharing and analytics with ACC, built a robust querying and analytic platform for exploring those data, piloted a method for accessing heretofore inaccessible unstructured text data from contracts, and conducted a pilot machine-learning analysis that highlighted how a cloud-based contract analysis system could lead to cost savings.

HELPING THE ARMY SAVE MONEY AND BECOME MORE EFFICIENT

KEY FINDINGS

The Army can achieve immediate cost savings and efficiencies through advanced data analytics and the use of currently available commercial off-the-shelf technology.

The Army does not need to wait for a complete system to reap efficiencies and cost savings; rather, it can build from the proof of concept developed for this project.

The Army can leverage commercial cloud infrastructure and software to immediately begin robust data sharing, querying, and analytics. Moving to the cloud would provide infrastructure efficiently without large initial capital expenditures. Maintenance, upgrades, and hardware availability would be baked in.

However, the researchers also note that, as a matter of policy, ACC data scientists lack access to common data science tools and lack permissions or remote access to computing infrastructure that allows for robust data-processing pipelines and analytic interfaces.

EXPECTED IMPACT

This project is expected to help the Army develop the capability to analyze all data available in the VCE to find opportunities for cost savings.



ACC contingency contracting administration services training at Fort Bragg, North Carolina.

Army Analytic Capabilities: A Case Study Within Army Contracting Command and Its Implications, by William Marcellino, Justin Grana, Jair Aguirre, Amber Jaycocks, Christian Johnson, Joshua Kerrigan, Santa Monica, Calif.: RAND Corporation, RR-A106-1, 2021. Available at www.rand.org/t/RR-A106-1.

PROJECT HIGHLIGHTS

WHAT DETERS AND WHY

BACKGROUND

The challenge of deterring territorial aggression has once again become a major focus of U.S. defense policy. In three key scenarios in particular—China’s threats against Taiwan, Russia’s threats against the Baltic states, and North Korea’s aggression against South Korea—the United States is attempting to deter aggression by rivals. Over several years, RAND has been examining the established concepts of deterrence, developing a framework for evaluating the strength of deterrent relationships, and offering recommendations for shoring up deterrence in the three key scenarios.

As one part of this project, researchers applied the framework they had developed to U.S. efforts to deter North Korean aggression against South Korea and U.S. efforts to deter Chinese aggression against Taiwan.

Another component of the project focused on gray zone activities—acts of aggression that remain below the threshold of outright warfare. Researchers identified eight common characteristics of such aggression and developed a framework for assessing the health of U.S. and partner deterrence in the gray zone.

KEY FINDINGS

The state of deterrence in Korea is strong. The United States and South Korea have a robust military pres-

HELPING THE ARMY DETER INTERSTATE AND GRAY ZONE AGGRESSION

ence on the Korean Peninsula that, at a minimum, would make any effort by North Korea to reunify the nations by force extremely costly. By contrast, the state of deterrence in Taiwan is mixed. Many variables governing capability, commitment, and national will seem to have degraded over the past two decades, leaving only China’s motivations as the major barrier to a seriously imperiled deterrence posture.

Overall, deterring gray zone aggression is more difficult than deterring interstate aggression. With respect to the specific contexts RAND researchers examined,

- regarding Chinese aggression against the Senkaku Islands, the U.S. and Japanese deterrence posture is healthy.
- regarding Russia’s gray zone aggression against the Baltic states, the U.S. and North Atlantic Treaty Organization deterrence posture is mixed.
- regarding North Korean gray zone aggression against the south, the U.S. and South Korean deterrence posture is also mixed.

EXPECTED IMPACT

This project is expected to help the Army better understand the United States’ conventional and nonconventional deterrence relationships with Russia, North Korea, and China.

