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**UNITED STATES ARMY CORPS OF ENGINEERS INTEGRATION  
INTO THE CINC'S THEATER ENGAGEMENT PLAN FOR SUB-  
SAHARAN AFRICA**

**BY**

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USAWC STRATEGY RESEARCH PROJECT

**United States Army Corps of Engineers Integration Into the CINC'S Theater  
Engagement Plan for Sub-Saharan Africa**

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## ABSTRACT

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Africa is a region with many political, economic and social problems that result in nearly continuous conflict. The population suffers immensely from man-made and natural disasters. Underlying these political, social and economic problems is a physical infrastructure that is not likely to support security or growth in the region. There is an engineering aspect to the solution of Africa's problems. The U. S. Army Corps of Engineers is uniquely qualified to address these physical shortcomings. It possesses the technical expertise, experience and legal authority needed to solve these problems. The Corps unique qualifications have led to its involvement in political, economic and military engagement in the region. By carefully integrating USACE activities into the Theater Engagement Plan for Africa the CINC can realize progress toward the accomplishment of his theater objectives. The U.S. Army Corps of Engineering concept of "Field Force Engineering" can assist in this integration.



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## **UNITED STATES ARMY CORPS OF ENGINEERS INTEGRATION INTO THE CINC'S THEATER ENGAGEMENT PLAN FOR SUB-SAHARAN AFRICA**

"Africa at the Crossroads: The Challenge for the Future" is the title of a speech given by Susan E Rice, Assistant Secretary of State for African Affairs, in November 2000 at Nairobi Kenya. As the title implies, Assistant Secretary Rice spells out two vastly different futures for Africa a generation from now.

One future is a bright one in which democracy flourishes and economies expand. It is a future in which Africa's vast natural resources support true development rather than finance conflict. Technology fuels this development and while Africans will have suffered greatly from health problems such as AIDS, citizens enjoy access to affordable health care and millions of lives are being saved.

The other potential future is far more ominous and discouraging. It is one in which the cycle of conflict and genocide continue. Millions of people are displaced and homeless. The growing technology gap makes it impossible for African countries to participate in the global economy and economic growth declines. Coups remain the norm and democracy is nonexistent.<sup>1</sup>

Which path Africa<sup>2</sup> follows will largely be determined by African decisions. Africa will continue to feel the pressure of globalization and therefore the extent and nature of foreign participation in African affairs will play a role in shaping it's future. The United States will continue to become involved in African events as Somalia, Rwanda and Mozambique have demonstrated in the past decade. The decision for the United States is how we will participate in African affairs. Our involvement will fall somewhere between actively engaging in trying to shape the environment and attacking the root causes of Africa's problems or standing back and responding only when the situation becomes too bad to ignore. The United States Army Corps of Engineers (USACE) possesses a vast array of capabilities, which can be used to both shape and respond. Integrating USACE engineer engagement activities into the CINC's Theater Engagement Plan for Africa can advance U.S strategic security objectives in Sub-Saharan Africa.

### **THE STRATEGIC ENVIRONMENT**

Africa is a region plagued by many problems. Since the demise of colonialism in Africa most of its states have struggled for survival. The region has been the site of nearly continuous conflict. While it appears on the surface that democratic processes are taking hold, true multi-party elections do not appear to be the norm. Economic growth and incorporation into the global economy has been slow at best. The social structure of Africa has been devastated by

medical problems, the worst of which is the spread of HIV/AIDS. Environmental degradation is severely threatening the very existence of the human population in many countries. All of these circumstances have led to a series of complex emergencies unsurpassed in any other region of the world.

Violent conflict has been widespread in Africa over the past two decades. In many of these conflicts ethnic diversity within countries is used to fuel the violence. Many of the boundaries of the nations in Africa are the result of colonial decisions rather than ethnic or cultural demographics. As a result ethnic differences are often used to fuel the fighting. The natural resources of the region are used to fund conflict rather than foster development. This is the case with diamonds in Sierra Leone or oil in the Sudan. Nearly all of these conflicts are internal as opposed to State versus State. External support does however play a role. Nearly 25% of all the nations of the world are involved with arms being shipped to Africa.<sup>3</sup> Many of these conflicts employ violence directed at women and children on a regular basis. This nearly continuous conflict had created nearly 8.1 million refugees (one third of the worlds total) by 1998.<sup>4</sup>

The political picture for Africa is not much brighter. While over 40 African states have held democratic elections since 1990, the integrity of these elections is in question. The results of five of these elections have been invalidated by civil war or military coups.<sup>5</sup> By 1998 there appeared to be 20 countries with what could be described as democratic governments. Many analysts believe that what looks like political reform is actually an appearance created by leaders in order to secure foreign aid which might be contingent upon democratic reform.<sup>6</sup> In short, Africa largely remains a region in which personal rule is still the norm.

The economic picture for Africa is also bleak. Most countries rely on the export of primary commodities for their existence. The price of these commodities is subject to large fluctuations that can have devastating consequences. Internal markets are underdeveloped and states rely on uncertain export profits for revenue. Of the 36 countries rated as severely indebted by the World Bank, 29 are in Africa. Capital flight into the bank accounts of leaders is also a problem. The overseas capital held by Africans is equivalent to 39% of the Gross domestic product. Corruption is also a serious problem, siphoning off nearly as much money as the World Bank spends in the region each year. This combination of weak economies and corruption leaves Africa largely dependent on foreign aid. This foreign aid is often a significant percentage of the regions Gross National Products.<sup>7</sup>

In addition to the conflict in the region and the weak political and economic institutions, the population of Africa is being ravaged by medical disasters and environmental degradation.

These medical and environmental crises threaten the very survival of the population. With an annual growth rate of between 2.5 to 3.5% the population of Africa has doubled in the past 25 years. It is likely to double again over the next 25. Nearly 29% of this population now lives in urban areas with little to no sanitation infrastructure.<sup>8</sup> Disease, and HIV/AIDS in particular, is also wreaking havoc on the population. Nearly 20 million people are currently infected with HIV. This could result in nearly 10% of the population between the ages of 15 and 49 dieing of the disease. It is the leading cause of death in Africa.<sup>9</sup> Ebola and drug resistant strains of diseases such as tuberculosis and malaria are also a problem in the region. The environment is being threatened by air and water pollution, deforestation, soil erosion and a loss of biodiversity. These health and environmental factors result in Africans having the lowest chance of survival to age 5 and the lowest chance to live past age 50 of all the world regions.

The combination of conflict, weak political and economic institutions with large-scale health and environmental problems make the security environment of Africa very unstable and volatile. The prospects of a bright future for Africa are grim at best. It is evident that these problems are not likely to be overcome without assistance from the developed world.

#### **UNITED STATES STRATEGY FOR AFRICA**

The strategic environment in Africa can appear very depressing and hopeless. In spite of this situation there are reasons for the United States to be involved in the region. The unstable situation in Africa provides fertile ground for serious transnational threats to take hold. Already threats such as state sponsored terrorism, narcotics trafficking, weapons proliferation, international crime, environmental damage and disease emanate from the region. Conflict and humanitarian disaster have drawn United States forces into the region several times during the past decade. Our economic involvement in Africa is growing. About 14% of U.S. oil imports presently come from Africa. This number will continue to increase in the near future and will probably surpass our imports from the Middle East. U.S. exports to the region surpass those to the former Soviet Union and account for an estimated 100,000 U.S. jobs.<sup>10</sup> How then, should the United States formulate its strategy for Africa?

