

STRIKE RESCUE - ARE WE ON THE RIGHT PATH ?

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→ The Navy departed the "right path" to an enhanced Strike Rescue capability in April 1989 with OSD's decision to cancel the <u>Osprey</u> program. This mission is vital for improving the morale and aggressiveness of our 'warriors,' ensuring each service meets it's own search and rescue needs in accordance with national and military policy, denying the enemy a source of intelligence and potential political propaganda, and returning a valuable asset to the fleet. The historical background, current capabilities and future possibilities of Strike Rescue are significant. → Our track record in Strike Rescue success has dwindled with time. Lessons learned in Strike Rescue during the previous conflict tend to be forgotten while the threat had increased. Current Strike Rescue capabilities in the Navy are deficient due to the lack of commitment to spend precious dollars to upgrade Strike Rescue platforms, provide needed aircrew survival gear, support					
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BLOCK 19: the mission with assets available, and provide adequate training and doctrine. Two programs that provide promise are the proposed 6:2 mix of Sikorsky's SH-60F:HH-60H helicopters for HS squadrons as an interim measure and Bell/Boeing's tilt-rotor HV-22 Osprey for the future fix.

In order to successfully complete a strike warfare package, a survivable Strike Rescue platform and trained crew is essential. The naval commander will select his best assets to perform the Strike Rescue mission, but today we will 'come as we are' which will not provide much. There needs to be both increased and continued commitment in resources for the Strike Rescue mission if we are to continue down the "right path".

Keywords: Naval operations, Rescues, Prisoners of war, history, Helicopters, Military doctrine, Surveys. (RWT) <

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EXECUTIVE SUMMARY

Strike Rescue is an emotional issue. The human factor alone evokes intense personal reactions which should be examined and factored into future decisions concerning this issue.

Historical lessons in Strike Rescue bear commitment to doctrine. Relearning these lessons in every conflict subjects U.S. Naval strike and rescue forces to needlessly high personnel and equipment losses.

Current capability in U.S. Navy Strike Rescue is supported almost solely by an improving training program. However, present doctrine, intelligence support and Strike Rescue platforms are inadequate. Also inadequate is the understanding of external Strike Rescue options available to the naval commander in limited scenarios.

As to platform deficiencies, the proposed interim fix (6:2 mix for HS squadrons) has not yet been fully authorized. The only viable future fix, V-22 Osprey, has continually been derailed by OSD - despite its potential operational superiority and lower cost incurred when compared to the OSD alternatives. This continues to adversely impact Strike Rescue readiness, aviator morale and departs us from the "right path" to a viable Strike Rescue capability in the Navy.

The Navy has never quite got Strike Rescue right. Doctrine, intelligence support and available platforms are 'broken.' They need immediate high level attention and increased commitment of resources. Otherwise, we will once again waste valuable people and equipment while attempting the Strike Rescue mission.

PREFACE

The Navy has recently replaced the traditional term, Combat Search and Rescue (CSAR) with one that more accurately reflects the mission . . . Strike Rescue (SR).¹ This suggests the placement of Strike Rescue where it finally belongs, as part of the strike planning package vice as an afterthought. In the course of this paper, I will refer to CSAR only when it is used as such in the text of a reference document or interview.

In this paper I have compiled data from three different sources who were, or are now involved operationally with the Strike Rescue mission. These expressive sources provide critical input from the human factor - the implementors and expectant beneficiaries of Strike Rescue. The first was an analysis of U.S. aircraft carrier line periods and losses during Vietnam. Each number in this analysis has someone's name attached to it, this the reader must bear in mind. Carrier Line Periods and Losses were derived from data in Tonkin Gulf Yacht Club's Appendix 1 and did not necessarily agree with the chart found on page 79 of that book. (see Appendix D)

The second source was a number of interviews I held with key individuals that work in various aspects of the Strike Rescue mission. These were to solicit candid opinions on where we stand with Strike Rescue today and where we are headed in the future. Interviews, both in person and over the phone, were conducted from the same bank of questions initially. Questions were then asked to clarify or expound on previous responses. (see Appendix II)

The third source was my questionnaire that was mailed to various fleet squadrons. The questionnaire was developed to get a feel for where Strike Rescue stands in the fleet today.

Questions such as extent of the problem, amount of concern, best platform and familiarity with doctrine were addressed. The questionnaires were mailed to 60 carrier squadrons picked at random from the Standard Navy Distribution List (SNDL). They were divided equally between east and west coast. The initial information was requested from experienced aviators. Most squadrons included junior aviators as well. I distinguished between aviators with 10 or more years of flying as 'experienced (E)' and less than that as 'nuggets (N).' (see Appendix III)

In addition to the reference documents mentioned, I also drew upon my experience as a Navy helicopter pilot involved in the Strike Rescue mission.

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STRIKE RESCUE - ARE WE ON THE RIGHT PATH ?

CHAPTER I

INTRODUCTION

Why do Strike Rescue ? We are in the era of the 'peace dividend' and military cuts are inevitable. 'Secondary' missions that are not of Top Gun glamour will be easy to forego. Let's consider a few points. Strike Rescue is a mission looking for an adequate platform and training package. Since the beginning of World War II, U.S. rescue operations have required commitment of a greater proportion of the involved forces as each conflict progressed. There are several reasons for this:

- * Large force commitments have been required to attempt to compensate for inadequate platforms and doctrine.
- * Our traditional western value on human life commits those forces..
- * Each service is responsible for meeting it's own search and rescue needs in accordance with national and military policy.
- * To improve the morale and aggressiveness of our "warriors."
- * To deny the enemy a source of intelligence and potential political propaganda.
- * A rescued aircrewman returns a valuable asset to the fleet.

Despite this compelling list, the proportionately greater rescue efforts did not bring greater rescue success. Consider a quote from a former POW on morale and the cost vs. benefit argument.

"Those of us not rescued in Viet Nam but fortunate enough to survive the mental and physical rigors and anguish of prisoner internment know the costs of inadequate combat SAR - cost measured in human spirit, morale, lives and dollars. Difficult as it may be to project those costs precisely, it is predictable that the cost in possible future conflict will greatly exceed those of past wars unless actions are taken to accord a high peacetime priority to the Combat SAR mission." ²

The mission of Strike Rescue has been a military necessity in nearly all conflicts since World War II. Furthermore, this rescue of brethren air crew during combat has always been an emotional issue.

"No American combat commander is going to leave his wounded on the field or his people trapped behind enemy lines without doing everything possible to get them back. He is going to keep trying, with whatever resources that he can muster, until he is forced to stop by the enemy. Our basic make-up provides the impetus for our actions and the American people would demand no less." ³

The armed services ability to perform Strike Rescue peaked during the Vietnam War and has steadily declined in the ensuing austere budget years. Does the Navy still have the requirement to conduct Strike Rescue? If so, which echelon is responsible for that mission? Each question is answered by both testimony before congress and current Navy doctrine. ⁴

"Department of Defense components provide search and rescue facilities in support of their own operations. SAR operations in support of a Naval Task Force (is the) responsibility of the task force commander. SAR operations in support of tactical operations in a Battle Group area (is the) responsibility of the tactical commander. And the real case for combat rescue lies in the moral responsibility of the American military commander to care for his people. Not the least of whom are those he has chosen to send in harm's way." ⁵

The ideal carrier launched strike package should be a unity of effort, imbued with interoperability. Successful completion of the strike includes the safe return of all who participated in it. Strike Rescue failures carry heavy political baggage. The success of an air strike can be reversed overnight, both in the international and domestic arena. A brief video of a captured pilot being walked down the enemy's streets, hooded with a rope around his neck, and surrounded by a cheering populace is a powerful political weapon. This prisoner of war is also a valuable source of intelligence to be exploited.

A joint task force or battle group commander should firmly link both doctrine and

capabilities in the Strike Rescue mission. This will help ensure the complete success of the execution of a carrier strike. Execution of this power projection mission is delegated to the carrier air wing. These air wings are comprised of tactical strike aircraft and helicopters. Their "aviators and combat air system specialists represent a national investment of well over a million dollars, and a minimum of 4 years of training (per person)." ⁶ Unfortunately, neither adequate doctrine nor capable platforms are readily available for the mission of Strike Rescue.

This paper will discuss Strike Rescue's: history, current capabilities, future possibilities and provide conclusions and recommendations.

CHAPTER II

HISTORICAL BACKGROUND OF STRIKE RESCUE

This chapter will explore the historical background of Strike Rescue using the following subjects: World War II, Korea, Vietnam, Mayaguez, Grenada, Lebanon, Libya, the Heroes and the Prisoners of War. There is no shortage of lessons that could have been learned.

World War II

The effectiveness of air-sea rescue increased with time during World War II. During the majority of the war, rescues were almost happenstance. They were accomplished by the first unit on the scene with minimum inter-service cooperation. Pilots were rescued by seaplanes, if the seas weren't too rough and if they were within range. Perhaps they were rescued by a submarine, as long as there wasn't an enemy threat in the area to the submarine. Or the pilots were rescued by surface ships, if they could be located. This set the background for the Air Rescue Service of the U.S. Air Force. In this fledgling state, inter-service cooperation began to emerge. Equipment, experience and command and control became the major factors in the learning curve. During the Pacific B-29 missions in 1945, ". . . the total known losses at sea in January were 125 men in 649 sorties, but in July were only 47 in 6,536 sorties."¹ The crescendo of air-sea rescue determination was reached during the final B-29 missions against Japan. Roughly 25 percent of the men involved in this combat mission were on air-sea rescue duty.²

Helicopters were first introduced to the military during World War II. "The Navy

accepted delivery of its first helicopter, the R-4 (HMX-1), on 16 October 1943.³ The Army Air Corps was the first to accomplish overland combat rescue by helicopter. They managed this feat in 1945, with the Sikorsky R-6. The Air Corps scored an impressive 39% success rate in the strike rescue role while operating in the jungles and mountains of China.⁴

Adequate equipment, experience, and solid command and control were hard learned lessons during World War II. These initial lessons were to be forgotten again and again.

Korea

The conflict in Korea offered the helicopter a continued role in rescuing downed aviators in combat. The Navy brought the HO3S-1 helicopter to Korea. It was not an aircraft intended to get into harm's way. Neither arms nor armor was available. The initial models flew with fabric covered, wooden ribbed main rotor blades, wooden tail rotor blades, and non-self-sealing fuel cells. Metal main and tail rotor blades were later added, along with self-sealing fuel cells. "The HO3S-1 was not configured for night or instrument flight, so most missions were performed in sight of the enemy; yet there was a high degree of success and a relatively low helicopter casualty rate."⁵ The practice of operating helicopters off of LST's for rescue duty proved fruitful. Twenty-two aviators were rescued by LST-799's helicopters near the Bay of Wonson, between March and November of 1952.⁶ Initially, the North Koreans and Chinese would wave at helicopters flying over the city of Wonson. "By mid-summer, however, the honeymoon was over, and the Reds were no longer hospitable to sight-seeing helicopters. I was told that this unfriendliness on their part was attributable to the practice of some helicopter pilots' dropping hand grenades in the general vicinity of the North Koreans while they were enjoying their toilet."⁷ One of LST-799's more celebrated rescues was Navy Lt. McCutcheon's recovery

of LCOL Robert E. Galer (USMC), a Congressional Medal of Honor recipient in World War II.⁸

Two more typical, and unsuccessful, missions were as follows. A carrier strike pilot from Task Force 77 was shot down behind enemy lines and picked up by an Army helicopter. They were then forced down by fuel exhaustion.⁹ Next, in an attempt to rescue a Navy Corsair pilot behind enemy lines, LTJG Charles C. Jones was boxed into a corner. He realized his helicopter wasn't equipped for night flying and the majority of his return trip would be at night. "I immediately called the ship and told them that my plane was restricted from night flying and that I'd had very little night-flying experience in a helicopter. There was a short pause, and finally the ship told me that the decision to continue the flight was entirely up to me."¹⁰ Despite a valiant attempt, the mission was not a success. The Corsair pilot had waved him off because of the intense ground fire.

Naval helicopters were the first helicopters to fire weapons in combat.¹¹ Also, it was a Navy crew that was the first to employ evasive maneuvering (EVM).¹²

The U.S. Marine Corps enjoyed the benefits of helicopters as well. They utilized them for everything from reconnaissance to the rescue of Marine flyers downed in enemy territory. One of VMO-6's HO3S-1 helicopters was carrying Brigadier General Edward A. Craig on an observation hop. The helicopter was called in to rescue a Corsair pilot that had ditched at sea. "General Craig himself hoisted the pilot aboard and was rewarded with a backslap and a "Thanks. Mac" from the shaken airmen, unaware of his benefactors' identity."¹³

The Air Forces Air Rescue Service again grew during the Korean War years, although inter-service squabbling hindered initial efforts. In August 1950, the Third Air Rescue Squadron

placed a detachment in Korea. Five days later, the first rescue of a downed pilot from behind enemy lines was accomplished by an H-5 helicopter. The tactic of Rescue Combat Air Patrol (RESCAP) was also born then. Fully armed, piston-engine fighters orbited near the helicopter rescue scene and provided suppression fire.¹⁴ The elements played a large part in the success or failure of at-sea rescues. With the arrival of the H-19 helicopter and "...their hydraulic hoist and large capacity, a downed, and possibly freezing pilot did not have to ride outside the chopper all the way back to the nearest base as they did on the H-5A's."¹⁵ The Air Force lost 1,690 airmen behind enemy lines during the Korean War. Air Rescue crews saved 170 of them. They also rescued 84 airmen from other U.N. services. "Counting both aircrewmembers and other personnel, the Air Rescue Service Crews rescued 996 men from enemy territory."¹⁶

The importance of Strike Rescue was again brought to the forefront with helicopters dominating the rescue experience in Korea.¹⁷ However, the helicopter would pay the price in Korea with the first combat loss in rotary wing history. Lessons learned from World War II in equipment, experience and command and control were forgotten. The threat had increased and the Strike Rescue success rate slipped to 18 %.¹⁸

Vietnam

The conflict in South East Asia brought out the mission of Strike Rescue as a true war fighting capability. Unfortunately, the concepts learned in previous conflicts were once again forgotten. The World War II lessons learned in equipment, experience and command and control had to be relearned in Korea. The Korean War lessons in RESCAP, pre-positioning SAR forces close to the action, ARS advances in command and control were destined to be relearned in Vietnam. The Navy was back to square one in Vietnam. Poor SAR performance was an

institutional failure on the part of the Navy. "When Yankee Team operations began in 1964, the navy possessed no organization dedicated to combat SAR. . . The air force, although possessing a SAR force for global operations, did not maintain a wartime search-and-rescue capability beyond 1958.¹⁹

The "best and brightest" back in Washington did little to solve the problem either.

"Cost-analysis devotees during the McNamara years occasionally pointed out the financial discrepancy in risking even low-priced assets such as H-2's and A-1's in rescue attempts. After all, they calculated, there were always more aviators than airplanes, so why expose additional aircraft and crews to increased risk just to fetch back one flier who got himself bagged."²⁰

"The SAR mission was assigned to the U.S. Air Force and remained primarily Air Force responsibility through the war, but the northernmost regions of North Vietnam and the waters of the Tonkin Gulf initially lay beyond the reach of land-based helicopters-even those flying from forward positions in Laos. Of necessity, therefore, a SAR responsibility evolved upon the U.S. Navy."²¹ The initial response was, ". . . all helicopters and all helicopter crews can rescue. . . ." ²² The result was a dismal record for the Navy CSAR efforts over North Vietnam when compared with Air Force CSAR efforts. ²³ "Whereas the Air Force mustered large, dedicated SAR task forces to create an environment in which helicopters could work, Navy Search and Rescue doctrine, particularly early in the war, stressed speed and surprise as the keys to recovering downed airmen."²⁴ Navy efforts over the benign environment of "blue water" were demonstrably better. They scored an impressive 95% success rate. ²⁵ During the first strikes, the Navy did not have an organized CSAR plan. The carrier H-3's were initially supposed to pick people up only at sea. "That situation did not last long, and ASW helicopter crews without combat SAR training were soon taking unarmed and unarmored aircraft into North Vietnam."²⁶

An example of the successes and failures of HS squadrons in Vietnam follows. An Air Force F-4 crew and the HU-16 amphibian plane crew that had tried to rescue them were in the waters off Hon Me Island in North Vietnam. The amphibian had been blown up by mortar fire. Two H-3's from HS-4, diverted from a logistics run, ended up rescuing 6 of the 7 survivors. LCDR Bill Terry piloted one of those H-3's. "Terry's SH-3 began losing fuel, and watching in his rear view mirror mortar explosions "walking" closer to the helicopter, he reluctantly withdrew, leaving wounded Air Force Captain Donald Price alone in the water."²⁷ An H-2 later picked up Captain Price. HS-2 did not have as much luck as her sister squadron, HS-4. During her 1967 cruise aboard USS Hornet, the squadron lost 5 helicopters and suffered 13 fatalities during rescue attempts.²⁸

One was never quite sure of the threat during a rescue in North Vietnam. In 1966, an A-1 pilot was shot down and his emergency radio beeper was heard. Voice communication is required as normal procedure prior to a rescue attempt, but most helicopter pilots would attempt the rescue without it. As the H-3 closed the rescue sight, the NVA opened up with what became known as a flak trap. The Sea King barely made it off shore before going down. "After rescue (of the helicopter crew), one of the crewmen reported that just before the NVA opened fire, an enemy soldier had held up the severed head of the Skyraider pilot."²⁹ As the threat increased, the chance of a successful rescue was diminished. If there was a surface-to-air missile (SAM) threat, rescues were not attempted.³⁰

The Navy finally got on track in Vietnam by establishing Helicopter Combat Support Squadron Seven (HC-7). HC-7's first CSAR, on 3 October 1967, was a dandy. Lt. Tim Melecosky, rescued a downed Air Force pilot inside Haiphong harbor. During the egress, small

arms fire forced his UH-2A down. They were all then recovered by an H-3 from HS-2. From this experience, HC-7 set up a strict CSAR doctrine. "You would wait for RESCAP. The biggest problem was to get the helo crew to wait. If they had their way, they'd have gone in yesterday."³¹ The A-1 Skyraider, or Spad, was considered well suited for RESCAP duty. It could fly slowly enough to stay with the rescue helicopters and carry enough ordnance to suppress ground fire. Unfortunately, it departed the fleet in 1968.³² The HH-3A soon became the primary rescue helicopter of HC-7. It possessed upgraded armor, self-sealing fuel tanks, and M-60 machine guns. One celebrated, but confusing, rescue occurred on May 10, 1972. Showtime 100 had been hit by a SAM 5 miles off the coast and 30 miles south of Haiphong. Navy aces LT Randy Cunningham and LT Bill Driscoll found themselves in the water. They were extracted by Big Mother 65 and 62 from HC-7.³³ In later accounts of the rescue, Cunningham and Driscoll believed Marine H-46's were their benefactors.³⁴ During 1972, one HC-7 detachment made 48 rescues. Thirty-five of these were opposed and most were at night or in bad weather. All of this was accomplished without loss of one aircraft or air crew.³⁵ This dedicated Strike Rescue squadron posted an enviable record of over 150 rescues without losing a single crew to hostile action. ³⁶ This success led Vice Admiral Cagle to call Strike Rescue, "One of the truly great success stories of TF 77 operations in the Gulf of Tonkin. . ." ³⁷ However, the end result of U.S. Navy carriers operating in the Tonkin Gulf, see Appendix I, wasn't a success story for Strike Rescue. Of the 701 pilots shot down, 3 out of every 5 were either killed in action, became a prisoner of war or are missing in action. The remaining 2 of those 5 pilots were rescued.