RAND Framework for Assessing Deterrence

CATEGORY	VARIABLE
How intensely motivated is the aggressor?	1. General level of dissatisfaction with status quo and determination to create a new strategic situation
	2. Degree of fear that the strategic situation is about to turn against the aggressor in decisive ways
	3. Level of national interest involved in specific territory of concern
	4. Urgent sense of desperation, need to act
Is the defender clear and explicit regarding what it seeks to prevent and what actions it will take in response?	1. Precision and consistency in the type of aggression the defender seeks to prevent
	2. Clarity and consistency in the actions that will be taken in the event of aggression
	3. Forceful communication of these messages to outside audiences, especially potential aggressor(s)
	4. Timely response to warning with clarification of interests, threats
Does the potential aggressor view the defender's threats as credible and intimidating?	1. Actual and perceived strength of the local military capability to deny the presumed objectives of the aggression
	2. Degree of automaticity of defender response, including escalation to larger conflict
	3. Degree of actual and perceived credibility of political commitment to fulfill deterrent threats
	4. Degree of national interests engaged in state to be protected

RAND's framework for assessing deterrence—developed in *What Deters and Why: Exploring Requirements for Effective Deterrence of Interstate Aggression* (RR-2451-A)—is based on quantitatively analyzing 39 cases of U.S.-led extended deterrence since 1945. For each of the three key scenarios, researchers applied the framework's 12 variables and, for each variable, assessed the level of deterrence as strong, mixed, or weak. The team also combined the variable assessments to determine an overall assessment for each scenario.

What Deters and Why: Applying a Framework to Assess Deterrence of Gray Zone Aggression, by Michael J. Mazarr, Joe Cheravitch, Jeffrey W. Hornung, Stephanie Pezard, Santa Monica, Calif.: RAND Corporation, RR-3142-A, 2021. Available at www.rand.org/t/RR3142.

What Deters and Why: The State of Deterrence in Korea and the Taiwan Strait, by Michael J. Mazarr, Nathan Beauchamp-Mustafaga, Timothy R. Heath, Derek Eaton, Santa Monica, Calif.: RAND Corporation, RR-3144-A, 2021. Available at www.rand.org/t/RR3144.

PROJECT HIGHLIGHTS

DEFENSE ACQUISITION IN RUSSIA AND CHINA

BACKGROUND

Since the 1970s and 1980s, U.S. defense acquisition has focused on sophisticated technologies, such as precision-guided weapons and stealth. Meanwhile, Russia and China have sought to both modernize their legacy equipment and develop new and increasingly sophisticated systems of their own. Evidence in recent years suggests that these efforts to catch up have been at least moderately successful, and, by some measures, the capabilities of certain Chinese and Russian systems are starting to surpass those of the United States.

In light of these concerns, RAND researchers sought to understand how China and Russia acquire weapons, both doctrinally and in practice, and how these processes compare with the U.S. process. They examined areas where these countries excel and where they may be at a disadvantage and consider development timelines, funding mechanisms, capital constraints, and other systemic factors.

KEY FINDINGS

Neither Russia nor China has better acquisition processes than the United States. Russia maintains a large arms export market but struggles to produce its most sophisticated systems in strategically significant quantities. Its most recent State Armaments Program (SAP) was successful insofar as it was adequately funded, managing to retrofit much of Russia's legacy

PROVIDING THE ARMY WITH CRITICAL STRATEGIC INFORMATION ABOUT NEAR-PEER COMPETITORS

Soviet equipment to modern standards; however, the next SAP's goals will be harder to accomplish because it calls for the procurement of new and highly sophisticated systems in large quantities. Complete execution of the plan is unlikely without increases in manufacturing capability, funding, and political will.

