

A Word from the



Chairman

MV-22 Osprey on deck of USS Essex.

Despite the unparalleled strength of the Armed Forces, we should not become complacent. Maintaining the status quo will not serve national interests. The evolving security environment of today, replete with new challenges and new opportunities, demands a capable and flexible military. Our great strength is service core competencies. We must expand on them to provide seamless interoperability in joint operations—our first joint core competency.

Looking Back

In developing a transformation strategy, we can learn from the past, particularly from those

instances when nations failed to understand that successful methods and technologies applied in one conflict may be inadequate in the next. Victorious powers benefitted from dramatic innovations. Such changes, often regarded as a revolution in military affairs (RMA), have occurred throughout history. New technologies and their applications can alter the balance of power as the champion of a new RMA assumes a position of dominance. Successful warfare in the Middle Ages was represented by knights in armor. To overcome them, English yeomen introduced the long-bow—a revolution in its day—to defeat the close-in superiority of French arms in the 12th century.

(continued on page 4)

JFQ

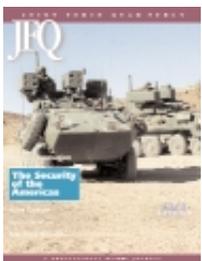
- 1 A Word from the Chairman**
by Henry H. Shelton
- 8 From the Field and Fleet:
Letters to the Editor**
- 10 1999–2000 JFQ Essay Contest
on Military Innovation**
- 11 Interdependent Maneuver for
the 21st Century**
by Antulio J. Echevarria II
- 20 Nanotechnology in a New Era
of Strategic Competition**
by Shannon L. Callahan
- 27 Transformation Trinity—
Vision, Culture, Assessment**
by Bruce H. McClintock
- 32 Airpower in the Pacific: A
Case Study in Innovation**
by Thomas E. Griffith, Jr.
- 38 Rethinking Army-Marine
Corps Roles in Power
Projection**
by Brian J. Dunn

FORUM

- 43 The Security of the Americas**
- 46 Effective Engagement: The
Case of Ecuador**
by John R. Groves, Jr.
- 51 Human Rights and Military
Conduct: A Progress Report**
by George R. Vickers
- 58 The Legislative Role in
Argentine Defense Reform**
by Pablo Carlos Martinez
- 64 U.S. Strategic Interests in
Caribbean Security**
by Ivelaw L. Griffith



PHOTO CREDITS



The cover of this issue features two light armored reconnaissance vehicles during combined armed exercise (U.S. Marine Corps). The front inside cover captures [from top] SH-60F taking off from *USS Dwight D. Eisenhower* for search and rescue mission (U.S. Navy/Josh Treadwell); Marine small craft during *Unitas 40* (2^d Marine Division/Tyler J. Mielke); C-141 approaching Cherry Point (1st Combat Camera Squadron/Jerry Morrison); and training for Desert Spring, Kuwait. The table of contents shows *USS Robert G. Bradley* leaving Guantanamo Bay (U.S. Navy/Danny Hernandez) and Royal Marine in Sierra Leone (CinC Fleet). The back inside cover depicts KC-10A heading into sunset (305th Communications Squadron/John Sidoriak).

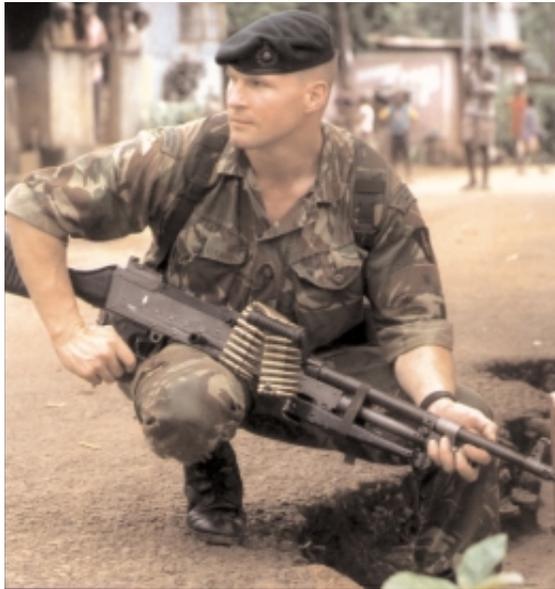
The back cover presents a panorama from the Persian Gulf War [clockwise from top]: F-16 with AIM-9 missiles (U.S. Air Force/Perry Heimer), Marines firing M-198 at start of ground offensive (DOD/J.R. Ruark), Tomahawk being launched from *USS Missouri* (U.S. Navy/Brad Dillon), and M1A1 tanks (U.S. Navy/D.W. Holmes).

