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STUDENT REPORT

AIR RESCUE IN THE U.S. AIR FORCE: A HISTORICAL PERSPECTIVE

MAJOR MICHAEL J. MARTINI 87-1660

"insights into tomorrow"

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The air rescue mission occupies a significant place in the history of the U.S. Air Force. During wartime and peace, Air Force rescue units have saved the lives of tens of thousands of servicemen and civilians of all nationalities. This historical perspective examines the influence military doctrine has had on the development of air rescue operations since the advent of the air power. It also considers how American humanitarian values have motivated the commitment of military resources for the single purpose of saving life.

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INTRODUCTION

It is my duty, as a member of the Aerospace Rescue and Recovery Service, to save life and aid the injured. I will be prepared at all times to perform my assigned duties quickly and efficiently, placing these duties before personal pleasures and comforts. These things I do that others may live.

-- PLEDGE OF THE AEROSPACE RESCUE AND RECOVERY SERVICE[1]

Administratively, the history of air rescue in the United States Air Force can be traced back to January 8, 1966, when the Aerospace Rescue and Recovery Service was established. Prior to that date, air rescue had been the mission of the Air Rescue Service which was created on March 13, 1946. Since that beginning, Air Force rescue units have been responsible for saving the lives of more than 21,000 persons in distress.[2] During wartime operations, these rescues encompassed activities ranging from behind enemy lines in North Korea to the Gulf of Tonkin, Vietnam. In times of peace, these rescues represent life-saving efforts that were conducted in nearly every part of the world and involved almost every nationality.

The primary mission of air rescue in the U.S. Air Force has been traditionally regarded as two-fold: to recover airmen downed in combat and to relieve suffering. In past conflicts, the recovery of aviators in distress retained for the Air Force a valuable resource--in both training time and expense--that otherwise

would have been lost. Thus, the evolving role of air rescue is directly related to the historical procession of air power. In this context, the history of air rescue begins at Kitty Hawk with the flight of the Wright brothers' airplane. The advent of air power was realized during World War I, where air rescue was manifested only through individual efforts. Next came global air warfare in World War II and the formation of the first air sea rescue organizations in the U.S. Army Air Forces. Finally, on the battlefields of Korea and Vietnam, combat rescue operations emerged and matured.

The relief of suffering transcends the mechanical aspects of air rescue and addresses the fundamentals of American attitudes about humanity. This too, then, is part of the air rescue heritage. America's enemies have always been astounded at the lengths to which rescue efforts were made to recover a single individual. More than just an invested interest in the mercenary actions of economizing resources, rescue attempts reflect American ideals about the value of human life. Such values, perhaps more than any other motivation, explains why American rescuemen have always willingly confronted perilous obstacles and risks--that others may live.

CHAPTER I

HUMANITARIANISM: THE BASIS OF RESCUE

To me it has always been a source of wonder and pride that the most potent and destructive military force ever known should create a special service dedicated to saving life. Its concept is typically American.

-- BRIG. GEN. THOMAS J. DUBOSE[1]

On September 22, 1984, three aircraft of the California Air National Guard's 129th Aerospace Rescue and Recovery Group (ARRGp) took-off from their home station near San Francisco and headed out over the Pacific. Responding to a request from the Air Force's Rescue Coordination Center, the aircraft--two HC-130 Hercules and an HH-3 Jolly Green Giant helicopter--were enroute to save a stricken sailor aboard the *Hyundai 16*, a South Korean freighter located 550 miles off the California coast. The Korean seaman was suffering from a perforated ulcer and required immediate surgery.

The first HC-130 had launched at dawn with two pararescuemen, or "PJs," on board. After the ship was located, the scuba-clad PJs parachuted into the ocean, where crewmen of the freighter were waiting to retrieve them from the 10-foot seas. Once on board, the medically trained PJs worked quickly to stabilize the man's condition and prepare him for evacuation by helicopter. The 129th's flight surgeon on board the second HC-130 communicated directly with the PJs by two-way radio, giving medical support.

Not far behind, the slower moving HH-3 helicopter was being escorted by the second HC-130 to the rescue site. Operating well beyond its normal range, the HH-3 depended on its HC-130 escort for aerial refueling and assistance in navigation. Flying through overcast skies and low clouds, the HH-3 required nearly five hours and 4,000 pounds of fuel transferred from the HC-130 tanker to cover the 550 mile distance to the *Hyundai 16*.

On-scene, the HH-3 hovered over the freighter while the PJs wrestled with a challenging problem. The patient was unable to straighten his body for placement in the liter normally used for hoist operations. Fortunately, a "Billy Pugh" cargo net had also been brought along by the crew. The flat-bottomed net enabled the PJs and their patient to be hoisted aboard the helicopter. During the return trip, the HH-3 and HC-130 tanker made three additional air refueling contacts, transferring an additional 11,000 pounds of fuel. Some 12 hours after take-off, the HH-3 rescue helicopter landed at San Francisco International Airport, where a waiting ambulance rushed the Korean seaman to a hospital.[2]

The events and emotions of that day were profoundly expressed by a grateful J. K. Jeung, the radio operator aboard *Hyundai 16*. His amazed witness of the rescue effort compelled him to write a letter to the two pararescuemen of the 129th. It states in part:[3]

> *I shall not forget, as long as I live, that day of 22nd Sept. of your devoted rescue operation for patient in rough sea. If We had asked a rescue to USSR in their territorial waters, They might expelled or arrested our ship instead of rescue. Because they had shot a civil airplane as you know. But You, America did your best for rescue by humanism, in spite of worthless one patient. I could say America is America, it's mean America is a greatest country in world more than any other country.*

To the airmen of the 129th Aerospace Rescue and Recovery Group, the life of "one worthless patient" came before the personal risks involved and the expense of several thousands of dollars. Although Jeung's grammatical skills might have been lacking, his message is easily understood. As Lt. Col. Edwin Lewis Jr., commander of the 129th, later observed, Jeung's letter expressed "not a statement about rescue but...a statement about America."[4]

Humanitarian regard for human life is as indelibly imprinted on the American character as is love of country and vitality of the human spirit. Radio Operator Jeung's recognition of American humanitarianism addresses the complexities of the American value system and the many variables that comprise its national attitudes toward mankind. These values are paramount and do not come second to the cost of saving a life. American rescue is free to whomever may need it. In order to understand the nature of humanitarian values in America, it is necessary to reflect upon the humanistic philosophies of its founding fathers, whose pervading idealisms fostered "the American way."

Roots of American Humanitarianism

> *There are no great men without virtue; and there are no great nations...without respect for right; for what is a union of rational and intelligent beings who are held together only by the bond of force?*
>
> -- ALEXIS DE TOCQUEVILLE[5]

American author and educator Howard Mumford Jones once noted that "the American way" is a concept that has eluded definition by

Americans as well as everyone else. It has been identified with everything from technological superiority to higher education. It has also been commonly used as a synonym for democracy, as if the concept of popular rule was uniquely American.[6] In this context, it signifies an understanding of the humanistic foundations of American democratic government; the advantages of which allows individual freedoms to associate in groups of all kinds for common interests or goals and to worship according to personal faith. It is this "spontaneous, uncoerced banding together of free men to further their mutual well-being" that typifies the American way.[7]

The fundamental humanistic value that underpinned the beginnings of American democracy was individual dignity. The opening passages of the American Declaration of Independence articulate a set of propositions in which individual dignity is expressed as a philosophical fundamental:

> *We hold these truths to be self-evident: That all men are created equal; that they are endowed by their Creator with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness.*

The several notions implied by these phrases often defy absolute definition and, indeed, have given occasion for interpretive dispute. Nonetheless, the overall intent is evident. Considered in their entire text, these ideals are understood to express a humanitarian reverence for the dignity of man.[8]

American ideals of humanism were not just an imagined flurry of notions set forth by its founding elite. These concepts began with the ancient philosophers of Greece and Rome, only to become displaced by Christianity and lost in the Dark Ages. During the

Renaissance, interest in the ancient authors was revived. From the ancient works of such notables as Socrates and Cicero, classical wisdoms and virtues were rediscovered and imitated. However, it was not "the 'virtu' dear to the Renaissance, but reason, dear to the Enlightenment" that inspired new attitudes concerning human dignity.[9] Whereas ecclesiastical dogma had been the bitter fruit of man's humility, the wide-spread appeal of the classics permitted man to see himself as a rational being. In a rejuvenated spirit of humanism, ideals began to evolve espousing man's natural right to pursue his own chosen ends, instead of submitting unquestioningly to the will of inscrutable providence.[10]

The Philosophical Foundations of Humanitarianism

> *Humanism implies...that every human being by the mere fact of his existence has dignity...and that to strip him of this dignity is to degrade him in so outrageous a way that we call the degradation inhumane*
>
> -- HOWARD MUMFORD JONES[11]

Humanism, being the philosophy of mankind, engenders ethical codes regarding man's conduct in society. Ultimately, three conceptions of the ideal character and moral life emerged:[12]

> *One is that of Buddha and Jesus, which stresses the feminine virtues, considers all men to be equally precious, resists evil only by returning good, identifies virtue with love, and inclines in politics to unlimited democracy.*
>
> *Another is the ethic of Machiavelli...which stresses the masculine virtues, accepts the inequality of men, relishes the risks of combat and conquest and rule, identifies virtue with power, and exalts an hereditary aristocracy.*
>
> *A third, the ethic of Socrates, Plato, and Aristotle, denies the universal applicability of either the feminine or the masculine virtues; considers that only the informed*

and mature mind can judge, according to diverse circumstance, when love should rule, and when power; identifies virtue, therefore, with intelligence; and advocates a varying mixture of aristocracy and democracy in government.

