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**STRATEGIC MOBILITY: AN EXPANDED VIEW
WITH FOCUS ON READINESS AND SUSTAINABILITY**

BY

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STRATEGIC MOBILITY: AN EXPANDED VIEW WITH FOCUS ON READINESS AND SUSTAINABILITY

AN INDIVIDUAL STUDY PROJECT

by

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Strategic mobility is a phrase often used in today's military jargon. In fact, strategic mobility is an integral part of the military strategy supporting the national security interests of the United States. When most military personnel think of strategic mobility, they usually define the concept in terms of airlift and sealift capability. The Secretary of Defense in his 1990 Joint Military Net Assessment to the U.S. Congress refers to strategic mobility as a strategic lift triad of airlift, sealift, and prepositioning. Certainly these three aspects of strategic mobility are crucial to a viable force projection capability. This paper focuses on what I believe are the two key concepts that most accurately describe strategic mobility--readiness and sustainability. Two case studies are developed to serve as points of reference in explaining how readiness and sustainability combine to form strategic mobility. The first case study describes how the United Kingdom projected a military force to the South Atlantic in response to the Falkland Islands' crisis in 1982. The second case study depicts the United States' military deployment to Saudi Arabia following the Iraqi invasion of Kuwait in August 1990. Following the case studies, an analysis of strategic mobility is presented.

INTRODUCTION

The sovereign Kingdom of Xray (KOX) has recently experienced a military coup, toppling the democratically elected government. A military junta is ruling KOX. The legitimate government of KOX fled to their friendly, neighboring country of Zulu. The country of Zulu exports strategically important mineral resources to the United States (U.S.). Continued access to these resources has been declared a vital security interest of the U.S.

Military forces of KOX are massing on their border with Zulu. The Junta leaders of KOX have stated their desire to gain control over the mining areas of Zulu to help finance their military buildup. The president of Zulu has initiated diplomatic proceedings at the United Nations (U.N.); but in the interim, he has requested U.S. military forces to bolster his small self-defense force. The Country of Zulu is over 9,000 miles from the east coast of the U.S. Can U.S. forces arrive in time to influence the hostile intent of the military Junta of KOX?

Although there are no U.S. forces in the region, the answer is: yes. Sufficient air, land, and naval forces will arrive in time. The strategic mobility posture of the U.S. allowed for a timely force projection to the region and precluded any further aggressive action by KOX.

During the decade of the nineties, many forward deployed forces will return to the U.S. Sizable defense budget reductions will take place. Both these factors will

cause greater reliance on strategic mobility to support U.S. national security interests globally. Every soldier, sailor, airman, and marine, whether a warfighter or a supporter of warfighting, needs a greater understanding of strategic mobility.

Strategic mobility has different meanings depending on the context and application the user desires. For the purposes of this paper, strategic mobility is used in a military sense and is defined as the total capability of a nation to project a military force outside its own boundaries to protect or secure some national interest. Projecting a military force forward from one's country may serve many purposes. A show of military force may be designed to make a political statement or to deter some adversary from an aggressive action he may be posturing for or threatening to take. A military force may be required to enforce economic sanctions imposed upon a country by the U.N. Countries may deploy military forces as part of a multi-national peacekeeping contingent. A country may deploy a military force for an immediate restoration of the status quo. Whatever the reason requiring a military force projection, there are two concepts that must be considered: readiness and sustainability.

The purpose of this paper is to examine strategic mobility in terms of readiness and sustainability. The ability to project military force is not a capability that

all countries possess or even desire. For those countries that do have a force projection strategy, their capabilities are vastly different and vary according to each country's global interests. To facilitate examining the key elements of strategic mobility, I will use two examples (case studies) of military force projections. The first of these case studies will describe the United Kingdom's (U.K.) deployment to the Falkland Islands in 1982. The second example will be the United States' deployment to Saudi Arabia and the Persian Gulf in 1990--Desert Shield.

The case studies will focus on how each country responded to a crisis and how military forces were projected and sustained. Once the case studies have been presented, I will analyze and compare the two in terms of readiness and sustainability. This analysis is a compilation of my own ideas developed over the years from my study of and experience in working strategic mobility issues.

Falkland Islands' Crisis

The Falkland Islands is a group of some 200 islands located approximately 300 miles east of the Straits of Magellan. The two largest islands are East Falkland and West Falkland. About half the population lives in the principal city of Stanley on East Falkland. The British explorer John Davis first sighted the islands in 1592, and

British explorer John Strong first occupied and named the Islands in 1690.¹ For the next 143 years, French, Spanish, British, and Argentine settlements were established at various times on the Islands. Finally in 1833, the British installed the first permanent government: the Falklands have been ruled by a British governor, with an executive and legislative council, ever since.² In 1908, several surrounding islands became dependencies of the Falklands. South Georgia, located 800 miles east of the Falklands, was the principle one.³ It was on South Georgia Island that the initial Argentine and British confrontation would take place.

