

South African president and Chinese president after signing declaration of partnership

AP/Wide World Photos (Anton Hammer)



Chinese Influence

on **U.S. Operational Access**
to **African Seaports**

Chinese destroyer *Qingdao* participating in search and rescue exercise with USS *Shoup*

By GORDON S. MAGENHEIM

The ability to project American power, except for a forced-entry scenario, across and through existing African commercial seaports in a time of regional crisis may be hampered by the growing economic and political clout of the People's Republic of China (PRC). American military planners must consider the use of austere seaport sites at alternative coastal locations as well as the use of intermediate staging bases as a means of countering this influence. This article illustrates the extent of China's influence along coastal Africa and the potential difficulty that this influence might present to U.S. military access to seaports in a time of crisis.

China's Growth

The PRC has made great strides over the last 25 years through a series of 5-year plans focused on modernization and economic growth. Since 1978, real gross domestic product (GDP) has grown "at an average annual rate of 9.3 percent, making China one

of the world's fastest growing economies."¹ This growth continues unabated. Since 2000, for instance, China's portion of the global GDP has been larger than that of the United States and more than half of the three next largest emerging economies (India, Brazil, and Russia) combined.²

Although the Bush administration holds that the PRC will act as "a responsible stakeholder in the world community,"³ the administration and Pentagon planners remain wary of the long-term strategy of the PRC. Statements such as those made in the early 1990s by Deng Xiaoping also reinforce this view. Known as the 24 Character Strategy, Deng's guidance to members of China's foreign and security policy apparatus stated that PRC policymakers should "observe calmly; secure our position; cope with affairs calmly; hide our capacities and bide our time; be good at maintaining a low profile; never claim leadership; and make some contributions."

Chinese Objectives in Africa. Following the end of the Cold War, China shifted

from developing ideological allies in Africa to securing access to natural resources, commercial ties, and economic influence.⁴ From the perspective of natural resources, the PRC is keenly interested in obtaining and securing long-term access to African oil and gas, as well as other natural resources, to sustain its economic growth.

Over the last 13 years, this economic growth has moved the PRC from a net exporter of oil to the world's second-largest importer. It now relies on foreign sources for 40 percent of its demand, and this amount is likely to rise to 80 percent by 2025 if current projections are correct.⁵ Because its decade-long attempt to diversify energy use through the introduction of natural gas recently failed,⁶ the PRC sees oil-rich nations in Africa as likely candidates to meet these expected energy requirements, at least in the near term.

The PRC is also actively pursuing access to other African natural resources such as minerals, metals, and timber. This pursuit often includes funding and constructing infrastructure and selling the heavy equipment necessary to support current or anticipated requirements. Moreover, the PRC is interested in developing current and

Lieutenant Colonel Gordon S. Magenheimer, USAR, is an Army Reserve Transportation Corps Officer serving as the Operations Officer for the Defense Reutilization and Marketing Service (Defense Logistics Agency) Disposal Remediation Team at Fort Sam Houston, Texas.

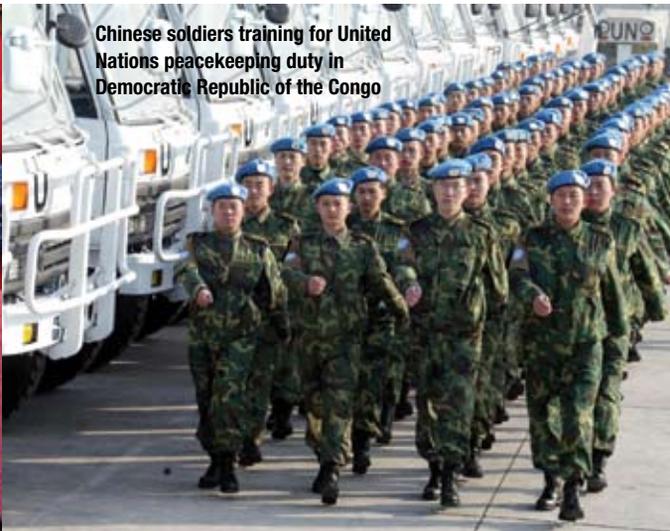
Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the 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 this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 2007		2. REPORT TYPE		3. DATES COVERED 00-00-2007 to 00-00-2007	
4. TITLE AND SUBTITLE Chinese Influence on U.S. Operational Access to African Seaports				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National Defense University, Institute for National Strategic Studies, 260 Fifth Ave SW Fort Lesley J. McNair, Washington, DC, 20319				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