In January 1966, the ARS became the Aerospace Rescue and Recovery Service (ARRS).

It was tasked to be the principal rescue agency in South-East Asia.³⁸ Air Force CSAR success can be attributed to several reasons. Their strike targets were not normally the densely populated and heavily defended areas of North Vietnam. Also, Air Force pilots were briefed to head for remote, mountainous areas to bailout. Significantly, their helicopters were armored and possessed superior firepower when compared to Navy assets. These HH-3E's and HH-53's were known as "Jolly Green Giants" and "Super Jolly Green Giants". They operated under the excellent command and control net of ARRS.³⁹ Their pilots were still not in the safest of professions. The North Vietnamese would normally wait until the helo was in a hover with the crewman on the way down the cable and then fire. They concentrated fire on the front of the helo, trying to kill the pilots.⁴⁰

Another valuable asset for the Air Force was the A-1 Skyraider - call sign 'Sandy'. It had a 7000 pound bomb load, four 20mm cannons, armor plating, long loiter time and a speed to match the helicopters. Unlike the Navy, the Air Force wisely held onto their A-1's.⁴¹ One particularly exciting rescue was made possible by the ingenuity and bravery of a Sandy pilot. After running out of ammunition, he rolled in on advancing NVA troops. He dropped down to a few feet off the road to halt the advance of the troops and allow the rescue helicopter time to get in for the pick up. "I wanted it to look like a fire-breathing metal monster possessed of every oriental demon was about to annihilate every millimeter of flesh and blood in its way."⁴² The pilot was rescued and the Sandy pilot received the Distinguished Flying Cross for heroism.

Not all rescue missions were flown by regular forces. A group known as 'The Ravens' operated out of Laos. It was a highly classified operation code-named the Steve Canyon Program. They were military men, but flew into battle in levi cut-offs, t-shirts, cowboy hats and

dark glasses. They also made numerous rescues along the Ho Chi Minh trail.⁴³

Rescue attempts usually took precedence over all other missions. One rescue in December 1969, took 336 sorties flown over 3 days to effect.⁴⁴ In March 1971, 5 HH-53's were modified to carry a night recovery system. This included a cockpit monitor which allowed the pilots to see the terrain in darkness and infrared flasher beacons (if the downed pilot was lucky enough to have one). The crewmen in the back were outfitted with night vision goggles (NVG's). A few rescues were made with this rudimentary system.⁴⁵ Over the course of the conflict, 3,883 lives were saved by the ARRS. The USAF lost 71 SAR personnel killed in action, along with 45 helicopters and fixed-wing aircraft.⁴⁶ To the crews of the Jolly Greens and Sandys, no effort was too great to fulfill the motto - "That others may live." How does the Air Force look at the problem beyond Vietnam?

"A future enemy could possess technologically advanced air defenses including modern jet fighters able to detect and destroy aircraft flying at low altitude, the SA-3, SA-6, SA-11, and a host of smaller, hand-held missiles like the SA-7, and the deadly ZSU 23-4 radar-directed, fully-mobile antiaircraft gun. These weapons would prove vastly more formidable than those in the 1950s vintage air defense system the Air Force faced in North Vietnam." ⁴⁷

Shortly after the Vietnam conflict, the Navy began to forget all of the hard earned lessons of the Vietnam conflict. HC-7 was disestablished and the Strike Rescue Mission was turned over to HC-9, a reserve squadron. The active duty component was lost, but at least the corporate memory was retained, as many of the pilots initially manning HC-9 were veterans of HC-7.

CDR Clyde Lassen, a Medal of Honor winner for CSAR over North Vietnam, made a telling statement and haunting prophecy. He said, "The Navy's experience with Combat SAR in North Vietnam was a classic example of 'how not to do it,' we were totally unprepared, untrained, and with few assets. As a consequence, both the TACAIR and the helicopter

community paid dearly.⁴⁸

Mayaguez

At times, Strike Rescue assets will be utilized for other rescue operations. In May 1975, a Cambodian communist Khmer gunboat boarded and seized the American container ship SS Mayaguez and its crew in international waters near the Cambodian possessed Poulo Wai Islands in the Gulf of Thailand.

The 40th ARRS (Aeronautical Rescue and Recovery Service) ran the CSAR attempt from Nakhon Phanom, Laos on short notice and with inadequate intelligence. "Landing zones on the island's narrow, rocky beaches proved too small for an H-53 except at low tide. There was disagreement over anticipated enemy activity."⁴⁹ Estimates ranged from 30 irregulars to the normal population of the Poulo Wai Islands, 14 fishermen and their families. Actual opposition included several Khmer gunboats and at least a company of Khmer regulars with heavy firepower in well-dug bunkers.

What was to be the last engagement of the Vietnam conflict resulted in 15 U.S. KIA's, 3 MIA's and 30 wounded. The operation began with 14 H-53 helicopters, of which 3 were destroyed and 10 were operationally damaged. An additional HH-53 threw a main rotor blade enroute from Nakhon Phanom. This destroyed helicopter, its 4 crewmen and 19 security policemen killed are in addition to those numbers listed above. The final name on Washington D.C.'s Vietnam Memorial is that of a helicopter crewman who was killed in the Mayaguez operation. He was Lieutenant Richard Vandegier, copilot of Knife 31, 21st Special Operations Squadron.⁵⁰

Poor intelligence contributed to the failure of this combat rescue attempt. The Cambodian

government had released the crew of the Mayaguez, who were actually being held on the mainland, during the middle of the fire fight taking place on the islands.

Grenada

During the military action "Urgent Fury" in Grenada in October 1983, "Planners did not seriously consider CSAR as a mission requirement until it came up in combat." ⁵¹ The threat had increased with the emplacement of ZU-23 anti-aircraft guns on the island. Though deadly at times to the helicopter, these were essentially primitive non-radar controlled guns. Several C-130 aircraft were hit by them during the initial assault. Strikes by AC-130H Specter gunships and TACAIR were necessary to silence these guns.⁵² The one rescue mission attempted, to recover a trapped Ranger unit, was pulled off successfully. This was without benefit of Strike Rescue doctrine and was done by a carrier Helicopter Anti-Submarine Squadron (HS) helicopter. Was it prior planning and a survivable platform? No, it was because the helicopter aircraft commander (HAC) just happened to be the only one in the squadron with Vietnam Strike Rescue experience! ⁵³ This aided him in planning the ingress/egress routes to avoid known threats, establishing a communications network and ensuring RESCORT aircraft were available.

Lebanon

In the Lebanon crisis in 1984, an attempt to preposition HC-9 assets by Air Force C-5's was to no avail. The underpowered HC-9 HH-3A's could not provide the required endurance due to hot, humid weather. Alternate plans involved using an experienced HC-9 pilot with a carrier HS copilot. They would operate a 30 year old SH-3H Sea King aircraft stripped of its ASW suite. ⁵⁴ When two jets were lost over the Bekaa valley, the call went to a Marine CH-

53 pilot to rescue them. The helicopter crew was launched without a location or confirmation of survivors into one of the heaviest concentrations of SAM sites in the world. The squadron C.O., the aircraft commander, challenged the order and the mission was called off.⁵⁵

Libya

In the Gulf of Sidra operations off Libya in 1986, HC-9 assets were employed aboard the CV again. Once again, only the carrier HS helicopters were forward deployed for airborne Strike Rescue.⁵⁶ A positive development was the plan for alternate rescue platforms. Surface ships, submarines and SOF forces were all involved in the planning and were in position for contingencies.⁵⁷

The Heroes

Aircrews are more than willing to risk their lives in battle. RADM Taylor, OP-50, made this point very well. "A significant contribution to this nations greatest resource is 'fighting spirit.' Warriors aren't afraid to go in. It's not fair however to go in without adequate CSAR. It is a violation of the cardinal rule in employment of troops if you do. One way trips are not the way."⁵⁸

During the Korean War, two Medals of Honor were awarded to Strike Rescue aircrew personnel.⁵⁹ One medal went to LTJG Thomas J. Hujner (USN) of VF-32. He made a deliberate wheels-up landing in the snow to rescue a wing man who was downed by enemy AA and trapped in his burning cockpit. He packed the cockpit with snow and radioed for a rescue helicopter. This was all accomplished in life threatening elements and in the advancing presence of the enemy. The second medal went to LTJG John K. Koelsch (USN) of HU-1. He was shot down while attempting a rescue. LTJG Koelsch then extricated his crewman and the aviator and

evaded the enemy for 9 days. He continually refused to aid his captors and died a prisoner of war from starvation and dysentery.

During the Vietnam Conflict, ten medals of honor were given for deeds in connection with Strike Rescue.⁶⁰ The stories of seven of those men follow. MAJ Patrick H. Brady (USA) of the 54th Medical Detachment piloted a UH-1H into heavy enemy fire 4 times, with 3 different aircraft. One rescue was in the middle of an enemy mine field. CAPT James P. Fleming (USAF) of the 20th SOS piloted a UH-1F in the extraction of a 6-man long range reconnaissance patrol. He exposed his helicopter to intense enemy fire on two occasions, taking fire through the windscreen, to effect the rescue. COL William A. Jones (USAF) of the 602nd SOS distinguished himself as the pilot of an A-1H Skyraider. During the rescue of a downed pilot, he repeatedly attacked an enemy gun position with a badly damaged plane. His ejection motor was hit and his radios failed. Rather than ditch his plane he elected to nurse it back to base to give details of the rescue position. COL Jones died on the operating table after passing on critical information. LT Clyde E. Lassen (USN) of HC-7 made a heroic save in North Vietnam. During a night hover between two trees, the last flare extinguished and his helicopter impacted a tree. He continued the rescue with his landing light, fully exposing his aircraft to intense enemy fire and made the rescue. LT Lassen evaded hostile antiaircraft fire and landed with 5 minutes of fuel aboard a DLG. MAJ Leo K. Thorsness (USAF) of the 357th TFS piloted an F-105 during the rescue of his wing man. He relayed the position to CSAR forces and engaged 5 MIG-17's until they arrived. He then elected to recover at a forward base to allow another critically low fuel aircraft to refuel at the one available tanker. CAPT Gerald O. Young (USAF) of the 37th ARS was attempting the night rescue of an Army reconnaissance team. Previous

attempts had resulted in the loss of 2 helicopters and he pressed the rescue despite intense enemy fire. His aircraft was shot down by point blank automatic fire and he escaped through a window in the burning wreckage, taking one survivor with him. Rather than expose another rescue unit to the enemy trap, he declined rescue. Despite severe burns, he evaded for 17 hours and was later rescued. S/SGT Fred W. Zabitosky (USA) of the 5th SFG (Airborne) was being extracted by helicopter along with his reconnaissance team. Enemy fire downed his helicopter and he pulled the pilot from the wreckage. Intense heat prevented his repeated attempts to recover the rest of his patrol members. Despite serious burns and crushed ribs, S/Sgt Zabitosky carried and dragged the unconscious pilot through a curtain of enemy fire to within 10 feet of a hovering rescue helicopter. Three other Medals of Honor were awarded to personnel not recovered by CSAR forces and who then became prisoners of war (POW's). Two of those, CAPT Lance P. Sijan (USAF) and COL Donald G. Cook (USMC), died in captivity. The third, CAPT James B. Stockdale, was eventually released by his captors.

During Vietnam, 18 awards of the Navy Cross were made to personnel involved in Strike Rescue. Twelve of those medals were awarded to helicopter aircrewmembers (3 were HS and 4 went to HC-7), five were awarded to TACAIR (2 were VA and 3 went to CAG's) and the final one was awarded to a POW.⁶¹

The Prisoners of War

When a pilot is shot down in combat, the result is a statistic. It will be in one of four categories: Rescued, Killed in Action (KIA), POW or Missing in Action (MIA). (see Appendix I) The price paid for inadequate Strike Rescue, both in combat and at home⁶², was steep. The brutality of both the North Koreans and the North Vietnamese is well documented.

One famous POW in the Korean War was Chief Aviation Pilot Duane W. Thorin. In one escapade he rescued 118 Thai officers and men that were under enemy fire. Thorin's luck was to run out when his helicopter later crashed and he spent 18 months as a POW. Readers of James A. Michener's "The Bridges at Toko-ri" and viewers of that movie would see a resemblance to Thorin in the character played by Mickey Rooney. The major difference was that Rooney wore a top hat and Thorin wore a red baseball cap.⁶³

In Vietnam, a pilot had more to worry about than just enemy SAM's and flak. More than one POW was bagged by his own weapon system. CDR Jeremiah A. Denton (later to become a RADM and U.S. Senator) was knocked out of the sky over North Vietnam by a premature fuse on one of his bombs. He was shot down and captured on 18 July 1965.⁶⁴ CDR Richard A. Stratton fell out of the sky when his A-4's engine ingested his malfunctioning 2.75" rocket debris. He was captured on 5 January 1967.⁶⁵

Our first POW, LT Everett Alvarez, Jr., was shot down on 4 August 1964. His capture was automatic, a result of an institutional failure. The strike was at the naval base in Hongay, about 100 miles northeast of Haiphong. The nearest U.S. naval ship (and SAR asset) was the CV, 400 miles away. Alvarez was in the water 30-45 minutes before capture.⁶⁶

Another way to get bagged was by the timing of your mission. One former POW had this to say about his mission. "On the mission I was shot down, the target was 10 miles from the coast. During the brief, I asked 'What SAR forces will we have if hit between the target and the coast?' The answer was, 'None, no SAR asset can safely get in.' Our target was on the outskirts of Haiphong, a power plant. I was hit right at the target in my A-4, within 1/2 mile, in a highly populated area. The target was worth hitting, but not on that day. It was a

retaliation raid for the Viet Cong blowing up the Victory Hotel in Saigon. The raid was scheduled for a couple days and canceled due to weather. The Joint Chiefs of Staff finally said hit it no matter what. So, we made the strike under the weather. I was bagged by barrage firing from small arms. One other A-4 was hit on the raid, he was KIA. One R-5 Vigilante was shot down on the post-raid BDA (Battle Damage Assessment), the pilot was KIA and the back seater became a POW.⁶⁷

A different way to end up as a POW was just poor luck. CDR Al Stafford was assigned to an A-4 squadron aboard the USS Oriskany during her worst cruise. In the first week on station, the Oriskany's lost 10 of it's 76 aircraft. Stafford was the "spare" (a back-up aircraft) for a strike near Haiphong. One of the "go" (primary) aircraft went down and he launched. A North Vietnamese SAM knocked him out of the sky on 31 August 1967. In a call to his squadron commander with his survival radio, he said "Sorry boss, I'll see you after the war."⁶⁸ CDR Stafford spent the next 7 years as a POW.