On 19 March 1982, an Argentine Navy transport ship off-loaded workers employed by an Argentine businessman on South Georgia. The Argentine entrepreneur, Constantino Sergio Davidoff, had contracted with the British owners of the old South Georgia whaling station, abandoned since the early sixties, to remove and salvage the scrap.⁴ The British had granted diplomatic permission to exercise the contract but had not granted permission for the workers to remain on the island. While diplomatic negotiations were taking place, the British ordered the HMS ENDURANCE, a Royal Navy Antarctic patrol ship with a small contingent of marines, to sail from Port Stanley to South Georgia. This ship was armed with two 20 millimeter cannons and had two Wasp helicopters on board. On 26 March 1982, over 10ⁿ Argentine

Marines were landed along with their supplies on South Georgia. This landing was observed by the British and taken as a sign of hostile intent. The next several days brought a heightening of tensions; and by 31 March, the British had become convinced that Argentina clearly intended to take the Falklands by force.⁵

By 1 April, the British government had become increasingly alarmed over embassy reports from Buenos Aires of expanded military activity at Argentine naval bases. On that same day, the British government officially requested U.S. President Reagan to intervene. Additionally, the British ambassador to the U.N. addressed the security council requesting the U.N. "to take immediate action in order to prevent an invasion."⁶ Not entirely trusting a diplomatic resolution, the Prime Minister had ordered the Ministry of Defence (MOD) to deploy three nuclear submarines to the South Atlantic on 29 March. The first submarine was underway within 48 hours preceded by a fleet auxiliary support ship.⁷ This limited show of force would not arrive in time to have any impact. The Argentine forces invaded the Falkland Islands on 2 April and captured the capital of Port Stanley.

The intent is not to analyze the specific causes for the invasion. Suffice it to say the Argentine Junta believed that the timing was right and was in their best national interests. The British government had sent enough

mixed signals to cause the Argentines to assess that the risk of British military intervention was low.⁸ The Argentine invasion forces were engaged by the small garrison of approximately 80 Royal Marines stationed in Port Stanley. After about four hours of armed resistance, the Falklands' Governor, Rex Hunt, ordered the Royal Marines to surrender to prevent any unnecessary civilian casualties. The following day South Georgia Island was taken by an Argentine force opposed only briefly by the 22 Royal Marines put ashore earlier by the HMS ENDURANCE.⁹

That same day, 3 April, the U.N. Security Council passed Resolution 502 calling for an immediate cessation of hostilities, the withdrawal of Argentine forces from the Falklands, and a diplomatic solution to the crisis.¹⁰ Concurrently, British Prime Minister Thatcher announced that she was sending a naval task force to the South Atlantic while allowing diplomatic efforts to proceed in the U.N. The U.S. commenced shuttle diplomacy with Secretary of State, Alexander Haig, who was trying to mediate between London and Buenos Aires.¹¹ However, diplomatic efforts would fail to resolve the crisis, and British military forces would see action in the South Atlantic.

By deploying a naval task force to the South Atlantic, the British sought to achieve two goals. First, the task force would get a military presence into the region and would give them a basis from which to continue negotiations.

Second, the task force would allow the British to attempt to isolate Argentine forces in the Falklands by cutting the lines of communications (LOC) from Argentina to the Falkland Islands. The first step would be to deny Argentina use of the sea lanes of communication (SLOC) by declaring a 200 mile maritime exclusion zone around the Falklands.¹² If the British could quickly and effectively deny the Argentine Navy and Merchant Marine use of the SLOCs, then the bulk of the British forces could be directed against the air resupply effort. To interdict the air resupply effort, the British could simply destroy or deny Argentina use of the 4,000 foot airfield at Port Stanley.¹³ With this broad strategy in mind, the British MOD began deploying the first elements of the task force that would eventually number over 100 ships and 28,000 men.¹⁴

The British task force that sailed from Portsmouth on 5 April 1982 included two aircraft carriers--HMS HERMES and HMS INVINCIBLE. These are small deck, vertical short takeoff and landing (V/STOL), aircraft carriers. The U.K. had scrapped its large deck carriers in the 1970s during a defense build-down. The air complement of each carrier included 8-12 Sea Harriers plus numerous anti-submarine warfare (ASW) Sea King helicopters. In addition, the task force included 6 destroyers, 9 frigates, 2 assault ships, and 3 nuclear powered submarines.¹⁵ The task force was supported by ships of the Royal Fleet Auxiliary including

tankers, fleet replenishment ships, support ships, landing ships, and logistic supply ships. To augment the task force, over 50 merchant ships were chartered or requisitioned along with their civilian crews.¹⁶

The lead elements of the task force sailed on 5 April. Although large enough to support a limited amphibious operation with its 3,500 Royal Marines, the lead elements were primarily a show of force which was consistent with the original military strategy.¹⁷ Following the initial sailings, the British MOD immediately began preparations for extended combat operations over an 8,000 mile LOC. If the diplomatic efforts failed, Prime Minister Thatcher wanted the task force structured to support the final phase of the campaign which would be to reoccupy the territory. The British were ill-prepared to conduct sustained combat operations over an 8,000 mile LOC. However, two key factors allowed the MOD to rapidly recover, seize the initiative, and prepare for an offensive capability. Those key factors were: the flexibility of Britain's industrial base, and the availability of a forward basing option at Ascension Island.

