

Army Aviation's Pacific Rebalance: Evolution towards Maritime Operations

A Monograph

by

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2016

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Executive Service Directorate (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ORGANIZATION.					
1. REPORT DATE (DD-MM-YYYY) 26-05-2016		2. REPORT TYPE Monograph		3. DATES COVERED (From - To) JUN 2015 - MAY 2016	
4. TITLE AND SUBTITLE Army Aviation's Pacific Rebalance: Evolution towards Maritime Operations				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) MAJ John M. McLean II				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Command and General Staff College ATTN: ATZL-SWD-GD Fort Leavenworth, KS 66027-2301				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) School of Advanced Military Studies, Advanced Military Studies Program				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for Public Release; Distribution is Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT US Army Aviation provides essential movement capabilities to maneuver and joint force commanders. Transitioning from exclusively land-based operations to potential maritime operations in the Pacific command area of responsibility, Army Aviation faces increased demands to overcome geographical complexities to support joint operations. This monograph examines historical maritime operations where Army Aviation's maritime applications provided commanders with increased options to achieve mission success. Army Aviation operations in the maritime domain pose unique challenges which require innovative adaptations of doctrine, organization, and training to overcome these operational challenges. Through continued doctrinal development and joint, multinational training exercises Army Aviation can augment existing maritime capabilities to increase the US military's operational capacity in the Pacific command area of responsibility.					
15. SUBJECT TERMS Army Aviation, Pacific Command, Amphibious Aviation Operations, Maritime Operations, Foreign Humanitarian Assistance Operations, Pacific Pathways, Multinational Operations					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			MAJ John M. McLean II
(U)	(U)	(U)	(U)	59	19b. TELEPHONE NUMBER (Include area code)

Reset

Monograph Approval Page

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Abstract

Army Aviation's Pacific Rebalance: Evolution towards Maritime Operations, by MAJ John M. McLean II, US Army, 59 pages.

US Army Aviation provides essential movement capabilities to maneuver and joint force commanders. Transitioning from exclusively land-based operations to potential maritime operations in the US Pacific command area of responsibility, Army Aviation faces increased demands to overcome geographical complexities to support joint operations. This monograph examines historical maritime operations where Army Aviation's maritime applications provided commanders with increased options to achieve mission success. Army Aviation operations in the maritime domain pose unique challenges which require innovative adaptations of doctrine, organization, and training to overcome these operational challenges. Through continued doctrinal development and joint, multinational training exercises Army Aviation can augment existing maritime capabilities to increase the US military's operational capacity in the US Pacific command area of responsibility.

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Acronyms

AOR	Area of Responsibility
ARG	Amphibious Ready Group
ATP	Army Training Publication
CAB	Combat Aviation Brigade
CV	Aircraft Carrier
CVN	Aircraft Carrier, Nuclear
DDH	Destroyer, Helicopter (Japan)
FM	Field Manual
FVL	Future Vertical Lift
INTERFET	International Force in East Timor
JMSDF	Japan Maritime Self-Defense Force
JP	Joint Publication
JTF	Joint Task Force
LHA	Landing Helicopter Assault - Amphibious Assault Ship
LHD	Landing Helicopter Dock - Amphibious Assault Ship
MAGTF	Marine Air-Ground Task Force
MCWP	Marine Corps Warfighting Publication
MEDEVAC	Medical Evacuation
MEU	Marine Expeditionary Unit
NATOPS	Naval Air Training and Operating Procedures Standardization
NAVAIR	Naval Air Systems Command
TRADOC	Training and Doctrine Command
UAS	Unmanned Aerial System
USARPAC	United States Army Pacific Command
USPACOM	United States Pacific Command

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Introduction

The strength of any Joint Force has always been the combining of unique Service capabilities into a coherent operational whole.

—General Martin Dempsey, *Capstone Concept for Joint Operations*, 2012

In 2011, the United States government introduced the “Pivot to the Pacific” to rebalance its strategic focus following a decade of emphasis on the Middle East and Southwest Asia.¹ To do so, the United States intends to rebalance its diplomatic, economic, and military focus toward increased emphasis on Asia-Pacific regional threats and opportunities.² Militarily, the Pacific region’s maritime-dominated environment requires reprioritization from the land-based competence earned in Iraq and Afghanistan.³ The US Pacific Command’s (USPACOM) expansive Area of Responsibility (AOR) ranges from dispersed islands to densely populated urban centers.⁴ For United States Army Aviation, the Pacific rebalance requires a broadened approach to its core competencies to increase its interoperability between land and maritime environments. US Army Aviation proved its integral capability to project power throughout a land-based operational environment. To match this capability in the US Pacific Command’s maritime area of responsibility, US Army Aviation must evolve to maintain its ability to support joint maneuver forces in maritime dominated environments.

¹ Joseph Gerson, “Reinforcing Washington’s Asia-Pacific Hegemony,” *Foreign Policy in Focus*, 13 September 2012, accessed August 4, 2015, http://www.fpiif.org/reinforcing_washingtons_asia-pacific_hegemony.

² US Department of Defense, *The 2014 Quadrennial Defense Review* (Washington, DC: Government Printing Office, 2014), 4.

³ Office of the President of the United States, *National Security Strategy, February 2015* (Washington, DC: Government Printing Office, 2015), “Foreword.”

⁴ Thomas J. Bickford et al., “The Role of the U.S. Army in Asia,” *CNA China Studies* (May 2015): 74-75, accessed August 8, 2015, <http://www.dtic.mil/docs/citations/ADA618342>.

Operations Iraqi and Enduring Freedom’s land-based theaters allowed combat aviation brigades (CABs) to maximize Army rotary wing capabilities via central location.⁵ This placement enabled commanders’ to project combat forces throughout the depth of the operational environment and maximize centralized support. In future operations, the USPACOM AOR’s dispersion will likely impede centralized aviation support in maritime-dominated operational environments.⁶ To overcome geographic impediments, the Army develop “innovative and collaborative” approaches to its doctrine, training, and ability to organize to fulfill its core competencies in support the US Pacific Command area of responsibility.⁷

US Army Aviation must evolve to remain viable in the USPACOM AOR. To identify Army Aviation’s necessary changes, this monograph asks: What adaptation of the US Army’s rotary wing aviation capabilities will lead to successful employment in the maritime regions of the US Pacific Command area of responsibility?⁸ A critical consideration for this research question is the fact that the Army Aviation will not abandon its land-based proficiencies to increase maritime competency. Instead, Army Aviation must expand existing capabilities to enhance maritime application.

Fiscal constraints and general practicality limit this monograph’s recommendations, which allows for near-term implementation. From an organization perspective, the combat aviation brigade remains the primary tactical aviation organization. Recommended organizational

⁵ James W. Williams, *A History of Army Aviation. From Its Beginnings to the War on Terror* (New York: iUniverse, Inc., 2005), 378.

⁶ John A. Olsen, ed. *Global Air Power* (Washington, DC: Potomac Books, 2011), 295.

⁷ US Joint Chiefs of Staff, *Capstone Concept for Joint Operations: Joint Force 2020* (Washington, DC: Government Printing Office, 2012), accessed January 11, 2016, http://www.dtic.mil/doctrine/concepts/ccjo_jointforce2020.pdf, 12.

⁸ Army Aviation includes both rotary wing, fixed wing, and unmanned airframes. For the purpose of this monograph, the term “Army Aviation” will focus on its rotary wing airframes assigned to combat aviation brigades unless otherwise specified.

changes are limited to internal arrangement of current CAB compositions. Existing aircraft remain the baseline to recommend improvements to doctrine, organization, and materiel.⁹ This monograph's recommendations remain economically feasible and implementable within three years by excluding new aircraft acquisition and CAB re-organization.

Consistent with the current Army Operating Concept, Army Aviation's incorporation into joint and multinational maritime operations increases the Army's operability across land and maritime domains, in support of joint and multinational partners.¹⁰ Increased Army maritime capabilities will augment, not supersede, Marine Air-Ground Task Force (MAGTF) capabilities. As fiscal constraints limit the amount of US Marine Corps and US Navy assets, Army Aviation will fulfill supplementary roles to ensure operational commanders can tailor available assets toward the appropriate operational requirements.

This monograph focuses specifically on Army Aviation's core competencies that enable the movement, sustainment, and mission command capabilities of supported maneuver forces.¹¹ These competencies require the most difficult effort to integrate with joint and multinational operations and exemplify the operations Army Aviation is most likely to execute as opposed to a standing MAGTF. These competencies focus the case studies and recommendations on utility and cargo helicopter operations. Lastly, proposed recommendations consider all levels of war. In a

⁹ This monograph assumes no change to the ongoing OH-58D divestment plan. During this transition, AH-64D/Es and RQ-7 equipped Heavy Armed Reconnaissance Squadrons replace OH-58D equipped Armed Reconnaissance Squadrons.

¹⁰ Training and Doctrine Command Pamphlet (TRADOC PAM) 525-3-1, *The US Army Operating Concept: Win in a Complex World 2020-2040* (Washington, DC: Government Printing Office, 2014), 7-10.

¹¹ Field Manual 3-04, *Army Aviation* (Washington, DC: Government Printing Office, 2015), 1-1 – 1-5. Army Aviation is founded in seven core competencies. This monograph focuses primarily on four: air assault ground maneuver forces; air movement of personnel, equipment, and supplies; evacuate wounded or recover isolated personnel; and enable mission command over extended ranges and complex terrain.

maritime dominated operational environment, proximity to partner nations, conventional and irregular threats, and the unmatched distances that separate areas of operation from support areas provide unique and challenging military problems in the United States' strategic rebalance toward the Pacific.¹²

Modern Army Aviation is optimized for land-based application and must adapt its doctrine, organization, training, and materiel to support joint operations throughout a maritime dominated operational environment. To prepare for maritime geographical limitations, Army Aviation must be able to scale-down to task force and team echelons based vast distances between support areas and the potential for amphibious, ship-based operations. Despite the differences between continental and maritime operational environments, the Army expects rotary wing aviation to support its maneuver forces with timely and precise mobility, fires, sustainment, and intelligence. By enabling the rapid displacement and concentration of combat power throughout the operating environment, Army Aviation enables efficiency and agility in joint operations.¹³ Efficiency increases enable military leaders to achieve mission objectives with less personnel or equipment. This efficiency is important given the growing attention on military expenditure and the political focus on troops strengths dedicated to contingency operations. Second, Army Aviation concentrates combat power at decisive points, in both time and space. Efficiency and concentration allow commanders to achieve relative and decisive advantages over their adversary.¹⁴

¹² US Joint Chiefs of Staff, *The National Military Strategy of the United States of America 2015: The United States Military's Contribution to National Security* (Washington, DC: Government Printing Office, 2015), 15. The 2015 *National Military Strategy* outlines the requirement to accomplish strategic objectives in an innovative, efficient, and agile manner; focusing on joint, interagency, and international partnered operations.

¹³ Ibid.

¹⁴ FM 3-04, 4-7.

Rebalancing its global priorities, the United States National Command Authority directed the Department of Defense to emphasize readiness and engagement in the USPACOM AOR in future military efforts.¹⁵ USPACOM's predominately maritime geography differentiates it from the primarily land-based focus of other geographic combatant command areas of responsibility. Extending beyond the limits of the Pacific Ocean, the USPACOM AOR also includes Australia, China, India, and nearly 80% of the Indian Ocean. Portrayed in Figure 1. US Pacific Command Area of Responsibility, this area hosts over fifty percent of the world's population, which magnifies the AOR's security considerations stemming from ethnic tensions and population density.¹⁶

Due to USPACOM AOR's vast size, this monograph differentiates two amphibious regions for expected Army Aviation employment. Also depicted in Figure 1. US Pacific Command Area of Responsibility, the "Continental amphibious region" denotes areas where Army Aviation will most likely operate in a traditional manner from land bases. More importantly for this monograph, the depicted "Maritime amphibious region" includes fragmented land areas where traditional operations may not be feasible. This "maritime amphibious region" provides the greatest likelihood for amphibious or ship-based operational requirements for Army Aviation.¹⁷

¹⁵ Gerson, "Reinforcing Washington's Asia-Pacific Hegemony".

¹⁶ US Pacific Command, "USPACOM Area of Responsibility," US Pacific Command Homepage, accessed February 3, 2016, <http://www.pacom.mil/AboutUSPACOM/USPACOMAreaofResponsibility.aspx>.

¹⁷ In Figure 1, the depicted "continental amphibious region" and "maritime amphibious region" are author-created for this monograph and neither attributed nor endorsed by USPACOM.