The fates of the POW's also led to the Son Tay Raid on 21 November 1970. The planning for the raid was precise and the intelligence seemed good. "The raiders flew some 400 miles from bases in Thailand in HH-53 "Jolly Green Giant" helicopters, with A-1E Skyraiders and specially equipped C-130 Es in support."⁶⁹ "TF 77 aircraft flew diversionary sorties along the coast to confuse North Vietnamese radar defenses while Air Force helicopters were attempting to rescue US prisoners of war from the Song (sic) Tay camp, twenty miles west of Hanoi."⁷⁰ The volunteers from the Special Forces raged through the buildings, shooting down North Vietnamese and raising general hell. After 27 minutes on the ground, the assault force left. Only two minor injuries were suffered by the U.S. forces.⁷¹ The raid proved to be a

double edged sword for the POW's. "Those guys (special forces) did a great job! The raid really boosted morale. We were aware that we were not forgotten. It lowered morale a bit also. If they were ready for such a desperate attempt then the end of the war was not in the near future."⁷²

Accurate intelligence reports and estimates play a key role in a successful Strike Rescue operation. The commander also needs the proper priority for national assets to obtain the needed intelligence inputs. For example, they form the basis for enemy opposition (which will guide the commanders decision on forces and armament required). The intelligence inputs should also locate known anti-air systems (for ingress and egress routes by the Strike Rescue forces). The only fault with this intelligence estimate was the reliance on IMINT (Image Intelligence) to confirm the camp was still being used to house POW's. Had good HUMINT (Human Intelligence) been available, it would have been known before the raid that the North Vietnamese had moved the POW's. Son Tay had been converted to an army camp and the enemy's continued truck and personnel movements keyed the IMINT to the wrong conclusion. The remainder of the estimate was very good. Otherwise, such a force could not have arrived undetected so close to Hanoi and withdrawn with so few casualties.

In the analysis of the historical background of Strike Rescue it is obvious that our success rate (number of aviators rescued by helicopter compared to the number of downed aviators, all behind enemy lines) has dwindled with each conflict. In World War II, the Army Air Corps scored an impressive 39 % in the jungles of China. The success rate for all services in Korea dropped to 18 %. In North Vietnam, the Navy's success rate overland was a dismal 8.4 %. (see Figure 1). The many reasons for these contrasting success rates include:

- * Lessons learned in Strike Rescue during the previous conflict tend to be forgotten.
- * The threat had increased from small arms fire to surface-to-air missiles, radar guided anti-aircraft guns, armed helicopters and advanced adversary jet aircraft.
- * Lack of inter-service coordination and intelligence utilization.
- * Lack of commitment to procure the most capable possible Strike Rescue platform and provide adequate training and doctrine in order to counter the increasing threat.

History also teaches us that there were many heroes that performed the Strike Rescue mission on guts alone. There were also many aviators that due to failures in Strike Rescue lost their lives or paid a heavy price as prisoners of war.

Current capabilities in the reserve and active duty Navy, external options and existing doctrine will be examined in the following chapter.

CHAPTER III

CURRENT CAPABILITIES

The Strike Rescue mission requirement did not dissolve with the end of the South East Asian conflict. Our experiences in subsequent actions point to the continued requirement for Strike Rescue. Our history in Strike Rescue also points to the tendency to forget the lessons, usually written in blood, we learned. Adequate equipment, experience, doctrine, planning, solid command and control, RESCAP/RESCORT, and forward positioned SAR assets are all such lessons. The threat increases with each passing year, either Soviet or Third World. Some of these threats include such systems as the SA-6 Gainful (SAM), ZSU 23-4 (radar guided AAA), SA-7 Grail (SAM), the Hokum/Havoc/Hind (armed helicopters), and various fixed-wing adversaries. In order to successfully go in harm's way and survive, the Strike Rescue asset must be crashworthy and survivable. The Strike Rescue crew must also be adequately trained utilizing competent doctrine.

As seen from current fleet perceptions (see Figure 2), we would have a significant problem in accomplishing the Strike Rescue mission today. The consensus feeling was that our current capability is clearly inadequate. Also, from the same survey, the amount of concern shown for the Strike Rescue mission is perceived as lacking. The armed/armored helicopter is seen as 'above average' for a platform to perform the mission. However, 3 out of 4 aviators who gave the V-22 lower marks accompanied their response with written notes. These notes showed a woeful lack of education at the fleet level on the capabilities of the Osprey. The

strongest response was for the Strike Rescue asset to be within the CV battlegroup.

I will now discuss our current capabilities located in the reserves, the fleet, external options and present doctrine.

Reserves

Although not an organic asset, the JTF/BG commander can request assistance from the reserves for the Strike Rescue mission. Past requests have shown the credible response of our "weekend warriors." Until recently HC-9 provided their strike rescue capability in ancient HH-3A armored helicopters. The corporate knowledge in Strike Rescue transferred to the HCS squadrons when HC-9 was disestablished in June 1990. HCS-5 and HCS-4 have now been established and fly the HH-60H. Our reserves will now be able to hone their warfighting skills in a relatively new aircraft. The HCS squadrons have picked up that primary duty as well.

Some technological updates the HH-60H will bring to bear are:

- * an infra-red jammer (AN/ALQ-144)
- * a hover and in flight infrared suppressor system
- * a night vision goggle compatible lighting
- * an improved radar threat warning receivers (AN/APR-39)
- * a missile plume detector
- * an automatic chaff and flare dispenser (AN/ALE-39)
- * a GPS (Global Positioning Satellite) navigation equipment capability
- * the ARS-6 homing receiver.

The ARS-6, coupled with the PRC-112 survival radio, comprises the PLS (Personal Locating System). This will allow localization and authentication of survivors out to 100 miles.¹ The PLS system will minimize search time and increase survivability for the rescue forces and survivor(s).² Armament is currently limited to 2 M-60 7.62 mm machine guns. Future possible upgrades include a 20 mm GPU-2/S gun pod, .50 cal GAU-10/A gun and 2.75" FFAR LAU-68 launcher per aircraft.³ The HH-60's capabilities will also allow it a 250 nm radius of

action and the ability to recover 4 survivors, do a mid-mission hover at 3000 feet and 91.5 degrees F and cruise at 147 knots in the Strike Rescue role. This adequately meets the operational requirements for the Strike Rescue helicopter.⁴

The Commander of the Naval Air Reserve Force (COMNAVAIRESFOR) made a recent comment on the direction of Strike Rescue in the reserves. "As I look to the future I see a strike rescue force comprised of well trained, highly motivated personnel employing state-of-the-art night vision and defensive electronic counter-measure systems, flying in a uniquely capable and survivable aircraft. Reserve HCS squadrons will continue to support strike training at Fallon and elsewhere while at the same time being even more accessible to the fleet than its predecessors were."⁵

Fleet

The JTF/BG commander also has various Strike Rescue helicopter candidates under his operational control. LAMPS (Light Airborne Multi-Purpose Systems) capable ships usually carry either SH-2F Sea Sprite or SH-60B Seahawk helicopters. Replenishment ships can carry up to two CH-46's. The carrier currently has six SH-3H Sea King ASW platforms to provide the rescue assets. A variety of tactical air (TACAIR) jets will perform the RESCAP and RESCORT (Rescue Escort) missions. As members of the Air Wing, all fixed wing and helicopter carrier assets must complete one Strike Rescue mission at NAS Fallon's Naval Strike Warfare Command (NSWC) before deployment. The rest of the helicopter assets in the JTF/BG do not normally participate in this training. This leaves the HS fleet squadron as the most capably trained Strike Rescue units readily available.

There are two excellent Strike Rescue training sources available to HS squadrons. One

is in Marine Aviation Weapons and Tactics Squadron One (MAWTS-1) and the other is in the Reserves (HCS-4 and HCS-5).

MAWTS-1 operates out of the Marine Corps Air Station in Yuma, AZ. It has a superb program. They cover map interpretation and terrain analysis, low level and nap-of-the-earth (NOE) navigation, terrain flight techniques, threat analysis and counter measures, night vision goggles, weapons employment and mission planning. This is accomplished during a seven week course. ⁶ HS work-up schedules and the scarcity of MAWTS-1 quotas limit use of this instruction, however.

The Navy has trained four, two per coast, FRS (Fleet Replacement Squadron) pilots as Strike Rescue Instructors (SRI's). The initial SRI's were trained by HC-9 prior to it's disestablishment. These SRI's then train two selected crews from fleet HS squadrons to Level 3N (Low threat; small arms, light AAA, dispersed SA-7's in a night environment) in Strike Rescue and Special Warfare missions. The Strike Rescue crews return to their command and form the nucleus for the squadron's Strike Rescue training at NAS Fallon. Although this training concept is steered in the right direction, the JTF/BG commander is still confronted with the "any helicopter will do" response.

What does the HS squadron offer in a Strike Rescue role? The SH-3H has low IR (infrared) paint, a cargo door mounted M-60 (7.62mm) machine gun, flak jackets and little else. It is not survivable in a high threat environment. Numerous HS squadron commanding officers, in response to the CAG (Carrier Air Group) commander's question on how ready his squadron is for Strike Rescue, make a typical response. "CAG, I can give you six missions, one for each of my six helicopters." That may be a somewhat pessimistic response, but it is not far off the

mark.

HS squadrons are currently transitioning to the SH-60F (a variant of the Seahawk), a lengthy process. Besides a relatively new airframe, the SH-60F will bring to the HS Strike Rescue mission other benefits. These are a higher speed (by 20+ knots), crash-resistant fuel tanks, and self-sealing break-away fuel fittings.⁷ The SH-60F will also sport the PLS system, enabling rapid localization of air crews both over water and land. The SH-60F also compares favorably with the Army's UH-60 Black Hawk in combat situations. "Each is optimized in design for its respective mission and environment. Basic airframe characteristics provide state-of-the-art combat survivability for both."⁸ The following is an example of the crashworthiness/survivability of the UH-60. Black Hawks were used in operation "Just Cause", our military action in Panama. "A total of 25 UH-60s were damaged during the operation in Panama. All but 1, which suffered a hard landing, were back in service within a day."⁹ The H-60 helicopter series brings a high rate of reliability as well. For example, the Seahawks are flying an average of over 100 hours per month per airframe. That is 3 times Sikorsky's guaranteed availability and almost 2 times the Navy target.¹⁰

A need has been identified for organic helicopter assets capable of meeting the Strike Rescue Level 3N level.¹¹ Current plans to meet this requirement provide for a 6:2 mix, 6 SH-60F's and 2 HH-60H's per squadron.¹² These two crashworthy and ballistically tolerant helicopters will provide a truly enhanced Strike Rescue warfighting capability. Ballistically tolerant is the term used for aircraft made from composite materials. It has the ability to take hits from up to 23 mm rounds and not fail structurally. In addition, the HH-60H has titanium main rotor blade spars and a main rotor hub. Though this is not true armor, it still offers

significant protection.

External Options

There are six external alternatives to the Navy that possess available forces which could perform Strike Rescue. These are the Allies, the Air Force, the Army, the Marines, the Coast Guard and the Special Operations Forces (SOF). I will discuss a macro view of these forces and what they have to offer.

Recent history points to a reluctance for allies to assist in our military efforts for political reasons. For example, before the Libya raid, President Reagan had to put heavy pressure on Great Britain to gain permission for U.S. Air Force assets to depart from their bases in England. France even refused overflight permission for the strike. Also, the chance of surprise dwindles with the involvement of allies. Marshaling these additional forces covertly and their ability to keep a secret is questionable. However, recent events in the Persian Gulf, with respect to the joint United Nations effort, are promising in terms of cooperation between allied units.

The second alternative holds a bit more hope. The ARRS is a well trained and orchestrated land based system. Time permitting, this asset could be exercised. In addition to the HH-53's of the Vietnam era, the Air Force could provide the newer MH-60G Pave Hawk. The first unit to receive these was the 55th Special Operations Squadron (SOS) based at Eglin AFB in Florida. The MH-60G features an air-to-air refueling probe and auxiliary internal fuel tanks. This allows for 4.5 hours of fuel, making it's refueling legs compatible with the MH-53J Pave Low III (the current SOS aircraft). Other improvements include an upgraded doppler, inertial navigation system (INS), color radar, KG-10 map display and provisions for GPS. These combine into the Integrated Tactical Navigation System, something Navy Strike Rescue

helicopters dearly need. The Pave Hawk will also possess the PLS system and .50 cal guns. Most of these aircraft will go to the Air Force Reserve and Air National Guard Units though, where most of the CSAR mission has been transferred.¹³ Some drawbacks exist with this option. It would require intensive shipboard qualification programs for their pilots and deck loading nightmares for the aircraft handler on the carrier. Forward secured land air bases for organic C-130 support would also be necessary. These items of concern are not desirable to a forward deployed BG. In a limited number of situations, the Air Force could be called upon.

The Army alternative should be considered also. I have already mentioned the crashworthiness and survivability of the Black Hawk, which is a plus. This is a relatively old airframe with military introduction in 1978 and first flight in 1974. It is also the grandfather of the H-60 lineage. There are a lot of them, as of the fall of 1989, over 1100 had been delivered to the Army. The UH-60 can carry rockets, anti-tank mines or 16 Hellfire anti-tank missiles.¹⁴ The Army is also a good source of other armed helicopters, such as the Apache and their Special Forces MH-60K¹⁵ (equipped with systems similar to the Air Force MH-60G). However, the same training and deck space limitations are inherent for the JTF Commander. Under unique situations, the Army option is available to most contingency operations.

The Marines have a lot to offer, being a part of the Navy team. However, most Battle Groups do not operate with the Amphibious Task Force (ATF) on a close string. In a combined amphibious operation, the Marine commander most likely will be reluctant to release scarce air resources while his forces were fighting ashore. The Marine pilot is trained above the "any helicopter/crew will do" concept, but not to a high degree of Strike Rescue proficiency. If available, this asset should be considered.

The Coast Guard has limited armed rescue assets, but these fall into the "any helicopter will do" syndrome. However, Air Station New Orleans is involved with regular planning and execution of Strike Rescue missions in the joint environment.¹⁶ Coast Guard aircraft operate primarily along CONUS shores and would not normally be available anyway.

SOF forces offer the JTF/BG commander an array of technological advances and highly trained units that can deploy on short notice. They also offer him the only option for threat level six, (Overland Strike Rescue With Heavy-Density Air Defense Systems).¹⁷ The most likely SOF asset to be tapped will be the Navy SEALs. There are some misgivings about the Strike Rescue mission with the Commander, U.S. Special Operations Command. "Significant resource shortfalls, particularly in air assets, currently exist, and any use of SOF for CSAR requirements would be at the expense of special operations requirements."¹⁸

Doctrine

Solid doctrine should be at hand to train, plan and execute a successful Strike Rescue mission. The current doctrine available for Strike Rescue is neither adequate nor available to the right players. Three basic publications hold the key doctrine for Strike Rescue and all three are in limited distribution.

MAWTS-1 Helicopter Air Combat Maneuvers (ACM) Guide. This superb document covers ACM concepts, helicopter versus helicopter or fixed wing ACM & EVM,¹⁹ Rules of Engagement and training syllabi.²⁰ The only drawback is that the JTF/BG commanders Strike Rescue assets are not on the distribution list.²¹ Experience has been to reproduce limited copies with limited squadron funds. Most BG helicopter squadrons do not even hold a single copy of this valuable doctrine.

Assault Support Helicopter Tactical Manual (NWP 55-9 ASH Volume I). This manual is oriented towards Marine aircraft, but contains a wealth of information and tactics for the Strike Rescue mission. It envelops defensive armament, air-to-air warfare, operational guidelines for mission planning, helicopter tactical planning and employment, mission command, control and coordination; planning and conduct of night operations, tactical flight techniques, helicopter escorts, the threat, and night vision goggles. ²² Once again, limited distribution precludes this outstanding doctrine from being available to the BG squadrons. ²³

Strike Rescue Manual (Navy Supplement To NWP 19-2). This is the primary doctrine for Navy Strike Rescue and is very well presented. This manual envelops the mission; command organization and structure; approach to, intelligence, air crew, communication, helicopter rescue mission, and fixed-wing support planning; with a final mission planning review checklist. ²⁴ Greater distribution is recommended however. Not all BG helicopter/TACAIR squadrons, or even Air Wing commanders, are included. ²⁵ Unless the individual squadrons can obtain a copy, they face being tasked for a Strike Rescue mission without benefit of the primary doctrine at hand.

These doctrine deficiencies are supported also by my survey of fleet aviators, see Appendix III. Of the 232 aviators responding, only 30 % had seen the MAWTS-1 ACM Guide, just 22 % had laid eyes on NWP 55-9 ASH and 53 % had ever seen NWP 19-2 (Strike Rescue Manual). Even fewer aviators had used this doctrine to plan a mission.

We have discovered that current Strike Rescue capabilities in the Navy are lacking. Assets in the regular Navy are neither well trained nor well equipped to effect most combat rescue scenarios. To remedy this, any potential success will come from increased emphasis on

knowing the threat, how to avoid the threat, mission planning, realistic flight training, superior coordination, flawless execution, and acquisition of an adequate platform. The two programs evaluated in this paper provide promise in meeting the Navy's Strike Rescue future requirements.

The first program, already evaluated, provides an interim solution to our present day make-up of fleet HS squadrons. Today's HS squadron is composed of 6 helicopters dedicated to ASW, SAR and logistics. The proposed 6:2 mix of Sikorsky's SH-60F:HH-60H helicopters will provide a force multiplier with dedicated Strike Rescue and logistics platforms. There are concerns about inadequate armament, short combat radius and "cubes" (cubic feet of passenger/storage space) in accomplishing the Strike Rescue mission and for insertion of special forces with the HH-60H.

The position of this paper is that the future success of Strike Rescue is embodied in the second program. Bell/Boeing's tilt-rotor HV-22 Osprey would provide for an effective Strike Rescue capability into the next century. This final major area will be explored in the next chapter.