The security strategy of the United States is designed to advance our national interests. In 1996 the Clinton administration published "A National Security Strategy of Engagement and Enlargement". This strategy broadly defined our national interests as our physical defense and economic well being. National interests were also expanded to include environmental security and security of our values. The objectives of this strategy were to enhance our security at home, promote prosperity at home and to promote democracy. These objectives were to be met by active United States engagement around the world in order to enlarge the community of

secure, democratic nations with free market economies. At the core of this strategy is the concept that by engaging throughout the world and spreading our national values we can create an environment in which the necessity for us to respond with force is less likely.<sup>11</sup>

Africa is the last region listed in "A National Security Strategy of Engagement and Enlargement". The strategy recognizes that the economic, political, social ethnic and environmental challenges which were outlined in the previous section of this paper can lead to a sense of "Afro-pessimism." The strategy stated is to identify and address the root cause of these problems before disaster occurs. While the strategy does recognize that there will be the need to intervene to relieve suffering it states that these interventions should be limited and designed to give Africans the "opportunity to put their own house in order."<sup>12</sup>

In "A National Security Strategy for a New Century" the concept of engagement is emphasized even more. This strategy stresses the "imperative of engagement. It states that the spread of democracy will support American values and enhance our core objectives, which are defined as security and prosperity. At the core of this strategy is the belief that the spread of our values and democracy will prevent conflict and foster economic growth. The strategy states that this can only be achieved if the United States exerts its leadership in the world and remains actively engaged. In Africa this strategy states that democracies have proved to be more "peaceful, stable, and reliable partners". American policy will continue to work to "broaden the growing circle of African democracies."<sup>13</sup>

It is clear from both of these National Security Strategies that Africa is not a top priority for the United States. The Secretary of Defense in his annual Defense report for 2000 states that that defense activities and resources for Africa are limited.<sup>14</sup> Our strategy is to seek partnerships with friendly African countries and develop a regional capability to deal with these problems. In short we seek to influence the situation in Africa while minimizing our direct military involvement and the resources expended in the region.

The strategy of engagement and enlargement had a direct impact on the formulation of our national military strategy. Engagement and enlargement was translated into the now familiar military strategy of "Shape, Respond, Prepare Now". The shaping element of this strategy involves fostering the international institutions and relationships that create a peaceful strategic environment by promoting stability, minimizing conflict and deterring aggression. Responding involves being able to respond across the spectrum of military operations, from humanitarian assistance to winning in a major theater of war. The preparing element of this strategy means that we must modernize our military in order to maintain the military superiority we now enjoy. The challenge of this strategy is being able to allocate our limited resources in

order to achieve a balance where we can shape the environment to promote peace and stability, respond to crisis' as required yet continue to prepare for the future through modernization.<sup>15</sup>

The decision as to which elements of our National Military Strategy will be brought to bear around the world is determined by the degree to which our national interests are at stake, the likelihood of our influencing the situation and the risks to U.S. forces that become directly involved. In those areas where our interests are high we are more likely to become involved and deploy U.S. forces to protect our interests. As outlined earlier America has only limited interests at stake in Africa. The complexity of the strategic environment and the nature of the problems in Africa mean that they are not likely to be solved easily or quickly. The nature of conflict in the region, the political and social environment there combined with the poor health and environmental conditions means the forces directly involved in responding to crises in Africa are likely to be at high risk. This combination of limited interests and high risk has led us to pursue a strategy of avoiding direct intervention in the region. Our military strategy has been to engage in shaping activities with limited resources in order to attack the root causes of the conflict. This limited military engagement, combined with political and economic engagement is directed at attempting to build an African capability to solve African problems and thus minimize direct U.S. involvement. This goal of limiting direct involvement is especially true of the military element of power. The U.S. strategy prefers economic and political engagement over direct military involvement.

#### **THE U.S. ARMY CORPS OF ENGINEERS AS AN ENGAGEMENT TOOL**

The United States Army Corps of Engineers (USACE) is uniquely qualified to serve as an instrument of engagement for United States security interests in Sub-Saharan Africa. There is an engineer element to solutions for many of the political, economic and social problems in Sub-Saharan Africa. The physical infrastructure in virtually all areas, from transportation to education to health, limits progress in the development of a secure and prosperous environment. USACE has the capabilities, experience and authority which make it uniquely qualified to address these problems as an instrument of national security strategy.

#### **ENGINEERING FACTORS IN AFRICA**

As described earlier in this paper the political, social and economic problems of Sub Saharan Africa run deep. These problems often manifest themselves in bitter conflict and natural disasters which cause immense human suffering. The strategy which the United States has chosen to address these problems is one of engagement where we seek to build partnerships and create the environment where these problems can be resolved. The physical

infrastructure within Africa is so weak that it limits progress in virtually all areas of growth and development. While addressing these infrastructure deficiencies will not guarantee growth and development it is clear that infrastructure improvements can act as an enabler toward the goal of sustainable growth and development.

The transportation infrastructure of a country is vital for economic growth and development to occur. It is not likely that markets will expand without the ability for producers to get their goods and services to consumers. A transportation infrastructure is vital for the growth of internal markets as well as for the growth of exports. The transportation infrastructure of Africa is virtually non-existent. Figure 1 shows the density of paved roads in selected countries of Africa compared to the density in several developed countries. In addition to the relative scarcity of paved roads in Africa the road systems that do exist are often inefficiently laid out and in poor repair. There are also numerous references to problems with land mines and damage from overuse and conflict. As figure 2 illustrates the situation with railroads is similar to that of paved roads. It appears that the developing countries of Africa lag far behind developed countries in this area also. In addition to the scarcity of railroad systems much of what exists is in bad repair. Having been built to support colonial activities the systems were planned to take resources out of the region and therefore may not support the development of internal markets. This also led to numerous odd sized gages being used within the same country. Those countries with rail systems will often have three or four different gages in use. Electricity production (Figure 3) and phone lines in service (Figure 4) also lag far behind the developed world. Only South Africa appears to have infrastructures that approach those found in developed countries.

Other elements of the transportation infrastructure are also lacking. There are few airfields capable of handling strategic lift aircraft in the region. Ports are also poorly developed. The airfields and ports that do exist have limited adjacent facilities for handling cargo. In general the weak transportation infrastructure will not support the expansion of markets in the region or the growth of export economies. This weak transportation infrastructure also limits our military access if required. When the refugee crisis occurred in Goma, Zaire after the genocide in Rwanda there was not an option to bring equipment or supplies in via ports. The only available port were 1000 miles from Goma with undeveloped roads winding across the continent being the only route available from the ports. The airfield at Goma was capable of handling strategic aircraft but had no parking or cargo facilities available. This will not be unusual when planning for contingencies in Africa.