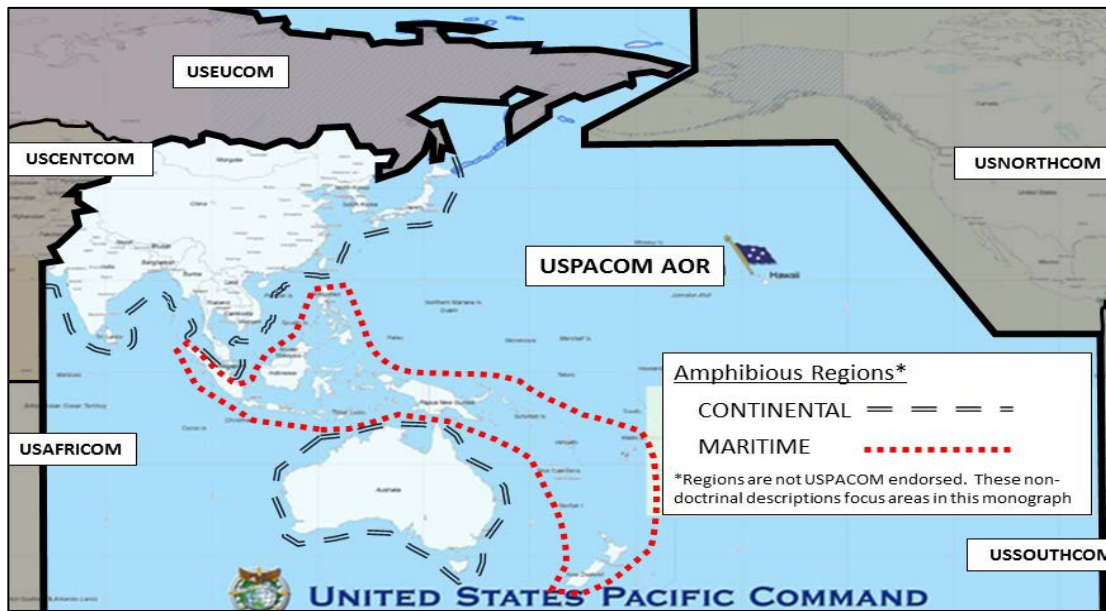


Figure 1. US Pacific Command Area of Responsibility and Amphibious Regions

Source: Adapted from “United States Pacific Command” (map), US Pacific Command website, accessed 3 February 2016, http://www.pacom.mil/portals/55/Images/USPACOM_map.png.

Economically, the United States’ trade relations throughout the Asia-Pacific region provide credibility with its strategic Asia-Pacific partners.¹⁸ By 2020, over half of the United States’ international growth is expected to occur within the USPACOM AOR.¹⁹ Military capabilities deter hostile action to maintain freedom of navigation in support of the United States’ economic interests. A maritime-capable Army assures the United States’ strategic partners in its ability to deter against adversarial aggression and economic impacts in the Asia-Pacific region.

Economic competition in the Asia-Pacific Region increases the potential for military conflict to guarantee access to resources and trade.²⁰ The expansion of the Army’s maritime capabilities will ensure that the United States’ largest military service remains a viable asset in

¹⁸ Mark Borthwick, *Pacific Century: The Emergence of Modern Pacific Asia*, 3rd ed. (Boulder, CO: Westview Press, 2007), 544.

¹⁹ *US National Security Strategy*, 2015, 24.

²⁰ Bruce Berkowitz, *Strategic Advantage. Challengers, Competitors, and Threats to America’s Future* (Washington, DC: Georgetown University Press, 2008), 231.

military operations in the USPACOM AOR. Aviation is a critical enabler for the Army; the development of amphibious aviation capabilities allows the US military to counter external influences and preserve its Asia-Pacific security and prosperity.

The Asia-Pacific region is one of the most complex global military landscapes, including seven of the world's largest militaries and five nuclear-capable nations.²¹ Multilateral military partnerships are essential to strengthen the United States' regional security posture. China refutes the United States' future ability to maintain Pacific security and proposes that its People's Liberation Army assumes the primary role in Asia-Pacific security.²² China's challenge requires increased US efforts to ensure national capabilities remain viable in the USPACOM AOR. This application of Nye's "smart power" will strengthen the United States' influence Asia-Pacific.²³ Adapting Army Aviation towards maritime capabilities provides a critical step to ensure that the United States' largest military service can conduct operations throughout the USPACOM AOR.

Army Aviation requires doctrinal and organizational adaptation to continue its joint efficiency and agility in maritime environments. This monograph examines the USPACOM AOR's unique geographic and operational requirements to determine the best opportunities for military employment. Army Aviation operations in the USPACOM AOR requires joint and multinational capabilities to improve interoperability and mission effectiveness to strengthen the United States' strategic deterrence throughout the USPACOM AOR.

This monograph uses current service doctrine and historical case studies as the lens to determine viable applications for Army Aviation in the maritime regions of the USPACOM

²¹ "USPACOM Area of Responsibility."

²² David Capie, "The United States and Humanitarian Assistance and Disaster Relief (HADR) in East Asia: Connecting Coercive and Non-Coercive Uses of Military Power," *Journal of Strategic Studies* 38, no. 3 (March 11, 2015): 322.

²³ Joseph S. Nye, *The Future of Power* (New York: Public Affairs, US, 2011), 208-209.

AOR. Service doctrine establishes the current frame of reference to establish a baseline assessment of Army Aviation's prospective capabilities. Following the capabilities assessment, three case studies provide contextual data to conduct a qualitative analysis of the potential for future Army Aviation applications in the USPACOM AOR. The current Army Aviation expectations and case studies identify the opportunities to recommend feasible modification to Army Aviation training, from unit-level drills to multinational Pacific training exercises.²⁴

A cursory understanding of Army Aviation capabilities is required to anticipate future maritime requirements. An Army doctrine overview, specifically focusing on maritime, amphibious, and shipboard operations highlights existing capability and shortfalls as applied to operations in the USPACOM AOR. A similar review of US Joint and cross-service doctrine and equipment identifies existing aspects necessary to improve Army Aviation doctrine and increase maritime capability.

The first case study examines Army Aviation's ship-based execution of Operation Uphold Democracy, the 1994 operation to secure Haiti. This case examines the opportunity created by the unprecedented and innovative amphibious employment of Army rotary wing Aviation from two US Navy aircraft carriers.²⁵ This case exemplifies the effects of joint interoperability and planning considerations preceding operation. The scale of the operation and joint coordination complications highlight potential differences between anticipated Pacific operations and those exhibited in Operations Iraqi and Enduring Freedom.²⁶ Though it did not

²⁴ Tyrone Marshall, "Pacific Pathways Increases Readiness through Partnership," *US Department of Defense Homepage*, October 15, 2014, accessed October 18, 2015, <http://www.defense.gov/News-Article-View/Article/603461>.

²⁵ Walter E. Kretchik, Robert F. Baumann, and John T. Fishel, *Invasion, Intervention, "Intervasion": A Concise History of the U.S. Army in Operation Uphold Democracy* (Fort Leavenworth, KS: US Army Command and General Staff College Press, 1998), 51-55.

²⁶ William B. Garrett, interview by Robert K. Wright, Donald Carter, and Cynthia L. Hayden, *JTF-180 Uphold Democracy: Oral History Interviews*, March 29, 1995. ed. Cynthia L. Hayden (Ft. Bragg, NC: XVIII Airborne Corps, 1996).

occur in the USPACOM AOR, Operation Uphold Democracy's unprecedented air assault demonstrates the potential scale required of Army Aviation's amphibious combat power projection in a maritime environment.

The second case study, 1999's Operation Stabilise, examines a USPACOM scenario where amphibious Army Aviation employment could have led to operational success. This United Nations (UN) initiated this peacekeeping operation to safeguard an independence referendum and stop a humanitarian crisis between Indonesia and the seceding East Timor. Despite East Timor's pursuit for independence from Indonesia, Timor Island remained Indonesian sovereign territory. Vast geographical distances and geopolitical complications delayed peacekeepers until Indonesia granted its approval. Though the US military did not play a primary role in Operation Stabilise, this case's geographic and political aspects represent a likely future scenario where amphibious capabilities may afford a strategic advantage.²⁷ Furthermore, the multinational aspect of Operation Stabilise makes it a viable case to examine joint and multinational partner employment capabilities for amphibious Army Aviation.

The final case study examines a worst-case scenario, where ship-based Army Aviation could augment joint foreign humanitarian response operations. Operation Tomodachi examines the multinational response to Japan's destroyed nuclear power plant following a tsunami. The combined effects of the tsunami and nuclear meltdown warranted an immediate US military response. Led by a USMC Marine Expeditionary Unit (MEU), the US government led the massive foreign humanitarian assistance and disaster relief mission. Despite the mission's success, mission requirements nearly exceeded relief capability on several occasions.²⁸ In a future

²⁷ John Crawford and Glyn Harper, *Operation East Timor: The New Zealand Defence Force in East Timor, 1999-2001* (Birkenhead, Auckland, NZ: Reed Books, 2001), 15.

²⁸ Rockie K Wilson, "Operation TOMODACHI: A Model for American Disaster Response Efforts and the Collective use of Military Forces Abroad" (research report, Harvard University, 2012), 8-9, accessed February 11, 2016, <http://www.dtic.mil/dtic/tr/fulltext/u2/a567991.pdf>.

scenario, amphibious Army Aviation could augment or relieve USMC units to increase operational capacity. Amphibious based employment alleviates the complications based upon potentially limited access. The counterpoint to Operation Stabilise's requirement for precise capabilities, operation tomodachi exemplifies the need to respond with massive operational capabilities in support response to crises in the USPACOM AOR.

The Pacific area of responsibility's vast array of population density (mega cities to desolate islands), infrastructural condition (modernity to squalor), and severe natural disasters (typhoons, earthquakes, volcanos) makes the region rife with plausible disaster scenarios. In these extreme scenarios, amphibious based or amphibiously introduced Army rotary wing operations provide an ideal augmentation to the primary, yet limited disaster response capabilities. In these case studies, rotary wing precision combined with reduced logistical requirements promote Army aviation assets as a viable option in large scale, Pacific disaster response.

The last decade's resurgence in Joint/Multinational partnership and exercises throughout the US Pacific Command area of responsibility provides the opportunities and resources required to develop Army Aviation's maritime capability. Implementing the Pacific Pathways construct, US Army Pacific Command conducts several multinational exercises to reduce training budgets and maximize training exposure with military allies and the US State Department.²⁹ These exercises provide the venue to incorporate Army Aviation to develop and improve Army Aviation's maritime competency in the Asia-Pacific region.³⁰

²⁹ Marshall, "Pacific Pathways Increases Readiness through Partnership."

³⁰ US Army Pacific, *Partnering in the Asia-Pacific Theater: The U.S. Army, Pacific Theater Engagement Strategy White Paper*, April 2012, accessed October 29, 2015, <https://www.usarpac.army.mil/pdfs/Partnering%20in%20the%20Pacific%20Theater.pdf>, 3-5.

Army Aviation's re-organization into specialized task forces will employ smaller, agile units, capable of providing direct support to independent Brigade Combat Teams. Scalable aviation organizations can provide tailored support to maneuver elements in areas where physical separation prohibits centralized support.³¹ Aviation missions executed from non-US Navy amphibious platforms provides a multinational opportunity to maximize Army Aviation's maritime potential in the Pacific. This monograph examines the feasibility of overcoming the Pacific expanse by conducting combined, joint operations with the Australian Defence Forces and Japanese Maritime Self Defence Forces.

The combination of historical examples and contemporary applications provides the method to assess whether the recommended aviation competencies yield increased joint and multinational capability. Examination of operational expectations, joint/multinational capabilities, and mission feasibility identifies recommended changes to doctrine, organization, training, and materiel for Army Aviation to succeed in the USPACOM AOR. This monograph recommends initial changes to training and doctrine that later enable opportunities to conduct combined and joint training as the method to optimize USPACOM employment. Additionally, this approach recognizes strategic and political advantages that maximize the United States' ability to increase its influence and deter opposition in the Pacific.

Three contentions shape what the recommended capabilities Army Aviation must develop to achieve mission success in the USPACOM AOR. First, Army Aviation must retain the capability to conduct a Brigade Combat Team sized air movement/air assault into semi-permissive environments.³² Second, Army aviation must retain the capability to sustain battalion-sized or smaller, multipurpose aviation task forces in support of a Brigade Combat Team or smaller operations in an austere environment. These mission capabilities represent the most

³¹ FM 3-04, 2-13 – 2-15.

³² Bickford et al., "The Role of the U.S. Army in Asia," 51-53.

demanding scenarios Army Aviation will likely face in the Asia-Pacific region. Third, aviation-capable amphibious platforms are limited in number and retain strategic importance; only strategically vital operations will warrant amphibious ship retask and reconfiguration to employ Army assets. These elements guide the recommendations for Army Aviation's joint capabilities in a maritime domain.

Aviation/Amphibious Capability: Doctrine, Organization, Training, and Equipment

A preliminary understanding of the applicable doctrine is required to recommend improvements for Army Aviation in the USPACOM AOR. This monograph considers applicable doctrine separated into three categories: Army service doctrine, US Joint doctrine, and US Naval doctrine. Army and Joint doctrine inform the capabilities, mission expectations, and limitations of aviation organizations specific to maritime operations. US Naval doctrine provides additional insight into the cross-service competencies that will aid Army Aviation's transition towards amphibious capabilities necessary in the USPACOM AOR.

Army Doctrine

Despite the Army's contemporary focus on land-based operations, its most recent doctrine incorporates maritime operations more than prior editions. The most notable additions are the release of Army Aviation's capstone document, Field Manual 3-04, *Army Aviation* and its technical companion Army Training Publication (ATP) 3-04.1, *Aviation Tactical Employment*. Integrating combat tactics, techniques, and procedures with new technology, FM 3-04 expands Army Aviation's doctrine to incorporate maritime capability and joint interoperability.³³

³³ FM 3-04, vii, 1-4. Released in 2015 and 2016, FM 3-04, *Army Aviation* and ATP 3-04.1, *Aviation Tactical Employment* supersede multiple publications, including the 1997 publication, FM 1-100, *Army Aviation Operations* and 2007's FM 3-04.111, *Aviation Brigades*.