CHAPTER IV

FUTURE POSSIBILITIES

A review of seven areas is necessary to understand what possibilities the future holds for the Strike Rescue mission. First, is the development and requirement for the Joint Services Advanced Vertical Lift Aircraft (JVX) and how it led to the V-22. Second, is what was the potential of the Osprey in past scenarios. Next is a look at the decision to cut the V-22 program. That decision is where the Department of Defense "departed the right path" in developing the potential for success in our Strike Rescue mission. Fourth, is a look at the Institute for Defense Analyses (IDA) Study. Fifth, is a possible future scenario. Then, a look at the supporters of the V-22. Finally, a brief look at past studies concerning the Osprey.

JVX to V-22

Early in the Vietnam conflict, the Navy recognized an operational deficiency in CSAR. In March 1968, the Office of the Chief of Naval Operations issued a Specific Operational Requirement (SOR) for CSAR aircraft. The SOR identified the mission requirement and performance standards for a combat recovery aircraft.¹ They were:

- * A vertical take-off at sea level, 89.8 degrees F.
- * Proceed to rescue scene at 200 nm, up to 10,000 feet, cruise speed of at least 185 kts. The last 100 nm to be at dash speed of at least 200 kts, up to 5,000 feet. Higher speeds desirable.
- * Hover out of ground effect at 3,000 feet, 103 degrees F., for 15 minutes while recovering 2 survivors.
- * Depart at dash speed until 50 nm from scene and convert to cruise speed.
- * Land with 10 % fuel reserve. External tanks, if used, shall be retained.
- * Must be maneuverable for EVM and stable throughout flight envelope for weapons platform and instrument flight.

Later in 1968, the Naval Air Development Center (NADC) generated another set of requirements for Naval CSAR aircraft in their study.² Some of those requirements were:

- * A capability of maintaining flight formation with naval strike aircraft.
- * Antipersonnel armament.
- * All weather flight capability.
- * A payload volume sufficient for two rescued airmen in a prone position or four rescued airmen in a seated position.
- * A hover capability at midpoint of mission of 15 minutes out-of-ground effect at 3,000 feet on a Navy hot day.
- * A terrain avoidance guidance system.
- * Armor protection against .50 caliber projectiles for the crew and engines.
- * A night vision system.

A memorandum of understanding on the JVB was signed by all of the Service Chiefs in 1982.³ It identified initial primary missions for the JVB and funding shares for the development program: Army - 46 %, Navy - 42 % and Air Force - 12 % .

Additional and modified requirements were identified in 1983 by Naval Air Systems Command. They were contained in a preliminary design effort for the JVB.

"The JVB shall be a multi-engine, vertical/short takeoff and landing (V/STOL) aircraft, providing the Army, Navy, Air Force and Marine Corps with a self-deployable, multi-mission capability. Application to each Service will be by use of a common air vehicle with applicable Service-unique mission kits. The aircraft shall be capable of operating in the field under austere maintenance support conditions with a high degree of reliability. It shall be capable of routine operations from rough areas and from a variety of air capable ships."⁴

The JVB would support the Navy and the Air Force in the primary mission of CSAR. For the Army, the aircraft would support Corps airborne signal intelligence (SIGINT) and Division airborne electronic warfare (EW). The Marines would utilize the JVB in the amphibious/land assault, troop lift and external cargo role. The Air Force would also press the JVB into SOF missions. The speed requirement was set at 275 knots, with 300 knots being desired. An aerial refueling capability, significant crashworthiness/survivability, and armament requirements were

also identified.⁵

Of considerable interest was a memorandum from David Chu, Assistant Secretary of Defense for Program Analysis & Evaluation (PA&E), about the JVX that he signed in 1984.⁶ It discussed the DOD position for the JVX and the missions for which it was being developed. It also listed potential future missions for the JVX; 13 for the Navy/Marine Corps, 12 for the Air Force and 1 for the Army. The memorandum was very supportive of the JVX. Subsequently, David Chu became a key player in the demise of the off-spring of the JVX program, the V-22 Osprey.

In 1985, the V-22 Vertical Lift Aircraft Decision Coordinating Paper (DCP) was developed. It included; a system description, program history, mission area and role, threat assessment, shortfalls of existing systems, alternatives considered, description of the selected alternative, risks of selected alternative and acquisition strategies. The annexes included; the program structure, thresholds, resources (cost track summary and funding profile), summary of life-cycle costs, joint services operational requirement, competitive production plan and V-22 baseline configurations.⁷ The Joint Services Operational Requirement (JSOR) was critically important for many reasons. It obviously identified the requirements of all the services, but it would also be the baseline for future studies. It addressed readiness, reliability, maintainability and supportability; survivability and crashworthiness; shipboard compatibility; self-deployment; common, ancillary and mission-unique mission requirements; and service mission profiles.⁸ The DCP was approved by OSD in May 1986.⁹

A program review board was held on 18 December 1986 and Full-Scale Development of the V-22 Osprey was authorized by OSD.¹⁰

Out of the JVX and V-22 program evolved an aircraft that was uniquely configured for the Navy in the Strike Rescue mission, the HV-22 Osprey. It has a radius of 460 nautical miles, compared to the radius of 100 nm for the SH-3H and 250 nm for the HH-60H. The HV-22 also can perform a low level, high speed, night and adverse weather pick up of at least 4 survivors. This can even be accomplished in a high threat environment.¹¹ The Osprey has pivoting engine pods that tilt up for hover mode or forward for airplane mode. Intermediate settings are available for short take-offs. The wing can be rotated 90 degrees to align with the fuselage and the blades on each engine fold for flight deck stowage. In the folded position, the HV-22's deck spotting is smaller than the SH-3's. The dash speed is 315 knots with a cruise speed of 275 knots.¹² The Osprey's survivability encompasses an ability to counter enemy fire when it cannot evade, absorb battle damage and still get home. This potentially eliminates one way rescue missions that serve no purpose.¹³ The survivability and crashworthiness features include:¹⁴

- * triply redundant and separated flight controls, electrical power sources and hydraulic systems.
- * a fly-by-wire flight control system that is shielded for protection from EMI (Electro-Magnetic Interference), EMP (Electro-Magnetic Pulses) and directed energy weapons.
- * a positive pressure cabin and cockpit to allow operations in an NBC (Nuclear, Biological and Chemical) area.
- * a common shaft through the wing in case one engine is knocked out by hostile fire, the remaining engine can power both rotors.
- * extensive use of composites for increased ballistic tolerance.
- * a fuel system with built-in fire protection and nitrogen inerting, and crash load attenuation for increased crashworthiness.
- * acoustic queuing enroute that is 75 % less than other helicopters making it far more acoustically stealthy.
- * armament enhancements to include 4 .50 caliber machine guns and an air-to-air missile capability.
- * large mass (engines/transmissions) items are located away from occupied areas (unlike conventional helicopters where these items are located directly above the occupants).
- * energy-absorbing seats and landing gear.

- * an anti-plowing structure in the nose.
- * a controlled wing failure for a vertical crash impact scenario.
- * a normalized detection radar range that is considerably less than the H-53 and C-130.

Past Scenarios

We have in our grasp today an aircraft that can truly solve the Strike Rescue dilemma. What if that technology had existed since World War II ? Night rescues and rescues at greater distances would have been possible. The loss of aviators to the elements and enemy prisoner of war camps would have been dramatically reduced with the Osprey. During the Vietnam conflict, the survivability and armament of the Osprey, coupled with it's speed and ability to operate at night, would have reversed the Navy's dismal Strike Rescue record. Similar attributes of the HV-22 would have enhanced the Mayaguez, Grenada, Lebanon and Libya Strike Rescue operations. The heroes of those conflicts would have had a much more capable platform to fly into combat. Lives and years of agony could have been saved. Our prisoners of war would have been far fewer in number had the Osprey been around. Imagine an HV-22 on station during the A-4 strike 4 August 1964 against Hongay, North Vietnam. The carrier could have remained 400 miles away and LT Alvarez would have been rescued instead of spending the rest of the conflict as a POW. Or, what if an Osprey had been inbound when LCDR Ray Alcorn was shot down ? He was on the ground for 30-45 minutes and would have used his .38 pistol in defense if he knew there was a Strike Rescue asset inbound. Instead, he stuck it in the mud to prevent closing militia from using it on him. The HV-22 would also have precluded the pre-flight briefing response of, "None, no SAR asset can safely get in."¹⁵ LCDR Alcorn would not have been captured and destined to become a POW that day.

A cursory look at the IDA study and the 1985 CNA Strike Rescue study indicates that

between 72 and 121 of the 242 U.S. Navy POW's/MIA's could likely have been rescued by the HV-22 prior to being captured.

The Decision

The Department of Defense was on "the right path" in Strike Rescue up until 1989. The Navy had envisioned a three-phased approach to remedy its current Strike Rescue deficiencies. The development of the interim helicopter, HH-60H, for the reserves and proposing it for the 6:2 mix in the fleet was discussed in Chapter III. The second step was to acquire SH-60F CSAR Kits. This would be an equipment upgrade for the SH-60F, consisting of 2 kits per CVBG for weapon/survivability improvement. It is currently unfunded. The final phase of the program is the HV-22. The plan was for 2 active duty squadrons with forward deployed detachments (dets). The dets would be integrated into the training cycle with the air wing and support a secondary logistics mission. The total buy was for 50 aircraft to be split between the Fleet Replacement Squadron (FRS) and the 2 squadrons.¹⁶ A Concept of Operations was even developed for the HV-22.¹⁷ In a letter to Congress, the Navy explained the concept.

"With strong congressional support, the Navy has initiated a three-phase program to improve its CSAR forces, including a competitive acquisition of a modern, mission capable helicopter for the Naval Reserve. This CSAR aircraft will provide a substantive improvement in operational capabilities until the delivery of the V-22 tilt-rotor aircraft to both the active duty and reserve forces in the mid-1990's. The V-22 will possess a quantum improvement in performance, navigation and survivability over any current CSAR aircraft. Additionally, we are developing the specific mission and funding requirements for a CSAR kit for use in active duty helicopters such as the SH-60."¹⁸

As late as January of 1989, the Navy strongly supported this concept. "For the out years, the HV-22 will be our dedicated active duty Navy asset and a mix of HV-22 and HH-60H will meet BG Strike Rescue requirements."¹⁹

Secretary Cheney was sworn into office on 21 March 1989. The Osprey program was

canceled by the Secretary of Defense (SECDEF) on 19 April 1989.²⁰ That is when OSD took us off "the right path" for a future successful Strike Rescue capability.

"OSD was faced with a lot of hard choices at that time. There was a \$10 billion cut per year for the DOD mandated in the Reagan to Bush transition. Naval aviation was targeted for \$2.4 billion of that cut (V-22 and F-14D), even though it is only 9 % of the OSD budget. So, 24 % of the cut went to 9 % of the players. This was more than our fair share."²¹

The decision to cancel the Osprey was based on the opinion of David Chu.²²

"Chu personally recommended canceling the V-22 and substituting Sikorsky CH-53s and CH-60s (a Marine Corps version of the UH-60). The House committee's memo said Cheney "may not have had the benefit of a comprehensive and objective cost and operational effectiveness analysis (COEA) of reasonable V-22 alternatives."²³

Congress then directed SECDEF to conduct a COEA in August of 1989, to provide the framework for a production decision on the Osprey. PA&E contracted IDA to conduct the COEA. Direction was also given to IDA by OSD that the study will have no conclusions or recommendations. In addition, PA&E established an executive steering group to oversee the study. In October 1989, Congress funded \$255M for Research and Development (R&D) for Fiscal Year (FY) 1990 and directed the Office of the Secretary of Defense (OSD) to spend the remaining FY 1989 advanced procurement (APN) funds in FY 1990. On 1 December 1989, SECDEF directed the Department of the Navy (DON) not to spend FY 1989 APN funds and to terminate all procurement contracts. In May 1990, the President's budget contained neither APN nor R&D funds for the V-22 program beyond FY 1990.²⁴

The irony of the debate over the Osprey is that it really isn't about the cost. OSD is claiming a savings of \$26 billion by cutting the V-22. What OSD isn't emphasizing is that the replacement helicopters for those missions are not free.²⁵ In fact, they are just as expensive, if not more expensive. Consider the following cost savings with the V-22. In a 1986-1987

Combat Effectiveness Analysis (CEA) study by BDM International, the V-22/CH-53E mix had the lowest life-cycle cost for three typical Marine tactical missions and subsequent logistical support. In a 1988 MEDEVAC (Medical Evacuation) Mission Analysis by Bell-Boeing, the V-22 was 3.5 to more than 4 times as cost effective when compared to the UH-60A for the Army. The V-22 fleet also reduced annual costs over 60 percent. Analytic Services, Inc. (ANSER) conducted a 1985 and 1987 Long-Range Special Operations Studies for the U.S. Air Force comparing the V-22 with fixed-wing aircraft and helicopters in SOF missions. They found the annual operations and support (O & S) costs of the CV-22 to be \$75-\$100 million (FY 1985 dollars) less than for the helicopter. More significantly, the total investment and O&S costs for the CV-22 mix were \$9 billion less than for the HH-53E mix, a savings of 35 percent. The Institute for Defense Analyses (IDA) study in 1990 discovered once again that the V-22 is truly more cost effective. The V-22 program cost less in FY 1991-1997 (\$7.7 billion for the V-22 and \$8.4-\$10.5 billion for the OSD alternative) and also less in discounted costs (\$13 billion for the V-22 and \$13.6-\$14.8 billion for the OSD alternative).

An interesting twist is OSD's apparent willingness to release the advanced technology to foreign companies. Without a military contract, Bell-Boeing would be financially forced to link with or sell the technology to a foreign company.²⁶ In Europe, Eurofar (Aerospatiale, Westland and MBB) is working on developing tilt-rotor technology for military and civil use. The Ishida group of Japan has built a tilt-wing system, the TW-68. The TW-68 is being developed by a team of 8 ex-Bell employees that were previously working on the Bell-Boeing V-22 ! Also, Hikaru Matsunaga (the Japanese Minister of International Trade and Industry) visited only one company in the U. S. during his visit in January 1990. . . Bell Helicopter.

After his tour of the V-22 line he said, "If you produce this aircraft, I guarantee you we will buy it; if you do not, I guarantee you we will build it."²⁷ The cost to OSD to buy back that technology in the future will be substantial, not to mention the impact on the trade deficit.

OSD also appears willing to let Sikorsky Aircraft become the sole U. S. helicopter manufacturer. "Obviously if the V-22 is not successful, they (Sikorsky) stand to gain the most, perhaps be the only manufacturer left out there."²⁸

The human factor apparently wasn't heavily considered in the decision to cancel the V-22 Osprey. The analysis was solely an academic one, a "paper proposal."²⁹ A member of the House Armed Services Committee stated that the services had no real chance to defend their position. "But I am not sure the Secretary of Defense has the whole story, I will be honest with you. I talked with him in this very room not too long ago and asked him how much time he had spent talking with the people who will use the V-22. He admitted it was not a very long time."³⁰ Chu's testimony before a Senate subcommittee was even flawed. He did not acknowledge the Strike Rescue mission for the V-22, only a SAR mission. Still, he said ". . .the V-22's SAR capabilities are superior in the cases examined in the IDA study. . ."³¹ OSD must first get the Navy's mission requirement right, then they need to consider the human factor. No value can be placed on the large number of lives saved or years of internment prevented using the HV-22 in the Strike Rescue role. An example of the human factor can be seen in Appendix I. The human factor in Strike Rescue leaps from these statistics. Failures in survivability (black boxes, stealth, EW, stand-off weapons, crashworthiness of platform, personal survival gear, etc.), inadequate institutional Strike Rescue efforts and deficient Strike Rescue assets contributed significantly to the KIA/POW/MIA numbers.

IDA Study

On 29 June 1990, OSD released the Institute For Defense Analyses (IDA) Cost and Operational Effectiveness Analysis (COEA) study previously mandated by Congress. The IDA COEA³² examined the V-22, CH-53+, CH-46+, CH-60(S), New Helo (Boeing model 360, EH-101 (UK/Italy), CH-47M and the Super Puma (France). Missions for the Marine Corps (Amphibious Assault, Sustained Operations Ashore, MPF/Norway Deployment and Hostage Rescue or Raid), Navy (Strike Rescue), Air Force (Long-Range Special Ops) and Drug Enforcement Agency (Drug Interdiction) were also examined. A summary of results indicate that the V-22:

- * has near term and discounted 20 year life cycle costs which are less than the CH-60/CH-53E.
- * is 1.2 to 2.2 times more cost effective than any alternative for other service and agency missions.
- * It is 1.3 times more operationally effective in the Strike Rescue role.
- * is the most survivable alternative.
- * requires 1150 to 3000 fewer Marines to maintain than any alternative.
- * has least developmental risk of undeveloped aircraft.
- * is the only aircraft which meets the JSOR. Sikorsky's H-60 met only 45 % of the JSOR.
- * in the Strike Rescue role would recover 30 % - 40 % more aircrews if they were downed far from the ship, 15 % - 25 % more if downed a moderate distance from the ship and 0 % -10 % more if downed close to the ship.

Conferees of the Authorization Conference in Congress had noted in November 1989 "that the future of the V-22 will be considered on the basis of the information that will be provided as a consequence of those studies. . ." Also, conferees of the Appropriations Conference believed

"that the study should be used as a basis for a decision (on whether) to begin production of the V-22 in fiscal year 1991."³³ "The report by IDA exhaustively compares the V-22 with helicopter alternatives DoD is considering and comes to the inescapable and unequivocal position that the V-22 is better in all tactical aspects and less expensive when all factors are considered."³⁴ However, OSD was not listening.³⁵

On 29 June 1990, SECDEF released a letter to Congress on the V-22 IDA COEA.³⁶

The SECDEF stated:

- * the decision to cancel the V-22 is still valid.
- * the aircraft has excellent capability but investment costs are too high.
- * Marine Corps medium lift requirement can be met in substantial part by alternative means that are much less costly.
- * OSD disagrees with a number of assumptions made by IDA which are critical to its V-22 conclusions. (Speed of V-22 with externals, V-22 had higher sorties than helos, fewer V-22s procured on a slower schedule were acceptable.)
- * OSD would be required to give up all amphibious shipping to pay for the V-22 program.