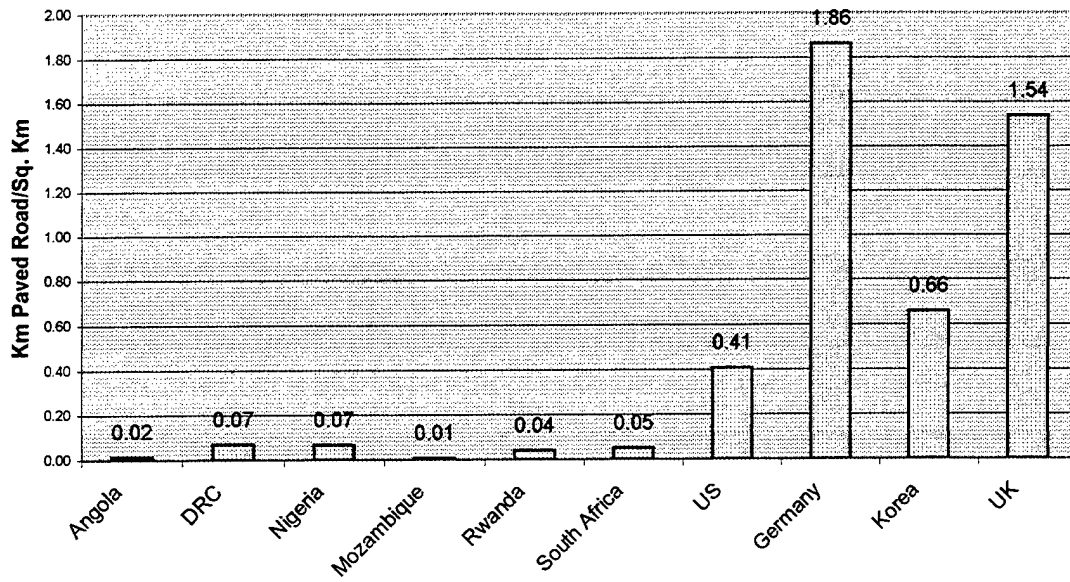


FIGURE 1 – Paved Road Density<sup>16</sup>

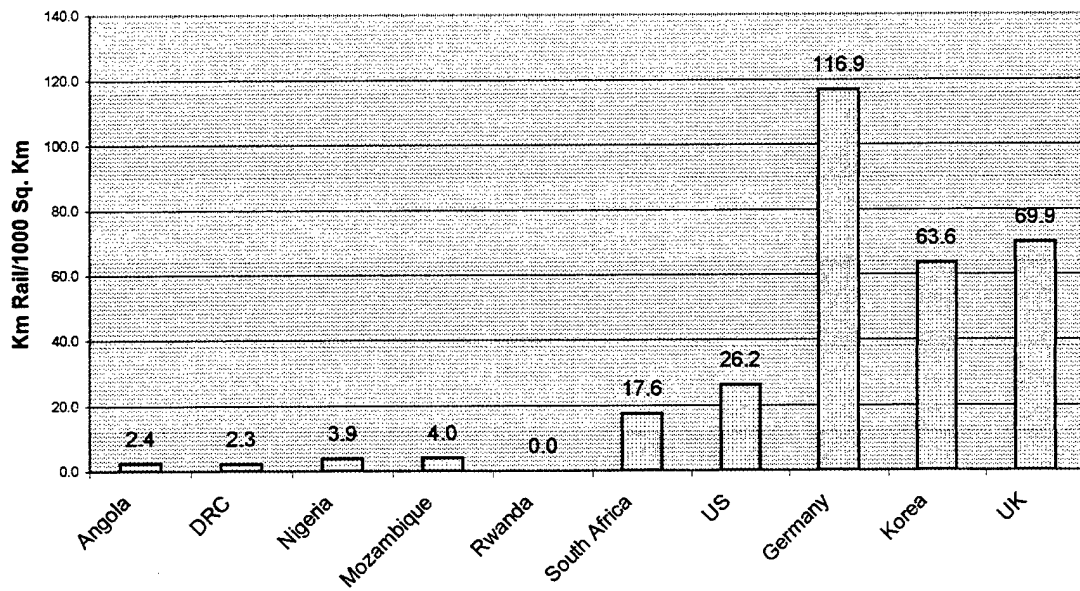


Figure 2 – Railroad Density<sup>16</sup>

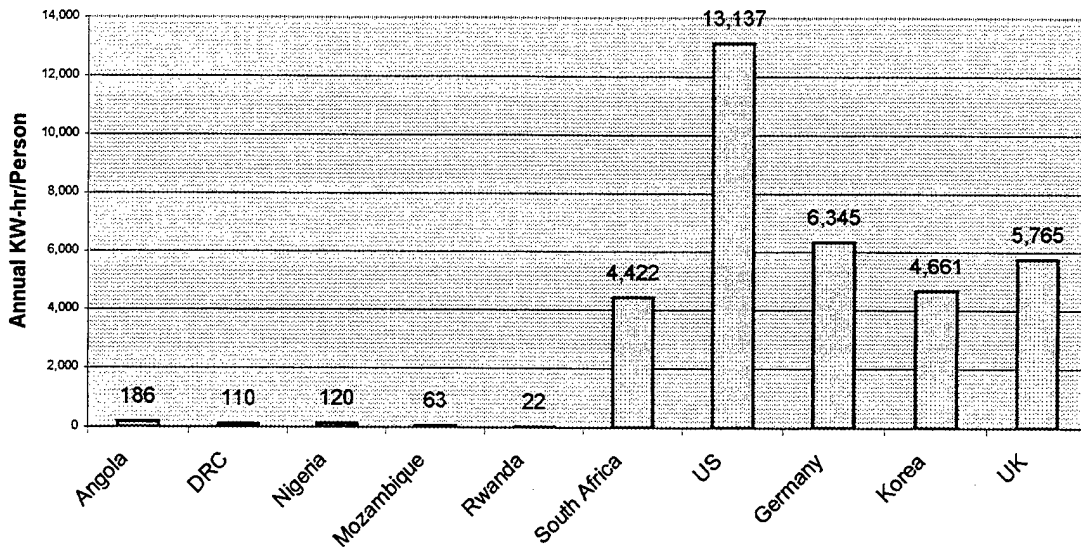


Figure 3 – Energy Production<sup>16</sup>

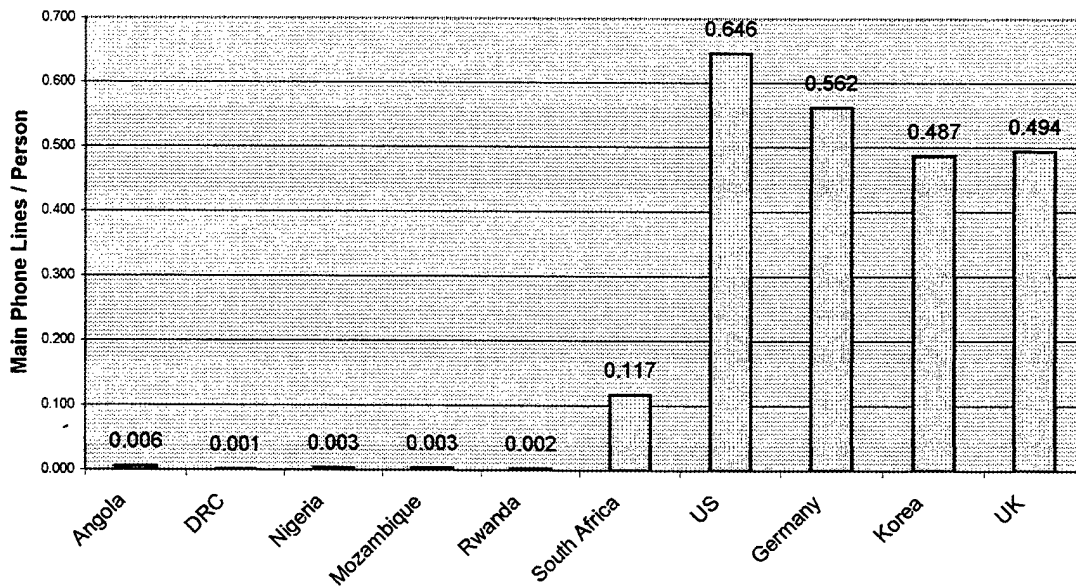


Figure 4 – Phone Lines in Service<sup>16</sup>

The water resources and sanitation systems in Africa are also lacking. The continent is endowed with abundant water resources. There are 17 major rivers with a catchment area greater than 100,000 km<sup>2</sup> there are also 160 lakes larger than 27 km<sup>2</sup>. There is abundant rainfall in most of Sub-Saharan Africa and water withdrawals for agriculture, community water supply and industry use less than 5% of the available renewable water supply. There is also the potential for huge amounts of energy from un-tapped hydroelectric power resources. In spite of

this there are areas of Africa that suffer from the water scarcity. In those areas where water is available the quality of the water supply is often poor. Sanitation services are virtually non-existent. In rural Africa 65% of the population are without access to adequate water supply and 73% are without access to adequate sanitation. In urban areas these numbers are 25% and 43% respectively. As a result of this half of all Africans suffer from water borne disease. Africa suffers from food insecurity resulting in frequent famine yet two-thirds of the African countries have developed less than 20% of potential irrigated land. Inefficient management of water resources results in waste and environmental degradation of much of the available water. The water resource problems in Africa are not rooted in the inadequacy of water resources but rather appear to be financial and technological in nature. The engineering solutions to these problems will have to be addressed in order to achieve security and economic development in the region.<sup>17</sup>

Infrastructure shortfalls are also a component of health and education problems in Africa. The lack access to health services makes the fight against diseases such as AIDS and malaria more difficult. Health facilities are scarce and unequally distributed between rural and urban areas. The same is true of education facilities in Africa, which has resulted in education rates declining since 1980.<sup>18</sup>

It is clear that there is an engineering component to the resolution of many of Africa's problems. If we hope to increase security and prosperity in the region there will have to be improvements in the public services infrastructure. Improvements in the transportation, water supply, sanitation, energy production, health services and education facilities can enable other social, political and economic improvements to occur.

#### A ROLE FOR USACE

The U.S. Army Corps of Engineers has the capability to engage in Africa by addressing the infrastructure deficiencies that impact on the security and stability of the region. Over the past two centuries USACE has demonstrated its ability to accomplish large projects in support of national security objectives at home and abroad. Its structure and capabilities give USACE a unique capability to engage on the political, economic and military fronts. Through careful selection of the methods used for engagement USACE has the potential to realize not only physical improvements in the region but contribute to the security environment of the region as well.

The mission of USACE<sup>19</sup> is to provide quality, responsive engineering services to the nation including:

- Planning, designing, building and operating water resources and other civil works projects (Navigation, Flood Control, Environmental Protection, Disaster Response, etc.).
- Designing and managing the construction of military facilities for the Army and Air Force.
- Providing design and construction support for other Defense and federal agencies. (Interagency and International Services)

To accomplish this mission USACE has approximately 36,000 civilian and 320 military men and women. These employees are divided amongst 8 Divisions (commanded by General Officers) containing 41 Districts in the US and overseas (commanded by LTCs or COLs), 2 Centers, and 8 specialized laboratories.