Despite the integrated importance of Army Aviation's core competencies, rotary wing movement of personnel and equipment in joint, maritime environments requires the most integration with supported forces.³⁴ Rotary wing aircraft allow commanders to overcome anti-access and area denial environments to insert ground forces into the depth of an area of operations using speed and range of army aircraft.³⁵ Air assault and air movement operations differ in execution, but both increase its operational range and tempo a supported force can influence its operational environment.³⁶ In maritime environments, ground movement may be impractical or impossible. Army Aviation overcomes physical limitations by providing viable means for moving combat forces, humanitarian cargo, evacuate wounded persons, or enhance mission command capabilities across dispersed terrain.³⁷

Army Aviation's rotary wing depth exceeds all other services. This ability to mass rotary wing aviation enables joint commanders to increase capacity in foreign humanitarian assistance operations. Whether deployed from naval vessels or between isolated landmasses, Army Aviation provides operational commanders with increased flexibility to achieve mission objectives or augment existing forces.

FM 3-04 and ATP 3-04.1 depict combat aviation brigade organization and serve two key purposes for maritime readiness: brigade organization and scalability. FM 3-04 outlines the

³⁴ Though the fires and intelligence capabilities are necessary in maritime environments, this monograph assumes other joint non-amphibious-based platforms can produce similar effects without requiring the use of amphibious-based aviation platforms.

³⁵ FM 3-04, 1-14 – 1-15.

³⁶ Ibid., 1-4 – 1-6. Air assaults intend to destroy enemy forces or seize key terrain. Air movements support offensive, defensive and stability operations including foreign humanitarian assistance, foreign disaster relief, and non-combatant evacuation operations.

³⁷ Ibid., 3-23 – 3-31.

standard CAB organization beyond the aviation restructuring initiative.³⁸ These publications describe scaled-down forces packages at the battalion tasks force and company team level, to ensure the necessary maintenance, sustainment, and mission command capabilities accompany the airframes.³⁹ Due to space limitations for equipment and personnel aboard amphibious ships, mission configured force packages are essential to optimize Army Aviation capabilities in support of joint operations on amphibious vessels or in austere environments.

A significant limitation for Army Aviation in maritime environments is the increased maintenance consideration required in saltwater environments. Salt water's corrosive effects on Army aircraft increases routine maintenance requirements. Understanding the effects of salt water corrosion in shipboard operations is critical to ensure Army Aviation capabilities endure operational assignments in maritime environments.⁴⁰

In preparation for contingency operations in the USPACOM AOR, FM 3-04 addresses Army Aviation's mission capability in "other environments": pandemic zones; post-disaster areas; and chemical, biological, radiological, and nuclear environments. Recent events in the Asia-Pacific region exhibits these environments: avian flu, typhoons and tsunamis near populated areas, and potential conflicts on the North Korean peninsula.⁴¹ These environments exemplify the necessary conditions in which Army Aviation must prepare to operate.

³⁸ FM 3-04, 2-1, 2-7– 2-9. The current CAB contains a headquarters and five subordinate battalions: an Attack Reconnaissance Battalion with twenty-four AH-64D/Es and twelve MQ-1C Gray Eagle Unmanned Aerial Systems (UAS); an Assault Helicopter Battalion with thirty UH-60M utility helicopters; a General Support Aviation Battalion (GSAB) with eight UH-60Ms, twelve CH-47F cargo helicopters, and fifteen MEDEVAC HH-60Ms; the thirty OH-58D Attack Reconnaissance Squadron is in transition to a Heavy Squadron with twenty-four AH-64D/Es and twelve RQ-7B UAS, an Aviation Support Battalion (ASB) provides maintenance and support.

³⁹ FM 3-04, 2-13 – 2-15; Army Training Publication 3-04.1, *Aviation Tactical Employment* (Washington, DC: Government Printing Office, 2016), A-1 – A-5.

⁴⁰ FM 3-04, 1-15 – 1-16.

⁴¹ *Ibid.*, 1-17 – 1-18; *US National Security Strategy, 2015*, 10-11.

Commensurate with the Army's Doctrine 2015 initiative, the US Army Aviation Center of Excellence's top-down Army Aviation doctrine revisions started with FM 3-04 and will cascade down to subordinate doctrine. Last updated in 1997, FM 1-564 *Shipboard Operations* details are obsolete, but retains conceptual utility for joint planning, Navy flight deck procedures, and LHD flight deck dimensions and capacities.⁴² Once updated and nested into the FM 3-04 series, FM 1-564 will provide a vital tool for planning joint operations amphibious operations.

Joint Doctrine

In preparation for maritime operations, Army Aviation doctrine must nest with Joint doctrine and incorporate US Navy and Marine Corps doctrine. In its capstone document, Joint Publication (JP) 3-0, *Joint Operations* instructs the Army to prepare to employ its rotary wing assets in support of military operations across the entire range of military operations and conflict continuum. Including combat operations, JP 3-0 specifically instructs the Army to prepare to employ rotary wing capabilities in support of peace operations, including foreign humanitarian assistance and reconstructions efforts. In the USPACOM AOR, Army Aviation can provide an unmatched capability supporting foreign humanitarian assistance operations.⁴³

Joint Publication 3-04, *Joint Shipboard Helicopter and Tiltrotor Aircraft Operations*, describes the unique aspects of joint shipboard operations. The publication covers all facets of pre-deployment, embarkation, and debarkation planning for joint shipboard operations, and addresses shipboard command authorities, flight/hangar deck operations, and sustainment considerations. JP 3-04 also provides general guidance for integrating aircraft from all the

⁴² Field Manual 1-564, *Shipboard Operations* (Washington, DC: Government Printing Office, 1997), chapter 2, 4-6 – 4-7, Annex G.

⁴³ Joint Publication 3-0, *Joint Operations* (Washington, DC: Government Printing Office, 2011), V-22 – V-26.

services aboard air-capable ships, amphibious assault ships, and aircraft carriers. It also examines historical complications of shipboard Army Aviation operations including space limitations, aircraft incompatibility issues, and ammunition and fuel considerations.⁴⁴

JP 3-04 addresses “mission trade-off” as the most important consideration regarding joint amphibious operations at the operational level of warfare. Amphibious assault ships and aircraft carriers are limited in quantity and fulfill strategic roles. Operational commanders must consider that embarking Army Aviation onto Navy vessels incurs mission trade-off in the removal of Navy or USMC assets which are originally designed and optimized for shipboard operations.⁴⁵ Reconfiguring aircraft carriers for Army operations requires additional Navy ships to defend the aircraft carrier. USMC MAGTFs are optimized to operate from LHD and LHA class amphibious assault ships. Army Aviation’s reduced compatibility requires additional mission trade-off as compared to USMC fixed and rotary wing aviation.⁴⁶ JP 3-04 provides the general insight for Army Aviation to incorporate joint concepts, additional publications provide additional utility for specific mission scenarios.

JP 3-04’s accompanying manual, JP 3-04.1, *Joint Tactics, Techniques, and Procedures for Shipboard Helicopter Operations*, requires revision but remains useful at the tactical level.⁴⁷ Once revised, JP 3-04.1 will guide FM 1-564’s revision to a 3-04 series *Shipboard Operations*.

Joint doctrine spans the conflict continuum, informing expectations for Army Aviation in both combat and support operations. Joint Publication 3-03, *Joint Interdiction* addresses the

⁴⁴ Joint Publication 3-04, *Joint Shipboard Helicopter and Tiltrotor Aircraft Operations* (Washington, DC: Government Printing Office, 2013), II-39.

⁴⁵ JP 3-04, II-1. The US Navy currently operates ten aircraft carriers and nine amphibious assault ships, with one aircraft carrier and one amphibious assault ship near completion.

⁴⁶ *Ibid.*, II-4.

⁴⁷ JP 3-04.1, *Joint Tactics, Techniques, and Procedures for Shipboard Helicopter Operations*’ last revision was 1997, the same year as Army FM 1-564, *Shipboard Operations*.

combat related end of the conflict continuum describing how Army Aviation's attack and air assault capabilities enable joint force commanders to overcome the prohibitive effects of terrain and enemy force activity to gain an advantage. Additionally, maritime interdiction can isolate enemy forces from external support, stop their actions, or enforce legal sanctions.⁴⁸ Army forces supported by Army Aviation greatly increase the available combat forces able to conduct maritime interdiction operations in the USPACOM AOR.

Addressing the peaceful end of the continuum, Joint Publication 3-29, *Foreign Humanitarian Assistance*, describes Army Aviation's unique contribution to humanitarian assistance operations. Amphibious-capable Army forces increase the overall joint force capability and throughput. JP 3-29 describes how massive international response can cripple logistics architecture, requiring military augmentation to support airfield operations and increase airlift support. Additionally, helicopters provide unmatched utility during disaster relief efforts as ground transportation infrastructure is often impaired.⁴⁹ Rotary wing casualty evacuation capabilities combined with ship-based medical capabilities greatly increase the ability to save lives in a crisis. Overall, ship-based aviation capabilities alleviate the strain on land based logistical nodes while providing critical assistance capabilities.

Joint doctrine provides conceptual information necessary to incorporate amphibious Army Aviation into joint force operations. To prepare the combat aviation brigades for tactical requirements, Marine Corps and Navy doctrine inform how its MAGTFs execute expeditionary shipboard aviation operations. Most important, Marine Corps Warfighting Publication (MCWP) 3-24, *Assault Support*, introduces Army Aviation to "Command and Control in Amphibious

⁴⁸ Joint Publication 3-03, *Joint Interdiction* (Washington, DC: Government Printing Office, 2011), II-4 – II-8.

⁴⁹ Joint Publication 3-29, *Foreign Humanitarian Assistance* (Washington, DC: Government Printing Office, 2014), chapter III.

Operations,” detailing the authorities and procedures required to operate with the US Navy.⁵⁰ US Naval Air Systems Command (NAVAIR) published two essential Naval Air Training and Operating Procedures (NATOPS) manuals which provide CAB planners essential references for planning shipboard operations. NAVAIR 00-80T-106, *LHA/LHD NATOPS Manual* details all aspects of aviation operations from amphibious assault ships and NAVAIR 00-80T-105, *CV NATOPS Manual* describes operations aboard aircraft carriers (CV). These two comprehensive publications provide the essential details required to prepare Army Aviation units for amphibious operations.

Where doctrine guides Army Aviation’s training requirements, equipment interoperability also affects joint employment in the USPACOM AOR. Previously discussed; Army Aviation cannot abandon existing competencies nor acquire airframes that achieve increased shipboard compatibility. This section examines the basics of the naval vessels Army Aviation can expect to operate from in the USPACOM AOR as well as the helicopter-specific capabilities and limitations in conducting shipboard operations.

US Navy Amphibious Ships

Amphibious based Army Aviation can operate primarily from three classes of US Navy ships. The Navy currently operates ten of the Nimitz-class nuclear aircraft carriers (CVNs) organized into multi-ship Carrier Strike Groups (CSGs). Additionally, the Navy operates one America class (LHA) and eight Wasp-class (LHD) and amphibious assault ships, which the Navy organizes into Amphibious Ready Groups to forward-deploy MEUs. Table 1 includes additional

⁵⁰ Marine Corps Warfighting Publication 3-24, *Assault Support* (Washington, DC: Government Printing Office, 2004), 1-4, 4-1 – 4-4.

ship capabilities and comparison to allied assets. Though deployable to any geographic combatant command, eleven of these nineteen ships are Pacific based in the United States and Japan.⁵¹

Nimitz class aircraft carriers are the world's largest warships, and though optimized for Navy and Marine Corps fixed-wing aircraft, can accommodate Army helicopters. The flagship for Carrier Strike Groups, US aircraft carriers provide the United States with an unmatched strategic strike platform and deterrent capability. Fueled by nuclear reactors, US aircraft carriers have unlimited range and are the fastest amphibious ship. While CVNs are capable of amphibious operations, they are designed specifically for open-sea operations and long-range strike.⁵² No other nation's aircraft carriers match number or capability of the Nimitz class'. Embarked Army Aviation incur significant mission trade-off as the carrier must operate closer to shore with fewer fixed wing capabilities. See Table 1 for additional aircraft carrier capabilities.

Table 1. Amphibious Ship Capability Comparison

Class-Type	# Ships	# Pacific Based	Displacement (tons)	Flight Deck length	Max Helos	Well Deck	Speed	Range	Embark Troops
Nimitz - CVN	10 ^A	6	101,000	1100'	50+	N	31 kts	unlimited	3000+
Wasp - LHD	8	5	41,000	818'	28	Y	24 kts	9500nm	1687
America - LHA	1 ^B	1	45,000	818'	28	N	24 kts	9500nm	1687
Canberra - LHD (AUS)	2	2	28,000	757'	18	Y	20 kts	8000nm	1100
Hyuga-DDH (JPN)	2	2	20,000	646'	15	N	30 kts	6000nm	n/a
Izumo - DDH (JPN)	1 ^C	1	24,000	810'	~22	N	30 kts	6000nm	400
^A USS <i>Ford</i> , <i>Kennedy</i> in production (CVN)			^B USS <i>Tripoli</i> in production (LHA)			^C DDH <i>Kaga</i> in production (DDH)			

Source: Adapted from Military Periscope Equipment Databases: America LHA-6 and Wasp LHD Class, Canberra Class LHD, Hyuga and Izumo Class DDH, and Nimitz Class CVN, accessed December 30, 2015, <https://www.militaryperiscope.com/weapons/ships/amphib/w0007824.html>.

⁵¹ US Navy, "Pacific Fleet Ships by Class," accessed August 20, 2015, <http://www.public.navy.mil/surfor/Pages/USNavyPacificFleetShipsbyClass.aspx#.VtufnY-cHcc>.

⁵² Military Periscope, "NIMITZ (CVN-68) Class," Military Equipment Database, accessed December 30, 2015, <https://www.militaryperiscope.com/weapons/ships/carriers/w0002877.html>.

