

USAWC STRATEGY RESEARCH PROJECT

THE ACHILLES HEEL OF AMERICAN AIRPOWER

by

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This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

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ABSTRACT

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The need to overcome an enemy's anti-access strategy and rapidly project lethal firepower anywhere in the world raises many policy issues about U.S. combat air search and rescue forces, not the least of which relate to the suitability of their aircraft fleet. Along these lines, this study asks the question of whether the United States Air Force (USAF) should be satisfied with its helicopter-based combat search and rescue (CSAR) force for the indefinite future, or whether it should make definite plans to replace those helicopters expeditiously with aircraft that have greater speed, range and survivability characteristics.

The first part of this paper analyses the foundation of the need to overcome an adversary's anti-access strategy. It looks at the National Security Strategy and the Quadrennial Defense Review to identify the ends, ways and means that the services must build military forces and capabilities to support. It then looks at how the USAF has restructured and resources itself to meet these goals in all but one critical area, CSAR. The conclusions reached are that this nation's requirement for airpower to react quickly over greater distances will impact the structure of tomorrow's CSAR forces.

The second part of the paper analyses the impact of speed, range and survivability on the success or failure of the Iranian hostage rescue mission. This case study indicates that the effects of speed, range and survivability influence both the planning and probability of success of rescue missions. From a strict operational viewpoint, an aircraft that has increased speed, range and survivability would be more flexible and capable in the CSAR mission.

The final part of the paper asserts that the speed, range and survivability characteristics of helicopters limit their ability to support an anti-access strategy. Therefore, it discusses other aircraft options that should be looked at to fill this role. Ultimately, the most capable solution might require a mix of different aircraft, with different capabilities, to cover the entire spectrum of CSAR missions.

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THE ACHILLES HEEL OF AMERICAN AIRPOWER

The September 11th 2001 terrorist attack on the United States of America forever changed this country and the world. This attack was the catalyst that led the United States (U.S.) and her allies to launch the Global War On Terrorism (GWOT). The GWOT is a war fundamentally different from any war in recent history. It is a war that will predominately be fought against small pockets of belligerents, intermingled among non-combatants as opposed to a war against large fielded armies. In this war, speed will be imperative to strike the enemy when our intelligence can fix his position. Hence, airpower will continue to be a key element of military and national power.

In the last decade, American political leaders have increasingly viewed airpower as the first and best option to demonstrate the conviction of their resolve when diplomacy has failed.¹ Economic sanctions have proven to be nearly impossible to enforce and therefore, relatively ineffective. Additionally, sanctions are often viewed as cruel because when used against totalitarian or repressive régimes the population feels their effect but there is little to no impact on the leadership. Ground forces are slow to move, relative to airpower, and their introduction is considered to be risky due to the higher potential for casualties. This perception is especially true when vital interests are not at stake. One only needs to look at the 1983 bombing of the U.S. Marine Corps barracks in Lebanon or the loss of eighteen U.S Army Rangers in Somalia to see the effects that relatively small numbers of casualties can have on the employment of U.S military power in other than the pursuit of vital interests. Today, the number of casualties incurred on the ground in operation IRAQI FREEDOM has surpassed 500. This has led to criticism of the current administrations policy to commit military forces to Iraq, is shaping up as a major issue in the upcoming presidential election and ultimately might threaten to undermine American public support for a continued military presence in the region. Regardless of the ultimate outcome of operation IRAQI FREEDOM, the concern for casualties will be a dominant factor in determining whether to commit military forces in the future. Yet, the success of airpower in operation DESERT STORM, the Kosovo conflict, Afghanistan and most recently operation IRAQI FREEDOM has continued to advance the perceived invulnerability of American airpower. As General Jumper (then, Commander United States Air Forces in Europe and now Chief of Staff, United States Air Force (USAF)) indicated following the Kosovo conflict, "we set the bar fairly high when we fly more than 30,000 combat sorties and we don't lose one pilot. It makes it look as if airpower is indeed risk free and too easy a choice to make."²