The Defense Ministry's ability to rapidly structure and resupply the task force was enhanced greatly by the responsiveness and ingenuity of the British industrial base. The British recognized early on that too few Navy ships were available.¹⁸ A variety of civilian ships were immediately requisitioned and refitted for military use. A good example

is the 18,000 ton Cunard container ship, the ATLANTIC CONVEYOR. This ship, a roll on/roll off type with a flat upper deck, was modified with a ski ramp and used to transport and launch additional Royal Navy and Royal Air Force (RAF) Harriers. Deep-sea fishing trawlers were modified as minesweepers. Cruise liners such as the QUEEN ELIZABETH II (QE II) were converted to troop ships or hospital ships. North Sea oil rigs were converted to floating repair facilities.¹⁹ The list goes on and on. The Defense Ministry, superbly supported by the British Industrial complex, used their imagination and creativity in structuring the reserve and support forces necessary to sustain the fighting elements of the task force.

In addition to naval preparations, the aerospace industry was furiously planning and designing modifications to several RAF aircraft and expediting deliveries of the remaining Royal Navy Sea Harriers on contract. Most aircraft modifications focused on adding increased operational capabilities--most noticeably aerial refueling. The Nimrods, ASW and Airborne Early Warning (AEW) aircraft, were assigned the role of maritime surveillance as the task force deployed. The Nimrods, lacking the range desired, were modified with an air-to-air refueling capability to allow for nineteen hour sorties. Additionally, the Nimrods were modified with a defensive capability by fitting them with Sidewinder AIM-9L air-to-air missiles and an offensive

capability by installing racks for conventional bombs, torpedoes, and the Harpoon missile.²⁰

As the need for airlift increased, the RAF quickly added an inflight refueling capability to their C-130s. The extended range of the C-130 greatly enhanced Britain's limited airlift assets. The dramatic increase in the number of aircraft, now capable of aerial refueling, severely strained the existing Victor tanker force. Acceleration of the new VC-10 tanker program was not deemed feasible; therefore, it was necessary to convert Vulcan bombers and C-130s to tankers.²¹ In addition to aircraft modifications, other aircraft and crews had to change roles and missions.

The Vulcan bomber, whose primary mission had been low level nuclear operations in support of NATO, was pressed into service in a conventional role. Crews were quickly retrained; although "the Vulcans accomplished little tactically, they did have an important psychological affect."²² RAF Harriers, whose primary mission had been ground attack, were modified with AIM-9L Sidewinder air-to-air missiles and tasked to augment the Sea Harriers in the air-to-air fleet defense role. Crews were quickly trained in ski-jump assisted takeoffs from ships and soon became quite proficient and effective.²³

As one can well imagine, the military and their counterparts in the maritime and aerospace industries were operating around the clock in restructuring forces

III-designed for strategic mobility. Aircrews were training in the use of expanded operational capabilities or for new missions entirely. Industry was straining to design, build, and modify the ships and aircraft so desperately needed for both the "teeth and tail" of the task force. The ability of the British industrial base to respond so rapidly and efficiently to the crisis proved to be a significant force multiplier. One military official summed it up by saying, "What used to take us years to get, we're now getting in days."²⁴

The other key factor and force multiplier that enhanced Britain's strategic mobility was access to a forward base. Ascension, a British Island with its American operated Wideawake Airfield, is located approximately 4,100 miles from the U.K. and 3,900 miles from the Falklands.²⁵ Ascension Island's strategic location and easy access were paramount to the British effort to sustain the task force in the South Atlantic. Ascension Island was the rendezvous point for the task force and subsequent elements as they sailed south for the Falklands. Ascension was the forward staging area for the materiel required to resupply the task force. There was a significant amount of men, equipment, and supplies moved to Ascension by air or sea from the U.K.

While bulk supplies had to be transported to Ascension by ship, the flow of essential war materiel, such as spare parts, was time critical and had to be airlifted. The

airlift operation--second only in post World War II size to the Berlin Airlift--"moved over 5,800 people and 6,600 tons of stores through Ascension in over 600 sorties by CC-130 and UC-10 aircraft."26

In addition to being a rendezvous and resupply point, Ascension's Wideawake Airfield was used by the British to mount air operations against the Argentines. Maritime surveillance, bombing sorties, and tactical airlift missions were all launched and recovered at Ascension. Without the ability to forward base supplies and conduct land based aircraft operations, the British would have been hard pressed to sustain the task force. The strategic and tactical use of Ascension Island was truly an essential element in the overall strategic mobility equation.

By mid-April, some ships of the task force--principally the nuclear submarines--had reached the waters of the Falklands. The main surface combatants were still massing and combat loading at Ascension Island. The subsequent sea, air, and land campaign for retaking the Falklands is outside the scope of this paper. In historical perspective, the battles fought were insignificant, especially in terms of casualties. Casualties for the British were slightly over 1,000 with 255 killed in action. Although the Argentine figures are still disputed, the estimate is 652 men dead or missing.²⁷ Losses of ships, aircraft, and equipment on both

slides were higher than the casualty figures would indicate and are attributable to high technology weaponry.

What is significant from this Falkland's campaign is that the British were able to pull it off at all. Their military strategy was narrowly focused toward NATO with little thought given to strategic mobility. The fact that they were able to fight and sustain a war over an 8,000 mile LOC was remarkable. Let us look now at another nation's response to threatened security interests abroad. In the following section, the focus will be on the United States' force projection to the Persian Gulf--an operation called Desert Shield.