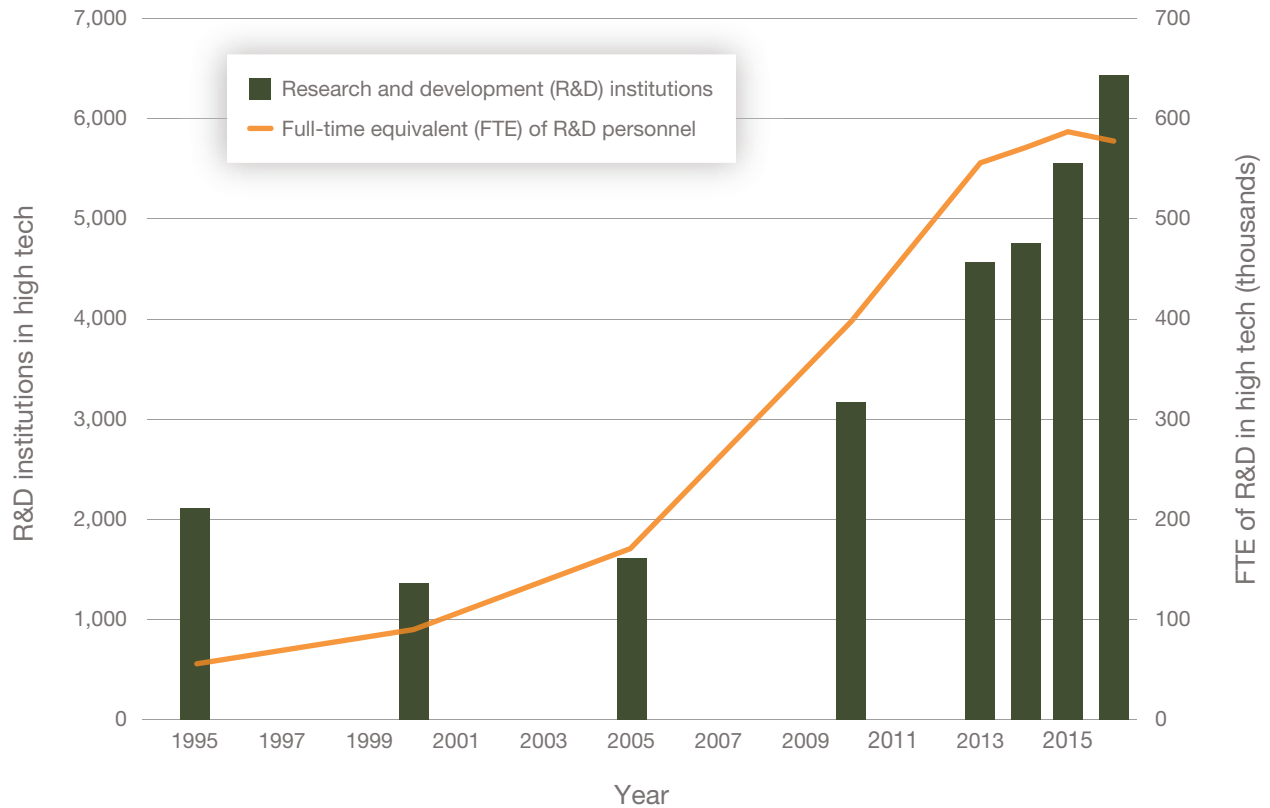
China's reliance on intellectual property theft means its weapons are years behind, but the Chinese government recognizes that shortcoming and is investing in and growing its organic capabilities through joint ventures and acquisition of foreign technology. These business relationships have the twofold benefit of developing the technical and managerial skills of junior talent and increasing access and exposure to foreign technologies.

China's inability to manufacture highly sophisticated parts continues to limit its status as a first-rate developer and producer of state-of-the-art military materiel, but progress is apparent. Successfully developing an indigenous aircraft engine and producing it in large quantities will signal a turning point in the capabilities of the Chinese defense industry.

EXPECTED IMPACT

Assessing the current state of and future prospects for Russian and Chinese acquisitions provides valuable insight to policymakers who are responsible for ensuring that the United States maintains an advantage over these pacing threats.

Number of Research and Development Institutions and Personnel in China over Time



To grow its organic R&D capacity, China has increased its national spending on R&D at a compound annual growth rate of almost 15 percent since 2010, which has coincided with rapid growth in the number of China's R&D institutions and the size of its R&D workforce.

Defense Acquisition in Russia and China, by Mark Ashby, Caoliann O'Connell, Edward Geist, Jair Aguirre, Christian Curriden, Jonathan Fujiwara, Santa Monica, Calif.: RAND Corporation, RR-A113-1, 2021. Available at www.rand.org/t/RR-A113-1.

PROJECT HIGHLIGHTS

ASSESSING ALTERNATIVE APPROACHES TO MEASURING MULTINATIONAL INTEROPERABILITY

BACKGROUND

The National Defense Strategy emphasizes the need for U.S. forces to be interoperable with capable allies and partners. To support this need, the Army develops and executes doctrine and guidelines for how its units can achieve interoperability with partners. The Army identified a need to develop an overarching concept for interoperability that includes explicit links between current Army multinational interoperability doctrine and mission command doctrine. Concurrently, the Army wanted an enduring and standardized way to measure levels of interoperability achieved as a result of major training events. Although no widely accepted and standard measurement system existed, several different systems had been developed and used over time to help meet interoperability measurement needs.