What support can the U.S. expect in the future from a world that increasingly views the U.S. as a hegemonic power that wields its military might too liberally? Will it have access to forward basing from which to fight? What affect will that have on its ability to project military power? If an aircraft is lost, like in Kosovo, but the pilot cannot be rescued, will the invulnerability of American airpower vanish and with it the will of the American people? If the president requires airpower to provide a relatively risk free, potentially casualty free military option then it must be structured and resourced to overcome the aforementioned questions. To this end, the USAF has modernized its aircraft and doctrine in order to rapidly project lethal firepower from greater and greater distances to overcome a potential access problem in all but one critical area, combat search and rescue. Therefore, the intent of this paper is to identify a subtle but critical mismatch of ends, ways and means that has created the potential Achilles heel of American airpower. That is the failure of the USAF, the service that provides the preponderance of American airpower, to provide for a comprehensive combat search and rescue (CSAR) capability that meets the realities of modern warfare. This subtle but critical mismatch of ends, ways and means has the potential to deny the president one of the greatest asymmetrical advantages that the U.S. enjoys, its ability to rapidly project military power as a coercive mechanism, in support of national objectives given the American public's aversion to casualty's.

It is the Department of Defense's (DoD) responsibility to provide the National Command Authority (NCA) with this viable military option when the president determines the use of force is required to achieve national objectives. Airpower has proven that it can provide the president with a practical military force option in an era of casualty aversion. It is to this end that the USAF should resource itself both today and in the future. However, as this paper is being written the USAF is in the final stages of procuring its next generation CSAR aircraft. The top two competitors are two helicopters that possess roughly the same speed and range capability as its current fleet. It is questionable if either of these aircraft support the anti-access strategy that the USAF is pursuing or provide the "means" to allow airpower to continue to operate if an aircraft is lost to enemy action or a simple aircraft malfunction.

This paper will focus on the requirement of modern aircraft to possess speed, range and survivability to overcome an anti-access strategy. It will advocate the need for the USAF to procure a CSAR platform that is capable of supporting the requirement to rapidly project lethal military force across global distances to address this access issue. To understand the importance of CSAR, one only has to realize that air operations would not be approved over Afghanistan until CSAR forces were in place.³ To understand the importance of these

attributes, one only has to evaluate the amount of time and energy that was put into securing basing rights in Pakistan, Turkmenistan, Uzbekistan and Tajikistan as potential sites from which CSAR forces could operate in order to have the speed, range and survivability to cover air operations over Afghanistan.⁴

Therefore, the methodology of this paper involves a discussion of ends, ways, means and history. "Ends" to define the range of capabilities the military element of power must possess to achieve the presidents vision. "Ways" to define the methodology in which the DoD will transform the military to provide the requisite capabilities required to achieve this vision. "Means" to determine the requirements that govern USAF and more specifically CSAR forces capabilities and if those requirements are being satisfied. Finally history, in the form of the Iranian hostage rescue case study, keyed to operational requirements, to emphasis that the lack of access, and the need for speed, range and survivability to overcome this lack of access, is a problem that have had a negative impact on helicopter operations for many years.

THE ENDS

This first part of the paper will identify, through a series of documents, the requirement for the DoD to provide the capability to rapidly project lethal firepower anywhere on the globe. Furthermore, DoD must have the capability to thwart an enemy's anti-access strategy by structuring itself to safely project this firepower over great distances and with great speed.

President George W. Bush has identified "the ends" his administration will strive to achieve in his September 2002, National Security Strategy (NSS) of the U.S.. In this document the president states, "the aim of this strategy is to help make the world not just safer but better. Our goals on the path to progress are clear: political and economic freedom, peaceful relations with other states, and respect for human dignity".⁵ To achieve these goals the strategy asserts that it will: "champion aspirations for human dignity; strengthen alliances to defeat global terrorism and work to prevent attacks against us and our friends; work with others to defuse regional conflicts; prevent our enemies from threatening us, our allies, and our friends, with weapons of mass destruction; ignite a new era of global economic growth through free markets and free trade; expand the circle of development by opening societies and building the infrastructure of democracy; develop agendas for cooperative action with other main centers of global power; and transform America's national security institutions to meet the challenges and opportunities of the twenty-first century".⁶ In truth, these eight assertions are the ways in which all the elements of national power will be utilized to achieve the desired ends. However, from

the NSS's stated ends and these overarching ways the DoD can craft a defense strategy that quantifies how the military element of power supports achieving these ends.

