Assessing the Operational Suitability of DoD Test and Evaluation Ranges and Infrastructure

Committee

Heidi C. Perry

Chair

Heidi C. Perry is currently Assistant Division Head for the Division Office for Air, Missile & Maritime Defense Technology at the Massachusetts Institute of Technology Lincoln Laboratory. In her role, she leads strategic initiatives for undersea systems, including the development of new approaches in autonomy technology and artificial intelligence. She also serves as the chief innovation officer for the division. Previously, Ms. Perry was Director, System Engineering, at the Charles S. Draper Laboratory, Incorporated. She also served in other senior leadership roles, including Director, Algorithms & Software and Director, Internal R&D Portfolio. Her expertise includes guidance, navigation, and control sensors and systems; autonomous systems for air, land, sea and space; mission-critical software; and command, control, communications, computers, intelligence, surveillance, and reconnaissance systems.

A former member of the Naval Studies Board (2008-2013), she has served on multiple National Academies committees studying the impact of climate change, distributed and global maritime networks and capability surprise for U.S. Naval Forces. Additionally, she has chaired several National Academy studies on Unmanned Undersea Vehicles, ONR’s National Naval Responsibility for Naval Engineering and Leveraging Unmanned Systems for U.S. Coast Guard operations.

Kevin G. Bowcutt

Member

Principal Senior Technical Fellow & Chief Scientist of Hypersonics for Boeing with 39 years of experience. AIAA Fellow, a Fellow of the Royal Aeronautical Society, and a member of the National Academy of Engineering. Earned BS, MS and PhD degrees in aerospace engineering from the University of Maryland. An internationally recognized expert in hypersonic aerodynamics, propulsion integration, and vehicle design and optimization. Notable accomplishments include developing the viscous-optimized hypersonic waverider, flight testing scramjets by launching them from a light gas gun, technically supporting the NASA X-43A scramjet flight test program, originating and optimizing the design of the X-51A scramjet-powered demo vehicle, helping the Space Shuttle Columbia accident investigation by simulating wing aero-thermal-structural failure, leading Boeing's contributions to the HIFiRE international hypersonic flight experiment program, and leading Boeing's hypersonic passenger airplane design investigation. Served on a National Research Council committee that evaluated DDR&E's National Aerospace Initiative for the US Air Force. Served as the writing team leader for one of two major sections, "Hypersonic Flight", of the published committee report. Currently a member of the Air Force Studies Board (AFSB). Organized and led a "Next 100 Years" summit for the Boeing Enterprise, sponsored by Boing's CTO, that explored long term technology trends and the potential risks and opportunities they present to Boeing. Results influenced corporate technology strategy. Gave an invited TEDx talk titled "Routine Hypersonic Flight: The Final Frontier of Aeronautics" in Nov. 2016 (https://youtu.be/SJWoKsfsSaA?list=PLlaIcE1oC886LMmdvMH53eagxEaOMhmIJ).

Katherine Graef

Member

COL (Ret) Graef is a retired US Army officer with 30 years of experience in a variety of leadership and staff positions, including senior command and three combat deployments. She is a distinguished military graduate of the University of Texas at Austin where she earned a degree in Classical Archaeology. COL Graef holds three masters degrees, is certified as a Demonstrated Master Logistician by the International Society of Logistics and is also an inaugural member of the Halifax International Security Forum Peace with Women Fellowship. The second half of her career was almost entirely joint, including assignments to US Strategic Command as a J4 and Sustainment Chief focused on eliminating weapons of mass destruction, and to the US Naval War College as a military professor in the Joint Military Operations department. Her final assignment before retirement was as the Logistics Director and Army Element Commander for Special Operations Command Africa, headquartered in Stuttgart, Germany. She possesses extensive experience in the Middle East, Europe, and Sub-Saharan Africa with some experience on the Korean Peninsula.

Conrad J. Grant

Member

Conrad J. Grant is the Chief Engineer for the Johns Hopkins University Applied Physics Laboratory, the nation’s largest University Affiliated Research Center, performing research and development on behalf of the Department of Defense, the intelligence community, the National Aeronautics and Space Administration, and other federal agencies. He previously served for over a decade as the Head of the APL Air and Missile Defense Sector where he led 1200 staff developing advanced air and missile defense systems for the U.S. Navy and the Missile Defense Agency. Mr. Grant has extensive experience in the application of systems engineering to the design, development, test and evaluation, and fielding of complex systems involving multi-sensor integration, command and control, human-machine interfaces, and guidance and control systems. Mr. Grant’s engineering leadership in APL prototype systems for the Navy is now evidenced by capabilities on board over 100 cruisers, destroyers, and aircraft carriers of the U.S. Navy and its Allies. Mr. Grant earned a Bachelor of Science in Physics from the University of Maryland, College Park, a Master of Science in Applied Physics and a Master of Science in Computer Science from the Johns Hopkins University, Whiting School of Engineering.