Desert Shield

Kuwait, although a small country about the size of New Jersey, is strategically located at the top of the Persian Gulf. Kuwait was virtually uninhabited before 1710. At about that time, several members of the Arab Analza tribe settled on what is presently the southern shore of Kuwait Bay. The British established interests early on in the area and assumed responsibility for Kuwait's defense in 1899. Joint British and American oil exploration began in the mid-1930s.²⁸ Vast quantities of oil were discovered and today oil revenues account for over 90 percent of export and other government income. Kuwait gained independence from

the U.K. on 19 June 1961. Kuwait has had a long standing territorial dispute with Iraq over two islands, Warbah and Bubiyan, located offshore in the Persian Gulf.²⁹

In addition to territorial disputes, other factors had caused relations between Kuwait and Iraq to deteriorate. In February 1990, Iraqi President, Saddam Hussein, demanded of both Kuwait and Saudi Arabia that they cancel his substantial debt incurred from the Iran-Iraq War. He also demanded that each country give him an additional \$30 million or he would seek reprisals.³⁰ By mid-July, Hussein publicly accused Kuwait of illegally extracting over \$2.4 billion worth of oil from underground deposits that both countries claim on the Iraqi/Kuwaiti border.³¹ Tensions heightened, negotiations eventually broke down, and in the early morning hours of 2 August 1990 Iraq invaded Kuwait. The defense forces of Kuwait were no match for Iraq's war machine. Kuwait City fell by midday and Kuwait's ruling emir and family fled the country.³² How the U.S. responded to this act of aggression will be described in the following sections of this paper.

Why Saddam Hussein felt he could invade and conquer another sovereign nation, without great condemnation from most other countries of the world, may never be fully understood. How he could miscalculate the U.S. response is a great mystery, although there is some evidence that the U.S. sent him mixed signals concerning our interests in

Kuwait. There should have been little doubt over how the U.S. would respond. U.S. declaratory policy toward the Middle East is quite clearly expressed in our security strategy--"The free world's reliance on energy supplies from this pivotal region and our strong ties with many of the region's countries continue to constitute important interests of the United States."³³ For this reason, the U.S. maintains a forward naval presence in the eastern Mediterranean Sea, the Persian Gulf, and the Indian Ocean.

Considering the speed with which Iraqi forces invaded Kuwait, there was little militarily the U.S. could have done. The only U.S. forces in the region at the time were eight navy ships in the Persian Gulf and two USAF tanker aircraft conducting refueling exercises with the United Arab Emirates.³⁴ Although unable to respond militarily, the U.S., along with most other countries of the world, condemned Iraq's invasion of Kuwait and initiated political and economic actions.

Shortly after the invasion, President Bush and Britain's Prime Minister Thatcher issued a joint statement at a news conference. They called on "the world to express its outrage through various United Nations resolutions establishing economic sanctions and quite possibly a resolution to call for the use of military force."³⁵ President Bush took immediate actions to freeze Iraqi held assets in the U.S. and positioned U.S. Navy ships to block

Iraqi ports.³⁶ Saudi Arabia's King Fahd, fearing an invasion from Iraq, asked President Bush for immediate military aid and support to defend his country and deter further Iraqi aggression.³⁷

On 5 August 1990, President Bush sent Defense Secretary Richard Cheney to Saudi Arabia to discuss the situation with Saudi officials. While there, he made arrangements for U.S. forces to bed down in country if required. On 6 August, the U.N. Security Council passed Resolution 661, imposing economic sanctions on Iraq. That same day, King Fahd approved plans to accept the deployment of U.S. and other multi-national forces in his country to defend and deter further Iraqi aggression.³⁸

The initial military strategy of defending Saudi Arabia and deterring further Iraqi aggression, while easy to articulate, was not so easy to execute. The distance from the east coast of the U.S. to Saudi Arabia is approximately 8,000 miles. In order to establish an initial defensive capability quickly, the Navy and Air Force were called upon. The Navy began moving three aircraft carrier battle groups into the region, and the Air Force began deploying tactical air assets.

By 7 August, F-15 Eagle air superiority fighters of the 1st Tactical Fighter Wing (TFW) were in the air flying to the Middle East. Many went nonstop requiring multiple aerial refueling contacts with Strategic Air Command's (SAC)

tanker aircraft. Military Airlift Command's (MAC) C-141s and C-5s began arriving at the deploying tactical fighter wing's bases to move the ground support equipment, supplies, and personnel. By the early morning of 8 August, a C-141 or C-5 was taking off from Langley AFB, home of the 1st TFW, every 10 minutes.³⁹

Other early deploying Air Force assets included: E-3A airborne early warning and control aircraft (AWACS), F-16 Falcons (fighter/bomber aircraft), F-4G Wild Weasel (enemy air defense suppression aircraft), and A-10 Thunderbolt (close air support aircraft).⁴⁰ Tactical air assets of the Navy and Air Force would not be sufficient to carry out the mission of deter and defend. Ground forces had to be committed to Saudi Arabia to fully accomplish the military mission assigned by the President.

Many Army units had been alerted early-on following Iraq's invasion of Kuwait. By 8 August, the first elements of the XVIII Airborne Corps began boarding transport aircraft from the Green Ramp at Pope AFB, NC. Approximately 3,000 paratroops of the 82nd Airborne Division were the first ground troops to arrive in Saudi Arabia. At the same time, the 101st Airborne Division (Air Assault) were loading out their troops and helicopters from Fort Campbell, KY.⁴¹ This massive airlift described by the Commander-in-Chief of Transportation Command (CINCTRANSCOM) as the "largest sustained airlift ever over a short period of time" was

using all but 5 percent of the available C-5s and all but 11 percent of the C-141s.⁴² Commercial aircraft, under contract to MAC, were also used to fly personnel and cargo to the Middle East. However, the requirements for airlift were rapidly exceeding the strategic airframes available.