Half the size of Nimitz-class aircraft carriers, amphibious assault ships are tailored for amphibious rotary wing operations and are the best-suited ship class to facilitate amphibious based Army Aviation operations. The United States currently employs nine amphibious assault ships in two ship classes. Wasp class LHDs conduct aviation and surface amphibious operations from its flight deck and well deck, whereas America class LHAs are exclusively aviation platforms without well decks.⁵³ These two classes comprise the Navy's nine amphibious assault ships which serve as the primary aviation platform and flagship for Amphibious Readiness Groups (ARG).⁵⁴ The ARG supports the MAGTF ability to conduct amphibious operations near maritime littorals.

Amphibious assault ships' aviation capabilities are designed to support rotary wing operations and vertical takeoff and land fixed wing operations (AV-8B Harrier and USMC variant F-35 Joint Strike Fighters). With nine deck landing positions and storage capacity for up to twenty-eight aircraft, LHD/As can simultaneously launch or recover an Army Aviation company and embark a partial Army Aviation battalion task force.⁵⁵ Below the flight deck, LHD/As have large hangar bays to conduct aviation maintenance and vehicle and cargo storage areas. During crisis response, amphibious assault ships can expand patient treatment facilities to six hundred hospital beds, forty-six inpatient beds, and a fourteen patient intensive care unit.⁵⁶

⁵³ US Navy, "SURFPAC's Amphibious Assault Ship (LHD/LHA) Info Page," accessed August 20, 2015, <http://www.public.navy.mil/surfor/Pages/AmphibiousAssaultShip.aspx>.

⁵⁴ US Navy. "The Amphibious Ready Group." accessed March 29, 2016, http://www.navy.mil/navydata/nav_legacy.asp?id=148. Though MEU-ARG scalable and tailorable to each mission, the traditional MEU-ARG configuration is one LHD with two smaller support ships.

⁵⁵ US Navy, "Pacific Fleet Ships by Class." USMC aircraft are designed to minimize space requirements on ships. Army rotary wing aircraft must anticipate a reduced shipboard capacity based upon airframe design.

⁵⁶ US Navy, "Essex ARG Ready to Provide Assistance to Japan," October 3, 2011, accessed February 29, 2016, http://www.navy.mil/submit/display.asp?story_id=59091.

Amphibious assault ships habitually support expeditionary MAGTF operations and their availability to support Army Aviation is subject to mission trade-off and asset reallocation.

Allied Amphibious Ships

Australia's recent acquisition of two amphibious assault ships increased the potential bilateral for rotary wing aviation operations in the USPACOM AOR. Since 2014, the Australian Defense Forces (ADF) commissioned two Canberra class LHDs, the HMAS *Adelaide* and HMAS *Canberra*. This procurement indicates Australia's long-term commitment to Indo-Pacific security and will strengthen its military partnership with the United States.

Regarding general capabilities and capacities, Canberra LHDs provide a two-thirds scale of a US Wasp class. Notably, the Canberra class is compatible with US Army aircraft and able to launch or recover six UH-60s or four CH-47s simultaneously.⁵⁷ Despite the Canberra class smaller stature, the addition of two additional allied LHDs to the Pacific increases the multinational amphibious presence, reducing the appearance of United States amphibious unilateralism. For Army Aviation, partnered operations provide the opportunity to conduct combined amphibious operations with the ADF.

The Japanese Maritime Self-Defense Force (JMSDF) currently operates three helicopter carriers (DDHs) as anti-submarine warfare vessels.⁵⁸ Japan's two Hyuga-class and one Izumo class DDH are similar in size and capability to the Canberra Class LHDs. IN addition to anti-

⁵⁷ Royal Australian Navy Homepage, "Amphibious Assault Ship (LHD)," Fleet ship/boat/craft information page, accessed November 3, 2015, <http://www.navy.gov.au/fleet/ships-boats-craft/lhd>. The ADF currently operates CH-47 and UH-60 variants, but is transitioning to european MRH-90 helicopters which are better suited for shipboard operations.

⁵⁸ Military Periscope, "HYUGA (DDH-181) Class," Military Equipment Database, accessed January 16, 2016, <https://www.militaryperiscope.com/weapons/ships/destroyer/w0007432.html>. Japan's constitution prevents the acquisition and operations of offensive aircraft carriers, so their helicopter capable ships' primary role is defensive anti-submarine warfare.

submarine warfare, these ships conduct humanitarian support and logistical operations in the USPACOM AOR.⁵⁹ Though originally forecasted to acquire four Hyuga class DDHs, China's increased maritime presence prompted the Japanese Navy to halt production of the smaller Hyuga class in favor for the larger and more capable Izumo class DDH.⁶⁰

Like the Canberra LHDs, Japanese DDHs are compatible with American helicopters and can simultaneously launch or recover four helicopters and store approximately ten to fifteen more on its flight deck and in the hangar. DDHs can launch an Army Aviation platoon and the embark approximately two aviation company teams. The Izumo-class DDH can accommodate up to four hundred embarked troops; a decreased capacity as compared to comparable sized United States and Australian LHDs.⁶¹ Japan's DDH fleet provides more options to conduct multinational, Army Aviation shipboard operations in the USPACOM AOR.

By including Australian and Japanese helicopter-capable ships in addition to US platforms, the number of US-allied amphibious assault ships in the USPACOM AOR increases from six to eleven. Partnered operations provide an opportunity to increase platform availability for Army Aviation to conduct shipboard operations by overcoming mission trade-off for Navy assets that primarily support MAGTFs. Additionally, multinational shipboard operations allow Army Aviation deploy via strategic airlift to the western Pacific and embark closer to the required area of operation.

⁵⁹ Ibid.

⁶⁰ Military Periscope, "IZUMO-Class Helicopter Carrier," Military Equipment Database, accessed January 16, 2016, <https://www.militaryperiscope.com/weapons/ships/carriers/w0008535.html>.

⁶¹ Ibid.

US Army Helicopters

Inherent incompatibilities between Army aircraft and amphibious assault ships reduce the efficiency that Army Aviation can conduct amphibious operations. In contrast, USMC aircraft are designed to operate from amphibious assault ships. The most significant Army aircraft inefficiency is the inability to transform automatically from an operational profile to a storage profile on the flight deck. Compact landing gear and automated blade folding systems improve USMC aircraft deck capacity and preparation time.⁶² Army CH-47's size and tandem rotor design inhibit its maintenance capability as crew chief must remove its rotor blades for the aircraft to fit on LHD/A elevators. Despite these constraints, Army Aviation can conduct shipboard operations, but inform planners must account for the inefficiencies as compared to MAGTF airframes.

These Army Aviation characteristics decrease the efficiency and capacity of flight deck storage, maintenance operations, and launch and recovery.⁶³ Due to its degraded shipboard compatibility and efficiency, Army Aviation shipboard operations must be deliberate and limited in duration. Joint planning between the Army and Navy will resolve many of these mission impediments before operations commence. This section provided the basic doctrinal and equipment fundamental necessary for Army Aviation to conduct joint and multinational operations in maritime environments. The subsequent three case studies focus on historical military instances which contribute towards the application of Army Aviation operations in the USPACOM AOR.

Case Study #1: Operation Uphold Democracy: Haitian Liberation 1994

In 1994, Operation Uphold Democracy ushered Army Aviation into a new era of joint operations. During this mission to reinstate the exiled Haitian President, Jean-Bertrand Aristide,

⁶² Geoffrey C. Lambert and Mark M. Huber, "Joint Shipboard Helicopter Operations." *Joint Forces Quarterly*, Winter 2000–01 (2001), 85.

⁶³ JP 3-04, II-5.

the Army executed the largest amphibious, rotary wing air assault in history. Operation Uphold Democracy's distinguishing contribution to this monograph is the parallel planning effort to prepare for both an opposed airborne invasion and an unopposed/semi-opposed brigade combat team air assault using Army helicopters from a US Navy aircraft carrier. This innovative operation marked the first time Army Aviation operation of this size deployed from a Navy aircraft carrier since Doolittle's Tokyo raid in 1942.⁶⁴

In 1990, Haiti elected Jean-Bertrand Aristide, a priest and outspoken critic of previous regimes, as president. Passionate but inexperienced, Aristide failed to bring effective change to the Haitian people. In September 1991, Lieutenant General Raoul Cedras prepared a military coup, to which President Aristide ceded power and fled to Venezuela. In response, the United States initiated diplomatic and military plans to remove Cedras' coup and re-install Aristide to power, but the collapse of the Soviet Union postponed the plans for two years.⁶⁵

In October 1993, a United Nations envoy aboard the USS *Harlan County* arrived in Port-au-Prince to assess humanitarian conditions under Cedras' regime. To demonstrate his power to the international community, General Cedras unexpectedly employed armed naval craft and a hostile mob in the port, denying the UN team's debarkation. In response, President Clinton's administration initiated military planning to remove Cedras from power under a wide array of contingencies, from a peaceful transfer of power to full military invasion.⁶⁶

In the spring of 1994, chief of the US Atlantic Command instructed the 18th Airborne Corps commander, then LTG Hugh Shelton, to establish Joint Task Force (JTF)-180 and commence planning the forcible entry into Haiti, OPLAN 2370. In July 1994, the US Army

⁶⁴ Williams, *A History of Army Aviation*, 373.

⁶⁵ Kretchik, Baumann, and Fishel, *Invasion, Intervention, "Intervasion"*, 19-20.

⁶⁶ Garrett, *JTF-180 Uphold Democracy: Oral History Interviews*, 43.

Forces Commander, General Dennis Reimer, activated Major General Meade's 10th Mountain Division as JTF-190, tasked to develop OPLAN 2380, as a non-invasion branch plan to seize key Haitian infrastructure, evacuate US citizens, and stabilize the Haitian population through the transition of national power.⁶⁷ Unique to this plan was the concept of embarking elements of the 10th Mountain Division's Aviation Brigade and 1st Brigade Combat Team aboard the aircraft carrier, USS *Eisenhower*. Opting to preposition air assault forces within the Joint Operations Area provided strategic leaders the option to execute an amphibious air assault/air movement into Port-au-Prince with fewer complications due joint coordination and national approval authorities.

On short notice, the 10th Aviation Brigade transitioned from planning to training for operations aboard the USS *Eisenhower*. The 10th Aviation Brigade received their warning order on 1 August 1994 and without precedent, created a training program to simulate carrier deck landings within the week. By 8 August 1994, aircrews conducted mock deck qualifications on replica aircraft carriers painted on airfield taxiways.⁶⁸ The following week, 10th Aviation Brigade deployed its aircrews to Norfolk, VA and in just four days, conducted over twelve hundred day and night deck landings aboard the USS *Roosevelt*. More importantly, the Army and Navy maintainers and armament personnel cross-trained each other on helicopter characteristics and aircraft carrier deck procedures.⁶⁹ Through live training and shared knowledge, the 10th Aviation Brigade identified key training objectives, synchronized their embarkation and deployment plans, and qualified the requisite number of aircrews within two weeks of mission notification. Through the joint exchange in Norfolk, the aircrews gained tactical repetition, but more importantly, the

⁶⁷ Cynthia L. Hayden, *JTF-180 Operation Uphold Democracy: Oral History Interviews* (Fort Bragg, NC: XVIII Airborne Corps & Fort Bragg Training Support Center, 1995), 1-5.

⁶⁸ Lawrence Casper, interview by Dennis Mroczkoswki, *JTF-190 Uphold Democracy: Oral History Interviews*, October 19, 1994, ed. Cynthia L. Hayden (Ft. Bragg, NC: XVIII Airborne Corps, 1996), 391.

⁶⁹ Ibid.

maintainers learned the nuances of amphibious based maintenance and the leaders gained an appreciation for the risks associated with amphibious flight operations.

On the 14th of September 1994, the USS *Eisenhower* and USS *America* departed Norfolk embarked with Army forces on the twelve-hundred-mile voyage to Haiti (depicted in Figure 2).⁷⁰

On 18 September 1994, with the invasion force en route to Haiti, General Cedras agreed to the peaceful terms set forth by former President Carter's diplomatic envoy.⁷¹ Facing the reality of a US military invasion, General Cedras ceded Haitian authority and granted US military peacekeepers unopposed Haitian entry.⁷²

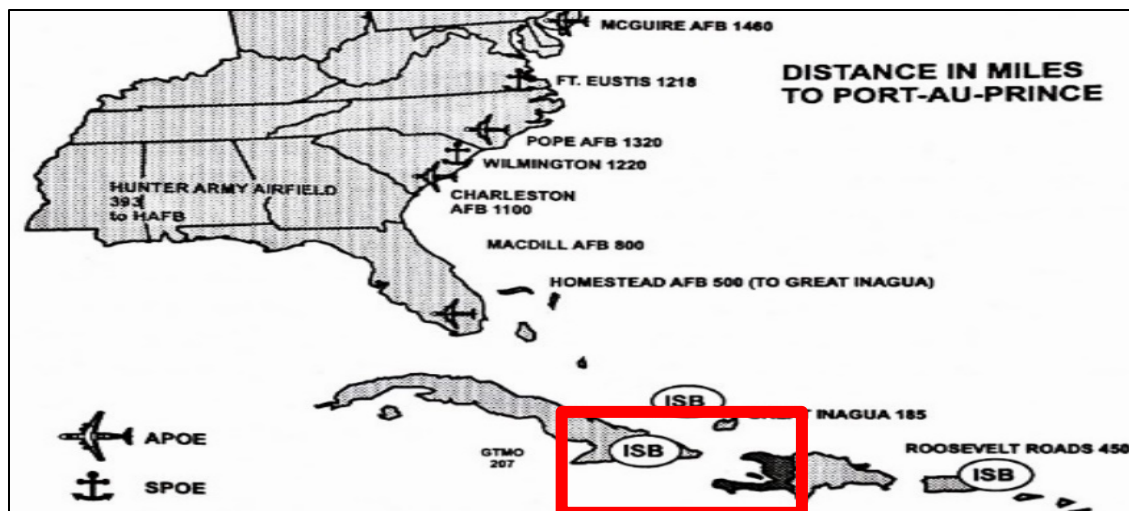


Figure 2. Map of Operation Uphold Democracy Operational Environment

Source: "Map 8: Force deployment scheme" (map), *Invasion, Intervention, "Intervasion"*, A Concise History of the U.S. Army in Operation Uphold Democracy (Ft. Leavenworth, KS: US Army Command and General Staff College Press, 1998), 55.