Results of the IDA COEA do not support the SECDEF's position.³⁷ The COEA does support the following:

- * The V-22 is the most cost and operationally effective alternative for a broad range of missions.
- * The V-22 can carry some external loads at approximately 200 kts - only the HMMWV was used in the study. (1988 wind tunnel tests demonstrate HMMWV (High Mobility Multi-power Wheeled Vehicles) stable at 225 kts. Excursion in study of 130 kts for V-22 resulted in negligible change in effectiveness - V-22s speed advantage is most effective carrying 24 troops or returning empty from external lifts.)
- * Funding information in the Cheney letter has misleading comparisons and is not supported by the IDA COEA. (For example, OSD's assertion that the avionics package for the helicopters in the study is too expensive. IDA clearly pointed out, "The study also examined several less costly avionics suites. These were found to provide substantially less capability, especially in night operations where the MV-22's infrared night pilotage system would enable the aircraft to fly at low altitude and thus limit its exposure to air defenses. This capability was considered important for any alternative that would be used for the Marine Corps' mission, and hence these costs were included for all alternatives."³⁸

* The letter fails to consider the V-22 as a joint program and assumes funding must come from only amphibious ships. In addition to Marine requirements (552 MV-22's), there still is a requirement for 55 CV-22's for Air Force SOF and 50 Navy Strike Rescue HV-22's. There is a potential for 900 to 1,200 aircraft in possible DOD roles. The Army backed away from the program in FY 1985 to favor their LHX (Light Scout Helicopter) program.³⁹ Though, the Army was still preparing studies on the V-22 for expanded Army missions (in regards to the JSOR) 5 years later.⁴⁰

Secretary Cheney then established a new Pentagon working group to bolster the validity of terminating the V-22 for Congress. OSD is now asserting that the Osprey has only completed 5 % of scheduled tests and will cost \$42 million each. That assertion came from the fact that the aircraft has completed 200 of a planned 4000 hours of flight testing. However, the V-22 has completed about 80% of its flight envelope testing which represents a large portion of its program testing. This also represents 14 % of all basic tests. A Boeing official has said that the aircraft's procurement cost will be \$19 million each once full scale production kicks in.⁴¹

The FY 1991 budget has been agreed upon by the House and Senate, and the President has signed it into law. Continued R & D and APN funding (\$403 million) is included in the budget package for the V-22.⁴²

A Future Scenario

This synopsis brings us up to date on the V-22 Osprey program. What other future possibilities does this versatile aircraft have to offer the Navy? If the Iraq-Kuwait conflict turns to armed conflict between Iraq and the U. N. forces, it has a lot to offer. The chairman of the House Armed Services Committee, Rep. Les Aspin made a telling comment. "The V-22 and its capabilities are more suited to the type of environment we are facing over there than aircraft we have today."⁴³ Strike Rescue crews will need the long-range and high speed that only the V-22 can offer. In Special Warfare, the Osprey can quickly insert SEALs or other special

operatives into target areas rapidly from long distances and extract them. It can also perform all of these missions in a contaminated NBC environment. Specifically, let's consider SCF missions to rescue "human shields" that Hussein has inserted to protect his interests in Iraq and Kuwait. The 11 potential locations are Mosul (weapons factory, oil refinery and industry), Kirkuk (air base, oil refinery and industry), Baiji (chemical-weapons factory and oil refinery), Samarra (chemical-weapons factory), Tammuz (nuclear reactor), Karbala (chemical-weapons factory), Hillah (weapons factory), Salman Pak (chemical-weapons factory), Baghdad (industry, air base and leadership), Zubair (industry, oil refinery and port) and Basra (oil refinery, industry, air base, navy base and port).⁴⁴ Three entry points for naval forces would be from the Persian Gulf, Red Sea or Eastern Mediterranean Sea. The next consideration is required stand-off distance for naval vessels to avoid the Silkworm missile threat. This would only be required in the Persian Gulf. Using a combat radius of 460 nm for the HV-22 and 250 nm for the HH-60H, the following observations were determined. From the Persian Gulf, the HH-60H could reach only 2 of the targets while the HV-22 would reach 7 of them. From the Red Sea, the helicopter is impotent and the tilt-rotor could insert SOF into 4 targets. From the Eastern 'Med', the HH-60H offers no help once again, while the HV-22 can operate on 9 of the 11 targets.

According to the editors of Aviation Week & Space Technology, "Specific emphasis must be put on requirements for such advanced systems as the C-17 transport, V-22 Osprey."⁴⁵ As I have stated before, it is the only alternative that meets the JSOR. From the above scenario, it is also apparent that it offers the commander far more options than the helicopter.

Supporters

The list of supporters of the Osprey since OSD's decision to cancel the program is vast

compared to the list of opponents. I have already covered the most powerful opponents, mainly those located in OSD. The following are just a sprinkling of the support that exists.

The Marines position on the Osprey has continued to be loud and clear. Gen. Gray called the MV-22 alternative scheme 'ridiculous.'⁴⁶ He also had this to say. "We believe strongly that we need the MV-22. I do not want my Marines going ashore and operating deep inland and doing all the things that we have to do in what I call "vanilla" helicopters, second-class helos. That's wrong."⁴⁷ Contemplating about the attempted Iranian hostage rescue (Desert One), Gen. Pitman had the following to say. "We could have done Desert One hands off with the V-22. . . the V-22 would solve the whole problem right there."⁴⁸ He also made the following comment. "I cannot overemphasize the seriousness of our medium lift shortfall. We are prepared to move out smartly when we have the results of the COEA. This program (V-22) is our Commandant's, and my, number one priority."⁴⁹ LGEN Pitman also talked about the limitations of conventional helicopters. "We are still convinced that tiltrotor or tiltwing technology is the way to go, because the helicopter is physically constrained to a maximum forward speed. . . the tiltrotor gives you added speed that you can not achieve in a helicopter."⁵⁰

The Navy has been fairly vocal also. Assistant Chief of Naval Operations for Air Warfare had the following to say about the V-22. "It is a requirement in the Navy and Marine Corps, it is a high requirement for the Corps and also has applicability to the Navy search and rescue, combat SAR and application to the Air Force. . . Mission wise we are delighted with its capability. . . From the blue-suit side, it is more (in) the combat SAR (mission). The strike rescue (mission capability) we think is a significant disadvantage we have at the present

time."⁵¹ His predecessor had an even more interesting comment. "But when the OSD (Office of the Secretary of Defense) personnel made a proposal to cancel the program, I was dumbfounded."⁵² The HV-22 will fulfill the Navy's combat search and rescue, delivery and retrieval of special warfare teams, and fleet logistic support transport missions.⁵³

The Air Force's position is clear. "We have always stated our interest in the V-22. We very early recognized that it could fulfill our high priority requirement for long-range infiltration/exfiltration. While the V-22 was canceled for fiscal reasons, the requirement for a SOF aircraft with similar capabilities was never dropped."⁵⁴

A majority of Congressional opinion also favors the V-22. When asked about various programs being parochial interests or congressional pork, Rep. McCurdy (D-Okla.) responded this way. "I would take exception to the V-22, because I think the V-22 has both extremely relevant military and civilian capability."⁵⁵ Rep. Murtha (D-Pa.) said, "I think the V-22 has a more significant role to play in the military today, because of the changed threat. The world situation has changed, but it has changed in a direction that would make the V-22 even more important."⁵⁶ Senator Steve Symms (R-Idaho) had this to say. "For military, civilian and economic reasons, the United States should invest in this technology and support the continued development and production of the V-22."⁵⁷

Many members of the government and industry strongly favor the V-22 as well. A former FAA Administrator commented on the need for the military development of the V-22. "But the military program is an essential forerunner of a civil program. Without a military program, the cost of developing commercial aircraft and a tilt-rotor network will be prohibitively high. . . ."⁵⁸ Jack Horner (Pres., Bell Helicopter) responded to the argument concerning

military development of programs with civilian application. ". . . (Y)ou have to get the DoD stamp of approval before the commercial market will buy it. The helicopter started that way. The jet engine started that way. . . (People) do not want their grandmothers and kids in (an aircraft) until it has got some time on it. . . There are six tilt-rotors flying in the world. We have got about 700 hours flight time in the whole world."⁵⁹

Just think of the world today without the helicopter or the jet engine, had the military departed that path to the future. The humane, economic and strategic benefits from these two systems have been immense.

Studies

Numerous studies have been conducted concerning the V-22 forces and alternative helicopter forces. According to the Executive Summary of the IDA study, "For every military and civilian user and vertical lift mission considered, the performance and cost-effectiveness of the V-22 are superior to those of any logical alternative."⁶⁰ These include the following:

- * 1982 Iranian Hostage Rescue Analysis by Bell-Boeing
- * 1984 Operation Urgent Fury (Grenada) Analysis by Boeing
- * 1985 Combat Search and Rescue Study by CNA
- * 1985 Long-Range Special Operations Study by ANSER
- * 1986 Antisubmarine Warfare Study by NADC
- * 1986-1987 Combat Effectiveness Analyses by BDM
- * 1987 Training and Doctrine Command Study by U.S. Army
- * 1987 Long-Range Special Operations Study by ANSER
- * 1988 Analysis of Sustained Operations Ashore by Bell-Boeing
- * 1988 MEDEVAC Mission Analysis by Bell-Boeing
- * 1988 Antisubmarine Warfare Study by CNA
- * 1989-1990 Combat Effectiveness Analyses by BDM
- * 1989-1990 Air Force Special Operations Study by Boeing
- * 1989-1990 COEA by IDA
- * 1990 Warfighting Analysis by Lawrence Livermore National Laboratory
- * 1990 Study of SAR Missions by Boeing

*** 1990 Study of Drug Enforcement Missions by Boeing**

The conclusions of the 1985 CNA study say much for the human factor in Strike Rescue. Two different distances to the rescue area were examined, one at 100 nm and the other out to 200 nm. ". . . the V-22 can rescue airmen twice as fast and has a 3-4 times higher probability of saving downed airmen than the HH-60. The study also considered a scenario in which an airman was downed in cold water and speed of rescue was essential to prevent him from freezing to death (here, minutes count). In such a case, the maximum allowable distance to the rescue scene for the V-22 was always twice that for the HH-60."⁶¹ (emphasis added by Bell-Boeing)

In summary, let's consider the following. "Speed is Life" for TACAIR strike missions. The HV-22 is almost twice as fast as the HH-60H. Experience has proven after 15 to 30 minutes on the ground, an aircrewman's chance of rescue decreases exponentially. Combining the previous two statements reasons, "Speed is Life" for the Strike Rescue mission as well. The Osprey is also the only program that meets the JSOR (Joint Services Operational Requirements) for Navy Strike Rescue and special operations missions. The HV-22 will bring to the Strike Rescue mission a weapons system whose capabilities, survivability and responsiveness are a quantum improvement over any aircraft in the Naval inventory. However, it's status is in question with current DOD budget submissions.

Consider all of the cost and operational benefits of a system such as the V-22 Osprey. Now, weigh that against the decision to cancel that program. The end result impacts adversely upon readiness, morale and a host of other factors. I contend that we are not on the road to a successful future capability in the Strike Rescue mission. We departed "the right path" on 19

April 1989.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Strike Rescue has been the forgotten child of Strike Warfare. The time has come to recognize it as a true war fighting mission. Unless the JTF/BG commander is willing to waste valuable resources, the ad hoc ("any helicopter/crew") response to Strike Rescue is unwise. This option hasn't worked very well in the past and it won't work very well in the future, (see Figure 1). Strike Rescue history has provided many hard learned lessons as well as telling data. For example, the analysis of U.S. aircraft carrier line periods and losses during Vietnam (see Appendix I) partially shows the human cost of inadequate Strike Rescue in that past conflict.

Current capability in U.S. Navy Strike Rescue is inadequate. The interviews (Appendix II) offered substantial evidence to support this thesis. From these interviews there was a general sense of frustration with our attempts at advancement in Strike Rescue capability. Fleet carrier aviators still perceive problems with our Strike Rescue capability, level of attention, platforms and doctrine, (see Figure 2). The following observations were gleaned from this survey (Appendix III).

- * We still have a significant problem in accomplishing the Strike Rescue mission.
- * Not enough concern is being perceived for this mission.
- * The helicopter isn't the final answer as a viable Strike Rescue platform. Also, from the comments on the returns, the Osprey is not well understood at the fleet level. Quite a few didn't realize it had even flown yet!
- * There is a strong feeling that Strike Rescue assets need to at least be located within the battle group for a rapid response.
- * Familiarity with available Strike Rescue doctrine was dismal.

Different external resources for Strike Rescue missions are available to the commander, but only the organic HS squadron and TACAIR is readily available and the recipient of coordinated Strike Rescue training.

As to the future of Strike Rescue, the probable interim fix, the 6:2 mix for the HS squadrons has yet to be realized. The future fix, HV-22 Osprey, has continually been derailed by OSD, despite its potential operational benefits and the immense cost of delay. There was unanimous support for the V-22 during my interviews (see Appendix II).

Recommendations

The Navy has been turned away from "the right path" that would lead to an enhanced Strike Rescue capability. However, we could regain "the right path" if attention and resources are turned back on the issue. First, the planned 6:2 mix of SH-60F:HH-60H per HS squadron must be realized. The ballistically tolerant and armed HH-60H will finally give the JTF/BG commander a true organic Strike Rescue helicopter. It will be relatively combat survivable and reduce the one way mission perception of the past. An enhancement would be for an air-to-air missile capability to be introduced. Second, procure the HV-22. The HH-60H is and was meant to only be an interim aircraft.¹ The HV-22 is the only Strike Rescue platform that can carry this mission through the 21st century and survive the threat. Support it on paper and vocally. Third, the current Strike Rescue doctrine distribution should be increased. Additionally, these indispensable manuals need to be obtained by each HS/TACAIR squadron and Air Wing now. Fourth, ability as a war fighter is a direct result of how you train. To accomplish a satisfactory training level the embryo Strike Rescue Instructor concept must be encouraged and pushed. From there, three Strike Rescue crews per HS squadron should be established and maintained.

In addition, the invaluable training in Strike Rescue before deployment at NSWC should continue to be conducted with organic fleet aircraft. Fifth, available external alternatives must be kept in mind, especially Joint, Reserve and SOF forces, for unique situations. Sixth, sound intelligence and intelligence estimates play key roles in a successful Strike Rescue operation and therefore must be made accessible to the commander. He can then consider all intelligence inputs, not relying solely on any one source, and demand requisite priority to accomplish the Strike Rescue mission.

These recommendations will not solve all the problems facing the JTF/BG commander and the Navy in the complex warfighting specialty of Strike Rescue. They should aid us in getting back on "the right path".

**"Will we be able to react again at the eleventh hour,
or is there a better way?" ²**

APPENDIX I

CARRIER LINE PERIODS AND LOSSES

Carrier Days on Line/ Number of Periods	Aircraft Combat Losses	Pilots Recovered	Combat KIA	POW/Died in Captivity/ Escaped	MIA
AMERICA (CVA-66) 370/3	21	17	7	4/3/0	2
BENNINGTON (CVS-20) 176/3	1	4	0	0/0/0	0
BON HOMME RICHARD 620/6 (CVA-31)	43	17	11	11/2/0	2
CONSTELLATION 824/7 (CVA-64)	45	25	23	18/1/0	3
CORAL SEA (CVA-43) 875/7	69	30	16	25/1/0	13
ENTERPRISE (CVAN-65) 669/6	39	18	16	22/1/0	2
FORRESTAL (CVA-59) 5/1	0	0	0	0/0/0	0
HANCOCK (CVA-19) 843/8	46	20	10	14/0/0	2
HORNET (CVS-12) 233/3	5	8	8	0/0/0	4
INDEPENDENCE 100/1 (CVA-62)	13	10	4	9/0/0	0
INTREPID (CVS-11) 312/3	17	9	3	3/0/0	3
KEARSARGE (CVS-33) 258/4	2	8	0	0/0/0	0
KITTY HAWK (CVA-63) 806/6	55	33	30	15/5/0	11
MIDWAY (CVA-41) 426/3	32	11	13	12/0/0	3
ORISKANY (CVA-34) 800/7	64	24	17	15/3/0	5
RANGER (CVA-61) 765/7	30	15	11	2/1/1	8
ROOSEVELT (CVA-42) 95/1	7	2	1	2/0/0	2

SARATOGA (CV-60)	13	12	3	5/0/0	2
173/1					
SHANGRI-LA (CVS-38)	1	0	1	0/0/0	0
120/1					
TICONDEROGA	27	16	6	4/0/0	1
516/5 (CVA-14)					
YORKTOWN (CVS-10)	0	0	0	0/0/0	0
192/3					

Note 1: This is an analysis of U.S. aircraft carrier line periods and losses during Vietnam. It is one way to show the human factor involved with Strike Rescue. Of the 701 total pilots, 40% were rescued, 26% were KIA, 25% became POW's and 9% are MIA's. Of the POW's, 90% were released, 9.4% died in captivity and 1% escaped.