These three diverse philosophies seemed irreconcilable until Baruch (or Bendictus) Spinoza, often considered the greatest of the modern philosophers, wrote his *Ethics Demonstrated in the Manner of Geometry*. Published in 1677, Spinoza's *Ethics* earned the distinction of having unified these three conflicting beliefs into a harmonious system of morals.[13] Spinoza believed that "the foundation of virtue is no other than the effort to maintain one's being; and man's happiness consists in the power of so doing."[14] Thus, he determined that happiness should be the goal of man's conduct, with egoism as an essential element for self-preservation. Although Spinoza emphasized that man should enhance his status by use of his own vital energies, he also expressed the belief that the varying endeavors of mankind need not be mutually exclusive:[15]

There is nothing men are less able to do than live a solitary life, so that many writers have defined man as the social animal....Hence let satirists laugh...let theologians scorn...let the despondent...heap contempt upon men and admiration upon brutes. When, however, all is said and done, men find that they are dependent upon mutual support in order to provide the things they need and to escape the dangers which everywhere impend.

The ethics put forth by Spinoza reflect a departure from the rigid controls of Christian sectarianism and the emergence of modern philosophical thought. This break from the past had already begun with Francis Bacon (1561-1626) and a generation later, Rene' Descartes (1596-1650). Bacon opposed tradition and authority as did Descartes, and both believed that man could rely on his own initiative instead of past beliefs to find truth. Bacon's induc-

tive method for the discovery of truth was revealed in his famous *Novum Organum*, or, *New Instrument*. Here he wrote that through his knowledge of nature, man could rule over it and control the order of human affairs. He dismissed theological problems as irrelevant to philosophical concerns with the visible world and humanity.[16] In his popular *Essays*, Bacon praised humanitarian morality as an act consistent with nature:[17]

> *If a man be gracious and courteous to strangers, it shows he is a citizen of the world, and that his heart is no island cut off from other lands, but a continent that joins them. If he be compassionate towards the afflictions of others, it shows that his heart is like the noble tree that is wounded itself when it gives the balm.*

Like Bacon, Descartes determined that understanding based upon knowledge would lead man to the truth and that intuitive knowledge alone provided the necessary foundation for such contemplation. He maintained that the initial truth "Cogito ergo sum," or, "I think, therefore I am," constituted the basis by which the essence of all other realities could be ascertained.[18] The capability for man to reach understanding through reason was inherent. In his *Discourse On The Method* Descartes explains:[19]

> *Good sense is, of all things among men, the most equally distributed....and of distinguishing Truth from Error, which is properly what is called Good Sense or Reason, is by nature equal in all men....*

Both Bacon and Descartes attributed to man a dignity which emphasized his capacity for reason. And, although Baconian and Cartesian methods of reasoning became the subject of severe scrutiny as modern philosophical thought gained momentum throughout the Age of Reason, under their tutelage a renewed humanitarian concern for all mankind flourished.

As the humanist movement began to spread during the seventeenth and eighteenth centuries, men of reason contemplated the physical universe and man's place in it. Among these philosophers was Thomas Hobbes (1588-1679). In his reknowned *Leviathan*, first published in 1651, he proposed his estimate of a man's value within society:[20]

> *The 'value,' or 'worth,' of a man is, as of all things, his price; that is say, so much as would be given for the use of his power; and therefore is not absolute, but a thing dependent on the need and judgment of another. The public worth of a man, which is the value set on him by the commonwealth, is that which men commonly call 'dignity'.*

Hobbes supposed that a man's esteem was dependent on his inherent power. Since it was man's tendency to use his power to advance his own selfish ends, anarchy was man's natural state. "In the state of nature," Hobbes wrote, "to have all, and do all, is lawful for all."[21] Therefore, he believed that through the power of reason, men should be willing to subordinate some portion of their natural rights to government. Government, on the other hand, was obligated to concern itself with all human interests and observe certain principles of morality. Hobbes' advocacy of humanism in government did not necessarily favor democratic rule. Convinced that even bad government was better than the anarchic state of nature, Hobbes was content to advise on the moral ministrations of government rather than its validity.[22]

Perhaps more than any other philosopher, John Locke (1632-1704) influenced the humanistic concepts so deeply imbedded in American democracy. Unlike Hobbes, Locke argued that even in a state of nature, men possess inalienable rights "to order their

actions and dispose of their possessions and persons as they see fit, within the bounds of the law of nature, without asking leave or depending upon the will of any other man."[23] In his *Treatises of Government*, he wrote that the law of nature is the instruction of reason which guarantees equal rights to all men. These rights were not granted to the individual by the state, hence, they could not be legitimately revoked by the state. He believed that legitimate government was based on a social contract among men, and that the function of civil authority was instituted by a mutual consent to protect the rights of the governed.

Locke also espoused government toleration of different religious denominations. He held that clerical matters were not the concern of the state and should, therefore, be altogether ignored. Since the requisites of a man's salvation were best left to the dictates of his faith, churches and individuals could be entitled to worship in what ever way they chose. In exchange for this privilege, they need only be obligated not to incite immoral behavior or civil disloyalty.[24] Thus, by differentiating the role of the state and the role of the church, Locke also differentiated the way and purpose of pursuing knowledge for secular ends and for sacred ends.[25] The harmonious side-by-side existence of state and sectarian values in society is one of the central ideals of American humanism.

Respect for individual worth and human dignity are the central concerns of religious tradition. It is a classic theme of Graeco-Roman philosophy. It is fundamental to the ethical reasoning of the Enlightenment.[26] These ideals were imagined, invented, and

formulated in the Old World. Yet, it was the New World that realized them and fulfilled them.[27] Humanism embodied the democratic principles of the emerging American Republic. Democracy, in turn, embodied a humanistic spirit within its governed. The extent to which humanism permeated American attitudes was such that Thomas Paine could write: "Our citizenship in the United States is our national character....Our great title is Americans."[28] It is this national character that is often called "the American way."

Manifestations of American Humanitarianism

In the 1830s, a French nobleman, Alexis de Tocqueville, came to the United States to observe the American way of life. In his classic treatise, *Democracy in America*, he wrote:[29]

> *I think that in no country in the civilized world is less attention paid to philosophy than in the United States.... Nor is this surprising. The Americans do not read the works of Descartes, because their social condition deters them from speculative studies; but they follow his maxims, because this same social condition naturally disposes their minds to adopt them.*

He went on to state:[30]

> *Americans of all ages...and all dispositions, constantly form associations....to construct churches, to diffuse books, to send missionaries to the antipodes; they found in this manner hospitals...and schools. If it be proposed to inculcate some truth, or to foster some feeling by the encouragement of a great example, they form a society....*
>
> *Nothing in my opinion, is more deserving of our attention than the intellectual and moral associations of America.*

De Tocqueville's commentary illustrates the extent humanitarianism became manifested in American society. Several factors account for this occurrence. The United States had been settled predominately by people who were devout in their Christian faith

and rebellious in spirit. The necessity of forging a living out of the dense American forests and the deprivation of pioneer life changed social patterns and habits of thought. Hardships amidst raw surroundings bred sympathy and mutual cooperation. Isolated by three thousand miles from the immediate control of the government in London, the American colonists had to depend upon their own resources and initiative. Freedom from European influence developed a strong spirit of independence. This spirit created all sorts of autonomous activities to enrich an emerging life-style that embraced notions of liberty and equality. This same freedom-loving and voluntary spirit also engulfed humanitarian values, thereby inspiring networks of libraries, churches, hospitals, and other institutions dedicated to the dignity of man.[31]

It is from these rudimentary beginnings that humanitarianism in the United States developed into sophisticated institutions. It is also from these beginnings that America enjoys its world-wide reputation for unparalleled life-saving rescue operations. Americans have been involved in maritime activities since the time the first colonists arrived on its shores. Commerce maintained by the oceanic trade routes provided a vital access to the markets of Europe. It is not surprising, then, that organized life-saving in the United States was first conducted on a voluntary basis to render assistance to mariners in distress.