The Divisions, Districts and Centers of USACE are responsible for the management of an engineering program that accomplishes approximately \$13 billion of work each year. Within the U.S. the USACE civil works program is responsible for navigation, flood control, disaster response and environmental restoration projects. This includes the management and maintenance of 12,000 miles of inland waterways, 400 miles of coastal structures, 8500 miles of levees and 450 major lakes or reservoirs.<sup>20</sup> In addition to this civil works mission the Corps accomplishes all military construction for both the Army and Air Force. To accomplish this USACE relies heavily on civilian industry through contracting. This leverages the full weight of the civilian construction industry and gives USACE the capability to expand and contract as the workload requires. Through this contracting method USACE has the capability to accomplish engineering design, construction management, cost estimating, planning, disaster response and other engineering activities. Its procurement contracting capability is well established and can accomplish even the largest engineering projects.

The Corps laboratories support USACE activities with research and development as required. These laboratories conduct research in the areas of mapping and terrain analysis; infrastructure design, construction, operation and maintenance; structural engineering; cold regions engineering; coastal and hydraulic engineering; environmental quality; geotechnical engineering and high performance computing.

The Corps also operates two centers that augment its capabilities. The U.S. Army Engineering and Support Center provides engineering and technical services, project

management, construction management and innovative contracting initiatives for programs that are national or broad in scope or not normally provided by other Corps' elements. They also develop and conduct training to support all of the Corps requirements. The Transatlantic Programs Center supports U.S. government programs and policies overseas.

#### A TRADITION OF SERVICE TO THE NATION AT HOME....

Over the past 200 years the Corps of Engineers has demonstrated its ability to apply its diverse capabilities to the most difficult engineering challenges in support of national objectives. It has demonstrated this ability both at home and overseas. The Corps legacy of military engineering support to the nation dates back to the Battle of Bunker Hill in 1775. Since its inception USACE has been involved, in the United States, with addressing virtually all of the engineering challenges previously described as now confronting Africa.

The transportation infrastructure of the U.S. became a concern for the U.S following the War of 1812. Studies after the war showed that a strong national defense rested on four pillars: a strong Navy; a highly mobile regular Army; invincible coastal defenses; and improved rivers, harbors and transportation systems to support rapid concentration of forces and swifter logistical lines. This realization of the need for a developed transportation infrastructure led to the Corps being given responsibility for improving navigation on the Ohio and Mississippi rivers in 1824. The Corps continues to perform that mission today. In 1832 the Corps was given the responsibility for the construction of the first National Road between Cumberland, Maryland and Vandalia, Illinois.<sup>21</sup> The Corps of Engineers has been involved with national transportation infrastructure projects in the U.S. continuously since the assignment of these early missions.

The Corps ability to accomplish other large infrastructure projects has been demonstrated over the years in its accomplishment of the military construction mission. During World War II the Corps of Engineers managed the construction of factories, military installations, depots and ports within the U.S. In total the mobilization program in the U.S. involved over 27,000 projects at a cost of \$100 billion 1980 dollars. This mission has continued until the present day and accounts for an annual expenditure of approximately \$4 billion for the construction of Army and Air Force facilities. This construction capability could easily be applied to address any infrastructure shortfalls that exist in Africa such as those that in the health care, education and military sectors.