The Quadrennial Defense Review (QDR), that was published before the final version of the NSS was released and just after the September 11th 2001 terrorist attacks on the U.S., states,

The defense strategy serves the broad national objectives of peace, freedom and prosperity. Diplomatic and economic efforts seek to promote these objectives globally by encouraging democracy and free markets. U.S. defense strategy seeks to defend freedom for the United States and its allies and friends, and it helps to secure an international environment of peace that makes other goals possible.⁷

The defense strategy articulates four ends that the military element of power will attempt to achieve in order to support the overall national objectives. These ends are captured in these four defense policy goals: "assuring allies and friends; dissuading future military competition; deterring threats and coercion against U.S interests; and if deterrence fails, decisively defeating any adversary".⁸ It is in achieving these ends that the DoD has outlined the way it intends to train organize and equip the military forces of the U.S..

THE WAYS

This part of the paper will identify the need for the military to transform itself to be leaner, lighter and more capable of rapid projection of lethal firepower across the globe. Airpower must be able to find, fix, track and engage targets with precision anytime, anywhere while overcoming anti-access strategies.

To achieve the aforementioned ends, the DoD is shifting to a "capabilities-based" planning paradigm.⁹ This paradigm is designed to meet the challenges of the post Cold War world in which we no longer can predict, with any certainty, where and who we are going to fight. Therefore, it looks at the types of capabilities that might be employed by any adversary and plans a force capable of deterring and defeating those capabilities.¹⁰ The QDR calls for developing and enhancing "long range precision strike, and transformed maneuver and expeditionary forces and systems, to overcome anti-access and area denial threats," as an element of this capabilities based approach.¹¹

Additionally, the QDR identifies the need to protect the American homeland by defending its land, sea, air and space approaches, while at the same time maintaining the ability to project power at long ranges.¹² It recognizes that "mutually reinforcing security relationships underpin the political stability on which the prosperity of civilized nations is built."¹³ Therefore, it calls for strengthening existing alliances and partnerships and creating new forms of security

cooperation, to include enhancing military interoperability.¹⁴ Moreover, it emphasizes “maintaining favorable military balances in critical geographic areas” to deter aggression and assure support to its allies and friends.¹⁵

The defense strategy identifies the need to maintain the current U.S advantage in conventional military forces to “prevail over current challenges and to hedge against and dissuade future threats”¹⁶ Key to this ability is the need to transform the military into a more agile and rapidly deployable force that is capable of operating in an anti-access environment. DoD has identified the following six operation goals that provide the focus for military transformation:¹⁷

- Protecting critical bases of operation (U.S. homeland, forces abroad, allies, and friends) and defeating chemical, biological, radiological, nuclear, and enhanced high explosive (CBRNE) weapons and their means of delivery;
- Assuring information systems in the face of attack and conducting effective information operations;
- Projecting and sustaining U.S. forces in distant anti-access or area-denial environments and defeating anti-access and area-denial threats;
- Denying enemies sanctuary by providing persistent surveillance, tracking, and rapid engagement with high-volume precision strike, through a combination of complementary air and ground capabilities, against critical mobile and fixed targets at various ranges and in all weather and terrains;
- Enhancing the capability and survivability of space systems and supporting infrastructure; and
- Leveraging information technology and innovative concepts to develop an interoperable, joint C4ISR architecture and capability that includes a tailorable joint operational picture.

The DoD has conceptualized the ways the military element of power will assist in achieving the ends identified by the president. It then tasks the four services and the United States Special Operations Command (USSOCOM) to provide the means to achieve this defense strategy.

THE MEANS

The scope of this paper would quickly get out of hand if it tried to capture all the means employed to support the NSS. Therefore, it will focus on the means the USAF brings to the fight in support of the NSS ends and the QDR’s ways. More specifically, it will identify a subtle but

critical mismatch in its means designed to employ air and space power in support of national objectives.

The USAF is well aware that many of the ways identified in the QDR to meet the ends stated by the president rely on airpower in whole or part to be effective. In such, the USAF has restructured itself from a force designed to operate from permanent bases during the Cold War to a force that is expeditionary in nature today. The USAF no longer measures combat power in fighter wing equivalents but in Air Expeditionary Forces (AEF's). It has restructured the entire service to fit into ten scaleable AEF's with two capable of deploying within hours of notice.