AP/Wide World Photo (Wang Jianmin)



Chinese soldiers training for United Nations peacekeeping duty in Democratic Republic of the Congo

AP/Wide World Photo (Ng Han Guan)



China pledged billions of dollars in aid to Africa during Forum on China-Africa Cooperation

future African markets for the sale of Chinese exports. Taken together, these steps will allow China to have access to both raw resources and export markets.

Globalization and the Core-Gap Model. In *The Pentagon's New Map*, Thomas Barnett categorizes countries and regions from the perspective of globalization. This classification is based on the degree to which a nation (or region) is connected "and can handle the content flows associated with integrating one's national economy to the global economy."⁷ Countries able to handle this increasing content flow are designated as Functioning Core states (or simply Core states); countries remaining fundamentally disconnected from globalization are termed the Non-Integrating Gap states (or simply Gap states). Other than South Africa, all of Africa is located within the region identified as the Non-Integrating Gap.

Global Strategic Positioning. This concept integrates a nation's private and governmental assets with foreign countries (or groups of countries) for the purpose of expanding its own influence, accumulating power, and acquiring resources.⁸ This practice has been common throughout history and has allowed predominant powers to extend their regional influence through trade, political, and military alliances. The PRC follows this concept by

*taking careful, deliberate and well-coordinated action on a global scale to advance relations with strategically positioned countries possessing both the natural resources and influence to support its ascension in the international community and to accelerate the growth of its power and influence on the world stage.*⁹

The global strategic positioning concept is consistent with several priorities of the PRC's foreign policy, such as "economic development; managing security issues around China's borders; and unfolding plans for China's rise to replace the United States as the dominant power in Asia."¹⁰ The PRC "is forging deep economic, political, and military ties with most of Africa's 54 countries" in order to secure access to the continent's vast natural resources.¹¹ The concept meshes well with Barnett's Core-Gap model. Taken together, these theories lay the foundation for understanding the objectives of the PRC in establishing itself as a regional influence across the African continent.

The Nature of African Seaports

Seaports act as natural gateways and nodes within international transport networks and serve as corridors for materials and resources. This especially has been true since the advent of modern material handling technologies such as bulk terminals, container ports, and roll-on/roll-off methods of wheeled equipment, which have strengthened the relationship between a seaport and its supporting hinterland.

Africa is unique in that at least for sub-Saharan Africa, there is "an unusual shortage of natural ports along the coastline."¹² Consequently, seaport locations, where available, become major points of access into the African continent for both imported goods and exports such as oil and gas, metals, and timber. The general lack of natural seaports along the coast is compounded by "the absence of rivers which

are navigable by ocean-going vessels in the interior of the continent."¹³ The result is that only a handful of widely separated commercial seaports are suitable for large volumes of maritime traffic. Large-scale and continued logistical support for any U.S. military operation would require either these sized ports or alternatives.