In 1785, the first American association dedicated to sea rescue operations was created with the founding of the Massachusetts Humane Society. According to its charter, this humanitarian organization was committed to "the recovery of persons who meet with

such accidents as to produce in them the appearance of death, and for promoting the cause of humanity by pursuing...the preservation of human life and the alleviation of its miseries."[32] To achieve its noble goals, the Society built huts equipped with life-saving articles at various coastal points. It also offered monetary rewards to individuals who had made "signal exertions" to save human life. In 1807, the Society built a lifesaving station at Cohasset, making available the first lifeboat ever used in the United States.[33]

The ancient Vikings considered it good fortune for a ship to rescue stranded seafarers.[34] Superstition eventually gave way to more conventional ethical codes, and a seagoing tradition evolved over the centuries that required any ship capable of rendering assistance to respond to the plight of another in distress. Thus, when the Revenue Cutter Service was created by Congress in 1790, rescue operations at sea naturally became one of its unofficial duties. In 1831, Secretary of the Treasury, Louis McLane, formalized the Revenue Cutter Service rescue activities by initiating maritime winter patrols for ships in distress. Six years later, Congress passed into law an act that authorized the President to use public vessels to conduct search patrols and to go to sea fully prepared to aid any ship in need of assistance.[35] These actions established rescue operations as an official national policy. Consequently, the United States became the first country in the world to "assume as a national duty the saving of life at sea, without regard to the nationality of the distressed vessel or person."[36]

By 1878, the lifeboat stations that had been built by the federal government thirty years earlier were placed under the charge of its latest humanitarian organization, the Lifesaving Service. Although the Lifesaving Service and Revenue Cutter Service functioned as separate operatives, both were administered by the U.S. Treasury Department and later, in 1915, combined to create the U.S. Coast Guard. In the meantime, these two rescue agencies initiated a "golden age of daring rescues and distinguished public service" that saved thousands of lives and property valued at many times the services' operating budgets.[37]

Even greater impetus was given to search and rescue operations as new devices and procedures were developed. In 1883, the Lifesaving Service created the Board of Marine Lifesaving Appliances to test and evaluate new techniques and equipment. The board's activities resulted in improved rescue boats, pyrotechnics, communications, line-throwing guns, and other lifesaving equipment.[38]

Shortly after the turn of the century, another innovation was realized that was destined to attain unprecedented prominence as a rescue device. Although its value in a humanitarian role would remain obscure for several years after its invention, its application to the effort of saving human life would prove no less than revolutionary. On December 17, 1903, the Wright brothers made the first manned flight in an airplane at Kitty Hawk, North Carolina.

CHAPTER II

THE ORIGINS OF AIR POWER: SEEDS OF AIR RESCUE

I am awaiting with earnest expectation the first time that an aeroplane actually saves a life; when that takes place, it will have conquered the heart of the people as well as fascinated its intellect, aroused its awe, or compelled its admiration.

-- GLENN H. CURTISS[1]

To even the most casual observer, the advent of the airplane in the early 1900s had at least one distinct advantage. As an observation platform, it afforded a wide field of view, covering relatively long distances in a short period of time. In terms of initial military application, this capability translated into aerial reconnaissance. Indeed, before 1914 few perceived the airplane as having any military significance other than aerial reconnaissance.[2]

Early advocates of military aviation envisioned observers in airplanes providing intelligence support to combat forces on land and sea. Data reporting the disposition of enemy forces collected by air could be used to direct suppressive fire or deploy forces to threatened friendly positions. Timely reconnaissance, it was believed, could provide critical information that would reduce losses in battle, thereby saving lives. Although it would be tenuous at best to assert that the earliest concepts of aerial

reconnaissance were founded in a spirit of humanitarianism, the airplane was destined to emerge in military aviation as a search and rescue vehicle.

The First Military Aircraft

On February 10, 1908, the Wright brothers were awarded the first military aircraft contract.[3] While the official acceptance trials of the Wrights' airplane, conducted at Fort Meyer in 1908, captured the interest of the Army, land based aircraft were of little value to Navy officials concerned with aviation as a practical element of sea power. The Navy did, however, begin to reconsider the possibilities of naval aviation with the successful flight of a hydroaeroplane built by Glenn H. Curtiss.

Unlike the Wrights' airplane, the Curtiss hydroaeroplane was supported by pontoons, rather than skids. On February 17, 1911, Curtiss "took such a machine off the water, flew it out to the *[USS] Pennsylvania* to land alongside and be hoisted in and out again, then rose from the surface and flew back to the base."[4] With the advent of a "seaplane," naval aviation began in earnest.

At the request of the Navy Department, Curtiss improved on his hydroaeroplane design. Substituting a boat hull fuselage in place of pontoons, the Curtiss flying boat achieved greater stability in rough waters. In July 1912, the flying boat was successfully tested. Captain Washington Chambers, head of the Aeronautical Bureau, U.S. Navy, remarked: "The hydroaeroplane is the coming machine so far as the navy is concerned; in fact, it has already come."[5]

Although Captain Chambers' statement was directed to the use of airplanes as a component of naval fleet defense, he could just as well have been making a comment on the rescue capabilities of the hydroaeroplane. During the 1911 Chicago Air Meet, one of the participating aviators crashed his airplane into the lake. Hugh Robinson, who was demonstrating a Curtiss built hydroaeroplane to the crowd at the time, immediately flew to the the downed airman's assistance. And, "...for the first time in the history of the world, a man flew through the air from dry land, alighted on the water beside a man in distress, and before anything else could get there, invited him to fly back to shore with him."[6] However, the posterity of the occasion was soon lost, as the distressed pilot chose instead to wait for approaching boats to effect his rescue.

The following year, Hugh Robinson got another opportunity to display the life saving merits of the hydroaeroplane. Robinson was an instructor at the Curtiss Hydroaeroplane School operating out of Urbana Lake, New York. A young boy, living near the lake had taken a fall resulting in serious injuries. Responding to a request for assistance, Robinson flew a doctor and medical supplies five miles across the lake within a matter of minutes. With the boy's emergency happily resolved, the hydroaeroplane and its pilot returned the doctor to his home.[7] Robinson's brief flight may well have been the first documented airborne para-medical rescue mission.

Improvements during the next few years provided the military with both land and sea based scouting aircraft attaining speeds of 60-70 miles per hour and ranges of about 200 miles. In 1915, U.S.

Coast Guard Lieutenants Elmer Stone and Norman Hall reasoned that "...if aircraft could be so used in war...they could be used with like advantage to support many cutter operations."[8] Since many sea going vessels were still unequipped with radio, those overdue were necessarily considered to be in distress. Locating these vessels required long and extensive searches by Coast Guard cutters that greatly reduced the chances of providing timely assistance.

Stone and Hall conceived a plan by which aerial search could be conducted in close coordination with cutter rescue operations. Arrangements were made to borrow an airplane from Captain Baldwin, the commander of Curtiss Field. Throughout the summer of 1915, they flew search missions for the cutter *Onondaga*. The success of their aerial search operations prompted a favorable endorsement by the commandant for continued development of Coast Guard aviation.[9] Stone and five other officers were sent to the Navy Aviation School at Pensacola, Florida. Hall was assigned to study aviation and engineering with the Curtiss Company. At last, in 1916, Congress authorized the Coast Guard to purchase its own aircraft and establish ten air stations along the U.S. coast. Unfortunately, the Coast Guard's plans to conduct air rescue operations were soon preempted. On April 6, 1917, the United States declared war on Germany. All Coast Guard personnel and equipment reverted to wartime operations under the U.S. Navy.[10]

World War I

When the United States entered World War I, the fledgling aviation branches of both the Army and Navy were ill-prepared for the

task ahead. Neither service had more than a handful of operational aircraft or trained airmen to fly them. The Air Service of the American Expeditionary Force was largely dependent on its allies, particularly the French and British, for combat aircraft and aviator training. More important, within American military circles "...there existed only the haziest notions regarding the doctrines of aerial warfare."[11] Such notions, as they eventually materialized, were concerned primarily with providing tactical support for ground forces.

The urgencies of the war, coupled with an untried air arm, fostered many advances in aviation. With innovation occurring at a rapid rate, improvements were made in aircraft design, armament, and aerial combat tactics. Slowly but surely, three distinct functions for military aircraft evolved. Aerial warfare quickly escalated as both sides began to field various types of airplanes designed for "...reconnaissance, to ascertain the positions, the movements, and the intentions of the enemy; to hinder and destroy his communications and preparations by aerial bombardment; to prevent his machines flying over our own lines and into our territory for observation or bombardment--this last being the work of the fighting patrol planes...."[12]

As reconnaissance, bombardment, and fighter pursuit missions established a conventional role for the airplane in combat, other ancillary uses also emerged. As early as 1915, Allied airplanes began flying behind enemy lines to insert agents whose missions were to collect intelligence information or sabotage certain key targets. American aviators, serving in both French and British

volunteer units, participated in some of these unconventional aerial operations.