In conjunction with the Deputy Chief of Staff for Operations and Plans, RAND researchers identified eight approaches that had been developed or could be modified to measure multinational interoperability. The team analyzed data for each approach and information from multiple rounds of interviews with representatives familiar with each approach, respectively. The assessment considered seven primary dimensions: ease of use; cost incurred; consistency with, or similarity to, current Army processes; output relevance to stakeholders; balance of standardization and flexibility; reliability and sustainability; and differentiation from a readiness system.

HELPING THE ARMY MEET NATIONAL DEFENSE STRATEGY NEEDS

KEY FINDINGS

The overarching takeaway from the assessment of alternatives was that no existing option had all the characteristics that would be required by the Army's interoperability system.

In light of this key finding, the Army decided to develop a new system, the Army Interoperability Measurement System (AIMS), which includes a quantitative instrument for measuring interoperability levels, a qualitative component to enable capability gap analysis, an automated approach to connect and analyze the data, and exploitation panels that convene immediately following a training exercise.

EXPECTED IMPACT

This analysis is expected to support the Army in meeting its multinational interoperability objectives as laid out in the National Defense Strategy.

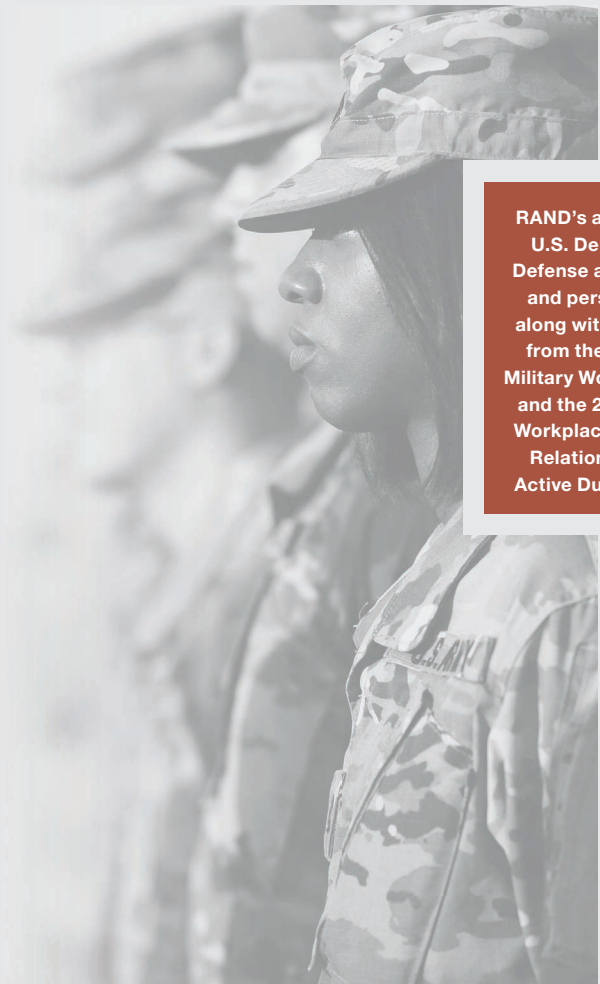


U.S. Army training as part of Exercise Rapid Trident 21 at the International Peacekeeping Security Centre near Yavoriv, Ukraine, to support joint combined interoperability.

An Analysis of Alternative Approaches to Measuring Multinational Interoperability: Early Development of the Army Interoperability Measurement System (AIMS), by Bryan W. Hallmark, Christopher G. Pernin, Andrea M. Abler, Ryan Haberman, Sale Lilly, Samantha McBirney, Angela O'Mahoney, Erik E. Mueller, Santa Monica, Calif.: RAND Corporation, RR-A617-1, 2021. Available at www.rand.org/t/RR-A617-1.

FEATURE STORY

PREVENTING SEXUAL ASSAULT AND SEXUAL HARASSMENT IN THE ARMY



Sexual harassment and sexual assault have been a widespread concern across the military, leaving many victims to remain in traumatic environments or pushing some to leave their positions altogether. In February 2021, U.S. Secretary of Defense

Lloyd Austin ordered the armed services to take immediate action to address these troubling behaviors and actions, especially at high-risk military installations. RAND Arroyo Center recently conducted two projects examining the risk factors associated with sexual assault and sexual harassment and the characteristics of sexual harassment and gender discrimination in the Army.