China's Influence

Atlantic and Indian Ocean Coasts. Of the six seaports for the Atlantic and Indian Oceans (see table 1¹⁴), only a single Atlantic Ocean port (Cape Town, South Africa) has sufficient draft for the berthing of vessels classed as large medium-speed roll-on/roll-off (LMSR). On the Indian

following the Cold War, there was a shift from developing ideological allies in Africa to securing access to natural resources, commercial ties, and economic influence

Ocean, the port of Durban, South Africa, has the largest number (15) of LMSR-sized berths. The port of Mombasa, Kenya, is the remaining LMSR-capable seaport (with a single vessel berthing space) located on the Indian Ocean. The apparent lack of large commercial ports with sufficient room for the placement of LMSR-class vessels along both of these coasts is particularly troubling in that the west coast of Africa is the largest

Table 1. Operational Summary of African Ports and Large Medium-Speed Roll-On/Roll-Off (LMSR) Capacities

Port	Country	Berthing Groups	LMSR Equivalent Berths	Comments
Atlantic Ocean				
Lagos	Nigeria	13	0	Insufficient draft; Niger Delta area
Cape Town	South Africa	10	5	Western coast of South Africa
Indian Ocean				
Durban	South Africa	17	15	Eastern coast of South Africa
Dar Es Salaam	Tanzania	3	0	Insufficient draft
Mombasa	Kenya	10	1	
Mogadishu	Somalia	2	0	Insufficient draft
Gulf of Aden				
Berbera	Somalia	1	0	Insufficient draft
Kismayu	Somalia	2	0	Insufficient draft
Djibouti	Djibouti	4	0	Insufficient draft
Red Sea				
Assab	Eritrea	3	0	Insufficient draft
Massawa	Eritrea	5	0	Insufficient draft
Port Sudan	Sudan	6	2	
Safaga	Egypt	1	0	Insufficient draft
Adabiya	Egypt	4	2	
Mediterranean Sea				
El Dekheila	Egypt	3	1	
Alexandria	Egypt	9	2	
Port Said	Egypt	3	1	
Damietta	Egypt	3	7	
Benghazi	Libya	3	0	Insufficient draft
Tripoli	Libya	4	0	Insufficient draft
Gabes	Tunisia	3	0	Insufficient draft
Sfax	Tunisia	2	0	Insufficient draft

Source: Military Traffic Management Command Transportation Engineering Agency (MTMCTEA), Pamphlet 700-2, *Logistics Handbook for Strategic Mobility Planning* (Newport News, VA: MTM CTEA, 2002), appendix F, 50-52. Number of LMSR equivalent berths is based on a planning length of 1,000 feet and a minimum draft of 36 feet.

oil-producing area on the continent, with Nigeria and Angola as the main producers. Moreover, West Africa is a strategic area for the United States as it provides the Nation with 15 percent of its oil imports. This figure is expected to grow to as much as 20 to 25 percent over the coming decade.¹⁵

In oil-rich Nigeria, the PRC has undertaken a variety of resource and commercial projects. These include a recent \$800 million crude oil sales agreement for the purchase of 30,000 barrels of oil per day for 5 years,¹⁶ as well as agreements for the construction of a hydropower station and the rebuilding of the railroad network.¹⁷ The effort associated with rebuilding the railroad is key to expanding the transportation network into the neighboring country of Chad, where the PRC is also seeking exploration and development rights along the Nigerian-Chad border.¹⁸

The PRC has also expanded its influence in Angola. China recently provided a \$2 billion loan as part of a longer-term aid

package. In return, it was rewarded with oil exploration rights for a block that Angola had placed on the open market for bids.¹⁹

Located at the southern tip of the continent, South Africa sits astride the major maritime trade route between the Indian and Atlantic Oceans. Although not a key area with regard to petroleum resources, South Africa occupies a strategic location through which a large portion of oil tanker traffic from the Middle East to Europe and North America passes. It also has the largest seaport capacity of all the countries listed in table 1 and is easily accessible to both oceans.