Note 2: Carrier Line Periods and Losses were derived from data in Tonkin Gulf Yacht Club's Appendix 1 and don't necessarily agree with the chart found on page 79 of that book.

Source: Rene' J. Francillon, Tonkin Gulf Yacht Club (Annapolis, MD: Naval Institute Press, 1988), Appendix 1, pp. 116-171.

APPENDIX II

INTERVIEWS WITH KEY PERSONNEL

I held a number of interviews with key individuals who work in various arenas of the Strike Rescue mission. These interviews were to solicit candid opinions on where we stand with Strike Rescue today and where we are headed in the future. Interviews, both in person and over the phone, were conducted from the same bank of questions initially. After that, questions were asked to clarify or expound on previous responses. The questions in the interview guide are similar to those in the questionnaires located in Appendix III.

These interviews revealed a general sense of frustration with our attempts to enhance Strike Rescue capability. There was unanimous support for the V-22, though some were more guarded than others. The interview guide, respondents and their answers follow in chronological order.

Interview Guide

I would like to briefly cover your positions on the following issues: Strike Rescue and helicopters vs. tilt rotor in that mission.

1. To what extent do we have a problem in accomplishing the Strike Rescue mission?
2. What amount of concern/attention is being shown for this mission? Are we on the right path?
3. What dollar figure would you place on a pilot lost over hostile territory during a strike or strike rescue mission?
4. Is the armored/armed helicopter the best vehicle for Strike Rescue? Why?
5. Is the V-22 Osprey the best vehicle for Strike Rescue? Why?
6. Do you feel that the V-22 is a national asset? Why?
7. To what extent do we need Strike Rescue assets on board the CV(N) as an organic asset?
8. To what extent are you familiar with the following publications?
 - a. MAWTS 1 HELICOPTER ACM GUIDE
 - b. ASH VOL. I (NWP 55-9)
 - c. STRIKE RESCUE MANUAL (NAVY SUPP TO NWP 19-2)

9. Do you have any documentation on these issues we have discussed; such as point papers, hearings testimony, etc.; that I could look at and/or get a copy of?

Thank you very much for your valuable time today. You have been a great deal of help in my research project.

Respondents/Answers

LCDR MIKE SHEPHERD
(OPS OFFICER, HCS 4)
27/28 JUNE 1990

1. A great deal. GPS missing, armament poor, ballistic matting (custom fit each aircraft. .not cost effective. Marinized Black Hawk better. SOF hard, only one cargo door. Tail wheel not aft, requires steep approach to LZ.
2. No, Reserves are carrying the torch.
3. NR
4. Yes.
5. HH60 is only the interim fix.
6. Yes.
7. NR
8. a.-c. NR
9. * No more MAWTS trained pilots.
* Planning key to success.
* Night preferred mission.
* 7.62 is lousy. Need .50 caliber, Air-to-air and air-to-ground missiles.
* HH60 avionics/Nav hard (menu).
* NVG great lighting package, but glare shield vastly limits cockpit visibility.
* Hoist not centered in door, makes the litter work hard.
* Limited visibility in cockpit and cabin with NVG's (AD1 Weiner)

LCDR RICK COYLE
(OPS OFFICER, HCS 5)
28 JUNE 1990

1. Viable mission, night aspect now w/ HH60. 72 hrs from call-up to on station (via C-5).
2. Lots in the regular Navy. ADM Taylor (OP-50) pushing 29 HH60's.
3. NR
4. Each det a "re-write", a "living document".
5. Excellent, helo has some limits. Single door is poor. NVG is good. Poor nose visibility. Survivable, speed, range. Need .50 caliber.
6. NR
7. NR

8. a.-c. NR
9. * HH-60 only a stop gap.
* NVG currency tough at sea for HS squadrons.

**LCDR KERRY SULLIVAN
(NAVY SAR MODEL MANAGER, HC 16)
6 JULY 1990**

- * TOR delayed HH-60 a couple of years (Operators didn't know that it expired at the end of one year)
- * NAVSTK 'U' should have oversight
- * Keep SAR and SR together
- * Problem- "Dedicated Crews, Specialized Crews and Equipment Needed"

**DAVE HAINES
(SIKORSKY MILITARY MARKETING REP)
17 JULY 1990**

1. HH60 fills the bill, but lacks the weapons.
2. Greater attention. HH60 is Navy's first real SR platform, LIC.
3. @ \$1 million.
4. Defer.
5. Defer
6. Defer
7. Need capability on board.
8. a.-b. No. c. Yes
9. * 9 a/c delivered (HCS) and 9 to go. Joint procurement with CG ("J") (35), DOD/DOT, 250 nm SR and 200 nm SOF.
* Buy pending on 6:2 (29 "H", 14 "J").
* No GPS, but hardwired in and space provided.
* HCS can fit 10 seals in plus 2 crew (w.o jump seats, normal is 8+2)
* Seals: would like 2 cargo doors, dedicated aircraft a problem (Panama)
* HH as survivable as UH.
* No armor, like kevlar.
* MRB titanium spar, titanium hub MRH, T700 engine, MGB run time dry spec 30 min (operational 60 minutes).
* ECP in for FBP on 'H'- high DA problems.
* APU. . . start anywhere.
* 8 CV helo's = 6 H-3 spots
* Air Force has in flight refuel (MH-60G)
* Potential missions: VERTREP ('H'), NAS & VXE-6 Polar Hawk (DON, marinized UH).
* Stops on pintel mount a problem.
* Joined with Boeing on LHX program.

LCDR ROC LASTINGER
(NAVAIR PMA 266C/HH60)
24 JULY 1990

1. Biggest shortfall in HH-60 is : weapons (\$33M for block upgrades, HUD with weapons), one door (SOF), "cubes" small, aft 'cg' problem (add 'plug'), limited life on dynamic components in yank/bank), GPS is coming.
2. ADM Taylor big supporter! Reserves (political and budget \$).
3. NR
4. HH-60 just interim fix. Detection (+), Evasion (+), survivability (N), better NOE.
5. Speed, range, lift (compare to LCAC and boats). Detection (N), Evasion (N), Survivability (+). Can you afford to lose? (what percent of capability). If cost drives to lower the number, you lose flexibility. Reliability in question. Field supportability?
6. Proponent of V-22.
7. Yes (with CVBG at least), to be in theater.
8. a.-b. No. c. Yes.
9. * Weapons (GAU), ASE upgrade in work.
* Sikorsky posturing for big buy?
* V-22 specs: Boeing can't meet current. . . \$300M in red.
* No weapons development with V-22 now.

CDR GARY THOMPSON
(PMA 275C/V22)
24 JULY 1990

1. No comment. It's an OP-05 question. XV-15 tiltrotor (Bell/NASA/Army), ABC (Sikorsky) were 2 platforms for JVB (to meet JSOR). Conference in early 1980's with all services for JVB.
2. We need it! Need active duty squadron. Nature of war changing. Helo vs. helo, attack platform. Hostility at sea is up. Ships will target us. Quick reaction vital (time on ground increases capture). SR is low priority (TACAIR, ships, weapons, budget low profile).
3. NR
4. NR
5. Best. Combat radius/survivability, opens courses of action, IDA (from study, no helo can beat, if no V-22 then: buy new helo, marinize H-47, last option is H-53/H-60). H-60 lacks cubes, not an issue in V-22.
6. Yes. Technology in hand-if we don't Japanese/Europeans will. Ideal for civil air (high density/island). Export item for 3rd world.
7. Part of CVBG, in theater. Operates off DD-963 and up. HC-7 spent most time on det on small boys. Same spot as A-7 (V-22).
8. a.-c. NR
9. * Background is HS/HC. Four tours in Vietnam (H-34/46/3).
* In HS-2 when POW's came out, clearing mines in Haiphong-"Highly emotional event"
* POW's morale soared with knowledge of Son Tay raid

* 1 HAL-3 helo down, 3 more down to rescue (Vietnam)

REP. PETE GEREN

(D-TEXAS)

24 JULY 1990

1. NR
2. NR
3. \$3M or \$4M
4. NR
5. Survivable/range/duplicate systems/sped/altitude/faster/higher. Dollar for dollar, much greater capability. Maint/ops projected lower costs.
6. "I certainly do." Not role of military concern for civil impact. Advantages important though. Large airports having trouble (stage III noise). Expanding, higher departure angles. Environmental impact less. FAA in full support. More than \$2B in research, technology. We've paid for. Akin to infrastructure support. Transportation boom. Japanese Ashida (tilt wing) hired 8 Bell technicians and have test facility 10 miles away.
7. NR
8. a.-c. NR
9. * Member since last Sep.
* SECNAV Bell briefed SECDEF (didn't know about V-22) and Chu advised Cheney to kill it.
* V-22 not killing program alternate just as expensive. ..saving face/bargaining chip.
* Marines still testifying publically on the hill.

REP. BRUCE MORRISON

(D-CONNECTICUT)

25 JULY 1990

- * Declined the interview. In the office, EA too busy.
- * Will mail the interview questions.
- * Defense L.A., Erin, in job 4 months.
- * Reluctance to go on the record.
- * Never mailed back interview questions and ignored follow up calls and letters.

REP. CURT WELDON

(R-PENNSYLVANIA)

25 JULY 1990

1. NR
2. NR
3. Wise to look into.
4. NR
5. Vastly improved avionics/speed/night/greater capability. Save lives, could have saved

12 Marines in D'nang (medevac). Chu signed 1984 memo in favor of V-22.

6. Yes, many national policy issues. Commercial delivery/medevac/oil spill containment/aerospace.

7. NR

8. a.-c. NR

9. * Not question of V-22 but of V-22 or mix.

* No significant \$ difference.

* IDA priorities.

* Marines never had chance to defend V-22 (Chu did academic analysis).

* Lehman fought yearly with Chu on V-22.

* Nancy Lisset defense L.A.

* Curt very optimistic for V-22. Well briefed, tiltrotor coalition a big plus. He is a leader in coalition.

**CDR GARY JONES
(OSD LIC PLANNING/PROGRAMMING)
25 JULY 1990**

1. Limited capability, a shortfall.

2. Recent attention for more airplanes.

3. No response.

4. No.

5. Yes. Speed (SOF gets 55). IDA: Mix more expensive. BH360 (new H-46, composite). Chu stands to lose lots of face. "Goldwatch" move by Cheney to bargain with V-22 later.

6. Yes. American Helicopter Society supports. Japanese will get. Is DOD supposed to further American commerce?

7. Almost have to, Libya/Lebanon show the need.

8. a. Yes, instructors came to squadron (H2 background), 1 week course. b. NR c. Yes.

9. * SEALs want HCS squadrons attached.

* Chu down on V-22

* All funding for SOF air lift gone without V-22

* Marines used draft IDA figures on hill.

* A definite V-22 fan.

**CAPT RANDY BOGLE/LTCOL JIM SEXTON
(OP 504C/V22)
26 JULY 1990**

1. Don't have. "Send the yellow gear."

2. Normal, "lip service". Funding the issue.

3. NMPC would have. \$1.5 million for TACAIR and \$1.0 million for Helo?

4. NR

5. Yes, survivability is the main issue.

6. Yes. Tiltrotor technology the asset. DOD must develop for civil use (pilots/maint/supply support/O&S costs/plant). Trump and H. Ross Perot part of coalition. Perot is funding R&D technology with Japanese for tilt-wing technology.
7. With CVBG on small decks probably.
8. a. Yes. b.-c. No
9. * Cheney in SECDEF 2 days and canceled the V-22, without briefings from any of the services. His background is strategic, only contact was Chu and Chu offered the V-22.
 - * Kelley/Trost/Gray all disliked Chu (and vice versa)
 - * Nothing to do with \$, it's Cheney/Chu versus the rest of the world.
 - * Crowe stabbed Marines in back ("Don't need V22 since Marines haven't made an amphibious landing since WWII.")
 - * Trost/Gray/Pittman/SECNAVs all fought with Chu over V22
 - * Nothing leaves building @ V22 unless cleared by Chu/Cheney
 - * 2 guys from PA&E accompany briefer on V22, the "thought police"
 - * OP 50 H60 is SR, backing away from V22
 - * IDA (Dean Simmons Director) originally against, now for tiltrotor. PA&E told IDA "No summary, no conclusions", over 400 major excursions on study directed by Chu.
 - * V22 only program in DOD Chu used discounted dollars against, but it backfired (IDA).
 - * SECDEF/SECNAV 2 1/2 hour difference on OSD letter release to hill (released at 1400, appt at 1630, "see me with your concerns")
 - * V22 getting DAS (defense armament system) (EW suite/AA(Aim 9 or stinger)/.50 caliber gatling nose gun).
 - * Production and R&D engineers sat side by side until '89. The \$ stopped, then production engineers fired-lost unique capability to instantly put R&D changes into the production system.
 - * IDA study "Whether it's \$1 or \$1B, V22 is most effective platform." Sexton on study working group. 1200 pages. IDA released 6/22 and Chu (OSD) has till 6/29 to "adjust" for brief on the hill.

CDR DAVE CROCKER
(OP 503F/SH60F/HH60)
26 JULY 1990

1. Resolving itself with 6:2 mix. Fallon training in H-3's, never had platform for SR but still do the training. Level 3N for SR with HH-60, significant upgrade coming with the 6:2 mix. LIC offers the major scenario.
2. Significant. TACAIR (ADM Taylor) put HH-60 in budget. VADM Dunleavy and DCNO put TACAIR money into the program.
3. \$40 per aircraft, training lost \$, political disadvantage (POW propaganda).
4. NR
5. Won't deploy off the CV, but in the CVBG. Airframe wise much better.
6. A tactical asset for SR. Yes, tremendous civil application. Boeing will sell rights to Japanese. Long range potential for ASW (H60/S3).
7. Absolutely essential. In LIC potential for strike is early. Higgins incident-Air Force

Pave Low showed up 72 hours later. Reserves (C-5+helo is overt, transport & brief crew), can get their pilots-train to level 5N. Long pole in tent now gone.

8. a. Seen. b. No. c. Yes

9. * 6:2 mix only needs SECDEF approval, memo at DCNO.

* Dec 87 Rotor Wing

CDR BILL LIPMEYER
(OP 05G1/STRIKE WAR PLANS ANALYSIS)
26 JULY 1990

1. Big problem-no capability. 2 H3's at Fallon (stripped). Program at NSWC good for coordination. With CVW-13, ran problem-couple of jets 'shot' down. Air Force has cog: good if they are there for brief (LIC).

2. Point of concern. Funding drives. Competition for \$.

3. Cost to train, Safety Center.

4. Reserves not the answer.

5. Don't know capabilities. OP-50 big on publishing/SAR initiative (good source for SAR in Navy).

6. If not developed, Japanese will. OSD licensing (technology transfer) (Tom White, 693-1169).

7. Absolutely. Capability needs to be there.

8. a.-c. NR

CAPT. RAY ALCORN
(FORMER P.O.W.)
28 AUGUST 1990

1. Tremendous problem. Assets limited, in high threat environment chances of mission completion small.

2. Navy wide- not very much. There are pockets of support (due either to a sincere desire and/or parochialism). Look at total assets in reserve status.

3. Training command-@\$1M+ to get wings. @\$1M+ through RAG (TACAIR) and \$1/2M (HELO). Then there are recruiting costs, time. . . Probably \$3.5M just to replace a pilot. But what if a CDR/LCDR is smoked, what value on is put on their experience level?

4. NR.

5. Speed is prime in rescue (less than 30 minutes), longer ups the ante. Percent goes exponentially down after 30 minutes. Speed is associated with survivability.

6. Yes, I do. V/STOL technology is the thing of the future.

7. On this one, "I'm kind of torn." It doesn't matter where they are: (1) Available in CVBG in combat situation and (2) whoever is doing strike rescue needs it to be assigned as the sole/dedicated mission, for training and readiness.

8. a. It's available. b.-c. NR.

9. * On mission I was shot down, 10 miles from target to coast out. During brief, I asked "What SAR forces will we have if hit between target and coast?" "None, no SAR asset can

safely get in."

- * Target on outskirts of Haiphong, a power plant.

- * 30-45 minutes on ground prior to capture.

- * Hit right at target (A-4), within 1/2 mile, highly populated.

- * Target worth hitting, but not on that day. It was a retaliation raid for VC blowing up Victory Hotel in Saigon. Was scheduled for a couple days and canceled due to weather. JCS finally said hit it no matter what. So, we made the strike under the weather with snakeeyes. I was bagged by small arms fire, barrage firing. One other A-4 hit, KIA. One 'Vigie' shot on BDA, pilot KIA and back seater POW.

- * Captured by militia (clubs/machete/old rifles). Planned to get to water and out to sea. It wasn't a group to take on with my .38 (couple of hundred of them beating the brush). Stuck the gun in the mud, would have used to hold off if I had heard a helo inbound.

- * Improvements in radios welcome (PRC), in my confused state of mind, took radio with separate antenna, moved to get out of open, lost antenna.

- * Jane Fonda. . . "That poor misguided soul. She caused a lot of grief, a lot of POW's suffered significantly because of her." Propaganda ploy by NVN tremendous, "hours every day that Jane Fonda was in North Vietnam supporting their cause."

- * Son Tay. . . Knew something happened that night. Heard aircraft outskirts of Hanoi-no flying for a couple of years. Following night all camps on outskirts packed up and moved into town. Eight months later received word of raid in Son Tay. Six months prior to raid I was held there. NVN turned into army camp, intel based on truck movements. "Those guys did a great job." Boosted morale-aware "not forgotten." but also lowered it-"if ready for desperate attempt then the end of the war not in the near future."