Jimmy Bach, the first American pilot to shoot down a German plane in World War I, was assigned to the famed Lafayette Escadrille when, on September 23, 1915, he was tasked to fly saboteurs into enemy held territory. Bach and his wingman, Sergeant Pilot Mangeot, took off at dawn in Morane-Saulnier two-seater monoplanes. In their observers' seats they carried two soldiers who were to destroy a length of railroad line near German positions in the vicinity of Mezieres. The two pilots landed at the planned destination without incident. Both airplanes quickly discharged their passengers and prepared for the return flight. However, during his take-off roll, Mangeot clipped a portion of hedge and overturned his aircraft. Bach, already airborne, throttled back immediately, circled into the wind and landed to assist his distressed wingman. Mangeot, with "gratitude gleaming in his eyes," scrambled aboard Bach's airplane. This time, though, it was Bach's turn to fall victim to the unpredictable impromptu landing site. Taxiing into position, he failed to select a clear runway. The Morane-Saulnier was almost air-borne when the wing tip struck a tree branch. The airplane spun and hit the ground. Bach and Mangeot both escaped injury, but were subsequently captured by a German patrol. Jimmy Bach's unsuccessful rescue attempt resulted in detention until his repatriation after the war.[13]

Little, if any, evidence exists suggesting organized efforts to recover downed airman were ever considered during World War I. The lack of air rescue forces did not necessarily reflect a cal-

lous attitude toward aviators. Rather, the survivability of early combat airplanes was inadequate to allow the crew of a damaged aircraft to safely escape. To achieve speed or weight carrying capacity, optimum power for an airplane depended on its lightness. Therefore, designers "...had one idea always before them: their constant aim [was]...to reduce the body structure to its narrowest limits, to use only the lightest materials available...and make the fittings as slight as possible; in fact to economise [sic] weight by every possible means."[14]

Light weight design required most airframes to be constructed largely from wood and fabric. Built in this manner, World War I aircraft were extremely vulnerable to attack. Damage sustained in combat often rendered flight or control surfaces inoperative, causing many airplanes to plummet to the ground. In cases where aircraft control could be maintained, the airman's survival depended on his own ability to coax his crippled airplane to a suitable landing site in friendly territory. With the large concentrations of ground troops that characterized trench warfare, airmen forced down behind enemy lines were usually captured or killed. But, feared perhaps more than anything else by airmen was fire. Hostile rounds could easily ignite the fuel supply and engulf the aircraft in flames. Such was the fate of Major Raoul Lufbery, an American ace with 17 victories.

In March 1918, Major Lufbery was assigned to the newly organized 94th Pursuit Squadron. Based in Villeneuve, France, the 94th conducted patrol operations flying Nieuport-28s. On May 19, a German photographic airplane was observed moving back and forth over

a nearby area. Lufbery raced for the first Nieuport on the line and took-off in pursuit. He quickly engaged the enemy aircraft and made two unsuccessful passes to shoot it down. On the third pass, the German gunner returned fire and poured several rounds into the Nieuport-28, causing it to burst into flame. Moments later, Lufbery was seen falling away from his burning aircraft. Since parachutes were not available to Allied flyers, observers speculated that he had tried to maneuver his airplane over a nearby stream and jumped, hoping to break his fall by landing in the water. Instead, Raoul Lufbery fell onto a picket fence.[15] His tragic end serves as a example of the slim chances military aviators had to survive being shot down in World War I vintage aircraft.

The fate suffered by Raoul Lufbery, like so many other pilots, could have been prevented had parachutes been made available to airmen. In 1908, parachutes attached to packs worn by jumpers and inflated during free-fall had been demonstrated at shows and displays in the United States. The life-saving significance of these early parachutes escaped serious consideration by the "...supposedly alert minds engaged in developing the infant flying services of both the U.S.A. and the then much more militant nations of Europe."[16]

Military officials held varied notions about the parachute. Some felt there was insufficient time for a pilot to escape from an airplane going down. Others believed that, even if the pilot did manage to get clear of his aircraft, the velocity of the fall would cause him to lose consciousness before the parachute could

be used. Also, many officials harbored the fear that, equipped with parachutes, pilots would prematurely leave slightly damaged aircraft that otherwise could have safely returned to base and been restored to service.

Even the initial attitudes expressed by most airmen revealed a reluctance to accept the parachute. Many aviators perpetuated romantic notions "of being shot down in flames."[17] However, most pilots objected to parachutes because of lost aircraft performance due to the extra weight they would have to carry. These airmen believed "...the perfect machine...is the one offering the greatest prospect of victory, and this perfection...counts the life of the combatant as naught in comparison with the efficiency of the weapon."[18]

The collective attitude expressed by Allied officials and airmen suggests a fatalistic outlook on the plight of the distressed aviator. Perhaps, this outlook was best described by E. R. Calthrop, a British engineer who, in 1914, designed a workable parachute for military fliers. Despite several improvements in his parachute design and many successful demonstrations, the British War Office repeatedly refused to adopt its use. Finally, in January 1919, Calthrop bitterly wrote: "No one in high quarters had any time to devote to investigating the merits of an appliance whose purpose was so ridiculously irrelevant to war as the saving of life in the air."[19] In a climate of such sentiments, any ideas to establish an air rescue effort could only have been perceived as futile. The time had not yet arrived for a dedicated combat air rescue service.

There were, however, isolated incidences of life saving efforts by individual airman. As might be expected, hydroaeroplanes, similar to those first built by Curtiss, were the principals of the earliest combat search and rescue exploits. On November 16, 1916, a British Sopwith seaplane developed engine trouble while flying patrol off the Dover coast. The pilot, Flight Sub-Lieutenant R. Graham was forced down on a rough sea. The aircraft, damaged by a heavy wave on landing, turned upside down with only the bottoms of the main floats remaining above water. A few hours later, a search patrol was tasked to look for the missing aircraft. Flight Sub-Lieutenant J. H. Woolner, flying a Short 184 float plane, spotted the wreckage and the survivor. Setting down on the water, Woolner maneuvered his float plane over to Graham and after many attempts, finally managed to pick him up. Unable to get airborne again with his extra load, Woolner released a carrier pigeon with a distress message. One hour later a French torpedo-boat departed from Dunkirk to tow back the two stranded airmen.[20]

A similar exploit involved two American naval aviators flying missions out of Porto Corsini, some 50 miles south of Venice, Italy. In the middle of the morning, on August 21, 1918, Ensigns Ludlow and Hammann were providing fighter escort in Italian built Macchi M-5 flying boats. Flying out over the Adriatic Sea, Ludlow and Hammann were soon engaged by Austrian Albatross fighters. In the dogfight that ensued, Ludlow's airplane sustained several hits to his engine and propeller. His aircraft caught fire and started down in a spin. Ludlow managed to pull out of it in time and land

on the water. When Hammann observed that Ludlow had survived, he decided upon a rescue attempt. He circled down and drew up along side the downed airman. As the Macchi M-5 was built to hold only one man, Ludlow had to seat himself on Hammann's airplane under the engine and hang on to the wing struts. Despite the additional weight and damage done to his aircraft, Hammann was able to get the flying boat into the air and complete the 60-mile trip back to Porto Corsini. For his gallant rescue, Ensign Hammann received the Medal of Honor, the first ever awarded a naval aviator.[21]

These isolated rescue efforts reflect the high regard for life valued by American airmen. Sadly, the conditions of aerial combat offered a small chance of survival to airmen in distress. Only under circumstances of great fortune were downed aviators ever recovered. And, such circumstances were usually favorable only when airmen went down in the water where float planes could land nearby and render immediate assistance.

In the Aftermath of War

Peace had been the cradle of aviation, war proved an effective school.

-- M. ETIENNE LAMY[22]

When World War I ended with the signing of an armistice in November 1918, little less than 15 years had elapsed since the invention of the airplane. Air power, though far from decisive, had advanced in significance during the war. Functional improvements motivated by attempts to obtain a superior military advantage in combat greatly expanded the airplane's operational role. Major

"Hap" Arnold, one of America's first airmen, described the wartime development of the airplane when he said:[23]

> *The types changed so fast that the best plane on the line one day might very well be called obsolete the next day. The resources of almost the entire world were engaged in producing the best possible aircraft....Thus, as a result of military necessities, fine desirable qualifications of an airplane were improved: speed, reliability, great strength...low gross weight and high-powered engines.*

The airplanes that emerged from World War I were much improved over the frail designs of 1914. With peace at hand, the wartime technology that founded the aviation industry now diverted its interest to the production of aircraft for civil purposes. In the years following the war, the airplane began to occupy a central place in the public's attention. Passenger airlines and air mail service became realities. Aerial stunts and record breaking attempts captivated international interest. Issues concerning military aviation provoked heated controversy as proponents of air power prophesied an expanded importance for the airplane in future wars.

