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New Combat and Noncombat Roles for U.S. Aircraft Carriers

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Abstract

To meet future combat and noncombat demands, U.S. aircraft carriers will require a range of new capabilities. Carriers will need to be better able to mix and match personnel, aircraft, and other assets to emerging tasks. They will need capabilities to perform more extensive surveillance and reconnaissance, conduct longer-range air operations, and operate in nuclear environments. And they will need to be more modular, deploy on shorter notice, and be prepared to handle more casualties than they can today.

For more than seven decades—stretching from before World War II through the Global War on Terrorism, to the 2004 Southeast Asia tsunami—the United States has used aircraft carriers and their air wings to show force, deter adversaries, engage friends and allies, provide humanitarian assistance, and bring airpower to bear against opponents.

In coming years, it is likely that aircraft carriers will be called upon to shoulder even more duties. Some duties may involve new variations of combat and noncombat operations that carriers traditionally have pursued. Others might entail an expansion of nontraditional assignments. Equipped with aircraft, helicopters, and unmanned aerial vehicles and possessing large, open and covered spaces, significant human resources, and massive electrical-power-generation capabilities, aircraft carriers represent substantial resources that the U.S. Navy may be able to more fully exploit.

The Navy sought RAND's help in 2004 to better understand possible nontraditional roles for aircraft carriers. Over the course of six months, RAND convened two small groups of experienced military and civilian experts, defense analysts, and potential users. One group explored and identified new ways that aircraft carriers could be used in combat operations; the other examined ways that the vessels could be used in noncombat homeland-security missions or in helping the nation recover from terrorist attacks or natural disasters.

The groups cataloged how and under what conditions aircraft carriers have been employed in the past and identified circumstances over the next 20 or 30 years that could require U.S. aircraft carriers to be employed in nontraditional roles.

Historical nontraditional uses of aircraft carriers

The Navy has not been shy about using aircraft carriers in alternative ways. During World War II, for example, it used carriers as platforms from which to launch Army bombers in the Doolittle Raid on Tokyo in 1942, as vessels to transport Royal Air Force, Marine Corps, and U.S. Army planes to various theaters, and as launch platforms for Army spotter planes throughout the Pacific theater. In the Vietnam War, it used them as electronic intelligence and communications antenna farms. And in later conflicts, it used them as bases for Army air assault and Special Operations Forces (SOF).

Aircraft carriers also have been used in noncombat roles—as launch platforms for U-2 spy planes, spacecraft-recovery vehicles, troop transports, mobile electric-power plants, and as centers from which to conduct disaster-relief operations.

Uses of aircraft carriers in future operations

The research groups also examined 12 combat and noncombat scenarios (shown in Table 1) that they speculated the U.S. carrier fleet might encounter in the future.

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Corporate Headquarters
1776 Main Street
P.O. Box 2138
Santa Monica, California
90407-2138
TEL 310.393.0411
FAX 310.393.4818

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Table 1
Future Scenarios in Which U.S. Aircraft Carriers Might Be Used

Type	Scenario	Circumstance
Combat	China–Taiwan	Taiwan is threatened by the People's Republic of China
	Pakistan coup attempt	Radical group within Pakistani military attempts to overthrow the government in Islamabad
	Korean crisis	North Korea, equipped with a dozen or more nuclear weapons, confronts South Korea
	Strait of Hormuz crisis	A nuclear-armed Iran sponsors nonstate terrorist groups
	Nigeria civil war noncombatant evacuation	Civil war in Nigeria requires a large-scale noncombatant evacuation operation
	Colombia insurgency	Colombia's police and military require help to counter an insurgency by two major guerrilla groups
	Myanmar civil war	Myanmar government is pressed by a foreign-backed civil war
Noncombat	Nuclear detonation in Long Beach, California	Radical nonstate terrorist detonates nuclear device in Port of Long Beach
	Tsunami along U.S. Atlantic coast	Underwater earthquake in mid-Atlantic causes major tidal wave on U.S. East Coast
	Volcanic eruption in Hawaii	Kilauea volcano erupts, significantly damaging major portions of the Big Island
	Earthquake in San Francisco, California	Large earthquake strikes San Francisco area, simultaneous with security crisis in Korea
	Cuban refugee crisis	Post-Castro civil unrest in Cuba leads to a massive flood of Florida-bound refugees

Recommendations resulting from scenario examinations

For each scenario, RAND examined tasks that the United States might assign to its carrier fleet, evaluated whether the current fleet could handle them or would need to change, and assessed the operational and technical implications of such changes. RAND made five recommendations to the Navy related to future combat missions and five recommendations for future noncombat missions.

