TABLE OF CONTENTS

8 Lessons from D-Day

The Importance of Combined and Joint Operations

Col. Gregory Fontenot, U.S. Army, Retired

The D-Day invasion provides an outstanding example of a joint and combined operation in the context of a deliberate attack characterized both by time to prepare and good intelligence.

20 "An Incredible Degree of Rugged and Realistic Training"

The 4th Infantry Division's Preparation for D-Day

Stephen A. Bourque, PhD

The U.S. Army's assault on the Normandy coast took many months of training and practice to ensure that all the complex aspects of the invasion would come together to produce tactical success.

34 "Will to Fight"

Twenty-First-Century Insights from the Russo-Ukrainian War

Benjamin A. Okonofua, PhD Nicole Laster-Loucks, PhD Lt. Col. Andrew Johnson, U.S. Army, Retired

The Russo-Ukrainian War presents an opportunity to reflect on the "will to fight," an often underestimated component in the annals of warfare and strategic defense.

50 Information Advantage

A Combined Arms Approach

Col. Richard Creed, U.S. Army, Retired Lt. Col. Michael Flynn, U.S. Army, Retired

Army doctrine on information describing a framework for creating and exploiting information advantages to achieve objectives considers how Army forces use, protect, and attack data and information while affecting the threat's ability to do the same, and makes clear that everyone in the Army plays some role in achieving information advantages.

57 Goldilocks Kill Chains and the Just Right Data

Maj. Michael G. Dunn, U.S. Air Force

The Department of Defense should lead the next generation of kill chain dynamics in joint all-domain operations by adopting object-based storage solutions within its intelligence apparatuses to address the challenges of cross-domain data integration.

66 International Force East Timor

A Case Study in Multinational Mission Command

Commandant Gavin Egerton, Irish Army

The integration of an Irish platoon into a New Zealand battalion, which was part of an Australian brigade in International Force East Timor, provides a useful case study on how mission command was successfully employed across a hastily assembled and diversely multinational force.

78 3D Printing Solutions for Contested Medical Logistics

Lt. Col. Michael Browning, DMD, MS, U.S. Army
Lt. Col. Michael Hoffman, DDS, MS, U.S. Army
Lt. Col. Michael Kroll, DMD, MS, U.S. Army
Lt. Col. Andres Mendoza, DDS, MS, U.S. Army
Maj. Ross Cook, DMD, MS, U.S. Army
Maj. Martin Smallidge, DMD, MPH, MS, U.S. Army

The Army Health System must reduce the size and weight of contemporary equipment to keep pace with the kinetic, dispersed nature of future conflicts. It can accomplish this while also improving mobility for forward medical units supporting maneuver elements by integrating additive manufacturing technology.

ARTIFICIAL INTELLIGENCE

88 The Coming Military Al Revolution

Col. Joshua Glonek, U.S. Army

The U.S. military must embrace the transformative technology in artificial intelligence (AI) and accelerate the development of innovative applications of AI to preserve its technological edge, deter adversary aggression, and, if necessary, prevail in armed conflict.

100 Advancing the U.S. Army's Counter-UAS Mission Command Systems to Keep Pace with Modern Warfare

Maj. Gen. Joel B. (J. B.) Vowell, U.S. Army Maj. Anthony R. Padalino, U.S. Army

Existing mission command systems fielded to counter enemy unmanned aircraft systems (UAS) lack necessary technological capabilities to adequately defend combat power on today's battlefield. Mission command systems for counter-UAS require artificial intelligence, machine learning, and automation to assist operator decision-making and enable simultaneous employment of defeat mechanisms.

108 Artificial Intelligence and Agile Combat Employment

Lt. Col. Benjamin "Buzz" Hagardt, U.S. Air Force

The threats presented by enemy weaponry, pervasive surveillance technology, and cross-domain long-range fires have motivated the U.S. Air Force to apply its operational resiliency framework to a new scheme of maneuver called agile combat employment, which employs small, dispersed, and adaptive basing techniques to survive and operate in all domains.

120 Automating the Survival Chain and Revolutionizing Combat Casualty Care

Human-Technology Teaming on the Future Battlefield

Maj. Gen. Michael J. Talley, U.S. Army
Col. Jennifer M. Gurney, MD, FACS, U.S. Army
Col. Jeremy C. Pamplin, MD, FCCM, FACP, U.S. Army
Capt. Travis M. Polk, MD, FACS, U.S. Navy
Col. Sharon L. Rosser, DSc-PA, PA-C, U.S. Army
Lt. Col. Patricia M. Schmidt, RN, PhD, U.S. Army
2nd Lt. Mason H. Remondelli, U.S. Army
Matthew T. Quinn

The scale, severity, and prolonged nature of combat casualty care in multidomain operations against near-peer adversaries requires modernizing the Military Health System (MHS). The survival chain is a concept that can help the MHS reframe battlefield medicine and iteratively develop technology solutions across the care continuum.

131 Army Medicine and Artificial Intelligence

Transforming the Future Battlefield

Col. Vanessa Worsham, U.S. Army Nurse Corps Lt. Col. Elvis Gonzalez, U.S. Army Medical Service Corps Lt. Col. Margaret Kucia, U.S. Army Specialist Corps Lt. Col. Megan Matters, U.S. Army Nurse Corps Maj. Thomas Hansen, U.S. Army Medical Service Corps Maj. David Preczewski, U.S. Army Medical Service Corps Maj. Martin Smallidge, U.S. Army Dental Corps Dr. Edward Michaud, U.S. Army Civilian Corps

During future conflict, the Army Health System will face a hyperactive, lethal, and kinetic fight, straining its ability to complete its enduring mission to conserve the fighting strength. However, artificial intelligence could provide solutions for the extreme challenges of providing medical care during large-scale combat operations.

142 Using Open Access AI to Create Military Training from POW Experiences

Col. John P. Albano, MD, U.S. Army, Retired Cmdr. Steven E. Linnville, PhD, U.S. Navy, Retired Lt. Jacob R. Westerberg, PhD, U.S. Navy Travis V. Meyer

Artificial general intelligence could potentially be used for curriculum development to prepare military personnel to survive a captivity experience.

REVIEW ESSAY

151 Afghan Air Wars

Soviet, US and NATO Operations, 1979–2021

Matthew Kiefer

The author critiques a book by Michael Napier that discusses the use of air power in Afghanistan for more than five decades.