All USAF combat coded aircraft are air refuelable and all aircraft capable of dropping ordinance have been modified to deliver precision-guided munitions. This includes the entire long-range bomber fleet that is now capable of delivering both conventional and nuclear munitions. USAF on-going procurement efforts for next generation fighter aircraft, the F/A-22 Raptor and F/A-35 Joint Strike Fighter, focus on the need for speed, range and stealth to rapidly project power from greater distances in contested airspace. The transformation of organizational concepts, modifications of current aircraft and on-going procurements efforts all reflect the USAF belief that it must be capable of overcoming an anti-access strategy to support the requirements of the QDR and NSS.¹⁸

"National political, joint military, and service planning guidance all warn of the emerging capabilities of adversary states and non-state actors such as criminal cartels or religious and political factions. These groups will use increasingly available weapons...to include use of WMD...and information technologies to affect our will and ability to conduct vital military operations from forward locations."¹⁹ "The friction and uncertainty these activities would cause, as well as effects on public perceptions of the validity and cost of U.S operations, would likely be the deciding factors in the United States participation."²⁰ USAF strategic plan, volume one, concedes that forward operating bases are critical to U.S. operations but acknowledges that bases close to the fight are also inviting targets and therefore risky.²¹ The 1999 report from the United States Commission on National Security echoes this concern and states that, "U.S forces may be forced to operate at longer ranges from required targets."²² The April 2000 Final Report on Strategic Responsiveness states, "Even less in the early twenty-first century can the Air Force make the strategic assumption that forward basing will be available or accessible in future operations."²³ At the core of the USAF transformation philosophy is the belief that it must be prepared and capable of operating from remote airfields and at great distances to provide lethal firepower when directed by the National Command Authority.

While operating from extended ranges might be a necessity in the future, that in and of itself will not guarantee success. The USAF's initial report on the Kosovo campaign indicated that improving defenses pose a greater threat on attacking forces and therefore, stealth and better stand off attack capabilities and suppression of enemy air defenses are required.²⁴ Additionally, airpower's ability to shape the battlespace from a distance, to influence an adversary's area of operation from outside his reach and do this while placing minimum friendly forces in harms way had a significant impact on American public support for recent conflicts.²⁵

The USAF has identified the need to pursue an anti-access strategy in which it can rapidly project combat power from great distances. It has modified its aircraft and operating paradigm to support this need. It has identified that improving air defenses around the world pose a greater threat to the survival of its aircraft. It knows that stealth is a combat multiplier, yet not immune from danger. It also knows the utility that a credible CSAR capability brings to the successful application of airpower in the 21st century.

Air operations would not begin in Afghanistan until CSAR was in place. Due to the range limitations on the helicopters that would be conducting CSAR, high level diplomatic actions were required to secure bases in Turkmenistan, Uzbekistan or Tajikistan and without them the whole operation was in jeopardy.²⁶ CSAR was a critical concern of the DoD leadership as related by Bob Woodard in, *Bush at War*:

It was bedrock doctrine with Shelton (Gen Hugh Shelton, Chairman, Joint Chiefs of Staff) and most military officers that combat operations could not commence without full search and rescue. The CSAR was the lifeline for those who flew combat missions and there was a presumption that the military brass would go all out to ensure it was in place. This was not only because of the lives of the pilots and crew. Any downed airman behind enemy lines is a potential hostage. Anyone who had lived through hostage crises, from the 52 Americans held in Tehran during 1979-80 to those held in Lebanon in the mid-1980s, knew the potential impact of American hostages on foreign policy²⁷

The President was pushing for military action to show the resolve of the U.S. and to strike the terrorists before they could disperse. Airpower was ready to respond with one critical exception, CSAR. The inability of CSAR forces to support the global strike concept negates the USAF's ability to overcome an anti-access strategy unless it is willing to accept the risk of losing an aircraft and not being able to recover the pilot or crew. A risk the president and DoD leadership was not willing to accept in the relatively low threat airspace of Afghanistan.

It is clear that USAF's current helicopter centric CSAR force lacks the capability to support the global strike concept, a concept that underpins our ability to address the realities of 21st

century air warfare. However, the helicopters speed and range limitations are not unique to the Afghanistan scenario, as the following case study will show.

IRANIAN HOSTAGE RESCUE MISSION

The following paragraphs will look at the Iranian hostage rescue mission as a historical case study to determine how the operating characteristics of helicopters effected the planning and outcome of that mission. The Iranian hostage rescue attempt illustrates the use of rescue forces in a deliberately planned and rehearsed mission that ended in disaster. The lack of access and the effects of speed, range and survivability were important factors that contributed to the complexity and ultimate failure of that mission. The planning and execution of the rescue attempt reveal the premium importance of speed, range and survivability in rescue operations and puts in doubt the ability of any helicopter to overcome an anti-access strategy.