The Corps of Engineers involvement with water resources management began over 100 years ago. Concern with navigation and flooding along the Mississippi River prompted Congress to establish the Mississippi River Commission in 1879. Three of its seven members were from the Corps of Engineers This marked the first effort in the United States for river basin

management. The Corps of Engineer mission for flood control gradually was expanded to include all of the United States. This mission resulted in the Corps constructing and operating over 300 reservoirs between 1936 and the present. The purpose of these reservoirs was also expanded to include navigation, water supply, irrigation, power and recreation objectives. In the area of hydropower the Corps' 73 operating hydropower projects were responsible for the production of 20.1 million kilowatts or nearly 5% of the nations power in 1987.<sup>22</sup> The Corps experience with managing water resources makes it uniquely qualified to assist in overcoming the water resource challenges facing Africa today.

In the area of environmental protection USACE has also played an important role in the U.S. In the 1880s and '90s congress directed the Corps to prevent dumping and filling the nation's harbors. The River and Harbors Act gave the Corps the responsibility to regulate obstructions to navigation. This act was also used to deal with polluters. Modern environmental regulations in the U.S. trace their existence to this act passed in 1899. The Oil Pollution Act of 1924 and the Clean Water Act of 1972 expanded the Corps responsibilities for environmental protection.<sup>23</sup> The Corps continues to serve as the steward of the environment within the U.S. today and has even become involved in managing certain environmental restoration projects under the Superfund Act. The environmental expertise resident within USACE could make significant contributions toward Africa's environmentally sustainable development.

#### ...AND ABROAD

Long before the term "engagement" became a formal element of national strategy USACE was involved in activities that would now be classified as shaping or engagement. The Corps unique engineering capabilities were applied to overseas projects designed to fulfill America's strategic goals. In 1914 the Corps of Engineers opened the Panama Canal after 10 years of construction. The canal is still important to the United States today and was managed by the Corps of Engineers until it's turn over to Panama in the 1990's. Though few of the Corps international missions are as notable as the Panama Canal, the Corps has been an active instrument of U.S. engagement overseas since the end of World War II. These projects have been accomplished in support of foreign militaries and for economic development. This experience in overseas engineering activities could easily be applied to the engineering related deficiencies in Africa today.

At the end of World War II much of Europe was suffering from the physical devastation and political instability caused by the war. In response to this situation the United States enacted the Marshall Plan, which provided financial support for the reconstruction of European nations. Separate plans were enacted for Greece and Turkey which both appeared vulnerable

to subversion in the wake of the war. In Greece the Corps projects focused on the restoration of the transportation and communications infrastructure. Projects included clearing the Corinth Canal, restoring the port of Piraeus and constructing more than 3000 kilometers of roads. These projects helped the government resist insurgent forces within the country. In Turkey the Corps constructed facilities for Turkish and American Armed Forces. The Corps remains involved in support of the American presence in Turkey to this day.

The work in Greece established several precedents for Corps involvement overseas, which still influence the way in which these missions are accomplished. The Corps established its first overseas district to administer large civil works projects in support of this operation. The Transatlantic Center of USACE traces its lineage to this organization. The Corps began its tradition of providing technical assistance in support of U.S. economic aid with these projects. The Corps practice of training indigenous personnel to conduct as much of the work as possible also began with these projects. All of these elements can still be found in USACEs overseas activities today.

During the period from 1950 to 1964 the Corps supported Foreign Military Assistance programs with the construction of military facilities for Iran, Pakistan, Turkey, Taiwan and Korea. These projects included cantonments, ports, airfields and railways. These projects were intended to bolster allies on the periphery of the Soviet Union and China.

In 1953 when the Department of State took over responsibility for economic development programs, USACE involvement in these programs continued. Economic development programs resulted in the Corps producing engineering studies for 17 countries. These studies dealt with everything from beach erosion to transportation systems to entire public works programs. The Corps managed the actual construction of airports, highway systems and ports in eight countries. These projects were all designed to further American security interests.<sup>24</sup>

USACE involvement in the Persian Gulf Region is interesting for a number of reasons. Corps involvement in Saudi Arabia began in 1943 with the construction of an airfield at Dhahran. This airfield was used to fly supplies into Russia during the war. The Corps maintained a presence in Saudi Arabia after the war accomplishing minor projects in support of Saudi armed forces. In 1963 the Corps began a series of development projects funded by the Saudi government. This was the first example of the Corps performing construction using foreign funds. By 1970 the Corps had accomplished \$5 billion of construction funded by Saudi Arabia. Projects supported both the Saudi military and civilian objectives such as the national radio and television system. During this time the Corps also accomplished reimbursable projects for Iran, Jordan, Kuwait and Libya. After the fall of Iran the corps expanded its

missions into Oman and Bahrain. In the 1980's the Corps constructed military and transportation facilities throughout the region.<sup>25</sup> These relationships formed with the Gulf nations during this period and the facilities constructed played an important part in the U.S. being able to respond to Iraq's invasion of Kuwait in 1990.

Since the end of World War II USACE has demonstrated the ability to perform a variety of engineering missions overseas in support of United States security objectives. These missions have been in direct support of military forces (U.S. and foreign) and for the economic development of countries where we have wanted to advance our interests. They have been funded on a reimbursable basis by foreign governments, through the foreign military assistance program or using economic development aid funds. The Corps has clearly demonstrated its ability to perform overseas and as such has the capability to accomplish projects in support of U.S. interests in Africa.

#### USACE AUTHORITIES FOR INTERNATIONAL ACTIVITIES

In addition to possessing unique engineering capabilities and experience that can be applied to enhance U.S. security interests overseas, the Congress has given the Corps a wide range of authorities in the law to perform international activities. Under present laws USACE can provide reimbursable technical support overseas to DOD and non-DOD U.S. Agencies, private firms, other nations, and international organizations such as the World Bank. The specific laws that grant these authorities are:<sup>26</sup>

- Economy in Government Act (10 USC 3036d)
- Arms Export Control Act
- International Narcotics Control Act
- Foreign Assistance Act
- Interagency and International Support (33 USC 2323a)
- Technical Assistance to Private Firms (33 USC 2314a)
- Federal Technology Transfer Act
- Other Activity Specific Legislation

These laws give USACE the authority, and in a sense the obligation, to perform engineering activities overseas. They provide a means for USACE to apply its unique engineering capabilities and experience to a wide range of engagement activities. These engagement activities can support not only military engagement but can support political and economic engagement as well. The level of USACE support can range from providing technical assistance and advice to the construction of large infrastructure projects.

## CURRENT USACE ACTIVITIES IN AFRICA

The combination of USACEs vast array of engineering capabilities, its experience in performing overseas engineering missions and the authorities granted by congress has resulted in a large overseas mission for the Corps. At any given time the Corps has over 300 large and small activities underway in about 80 countries. The largest current project is a \$600 million Nuclear Weapons Materials Storage Facility in Russia for the Defense Threat Reduction Agency. The Corps has the responsibility for the construction of military facilities for Israel valued at \$200 million, if the Wye River accords are enacted. There is still a sizable program underway in Central America for the U.S. Agency for International Development as part of reconstruction following Hurricane Mitch.<sup>27</sup>

As part of this international mission USACE currently has numerous programs and initiatives on going in Africa. The Transatlantic Programs Center (TAC) is the Corps agency responsible for USACE activities in Africa. These projects support engagement on the political, military and economic fronts.<sup>28</sup>

USACE has been involved supporting the State Department sponsored Africa Civic Action Program since 1985. In this program USACE is involved with addressing infrastructure deficiencies in the health, education, water resource and sanitation areas. As part of this program TAC has planned projects, provided technical assistance, procured materials and conducted quality assurance. This program has resulted in the construction of numerous facilities such as medical clinics, schools, and low cost housing. It is also responsible for well drilling, water resource planning and environmental protection programs.