RAND's analyses used U.S. Department of Defense administrative and personnel data, along with survey data from the 2014 RAND Military Workplace Study and the 2016 and 2018 Workplace and Gender Relations Survey of Active Duty Personnel.


ORGANIZATIONAL CHARACTERISTICS OF SEXUAL ASSAULT AND SEXUAL HARASSMENT

RAND researchers found considerable variation in the risk of sexual assault and sexual harassment across groups of soldiers at different installations or within commands or career management fields, primarily among Army women. The analysis also found an association between (1) risk and (2) unit and supervisor climate. Among men and women,

commands and installations with better unit and supervisor climate have lower rates of sexual assault and sexual harassment. Researchers also found that overall rates of sexual assault and sexual harassment remain fairly stable over time. And, perhaps unsurprisingly, groups that have high rates of sexual harassment are very likely to also have high rates of sexual assault and vice versa.

To address these challenges, researchers suggest that improving unit and command climate might help reduce rates of sexual assault and sexual harassment. Furthermore, given the difference in risk across units, commands, and career fields, targeting prevention efforts at large units with high rates of sexual assault or sexual harassment might bring down total sexual assault and harassment rates. Indeed, 34 percent of all women soldiers who were sexually assaulted in 2018 were assigned to the five highest-risk bases. Researchers also recommend that the Army investigate differences among bases and commands that are associated with unexpectedly high risk of sexual assault and sexual harassment as a strategy for better understanding drivers of risk. Groups with unexpectedly low risk may also help to shed light on protective factors.

AMONG MEN AND WOMEN, COMMANDS AND INSTALLATIONS WITH BETTER UNIT AND SUPERVISOR CLIMATE HAVE LOWER RATES OF SEXUAL ASSAULT AND SEXUAL HARASSMENT.




34% OF ALL WOMEN SOLDIERS WHO WERE SEXUALLY ASSAULTED IN 2018 WERE ASSIGNED TO JUST THE FIVE HIGHEST-RISK BASES

Because sexual harassment and sexual assault appear to be tightly linked, prevention of sexual harassment also might prevent sexual assault. Furthermore, sexual harassment might be easier to combat: It is more public and more frequent, providing leaders with opportunities to counsel and reprimand soldiers and establish professional workplace norms before inappropriate behaviors become crimes.

TYPES OF SEXUAL HARASSMENT AND GENDER DISCRIMINATION

RAND conducted a follow-on project examining the characteristics of sexual harassment and gender discrimination incidents to help the Army better target its efforts to prevent these events. Researchers developed profiles of active-component soldiers' self-reported most serious experiences of sexual harassment and gender discrimination, including the types of behavior that occurred, characteristics of (alleged) perpetrators, and the times and places of the experiences.

Researchers found that during women's most serious sexual harassment or gender discrimination experience, they typically experienced gender discrimination (e.g., being mistreated, insulted, or ignored because of their gender or being told that women should not have their jobs or that men are



better at their jobs), repeated attempts to establish an unwanted sexual relationship, and sexual comments about their appearance or bodies, whereas men typically experienced insults to their masculinity, sexual orientation, or gender expression. Both men and women reported that the perpetrators were usually in the military, usually male, and often a military peer, and the incidents typically occurred during the workday. Although women's experiences are more persistent and cut across all times and places, both men and women reported experiencing multiple forms of sexual harassment or gender discrimination at one time.

Training materials on the prevention of sexual harassment and gender discrimination should emphasize these problematic behaviors, and prevention efforts also should focus on the workplace as the setting for sexual harassment and gender discrimination events. Furthermore, although high-risk installations should be prioritized for

interventions, as the first project recommended, the Army can also use the content more broadly as it focuses on types of behaviors that are common across all installations, regardless of risk.

When the project was briefed to the Secretary of the Army, discussion focused on how the Army could use the work to inform prevention efforts—for example, by helping to level understanding of what sexual harassment and gender discrimination look like and dispel myths or incorrect beliefs.

Although rooting out sexual assault and sexual harassment will take considerable effort and commitment, the recommendations identified by Arroyo researchers provide Army leaders with practical steps they can implement in the near term to help prevent these troubling incidents and improve well-being and readiness across the service.

Sexual Harassment and Gender Discrimination in the Active-Component Army: Variation in Most Serious Event Characteristics by Gender and Installation Risk, by Avery Calkins, Matthew Cefalu, Terry L. Schell, Linda Cottrell, Sarah O. Meadows, Rebecca L. Collins, Santa Monica, Calif.: RAND Corporation, RR-A1385-1, 2021. Available at www.rand.org/t/RR-A1385-1.