BACKGROUND

TEHERAN, IRAN, Nov 4 – Moslem students stormed the United States Embassy in Teheran today, seized about 90 Americans and vowed to stay there until the deposed Shah was sent back from New York to face trial in Iran

--New York Times, 5 Nov 1979.²⁸

Lack of access to facilities in the region from which to plan, rehearse and stage this rescue mission was a major issue from the outset and ultimately contributed to the complexity of the operation. This was compounded by the critical requirement for surprise in order to have any hope of success in this operation.

The 4 November 1979 seizure of the U.S. embassy in Teheran began the 444-day ordeal known as the Iranian hostage crisis. Throughout this ordeal President Carter was briefed on a myriad of proposals for freeing the hostages, ranging from diplomatic initiatives to the use of nuclear weapons. Military actions discussed from the first day of the crisis in the National Security Council included: seizure of oil fields, retaliatory bombing, mining of Iranian harbors, blockade, seizure of Kharg Island, covert operations and a rescue operation.²⁹

Dr. Zbigniew Brzezinski, President Carter's national security advisor, requested that contingency plans be prepared for a rescue operation, for use if the militants started executing hostages.³⁰ The obstacles to overcome were enormous. There were no U.S. bases in the vicinity, no intelligence network in place and no force in existence that had the capability of executing the rescue.

PREPARATION

Col "Charlie" Beckwith, commander of the Army's elite counterterrorist unit known as "Delta Force", developed the initial rescue plan and described it as "straightforward...and suicidal".³¹ The plan entailed a parachute drop east of Teheran followed by a movement through the city via stolen trucks to assault the American embassy.³² Once they had fought their way into the embassy, located and freed the hostages, they would move the whole force through the city to Mehrabad Airport.³³ Delta would then seize the airport and hold it until U.S. aircraft could land and evacuate the entire contingent or if aircraft could not land then evade overland.³⁴

Both Beckwith and General Vaught believed that this initial plan had zero chance of success and that additional time was necessary to develop a reasonable plan. Pressure for an immediate rescue attempt was reduced when the Iranian militants released thirteen hostages, heightening the hopes for a diplomatic solution. The Joint Task Force used this time to organize and train a force capable of accomplishing the mission.

The final plan to rescue the hostages, Operation EAGLE CLAW, by necessity was complex and demanding.³⁵ Six USAF C-130s (three MC-130 Combat Talons and three EC-130s, configured for ground refueling) would takeoff from Masirah Island (Oman) with the assault force onboard and fly to Desert One, a refueling site established on a sand strip 200 miles southeast of Teheran in Iran's Dashed-e-Kavir desert. Here they would transfer the assault force and refuel eight Navy RH-53D Sea Stallion helicopters (flown by United States Marine Corps (USMC) pilots) that had launched from the *USS Nimitz* some 600 miles away in the Gulf of Oman. The C-130s would then return to Masirah and the helicopters would proceed to Desert Two where they would offload the assault force and move to hide sites in the hills around Garmsar. At Desert Two the assault force would be met by DoD agents, already in Iran, and move to a hide site for the day. At nightfall the Delta assault force would move via trucks, provided by the CIA, to the embassy and free the hostages. Concurrently, a thirteen-man Special Forces (Green Beret) team would move via vehicles to the Foreign Ministry Building and free the three hostages that were being held at that location. The helicopters that had launched from their hide sites and were orbiting north of the city would land at the embassy (or the nearby Amjadih soccer stadium if the embassy was blocked) and the Foreign Ministry Building and evacuate the hostages and rescuers. Two AC-130 gunships would orbit over the city and provide fire support as required. The helicopters would then fly to Manzariyeh airfield, thirty-five miles south of Teheran that would have been seized by U.S. Army Rangers. Once there the

helicopters would be destroyed and everyone would load on USAF C-141 Starlifters and fly out of the country.³⁶

EXECUTION

Far better it is to dare mighty things, to win glorious triumphs, even though checkered by failure, than to take rank with those poor spirits who neither enjoy much nor suffer much, because they live in the gray twilight that knows not victory nor defeat.

—Theodore Roosevelt³⁷

The C-130s departed Masirah on time, with the assault force onboard, and headed toward Desert One. They arrived at Desert One on time and landed with the assistance of remotely activated low intensity runway lights, which had previously been installed by a site reconnaissance team. The C-130s repositioned for helicopter refueling operations, deployed the security force and awaited the arrival of the helicopters.