- * Lived with 2 Air Force pilots, one a F-105 guy who was on the sling and the other the helo pilot rescuing him . . . helo shot down.

- * A number of POW's wandered jungles for days with significant radio contact with the SAR forces.

- * Air Force F-4 backseater sport parachuter guided out of rocky area into clear area, got captured. The front seater didn't guide his chute, landed in the rocks and was rescued.

- * A Marine evaded 4-5 days in the jungle, captured.

- * Training has come along way (SERE). But we still train for what happened in the last war, treatment of captured that is. "I got experience of Korean events." Not on significant periods of solitary confinement, 4 years of individual handling- though I am not sure we can duplicate that.

- * Not enough training for strike pilots to help SAR effort success.

- * Fallon. . . talked about CSAR at Hawthorne, NV (Sen. Reed questioned joint Army/Navy venture). (1) cost a lot of \$ (facilities) and (2) demographics (how many reservists want to come to Nevada, HC-16 too as well as HC-9).

RADM J. D. "BEAR" TAYLOR
(OP 50/AVIATION PLANS & REQUIREMENTS DIVISION)
12 SEPTEMBER 1990

1. No in theatre assets, kinds of things involved are "come as you are." Still no Navy SR assets in Iran/Iraq. We are not equipped to go over the beach. It is "ridiculous" that 100 % of our strike rescue assets are in the reserves. System needs change. HH-60's on every carrier will help. Strike Rescue in Iraq is with Air Force H-53's. No dedicated assets is a problem. Need to change formula to 50% active and 50% reserve.
2. Considerable. Birth of HH-60. There were no dollars. It was a fresh idea 1/2 to 2 years ago. OP 08/07/098 and reserves all bought in. Still no dollars. CNO put 29 HH-60's in budget and took resources from elsewhere. "Last in=first out" with budget, but the program is still alive.
3. Other than being crass, I figure about \$1-2M, with flight training command and FA 18 RAG (at \$2K/hour and over 500 hours). The airplane is priceless also. Once it's gone it can't be replaced. Contribution to nations greatest resource is "fighting spirit." Warriors aren't afraid to go in, not fair however to go in without CSAR. They are teammates, the warriors need the helo drivers. Violation of cardinal rule in employment of troops (like no hospital ships) if you do. One way trips are not the way. It's not fair to send crews to Fallon, train in CSAR, with PRC 112 and other assets that will sit here back in the states. That's "dumb as dirt."
4. "Bird in the hand worth 2 in the bush." HH-60 is available now and maybe forever. SECDEF is against V-22 and congress is for it. The HH-60 with NVG's (I flew) can go anywhere, do anything.
5. Don't know where it is. V-22 doing well and we desperately need it in carrier aviation. HV-22, 50 aircraft, will be the SR assets for the active Navy. "Cost before need." Things must be affordable.
6. Technology we've been looking for intently for the last 20 years. Smaller decks. Introduce and develop, like the model "A" (a good one)- beginning not the end. Breakthrough especially for the Navy and society. Gridlock at air ports. People who slam this lack vision. Hope civilian side will pick up tab. Spend national treasury dollars on this. With the SV-22 you can do ASW on amphibs. . . get back to CVA and CVS concept.
7. The "fighting spirit" answer I guess. Increase survivability is the number one issue in manned naval aviation. This will reduce the POW/MIA issue. Black boxes, stealth, EW, stand-off weapons to make round trip, DF, parachutes (why domed "cheapie" when sport parachutes are available and chutes that fly to a safe haven ?), helicopters, trained crews and ejection seats all contribute to survivability.
8. Not asked.
9. * The HH 60 will be around until 2010 or longer. It is an interim aircraft in that respect.
* OSD faced with a lot of hard choices. There was a \$10B, per year, cut in DOD from Reagan to Bush. \$2.4B was cut from naval aviation even though we are only 9 % of the OSD budget. . . so, 24 % was stripped from 9 % of the players. This was more than our fair share. We lost introductory technology that will give many options in the future (V/STOL). That time frame was tough for OSD. The Tower nomination was in trouble. Chu and Glyster were offsetting centers of power then. Glyster became terminally ill and Chu became the voice of

OSD until Cheney was approved. This time frame was when the decision was made to chop the SH-60F, F-14D and V-22.

**LCDR PETE LeVOCI
NATC, ROTARY WING
13 SEPTEMBER 1990**

1. Ability for rescue vehicle to navigate inland not possible. Armament and doctrine lacking. Need wing man to suppress fire.
2. HH-60 interim vehicle. Shows requirement is valid. Forward firing weapons for HH-60 in works-an integrated SR aircraft. Prior to this, most people felt inadequate platforms available.
3. @ \$1M, flight school and RAG. Mid-range experience costs money. Intangible price is replacement of pilot with less experienced one.
4. In vicinity of CVBG, benign environment.
5. Will be far superior to any helo.
6. Definitely, this program can easily cascade to civil programs (FAA and NASA). Ease congestion in air and ground terminals.
7. Where TACAIR is you need SR unit to cover, analogous to CAP.
8. a. Some. b.-c. NR.
9. * I've had 3 flights (total of 3.8 hours) in V-22. 20 hours in simulator, good similarity. Transition from simulator to aircraft was a natural act. The thrust control lever, vice collective was an initial problem. Hovers like any big helo (no automatic flight control system) at 30 feet. Noise in cockpit like H-60, not noisy in hover. Noise in flight in cockpit very quiet. external noise (hover) like H-3. External noise (plane mode) like King Air (nose on approach is quiet).
 - * Few minutes in aircraft quite natural transitioning to forward flight with nacelle conversion.
 - * Two enhancements will help it get out of zone quick. The Torque Control Limiting System (if you "firewall" the TCL forward it will protect from transmission over torques). Conversion Corridor Protection (if nacelles are beeped forward, it will look for increased airspeed).
 - * Stall: natural warnings not great, some nose drop. Sink rate greater than 4000 feet per minute. Stall warning system not installed.
 - * Dual engine failure: In airplane mode it may cartwheel due to rotors. Convert to helo mode and autorotate.
 - * For unaugmented aircraft, it does very well.
 - * Rotor wash is intense (like H-53). Nacelle gases and vibes (3:1) are being worked out. No show stoppers.
 - * The following armament enhancements are being considered for the USMC combat assault mission: Turret mounted .50 caliber machine gun, window and door mounted .50 caliber machine gun, cargo ramp mounted .50 caliber and some sort of air-to-air missile capability.

APPENDIX III

STRIKE RESCUE QUESTIONNAIRE

Please fill in the following blanks and circle your position on each question.

Community _____ (HS, VS, etc.)

Years Flying _____

1. To what extent do we have a problem in accomplishing the Strike Rescue mission?
1 2 3 4 5 6 7 8 9 10
min avg max
2. What amount of concern/attention is being shown for this mission above your commands level?
1 2 3 4 5 6 7 8 9 10
min avg max
3. The armored/armed helicopter is the best vehicle for Strike Rescue.
1 2 3 4 5 6 7 8 9 10
min avg max
4. The V-22 Osprey is the best vehicle for Strike Rescue.
1 2 3 4 5 6 7 8 9 10
min avg max
5. To what extent do we need Strike Rescue assets on board the CV(N) as an organic asset?
1 2 3 4 5 6 7 8 9 10
min avg max
6. To what extent are you familiar with the following publications? (min=know they exist, avg=have held in my hands, max=have used extensively in planning/training)
 - (a.) MAWTS 1 HELICOPTER ACM GUIDE
1 2 3 4 5 6 7 8 9 10
min avg max
 - (b.) ASH VOL. I (NWP 55-9)
1 2 3 4 5 6 7 8 9 10
min avg max
 - (c.) STRIKE RESCUE MANUAL (NAVY SUPP TO NWP 19-2)
1 2 3 4 5 6 7 8 9 10
min avg max

QUESTIONNAIRES MAILED TO FOLLOWING COMMANDS

CVW-1	CVW-17
CVW-11	CVW-15
VA-105	VA-176
VA-35	VA-37
VA-46	VA-115
VA-128	VA-146
VA-165	VA-196
VF-101	VF-103
VF-14	VF-143
VF-32	VF-1
VF-114	VF-126
VF-2	VS-22
VS-27	VS-21
VS-33	VAQ-33
VAQ-129	VAQ-131
VAQ-133	VAQ-135
HS-1	HS-11
HS-15	HS-17
HS-3	HS-5
HS-7	HS-9
HS-2	HS-10
HS-12	HS-4
HS-6	HS-8
HS-14	VAW-120
VAW-122	VAW-124
VAW-110	VAW-113
VFA-87	VFA-131
VFA-136	VFA-195
VFA-125	VFA-147
HCS-4	HCS-5

UNSOLICITED RETURNS

VA-85 VAQ-137 VFA-82 VFA-146

MAILINGS: 60 RETURNS: 49 (+4) PERCENTAGE: 81.7 %

COMMUNITY RETURN RESULTS

HCS: 100 %	VA: 80 %
CVW: 100 %	VAW: 80 %
VS: 100 %	VFA: 66.7 %
HS: 93.3 %	VAQ: 60 %
VF: 88.8 %	

STRIKE RESCUE QUESTIONNAIRE RETURNS

<u>Community</u>	<u>Exp</u>	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6a</u>	<u>#6b</u>	<u>#6c</u>
CVW (VFA)	E	5	5	3	2	5	3	2	2
(VA)	E	8	4	5	5	8	1	1	5
(VF)	N	8	9	9	-	10	1	1	1
(VF)	E	5	7	5	2	9	2	5	4
(VA)	E	3	1	-	-	3	1	5	2
(VF)	E	10	9	8	9	10	7	1	9
(VF)	E	10	5	8	10	10	3	1	4
(VA)	E	10	6	8	2	10	1	1	6
(VS)	E	8	8	7	4	10	0	0	1
(VA)	E	10	4	7	-	10	1	1	5
(VFA)	E	8	6	-	-	9	1	1	5
Sub-Total	E	77	54	51	34	84	20	18	43
	#	10	19	9	6	10	10	10	10
	N	8	9	9	-	10	1	1	1
	#	1	1	1	0	1	1	1	1
	Eavg	7.7	5.4	5.7	5.7	8.4	2	1.8	4.3
	Navg	8	9	9	-	10	1	1	1
Total All		7.7	5.7	6.0	5.7	8.5	1.9	1.7	4.4
HCS	E	9	8	10	4	6	5	10	5
	E	6	8	6	8	10	8	8	8
	E	2	3	8	7	8	10	10	10
	E	7	8	7	10	10	9	9	10
	E	1	10	10	1	10	6	8	8
	E	8	8	9	8	9	10	10	10
	E	7	7	9	4	8	10	8	10
	E	6	7	6	8	7	7	7	9
Sub-Total	E	46	59	65	50	63	66	70	70
	#	8	8	8	8	8	8	8	8
	Eavg	5.8	7.4	8.1	6.3	8.5	8.3	8.6	8.6
Total All		5.8	7.4	8.1	6.3	8.5	8.3	8.6	8.6
HS	N	8	3	5	3	7	5	6	1
	N	7	6	8	7	10	1	1	1
	N	8	5	10	5	10	1	5	5
	E	10	3	7	10	10	1	1	1
	N	8	7	4	-	10	5	5	5

E	10	6	5	7	10	9	9	5
E	10	5	8	10	10	4	5	10
E	8	8	10	3	8	10	10	10
E	10	7	5	8	10	3	3	1
E	10	6	5	7	10	1	6	5
E	6	9	4	4	9	6	7	10
E	2	5	9	2	10	6	6	8
N	4	10	7	9	10	7	7	10
N	7	7	10	5	10	5	5	10
E	3	9	5	5	9	8	4	10
E	9	7	3	1	10	5	10	5
E	8	7	7	5	10	7	1	7
N	9	7	4	3	10	4	1	3
E	8	7	9	4	10	5	6	9
E	8	8	10	9	10	5	5	10
E	10	7	8	8	10	1	1	7
E	6	8	8	5	9	1	1	4
E	5	7	9	6	8	6	1	10
N	4	6	10	7	10	7	7	9
E	10	3	6	4	8	4	6	6
E	10	6	3	8	4	6	1	10
E	10	7	9	4	8	8	7	10
E	10	5	5	1	7	1	1	1
E	10	4	3	7	8	1	1	7
E	3	7	2	7	8	5	1	7
E	6	7	9	6	7	3	6	6
E	8	6	7	10	10	5	5	6
N	10	8	5	3	3	5	10	10
E	8	7	5	8	10	7	7	9
N	10	1	10	10	10	5	5	5
E	10	3	10	3	10	5	5	5
N	9	2	7	5	8	4	3	4
E	9	2	8	9	10	2	1	2
E	10	3	-	6	10	8	1	1
E	10	3	5	10	10	5	5	5
N	8	8	-	3	10	6	3	8
N	2	8	10	1	10	5	7	8
N	8	9	10	10	10	10	9	8
N	7	3	9	4	10	1	1	8
E	7	7	9	7	9	4	1	6
E	3	4	5	5	3	5	5	8
E	9	7	8	10	9	5	5	9
E	5	5	10	5	10	1	1	7
E	5	10	9	5	10	5	7	8

	E	7	7	2	8	9	3	8	9
	E	9	6	6	3	10	5	5	5
	E	10	7	-	-	10	9	5	9
	E	8	10	8	5	10	6	2	6
	E	7	8	8	5	10	5	5	3
	E	10	9	10	7	10	5	4	9
	E	6	8	3	5	10	6	6	9
	N	5	3	9	5	10	8	6	9
	E	8	6	10	4	10	10	10	10
	E	4	8	8	7	6	4	4	7
	E	8	1	10	8	10	10	10	10
	E	7	5	9	7	9	10	10	10
	E	7	5	8	4	10	5	5	7
	E	8	8	9	6	10	1	6	7
	E	8	5	7	4	10	4	4	6
	N	7	4	10	5	10	1	6	1
Sub-Total	E	374	300	324	292	448	243	226	332
	#	48	48	47	47	48	48	48	48
	N	121	97	128	85	158	79	88	105
	#	17	17	16	16	17	17	17	17
	Eavg	7.8	6.3	6.9	6.2	9.3	5.1	4.7	6.9
	Navg	7.1	5.7	8.0	5.3	9.3	4.6	5.2	6.2
Total All		7.6	6.1	7.2	6.0	9.3	5.0	4.8	6.7
VA	E	9	7	9	8	10	5	1	6
	E	8	4	5	8	8	1	1	1
	E	9	6	9	-	10	1	1	1
	E	9	3	8	-	9	1	1	1
	E	9	8	10	-	10	1	1	1
	E	9	3	8	5	4	3	5	8
	E	10	4	-	-	10	1	1	1
	E	9	1	10	10	9	1	1	1
	N	10	1	8	6	10	1	1	5
	N	3	6	8	5	4	3	1	8
	N	7	1	5	10	10	1	1	1
	N	5	1	7	10	5	1	1	1
	E	5	3	8	-	8	1	1	4
	N	5	5	8	4	8	3	3	3
	E	5	3	10	5	3	1	1	7
	E	8	5	7	10	10	1	1	1
	E	8	2	9	2	10	5	1	5
	N	7	3	4	4	10	1	1	4

	N	6	5	7	9	10	1	1	1
	N	7	3	9	5	10	1	1	5
	N	3	10	7	5	7	1	0	5
	E	8	9	8	5	8	5	7	8
	N	5	4	7	3	10	1	2	2
	E	7	4	7	3	9	2	2	7
	E	7	3	6	4	9	2	2	5
	E	8	3	5	-	3	6	1	3
	E	7	5	6	8	9	3	5	3
	E	8	4	7	5	8	1	1	5
	E	10	6	10	1	10	1	1	5
	E	8	5	5	4	4	1	1	1
	E	3	8	7	1	7	1	3	2
	E	8	4	10	3	6	1	1	1
	N	1	10	10	-	10	1	1	8
	N	8	5	9	3	10	5	1	7
Sub-Total	E	178	99	164	82	174	45	40	77
	#	22	22	21	16	22	22	22	22
	N	67	53	89	64	104	20	14	50
	#	12	12	12	11	12	12	12	12
	Eavg	8.1	4.5	7.8	5.1	7.9	2.9	1.8	3.5
	Navg	5.6	4.4	7.4	5.8	8.7	1.7	1.2	4.2
Total All		7.2	4.5	7.7	5.4	8.2	1.9	1.6	3.7
VAQ	N	9	7	8	6	7	1	1	4
	E	10	7	7	5	8	1	1	5
	E	7	2	7	-	6	7	4	8
	E	5	5	8	5	10	1	1	5
	N	6	5	8	8	3	1	3	1
	E	9	2	8	5	10	1	1	5
	E	5	4	8	3	6	1	1	1
	E	5	7	7	2	8	1	2	7
	E	5	4	7	2	8	1	1	1
	N	5	5	5	7	10	1	3	6
	N	7	3	8	3	8	1	3	5
	N	3	1	9	4	8	1	1	1
	E	8	3	10	-	7	3	5	7
	N	10	7	10	5	10	1	1	5
	E	5	3	7.5	-	8	1	1	6
	N	5	5	7	5	7	1	1	2
	E	9	2	10	9	10	1	1	1
	N	9	2	7.5	9	10	1	1	1