Along the eastern portion of the continent, well north of the South African seaport of Durban, lies the Tanzanian seaport of Dar Es Salaam. Tanzania has been China's largest aid recipient in Africa, with formal ties having been established in 1961.²⁰ The PRC has cooperated with the government on a variety of non-oil-related projects. Recently, China provided an \$11 million loan to Tanzania

and Zambia to rehabilitate the Tanzania-Zambia railway, a 1,153-mile route whose original construction was funded by China. This railroad extends from the seaport of Dar Es Salaam in Tanzania to Kapiri Mposa in central Zambia. Although trade between the two countries has been modest, military exchanges and cooperation continue to be an important part of the relationship.²¹

The PRC established relations with Kenya shortly after its independence in 1963. As with Tanzania, the PRC has developed a broad range of commercial ventures and projects. Kenya is the communications gateway to East Africa and a market of keen interest to the PRC. Recently, the port of Mombasa signed an agreement with China for the sale of gantry cranes to increase cargo handling operations. Only recently have both countries agreed to explore for oil and natural gas.

The PRC has provided modest financial support to Somalia, with which it has also had close relationships since 1960. Prior to Somalia's becoming a failed state in 1991, China had constructed several commercial and public facilities across the country. Current involvement has been limited to political support for the reestablishment of the government.

The role of the PRC in countries with seaports that border the Indian Ocean is limited to commercial trade, along with military and political/educational exchanges, rather than the oil exploration and production activities associated with the Atlantic coastal seaports. Nonetheless, the PRC has established an early toehold in many of the African countries along the Indian Ocean.

Gulf of Aden and Red Sea Coasts. Eight seaports listed in table 1 are located along the Gulf of Aden and the Red Sea coastlines of Africa. Based on information contained in this table, there are no ports capable of receiving LMSR-class vessels along the Gulf of Aden. Two ports, Port Sudan (Sudan) and Adabiya (Egypt), are the only seaports located along the Red Sea coast of Africa that have berths with adequate length and draft to receive LMSRs.

Both Djibouti and Eritrea are small countries strategically located along the northeastern corner of the African continent. The influence of the PRC with Djibouti has been minimal and is limited to construction, student exchanges, and visits by Chinese medical teams, although both Djibouti and the PRC have established agreements on economic and technical cooperation.²² Trade

and political contact between Eritrea and the PRC are similar to that between Djibouti and the PRC, although Eritrea expects China to expand its involvement in local industries, to include mining and transportation infrastructure.

Sudan and the PRC have had a long political association since relations were established in 1959. Over the last decade, a strong economic relationship has also developed between the two countries that is focused on petroleum exploration and development, port construction, and electrical power generation and transmission. Sudan provides China with 7 percent of its imported oil, and China controls most of a Darfur oil field (the current site of hostilities between Sudanese forces and Christian rebels in southern Sudan)

with minority percentage interests in several other oil fields. Chinese construction interests associated with the China National Petroleum Corporation participated in the construction of a 930-mile pipeline from several oil fields to the Red Sea. Separately, Chinese interests are building a \$215 million export tanker terminal at Port Sudan. Another construction project planned by China is a \$325 million pipeline to transport water from the Nile to Port Sudan. Clearly, the PRC has invested heavily in a variety of domestic projects in order to ensure its future with regard to Sudanese oil exports. Notably, this access extends to Port Sudan, one of the only seaports along the Gulf of Aden/Red Sea coastline capable of berthing LMSR-class vessels.

The relationship between the PRC and Egypt is also a mature one, dating back to 1956. Trade, political, and educational exchanges are significant. Chinese companies have undertaken a variety of construction projects and continue to sign numerous contracts to include oil and gas sector projects. Egypt is unique among most African countries in that it has large capacity seaports on both the Red Sea and Mediterranean coasts.

Mediterranean Sea Coast. The African coast bordering the Mediterranean Sea has eight seaports listed in table 1, half of which are capable of berthing LMSR-class vessels. All four of these ports are located along the Egyptian coast, which makes Egypt a key access point for strategic sealift equipment and materiel into northeastern Africa.

the PRC has invested heavily in a variety of domestic projects to ensure its future with regard to Sudanese oil exports

China's emphasis in Libya has been on developing economic and commercial links in a variety of industries, especially those related to oil and gas exploration and production. Unlike Egypt and Sudan, China was not actively engaged commercially with Libya until 1981. Since that time, the Chinese have been involved in a number of Libyan infrastructure projects and are pursuing additional commercial opportunities. Both Libyan ports listed in table 1 lack the available draft necessary for receiving LMSR-class vessels.