⁷⁰ E.D. McGrady and Robert E. Sullivan, *Operation Uphold Democracy: Observations on Joint Assault Forces Operated From a CV* (Alexandria, VA: Center for Naval Analysis, 1996), 1-6. In addition to the USS *Eisenhower*, the USS *America* departed Norfolk for Haiti with Army Special Operations Aviation and Special Operations Forces embarked.

⁷¹ John R. Ballard, *Upholding Democracy: The United States Military Campaign in Haiti, 1994-1997* (Westport, Conn.: Praeger Publishers, 1998), 96-100; Kretchik, Baumann, and Fishel, *Invasion, Intervention, "Intervasion"*, 74-76.

⁷² Joe Truelove, interview by Robert K. Wright, *JTF-180 Uphold Democracy: Oral History Interviews*, March 30, 1995, ed. Cynthia L. Hayden. Ft. Bragg, NC: XVIII Airborne Corps, 1996.

Within hours, planners hastily adapted JTF-190's semi-permissive entry into Operation Uphold Democracy's main effort. Labeled OPLAN 2380 Plus, the brigade level amphibious air assault sought to seize key Port-au-Prince infrastructure to facilitate follow-on peacekeeping forces.⁷³ On 19 September 1994, 10th Aviation Brigade executed a fifty-helicopter air assault, transporting over two thousand Army soldiers from the USS *Eisenhower* to seize the Port-au-Prince airport and deter opportunist aggression by Cedras loyalists.⁷⁴

Available shipboard Army Aviation created operational and strategic leverage. Strategically, the depth of military capabilities strengthened President Carter's negotiations and forced Cedras' surrender. Operationally, the ability to rapidly transition from a combat airborne invasion to a semi-opposed air assault gave General Shelton a variety of options to seize/secure key Haitian infrastructure without delay. One of the 18th Airborne Corps' planners explained Army Aviation's amphibious value, stating: "having the 10th mountain division's 1st brigade combat team aboard the USS *Eisenhower* gave the plan and the planners the flexibility to adapt to the last minute change in plan and the ability to adapt and meet operational requirements."⁷⁵

As a case study, Operation Uphold Democracy demonstrated an innovative application of joint interoperability and established the maximum scale for amphibious Army Aviation operations. Tactical mission preparation for non-standard Army Aviation missions will provide operational commanders the necessary flexibility to employ Army Aviation in the USPACOM AOR to respond to emergent problems in a complex environment.⁷⁶ Additionally, the credible threat JTF-190 posed upon the Cedras regime helped used the United States' military capabilities

⁷³ Kretchik, Baumann, and Fishel, *Invasion, Intervention, "Intervasion"*, 78.

⁷⁴ Casper, *JTF-190 Uphold Democracy: Oral History Interviews*, 393.

⁷⁵ Garrett, *JTF-180 Uphold Democracy: Oral History Interviews*, 55.

⁷⁶ Frans P.B. Osinga, *Science, Strategy and War: The Strategic Theory of John Boyd* (New York: Routledge, 2007), 95.

to reinforce diplomatic power. Exhibiting Joseph Nye's concept of "Smart Power," the next case study demonstrates Army Aviation's amphibious potential in as a missed negotiation opportunity.⁷⁷

A counterpoint to Operation Uphold Democracy's application towards operations in the USPACOM AOR is the vast differences in the distance and security requirements between the operations in the Caribbean Sea and the Pacific or Indian Oceans. The disparate times and distances required to execute a multi-day, twelve hundred mile operation in the Caribbean pale in comparison to the multi-week or multi-month operations, six to eight thousand miles from the continental United States.⁷⁸ This case study demonstrates a feasible scenario for operational employment of amphibious Army Aviation, but it is doubtful whether the US Navy would risk the long-term mission trade-off of an entire carrier strike group to employ Army Aviation loaded aircraft carrier on the far side of the USPACOM AOR.

A significant takeaway from Operation Uphold Democracy is the importance of personnel integration over tactical training. While aircrews had to conduct hasty deck qualifications, the training was accomplished relatively quickly with minimal preparation. The most important learning point was the Army to Navy exchange that occurred in Norfolk, as this allowed subject matter experts to coordinate and identify equipment and procedural incompatibilities before they impacted mission readiness. This exchange highlights the importance of updated doctrine to identify incompatibilities and recommend operational solutions. In doing so, Army Aviation can facilitate efficient training opportunities and overcome equipment incompatibilities to help to employ Army Aviation assets from naval platforms in any maritime environment.

⁷⁷ Nye, *The Future of Power*, 208-209.

⁷⁸ Bruce Berkowitz, *The New Face of War. How War Will Be Fought in the 21st Century* (New York: The Free Press, 2003), 181.

Operation Uphold Democracy described Army Aviation's most significant contemporary maritime operation, the execution of a brigade-level air assault from a US Navy aircraft carrier. Despite its significance demonstrating Army Aviation's shipboard capabilities, the geostrategic implications of the Caribbean pale in comparison to those encountered across the Pacific Ocean. The next case study examines a contemporary peacekeeping operation in the USPACOM AOR where geographic limitations warrant amphibious Army Aviation capability.

Case Study #2: Operation Stabilise: East Timor Crisis 1999

Operation Stabilise, the 1999 United Nations peacekeeping mission in East Timor examines the anticipated operational requirements for amphibious Army Aviation with specific emphasis on the USPACOM AOR's geography.⁷⁹ East Timor's geography exemplifies the remote location within the maritime amphibious region where joint commanders can utilize shipboard Army Aviation to introduce forces into a low-intensity, permissive environments. These operations represent Army Aviation's expected contribution to multinational foreign humanitarian assistance operations. Operation Stabilise depicts the likely future scenario in which shipboard Army Aviation capabilities can achieve a strategic advantage to deter or compel hostile foreign activities.

Gaining its independence in 2002, East Timor is one of Southeast Asia's youngest and poorest states.⁸⁰ Located in the southern Indonesian archipelago and roughly the size of Connecticut, Timor Island is divided between western Indonesian territory and East Timor occupying the remainder. Exhibiting the physical and diplomatic isolation, East Timor lacks access to natural resources and is virtually isolated from all states except Indonesia. This lack of

⁷⁹ Since Operation Stabilise, East Timor's official title changed to "Timor-Leste". This monograph uses the outdated "East Timor" to maintain continuity with reference material.

⁸⁰ Simon Chesterman, "East Timor," in *United Nations Interventionism, 1991-2004*, ed. Mats Berdal and Spyros Economides (New York: Cambridge University Press, 2007), 192.

resources limits economic trade and the development of economic partners. Depicted in Figure 3, East Timor is encircled by Indonesian territory. With 275 nautical miles between East Timor and its next closest state, East Timor remains subject to Indonesian influence.⁸¹



Figure 3. East Timor in the South Indian Ocean

Source: “Indonesia” (map), CIA World Factbook, accessed 2 March 2016, <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/id.html>.

In 1975, Indonesia invaded and annexed the Portuguese colony, Timor Island, initiating an era of coercive governance.⁸² Australia, In an attempt to strengthen its strategic relationship with Indonesia, was one of the only world governments that recognized Timor Island’s annexation.⁸³ Though 1980, Indonesia enforced its authority through military aggression as the Indonesian Army was the only national institution capable of imposing national control

⁸¹ CIA World Factbook, “Timor-Leste,” US Central Intelligence Agency Homepage, last modified January 7, 2016, accessed February 2, 2016, <https://www.cia.gov/library/publications/the-world-factbook/geos/tt.html>.

⁸² Borthwick, *Pacific Century*, 338; Chesterman, “East Timor,” 194.

⁸³ Chesterman, “East Timor,” 193-194.

throughout its dispersed territory.⁸⁴ Throughout the 1980s and 1990s, military conflict ceased, but coercion and brutality continued, inciting East Timor's secession movement during the mid-1990s. Physically isolated and lacking economic means to forge strategic partnerships, East Timor was subject to Indonesian coercion and brutality. The matter complicated regional relations as South Pacific nations wanted to end East Timor's humanitarian crisis, but feared disrupting their strategic relations with Indonesia.⁸⁵ In 1998, Indonesian President Suharto left office which increased East Timor's secession movement.⁸⁶ In 1999, the United Nations internationally recognized East Timor's desire for independence by sponsoring a 1999 independence referendum and promised to provide a peacekeeping mission to police the fall 1999 referendum.

Early 1999, despite the auspice of an unobstructed referendum, continued Indonesian coercion attempted to influence East Timor's population to remain under Indonesian sovereignty. The Indonesian military and militia inflicted widespread violence in pro-independence areas. Throughout 1999, Indonesia's coercive practices intensified as violence spiraled into localized genocide, fostering increased tension and animosity that endured since Indonesia's 1975 occupation.⁸⁷

⁸⁴ Ben Kiernan, "War, Genocide, and Resistance in East Timor, 1975-1999: Comparative Reflections on Cambodia," in *War & State Terrorism. The United States, Japan, & the Asia-Pacific in the Long Twentieth Century*, ed. Mark Selden and Alvin Y. So (Lanham, MD: Rowman & Littlefield Publishers, 2004), 203; Alan Stephens, "The Asia Pacific Region," in *Global Air Power*, ed. John A. Olsen (Washington, DC: Potomac Books, 2011), 300, 323.

⁸⁵ John Sanderson, "The Cambodian Experience: A Success Story Still?" in *United Nations Peacekeeping Operations: Ad Hoc Missions, Permanent Engagement*, ed. Ramesh Thakur and Albrecht Schnabel, (New York: United Nations University Press, 2001), 159.

⁸⁶ Kiernan, "War, Genocide, and Resistance in East Timor," 222-226.

⁸⁷ *Ibid.*, 224-226.

The key aspect of this case study is the conflict between geo-political relations and support of humanitarian rights in poor, remote locations that inhibit neutral base access. In response to Indonesia's violence, Australia offered five thousand troops to lead the International Force in East Timor (INTERFET), a multinational UN peacekeeping coalition consisting of ten thousand troops from twenty-two nations.⁸⁸ Despite INTERFET's creation, neither Australia nor any other contributing nation authorized their forces to deploy without Indonesia's formal acceptance. Inaccessible from neutral areas, East Timor remained Indonesian sovereign territory and subject to maritime isolation; the closest neutral territory was 275 nautical miles away.⁸⁹ The inability for INTERFET to reach East Timor from neutral territory emboldened the Indonesian government's continued coercion and refusal of UN peacekeepers.

Subject to limited options, the INTERFET could either invade Indonesia or await diplomatic resolution. Unwilling to endure diplomatic and economic damage to its relationship with Indonesia, Australia awaited Indonesian approval. Despite the UN Security Force assessment that a continued Indonesian terror and destruction would precede and follow the referendum, INTERFET did not intervene.⁹⁰ This continued UN inactivity further emboldening the Indonesian military and militia to continue their violent campaign in East Timor.

Despite continued Indonesian violence, the East Timor populace overwhelmingly voted for independence on 30 August 1999.⁹¹ Following the results, Indonesian forces killed nearly one thousand citizens and destroyed eighty percent of their dwellings.⁹² This abject act of retaliatory

⁸⁸ Chesterman, "East Timor," 196.

⁸⁹ Joseph Nevins, *A Not-So-Distant Horror: Mass Violence in East Timor* (Ithaca, NY: Cornell University Press, 2005), 118-119.

⁹⁰ *Ibid.*, 120-121.

⁹¹ CIA World Factbook, "Timor-Leste."

⁹² Borthwick, *Pacific Century*, 500.

violence finally swayed the international community to pressure Indonesia to cease hostilities and permit the entry of the UN peacekeeping force.⁹³ On 12 September 1999, the Indonesian government authorized UN entry and on 15 September, the UN Security Council authorized Operation Stabilise, the Australian-led peacekeeping mission to East Timor.

Once the INTERFET arrived in East Timor, Indonesian violence subsided, but the true damage had occurred as the UN failed to interdict the violence the spring of 1999 as INTERFET reconnaissance of former Indonesian military compounds discovered evidence of execution and torture sites which exceeded prior estimates.⁹⁴ The Indonesian military was never deterred from violence because East Timor's geographic isolation and the regional strategic relationships with Indonesia prevented external intervention.

Operation Stablise demonstrates the important concept of geographic access as a necessary means to deter coercive violence in the USPACOM AOR. Without access, the INTERFET could not provide a credible deterrent to Indonesian aggression, which emboldened the Indonesian military to commit unchecked acts of violence in East Timor. Through the introduction of amphibious based aviation, the INTERFET would have gained a viable third option to intervene in East Timor. Shipboard Army Aviation capabilities may have theoretically provided UN forces with the ability seize the strategic initiative and compel the Indonesian military to cease violence.

Though it is impossible to prove whether amphibious capabilities would have prevented the stopped violence in East Timor, this case validated the utility amphibious aviation access remote objectives in the USPACOM AOR.⁹⁵ Furthermore, amphibious assault ships not only

⁹³ Kiernan, "War, Genocide, and Resistance in East Timor," 203.