To meet the ever increasing demand for airlift, General Johnson, CINCTranscom, activated stage one of the Civil Reserve Air Fleet (CRAF).⁴³ This 17 August activation was the first one ever in the 38 year history of the CRAF. The CRAF comes in three stages and, depending on the nature of the crisis, requires civil carriers to commit varying numbers of airframes and crews to the DoD. Stage one activation made 17 passenger and 21 cargo aircraft available to support Desert Shield deployments.⁴⁴ Although these 38 aircraft helped considerably, the rush to move rapidly deployable units to Saudi Arabia was severely straining the airlift system.

In addition to the early deploying Air Force and Army units, the Marines were tasked to deploy a Marine Expeditionary Force (MEF) of approximately 45,000 marines. Their support and combat equipment is prepositioned aboard ships in various locations around the world. Five Maritime Prepositioning Ships (MPS) from Diego Garcia and four from Guam sailed to the Persian Gulf. Two marine brigades were then airlifted to Saudi Arabia to link up with their equipment and supplies. A third brigade deployed aboard

amphibious transport ships.⁴⁵ While airlift got some force on the ground quickly, sealift would be called upon to get the heavy forces and the much needed sustainment to Saudi Arabia.

After the first week, considerable light forces and tactical air were on the ground in Saudi Arabia. To move the equipment of the 24th Infantry Division (Mechanized) however, required sealift. The U.S. Navy's fleet of 8 Fast Sealift Ships (FSS), kept in port ready to respond in 96 hours, was activated on 10 August. They began loading out the 24th ID from east coast ports. The first FSS, carrying the lead brigade of the 24th ID, arrived in Saudi Arabia on 27 August.⁴⁶ Sealift assets, as other Army heavy units were tasked to deploy, became as precious a commodity as airlift.

Just as CRAF was activated for the first time, so was the Ready Reserve Force (RRF). These assets are older ships in reserve status with the capability of being activated in a relatively short period of time. By mid-October, forty cargo ships of the RRF were activated.⁴⁷ Additionally, ships of the Afloat Prepositioned Ships (APS), anchored in port at Diego Garcia, were sent to Saudi Arabia very early in August. These ships contained ammunition, fuel, medical supplies, and general support cargo for the Army and Air Force.⁴⁸

The magnitude of this force projection, described by General Johnson as "the largest deployment of forces since

World War II,"⁴⁹ severely strained the active duty force structure. Many Guard and Reserve volunteers were augmenting the active duty forces. In fact, over 10,500 Reserve Component members had volunteered to serve in support of Desert Shield from the Air Force alone. In contrast, the number of volunteers in other branches of the services was not sufficient. It was soon discovered that entire, one of a kind, units were needed.⁵⁰ On 22 August, the President enacted a provision of the law allowing him to call up to 200,000 Reserve Component members.⁵¹ The call up was described by one Pentagon spokesperson as inevitable since "reserve forces have become so crucial to the success of any major U.S. military operation."⁵²

By mid-October, a sizable military force had been deployed to the Southwest Asia Theater of Operations. The statistics alone were staggering. Over 162,000 personnel were moved by air and another 1,100 moved by sea. Over 148,000 short tons of cargo had moved by air and more than 1,000,000 measurement tons had been shipped by sea.⁵³ U.S. troop strength in Saudi Arabia had exceeded 200,000. When all the allied forces from the various countries supporting Desert Shield were added together, allied strength had reached nearly 300,000.⁵⁴ U.S. Central Command (CENTCOM), which had responsibility for the Middle East, forward deployed to Saudi Arabia. The CINC worked command arrangements and a campaign plan. Although formidable, the

allied forces were still numerically inferior to Iraqi forces amassed against them. The initial mission to defend Saudi Arabia and deter further Iraqi aggression remained the overriding strategy.

With the surge of forces and equipment slackening, the sustainment effort was just starting to get into full swing. As most units deployed, they took with them as much sustainment as possible. But typically, initial quantities of supplies, ammunition, spare parts, etc. were only a 30-day issue. Each service, responsible for the logistics of their deployed forces, was working around the clock. All units were competing for scarce strategic lift assets. High priority items such as spare parts would go by airlift. TRANSCOM established the Desert Express, dedicated strategic airlift, to ensure that these high priority assets arrived in country expeditiously.⁵⁵ While airlift is timely, 95 percent of the equipment, supplies, etc. for sustainment must go by seallift.⁵⁶

To put the sustainment problem in perspective, the National Security Council (NSC) estimates that to deploy a single Infantry division (mechanized) requires in excess of 100,000 tons of cargo. However, the more telling part is that in order to sustain that division it will require an additional 1,000 tons of logistics assets each day.⁵⁷ To meet the growing demand for sustainment, a large number of ships were needed. "As of mid-October, 115 U.S. and foreign

ships were involved in the effort: the U.S. had chartered 57 commercial transport vessels, 33 of which are foreign flagged."⁵⁸ Logistic centers, depots, and storage points of all branches of the services were working around the clock to fill the 8,000 mile pipeline to Saudi Arabia.