TAC has constructed training facilities as part of the State Department humanitarian assistance program for demining. This program has constructed facilities in Eritrea and Chad with planned facilities in Ethiopia and Angola. Mines are a huge problem in post conflict societies.

Through the Joint Economic Partnering Commission in Nigeria the Corps is advising on programs to promote economic development and democracy. This is also a State Department managed program. TAC is advising the government of Nigeria on the role of infrastructure development in economic growth. It is addressing infrastructure strategies for the growth of exports, privatization, poverty reduction and AIDS prevention.

USACE/TAC acts as the infrastructure development expert for the State Department on the Angola Bi-Lateral Consultative Commission. USACE has presented several proposals to the government of Angola for infrastructure improvements under this program.

At the request of OSD Environmental Security USACE has begun coordination with the South African Development Community to develop a civil military emergency response plan. USACE involvement focuses on flood modeling and emergency response.

The unique capabilities that USACE has developed over its long history combined with its experience in overseas engineering and the broad authority given to it through legislation have in fact led to USACE involvement in engagement around the world. Examples of this engagement are found in current activities in Africa as well. This engagement is in fact occurring not only on the military front but also on the political and economic fronts as well. This involvement in Africa is already beginning to address the infrastructure shortfalls within the region that were described earlier in this paper. Through these activities USACE is advancing national security and military objectives. Much of the cost of this foreign engagement is being funded by agencies outside of DOD and in some cases by non U.S. government sources (work funded by foreign governments, private business or international organizations). The international and interagency activities of USACE provide the Regional CINC's an opportunity to promote national military objectives by non-military avenues and with non-DOD funds. The instrument that can link these programs to military objectives is the CINC's Theater Engagement Plan.

#### **SHAPING THROUGH THE THEATER ENGAGEMENT PLAN**

The previous section describes how and why USACE has come to be involved in engagement overseas. This engagement is likely to continue and perhaps even grow. The latest National Security Strategy, "A National Security Strategy for a Global Age," specifically directs USACE to conduct training and demonstration projects in Africa.<sup>29</sup> The challenge for USACE is ensuring that these activities; which come from other agencies, foreign governments, international organizations and even private firms; are incorporated into our regional plans and support regional objectives. The instrument that can integrate these activities is the Theater Engagement Plan (TEP). It describes how the CINC will use engagement activities to accomplish national security and military objectives. The requirement for the TEP grew out of changes in national strategy resulting from the end of the cold war. USACE engagement activities described in the previous section should be integrated into the overall military plan for the region, which is articulated in the TEP. Integration of USACE activities into the CINC's TEP can act as a force multiplier toward the accomplishment of his objectives.

The increased emphasis placed on engagement in the 1997 National Security strategy and the National Military Strategy of "Shape, Respond, Prepare Now" led to the need to develop a disciplined approach for the planning of shaping missions. In response to this need the Joint

Strategic Planning System instructions published in 1997 directed the CINC's to develop Theater Engagement Plans (TEP) for peacetime engagement. The National Command Authority (NCA) directed the Chairman of the Joint Chiefs to specify which types of engagement activities will be carried out by the U.S. armed forces.<sup>30</sup> The purpose of the TEP is to:

- Link national shaping objectives to theater engagement Activities
- Present the regional CINC's theater-specific plan to execute the military aspects of the shaping imperative of the Defense Strategy
- Identify theater engagement requirements and facilitate resource allocation decisions
- Extend the engagement planning process

To achieve this stated purpose each CINC produces a Theater Engagement Plan, which is submitted to the Joint Staff for review and integration.

The theater engagement planning process begins with the annual Contingency Planning Guidance (CPG) from the NCA. Annex A to the CPG is the Prioritized Regional Objectives. The CINC's TEP is built based on these Prioritized Regional Objectives. These objectives are developed by region rather than by Combatant Command. They are developed by the OUSD(P) and staffed through the Joint Staff and other agencies to include the Department of State. The details of these objectives are classified. They give the CINC general guidance on national objectives to be pursued within the region. In some cases they specify specific tasks to be carried out throughout the region as a whole and in some cases within specific countries. Many of these Prioritized Regional Objectives have direct engineer activities associated with their accomplishment.<sup>31</sup> The Chairman of the Joint Chiefs articulates these Prioritized Regional Objectives to the CINC's in the Joint Strategic Capabilities Plan (JSCP). The JSCP directs the CINC's to conduct shaping activities with the following objectives:

- Access, interoperability, regional stability
- Strengthen coalitions
- Facilitate the ability to respond<sup>32</sup>

The Prioritized Regional Objectives articulated in the JSCP are the starting point for the development of the TEP. USACE must use these regional objectives as the starting point for its input to the TEP as well. Virtually every type of engagement activity that USACE conducts may in fact assist the CINC in accomplishing his shaping objectives. Work done to improve the transportation infrastructure improves physical access to the region, establishes relationships with friendly nations and thus improves our ability to respond. This is true whether the work is performed at the request of a foreign government or as part of development aid initiative from

the State Department or international organization. Technical assistance given to governments or organizations aimed at improving water resource issues, sanitation, food security, health or economic development can enhance regional stability. Virtually any of the types of engineer shaping activities described earlier can help to accomplish the three shaping objectives listed above. Regardless of where these activities originate, the CINC should be aware of them and the impact they have on his mission. Where these activities that originate as political or economic engagement also enhance our military engagement objectives they should be incorporated into the CINC's TEP.

The Theater Engagement Plan developed by the CINC's has two parts. The first of these is the TEP Strategic Concept. This concept contains a narrative description of how engagement activities will be employed to achieve the regional objectives. The TEP Strategic concept includes the commander's intent, prioritized objectives, a general discussion of engagement activities and an assessment of progress toward completion of regional objectives. It also identifies resources required to accomplish these objectives. The second part of the TEP is an Engagement Activities Annex. This Activities annex is a detailed listing of engagement activities to be conducted. Activities that will be included in the Engagement Activities Annex are operational activities, combined exercises, security assistance, combined training, combined education, military contacts, humanitarian assistance and other engagement.<sup>33</sup> USACE activities should be incorporated into both components of the TEP.

The integration of USACE capabilities into the CINC's TEP Strategic Concept should begin by reviewing the Prioritized Regional Objectives. USACE should analyze how their engineer capabilities can best be applied toward the accomplishment of these objectives. Engagement initiatives that originate from non-DOD sources should be analyzed to see if they contribute toward accomplishing regional objectives. From this analysis USACE should formulate an engineer engagement strategic concept which parallels the CINC's TEP Strategic Concept. Elements from this engineer strategic engagement concept should be considered for inclusion in the CINC's overall concept. This process should drive engineer priorities for the pursuit of initiatives presented during the conduct of its interagency and international mission.