Interaction between the PRC and Tunisia is similar to that with Djibouti and Eritrea, with cooperative agreements dealing with various issues being completed in 2002. Chinese firms have been active in construction planning for local infrastructure projects, to include water supply and sewage projects. As with Libya to the east, Tunisia's two ports listed in table 1 are incapable of handling LMSR-sized vessels.

Algeria and China have had extensive commercial and political dealings since Algeria's independence from France in 1958. Both countries entered into a strategic agreement that focuses on oil and gas production, infrastructure development, and telecommunications development. This agreement was preceded by contracts signed in 2002 for the development of a Saharan Desert oil field (\$525 million) by the China Petroleum and Chemical Company and in 2003 for the purchase of several Algerian refineries and exploration rights by the China National Petroleum Corporation. China continues to pursue aggressively additional petroleum exploration, development, and distribution throughout Algeria in order to increase its access to oil and gas supplies.²³

Beijing follows the same pattern of political and economic agreements with African countries bordering the Mediterranean Sea as it does for other coastal regions. These agreements offer an avenue for Chinese engagement with poorly developed economies. They begin with the offer of humanitarian assistance and educational exchanges and are followed with infrastructure development (that is, hospital, water and sewage treatment plants, and road and railway construction) and the acquisition and export of natural resources (principally oil and gas).

U.S. Strategic Sealift Power Projection Options

Throughout the 1990s, the United States has decreased its overseas military presence through reducing forces and shifting troops and equipment from bases in Europe and South Korea. With transformation efforts by the Department of Defense under the Bush administration, the reduction in an overseas American presence continues, notwithstanding the effort to establish small and austere bases and facilities (so-called lily pad bases that allow for the fast, flexible, and efficient projection of force) in former Eastern Bloc and other countries. Rather than being a forward deployed force, the U.S. military now requires strategic air- and sealift to project influence and power overseas. Historically, however, approximately 95 percent of all equipment and supplies reach a theater of operations by sealift.²⁴ Any military operation requiring the projection of a significant American presence into Africa will require the use of a commercial seaport or adjacent secondary/austere ports in a theater of operations.

Characteristics and Capabilities of U.S. Strategic Sealift Vessels. Four conventional ship types are used for the deployment and redeployment of unit equipment:

- breakbulk vessels, which consist of a series of separate cargo holds and are self-sustaining using ship's gear (on-board booms, cranes, and winches) to conduct lift-on/lift-off operations
- container ships, which carry their entire load in containers that are 20 or 40 feet in length, and are non-self-sustaining (lacking on-board cranes)
- barge carriers, which carry smaller barges that are subsequently unloaded and ferried by tugs to berths where they are discharged by shore-based cranes
- roll-on/roll-off (RO/RO) vessels, which are designed primarily as vehicle transports that allow the rapid movement and placement of wheeled and tracked equipment by a series of external and internal ramps between decks.²⁵

Only fast sealift ships (FSSs) and LMSRs are RO/RO vessels that have the largest amount of available floor space for the placement of equipment. Consequently, these types are preferred for large-scale unit deployments. Table 2 provides summary

Table 2. Strategic Sealift Vessel Type Cargo Capacities

Vessel Type	Average Usable Space (sq. ft.)	Average Total TEU Capacity	Berthing Limitations
Non –Self-Sustaining Container Ship	N/A	2,718	610 to 687 foot length (variable); 18 to 20 foot draft
Self-Sustaining Container Ship	N/A	1,763	610 to 687 foot length (variable); 18 to 20 foot draft
Breakbulk	48,625	N/A	268 to 605 foot length (variable); 18 to 35 foot draft
Notional Roll-On/Roll-Off	117,668	459	540 to 750 foot length (variable); 18 to 35 foot draft
Fast Sealift Ship	152,774	230	946 foot length; 36 foot draft
LMSR (Conversion)	233,969	279	906 foot length; 34 to 36 foot draft
LMSR (New Construction)	292,733	353	949 foot length; 35 to 36 foot draft