The helicopters 600 NM journey to Desert One was not as auspicious as that of the C-130s. "Eight mission-capable RH-53D helicopters departed *Nimitz* on the evening of 24 April 1980. Of these eight, only five arrived at Desert One capable of proceeding."³⁸

It was determined prior to mission launch that a minimum of six operational helicopters was required to continue the mission past Desert One.³⁹ With only five operational helicopters, Col Kyle, the C-130 and Desert One commander, in conjunction with Col Beckwith, the assault force commander, advised Major General Vaught of their intent to abort the mission. "General Vaught advised the President of this intent and the President concurred in the decision that the mission could not continue, and preparations began for withdrawal of the five operational helicopters, the C-130s, and the rescue force."⁴⁰

It was necessary to reposition the helicopters to allow the first aircraft to arrive at Desert One top off its fuel tanks, in preparation for the flight back to the *Nimitz*. While repositioning, helicopter #4 collided with an EC-130 causing both to erupt into flames, killing eight crewmembers and injuring five other members of the team.⁴¹

Exploding ammunition and fragments from the burning aircraft impacted and damaged some of the other helicopters. With time and fuel running out Col Kyle decided to abandon all the helicopters and fly everyone out on the remaining C-130s.⁴² The bodies of the eight servicemen, the five remaining helicopters, the burning remains of the sixth helicopter and the EC-130 and classified material in three of the helicopters were left behind in the desert.⁴³ An air

strike was requested on Desert One to destroy the equipment left behind but the President disapproved it.⁴⁴

OUTCOME

The morning of 25 April 1980 the world awoke to the news of the failed hostage rescue attempt. American prestige and reputation for military skill and power had been tarnished. Congressional testimony placed the monetary cost for the failed rescue mission at an estimated 193 million dollars.⁴⁵ More importantly, eight American servicemen had perished and the hostages were still being held, with no end in sight.

The Iranian hostage crisis issue was an important aspect of the 1980 presidential elections. While it cannot be said that President Carter lost the election based entirely on his handling of the hostage crisis; history does show that the American public was dissatisfied with the handling of the crisis. On 20 January 1981, the day Ronald Reagan was inaugurated as President of the U.S., the fifty-three American hostages were released after one year, two months and sixteen days of captivity.

ANALYSIS

Operation EAGLE CLAW was a complex plan that accepted a high risk of failure. The effects of speed, range and survivability on the helicopter operations drove the complexity of the air plan, in part. The landing, refueling and transloading of the assault force at Desert One was required because of the helicopter's range. To minimize the risk of being discovered the entire operation from launch until entry into the hide sites was to be accomplished under the cover of darkness. However, the speed of the helicopters required everything to go right in order to arrive at the hide sites before sunrise. Additionally, the whole concept of hiding eight large helicopters in the hills around Garmsar was required because of the relatively slow speed of the helicopters. Due to survivability concerns the helicopter force trained for and flew the entire route at low-level altitudes. This caused them to fly through the dust cloud, become disorganized and eventually for helicopter #5 to abort.

The necessity for a refueling operation at Desert One was driven by the range limitations of the helicopter. With a single fuel load the helicopters were incapable of flying from the *USS Nimitz*, in the Gulf of Oman, with the assault force onboard to Desert Two, moving to the hide sites and transporting the hostages and the rescuers to Manzariyeh airfield the next night. Range was an important factor in determining the probability of success or failure in this mission.

The plan to hide the helicopters in the hills around Garmsar was required due to the speed limitations of the helicopters. The assault force required the element of surprise in order for their plan to work. Therefore, their arrival at Desert Two and the hiding of the helicopters had to be accomplished prior to sunrise to minimize the risk of discovery. The helicopters did not have the speed required to transport the assault force to Desert Two and depart the country before sunrise.

The need to conduct the first night's events during the hours of darkness was an important factor in determining the timing of the mission.⁴⁶ A number of seasonal weather conditions, to include the available hours of darkness, would have turned against the mission if it were delayed.⁴⁷ Therefore, the speed limitation of the helicopter not only drove the requirement to hide the helicopters inside of Iran but also was a factor in determining the timing of the operation.