Ed Greer

Member

Mr. Greer is the former Deputy Assistant Secretary of Defense for Developmental Test and Evaluation. He served as the The MIL Corporation (MILCORP) Chief Operating Officer (COO) for the Department of Defense (DoD) Business Unit from July 2018 through September 2020. Prior to serving as COO, Mr. Greer served as the Chief Executive Officer (CEO) of Greer Consulting, LLC December 2015 through June 2018 supporting various customers throughout industry and government. Mr. Greer served as the MILCORP COO from January 2013 through October 2015. Mr. Greer served as the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DT&E) being sworn in March 2010. Mr. Greer also served concurrently as Director, Test Resource Management Center. Prior to his political appointment and since 2002, Mr. Greer served as the Deputy Assistant Commander for Test and Evaluation, Naval Air Systems Command (NAVAIR), Patuxent River, MD. Mr. Greer also served concurrently as the Executive Director, Naval Air Warfare Center Aircraft Division (NAWCAD). In 1998, Mr. Greer joined the Senior Executive Service as Director of the Atlantic Test Ranges and Facilities within NAWCAD. From 1995 to 1998, Mr. Greer served as Principal Deputy Program Manager for the E-6B Aircraft.

Michael A. Hamel

Member

MICHAEL HAMEL an independent consultant, is a space professional and leader, with a career in government and industry spanning over 40 years. He has diverse experience in all aspects of space policy, planning, development, and operations; including launch, satellite, ground, and integration programs. His experience has included senior leadership roles in the military space sector, as well as work in intelligence, civil and commercial/international space. Most recently Gen Hamel served in Lockheed Martin Space, both as Vice President and General Manager of Commercial Space and Country Executive for the Kingdom of Saudi Arabia. In these roles he was responsible (P&L) for all commercial space business including communication and remote sensing programs, and new product development beginning in November 2013. In January 2017, Gen Hamel became responsible for developing new business opportunities with the Kingdom of Saudi Arabia, including joint and in-country ventures. He retired from Lockheed Martin in August 2018. Prior to that employment, Gen Hamel served as Senior Vice President of Corporate Strategy and Relations for Orbital Sciences Corporation, where he was responsible for leading Orbital Science’s strategic planning, product and business development, government relations and corporate communications. Gen Hamel served in the U.S. Air Force for more than 30 years in a broad range of space operations, development, acquisition, policy, and command positions, concluding his military career in 2008 as a Lieutenant General. In his later years in the Air Force, Gen Hamel was Commander of the Air Force Space and Missile Systems Center and Air Force Program Executive Officer for Space and Commander of the 14th Air Force. He served in senior command and staff positions at U.S. Air Force Headquarters and AF Space Command and was Military Advisor to the Vice President on defense, arms control, non-proliferation, and space policy. Gen Hamel holds a bachelor’s degree in aeronautical engineering from the U.S. Air Force Academy and a master’s degree in business administration from California State University. He is a graduate of the Industrial College of the Armed Forces and the program in national and international security at Harvard University. He is a member of the Council on Foreign Relations and a fellow of the American Institute of Aeronautics and Astronautics. He also serves on the boards of several corporate and advisory groups

Dana K. Jackson

Member

Dr. Dana "Keoki" Jackson is senior vice president and general manager, MITRE National Security Sector. In this role, he is responsible for the strategic growth and execution of MITRE's national security programs, including support to the U.S. Department of Defense, the U.S. Department of Justice, and the Intelligence Community, including leading the National Security Engineering Center. After more than two decades at Lockheed Martin, Jackson brings robust technical leadership and business experience, including directly contributing to the design, development, deployment, and flight operation of major national security spacecraft and programs. He also held management roles on the GPS III position, navigation, and timing program, and the Space-based Infrared System missile warning program. Jackson held several executive and senior management roles at Lockheed Martin, including chief technology officer and chief engineer, and vice president of engineering and program operations. He most recently served as vice president of supply chain and program performance and was responsible for program and supply chain management strategy, execution, and success across the enterprise. Before joining Lockheed Martin, Jackson was a NASA research fellow at the Massachusetts Institute of Technology (MIT) in the field of human adaptation to the space environment. Jackson is a fellow of the United Kingdom Royal Aeronautical Society and the American Institute for Aeronautics and Astronautics (AIAA). He is a member of the National Academy of Engineering, Sigma Xi, the International Academy of Astronautics, and the Institute of Electrical and Electronics Engineers. He previously served on the Sandia Corporation Board of Directors, the AIAA Foundation Board of Trustees, the Georgia Institute of Technology President's Advisory Board, the University of Maryland Clark School of Engineering Board of Visitors, and the MIT Department of Aeronautics and Astronautics Visiting Committee. Jackson received his bachelor's, master's, and doctoral degrees in aeronautics and astronautics from MIT and completed the Stanford Executive Program at the Stanford Graduate School of Business.