Source: Military Traffic Management Command Transportation Engineering Agency (MTMCTEA), Pamphlet 700-2, *Logistics Handbook for Strategic Mobility Planning* (Newport News, VA: MTMCTEA, 2002), table 8 (Planning Factors by Ship Type) and table 9 (Vessel Characteristics).
LMSR = Large Medium-Speed Roll-On/Roll-Off Vessel; TEU = Twenty-foot Equivalent Unit

money to cultivate political and economic access into most of Africa, particularly the coastal countries.

American military planners must confront the reality that access for the largest class of vessels capable of delivering sizeable amounts of equipment and materiel into available African seaports may be denied due to conflict with commercial interests at the port for all but a forced-entry scenario. This may be especially the case in those ports that are actively engaged in commercial ventures with the People's Republic of China. Seaport operators may be reluctant to allow U.S.-flagged vessels port access if it would disrupt normal port operations or run counter to China's political goals for the region. **JFQ**

NOTES

- Wayne M. Morrison, *China's Economic Conditions*, Report No. IB98014 (Washington, DC: Library of Congress, Congressional Research Service, 2005), 2.
- "Balancing Act: A Survey of China," *The Economist*, March 25, 2006, 3.
- Ibid.*, 4.
- David H. Shinn, "China's Approach to East, North and the Horn of Africa," testimony before the U.S.-China Economic and Security Review Commission, *China's Global Influence: Objectives and Strategies*, July 21, 2005, 1.
- Office of the Secretary of Defense, *The Military Power of the People's Republic of China 2005* (Washington, DC: U.S. Government Printing Office, 2005), 10.
- Shai Oster and Patrick Barta, "About Face: China Stumbles in Attempt to Cut Use of Coal and Oil," *The Wall Street Journal*, March 3, 2006, A2.
- Thomas P.M. Barnett, *The Pentagon's New Map: War and Peace in the Twenty-first Century* (New York: G.P. Putnam's Sons, 2004), 125.
- Frederick W. Stakelbeck, Jr., "China and the Concept of Global Strategic Positioning (GSP)," *The American Thinker*, August 19, 2005, 1, available at <www.americanthinker.com/articles.php?article_id=4741>.
- Ibid.*, 1.
- Ross Terrell, *The New Chinese Empire and What It Means for the United States* (New York: Basic Books, 2003), 265.
- Karby Leggett, "China Flexes Economic Muscle Throughout Burgeoning Africa," *The Wall Street Journal*, March 29, 2005, 1, available at <<http://aimpoints.hq.af.mil/display.cfm?id=2265&printr=yes>>.
- United Nations Conference on Trade and Development (UNCTAD), *UNCTAD's Contribution to the Implementation of the United Nations New Agenda for the Development of Africa in the*

planning information regarding the cargo capability of various vessel types. LMSR vessels are capable of transporting a significant amount of equipment—generally four to six times that of an average breakbulk vessel. FSSs have approximately half of the usable cargo capacity of LMSRs but have average service speeds of 27 knots compared to 24 knots for LMSRs.

Both LMSRs and FSSs are capable of deploying both wheeled and tracked equipment adjacent to a berthing area, provided there is sufficient length and draft. Both types of vessels have side or stern ramps that are maneuvered into place, allowing equipment to be driven or towed from the interior of the vessel, across the ramp, and onto the pier for staging and pickup by the owning unit.

Ready access to pier side unloading areas is critical for capitalizing on the strengths of LMSR- and FSS-class vessels (that is, large cargo capacity, self-sustaining capabilities, and quick loading/unloading times). Average discharge times range from 24 to 36 hours; similar discharge times for LMSRs are approximately 24 hours. LMSR vessel discharge rate information from Operation *Enduring Freedom* or *Iraqi Freedom* is not currently available but should be similar to that of FSS vessels.