Extraordinary effort was evident throughout the logistics community. Deliveries of supplies were moved up, contracts were expedited, and aircraft depot maintenance was either deferred or compressed. Defense Industries also played a major role as they worked around the clock to supply the demands of Desert Shield. Although the Saudi government did provide some in-country support, most of what was needed was deployed there. Although there were shortages, and not everything arrived time-phased as desired, the sustainment effort was a total success. General Schwarzkopf, CINCENTCOM, the officer responsible for bringing it all together in Saudi Arabia had this to say:

From the flow standpoint, even though you hear about sealift breakdowns and some supplies haven't come fast enough--there has never been a show-stopper. There was no time when I said, 'Hey, the troops are in danger.'...I don't think there's anybody who wouldn't say the Desert Shield deployment was an overwhelming success.⁵⁹

By early November, President Bush determined that the original strategy to defend Saudi Arabia and to deter further Iraqi aggression needed some modification. From the

beginning of the crisis, the President had articulated four goals:

- (1) the immediate, complete and unconditional withdrawal of all Iraqi forces from Kuwait as mandated in U.N. Security Council Resolution 660;
- (2) the restoration of Kuwait's legitimate government;
- (3) the protection of the lives of American citizens held hostage by Iraq, both in Iraq and in Kuwait;
- (4) a commitment to the security and stability of the Persian Gulf.⁶⁰

Since the diplomatic endeavors and economic sanctions were not working to bring about these four objectives, the President wanted the military option available. Thus, a force buildup designed to give an offensive military capability was initiated. This second phase would be roughly the magnitude of the initial force deployment, at least in U.S. troop strength. Shifting from a sustainment effort to another major force deployment strained the strategic lift system. However, by now the greatly expanded strategic mobility capability of the U.S. was flexible enough to deal with the situation. Phase two deployments, while meeting an increased sustainment requirement, posed no insurmountable problems.

By mid-January, the Desert Shield preparations for war shifted to warfighting--Desert Storm. Having laid the groundwork with these two examples of force projections, I

will now analyze the similarities and differences between the two.

Desert Shield and Falklands Parallels

One must be careful of trying to draw too many parallels between the United Kingdom's force projection to the South Atlantic and the United States' deployment to the Persian Gulf. Although both military deployments were required because of political miscalculations by the adversaries, the size and scale of the response by the U.K. and the U.S. were vastly different. The distance from the U.K. to the Falklands is roughly equal to the distance from the U.S. to the Persian Gulf. Neither the U.K. nor the U.S. had much warning time. Because of the distances involved, neither was able to initially get a military force into the area to prevent the taking of territory.

Once the decision to deploy forces had been made, both countries' grand strategy was to quickly get some show of force in the region to deter further aggression. While structuring their forces for an offensive capability, each country continued to aggressively pursue the diplomatic option. Both the invasion of the Falklands by Argentina and the invasion of Kuwait by Iraq were condemned by the U.N. Both the U.K. and the U.S. sought to isolate the occupation forces through economic sanctions. The United States'

economic embargo of Iraq was U.N. sponsored while the U.K. unilaterally imposed a maritime exclusion zone around the Falklands. Finally, for both the U.K. and the U.S., neither diplomatic nor economic measures would succeed. Ultimately, in both cases, military force would decide the outcome.

Strategic Mobility Analysis

Given the limited strategic mobility capabilities of the U.K., it was remarkable indeed that they were able to conduct a winter war in the South Atlantic and win. How they were able to accomplish this has been alluded to previously in this paper. Given the United States' global perspective and superpower status, it should be no surprise to anyone that we were able to project such a sizable and capable force to the Persian Gulf. By the end of January 1991, nearly 23 percent of all U.S. military forces were deployed to the Persian Gulf in support of Desert Shield--that is strategic mobility.

Strategic mobility is traditionally thought of in terms of what it takes to get a fighting force deployed beyond the boundaries of the U.S. That usually involves airlift and sealift. Prepositioning of equipment, supplies, etc. is generally included in most discussions of strategic mobility. Airlift, sealift, and prepositioning are collectively referred to as the strategic mobility triad.

All three of these aspects of strategic mobility are certainly important, but I believe there are more factors that should be considered. Strategic mobility, in my opinion, can best be understood in terms of readiness and sustainability. Readiness to respond is crucial to a viable force projection capability. Sustainability is key to a credible strategic mobility posture. The remainder of this paper will be devoted to examining what constitutes readiness and sustainability.

Readiness

Readiness, when applied at the military unit level, usually refers to that unit's ability to perform its wartime mission. In a broader strategic mobility context, an expanded connotation of the word will be used here. For the purposes of this analysis, readiness is used to describe those essential components one needs to have a credible and competent force projection capability. The essential elements of readiness are: training, equipment design, force structure, strategic lift capability, forward basing, and prepositioning.

Quality training of soldiers, sailors, airmen, and marines is a prerequisite to readiness. Inherent in this statement is the fact that one must begin with quality people. For training to be effective, you must train the

way you plan to fight. Additionally, to the extent possible, you should train and exercise in the area of the world where you are likely to fight. U.S. forces train extensively on a global scale to support worldwide super-power commitments. Although Britain's focus had once been global during the colonial era, U.K. forces now train mainly in a NATO context. U.S. forces train to deploy rapidly to support contingencies around the world and project military power. The extraordinary measures the U.K. took to project a military force to the South Atlantic, described earlier in this paper, were a testimony to the quality of their civilian and military leadership. While the U.S. deployment to Desert Shield revealed some shortfalls, it was, for the most part, executed well. This was the result of years of training for that type scenario.