Combat Recommendations

- *Improve abilities to reconfigure carrier air wings*. Air wings are heavily weighted toward strike and anti-air operations today. Future scenarios might require that a carrier alter its normal mix of aircraft, sometimes on short notice or after the vessel has reached its operational area, requiring changes to its maintenance, weapon storage, and berthing facilities.
- *Increase carrier modularity*. Modularity would enable carriers to bring aboard new capabilities, in the appropriate mix and in the right quantities, so that carriers can be operational bases for specific missions. Examples of modularity include containers of spare parts and key maintenance equipment; temporary spaces for use by SOF elements; or modular medical facilities.
- *Obtain greater reconnaissance and surveillance capabilities*. Each vignette pointed to a need for greater long-range, long-endurance, all-weather, stealthy, armed and unarmed intelligence, surveillance, and reconnaissance (ISR) capabilities. The entire joint force would benefit if carriers were able to conduct ISR operations from a distance of 500 nautical miles (nmi) and process and disseminate ISR data quickly.
- *Increase the ability to operate at greater range and endurance over larger operational areas*. The Nigeria, Pakistan, Iran, Myanmar, and Colombia vignettes highlighted the fact that aircraft from a carrier, whether manned or unmanned, would have to operate 500 nmi or more from the ship. Today's carrier air wings would have considerable difficulty maintaining more than a handful of aircraft with that capability.
- *Prepare for operations in a nuclear environment*. Several cases that we examined—China–Taiwan, Iran, Korea—involved the possible enemy use of nuclear weapons. Such use could include either an overtly lethal and destructive attack by surface or aerial detonation or a high-altitude nuclear detonation to disrupt U.S. command, control, communications, and computer intelligence, surveillance, and reconnaissance systems.

Noncombat Recommendations

- *Enhance abilities to alter the aircraft mix aboard carriers*. All noncombat vignettes revealed a need to significantly increase the number of helicopters and V-22 aircraft, a need that stems from the fact that rescue and relief efforts ashore would be in areas where few, if any, airports are available for conventional aircraft.
- *Enhance abilities to provide a command center for key government personnel or agencies*. Depending on the level of devastation ashore, some key civilian personnel may need to move onto carriers. For example, the local phone and power system might be so badly disrupted that such officials as U.S. Federal Emergency Management Agency or local government leaders might need to move to the ship temporarily.
- *Enhance onboard medical facilities*. Most vignettes involved numerous civilian casualties. The local medical facilities would almost certainly be overwhelmed, at least initially. In such circumstances, it may be necessary to provide a modular medical capability to enhance the ship's treatment facilities.
- *Improve the availability of nonready carriers*. The noncombat vignettes suggested that an aircraft carrier's main value is realized in the first few days of a crisis. In disaster-relief situations, the Navy should consider ways to deploy on short notice non-combat-ready carriers that recently have returned from deployments or completed yard periods.
- *Hold carriers back from humanitarian noncombat missions when a major military crisis looms*. When a major disaster occurs concurrently with a military crisis, it is likely that carriers would

be best employed for their primary mission: combat operations. The preceding recommendation—improved availability of non-combat-ready carriers to respond to a disaster—would, however, allow the Navy to provide more options to senior civilian leaders who would want as many military capabilities as possible available in the event of a major disaster. ■

This research brief describes work documented in *Leveraging America's Aircraft Carrier Capabilities: Exploring New Combat and Noncombat Roles and Missions for the U.S. Carrier Fleet*, by John Gordon IV, Peter A. Wilson, John Birkler, Steven Boraz, and Gordon T. Lee, MG-448-NAVY, 2006, 118 pp., $20, ISBN: 0-8330-3922-9, available at http://www.rand.org/pubs/monographs/MG448/. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark.

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