- 70 Mexico's Search for a New
Military Identity**
by Craig A. Deare
- 75 Battling Storms: Interagency
Response to Hurricane Mitch**
by Melinda Hofstetter

OUT OF JOINT

- 81 The Paradox of Joint Culture**
by David T. Fautua

-
- 87 Organizing British Joint Rapid Reaction Forces**
by Richard M. Connaughton



- 95 The Coast Guard and Maritime Security**
by Bruce B. Stubbs

- 100 Space Warfare Meets Information Warfare**
by Gordon D. Issler

OF CHIEFS AND CHAIRMEN

- 105 Joseph Lawton Collins**

THE JOINT WORLD

- 106 Doctrine, Lessons Learned, and History**

OFF THE SHELF

- 107 Invitation to the Revolution: A Book Review**
by François L. J. Heisbourg
- 108 Winning the Good War: A Book Review**
by Cole C. Kingseed
- 109 Changing the Guard in Latin America: A Review Essay**
by Frederick M. Nunn

Joint Force Quarterly

Stephen J. Flanagan
Director
Institute for National Strategic Studies
Editor-in-Chief

Martin J. Peters, Jr.
Production Coordinator

Robert A. Silano
Director of Publications
Institute for National Strategic Studies
Editor

Calvin B. Kelley
Copy Editor

LTC James Jay Carafano, USA
Executive Editor

William A. Rawley
U.S. Government Printing Office
Art Director

JFQ is published for the Chairman of the Joint Chiefs of Staff by the Institute for National Strategic Studies, National Defense University, to promote understanding of the integrated employment of land, sea, air, space, and special operations forces. The journal focuses on joint doctrine, coalition warfare, contingency planning, combat operations conducted by the unified commands, and joint force development.

The opinions, conclusions, and recommendations expressed or implied within are those of the contributors and do not necessarily reflect the views of the Department of Defense or any other agency of the Federal Government. Copyrighted

ISSN 1070-0692

portions of this journal may not be reproduced or extracted without permission of copyright proprietors. An acknowledgment to *Joint Force Quarterly* should be made whenever material is quoted from or based on its contents.

This publication has been approved by the Secretary of Defense. All previous issues have been published electronically and are available over the Internet at the address indicated below. Paid subscriptions to *JFQ* are offered through the U.S. Government Printing Office.

The editors invite articles and other contributions on joint warfighting, interservice issues that support jointness, and

topics of common interest to the Armed Forces (see page 112 for details). Please direct all editorial communications to:

Editor, *Joint Force Quarterly*
ATTN: NDU-NSS-JFQ
300 Fifth Avenue (Bldg. 62)
Fort Lesley J. McNair
Washington, D.C. 20319-5066

Telephone: (202) 685-4220 / DSN 325-4220
Fax: (202) 685-4219 / DSN 325-4219
e-mail: JFQ1@ndu.edu
Internet: <http://www.dtic.mil/doctrine>

