Resources and Force Readiness Division

CNA's Resources and Force Readiness Division provides operationally grounded, data-driven analysis for critical resource allocation problems facing the Navy, Marine Corps, and other Department of War components and agencies. Our study teams use a wide range of state-of-the-art quantitative and qualitative methods and vast data repositories to help military and civilian leaders make critical decisions on personnel, health, infrastructure, logistics, environment, energy, and budget-related challenges.

We recruit our staff from many of the finest universities in the United States, with a variety of technical expertise: economics, operations research, data science, public health, statistics, psychology, mathematics, and earth and physical sciences. Study directors organize their teams with the right combination of education, experience, and analytical skills to provide high-quality analysis to support decision-making by key leaders in a variety of organizations, including:

- Office of the Chief of Naval Personnel
- Headquarters Marine Corps
- Office of the Under Secretary of War for Personnel and Readiness
- Office of the Secretary of the Navy
- US Pacific Fleet
- US Fleet Forces Command
- Department of the Army
- US Coast Guard
- Other field commands across the globe

The Resources and Force Readiness Division is made up of four research programs:

Navy Health and Human Resources

For a half-century, CNA analysis has helped Navy leaders **recruit, train, retain, and educate active, reserve, civilian, and medical personnel** to support the Navy's readiness goals. Most of the program's analysts have PhDs and deep experience with Navy personnel and health issues. We design and employ advanced tools, including our Dynamic Decision Model of servicemember retention, allowing us to make data-informed recommendations on the Blended Retirement System, Selective Reenlistment Bonuses, and other non-monetary incentives. In addition, we use our manpower and personnel data and deep subject matter expertise to help the Navy efficiently allocate resources and improve servicemember recruiting, lethality, resilience, and career opportunities. We also help the Navy plan for future manpower and personnel issues related to evolving technologies and platforms like AI/ML and the future fleet. Our work on health analytics and medical readiness provides analytical support so

military medical leaders can make informed decisions on issues like tracking and improving population health in garrison and operational settings, medical capability design and concepts of employment, and the readiness and skill sustainment of the medical force.

Marine Corps and Defense Workforce

The Marine Corps and Defense Workforce Program brings together analysts who employ the same range of sophisticated analytical approaches to human resources and health issues as our Navy Health and Human Resources Program—but with **experience and knowledge of the special needs of the Marine Corps, Army, Air Force, Space Force, Coast Guard, and Department of War** as a whole. It provides a broad range of sophisticated analytical support to sponsors on critical issues related to a service's manpower requirements, personnel management, and training. For the Marine Corps, the program has analyzed the workforce mix in its supporting establishment and the evolving required skillset of the enlisted force. It also evaluated the Army's harmful behaviors prevention programs and recommended improvements to the Basic Allowance for Subsistence and Basic Allowance for Housing as part of the Department of War's Quadrennial Review of Military Compensation.

Energy, Infrastructure, and Environment

The experienced analysts of the Energy, Infrastructure, and Environment Program assist Navy and Department of War leadership with three critical challenges:

- **Energy efficiency and power systems afloat,** as well as energy resilience ashore
- **Infrastructure effectiveness and economy** at shore installations, including forward locations
- **Environmental effects** on the Navy's ability to train and exercise

For example, the program's analysts completed a study of the power and energy requirements of the Large Future Surface Combatant, which is expected to host advanced, high-power electric weapons and sensors. This research will inform decisions concerning the electrical architecture of the ship, including whether it should have an Integrated Power System. The program's installation research has focused on understanding the shore support required in forward locations to support current operational plans.

Data Science for Sustainment

As the Navy and other services emphasize data-driven decisions, the Data Science for Sustainment Program supports decision-makers in costing, readiness, and logistics with advanced data analytics. Our data scientists leverage descriptive, predictive, and prescriptive analytics to generate decision-support tools in the government's cloud environments. Our projects are structured around agility to rapidly pivot support to ever-evolving sponsor needs.

The program's approach centers on three fundamental analytic tools:

- **Drivers.** Through rapid expertise collection methods like design thinking workshops, we build cause-and-effect networks of internal and external factors that drive the primary outcome or key performance indicators.
- **Predictive analytics.** CNA data scientists use machine learning, modeling and simulation, and artificial intelligence tools to construct models that accurately forecast future performance and identify drivers with high leverage and return on investment.
- **Prescriptive analytics.** Our analysts combine predictive analytics with resource and operational constraints to determine the optimal combination of driver levels to maximize outcomes.

This iterative methodology delivers quick insights and recommendations at every step to senior leaders

so they can take actions that ensure a competitive advantage over adversaries while ensuring effective stewardship of constrained resources. We have used this approach for maritime depot cost performance evaluation, identifying causes of ship material readiness declines, and optimizing logistics routes. We also have expertise in medical supply chains and optimizing medical logistics for the joint force.