The speed and distance limitations of the helicopter drove the requirement for Desert One and the hide sites. Survivability concerns forced the helicopters to fly low level and into the worst part of the dust cloud. The effects of speed, range and survivability were important factors that contributed to the complexity and ultimate failure of this mission.

OPTIONS

The speed, range and survivability characteristics of helicopters combined with the need to recover isolated personnel quickly and reliability raises many policy issues about CSAR forces, not the least of which relate to the suitability of their aircraft fleet. Along these lines, this part of the paper asks the question of whether the USAF should be satisfied with its helicopter-based CSAR force for the indefinite future, or whether it should look for an alternative that provides greater speed, range and survivability characteristics in order to overcome an anti-access strategy and support the global strike mission. However, the intent of this paper is not to do a detailed technical analysis of all potential CSAR aircraft, for that is beyond the capabilities of the author, but to establish that the Air Force's current direction does not support its concept of how it is going to employ airpower in the future.

The USMC and special operating forces (SOF) are investing in tilt-rotor technology, in the form of the V-22 *Osprey*. The *Osprey* has comparable airspeed, altitude and range characteristics of other turbo-prop, fixed wing aircraft in the inventory today but can land and takeoff vertically like a helicopter. The required capabilities of this aircraft to accomplish its USMC and SOF missions are not much different from those required to support CSAR missions. Tilt-rotor technology promises to produce an aircraft that is more than twice as fast as

any helicopter, with four times the range and the ability to fly above much of the threat. The speed, range and survivability increase afforded by the *Osprey* more closely supports the capability that must be resident in the USAF to support the NSS and QDR.

The USAF, USMC and United States Navy are all combining to produce the F/A-35. The USMC version will have the ability to takeoff and land vertically much like today's Harrier. Most fighter aircraft are also produced in a two-seat version for training purposes. The USAF can pursue the option of procuring a to be determined number of the two-seat USMC F/A-35 version as a CSAR platform. These aircraft have the same speed, range and armament as other fighter aircraft but can land in close proximity to an aviator that has ejected from his/her aircraft. All downed aviators that have been rescued from the first Gulf War to today have suffered only minor injuries following ejection and would have been capable of getting into the back seat of a fighter aircraft. If more than one aircraft is lost or a multi-seat fighter goes down then more than one F/A-35 could be utilized to rescue the downed aviators. The intent here is not to propose a fully developed F/A-35 CSAR concept but to propose that our vision of how we conduct CSAR needs to expand to meet the requirements set forth in the NSS and the QDR.

Ultimately, the most capable solution might require a mix of different aircraft, with different capabilities, to cover the entire spectrum of CSAR missions. However, as the services move beyond jointness to interdependence the USAF must look beyond its current helicopter centric CSAR paradigm to an aircraft that supports how it intends to employ airpower in the future. Perhaps the USAF can rely on the other components of the joint force to provide helicopter and tilt-rotor capability when required to support its operations.

CONCLUSION

The September 11, 2001 terrorist attack on the U.S. forever changed this country and the world. That attack drove President Bush to articulate a NSS that embraces the pre-emptive use of military force in defense of the U.S. and her allies. Yet, at the same time a downsized DoD, following the end of the Cold War, is trying to transform itself to a lighter, leaner, faster deploying, more lethal force. To support this new paradigm the USAF has restructured itself to be an expeditionary force capable of providing worldwide employment of precision airpower at a moments notice. Additionally, it has postured itself to overcome a QDR projected anti-access environment by building a force that is capable of projecting and sustaining airpower from greater and greater distances. Yet as the Iranian hostage rescue mission case study shows, the limitation in speed, range and survivability of helicopters makes their ability to support combat aviation in carry out the president's mandate in an anti-access environment doubtful.

There is no indication that airpower will cease to be the first and best option to demonstrate the resolve of the U.S. when our way of life is threatened. Additionally, the speed and precision inherent in modern airpower will provide the critical tool to our national leadership to use in the on-going GWOT. Airpower must continue to provide the president a lethal force capability to press the fight as our casualty adverse society loses interest in the on-going war. Therefore, it is essential that when this nation calls on airpower to lead it into battle it is ready. Hence, it must mend its Achilles heal and develop a CSAR capability that is in synch with the way we will employ airpower in the future.