January 2001

GEN Henry H. Shelton, USA
Publisher

ADVISORY COMMITTEE

VADM Paul G. Gaffney II, USN ■ *National Defense University*
Chairman

BG David A. Armstrong, USA (Ret.) ■ *Office of the Chairman*

Col Darrell A. Browning, USMC ■ *Marine Corps Command and Staff College*

Brig Gen Richard B. Bundy, USAF ■ *The Joint Staff*

VADM Arthur K. Cebrowski, USN ■ *Naval War College*

MG Reginal G. Clemmons, USA ■ *National War College*

A. Denis Clift ■ *Joint Military Intelligence College*

VADM Scott A. Fry, USN ■ *The Joint Staff*

BG David H. Huntoon, USA ■ *U.S. Army Command and General Staff College*

MG Robert R. Ivany, USA ■ *U.S. Army War College*

Brig Gen Edward L. LaFountaine, USAF ■ *Joint Forces Staff College*

Maj Gen David F. MacGehee, Jr., USAF ■ *Air War College*

MajGen Harold Mashburn, Jr., USMC ■ *Industrial College of the Armed Forces*

Col John T. Sheridan, USAF ■ *Air Command and Staff College*

Col John H. Turner, USMC ■ *Marine Corps War College*

EDITORIAL BOARD

Stephen J. Flanagan ■ *National Defense University*
Chairman

Richard K. Betts ■ *Columbia University*

Col John M. Calvert, USAF ■ *Joint Forces Staff College*

Col Stephen D. Chiabotti, USAF ■ *Air Command and Staff College*

Eliot A. Cohen ■ *The Johns Hopkins University*

COL David M. Cole, USA ■ *U.S. Army War College*

COL Robert A. Dougherty, USA ■ *U.S. Military Academy*

Aaron L. Friedberg ■ *Princeton University*

Alan L. Gropman ■ *Industrial College of the Armed Forces*

COL Timothy S. Heinemann, USA ■ *U.S. Army Command and General Staff College*

CAPT Chester E. Helms, USN ■ *Naval War College*

COL Paul Herbert, USA ■ *National War College*

Mark H. Jacobsen ■ *Marine Corps Command and Staff College*

Thomas L. McNaugher ■ *The RAND Corporation*

William H. J. Manthorpe, Jr. ■ *Joint Military Intelligence College*

John J. Mearsheimer ■ *The University of Chicago*

LTG William E. Odom, USA (Ret.) ■ *Hudson Institute*

James H. Toner ■ *Air War College*

LtGen Bernard E. Trainor, USMC (Ret.) ■ *Harvard University*

LtCol James I. Van Zummeren, USMC ■ *Marine Corps War College*

(continued from page 1)

In general, RMAs reach fruition over a period of years as new technologies or approaches evolve into final form. One revolution replaces another. In a fast-paced world filled with many innovations, we must anticipate and take advantage of unfolding advances more quickly.

An example from the early 20th century illustrates this point. French doctrine, manpower, and matériel appeared to be the best on the continent after World War I. To guard against another invasion, France constructed a series of defensive fortifications along the German frontier known as the Maginot Line. Unfortunately, this static defense was better suited to the threat in 1914 than the assault of 1940. The German concept of combined arms warfare known as *Blitzkrieg* made such efforts irrelevant. The lesson is that combining revolutionary technology and its application can defeat the established tools of war. The key to success is understanding core competencies and building a coherent approach to change and extending skills to a new force. We must be vigilant to ensure that America leads future RMAs—in terms of doctrine, organization, and technology—and does not instead fall victim to one.

Looking through the eyes of military leaders of a century ago, would we have anticipated the advent of the tank, plane, submarine, and radio—systems that transformed the nature of war? Would we have embraced new technologies to

America has done better than most other nations in exploiting technological breakthroughs

meet emerging threats? Or would we have used the technology of the age to breed stronger horses, build better observation balloons, or forge a more deadly bayonet? It is natural for a dominant nation to perfect weapons that proved successful in the last conflict. Less powerful nations, eager to assert themselves, are often more open to new ideas to shift the balance of power in their favor. Thus we ignore change at our peril.

If we lack the courage to change and allow success to blind us to new possibilities, we can become like Ferdinand Foch who halted the Germans on the Marne in 1914. As commandant of the French war college in 1911, this future marshal revealed an astonishing view of the potentiality of aviation by stating, "Airplanes are interesting toys but of no military value."