⁹⁴ David Dickens, "The United Nations in East Timor: Intervention at the Military Operational Level," *Contemporary Southeast Asia* 23, no. 2 (August 2001): 221, accessed December 11, 2015, <http://www.jstor.org/stable/25798543>.

⁹⁵ Berkowitz, *The New Face of War*, 182. Berkowitz references A.T. Mahan's concepts as enduring precepts in US Naval doctrine regarding the benefit of aircraft carriers.

overcome the requirement to gain access, provide a neutral location from which to project foreign humanitarian assistance capabilities. In this case, amphibious based aviation would negate the requirement to create forward operating bases as LHD/A based Army Aviation combine amphibious maintenance and medical capabilities with the Army's aerial medical evacuation (MEDEVAC) and sustainment capacity in support of foreign humanitarian assistance and disaster response operations.

Conversely, Indonesia was emboldened by their physical realities surrounding their area of operations. Conventional responses limit the prospective solution sets to the geographic constraints placed upon the problem. Additionally, extended MEU operations to facilitate long-term deterrence may work, but remain a comparatively low priority based potential mission sets required by this capable formation. Essentially, Army Aviation mere ability to execute shipboard operations can deter the opposition's military commanders or political leaders. In the East Timor case, continued shipboard operations were not required. Instead, Army Aviation could conduct a one-time air movement from ship to shore to establish a rapid buildup of humanitarian assistance capabilities ashore within hours, not days from notification.

Operation Stabilise stressed the importance of multilateral operations. In this scenario, the Australian government risked future diplomatic and economic relationship with Indonesia by supporting an Indonesian colony's secession. Though Australia's intervention prioritized ending humanitarian atrocities over political aims, their intervention strained Australia-Indonesian relations following Operation Stabilise. Australia's overwhelming contribution to the INTERFET created the perception of Australian unilateral action as opposed to a multinational UN effort. Traditional amphibious operations are most often unilateral actions. This case study highlights the need for Army Aviation to continue multinational training exercises to ensure multinational contribute to forces can gain access locations that require foreign humanitarian assistance. This application of the US smart power increases its regional credibility to reassure its regional allies

and deter its adversaries.⁹⁶ Army Aviation in partnership with Australian Defense Forces provides the United States and the international community with an additional economy of force capability to exert deterrence and truly exert smart power through the “skillful combination” of military presence and diplomacy.⁹⁷

Though a MEU served as an operational reserve during the execution of Operation Stabilise, its capabilities were needed months before mission execution to deter Indonesia’s continued violence. Another example of mission trade-off, the US military cannot dedicate its MAGTFs for multiple months in support of stability operations. Expeditionary in nature, MAGTFs are forward deployed to react to any contingency operation in its assigned AOR. Army Aviation could augment the MEU to support the UN operation and free the MEU for higher priority missions. Future conflict is most likely as states compete for access and influence in the vicinity of the major shipping lanes in the USPACOM AOR. Figure 4’s depiction of the major Indo-Pacific shipping lanes emphasizes the South China Sea and Strait of Malacca, areas which bisect the “maritime amphibious region” and “continental amphibious region” previously discussed in Figure 1. These major shipping routes border areas that will likely require increased US Navy and MAGTF presence.⁹⁸ Maritime Army Aviation capabilities can focus on peripheral operations in less-essential areas or augment MAGTF operations. Army augmentation would enable MAGTF presence in strategically vital and conflict-prone areas of the USPACOM AOR.⁹⁹

⁹⁶ Capie, “The United States and HADR in East Asia,” 325; Nye, *The Future of Power*, 213-214.

⁹⁷ Nye, *The Future of Power*, 208-209.

⁹⁸ Crawford and Harper, *Operation East Timor*, 15.

⁹⁹ A counterpoint to Army Aviation’s utility in future scenarios similar to Operation Stabilise is the limited duration in which Army Aviation can conduct shipboard and maritime operations based on the materiel damage incurred in saltwater environments. While this precludes

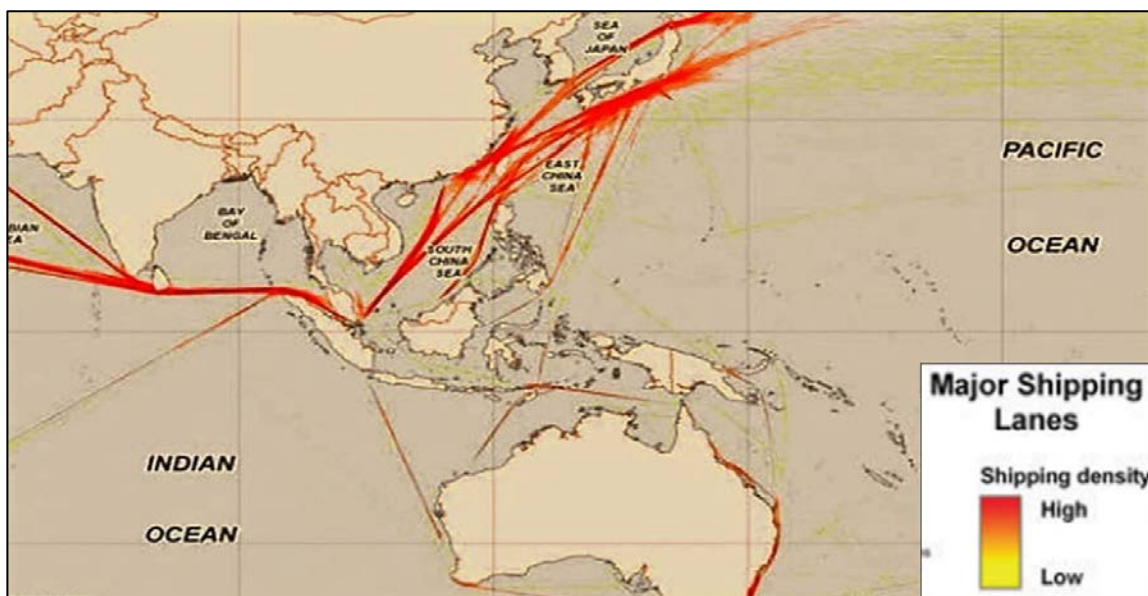


Figure 4. USPACOM Major Shipping Lanes

Source: Australian Department of Defence, *Defence White Paper 2013. Defending Australia and Its National Interests*, accessed November 3, 2015, http://www.defence.gov.au/whitepaper/2013/docs/WP_2013_web.pdf, 13.

East Timor represents one instance where internal turmoil and bids for independence spur humanitarian crises that the international community must mediate in the Asia-Pacific region. West Papua, the Moluccas, Papua New Guinea, and the Solomon Islands all represent a short list of states in the maritime dominated South Pacific that exhibit the potential for international assistance.¹⁰⁰ Additionally, violent extremist organizations traditionally associated with the middle east are attempting to spread their influence to the Pacific region with its vast Islamic

enduring shipboard operations, Army Aviation's utility in one-time ship to shore operations and demonstrated deterrence mitigates the effects of salt water corrosion by limiting flight hours, thus reducing the corrosive effects and increasing the ability to conduct preventative maintenance.

¹⁰⁰ John McFarlane and William Maley, "Civilian Police in United Nations Peace Operations: Some Lessons from Recent Australian Experience," in *United Nations Peacekeeping Operations: Ad Hoc Missions, Permanent Engagement*, ed. Ramesh Thakur and Albrecht Schnabel (New York: United Nations University Press, 2001), 182-183.

populace.¹⁰¹ US, allied, and UN presence and engagement can counter the coercive environments where violent extremist organizations recruit and operate in the USPACOM AOR.¹⁰²

Operation Stabilise provides a scenario where Army Aviation capabilities can contribute key amphibious capabilities in permissive, joint force operations. This case exemplifies by a “most likely” scenario that necessitates Army Aviation’s scalable shipboard employment to execute the USPACOM AOR’s most likely and frequent missions, foreign humanitarian assistance operation. The next case study examines a “worst case” scenario which would require a large scale requirement for shipboard Army Aviation employment in the USPACOM AOR.

Case Study #3: Operation Tomodachi: Fukushima Nuclear Disaster 2011

The previous case study demonstrated Army Aviation’s contribution to maritime operations to overcome increased distances between land-based support bases and operational areas. The next case study examines a historical situation where Army Aviation’s shipboard capabilities would increase the aviation lift capability and throughput in response to large-scale maritime operations demands. Operation Tomodachi examines a scenario where the response to a catastrophic event warrants Army Aviation to augment traditional amphibious capabilities in the USPACOM AOR.¹⁰³

Combining maritime, post-disaster, and radiological factors, Operation Tomodachi simultaneously incorporates three demanding environments in which Army Aviation doctrinally operates.¹⁰⁴ Operation Tomodachi exemplifies Army Aviation’s ability to augment a large-scale

¹⁰¹ US Army Pacific, *Partnering in the Asia-Pacific Theater*, 4-5.

¹⁰² *US National Security Strategy*, 2015, 9-11.

¹⁰³ Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region* (Santa Monica, CA: RAND, 2013), 90. “Operation Tomodachi” translated to English means “Operation Friends.”

¹⁰⁴ FM 3-04, 1-14 – 1-18. FM 3-04 specifically defines operations in the maritime environments and other environments including post-disaster zones and in Chemical, Biological, Radiological, and Nuclear environments.

foreign humanitarian assistance operation. This case study represents Army Aviation's maximum anticipated requirement in response to crises in the USPACOM AOR.

Midafternoon, on March 11th, 2011, a magnitude-nine earthquake erupted on the Pacific Ocean floor, eighty miles east of the Japanese coast (as depicted in Figure 5). Fifty-five minutes later, a fifty-foot tall tsunami inflicted extraordinary destruction upon Japan's coastal infrastructure and catastrophic damage to the nuclear reactors at the Fukushima Daiichi power plant.¹⁰⁵ The combined effects of the tsunami's infrastructural damage and mounting nuclear crisis exceeded Japan's emergency response capability.¹⁰⁶ Though the event occurred only one hundred miles north of Tokyo, the extensive infrastructural damage (highways, airfields, rail

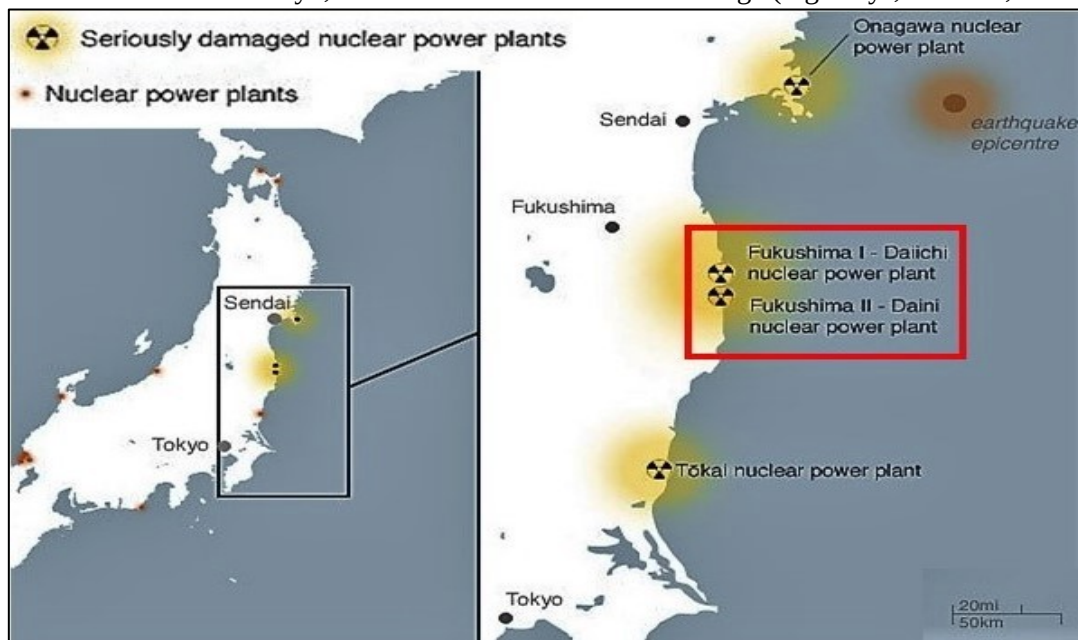


Figure 5. Fukushima Daiichi Nuclear Reactor and Earthquake locations.

Source: "Location of the Fukushima nuclear disaster" (map), Greenpeace website, accessed 10 February 2016, <http://www.greenpeace.org/new-zealand/en/Multimedia/photos/2011/March/Japan-map---Fukushima-/>.

¹⁰⁵ David Lochbaum et al., *Fukushima: The Story of a Nuclear Disaster* (New York: The New Press, 2014), 4-12.

¹⁰⁶ Capie, "The United States and HADR in East Asia," 318.

lines, electric, telecommunication) prevented Japan's Nuclear and Industrial Safety Agency from assisting with a national response.¹⁰⁷ Additionally, the proximity to the capital's vast population raised the concerns of unmitigated radioactive fallout on populated areas.¹⁰⁸ By the end of 11 March 2011, the Japanese government, one of the best prepared in the world, required international assistance to counter this catastrophe.