To do this the USAF must rekindle the innovative spirit exemplified by General George Kenny in the Pacific Theater of World War II. General Kenny modified aircraft and developed new tactics, techniques and procedures as required, overcoming adversity and carrying the fight to the enemy. The USAF must look beyond its helicopter centric CSAR paradigm and develop a capability that supports the requirements of 21st century air warfare. Speed, range and survivability must be resident in this force for it to meet the challenges of a world in which unilateral U.S. military action might be required to ensure the safety of our great nation.

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ENDNOTES

¹ Airpower has played the primary if not sole role in operation NORTHERN WATCH, SOUTHERN WATCH, DENY FLIGHT, PROVIDE PROMISE, and ALLIED FORCE in support of operations in Iraq, Bosnia, and Kosovo. It also was the key element in showing U.S. support to Taiwan during increased tensions in the Taiwan Straits. Additionally, the movement of carrier battle groups within striking range of their aircraft, deployment of land based aircraft or simply increasing the readiness status of inter-continental bombers has been common in the last decade.

² Benjamin S. Lambeth, "NATO's Air War For Kosovo: A Strategic and Operational Assessment," 2001; available from <http://www.rand.org/paf/highlights/Kosovo.html>; Internet; accessed 19 September 2003.

³ Bob Woodward, *Bush at War*, New York: Simon & Schuster, 2002, p. 152.

⁴ Ibid.

⁵ George W. Bush, *The National Security Strategy of the United States of America*, (Washington, D.C.: The White House, September 2002), 1.

⁶ Ibid., 1-2.

⁷ Donald H. Rumsfeld, *Quadrennial Defense Review Report*, (Washington, D.C.: The Pentagon, September 2001), 11.

⁸ Ibid.

⁹ Ibid., 13.

¹⁰ Ibid.,

¹¹ Ibid., 14.

¹² Ibid.

¹³ Ibid., 15.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid., 30.

¹⁸ Gene Myers, "Getting to the Fight: Aerospace Forces and Anti-access Strategies," 27 March 2001; available from <http://www.arpower.maxwell.af.mil/airchronicles/cc/myers01.html>; internet; accessed 10 October 2003.

¹⁹ Ibid., 3.

²⁰ Ibid.

²¹ Department of the Air Force , *US Air Force Strategic Plan, Volume One: The Future Security Environment*, (Washington D.C.: U.S. Department of the Air Force), 15.

²² The United States Commission on National Security/21st Century, "New World Coming: American Security in the 21st Century," September 15, 1999, 4.

²³ Myers, 7.

²⁴ Department of the Air Force, *The Air war over Serbia: Aerospace Power in Operation Allied Force, the initial report*, (Washington D.C.: U.S. Department of the Air Force), January 2000, 43-52.

²⁵ Daniel Gore and Stephen A. Cambone, "The Coming of Age of air and Space Power," In Daniel Gore and Christopher M. Szara, eds., *Air and Space power in the New Millennium*, (Washington, D.C., The Center for Strategic and International Studies), 1997, 14-15.

²⁶ Summarized and paraphrased from Bob Woodward, *Bush at War*, p.152.

²⁷ Bob Woodward, *Bush at War*, p.152.

²⁸ Reuters, "Teheran Students Seize U.S. Embassy. " *The New York Times*, 5 November 1979.

²⁹ Zbigniew Brzezinski, *Power and Principles: Memoirs of the National Security Advisor 1977-1981*. New York: Farrar, Straus, and Giroux, Inc., p. 477-500.

³⁰ Ibid., p. 478.

³¹ Colonel Charlie A. Beckwith and Donald Knox, *Delta Force*, New York: Harcourt, Brace, and Jovanovich, 1983, p. 186

³² Ibid.

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid., p. 194

³⁶ Summarized and paraphrased from Colonel Charlie A. Beckwith and Donald Knox, *Delta Force*, p. 253-256.

³⁷ Robert D, McFadden, Joseph B. Treaster, Maurice Carroll and Drew Middleton, *No Hiding Place*, p. 215.

³⁸ Ibid., p. 44.

³⁹ Ibid., p. 10.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Ibid.

⁴³ Ibid., p. 53.

⁴⁴ Beckwith, p. 283.

⁴⁵ Benjamin F. Schemmer, "22 Months After Desert One, Some on Iran Rescue Try Still Not Decorated", *Armed Force Journal International*, March 1982, p. 26.

⁴⁶ Senate, *The Situation In Iran: Hearing before the Committee on Foreign Relations*, 96th Cong., 2nd sess., 1980, 3.

⁴⁷ Ibid.

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