America has done better than most other nations in exploiting technological breakthroughs. Its record over the past century is filled with



*USS West Virginia
and USS Tennessee,
December 7, 1941.*

many successes in making heroic sacrifices to further the causes of freedom, democracy, and rule of law. It played the decisive part in two world wars and led the United Nations in preventing a communist takeover of South Korea. And its sustained role in Vietnam permitted the growth of democracy across Southeast Asia. America kept faith with its principles during a long Cold War and averted a nuclear holocaust. Moreover, the United States led coalitions to thwart the forces of Saddam Hussein and Slobodan Milosevic. Although blessed with economic abundance and geographical isolation from foreign threats, the Nation has accepted global responsibilities to build a more secure world. But our triumphs have come at a high price and sometimes after an initial disaster.

This was the case when the Navy suffered an ignominious defeat at Pearl Harbor and Japan

overran an American-led force in the Philippines. With an extraordinary demonstration of national will and industrial power, the United States built mighty land, sea, and air forces to secure victory in Europe and the Pacific. In 1945, however, we dismantled our military machine just as we did following World War I.

But only five years after Japan surrendered, the Nation found itself in a desperate situation. Post-war demobilization and defense cuts stretched the Armed Forces. U.S. troops in Korea were ill trained and unprepared for an invasion from the North. Ultimately recovering from near disaster and at a cost of over 36,000 lives, America and its allies preserved South Korean independence.

We must defend national interests whenever and wherever challenges arise. Given success in the Persian Gulf and Kosovo, some may believe that America can remain secure by making only minor improvements in warfighting. The world will not stand still. Unpreparedness exposes us to many threats—some of a new and asymmetric nature.



55th Signal Company (Christina Ann Horne)

M270 at forward operating base in Kcirre, Albania.

Unmasking the Future

Just as the situation changed for France in the interwar period, the security environment is in a state of flux at present. Indeed it has dramatically changed since the fall of the Berlin Wall. The Soviet Union is gone and the threat of a nuclear war has been reduced. The comparatively stable bipolarity of mutual deterrence has given way to a less certain world.

Today many states as well as nonstate groups seek asymmetric ways to use technology to negate our strengths and exploit our weaknesses.

We must be concerned about threats such as the Osama bin Laden organization that combine great wealth, anti-Americanism, and religious fervor. Terrorists are not bound by con-

ventional norms of behavior and international treaties and are often difficult to deter. America must be prepared to defeat this growing threat.

Moreover, we must be concerned over the proliferation of weapons of mass destruction. They are being sought by the weak, who cannot pose a direct threat and thus opt for asymmetric methods. Some nuclear, chemical, and biological weapons can actually be built in basements yet produce devastating effects.

In addition to conventional threats, current dangers include cyber attacks against information systems. Such strikes can visit disproportionate

effects on civil infrastructure as well as military capabilities. It is crucial to protect the security of vital information networks.

To confront emerging threats, we are not looking for a fair fight or to be just good enough. Minimum force is not sufficient. We must do better because maintaining the status quo inevitably risks higher casualties or calls into question our willingness to assist an ally in trouble.

The United States has the technological edge, economic power, political system, and creativity to move beyond mere sufficiency. We have an obligation to build and maintain forces to provide overwhelming advantages across the range of military operations to counter any enemy. Possessing overwhelming superiority means that most threats will not materialize because would-be aggressors are deterred. Those who do confront us must be defeated quickly because rapid termination of a conflict saves lives on both sides.

To gain the benefit of full spectrum dominance, we must modernize, experiment, improve, innovate, and reshape the Armed Forces to retain clear superiority—regardless of the means any potential enemy may choose. Harnessing our technological edge and organizational expertise can keep the U.S. military far ahead of competitors. The result will be a capabilities-based force that synchronizes our strengths to create power that will not only deter but also defeat any assault.