By 12 March 2011, the Government of Japan's declared a state of emergency. Forty-five countries offered assistance, but the Japanese government declined aid from all but four allies to avoid over complication. Based on established diplomatic and military partnership, the United States, Australia, New Zealand, and South Korea commenced Operation Tomodachi, the international disaster response to the Japan.¹⁰⁹ In all, the tsunami's effects forced the evacuation of over two hundred thousand Japanese civilians, over one hundred billion dollars in damages, and resulted in over twenty-six thousand fatalities.¹¹⁰

The United States response to the incident had domestic and coalition objectives. First, the US government retains the responsibility to safeguard its citizens abroad. Second, the United States provided nuclear expertise and foreign humanitarian assistance to its longtime ally. By March 16, 2011, the US Secretary of Defense committed over twenty-four thousand US forces, twenty-four naval vessels, and 140 military aircraft in a three-phased response.¹¹¹ The initial priority, save civilian lives and prepare to evacuate American citizens. The second priority, deliver basic human needs and restore essential civil services. The third priority, restore Japan to

¹⁰⁷ Lochbaum et al., *Fukushima: The Story of a Nuclear Disaster*, 17.

¹⁰⁸ Capie, "The United States and HADR in East Asia," 318-320.

¹⁰⁹ Moroney et al., *Lessons from DoD Disaster Relief Efforts*, 89-90.

¹¹⁰ Capie, "The United States and HADR in East Asia," 318.

¹¹¹ Ibid., 319; Moroney et al., *Lessons from DoD Disaster Relief Efforts*, 91-92.

pre-disaster conditions.¹¹² Despite the global effort to coordinate and deliver disaster response materiel to the region, the USMC 31 MEU's rotary wing and tiltrotor aircraft provided the critical capability to deliver these necessities to the affected disaster areas.

Immediately following the disaster, the Okinawa-based 31 MEU provided the most useful capabilities during Operation Tomodachi. Aboard the USS *Essex*'s amphibious readiness group, 31 MEU arrived at the disaster area ready to evacuate American citizens and provide amphibious based foreign humanitarian assistance operations off the Pacific coast.¹¹³ Though the MEU fulfilled its mission requirements, two minor variations to the operating environment may have required augmentation by Army Aviation: increased demand for personnel evacuation and decreased available MEU aircrews due to radiation exposure.

In the initial response to the meltdown of the Fukushima Daiichi reactors, the Japanese government established a twelve-mile evacuation radius based upon fallout assessments.¹¹⁴ 31 MEU possessed the necessary lift capabilities to evacuate the affected zone. Days later, the evacuation radius expanded drastically, from twelve to fifty miles based upon deteriorating meteorological conditions. The increased the evacuation area nearly tenfold and threaten radiological exposure in Tokyo, increasing assessed exposure levels at the US embassy to evacuation thresholds in only four days.¹¹⁵ Though the government rescinded the fifty-mile evacuation radius, the American and Japanese evacuation requirements would have exceeded 31 MEU's lift capabilities. Tokyo's increased exposure would re-prioritize the US military mission

¹¹² Capie, "The United States and HADR in East Asia," 318-319.

¹¹³ Lochbaum et al., *Fukushima: The Story of a Nuclear Disaster*, 132.

¹¹⁴ Lochbaum et al., *Fukushima: The Story of a Nuclear Disaster*, 119.

¹¹⁵ *Ibid.*, 131-132.

from foreign humanitarian assistance to American citizen evacuation.¹¹⁶ Army Aviation assets could augment MAGTF aviation to fulfill foreign humanitarian assistance obligations and allow the operations to allow the MAGTF to accomplish its higher priority missions.

During Foreign Humanitarian Assistance operations, helicopters provide critical lifesaving capabilities to operational commanders.¹¹⁷ Amphibious assault ships possess vast medical capabilities, second only to the Navy's hospital ships. In response to a crisis, LHD crews can expand their patient treatment facilities to upwards of six hundred hospital beds, complimented by a fourteen patient intensive care capacity and a forty-six-bed inpatient ward.¹¹⁸ By pairing US Army MEDEVAC with an LHD's medical facilities provides immediate medical capacity well before comparable medical facilities can be established ashore.

Increased operational requirements are one factor which necessitates increased rotary wing augmentation; another is the degradation of available rotary wing assets. During Operation Tomodachi, aircrew and airframe cumulative radiation exposure directly limited 31 MEU's ability to conduct enduring operations. The radiological environment in the immediate disaster vicinity prevented the establishment of local support areas. Naval platforms maneuvered closer and farther away from the contaminated area based upon prevailing meteorological conditions. This ability to move the amphibious ship's location to suitable areas decreased the crew's exposure and increased their ability to support operations.

Though aerial radiological exposure is minimal compared to ground exposure, the cumulative effects degrade enduring operational capabilities. During Operation Tomodachi,

¹¹⁶ Wilson, "Operation TOMODACHI", 8-9. Traditional American evacuation operations employ commercially contracted means that cannot operate in radiological environments.

¹¹⁷ JP 3-29, III-14.

¹¹⁸ US Navy, "Essex ARG Ready to Provide Assistance to Japan."

routine radiological tests aboard the USS *Essex* and USS *Ronald Reagan* identified radiation on at least three aircraft and seventeen aircrew members.¹¹⁹ Though decontamination proved successful, the time-intensive decontamination process degraded operational readiness. Furthermore, cumulative radiological exposure limitations establish maximum safe exposure levels crewmembers can endure before risking permanent health complications. During Operation Tomodachi aircrews did not exceed exposure thresholds. However, in future scenarios, aircrews may surpass exposure limitations, requiring augmentation forces to continue the mission.

Operation Tomodachi was an operational success without the use of Army Aviation. However, future operations may require increased aviation capabilities to meet the objectives. Though the combined tsunami and radiological effects are unlikely, worst-case scenario, overpopulation, frequent natural disasters are representative of the region and require preparation for future assistance operations in the USPACOM AOR. Furthermore, Operation Tomodachi also demonstrates how foreign humanitarian response operations are not limited to impoverished states, but also occur in states with modern governments and militaries. Army Aviation's ability to augment these operations will strengthen US Pacific alliances and uphold their ability to respond to regional challenges.¹²⁰

Following the tsunami's destruction, essential civil services were either inoperable due to the tsunami or located in the radiation fallout zone. These factors negated ground response assets, making helicopters the primary means to support the operational area, emphasizing amphibious rotary wing aviation as a critical capability in the operation.¹²¹ Army Aviation's ability to conduct Brigade or Battalion sized operations aboard naval ships provides operational commanders and

¹¹⁹ US Navy, "Seventh Fleet Repositions Ships after Contamination Detected," Seventh Fleet Public Affairs Office, March 19, 2011, accessed February 29, 2016, http://www.navy.mil/submit/display.asp?story_id=59065.

¹²⁰ *US National Security Strategy*, 2015, 24.

¹²¹ JP 3-29, III-13 – III-14.

political leaders with an increased capacity to conduct large-scale amphibious rotary wing operations to facilitate foreign humanitarian assistance and disaster response operations.

With its increased population density and location around the Pacific rim, the USPACOM AOR's nations are subject to many crises which require a unique US response. Army Aviation's increased maritime capabilities will facilitate increased United States ability to conduct foreign humanitarian assistance operations. This capability will increase US international influence. Pandemic outbreaks, volcanic eruptions, earthquakes, and tsunamis represent the common occurrences which may require international assistance in the USPACOM AOR's maritime regions.¹²²

In contrast to Operation Stabilise's requirement for limited aviation capabilities, Operation Tomodachi exemplifies the need for large-scale aviation capacity. This case study examined a scenario which may require the maximum US crisis response in the USPACOM AOR, requiring the need for a combat aviation brigade complement of utility and cargo aircraft. Environmental exposure rates in future operations could require an Army Aviation to augment or relieve a MAGTF to continue foreign humanitarian assistance operations in affected maritime areas.¹²³

As a counterpoint to Army Aviation's ability to augment MAGTF crisis response capabilities again revolves around the joint concept of mission trade-off and limited availability of helicopter-capable ships. While US Navy assets may not be available, this increases the requirement for Army Aviation to maximize its unmatched rotary wing depth with available ADF LHDs or JMSDF DDHs ships.

¹²² Borthwick, *Pacific Century*, 498; CIA World Factbook, "Indonesia," US Central Intelligence Agency Homepage, last modified February 25, 2016, accessed March 2, 2016, <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/id.html>.

¹²³ JP 3-29, III-13.

Overall, these three case studies provided historical examples where actual, or potential Army Aviation capabilities provided utility towards accomplishing mission objectives in maritime environments. The increased trend in joint and multinational training exercises throughout the USPACOM AOR highlights the increased opportunities to train and employ shipboard Army Aviation capabilities.

Contemporary Multinational Operations: US Army Aviation with Pacific Partners

In accordance with the 2015 National Security Strategy, the United States will increase its multinational partnerships and military operations with its Pacific allies. This effort to modernize its military alliance seeks collaborative relationships to diversify the United States' "posture and presence" and demonstrate its resolve to America's Pacific partners and adversaries.¹²⁴ Maritime-capable Army Aviation reassures US allies of America's regional commitment and ability to increase multilateral partnership with Australian Defence and Japanese Self-Defence Forces. Applying America's military strengths in unilateral and multinational operations preserve the ability to exert US influence throughout the USPACOM AOR.¹²⁵

Maritime aviation capability is essential for the Army to secure its national interests and is best achieved through joint and multinational interoperability.¹²⁶ Consistent with the Army Operating Concept, enhanced Army Aviation increases the joint force commander's employment options in maritime environments across the continuum of conflict.¹²⁷ The government's desire

¹²⁴ *US National Security Strategy, 2015*, 24; TRADOC PAM 525-3-1, iv.

¹²⁵ Berkowitz, *Strategic Advantage*, 230-231.

¹²⁶ *Ibid.*, 223.

¹²⁷ *The US Army Operating Concept*, iv.

for soft power aligns with military commanders' desire for an Army capable of rapid response to isolated aggression, small conflicts, and natural disasters in the USPACOM AOR.¹²⁸

The US government leverages Army Aviation to increase "soft power" in the Pacific by increasing partnership with low-intensity, foreign humanitarian assistance operations.¹²⁹ This "capability dividend" increases military presence without decreasing deterrence by over-tasking US expeditionary forces in the USPACOM AOR.

Strategically, bilateral foreign humanitarian assistance operations demonstrate the combined capabilities which allow the United States, Australia, and Japan to reinforce alliances and deter adversaries.¹³⁰ Operationally, partnered Army Aviation operations, when available, benefit the US military by utilizing foreign military capabilities to circumvent LHD/A utilization trade-off. The ADF and JMSDF benefit via increased access to amphibious-capable Army Aviation. Furthermore, using US strategic airlift to embark Army Aviation in Australia or Japan reduces Pacific transit delays.

Australia's Canberra-class LHDs increase ADF's ability to influence the Indo-Pacific region via foreign humanitarian assistance and multilateral training exercises.¹³¹ These ships also provide Army Aviation its greatest opportunity for partnered amphibious operations in the USPACOM AOR. Army Aviation must continue allied amphibious exercises with ADF to increase partnered interoperability and regional multilateralism. The US-Australian alliance must

¹²⁸ Rajiv Chandrasekaran, "Army's 'Pacific Pathways' Initiative Sets up Turf Battle with Marines," *Washington Post*, December 29, 2013, accessed March 1, 2016, https://www.Washingtonpost.com/world/national-security/armys-pacific-pathways-initiative-sets-up-turf-battle-with-marines/2013/12/29/11c948c8-69b1-11e3-a0b9-249bbb34602c_story.html.

¹²⁹ Capie, "The United States and HADR in East Asia," 328.

¹³⁰ *Ibid.*, 325.

¹³¹ Australian Department of Defence, *Defence White Paper 2013. Defending Australia and Its National Interests*, accessed November 3, 2015, http://www.defence.gov.au/whitepaper/2013/docs/WP_2013_web.pdf, 77, 84.

prevent the rise of terrorism and violent extremist organizations in the weakly governed and impoverished Southeast Asian maritime region.¹³² These opportunities for Army Aviation to partner with ADF increases Australia's capabilities and US presence in the USPACOM AOR.

Though Army Aviation applications in the USPACOM AOR will support regional deterrence, increased trilateral partnerships between the United States, Japan, and Australia potentially provoke an unintended response by threatening their adversary's influence.¹³³ To avoid provocation, Army Aviation must start maritime applications with low-intensity operations establish the Army's image without excessive provocation. Multinational forces must overcome strategic and operational incompatibilities by developing common understanding via basic military principles: communications protocols, common logistics, and information/intelligence sharing methods.¹³⁴ Routine military engagement and regular training exercises are the most effective and affordable methods to achieve maritime military commonality and interoperability in USPACOM's complex AOR.

¹³² Michael Evans, *The Tyranny of Dissonance. Australia's Strategic Culture and Way of War 1901-2005* (Duntroon, Australia: Land Warfare Studies Centre, 2005), 101.

¹³³ Tetsuo Kotani, "Japan's Interest in Non-Traditional Security Issues," in *Enhancing Trilateral Disaster Preparedness and Relief Cooperation between Japan, U.S. and Australia. Approaches from Various Civil-Military Perspectives*, ed. Lauren Richardson (A Joint Research Project by: The Association for Cooperation between Japan, US and Australia; The Asia-Pacific Center for Security Studies; and the Queensland University of Technology, 2013), 20.

¹³⁴ David Fouse, "U.S. Interest in Non-Traditional and Transnational Security Threats," in *Enhancing Trilateral Disaster Preparedness and Relief Cooperation between Japan, U.S. and Australia. Approaches from Various Civil-Military Perspectives*, ed. Lauren Richardson (A Joint Research Project by: The Association for Cooperation between Japan, US and Australia; The Asia-Pacific Center for Security Studies; and the Queensland University of Technology, 2013), 28; William J. Lahneman, "Military Intervention: Lessons for the Twenty-First Century," in *Military Intervention: Cases in Context for the Twenty-First Century* (Lanham, MD: Rowman & Littlefield Publishers, 2004), 184.