Work with other divisions

Resources and Force Readiness analysts work collaboratively with analysts from other divisions within CNA's federally funded research and development center (FFRDC), the Center for Naval Analyses. This ensures that CNA brings the right mix of skills to address the military's pressing issues. We routinely work with analysts from the following divisions:

- **Operational Warfighting**
- **Advanced Technology Assessment**
- **Regional, Strategy, and Policy Analysis**
- **Systems, Tactics, and Force Development**

Cross-cutting programs

Resources and Force Readiness personnel also are leveraged to provide expertise to a variety of cross-cutting CNA programs.

Future Fleet Research Program

CNA's **Future Fleet Research Program** coordinates all analyses that support the fielding of naval robotic and autonomous systems (RAS). We organize our work for the Navy, Marine Corps, and joint force around two primary categories: the hedge force and future fleet architecture.

Marine Corps Program

The **Marine Corps Program** manages CNA support to the Marine Corps, executed within research divisions of the Center for Naval Analyses—both at headquarters and on-site at key Marine Corps commands through the CNA Field and Scientific Analyst Programs. The program provides analytic support on a wide range of issues critical to Marine Corps leadership and deploys analysts to exercises and all major operations involving Marine Corps forces.

Special Operations Research Program

CNA's **Special Operations Research Program** brings our full spectrum of research and analysis capabilities to bear on the most complex and challenging issues facing special operations and its forces—today and in the future. It works across the organization to coordinate these analyses, providing a thorough understanding of complex issues facing Navy SEALs, Marine Raiders, and other special operations forces. These analyses have focused on special operations force design, exercises and training, workforce management, infrastructure, support, acquisition, resourcing and costs, as well as regional security.

Cyber Research Program

The **Cyber Research Program** provides objective analysis grounded in a deep understanding of cyberspace operations, cybersecurity principles and implementation, regional strategy, policy, deterrence and escalation, cyber workforce organization and management, and resourcing and readiness. It facilitates CNA support to leaders and warfighters charged with cyber-related responsibilities by supplying objective analysis informed by a diverse array of technical competencies and grounded in a deep understanding of military operations.
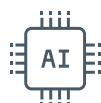
Center for Artificial Intelligence and Autonomy

CNA is a trusted partner to government agencies working to unlock the potential of AI and autonomy in solving their toughest national and homeland security challenges. The **Center for Artificial Intelligence and Autonomy** brings together talented analysts, scientists, and engineers to support

government decision-makers with data-driven analytics to plan, implement, and evaluate their use of AI. Its efforts help ensure government AI systems and initiatives are well governed and sufficiently resourced, their outputs are impactful and trustworthy, and their implementation is safe and secure.

Scientific Analyst Program

For over 70 years, CNA has embedded an elite corps of analysts in the offices of the Chief of Naval Operations (OPNAV), the Secretary of the Navy, and Headquarters Marine Corps (HQMC). These scientific analysts, as CNA calls them, provide direct analytical support to senior Navy and Marine Corps leaders by **providing subject matter expertise, attending staff meetings, and performing quick-turn, ad hoc analyses.** They keep CNA informed about emerging questions while making sure that military leaders are familiar with CNA's projects and capabilities. Resources and Force Readiness analysts currently serve in a variety of positions in the Scientific Analyst Program, including at the Assistant Secretary of the Navy for Manpower and Reserve Affairs; OPNAV N1, N4, N81, and N83; HQMC Manpower and Reserve Affairs; Marine Corps Recruiting Command; HQMC Deputy Commandant for Aviation; Naval Facilities Engineering Systems Command; and Naval Sea Systems Command.

Field Program

The **CNA Field Program** is unique among independent military research organizations, deploying analysts long-term to commands around the world. It deploys analysts for two to three years to Navy, Marine Corps, and joint commands ranging from carrier strike groups and Marine expeditionary forces to US Pacific Command. Field representatives provide real-time analytical support on operational problems of immediate concern to the command. Resources and Force Readiness analysts are currently or have previously been embedded with II Marine Expeditionary Force, the Marine Corps Warfighting Lab, and a Carrier Strike Group Two deployment, among others. In times of crisis or conflict, CNA augments its field staff, sending additional analysts to help commanders conduct operations more effectively and safely. These analysts are also responsible for identifying issues requiring post-conflict analyses and for collecting data to support those efforts. CNA analysts have deployed in support of every conflict involving the Navy or Marine Corps since World War II. CNA also provides analytical exercise support to nearly every major naval exercise, gathering data on-site and developing reconstructions and analyses.

About CNA

CNA is a not-for-profit analytical organization dedicated to the safety and security of the nation. With nearly 700 scientists, analysts, and professional staff across the world, CNA's mission is to provide data-driven, innovative solutions to our nation's toughest problems. It operates the Center for Naval Analyses—the Department of the Navy's federally funded research and development center (FFRDC)—as well as the Institute for Public Research. The Center for Naval Analyses provides objective analytics to inform the decision-making by military leaders and ultimately improve the lethality and effectiveness of the joint force. The Institute for Public Research leverages data analytics and innovative methods to support federal, state, and local government officials as they work to advance national and homeland security.

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