In the shadow of these events, a more obscure role became mandated for the airplane. In 1925, the Coast Guard received appropriations from Congress for the purchase of five airplanes and the establishment of two air stations. These funds were not allocated in a spirit of life-saving humanitarianism. Rather, the passage of the Prohibition Amendment had stimulated the widespread illegal importation of alcoholic beverages. The task assigned to the Coast Guard's new air arm was to support the enforcement of prohibition.[24] However, Coast Guard aviators soon demonstrated the rescue potentials of its newly acquired amphibious airplanes. In

1927, Secretary of the Treasury, Andrew Mellon, could report to Congress that: "In addition to law enforcement...the patrol aircraft have conducted experiments in the direction of lifesaving operations...."[25] As a result of these experiments, the Coast Guard expanded its use of airplanes in life-saving activities and started flying search and rescue missions as a matter of routine. The prophetic expectation expressed by Glenn Curtiss was realized. The airplane was finally granted a legitimate air rescue mission.

CHAPTER III

STRATEGIC AIR POWER: THE ADVENT OF AIR SEA RESCUE

The advent of air power...has put a completely new complexion on the old system of making war.

-- WILLIAM MITCHELL[1]

The interval between world wars founded many changes in military aviation. In 1927, the first transoceanic flights helped to eclipse the popular notion that the security of the United States was guaranteed by the two vast oceans that separated the American Continent from the rest of the world. In May, Charles Lindbergh made his famed crossing of the Atlantic Ocean in his *Spirit of St. Louis*. One month later, a similar aerial feat was performed by Army Air Corps Lieutenants Albert Hegenberger and Lester Maitland in their Fokker monoplane flight from California to Hawaii. These flights were more than impressive displays of airmanship. They demonstrated the far reaching potential of air power.[2]

Innovations in aircraft design soon produced a rapid succession of airplanes capable of greater ranges, speeds, altitudes, and pay loads. Further, collateral developments in weather reporting, radio communications, and flight instrumentation led to realistic margins of safety and dependability for travel by air. Aroused by the commercial prospects of aviation, both public and private interests envisioned a new dimension in transportation for

the exchange of goods and services made possible by the time compression of flight.[3]

Air Power Doctrine

Military visionaries also foresaw greater prospects for the airplane. The high cost in lives and national wealth expended during World War I when compared to the dismal results achieved, prompted many doubts about the validity of existing theories on the conduct of warfare. William "Billy" Mitchell, an American aviator, was among the foremost advocates of air power as the principal means to produce swift and decisive results in future conflicts. He prophesized that because "modern industrial economies and civilian morale in modern cities are extremely brittle, and that both would crack quickly under aerial bombardment" future conflicts would "bring swift victory to the belligerent who possessed command of the air."[4]

Besides having strategic decisiveness, Mitchell proposed that aerial bombardment also afforded the best defense against foreign naval intrusion into American coastal waters. In 1921, he proved this theory in a series of aerial bombing tests off the Virginia Capes attacking designated target ships. These tests culminated with the sinking of the German battleship *Ostfriesland*, which had been previously considered "unsinkable." Having demonstrated the destructive power of land based bomber aircraft, Mitchell further asserted: "Aircraft acting from suitable floating airdromes can destroy any class of surface sea craft on the high seas."[5] The top military officials were not easily convinced to accept such

new and radical ideas. Nonetheless, after some initial resistance to the ideas of Mitchell and other air power proponents, planners within the War and Navy Departments gradually relented and began to concentrate on strategies employing the airplane as a primary offensive weapon system.

By 1941, the U.S. Navy had seven aircraft carriers and an aviation branch dedicated to the concept that "the primary mission of carriers should be an offensive one against the enemy's aviation and fleet."[6] Within the Army Air Forces (AAF), the formulation of air power doctrine became centered on strategic aerial bombardment. General Henry H. "Hap" Arnold, Commanding General of the U.S. Army Air Forces, echoed Mitchell's theories when he stated: "Strategic air power is a war-winning weapon in its own right, and is capable of striking decisive blows far behind the battle line, thereby destroying the enemy's capacity to wage war."[7] Although the trials of combat eventually necessitated certain procedural refinements and caused other corollary operations to develop, these basic concepts comprised the predominant tenets of air warfare doctrine throughout World War II.

Among the several corollary developments resulting from air power doctrine was the creation of air sea rescue. This occurred for two fundamental reasons. First, the global scale of World War II operations encompassed vast seas and oceans that separated the various combat theaters. The defense of national coastlines and security for transiting forces necessitated dominance over these bodies of water. Second, the effective employment of air power in an offensive strategy demanded large concentrations of aircraft to

strike at the enemy's positions and vital centers of support. Operating from both land and carrier bases, strike aircraft frequently flew extensive over-water routes to and from their target areas. Defensive countermeasures encountered by Allied aerial forces caused heavy damage and aircraft losses. The crews of badly damaged airplanes could best hope to escape capture in enemy held territory by bailing-out over water or ditching. These two factors were inherent traits of the AAF's applied doctrine of offensive air power during World War II. They also account for the necessity of an air sea rescue service dedicated to the recovery of military aviators downed at sea.

The Battle of Britain

The rescue of one highly trained airman not only saved his life, but also the time and expense of training his replacement.

-- RICHARD T. KIGHT[8]

Mid-summer of 1940 found Great Britain hastily preparing for the aerial siege Hitler's Luftwaffe was about to launch across the English Channel. Immediately after it began, the Battle of Britain revealed a desperate need for an air sea rescue service. British air loses during August 8-18 numbered 213 Hurricane and Spitfire fighter aircraft.[9] With combined weekly production of both aircraft types slightly over one hundred, such loses caused considerable concern. More alarming than aircraft shortages was the diminishing supply of pilots. During that same ten day interval, the Royal Air Force (RAF) lost "154 pilots killed, missing

and severely wounded; and the number of new fighter pilots produced during the same period was only 63."[10] Many of those lost went down over the Channel. Existing rescue capability depended on a few RAF high-speed launches, any surface vessels operating in the vicinity, and whatever aircraft that could be made available for search.[11] The urgency for a more effective means to rescue airmen down at sea became not only a humanitarian priority, but also a matter of recovering a critical military resource.

The Battle of Britain proved to be even more costly for the Germans, with 1,733 Luftwaffe aircraft destroyed and 643 others damaged.[12] Despite the Germans' failure to anticipate the severe losses levied by a determined RAF Fighter Command, it was well prepared to conduct air sea rescue operations. Luftwaffe aircrews were outfitted with survival gear, including fluorescine sea-dye markers and inflatable dinghies. A German air sea rescue service, or *Sceenotdienst*, had been organized and equipped with some thirty Heinkel 59 float-planes specifically configured to search for and recover survivors at sea. The RAF Fighter Command, however, would not respect the Red Cross markings painted on the German rescue float-planes. Fearing that the *Sceenotdienst* would attempt to use its immunity to gather intelligence information, British fighter pilots were instructed to attack the rescue float-planes.[13]

Air Sea Rescue Service

The British were equally perceptive to appreciate the potential merits of the *Sceenotdienst* and soon mimicked their German adversaries. A few Lysander aircraft were assigned to Fighter

Command to begin joint rescue operations with surface vessels. In August 1941, overall responsibility for air sea rescue was centralized under the Coastal Command. Air Sea Rescue Squadrons were formed and control centers were established to coordinate all requests for assistance and link any available resources in concerted air sea rescue efforts. All RAF commands supplied their aircraft with survival equipment, such as rubber dinghies, radios, emergency rations, signaling devices, and first-aid kits. By 1943, a lifeboat was perfected that could be carried under the fuselage of rescue aircraft and dropped by parachute.[14]

The airborne lifeboat, complete with a set of sails, oars, and engines, was 23 feet long and 5 1/2 feet in beam. It was designed to right itself if it landed in the water upside down and automatically fire two rockets, each tossing out a lifeline. One of the most amazing rescues made with an airborne lifeboat occurred when a British Mosquito fighter was shot down in the Bay of Biscay by German fighters protecting U-boats entering and exiting port. A Warwick rescue airplane found the Mosquito's two man crew adrift in a dinghy and dropped a lifeboat to them. Sailing most of the way, the two airmen reached the English coast four days later.[15]

Throughout the course of the war, continuous refinements in organization, techniques, and equipment improved the chances of being rescued at sea. In the end, British air sea rescue units could claim a total of 3,723 Royal Air Force and 1,998 American airmen saved from the waters around Great Britain. Rescue efforts in overseas operations saved an additional 3,200 airmen.[16] The benefits derived from the Air Sea Rescue Service not only resulted

in the recovery of aviators in distress, "but also inspired all others with the knowledge that, in like misfortune, they too would be assured of that 'last full measure of devotion' which is the tradition of the Service."[17]