After developing the CINC's Strategic Engagement Concept the detailed Engagement Activities annex is created. This annex gives a detailed listing of individual engagement activities to be performed in support of the overall strategic concept. Again, USACE planning should parallel the CINC's planning. The engagement activities planned by the CINC should be reviewed to determine whether or not they should include USACE involvement. For example exercises planned might require facility construction or real estate procurement, which USACE

could provide. Disaster response plans could definitely involve USACE participation. Humanitarian assistance missions might include the construction of facilities such as schools or clinics that USACE can support. Security assistance programs often involve the construction of facilities, which USACE accomplishes. In addition to these USACE activities directly supporting the CINC's military engagement activities that will be accomplished in support of the interagency and international mission which have been determined to support military engagement objectives should be included in this annex. At the completion of this process all of the engineer engagement activities that support the CINC's engagement objectives should be identified, regardless of whether they originated within DOD or came from external sources.

Careful integration of USACE activities into the CINC's TEP will provide several valuable outcomes. This detailed parallel planning will ensure that USACE shapes its engagement activities to conform to the CINC's objectives. This process will provide USACE with priorities for the accomplishment of its interagency and international mission. It will ensure that the political, economic and military engineering engagement activities are coordinated. In those instances where USACE engagement activities, in support of its interagency and international mission, also strongly support the CINC's military objectives he may be able to assist USACE with interagency coordination. Most importantly this process will keep the CINC apprised of all USACE activities being conducted within his AOR. This process could be especially valuable in a theater such as Sub-Saharan Africa where engagement is the preferred strategic weapon of choice.

### **FIELD FORCE ENGINEERING**

A coordinated planning process such as the one described in the previous section would help to integrate USACE activities into the overall TEP. The coordination described above requires detailed involvement on the CINC's staff during the planning process; knowledge of USACE's vast engineering capabilities and where they reside within the organization; and up to date information concerning USACE international and interagency activities within the theater. There is currently no single agent within the CINC's staff or the USACE structure who is tied to all of these elements. The Chief of Engineers is currently staffing a concept proposal, called "Field Force Engineering", which could help to bridge these gaps and integrate USACE activities into the TEP.

The Field Force Engineering Concept, currently being staffed by the Chief of Engineers, would do the following:

- Align USACE divisions with the CINC's
- Provide integrated Army Engineer planning capability to the CINC's by placing USACE engineer/LNO's with the CINC and Army Component Commander
  - Funded by USACE
  - With access to all USACE resources
- Provide USACE funded engineer planning and technical assistance to the CINC'S

This concept was established primarily to assist the CINC's in supporting operations within the AOR. This structure would provide the CINC's with rapid engineer support to operations by planning and executing engineer missions such as base camp construction, contingency airfield construction, tactical military hydrology force protection and other engineering activities.

Aligning the USACE Divisions with the CINC's provides one entry point for accessing USACE's systems of districts and laboratories. The full time LNO provides the CINC with a resident expert on the staff to coordinate engineer support to theater operations. A small amount of funding up front allows the Corps to conduct initial planning and overcomes the requirement for all USACE activities to be funded by projects. This concept will clearly enhance USACE support to the CINC's operations.<sup>34</sup> EUCOM and PACOM have been designated as test beds for this concept.

This concept could also assist in the integration of USACE engagement activities into the CINC's TEP. The USACE LNO would have access to the CINC's staff during the development and conduct of the TEP. This LNO could also serve as a conduit to keep the CINC informed of USACE activities being planned under the interagency and international mission. Being on the CINC's staff he could also coordinate with other agency representatives within the theater (such as individual country teams) concerning engineering requirements. This LNO would be in the unique position of being linked to all of the players needed to effect the integration of USACE engagement activities into the TEP.

In order to perform this mission the LNO will have to be a sort of renaissance engineer. This individual must fully understand all of USACE's varied capabilities and know how to access them. They would also have to be well versed with the planning process and the formulation of the CINC's strategy. Knowledge of the interagency and international process would also be required. The extent to which these qualifications can be met through experience, education and training will determine how effective this LNO will be.

This concept could prove especially valuable for EUCOM and Africa. There are several complicating factors in Africa that make the potential value of this LNO even more important than in other region. The fact that Africa is divided amongst four CINC's makes complicates coordination. The boundaries for the regional CINC's AORs do not match the regional boundaries used by other agencies of the U.S. government or international organizations (the DOD does not even use the same geographic boundaries in Africa). The North Atlantic Division (NAD) of USACE is aligned with EUCOM, which has responsibility for Sub-Saharan Africa, but TAC handles USACE missions in Africa. This was done to balance the workload in light of NAD commitments in Europe (especially activities in eastern Europe and the Balkans). The enormity of the EUCM AOR has led to discussion of a separate CINC for Africa.<sup>35</sup> This has been recognized by USACE and the current distribution of the engineer workload is justified and should remain in place. All of these factors complicate coordination of USACE activities in Africa. Having a USACE LNO in each of the CINC's headquarters would help to make this coordination easier.

The Field Force Engineering concept would assist in the integration of USACE activities into the CINC's TEP. This is especially true as it applies to EUCOM activities in Africa. The small cost associated with this concept would definitely be paid for by efficiencies gained in engagement as well as by timely engineer support to operations.

## **CONCLUSIONS**

The challenges facing Africa are great. The combination of conflict, political instability, poverty and medical emergencies appear near insurmountable. U.S. interests in this region, while increasing, are not as important as other regions of the world. These problems do however have the potential to become so devastating that the U.S. will be forced to respond. Events in Somalia, Rwanda and flooding in Mozambique demonstrated this during the past decade. In response to few vital interests in the region and the potential to be drug into conflict or disasters, the U.S has chosen a strategy of engagement to try and address the root causes of Africa's instability. This engagement takes place on the political and economic fronts in an attempt to promote democracy and increase prosperity within the region. In support of this the Military strategy has been to try to shape the environment and be able to respond to crisis in the region when it becomes necessary.

Underlying much of Africa's political and economic worries is a physical infrastructure that cannot support prosperity or security. The transportation, communications, health and sanitation infrastructure within Africa is woefully inadequate. While the solution to Africa's complex problems will require strategies which effect political, economic and social changes;

the inadequacy of this infrastructure will have to be improved in order to enhance the standard of living and promote growth. This engineering challenge must be addressed along with the social, political and economic challenges.

The U.S. Army Corps of Engineers has a unique set of capabilities that could be used to address these engineering challenges. These capabilities have grown throughout the Corps history of overcoming these challenges at home. USACE has the planning, construction management, water resource, environmental and contracting skills to accomplish the large public work projects required in Africa. The Corps also has a proven record of performing overseas in support of national interests. This history of service at home and abroad has led to legislation that gives the Corps wide authority to accomplish the type of services required in Africa. The Corps works on a reimbursable basis and can accept work funded by other government agencies, foreign governments, international organizations and even private U.S. firms. This unique combination of capabilities, experience and legal authority has led to Corps involvement in engagement activities for the past 50 years. This engagement is likely to continue and could serve as a force multiplier towards the CINC's theater engagement. If USACE non-DOD activity can be coordinated with the CINC's military objectives the CINC might realize large engagement benefits with little cost in military resources. The extent to which the engagement activities of the military and other agencies can be coordinated might lead to a situation where the benefits derived from this engagement might be greater than the sum of its parts.