Alternative LMSR/FSS Discharge Options. In the event that access for berthing either an LMSR or FSS is unavailable at an existing commercial seaport, alternative vessel discharge options will be needed. Due to the deep draft of these vessels, equipment discharge will be required from offshore anchorage locations to smaller, shallower draft vessels known as lighters. LMSR/FSS discharge using this method is known as in-the-stream unloading and will increase vessel discharge times. This method may be used across bare beach environments, damaged/sabotaged ports, or in austere ports normally capable of handling smaller cargo vessels.

Of note, the Defense Science Board Task Force on Mobility has recognized the current lack of a viable method of using austere port locations for the rapid discharge of heavy/medium forces into a theater and has recommended a research and development program to determine its future feasibility.²⁶

in the event that berthing is unavailable at an existing commercial seaport, alternative vessel discharge options will be needed

The People's Republic of China has made considerable political progress and strong economic inroads with many African nations, particularly those with abundant natural resources. China has expended and continues to expend considerable time and

1990s: *African Transport Infrastructure, Trade and Competitiveness*, Report No. TD/B/46/10, August 20, 1999, 10, available at <www.unctad.org/en/docs/tb46d10.pdf>.

¹³ Ibid.

¹⁴ Table 1 lists seaports located along the coast of Africa and uses information presented in appendix F (Worldwide Port Characteristics) of the Military Traffic Management Command Transportation Engineering Agency (MTMCTEA), Pamphlet 700-2, *Logistics Handbook for Strategic Mobility Planning* (Newport News, VA: MTMCTEA, 2002). The number of multiple-vessel berthing groups, which vary in length and available draft, was obtained directly from appendix F for each seaport listed. The number of equivalent large medium-speed roll-on/roll-off (LMSR) vessel berths represents the number of vessels that could be accommodated at a single time given the limitations of length and draft required for an LMSR-sized vessel. For the sake of this article, a minimum planning length of 1,000 feet and a minimum draft of 36 feet were used to determine the number of LMSR-equivalent berths available for a given seaport listed in appendix F.

¹⁵ Princeton Lyman, "China's Rising Role in Africa," testimony before the U.S.-China Economic and Security Review Commission, *China's Global Influence: Objectives and Strategies*, July 21, 2005, 2.

¹⁶ Ibid., 2.

¹⁷ Leggett, 1.

¹⁸ Council on Foreign Affairs, *More Than Humanitarianism: A Strategic U.S. Approach Toward Africa*, Independent Task Force Report, No. 56 (New York: Council on Foreign Relations, 2005), 44.

¹⁹ Ibid., 43.

²⁰ Shinn, 6.

²¹ Ibid.

²² Ibid., 10.

²³ Ibid., 12.

²⁴ Department of the Army, Field Manual 55-1, *Transportation Operations* (Washington, DC: U.S. Government Printing Office, 1995), 4-5.

²⁵ MTMCTEA Pamphlet 700-2, 50-52.

²⁶ Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, *Defense Science Board Task Force on Mobility* (Washington, DC: U.S. Government Printing Office, September 2005), 37-44.

CALL for Submissions



JFQ FORUM

The following are areas of interest that JFQ expects to return to frequently, with no submission deadline:

- adaptive planning and execution
- coalition operations
- employing the economic instrument of power
- theater security cooperation
- humanitarian assistance and disaster relief
- industry collaboration for national security
- integrated operations subsets (new partners, interoperability, and transformational approaches)
- joint air and space power
- Just War theory
- "effects" planning
- proliferation and weapons of mass destruction
- prosecuting the war on terror within sovereign countries
- military and diplomatic history

Visit ndupress.ndu.edu to view our Guide for Contributors. Share your professional insights and improve national security.



U.S. Navy (Daniel A. Banker)

Chinese sailors aboard destroyer *Qingdao*