Exercises: Pacific Pathways

Despite the benefits of multilateral operations, practical applications prove difficult to support due to fiscal shortfalls and amphibious ship unavailability. Recently the Army has led an initiative meant to reduce the budget constraints and asset unavailability by replacing individual bilateral training exercises with successive, multilateral exercises throughout the USPACOM AOR. The development of Pacific Pathways transformed separate bilateral exercises into a collective, multi-month operation to enhance military interaction with Pacific allies.¹³⁵

Two of the most prominent Pacific exercises, Talisman Saber and Yama Sakura, incorporate consistency with the United States' two most significant Pacific allies: Australia and Japan. Biannually, Talisman Saber exercises ADF and US Forces in joint operations ranging from combat operations to foreign humanitarian assistance.¹³⁶ Annually, Yama Sakura exercises Japan's Self-Defense Forces with US Forces in a two-week event to strengthen regional stability and improve US-Japanese interoperability.¹³⁷ Talisman Saber and Yama Sakura provide Army Aviation the opportunity to improve its amphibious capabilities aboard the ADF's Canberra LHDs and JMSDF's Hyuga and Izumo-class helicopter carriers. Together these two exercises

¹³⁵ Cheryl Pellerin, "Army's I Corps Supports DoD Asia-Pacific Rebalance," *US Department of Defense Homepage*, August 21, 2015, accessed October 18, 2015, <http://www.defense.gov/News-Article-View/Article/614372/armys-i-corps-supports-dod-asia-pacific-rebalance>.

¹³⁶ Paul Barnes, "Potential for Growth in Collaboration on Non-Traditional Security Responses," in *Enhancing Trilateral Disaster Preparedness and Relief Cooperation between Japan, U.S. and Australia. Approaches from Various Civil-Military Perspectives*, ed. Lauren Richardson (A Joint Research Project by: The Association for Cooperation between Japan, US and Australia; The Asia-Pacific Center for Security Studies; and the Queensland University of Technology, 2013), 34-35.

¹³⁷ Eliverto Larios, "Yama Sakura 69 Kicks Off with Ceremony in Japan," *US Pacific Command Homepage*, December 7, 2015, accessed January 13, 2016, <http://www.pacom.mil/Media/News/tabid/5693/Article/633214/yama-sakura-69-kicks-off-with-ceremony-in-japan.aspx>.

present Army Aviation with rare opportunities to exercise bilateral, shipboard aviation operations in the USPACOM AOR.

Pacific Pathways' vital contribution to Army Aviation is the employment of reduced-scale Army Aviation elements in maritime operations. Unlike Operation Uphold Democracy's massive CAB operation, smaller-scale employment provides two advantages. First, smaller elements reduce embarkation requirement. Less embarked assets increases Army access to scarce US and allied nation naval assets.¹³⁸ Second, employing company-sized aviation teams facilitates operational innovation and experimentation. This innovation advances mission command, maintenance, and tactical procedures necessary to develop functional maritime doctrine. Despite its advantages, scaled-down aviation operations cannot replicate the staff tempo or support requirements associated with larger operations like Operation Tomodachi or Uphold Democracy. Ultimately, Pacific Pathways provides Army Aviation with the opportunity to integrate aviation and naval capabilities to increase the speed and agility of ground combat forces to prevent, shape, and win in the USPACOM AOR.¹³⁹

Despite Pacific Pathways' utility, critics assert that Army-Pacific engagement duplicates the US Marine Corps' expeditionary mission, effort, and budget.¹⁴⁰ Though correct that the Marine Corps' training and equipment are ideal for Pacific operations, increased Army maritime capabilities will enable USMC expeditionary forces to remain ready and available to respond to immediate contingencies and decisive action. Maritime Army units will not replace MAGTFs. Instead, Army Units will augment USMC capabilities to increase US presence and capabilities in the USPACOM AOR.

¹³⁸ Lambert and Huber, "Joint Shipboard Helicopter Operations," 84-87.

¹³⁹ Chandrasekaran, "'Pacific Pathways' Turf Battle."

¹⁴⁰ Ibid.

Future Considerations and Research

A specific area for future research is Army Aviation's continued maritime application of its future aviation platforms and capabilities in the USPACOM AOR. Two current acquisition priorities outline Army Aviation's continued maritime capabilities: the Future Vertical Lift initiative and rotary wing Manned-Unmanned Teaming.

Through 2030, Army Aviation forecasts no new rotary wing acquisitions which leaves fifteen to twenty years of aircraft continuity to improve existing shipboard interoperability.¹⁴¹ Despite the Army's airframe continuity, US Marine Corps aviation continues its transition to next-generation aircraft including V-22 Osprey tiltrotor and F-35 aircraft. As the primary user of LHD/A ships, the Marine Corps' transition will likely incorporate Navy procedural changes, requiring Army Aviation to remain up-to-date. This timeframe also includes a three ship increase in aviation-capable amphibious ships with the scheduled commissioning of one additional America class LHA and two Ford class CVNs.¹⁴² Through 2030, no significant detractors exist that would weaken Army Aviation's commitment to maritime proficiency.

The US Department of Defense future vertical lift (FVL) initiative's goal is to achieve cross-service rotary and tiltrotor interoperability and reduce sustainment costs through development and acquisition of common future airframes.¹⁴³ The Army recently approved two

¹⁴¹ Keith Brown, "Q&A with Army Aviation Program Executive Officer Tim Crosby," *Rotor & Wing Magazine*, July 2012, accessed August 21, 2015, <http://accessintelligence.imirus.com/Mpowered/book/vrw12/i7/p56>.

¹⁴² Military Periscope, "AMERICA (LHA-6) Class," Military Equipment Database, accessed December 29, 2015, <https://www.militaryperiscope.com/weapons/ships/amphib/w0005789.html>; Military Periscope, "GERALD R. FORD (CVN-78) Class," Military Equipment Database, accessed December 30, 2015, <https://www.militaryperiscope.com/weapons/ships/carriers/w0007233.html>. LHA-7: USS *Tripoli*; CVN-78: USS *Ford*; CVN 79: USS *Kennedy*.

¹⁴³ Walter J. Boyne, *How the Helicopter Changed Modern Warfare* (Gretna, LA: Pelican Publishing Company, 2011), 276.

aircraft designs FVL prototype development: one modified tiltrotor and a coaxial-rear thrust variant.¹⁴⁴ The tiltrotor variant benefits from increased maximum speed and longer range, but also occupy more flight deck space than existing Army aircraft. The benefits of the coaxial variant's reduced space requirement is countered by its lack of speed and range due to its fixed main rotor aerodynamic limitations.¹⁴⁵

Army rotary wing operations will become increasingly interoperable with its organic unmanned aerial systems. Current UAS configurations prevent shipboard operation. The RQ-7B Shadow requires no runway to launch, but the likelihood of a shipboard recovery is unlikely and prevents launch and recover operations afloat. The MQ-1C Gray Eagle cannot conduct shipboard operations, but its extended range allows for manned-unmanned-teaming near maritime objectives. This ability to implement Gray Eagle UAS into maritime intelligence, surveillance, and reconnaissance roles will offset the number of required attack and reconnaissance aircraft from embarked requirement and increasing overall economy of force.

Conclusion

Army Aviation's future application in the USPACOM AOR requires the identification of optimal maritime missions for Army employment and the corresponding emphasis on the development of maritime capabilities. Historical events, current military and political trends, and opportunities for multinational military partnership all define how Army Aviation must evolve to increase its utility in the USPACOM AOR. Despite Army Aviation's capabilities, limited amphibious ship availability poses the principal limitation which constrains Army Aviation maritime applicability. Army Aviation doctrine, organization, and training must incorporate three

¹⁴⁴ Marina Malenic, "Commonality is Key to Controlling FVL Costs, Officials Say," July 22, 2015, accessed September 12, 2015, <http://www.janes.com/article/53161/commonality-is-key-to-controlling-fvl-costs-officials-say>. Tiltrotor design resembles the V-22 Osprey, while coaxial design features two counter-rotating main rotor blades with a forward propulsion prop.

¹⁴⁵ Boyne, *How the Helicopter Changed Modern Warfare*, 280-281.

recommendations to develop and improve future maritime capabilities: immediate doctrine revision to incorporate maritime capabilities, aviation training focused on company-sized shipboard operations, and the prioritization of low-intensity and multinational operations.

As defined in JP 3-04, mission trade-off remains the most significant impediment to Army Aviation's shipboard employment. Employing scarce US Navy amphibious ships in non-standard configurations incurs such a high opportunity cost that only strategically important missions necessitate shipboard Army Aviation. Contemporary Pacific Rim operations incur greater risk than exhibited in Operation Uphold Democracy as increased proximity to anti-access, area-denial threats and extended sea lines of communication decrease Army Aviation's maritime utility. Mission trade-off refutes the first stated contention that Army Aviation must retain the ability to transport Brigade Combat Teams in maritime environments. Though applicable in the land domain, this contention is infeasible for general shipboard application. Army Aviation must retain the ability to support Brigade Combat Team-sized operations in the USPACOM AOR where land basing is suitable to support the depth of the operational environment. Also, mission trade off validates contentions two and three, confirming amphibious Army Aviation must support Brigade Combat Team and smaller operations must support strategic importance.

To increase its maritime applicability in the USPACOM AOR, Army Aviation must first codify and disseminate the baseline doctrine required to execute joint and multinational shipboard operations. As proven in Operation Uphold Democracy, cross-service communication founded in doctrine and professional expertise allowed 10th Aviation Brigade to overcome aircrew-training deficiencies in preparation for an unprecedented mission. As Army Aviation prepares to conduct joint and multinational operations with the United States, Australian, and Japanese amphibious navies, improved doctrine will enable Army planners to anticipate requirements, identify opportunities, and mitigate risks. The doctrine priority is to update FM 1-564 *Shipboard Operations* in accordance with FM 3-04, *Army Aviation* and JP 3-04.1 *Joint Tactics, Techniques, and Procedures for Shipboard Helicopter Operations*. Updated doctrine will allow combat

aviation brigades to incorporate basic maneuvers and academics into home station aircrew training programs to exercise shipboard operations in simulators and training areas to increase deck qualification proficiency in the absence of naval vessels.

Army Aviation must focus on small-scale, limited-duration maritime operations. Though effective in Operation Uphold Democracy, mission trade-off eliminates the likelihood of large-scale application in the USPACOM AOR. The focus on one-time ship to land missions and limited duration amphibious operations minimizes interoperability complications and reduces aircraft exposure to corrosive environments. This combines Uphold Democracy's method to introduce Army rotary wing assets from a maritime environment proved essential in Operations Tomodachi and Stabilise to overcome geographic or diplomatic constraints. Deploying company-sized elements optimizes embarked task organization to ensure the necessary operational, maintenance, and support personnel and equipment accompany each unit. Reduced-scale operations increase the access and availability of suitable US Navy, Australian Defense Force, and Japan's Maritime Self-Defense Force ships and expand US military presence throughout the USPACOM AOR.

Multinational-partnered shipboard operations provide a dual benefit. First, these operations overcome US Navy mission trade-off required of its limited number of ships. Second, and shortens the distance and transit required to deploy Army forces by forward deploying helicopters via more efficient methods (strategic airlift or cargo shipping). In-theater embarkation decreases airframe exposure and decreases transit time to joint operations areas. Operation Stabilise identified an opportunity to partner US Army capabilities with Australian assets to increase the multinational UN presence. The Australian Navy's amphibious platforms offer an ideal opportunity to merge regional amphibious capabilities with the US military's depth of rotary wing capabilities. The Australian Defense Force's relative lack of utility and cargo helicopters exemplifies the mutual benefit of US combat aviation capacity paired with allied amphibious

capabilities. Despite the advantages of allied operations, multinational employment does incur the increased risks associated with cultural, professional, and procedural differences between allies.

By implementing these recommendations, Army Aviation will increase its utility at all levels of war. Maritime-capable Army Aviation will not only increase military efficiency at the tactical and operational levels of war, but also increase the US military's strategic deterrence by broadening its ability to project combat power ashore. Exhibited during Operation Uphold Democracy and suggested for Operation Stabilise, integrated maritime capabilities enhance the United States' ability to deter conflict and aggression alongside its allies in the USPACOM AOR.

In Operation Uphold Democracy, the adversary's political leadership lost its strategic leverage when faced amphibious, air-capable forces which allowed the United States to avoid a military invasion and seize control by less hostile means. Preceding Operation Stabilise, the creation of a multinational United Nations amphibious-capable task force may have provided a decisive option to introduce peacekeepers into East Timor without risking invasion. Army Aviation's increased operational capability will allow the United States to prioritize its maritime assets to strengthen regional deterrence. Best suited to execute foreign humanitarian assistance missions, maritime-capable Army Aviation will allow the United States to focus its more-capable maritime assets, Navy Carrier Strike Groups and Marine Air-Ground Task Forces, towards more complex operational environments: the South China Sea, Strait of Malacca, or emergent threats from regional violent extremist organizations. Army Aviation's increased maritime competence will strengthen the US strategic advantage in the USPACOM AOR.

Overall, Army Aviation allows the US military to expand its capacity to conduct joint operations in maritime environments. By focusing on operations at the battalion and company level, Army Aviation will increase the US military's ability to conduct amphibious operations in maritime environments. Simultaneously, Army Aviation must remain balanced to train and deploy combat aviation brigades to provide integrated aerial support to combined, joint, and multinational operations throughout any land or maritime operational environment.

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