Organizational Characteristics Associated with Risk of Sexual Assault and Sexual Harassment in the U.S. Army, by Miriam Matthews, Andrew R. Morral, Terry L. Schell, Matthew Cefalu, Joshua Snoko, R. J. Briggs, Santa Monica, Calif.: RAND Corporation, RR-A1013-1, 2021. Available at www.rand.org/t/RR-A1013-1.

ARMY FELLOWS PROGRAM

Each year, the Army selects a number of majors and lieutenant colonels to work at Arroyo as visiting analysts in the Army Fellows Program. This program affords officers the opportunity to increase their analytical capabilities through participation in Arroyo projects addressing critical policy issues faced by the Army. In turn, fellows' participation enhances the Arroyo staff's understanding of current Army policies, increases the effectiveness of site visits, strengthens projects' analytic quality, and focuses recommendations. The one-year fellowship is followed by a three-year utilization assignment on a senior-level Army or joint staff. Typically, the Army assigns eight to ten officers each year as fellows to Arroyo. To date, 261 officers have participated in the program.

For more information, including application instructions, see www.rand.org/ard/fellows.

PUBLICATIONS

A Review of U.S. Army
Non-Materiel Capability-
Development Processes

www.rand.org/t/RR419-1

**BUSINESS
REFORM**

Army Analytic Capabilities:
A Case Study Within Army
Contracting Command and Its
Implications

www.rand.org/t/RR106-1

Evaluating the Effectiveness
of Public Communication
Campaigns and Their
Implications for Strategic
Competition with Russia

www.rand.org/t/RR412-2

Analysis of Russian
Irregular Threats

www.rand.org/t/RR412-3

GRAY ZONE



What Deters and Why:
Applying a Framework
to Assess Deterrence of
Gray Zone Aggression

www.rand.org/t/RR3142

Operational Unpredict-
ability and Deterrence:
Evaluating Options for
Complicating Adversary
Decisionmaking

www.rand.org/t/RR4448-1

EQUIPPING

Army Theater Fires Command:
Integration and Control of Very
Long-Range Army Fires

www.rand.org/t/RR809-1

An Analysis of Alternative Approaches to
Measuring Multinational Interoperability:
Early Development of the Army Interoper-
ability Measurement System (AIMS)

www.rand.org/t/RR617-1

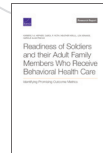
Organizational Characteristics Associated
with Risk of Sexual Assault and Sexual
Harassment in the U.S. Army

www.rand.org/t/RR1013-1

Sexual Harassment and Gender Discrimination
in the Active-Component Army: Variation in
Most Serious Event Characteristics by Gender
and Installation Risk

www.rand.org/t/RR1385-1

**HEALTH AND
WELL-BEING**



Readiness of Soldiers and
Adult Family Members
Who Receive Behavioral
Health Care: Identifying
Promising Outcome
Metrics

www.rand.org/t/RR4268

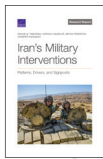
The End of Sanctuary:
Protecting the Army's
Installations from
Emerging Threats

www.rand.org/t/RR107-1

INSTALLATIONS

The Army's Local Economic
Effects: 2nd Edition

www.rand.org/t/RR1119-1



Iran's Military Interventions: Patterns, Drivers, and Signposts

www.rand.org/t/RAA444-2



The Iran Threat Network (ITN): Four Models of Iran's Nonstate Client Partnerships

www.rand.org/t/RR4231



Securing Gains in Fragile States: Using U.S. Leverage in Iraq, Afghanistan, and Beyond

www.rand.org/t/RAA250-1

What Deters and Why: The State of Deterrence in Korea and the Taiwan Strait

www.rand.org/t/RR3144



China's Military Interventions: Patterns, Drivers, and Signposts

www.rand.org/t/RAA444-4



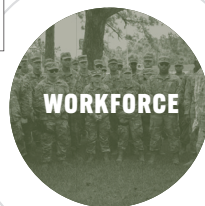
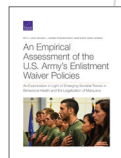
Increasing Efficiency and Incentives for Performance in the Army's Selective Reenlistment Bonus (SRB) Program