Technology alone cannot provide a capabilities-based force to meet security requirements. We must be innovative in organization and training as well as in developing new weapon systems. Transformation will involve combining unrivaled service core competencies with joint warfighting lessons learned in the recent past. Every triumph and setback has indicated that the keys to success are not only technological but functional. For the 21st century, we must consider a new joint core competency that transcends service boundaries to ensure effective joint warfighting.

The services have adapted to new threats while undergoing significant reductions in force. For example, budget constraints since 1989 have cut active Army divisions from 18 to 10, Navy ships from 566 to 315, and Air Force fighter wings from 36 to 20. Although the Armed Forces remain the strongest and most capable in the world, they rank well behind Russia, China, and even North Korea in numbers of personnel. To counter its reduced force size, America needs to ensure that its men and women in uniform are better trained and equipped than ever before.

Despite the steady pace of military commitments and reductions in defense budgets since

the services have adapted to new threats while undergoing significant reductions in force

the Cold War we are making great strides. Transforming an organization as large and successful as the U.S. military is a major undertaking. Machiavelli, who witnessed changes brought about by the Renaissance, said, "There is nothing more difficult to undertake, or more perilous to conduct, than to introduce a new order of things." But the transformation is an important challenge that has to be vigorously addressed by the entire defense establishment.

In the Vanguard

To lead a transformation, a military needs a clear vision of future warfighting, the courage to implement that vision, and the will to impose it on the military landscape. The vision for the joint force was laid out in 1996 with the publication of *Joint Vision 2010*. It established a common language for the services to develop and integrate their unique competencies into a synergistic whole. It also established targets for experimentation by the combatant commands and services. Thinking and acting as a joint force will become even more important in the years ahead as we respond to the broad new set of security challenges.

Joint Vision 2020 builds upon the conceptual template contained in *Joint Vision 2010*. It is a guide for experimentation that will help planners identify and understand the right answers. It describes in broad terms those capabilities that will be needed to succeed across the full range of operations.

Simultaneously applied, dominant maneuver, precision engagement, focused logistics, and full dimensional protection lead to full spectrum dominance. This transformation will be affected by the impact of the information revolution on the conduct of military operations and by continued reliance on our proven capacity for conceptual and technological innovation. New concepts lead to change in doctrine, organization, and education that is perhaps more important than technological change, which has been relied upon in the past to stay ahead of potential enemies. Without change in operational and organizational concepts, we simply apply new technologies to old methods.

America is moving along the path toward a transformed military and a dramatically different way of warfighting. We don't expect overnight changes. There are pitfalls in attempting to transform a large organization too quickly or without adequate planning. Thus *Joint Vision 2020* seeks to implement new concepts in an orderly and controlled way.

To ensure that transformation does not become only a catch phrase, we are taking steps to implement new ideas to propel the military toward success. U.S. Joint Forces Command has

been chartered to conduct joint experimentation and develop joint capabilities by identifying technological innovations, creating doctrine to incorporate advances, and implementing leading-edge concepts to employ that technology.

At a time when everyone has access to commercial technology, the military advantage often goes to nations that can capture the available technology, incorporate it in weapon systems, and get it fielded first. We cannot afford to fail in that competition.

Finally, the Armed Forces must be transformed with all deliberate speed. Now is the time to prepare—not only for the dangers of the past—but for new threats that lurk ahead. America can no longer depend on the protection of distance; global travel and new technologies make it easier to target our homeland. And information technology has created new vulnerabilities while at the same time increasing the productivity and capabilities of the Nation.

We are entering the 21st century from a position of strength and prosperity. *JV 2020* has pointed us in a new and exciting direction. We have instituted measures to ensure the appropriate mix of forces and capabilities for the future. By combining what has been learned about seamless joint interoperability with the imperative to maintain service competencies, we will be able to lead the next revolution in military affairs. I am confident that by working together we will successfully transform America's military.

HENRY H. SHELTON
Chairman
of the Joint Chiefs of Staff