Sub-Total	E	67	39	89.5	31	81	18	18	46
	#	10	10	10	7	10	10	10	10
	N	54	35	52.5	47	63	8	14	25
	#	8	8	8	8	8	8	8	8
	Eavg	6.7	3.9	9.0	4.4	8.1	1.8	1.8	4.6
	Navg	6.8	4.4	6.6	5.9	7.9	1.0	1.8	3.1
Total All		6.7	4.1	7.9	5.2	8.0	1.4	1.8	3.9
VAW	N	8	6	10	10	3	1	1	1
	E	1	5	-	-	6	0	1	1
	E	5	4	4	6	10	1	1	3
	E	8	3	6	9	10	1	1	1
	N	5	1	10	10	1	1	1	1
	E	7	3	10	1	10	1	1	1
	E	9	2	6	2	10	1	1	4
	E	7	3	2	2	3	2	1	6
	E	4	9	9	5	9	5	3	5
	E	2	5	10	4	10	1	8	10
	E	6	2	6	8	9	5	3	3
	E	5	1	10	10	10	1	1	5
Sub-Total	E	54	37	63	47	87	17	21	39
	#	10	10	9	9	10	10	10	10
	N	13	7	20	20	4	2	2	2
	#	2	2	2	2	2	2	2	2
	Eavg	5.4	3.7	7.0	5.2	8.7	1.7	2.1	3.9
	Navg	6.5	3.5	10	10	2.0	1.0	1.0	1.0
Total All		5.6	3.7	7.5	6.1	7.6	1.6	1.9	3.4
VF	N	7	7	1	10	9	3	1	4
	E	6	7	1	10	10	1	1	1
	N	8	3	3	8	10	1	1	1
	E	10	3	5	5	10	1	1	5
	E	5	3	8	1	8	2	1	1
	E	10	2	5	5	5	1	1	6
	E	7	5	9	7	8	2	5	7
	E	5	6	10	-	10	5	1	8
	E	10	2	5	5	3	1	1	10
	E	9	3	7	3	4	2	2	8
	E	6.5	5	5	7	8	6	3	5
	E	9	2	2	10	9	4	3	6
	E	7	5	7	8	8	3	1	6

	N	7	1	5	5	8	1	3	1
	N	3	1	5	5	10	1	1	1
	E	8	5	8	-	10	1	1	1
	E	8	5	9	-	5	2	2	2
	E	7	3	6	7	6	1	1	1
	E	7	3	5	7	5	1	1	1
	E	3	2	4	7	4	1	1	1
	E	8	4	8	-	9	1	1	1
	N	7	5	8	3	9	6	2	6
	E	7	5	8	-	9	1	1	1
	N	9	4	9	6	9	5	1	7
	E	5	4	8	4	8	1	1	2
	E	6	8	9	6	10	1	1	3
	E	5	7	3	3	5	1	1	6
	N	8	5	9	5	8	1	1	4
	E	5	3	-	-	5	10	3	5
	E	7	5	10	10	6	1	1	1
	E	7	2	5	8	10	1	1	1
	E	9	2	8	7	10	1	1	1
	E	7	3	-	-	-	1	1	1
	E	5	1	5	5	10	1	1	1
	N	8	5	-	-	10	7	1	8
	N	6	7	-	-	2	1	1	9
	N	5	6	8	-	10	3	1	7
	N	4	3	10	6	3	1	1	3
	N	4	3	8	8	8	1	2	3
Sub-Total	E	189	105	160	126	195	54	40	92
	#	27	27	25	20	26	27	27	27
	N	76	50	67	56	106	25	16	54
	#	12	12	10	9	12	12	12	12
	Eavg	7.0	3.9	6.4	6.3	7.5	2.0	1.5	3.4
	Navg	6.3	4.2	6.7	6.2	8.8	2.1	1.3	4.5
Total All		6.8	4.0	6.5	6.3	7.9	2.0	1.4	3.7
VFA	E	8	7	5	-	8	1	1	5
	E	7	7	7	1	10	1	1	5
	N	8	7	5	5	10	1	1	5
	N	5	5	1	10	10	1	5	1
	E	6	7	5	7	7	1	1	5
	E	8	5	10	2	1	1	1	5
	E	7	3	10	2	10	1	5	5
	E	8	2	9	-	10	1	1	1

	E	9	3	8	10	8	1	1	1
	E	5	4	5	5	5	1	1	4
	E	1	3	6	3	1	1	5	5
	E	7	4	9	5	7	1	1	1
	E	8	4	4	4	3	3	1	4
	E	10	6	9	1	3	1	1	1
	E	3	5	3	5	8	1	0	1
	E	8	5	5	5	7	1	1	5
	E	9	3	2	3	5	1	1	1
	E	8	5	5	1	1	3	1	1
	E	5	1	3	1	1	1	1	1
	E	8	3	7	5	9	1	1	2
	E	5	8	7	-	10	1	1	4
	E	7	3	5	7	6	5	5	6
	E	9	7	9	4	10	6	3	1
	E	8	5	10	1	10	3	5	6
Sub-Total	E	143	99	143	72	140	37	39	70
	#	22	22	22	19	22	22	22	22
	N	13	12	6	15	20	2	6	6
	#	2	2	2	2	2	2	2	2
	Eavg	6.5	4.5	6.5	3.8	6.4	1.7	1.8	3.2
	Navg	6.5	6.0	3.0	7.5	10.0	1.0	3.0	3.0
Total	All	6.5	4.6	6.2	4.1	6.7	1.6	1.9	3.2
VS	E	5	4	9	1	9	4	1	1
	N	5	4	8	2	6	1	1	1
	N	5	4	5	5	7	1	1	1
	N	5	4	10	1	6	1	1	1
	E	6	2	6	1	7	6	1	1
	E	10	7	5	5	5	1	1	1
	E	5	3	7	2	8	2	2	5
	N	7	4	6	3	10	1	1	1
	E	9	4	10	3	10	1	1	1
	E	9	1	5	5	8	1	1	1
	E	4	7	8	5	9	3	3	6
	N	-	6	8	5	5	1	1	3
	N	5	3	8	3	8	1	1	1
	N	-	-	9	1	8	1	0	4
	N	5	5	10	1	10	1	1	1
	E	8	6	8	8	5	5	1	5
	N	8	4	8	5	5	1	1	5
	N	7	1	7	10	3	1	1	1

	N	1	5	10	1	10	1	1	1
	N	5	8	10	1	7	3	3	3
	E	7	3	5	5	6	1	2	4
Sub-Total	E	63	37	63	35	67	24	13	25
	#	9	9	9	9	9	9	9	9
	N	53	47	97	38	60	14	13	23
	#	10	11	12	12	12	12	12	12
	Eavg	7.0	4.1	7.0	3.9	7.4	2.7	1.4	2.8
	Navg	5.3	4.3	8.1	3.2	5.0	1.2	1.1	1.9
Total All		6.1	4.2	7.6	3.5	6.0	1.8	1.2	2.3

TOTALS

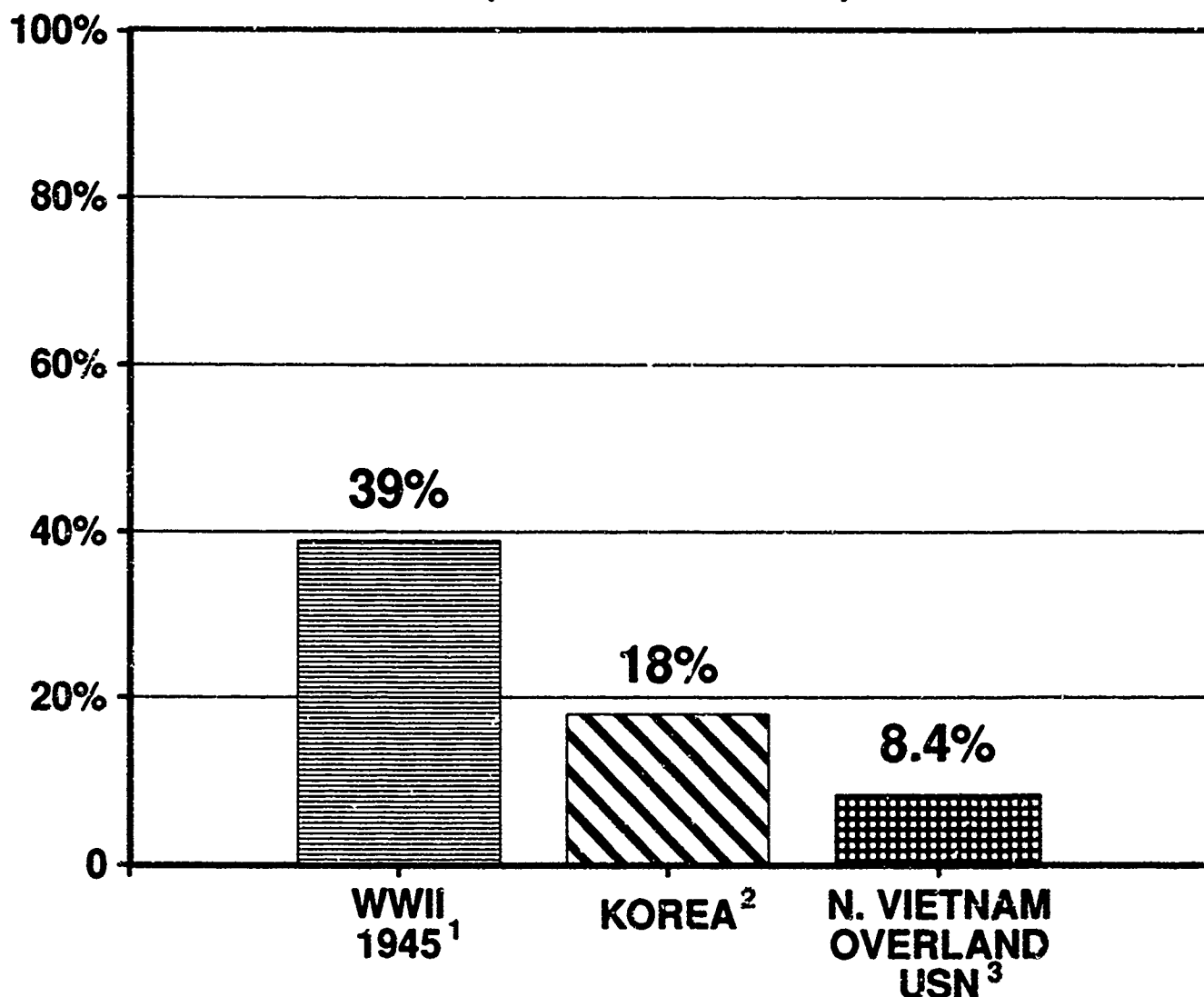
	<u>Exp</u>	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6a</u>	<u>#6b</u>	<u>#6c</u>
Sub-Total	E	1191	829	1093	769	1344	525	485	794
	#	166	166	160	142	165	166	166	166
	N	405	310	423	325	525	151	154	266
	#	64	65	63	60	66	66	66	66
	Eavg	7.2	5.0	6.8	5.4	8.1	3.2	2.9	4.8
	Navg	6.3	4.8	6.7	5.3	7.8	2.3	2.3	4.0
Total All		6.9	4.9	6.8	5.4	8.1	2.9	2.8	4.6

Note 1: This questionnaire was mailed to various fleet squadrons. It was developed to get a feel for where Strike Rescue stands in the fleet today. Areas such as extent of the problem, amount of concern, best platform and familiarity with doctrine were addressed. The questionnaires were mailed to 60 carrier squadrons picked at random from the Standard Navy Distribution List (SNDL). They were divided equally between east and west coast. The initial information was requested from experienced aviators. Most squadrons included junior aviators as well. I distinguished between aviators with 10 or more years of flying as 'experienced (E)' and less than that as 'nuggets (N).'

Note 2: Some observations are in order. First, we still have a significant problem in accomplishing the Strike Rescue mission. Second, not enough concern is being perceived for this mission. Third, the helicopter isn't the final answer as a viable Strike Rescue platform. From the comments on the returns, the Osprey is not well understood at the fleet level. Quite a few didn't realize it had even flown yet! Fourth, there is a strong feeling that Strike Rescue assets need to at least be located within the battle group for a rapid response. Finally, the familiarity with available Strike Rescue doctrine was dismal. See Figure 2 for a pictorial result of this survey.

Figure 1

STRIKE RESCUE SUCCESS RATES (BY HELICOPTER)



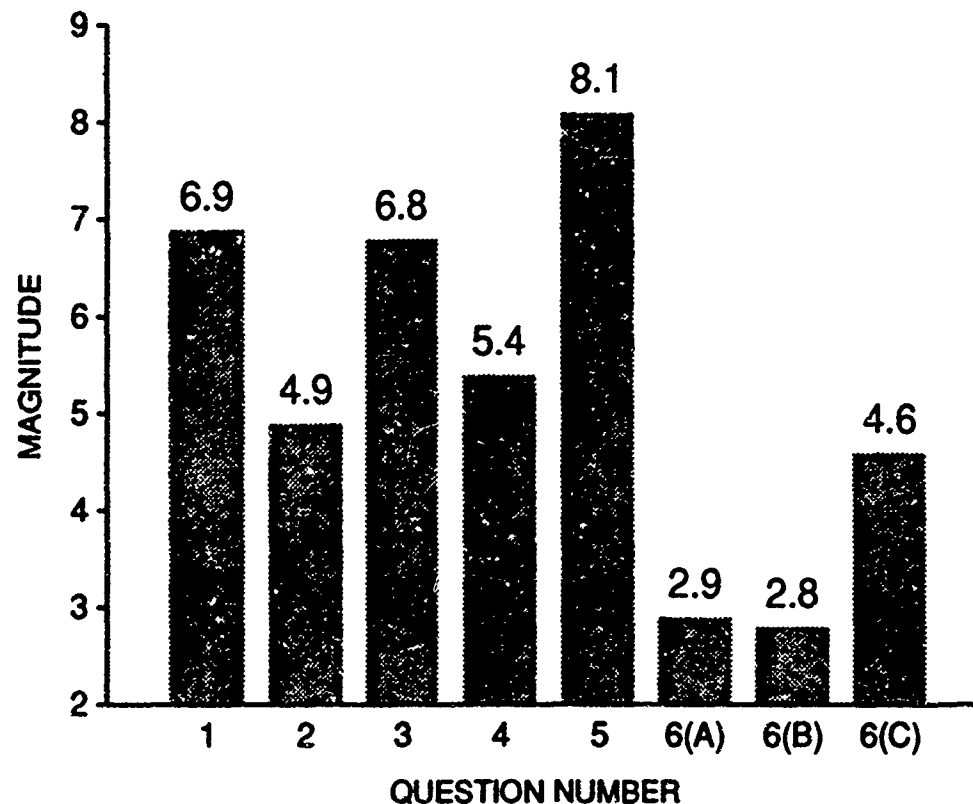
¹ Earl H. Tilford, Jr., Search and Rescue in Southeast Asia 1961-1975 (Washington: Office of Air Force History, 1980), pp. 7-8.

² Tilford, p. 13.

³ Rear Admiral Paul T. Gillcrist (OP 50), "Statement," U.S. Congress. House. Committee on Armed Services. Subcommittee on Readiness. Survival, Evasion, Resistance and Escape (SERE) and Combat Search and Rescue (CSAR). Hearings (Washington: U.S. Govt. Print. Off., 1983), p. 694.

Figure 2

PRESENT FLEET PERCEPTIONS OF STRIKE RESCUE MISSIONS



THE QUESTIONS

1. To what extent do we have a problem in accomplishing the Strike Rescue mission ?
2. What amount of concern/attention is being shown for this mission above your commands level ?
3. The armored/armed helicopter is the best vehicle for Strike Rescue.
4. The V-22 is the best vehicle for Strike Rescue.
5. To what extent do we need Strike Rescue assets on board the CV(N) as an organic asset ?
6. To what extent are you familiar with the following publications ?
 - (a.) MAWTS-1 HELICOPTER ACM GUIDE
 - (b.) ASH VOL. I (NWP 55-9)
 - (c.) STRIKE RESCUE MANUAL (NAVY SUPP TO NWP 19-2)

Source: CDR Mike Fackrell (USN), "Strike Rescue - Are We On The Right Path ?" Unpublished Student Research Paper (Newport, R.I.: Naval War College, 16 November 1990), Appendix III.

NOTES

Preface

1. U.S. Navy Dept. Strike Rescue Manual, Navy Supplement to NWP 19-2 (Washington D.C.: U.S. Gov't. Print. Off., July 1989) p. 1-1.

Chapter I

2. Senator Jeremiah Denton, quoted in Commander C.E. Lassen (USN), "Combat SAR-Past and Future," Wings of Gold, Fall 1982, p. 21.

3. Rear Admiral Paul T. Gillcrist (USN) (OP-50), "Statement," U.S. Congress. House. Committee on Armed Services. Subcommittee on Readiness. Survival, Evasion, Resistance and Escape (SERE) and Combat Search and Rescue (CSAR). Hearings (Washington: U.S. Govt. Print. Off., 1983), p. 684.

4. U.S. Navy Dept. Strike Rescue Manual. Navy Supplement to NWP 19-2. Washington: July 1989, p. 21.

5. Gillcrist, p. 672.

6. Gillcrist, p. 671.

Chapter II

1. Wesley Frank Craven and James Lea Cate, editors, The Army Air Forces In World War II (Washington, D.C.: Office of Air Force History, 1983), v. 5, p. 606.

2. Ibid, p. 606.

3. LTCOL Eugene W. Rawlins (USMC), Marines and Helicopters 1946-1962 (Washington, D.C.: History and Museums Division, Headquarters, USMC, 1976), p. 7.

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