Plans for Worldwide Air Sea Rescue

When the United States entered World War II in December 1941, American air sea rescue capability consisted of nine U.S. Coast Guard Air Stations and about 60 amphibious aircraft. Some Coast Guard air and surface vessels had already been transferred to Navy operational control to participate in the 1940 Neutrality Patrol, provide escort for merchant ships, and conduct rescue operations for submarine attack victims. On November 1, 1941, President Roosevelt placed the Coast Guard under the U.S. Navy. Its duties were then amended to include coastal surveillance and shore based air sea rescue for most naval commands. During the first seven months of the war, Coast Guard aircraft flew more than 23,000 hours locating over 500 survivors of torpedoed ships.[18]

Distressed AAF aircrews transiting the Atlantic Ocean also benefited from the Coast Guard's dedication to life-saving. In November 1942, while on patrol in the northern Atlantic, the cutter *Northland* was asked to rescue the crew of a B-17 bomber that had gone down in the Greenland interior. The *Northland* was equipped with a Grumman J2F amphibious airplane that could be hoisted over the side and launched from the sea. The pilot, Lieutenant John A. Pritchard, proposed to land his aircraft on the ice and snow with the pontoons serving as runners. After a brief flight

over the ice cap, Pritchard and his radio operator spotted the downed B-17. Pritchard picked out a suitable landing area and set his Grumman down on the snow. Three men had survived the crash--each having sustained injury. Because his airplane could not carry all three survivors, Pritchard boarded the two most critical cases promising to return for the third man on the following day. The next day, despite poor weather conditions, Pritchard recovered the last survivor. However, on the return trip he got lost and crashed. Search planes later found the wreckage and determined that all three men had perished.[19]

Massive transoceanic movements of AAF aircraft to overseas bases coupled with observations of the British Air Sea Rescue Service prompted the Joints Chiefs of Staff, in December 1942, to examine the problem of providing air sea rescue coverage on a worldwide basis. Prior to the war, search and rescue had been the responsibilities of each local commander. Rescue missions were conducted in random fashion using whatever organic aircraft were available and without the benefit of operational guidance or training.[20]

Because of its life-saving tradition and demonstrated capability in rescue procedures, Admiral Russell R. Waesche, Commandant of the Coast Guard, proposed that control of air sea rescue operations be delegated to the Coast Guard. A subcommittee for the Joint Chiefs of Staff was assigned to consider Waesche's proposal. Discussions developed into a controversy over whether to establish a separate rescue agency or task primary responsibility to one of the existing services. Waesche's proposition for a

centralized rescue organization was not considered feasible for all branches of the service. Therefore, the subcommittee concluded that each service should maintain separate responsibility for the rescue of its own aircrews and that authority for search and rescue be delegated to each theater commander.[21]

The parochial division of rescue responsibilities between the services can be explained by their differences in employing rescue resources. Naval air sea rescue operations were organized primarily for aircraft carrier activities. Since carrier task forces functioned as self-supporting entities, specified rescue duties could be consigned to internal elements of the fleet. However, Navy and Marine shore-based aircraft operations necessitated rescue activities also be designated according to geographic area of responsibility--that being regarded as an additional duty of naval amphibious aircraft.[22] The Navy also enjoyed the advantage of having absorbed the Coast Guard into its structure. Even though few resources could be spared to enlarge its rescue capability until the later part of 1943, the Coast Guard greatly expanded its role in air sea rescue, fulfilling many of the Navy's search and rescue requirements.[23]

The AAF was not so fortunate to have a readily available cadre of expertise in rescue procedures. Initial AAF rescue attempts "leaned heavily upon the RAF for guidance and support....British air and sea craft carried the major burden of rescue responsibility in the European and Mediterranean theaters of war."[24] In the Pacific theater, a general absence of knowledge and resources severely limited early rescue efforts. Eventually, planners on

the Air Staff determined that AAF rescue units should be formed and assigned to theater commanders in support of each combat air force. In August 1943, an Emergency Rescue Branch on the Air Staff was established and plans were made to create the first AAF rescue squadrons. The lack of equipment and trained personnel delayed these plans until finally, in December, the first of several Emergency Rescue Squadrons (ERS) was activated and sent to the European Theater.[25]

AAF Emergency Rescue Squadrons in Europe

> *...the very presence of an Emergency Rescue Squadron promotes the realization that help and protection are there, should the exigency arise. This will give to the airmen an additional measure of confidence, so vital to mental composure, for no man is unafraid.*
>
> -- HISTORIAN OF THE 1ST ERS[26]

In August 1942, when the 8th Air Force first began flying combat missions from England, "the British had already developed Air Sea Rescue to a fine art."[27] For nearly a year, the AAF relied exclusively on the British for rescue support. As the activities of both the American daylight and British night bomber offensives increased, it was agreed that rescue operations would become a combined Anglo-American responsibility. By July 1943, personnel from the newly formed 65th Fighter Wing had assumed the Air Sea Rescue (ASR) controller function for all 8th Air Force missions.[28]

The ASR controller's primary duty was to direct air sea rescue operations for American airmen that had ditched or bailed-out over the English Channel or North Sea. In the event of an emergency,

airmen had been trained to select a designated rescue radio frequency and transmit the phrase "Mayday!, Mayday!, Mayday!" (derived from the French *m'aidez*--help me). Using three or more radio bearings obtained from direction finding stations located along the English coast, ASR controllers could triangulate the position of any aircraft making a distress call. The distressed aircraft could then be vectored to a point where rescue boats had been pre-positioned or Air Sea Rescue Service aircraft could be called upon to render assistance.[29]

The 65th Fighter Wing also began flying "spotter" air sea rescue missions, modeled after the RAF system of using Spitfire fighters for search. In May 1944, a spotter squadron, Detachment B, 65th Fighter Wing, began operations using P-47 fighters that had been modified to carry two-man dinghies, smoke bombs, rations, and other emergency gear that could be dropped. The mission of the spotter pilot was to intercept and escort distressed aircraft to a suitable landing site or, if ditching was imminent, to the nearest boat; to conduct search for downed airmen; to orbit their position once survivors were found until a boat or amphibian aircraft arrived; and to provide escort for other rescue airplanes.[30]

The valuable contribution made by spotter aircraft to air sea rescue became immediately apparent. On June 29, 1944, a man in a dinghy was reported 10 miles off the coast of German occupied Holland. A British Warwick carrying an airborne lifeboat was launched with an escort of two AAF P-47 spotter planes. As the Warwick approached the dinghy's position, it was hit by antiaircraft fire from the enemy coast. Undaunted, the P-47s continued

the search and located the survivor. Additional P-47s were dispatched to provide air cover while an RAF high-speed launch recovered the dingy's occupant. The entire rescue mission for this one survivor, an Australian fighter pilot, had taken over seven hours and required fifteen aircraft.[31]

Early in 1945, the P-47 spotter squadron was redesignated the 5th Emergency Rescue Squadron. Newly equipped with OA-10 amphibians and SB-17s modified to carry airborne lifeboats, the 5th ERS was ready to assume all air sea rescue operations for the Eighth Air Force. Soon after they arrived, the OA-10s were put to task. On their initial orientation flight, one of these newly arrived crews was asked to rescue the crew of a bomber that had ditched near the coast of Holland. Aided by an ASR controller, the OA-10 and its inexperienced crew were vectored out to the site of the ditching. After locating eight members of the bomber crew afloat in rafts, the OA-10 set down on the 10-foot seas. With the eight survivors safely boarded, the amphibian started its take-off through the rough seas. Water poured into the nose of the airplane from a damaged port and shorted out the radio. Without an operative radio, vectors from the controller for the return trip could no longer be received. The navigator's map did not extend that far east, so he created a homemade chart to get his airplane back to base. Arriving after dark, the pilot made his first ever night landing in England. More important, eight men of a B-17 crew had been saved.[32]

As in the cross-channel operations against the European mainland, the British provided the bulk of air sea rescue coverage in

the Mediterranean. The first of four British air sea rescue units that would eventually materialize in the Mediterranean area began operations in September 1941. Out-fitted with amphibious planes, high-speed launches, and, later in the war, lifeboat carrying Warwicks, the British units alone provided air sea rescue coverage for Allied aviators until June 1943.[33]

At the request of the 12th Fighter Command, three AAF OA-10s and crews were sent from the United States to supplement British rescue operations. Hampered by the lack of thorough training and an absence of any real organizational support, the American airmen nonetheless displayed a high degree of determination and courage. During their first two months of operations, the OA-10s rescued 40 allied and 5 enemy airmen. Unfortunately, two of the amphibians were shot down by enemy airplanes during rescue attempts and in December, the crews were returned to the United States.[34]