The TEP development process is the instrument that could be used to integrate USACE activities within the theater. USACE should be actively involved in the development of the CINC's TEP. With the Prioritized Regional Objective as a guide USACE should develop a theater engagement strategy which compliments the CINC's objectives. This strategy should lead to the development of engineer engagement activities that are coordinated to support the CINC's activities. In both the strategic concept and the engagement activities USACE should look for linkages between the CINC's requirements and missions that it receives via its interagency and international support obligations. The CINC's objectives should focus USACE activity in its international and interagency role. With a small amount of funding and assistance with interagency coordination the CINC might be able to further his objectives with little expenditure of his limited resources.

Effective integration of USACE activities into the CINC's TEP will require coordination within USACE, the CINC's staff, with other agencies of the U.S. government or international organizations. The current USACE proposal, "Field Force Engineering", proposes changes that

could make this complicated coordination possible. While initially proposed to assist the CINC's with engineer planning for operations, this proposal could greatly enhance engineer integration into the TEP planning process. This is especially important within EUCOM with regard to its objectives in Africa. The Field Force Engineering concept should be initiated in EUCOM and the USACE LNO should be tasked with working the TEP integration discussed earlier.

Effective coordination of USACE engagement activities in Africa has the potential to further the CINC's objectives in the region. The Field Force Engineering concept can help to effect this coordination. If done well, with a coordinated interagency approach for the region Africa might even be able to realize the bright future which Susan Rice described.

WORD COUNT = 8760

## ENDNOTES

<sup>1</sup> Susan Rice, "Africa at the Crossroads: The Challenge for the Future", speech give in Nairobi, Kenya on 21 November 2000; available from <[http://www.state.gov/www/policy\\_remarks/2000/001121\\_rice\\_kenya.html](http://www.state.gov/www/policy_remarks/2000/001121_rice_kenya.html)>, pps. 1-2. Internet accessed 15 February 2001.

<sup>2</sup> For the remainder of this paper the term Africa will be used to refer to Sub-Saharan Africa.

<sup>3</sup> Richard G Catoire, "A CINC for Sub-Saharan Africa? Rethinking the Unified Command plan," Parameters Vol. XXX No. 4 (Winter 2000-01): 105.

<sup>4</sup> Steven Metz, Refining American Strategy in Africa, Carlisle Barracks, Pa.: U.S. Army War College Strategic Studies Institute, 2000, 13.

<sup>5</sup> Catoire, 87.

<sup>6</sup> Metz, 20.

<sup>7</sup> Ibid, 14-17.

<sup>8</sup> C. William Fox, Military Medical Operations In Sub-Saharan Africa: The DOD "Point of the Spear for a New Century, Carlisle Barracks, Pa.: U.S. Army War College Strategic Studies Institute, June 24, 1997, 13.

<sup>9</sup> Metz, 21.

<sup>10</sup> Ibid, 2-3.

<sup>11</sup> William J. Clinton, A National Security Strategy of Engagement and Enlargement (Washington, D.C.: The White House, February 1996), 11-12.

<sup>12</sup> Ibid, 43-44.

<sup>13</sup> William J. Clinton, A National Security Strategy for a New Century (Washington, D.C.: The White House, October, 1998).

<sup>14</sup> William S. Cohen, Annual Defense Report to the President and Congress (Washington D.C.: U.S. Department of Defense, 2000), 13.

<sup>15</sup> John M. Shalikashvili, National Military Strategy (Washington, D.C.: U.S. Department of the Defense, 1997).

<sup>16</sup> U.S. Central Intelligence Agency, "CIA World Factbook, 2000," available from <<http://www.odci.gov/cia/publications/factbook/>> Internet accessed 15 January, 2001. The data contained in Figures 1-4 was compiled from the individual country listings of the "CIA World Factbook". Comments on the general condition of the infrastructure were also compiled from this source.

<sup>17</sup> World Water Council, "The African Water vision for 2025" available from <<http://www.worldwatercouncil.org/vision/Documents/AfricaLatest.PDF>>, pps. 5-15. Internet accessed 15 February, 2001.

<sup>18</sup> The World Bank, "Regional Brief Overview: Sub-Saharan Africa," available from <<http://www.worldbank.org/afr/overview.pdf>>, Internet accessed 15 March 2001.

<sup>19</sup> U.S. Army Corps of Engineers, "Our Mission" From The U.S. Army Corps of Engineers home page available from <<http://www.usace.army.mil/who.html>>, Internet accessed 23 February, 2001.

<sup>20</sup> Roger Thomas, "U.S. Army Corps of Engineers Activities in Africa," briefing slides with scripted commentary, HQ USACE, 28 February 2001. 1-2.

<sup>21</sup> U.S. Army Corps of Engineers, The History of the U.S. Army Corps of Engineers, (Alexandria, Virginia: Office of History, Headquarters, U.S. Army Corps of Engineers, 1998), 33-39.

<sup>22</sup> Ibid, 47-55.

<sup>23</sup> Ibid, 57-59.

<sup>24</sup> Ibid, 109-113. The preceding information on USACE overseas programs was based on this section of the History of the U.S. Army Corps of Engineers.

<sup>25</sup> Robert P. Grathwol and Donita M Moorhus, Bricks, Sand and Marble: U.S. Army Corps of Engineers Construction in the Middle East, 1947-1991 (Unpublished Draft available at the Office of History, Headquarters, U.S. Army Corps of Engineers, Alexandria, Virginia, June 1998), 691-735.

<sup>26</sup> U.S. Army Corps of Engineers, "Interagency and Intergovernmental Support Program" available from <<http://www.usace.army.mil/ces-i/ISWWW/WebLinks/Author2.htm>>, Internet accessed 27 February 2001.

<sup>27</sup> Donald Kisicki, HQ, U.S. Army Corps of Engineers, interview by author 17 November 2000, Washington, D.C.

<sup>28</sup> Roger Thomas, Transatlantic Programs Center, U.S. Army Corps of Engineers, interview by author 27 February 2001, Washington D.C.

<sup>29</sup> William J. Clinton, A National Security Strategy for a Global Age, (Washington, D.C.: The White House, December 2000), 64.

<sup>30</sup> Thomas M. Jordan, Douglas C. Lovelace Jr. and Thomas-Durell Young, "Shaping the World Through Engagement": Assessing the Theater Engagement Planning Process, Carlisle Barracks, Pa.: U.S. Army War College Strategic Studies Institute, April, 2000, 4-6.

<sup>31</sup> CAPT. Pete Leehouts, Office of the Secretary of Defense, interview by the author 1 March 2001, Washington D.C.

<sup>32</sup> Ibid, 8.

<sup>33</sup> Chairman of the Joint Chiefs of Staff Manual, Theater Engagement Planning, CJCSM 3113.01(Washington D.C.: U.S. Department of Defense, 31 May, 2000), A10-A14.

<sup>34</sup> U.S. Army Corps of Engineers, Engineers in Transformation: Field Force Engineering, briefing slides, H.Q. U.S. Army Corps of Engineers, Washington D.C., 1 March 2001.

<sup>35</sup> Catoire.

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