Terry P. Lewis

Member

Dr. Terry P Lewis is a Senior Associate and Senior Technical Program Manager at Booz Allen Hamilton where he is the Chief Engineer for Electronic Warfare. He recently served as the U2- Dragon Lady Technical Director at Beale AFB. Previously, he was a Senior Program Manager and Off-Site Executive for the Raytheon Company, where he led an organization focused on radio frequency engineering, reverse engineering, cyber technology development (offensive and defensive), rapid prototyping, and system development. He had responsibility for portfolio management and profit and loss. Dr. Lewis' areas of expertise include command, control, communications, and information systems; intelligence, surveillance and reconnaissance collection and dissemination; digitized battlespace systems; COMSEC / TRANSEC security for tactical systems; wireless network security; and network management authentication techniques for robust security architectures and Key Management. Dr. Lewis is an Anti-Tamper technologies pioneer and has developed architectures to prevent or reduce the ability of potential aggressors to reverse-engineer critical U.S. information technologies. He led an agile group of engineers focused on information operations (cyber applications) as they related to signal processing and embedded systems. Dr. Lewis has experience working on various missile systems while at Hughes Aircraft (later purchased by Raytheon). He was a Raytheon Scholar and received the Most Promising Engineer of the Year Award conferred at the 2002 Black Engineer of the Year Award Conference. Dr. Lewis has been an executive board member of the National Academies Naval Studies Board and has served on multiple boards and workshops for the National Research Council (NRC). Dr. Lewis has participated on a multitude of NRC studies. Examples includes; the Committee on Distributed Remote Sensing for Anti-Submarine Warfare, the Committee on Optimizing the Air Force Acquisition Strategy of Secure and Reliable Electronics Components, and Committee for a Review of USN Cyber Defense Capabilities and various Army Research Lab assessments.

Albert A. Sciarretta

Member

Mr. Albert A. Sciarretta, PE, is president of and sole performer within CNS Technologies, Inc. He established this company in 1999 and works primarily as an independent consultant to various organizations. For almost 40 years, as a U.S. Army officer (retired as a Lieutenant Colonel) and civilian contractor, he has used his operational, research and development, operations research, prototyping and experimentation, mechanical engineering, and human performance assessment experience to assess the military benefits of technologies and develop technology investment strategies. As a consultant to the DoD Test Resource Management Center (TRMC), he has served more than 18 years as a subject matter expert for advanced test technologies. Currently, he is assisting TRMC in identifying test range infrastructure needs for testing counter-small aircraft system (C-sUAS) systems. In another consulting job, the U.S. Bureau of Prisons has asked Mr. Sciarretta to design and execute two tests at Federal Correctional Complexes: 1) a test of commercial C-sUAS systems and 2) a test of commercial devices designed to use ad tech to remotely detect cell phones. Mr. Sciarretta is the Chair of the ASA(ALT) Board on Army RDT&E, System Acquisition, and Logistics (BARSL); as well as a member of the National Academies of Sciences, Engineering, and Medicine (NASEM) Board on Army Research and Development (BOARD) and the NASEM Intelligence Science and Technology Experts Group (ISTEG). He previously served as a member of the NASEM Board on Army Science and Technology (BAST). In the past, he chaired the 2017 NASEM ad hoc study on “Counter-Unmanned Aircraft System (CUAS) Capability for Battalion-and-Below Operations.” The committee report has been downloaded all over the world and is in the top 8 percent of National Academy Press downloads. He has also served as a committee member for six separate NASEM studies, including “Technology Development for Army Unmanned Ground Vehicle,” “Advanced Energetic Materials,” and “Making the Soldier Decisive on Future Battlefields.” Mr. Sciarretta served as a part-time contractor and then Special Government Employee (Highly Qualified Expert) in a think tank at the National Defense University from 2004 to 2017. In addition to conducting studies, he developed a course on prototyping and experimentation that was eventually incorporated into the Defense Acquisition University curriculum. For his first seven years in the Army, Mr. Sciarretta served primarily in armored cavalry units. For the following 13 years, Mr. Sciarretta received advanced degrees, taught engineering and operations research at the U.S. Military Academy (1984-87), and conducted individual research efforts for Army program managers for Mobile Protected Gun System, Howitzer Improvement Program, and Electromagnetic Railgun. He also served as Technology Officer in the Armored Family of Vehicles Task Force, Military Assistant Chief Scientist in Army Materiel Command, and Chief Technology Officer in the Army MANPRINT Office. Mr. Sciarretta has a B.S. degree in general engineering from the U.S. Military Academy (Class of 1973), and dual M.S. degrees in mechanical engineering and operations research from Stanford University (1982-1984). He completed a one-year British military school undergraduate course on designing armored vehicles (1981) and six-month DoD program manager course (1982).

Steven Darbes

Staff Officer