In March 1944, the first completely trained and equipped AAF emergency rescue squadron deployed by the Emergency Rescue Branch arrived in Casablanca. The 1st ERS was manned by 200 officers and enlisted men assigned to three operational flights. Most of their missions were flown in support of Mediterranean based bomber raids against southern France and the European interior. Equipped with nine OA-10s and some liaison aircraft, the flights were stationed at various bases throughout the Mediterranean under operational control of the British Air Sea Rescue Service. In addition, four emergency rescue boat crews were deployed. However, the vessels assigned to the boat crews were too small to allow any significant operations in the open sea, limiting their rescue capabilities.[35]

Soon after it began operations, the 1st ERS demonstrated how properly trained and equipped AAF air sea rescue units increased the chances for aviators to survive going down at sea. In April 1944, a disabled American bomber returning from a daylight attack on Toulon announced its intention to ditch off the southern coast of France. An OA-10 crew from the 1st ERS located the survivors, set down on the water, recovered the ten men, and then delivered them to a waiting ambulance in Corsica. The expediency with which the rescue was accomplished is described in the unit's history:[36]

> *The B-24G is said to have "ditched" at 1300; the dinghies were sighted at 1400, water landing was successfully made at 1500. The take-off was undertaken at approximately 1530, and the PBY taxied out of the basin and up the ramp at 1615!*

AAF air sea rescue units in the European conflict contributed much to alleviate the airman's fear of going down at sea. In England, a well established British rescue organization provided valuable training and support for American rescue operations prior to the arrival of the 5th ERS. Due in large measure to British cooperation, after 1943, Eighth Air Force crews had "better than a one-in-three chance of survival if they were forced to descend to a watery landing."[37] In the Mediterranean, the 1st ERS operated under the much larger British Air Sea Rescue Service. Although the experience of the 1st ERS was brief, by December 1944, the unit had saved 244 Allied and Axis airmen.[38]

AAF Emergency Rescue Squadrons in the Pacific

Air sea rescue operations in the Pacific Theater was a joint, though not always highly coordinated, AAF-Navy effort. During the

first year of the war, rescue duties were mainly carried out by U.S. Navy amphibious airplanes. At first, a few PBY and J2F-4 seaplanes were tasked for rescue only when the need arose. But as the war progressed, the Navy organized their rescue operations on a more formal basis. After 1943, "Dumbos"--the affectionate name for Navy PBY search planes--became permanently assigned to forward combat areas to be used exclusively for air sea rescue. Although the Navy rescue system was not as elaborate as the British Air Sea Rescue Service, the Dumbo aircrews performed with equal skill and tenacity.[39]

During one of the air strikes against Rabaul in the South Pacific Theater, an AAF B-25 bomber had been forced down near the coast of Japanese-occupied New Ireland. Escorted by AAF P-40 fighters, a Navy Dumbo touched down on the water and taxied towards the six men in the life raft. When the Japanese shore batteries opened fire on the Navy airplane, the P-40s began strafing the enemy positions. While the hostile fire was being diverted by the escort fighters, the Dumbo crew helped the six B-25 flyers into the amphibian and got airborne once again. Fifteen minutes into the return flight, a request was received to recover a man in a dinghy 50 miles from Dumbo's position. Arriving on scene several minutes later, the rescue plane set down on the water, recovered the survivor--a Marine F4U pilot--and resumed the trip back to base. During the return flight, the Marine explained that he had been shot down over Rabaul nine days ago and parachuted to the ground. Evading capture by enemy soldiers for seven days, he had made his way through the jungle until coming to a river. Con-

fident that his best chance of being rescued was to be found and picked-up by a Dumbo rescue plane, he had inflated his rubber raft and floated downstream out to the open sea where he was most likely to be spotted.[40]

Recognizing a responsibility to its airmen, the AAF began to organize its own rescue efforts in early 1943. Both the Fifth and Thirteenth Air Forces established air sea rescue services at their respective headquarters. Using planes from their own combat units and cooperating with Navy and Australian rescue crews, these AAF rescue organizations functioned with some success for over a year and a half. By April 1944, the Fifth Air Force could claim credit for a total of 455 rescues.[41] As the presence of American air power began to expand, so did the requirement for additional resources to provide adequate rescue coverage. Acknowledging this need, the Air Staff deployed two Emergency Rescue Squadrons to the Pacific Theater in mid-1944, followed by another two newly activated squadrons in 1945.

The organizational structure of the rescue squadrons stationed in the Pacific were similar to those operating in Europe and the Mediterranean. In the Pacific Theater, however, the boat crews were combined with the flying rescue squadrons to form composite groups. Instead of being assigned to the theater commander, the rescue composite groups were placed under the control of the numbered air force to which they reported. The advantage of this command relationship was that as each AAF command in the Pacific advanced towards Japan, their component air sea rescue squadrons relocated with them. Accordingly, the 3rd ERS and the 6th ERS

were assigned to the 5th Emergency Rescue Group, the 2nd ERS to the 13th Emergency Rescue Group, and the 4th ERS was tasked to support the XXI Bomber Command.[42]

The assignment of emergency rescue squadrons to the Pacific afforded some autonomy to AAF rescue activities. Sector patrols were flown in conjunction with bomber missions and along routine air routes. Also, an alert system was devised whereby crews stood ready to launch in the event a distress call was received. Yet, cooperative efforts with the Navy remained paramount for many air sea rescue operations. Combinations of joint rescue resources were often used to establish a "rescue line" of pre-positioned boats and aircraft along the flight path of strike aircraft.[43]

An example of a joint service effort occurred on May 6, 1945. A fighter pilot had been forced to parachute into the sea. Within minutes, an OA-10 and an SB-17 from the 5th Emergency Rescue Group were overhead the survivor's position. When the amphibian elected not to attempt a water landing, the SB-17 dropped its lifeboat to the survivor. The final pick-up was made some hours later by a submarine.[44]

Through cooperative efforts with Navy aircraft and marine vessels, the AAF rescue squadrons in the Pacific Theater proved more effective than those in Europe. The 2nd ERS amassed a record total of 588 rescues from the time it began operations in July 1944.[45] By 1945, AAF airmen could expect an almost fifty per cent probability of being rescued in the event they went down at sea. However, the chances of survival varied among the various combat areas. For example, along the bomber routes to Japan the odds

rose to "almost 80 percent...in some months, but in the Southwest Pacific such results were never attained."[46]

The Achievements of Air Sea Rescue

Strategic air power during World War II made it necessary for American combat aircraft to extend their operations for long distances over water. Yet, even as large fleets of AAF bombers and fighters were being deployed throughout the world, "little consideration had been given to the search for, and retrieving of, missing or crashed airmen."[47] The overall lack of preparedness of the AAF in matters pertaining to air sea rescue became immediately apparent as American crews began combat air operations in Europe. Untrained in emergency procedures and without support from an organic rescue service, many AAF airmen were lost needlessly. Within the Eighth Air Force, only 6 percent of the crews that had been forced down were rescued during the first half of 1943. With the assistance of the British Air Sea Rescue Service, the Eighth Air Force began aircrew training and rescue programs that resulted in the rescue of nearly 40 percent of its downed airmen during the second half of the same year.[48] A similar situation existed in the Pacific and Mediterranean Theaters until early 1944 when the newly formed Emergency Rescue Branch of the Air Staff finally began to send trained AAF rescue units overseas.

Working with their British and U.S. Navy counterparts, the activities of the belated AAF Emergency Rescue Squadrons resulted in a respectable share of the nearly 5,000 rescued AAF airmen who benefited from air sea rescue operations.[49] In addition to the

humanitarian aspect of saving human life, the existence of air sea rescue units in the AAF proved beneficial in other ways:[50]

> *...the morale of personnel of operational flights increased many-fold when they realized that their chances of being saved after crashing were good. Not only did the efficiency of the flyer improve by the realization that he had a chance of being rescued, but a considerable saving in valuable manpower resulted.*

By the end of World War II, the AAF still had certain deficiencies in its air sea rescue capabilities. The lifeboat SB-17s were no longer adequate to cover the extensive distances flown by the larger B-29 bombers. The OA-10 with its weak hull and limited range also created problems throughout the war. Further, with the advent of atomic weapons, air power had acquired a new dimension in warfare. Strategic aerial bombing found new importance in the emerging atomic age. Thus, a continued need for air sea rescue to support long-ranged strategic bombers resulted in the post-war development of lifeboat carrying SB-29s and the SA-16 amphibian, a more capable airplane than the OA-10.[51]

But, perhaps the most critical deficiency of the AAF's air sea rescue organization was its limited capability to assist airmen forced down over land. As the war came to an end, a new device that made rescue from remote land sites possible had already been tested with some success by the 8th ERS in China. This device was called a helicopter.