www.rand.org/t/RAA803-1



An Empirical Assessment of the U.S. Army's Enlistment Waiver Policies: An Examination in Light of Emerging Societal Trends in Behavioral Health and the Legalization of Marijuana

www.rand.org/t/RR4431



Russia's Military Interventions: Patterns, Drivers, and Signposts

www.rand.org/t/RAA444-3



Competing with Russia Militarily: Implications of Conventional and Nuclear Conflicts

www.rand.org/t/PE330

Russia's Global Interests and Actions: Growing Reach to Match Rejuvenated Capabilities

www.rand.org/t/PE327



Countering Russia: The Role of Special Operations Forces in Strategic Competition

www.rand.org/t/RAA412-1

Anticipating Adversary Military Interventions

www.rand.org/t/RAA444-1



STRATEGY AND POLICY

Defense Acquisition in Russia and China

www.rand.org/t/RAA113-1



China-Russia Cooperation: Determining Factors, Future Trajectories, Implications for the United States

www.rand.org/t/RR3067

Organizational and Cultural Causes of Army First-Term Attrition

www.rand.org/t/RAA666-1

Soldier Preferences and Retention Effects of Changes in Army Reserve Training Requirements: An Exploration of Revealed and Stated Behavior

www.rand.org/t/RAA750-1

LEADERSHIP AND CONTACT INFO

**SALLY SLEEPER**

Vice President, Army Research Division; Director, RAND Arroyo Center
Phone: (703) 413-1100, x5213
Email: Sally_Sleeper@rand.org

**M. WADE MARKEL**

Director, Forces and Logistics Program, RAND Arroyo Center; Senior Political Scientist
Phone: (703) 413-1100, x5108
Email: Matthew_Markel@rand.org

**MICHAEL HANSEN**

Associate Director, RAND Arroyo Center; Senior Economist
Phone: (310) 393-0411, x7681
Email: Michael_Hansen@rand.org

**HEATHER KRULL**

Director, Personnel, Training, and Health Program, RAND Arroyo Center; Senior Economist
Phone: (412) 683-2300, x4171
Email: Heather_Krull@rand.org

**JOCELYN MACIOL**

Director of Operations, RAND Arroyo Center
Phone: (310) 393-0411, x6645
Email: Jocelyn_Maciol@rand.org

**STEPHEN WATTS**

Acting Director, Strategy, Doctrine, and Resources Program, RAND Arroyo Center; Senior Political Scientist
Phone: (703) 413-1100, x5174
Email: Stephen_Watts@rand.org

IMAGE CREDITS:

Cover (clockwise from top left): courtesy photo/United Launch Alliance

U.S. Air Force/SrA Kayla A. Palmer

U.S. Air Force/SrA Duncan C. Bevan

U.S. Air Force/SSgt K. Tucker Owen

wooyaa/Getty Images

Page 2: Spc. Laura Stephens/U.S. Army

Page 3: Staff Sgt. Christopher B. Dennis/U.S. Army

Page 4: U.S. Cyber Command Public Affairs

Page 5 (left to right): Sgt. Liane Hatch/U.S. Army

Maj. Robert Fellingham/U.S. Army

Page 6: Spc. Rachel Christensen/U.S. Army

Page 13: U.S. Army

Page 19: Staff Sgt. John Yountz/U.S. Army

Page 20: Tech. Sgt. Anthony Nelson Jr./U.S. Air Force

Page 22: Staff Sgt. Armando R. Limon/U.S. Army

Page 24 (clockwise from top left): Debralee Best/RIA-JMTC Public Affairs

Staff Sgt. John Yountz/U.S. Army

Staff Sgt. Andrew Enriquez/U.S. Army National Guard

Sgt. Alexis Washburn-Jasinski/U.S. Army

1st Lt. Alvaro Luna/U.S. Army

Page 25 (clockwise from top left): Spc. Christopher Bouchard/U.S. Army

scaliger/Adobe Stock

Spc. Kelvin Johnson Jr./U.S. Army

Sgt. Shawn Keeton/U.S. Army National Guard

Spc. Rachel Christensen/U.S. Army

Page 26: Diane Baldwin/RAND Corporation

For more information on this publication, visit
www.rand.org/t/CPA1897-1



www.rand.org

CP-A1897-1