Equipment design is an important aspect of readiness. If one has a global perspective as does the U.S., then that is reflected in its military equipment. Equipment such as tanks, armored vehicles, helicopters, etc. must be designed from the start with the idea that they must fit on a ship or aircraft in order to get them into the fight. A key part of the deployability equation is how rapidly can the piece of equipment be employed once it has reached its destination. If it has to be extensively disassembled for shipment, it cannot be quickly employed once deployed. The U.K. had to modify much of its equipment to accommodate an 8,000 mile

force projection. Ships had to be modified to accept aircraft. Aircraft had to be modified to accomplish new roles and missions, and an aerial refueling capability had to be added to several aircraft. The U.K. had not purchased its military equipment with strategic mobility in mind. The U.S., on the other hand, requires a strategic mobility capability; therefore, we buy equipment with the intention of rapidly deploying it.

The way a force is structured for readiness is an important part of strategic mobility. U.S. forces are structured to rapidly respond to crises around the world. Naval forces with the carrier battle groups and tactical air assets of the Air Force are able to respond immediately to contingency operations. Army light forces of the XVIII Airborne Corps can be quickly airlifted to hot spots and fight immediately if hostile actions dictate. Heavy Army forces, armored and mechanized, can follow with their equipment going on FSS and the troops airlifted. For the U.K., force structure did not accommodate a rapid deployment capability. The British ad hoc task force, quickly put together to constitute an offensive capability, is again a great tribute to superior leadership. But the point is that for a credible and enduring force projection capability, readiness to deploy must be inherent in the force structure.

Another key ingredient of readiness is strategic lift capability. Properly structured, well trained, well

equipped forces are of little use if you cannot get them to the fight. Strategic lift capability includes not only airlift and sealift but also adequate road, seaport, and airport infrastructure. For the U.K., both airlift and sealift assets were overtaxed during the initial stages of the force projection. By quickly contracting commercial airframes and hulls, they were able to support the operation. Additional airlift capability was garnered by modifying the C-130 transports with an aerial refueling capability. Although U.S. strategic lift capacity was severely strained during the early stages of Desert Shield, an orderly planned sequence of acquiring additional lift was followed. First, stage one of the CRAF was activated, and then ships of the RRF were brought out of mothball status. These measures quickly augmented the existing lift capacity. Additionally, the fact that the U.S. strategic airlift aircraft are air refuelable, supported by a robust U.S. tanker force, reduced turnaround times at the offload sites and enhanced aircrew availability. The key difference illustrated here is that the U.S. had planned to expand existing strategic lift thus enhancing readiness. The U.K. had to quickly devise plans to expand their limited strategic mobility capability.

Readiness to respond with military force is greatly enhanced if forward basing options are available--both airfields and seaports. As previously discussed, the

British use of Ascension Island's airfield and port was key to their success in the Falkland's campaign. Likewise for the U.S., use of military airfields in Germany and Spain was critical to the success of the Desert Shield deployment. Modern port facilities in Saudi Arabia, with the infrastructure to rapidly offload a variety of ships, greatly facilitated the ability to quickly reinforce and sustain the forces deployed by air. Forward basing options, in addition to enhancing strategic mobility, afford the opportunity to conduct offensive operations as well. It is absolutely essential for a country such as the U.S., with vital interests in so many regions of the world, to maintain as many security arrangements as possible for forward basing options.

The final concept that contributes to readiness is prepositioning. Prepositioning, simply defined, is the storage of equipment, supplies, ammunition, rations, etc. in strategic locations throughout the world. Prepositioning of stores can either be afloat on ships or ashore in storage areas. Prepositioning in theater reduces considerably the strategic lift requirements, thus increasing readiness. Although the U.K. had no prepositioned stores available, they quickly established a logistics base at Ascension. While the task force sailed south, supplies were airlifted to Ascension--an after-the-fact method of prepositioning. As already mentioned, the U.S. made extensive use of its

prepositioned materiel by moving the APS from Diego Garcia and the MPS to support the Marine brigade's deployment. Also, equipment and supplies prepositioned in Europe were moved to Saudi Arabia during phase two deployments. Prepositioning is truly a capability required by the U.S. to enhance readiness and ensure a worldwide strategic mobility posture.

Sustainment

The other key element I see as essential to a viable strategic mobility capability is sustainment. Sustainment is defined as those things necessary to ensure a fighting force has the supplies, ammunition, and other expendables ready to deploy with them to support combat operations for a relatively short period of time. The second part of the sustainment equation is the requirement to resupply or reinforce a deployed fighting force for an indefinite period of time. The level of combat will dictate the amount of sustainment required. There are four aspects of sustainment that are critical to a nation's strategic mobility posture. These four are: war reserve materiel (WRM), a strong industrial base, secure or defendable LOCs, and an intra-theater distribution system. Each one of these will be examined in greater detail.

WRM means different things to each service and the various DoD agencies. I view WRM as anything needed by people or machines to prosecute a war fighting capability. If you need it to sustain combat once deployed, then it is WRM. There are two categories of WRM. The first level includes the equipment and supplies you deploy with in order to sustain an initial fighting capability. It may be a 15, 30, or 45-day combat load and must last until receiving replenishment stocks. Whatever that level is, and it will vary depending on the unit and the anticipated operational tempo, it should remain untouched in peacetime. Also, it must be packaged for shipment and ready to move on short notice. The second level of WRM is adequate stockpiles of equipment, supplies, spare parts, and ammunition. These will serve as replenishment stores to sustain the fighting force after initial materiel is expended. This is admittedly a very simplistic explanation for WRM but it is sufficient to make the point.

When the initial elements of the U.K. task force deployed to the Falklands, there was insufficient WRM embarked with the combat forces to sustain much more than a minor fight. An enemy opposed amphibious landing would have been disastrous. This is not surprising given the limited focus of the U.K. toward NATO and the lack of any real intent for a strategic mobility capability. However, a flexible industrial base and the availability of Ascension

Island allowed the U.K. to quickly recover and structure the task force for offensive action. These two force multipliers also permitted the British to sustain combat once hostilities commenced. In the case of Desert Shield, the early deploying units had sufficient WRM to sustain them in combat if required. Again, it is not surprising since this is the way the U.S. plans--deploy, employ, fight, and sustain the initial phase of warfighting with the preplanned combat load.

The second aspect of sustainment that contributes to a robust strategic mobility capability is a nation's industrial base. The industrial base needs to be strong, flexible, and responsive to often rapidly changing procurement levels. A fairly detailed description of the British defense industrial bases' flexibility in quickly meeting the MOD's needs in the Falklands campaign has already been presented. An equally impressive case could be made for the United States' industrial base in support of Desert Shield.

On 16 January 1991, Desert Shield ended and Desert Storm, the military campaign to remove Iraqi forces from Kuwait, commenced. In excess of 100,000 sorties were flown in support of the air campaign. Military briefers from CENTCOM headquarters deployed in Saudi Arabia indicated sufficient logistics were available to sustain the air campaign indefinitely. When the land campaign was initiated

on 24 February, CINCCENTCOM later stated he had a 60 day logistic stockpile with which to prosecute the campaign. These impressive statistics are evidence of the fact that the industrial base of the U.S. has the capacity to support a robust strategic mobility capability.

A third key component necessary for viable sustainment is secure or defensible LOCs. If an adversary is able to interdict one's sustainment efforts, strategic mobility is threatened. In the Falkland's campaign, the U.K. did not have secure LOCs and suffered several losses of vital sustainment assets. The U.K. was better able to defend their LOCs than was Argentina. Argentina's inability to sustain their troops in the Falklands had a major impact on the outcome of the conflict. The U.S. has operated from the outset of Desert Shield with secure LOCs. This may not always be the case in future conflicts; however, the U.S. has considerable assets in the inventory to defend LOCs. Our worldwide national security interests dictate this capability.

The final consideration in this building block approach to what constitutes sustainment is an intra-theater lift capability. Supplies, equipment, ammunition, and reinforcing troops are of little use if they cannot get from theater supply points to the forward areas. A viable intra-theater transportation system is an absolute must in the sustainment business. Tactical airlift's ability to

airland, alldrop, or extract equipment, troops, and supplies may be the only method available to resupply or reinforce certain areas. However, for any large scale fighting force, most sustainment will still move by truck or rail if available. Helicopter lift of supplies played an important role for the British in the Falklands although not enough of these airframes were available due to combat losses. Because of terrain and the lack of roads, supplies often moved the old fashioned way in the Falklands--on the backs of British soldiers. Considerable intra-theater lift capability existed in support of Desert Shield. This was due to highly professional, deliberate planning and force structure decisions. Intra-theater lift, whether by land, sea, or air, is the final link in getting sustainment to the war fighter who needs it.

Conclusion

The purpose of this paper was to examine strategic mobility. The focus has been on what I believe are the two key elements that contribute to a nation's strategic mobility capability--readiness and sustainability. Two case studies were presented. One depicted the British force projection to the Falkland Islands in 1982; the other described the American force projection to Southwest Asia in 1990--Desert Shield. Both military force projections were

In response to crises that threatened their national interests. Many aspects of these two deployments were similar and served as points of reference for demonstrating how readiness and sustainability combine to produce strategic mobility.

I have attempted to show that strategic mobility for the U.S. is an integral part of our military strategy in support of national security interests. The British were able to project a sufficient military force, sustain it over an 8,000 mile LOC, and defeat an adversary operating from their own backyard. This feat was not the result of a military strategy that promoted strategic mobility. Rather, they were able to accomplish this force projection due to extraordinary resolve, ingenuity, and superior military leadership. In contrast, Desert Shield and Desert Storm were overwhelmingly successful because of deliberate planning for just such a scenario. The national security interests of the U.S. demand a high level of strategic mobility.

As we transitioned from Desert Shield to Desert Storm, we have now moved to conflict termination. Preparations have begun to redeploy our forces and equipment to U.S. soil. The focus will quickly shift from events in the Persian Gulf to the center of attention prior to 2 August 1990--the military build-down. For the next several years, military and civilian visionaries will write volumes on

lessons learned from Desert Shield and Desert Storm that either confirm or deny the wisdom of the defense build-down. The one lesson we will not have to learn is that credible strategic mobility is absolutely vital to our national security interests. Desert Shield has validated that lesson already.

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