CHAPTER IV

HELICOPTERS: AIR LAND RESCUE EMERGES

...if this instrument made with a screw be well-made...and be turned swiftly the said screw will make its spiral in the air and it will rise high.

-- LEONARDO DA VINCI[1]

The predominance of World War II aerial operations over vast bodies of water made it necessary that an organized rescue effort be directed to the recovery of American airmen downed at sea. The development of AAF Emergency Rescue Squadrons equipped with OA-10 amphibians, lifeboat carrying SB-17s, and rescue boats was predicated on the urgent need for an air sea rescue capability. However, such measures were generally inadequate for land search and rescue operations. Although, there were circumstances that permitted the recovery of American aviators who had been fortunate enough to be forced down over areas where contact with friendly partisan groups were made. In these instances, downed airmen were hidden from enemy patrols until arrangements could be made for their evacuation by amphibious aircraft or boats from coastal rendezvous points.

The need for a more extensive air land rescue capability first became evident during the air combat and airlift campaigns in the China-Burma-India Theater. These air operations were often con-

ducted over vast remote areas of sparsely inhabited jungles and mountains. Aircrews that went down in such areas were largely dependent upon their own devices to link up with friendly ground forces in the vicinity. In certain cases, ground rescue teams were dropped by parachute to the scene of an airplane crash so that medical aid could be given and to provide litter transport for any non-ambulatory survivors. Except in a few situations where a remote landing strip was nearby, the recovery of downed airmen usually took several days or weeks to accomplish. Movement was limited to travel by foot and whatever other land conveyance that could be found. As the incidence of land rescue operations continued to increase, AAF planners began to consider more satisfactory means to recover these aircrews.

The First AAF Helicopters

Unimpressed by the Wright brothers' flying machine, American inventor Thomas A. Edison once commented: "The aeroplane won't amount to a damn until it can fly like a hummingbird, go straight up, straight down, hover like a hummingbird."[2] Although Edison's statement proved to be short-sighted, it did address the advantage that helicopters would proffer. The ability of the helicopter to vertically ascend into the air, hover over a fixed point, and then vertically descend to land without the use of a runway, characterized those features most desirable in a rescue aircraft. These characteristics not only enabled helicopters "to perform routine air-sea rescues with greater dispatch than either amphibious or lifeboat dropping aircraft, but also opened two new vistas for

rescue efforts: the rescue of personnel from behind enemy lines and the speedy evacuation of wounded from front-line positions."[3] However, the mechanical complexities of hover flight precluded any large-scale production and deployment of helicopters for military use until the latter part of World War II.

Like the airplane, the history of the helicopter encompasses centuries of experimentation. In the sixteenth century, about the same time that Leonardo da Vinci was designing his "aerial screw," an Italian alchemist convinced the monks of an abbey in Scotland that with wings fabricated from bird feathers he would "ascend and fly from the precipitous walls of Castle Stirling across the English Channel to France."[4] His futile attempt at this aerial feat produced only a broken thighbone and a simple alibi. Lamenting the fact that he had chosen cock feathers to construct his wings, he claimed: "Such had too much affinity for the dung-hill....I should have used only eagle feathers."[5]

A more serious endeavor by a French engineer, Louis Breguet, resulted in the first manned helicopter flight in August 1907. Breguet's "helicoplane" was lifted by four propellers powered by a light airplane engine. It rose five feet into the air and remained aloft for two minutes.[6] However, other than producing an historic first, Breguet's machine offered no immediate practical use. The problem of producing adequate control and power for such contraptions continued to plague Breguet and other helicopter innovators until 1939, when Igor Sikorsky introduced his VS-300 helicopter. Acclaimed as the "first truly successful helicopter," Sikorsky's aircraft was demonstrated to the Army on April 20.[7]

The Army's interest in the helicopter can be traced back to 1921, when a Russian immigrant, George de Bothezat, wrote that he had designed a wholly practical helicopter four years earlier in Petrograd. Convincing the Army to fund his project, de Bothezat first flew his helicopter in December 1922. In 1923, his machine established a record by hovering for almost three minutes, lifting 450 pounds to a height of four feet. But, in 1924, after spending more than $200,000, the Army abandoned de Bothezat's helicopter because of "the unfavorable feature of inherent dissymmetry in case of mechanical failure and general mechanical complexity."[8]

Further efforts to develop a feasible helicopter lagged until 1940, when separate contracts were award to Platt-LaPage Aircraft Company and Vought-Sikorsky Aircraft. By 1943, both companies could offer a helicopter that satisfied the Army's requirements. However, the Sikorsky model, designated the XR-4, had already been determined to be the more efficient machine. It had a 165 horsepower engine, could lift 500 pounds, and was found to have a cruising range of 112 miles. Soon after its initial acceptance, the R-4 production model was modified with a larger rotor and more power. Designated the YR-4A, 13 of these helicopters were ordered by the AAF in April 1942. A total of 16 YR-4As were eventually procured by the AAF, four of which were deployed to China for service with the 8th Emergency Rescue Squadron.[9]

Rescue in the China-Burma-India (CBI) Theater

The first use of a helicopter in a rescue mission under combat conditions occurred during the Burma campaign in March 1944. An

AAF R-4 helicopter stationed in India was called upon to evacuate a downed pilot and three wounded British soldiers from the 1st Air Commando Group's secret base *Aberdeen*, deep inside Japanese held Burma. The pilot, Lieutenant Carter Harmann, had to have an extra fuel tank installed in his R-4 in order to cover the distance. Flying from India over a 5,000-foot mountain, he reached *Aberdeen* and landed in a nearby rice paddy. One by one, Harmann flew the wounded men to safety.[10]

One month later, the use of a helicopter again proved successful as a land rescue vehicle. A small liaison airplane had been forced down behind enemy lines in Burma. All three of the plane's occupants were injured. A search aircraft from the 1st Air Commando Group located the survivors and requested assistance from an R-4 helicopter assigned to the commando unit. The R-4 recovered the three men and carried them to a nearby airfield where a C-47 transport airplane flew them back to friendly territory. The helicopter's demonstrated adaptability to land rescue operations had proven so effective that another 18 such missions were flown during the next few days.[11]

The integrated use of fixed-wing aircraft and helicopters was further demonstrated in January 1945. A weatherman at an observation station atop a remote razor-back mountain in Burma had been injured. A YR-4A helicopter, escorted by two L-5 light airplanes, took-off from its base in Myitkyina and proceeded northwest to the site of the injured man. Flying at treetop level, the YR-4A landed for fuel at Sinkaling and then continued the 160-mile trek. By the time the helicopter reached the weather station, it was low on

fuel and the air was turbulent. The YR-4A crew chose to stay the night and attempt to evacuate the injured weatherman the next day. The L-5s flew back to Sinkaling to spend the night. The following morning, they returned to the mountain site and dropped fuel to the helicopter crew. The YR-4A took-off and delivered the injured man to Sinkaling. After being transferred to one of the L-5 escort planes, the survivor was then evacuated to Myitkyina, where medical facilities were available.[12]

These daring helicopter rescues in Burma were not performed by airmen of the AAF's Emergency Rescue Service. Rather, they were the individual achievements of helicopter pilots that had been deployed in piecemeal fashion to support the various operational combat commands. Until 1945, the only rescue capability organized on a formal basis in the CBI Theater was that provided by units of the British Air Sea Rescue Service based in India. Slightly modified for local conditions, the British units were modeled after those established in England.[13] While providing adequate rescue coverage for American airmen flying over the Indian Ocean, they were ill-equipped to render assistance to airmen downed over the jungles and mountains that characterized much of the terrain in the CBI Theater.

On January 1, 1945, two flights of the 1st Emergency Rescue Squadron were transferred from Italy and sent to India to form a new rescue unit.[14] Activated on January 25th, the 7th ERS began rescue operations in March and remained in the CBI Theater until August. However, like its British counterpart, the aircraft used by the 7th ERS were not ideally suited for land rescue activities.

Yet, during their first month of operations, the OA-10s, SB-17s, and L-5 rescue planes assigned to the 7th ERS flew 43 missions and achieved 16 rescues, more than half of which were conducted over land areas. The importance of land search and rescue was becoming increasingly evident as AAF bomber bases moved closer to Japan.[15]

The first organized AAF rescue unit dedicated to land rescue operations was formed in May 1945, with the activation of the 8th ERS. Equipped solely with C-47 search planes and helicopters, the 8th ERS was assigned to the Air Search and Rescue Section of the China Air Service Command. Their first mission, on May 20, was a search operation involving the C-47s. One week later, helicopters from the 8th ERS accomplished the unit's first rescue. By the middle of June, six more such helicopter rescues had been made. During its brief six months of activity, the 8th ERS eventually performed 110 land rescue missions, saving 43 downed airmen. In one instance three helicopters were used to locate and recover a crew that had bailed-out over dense jungle. Within a few hours the airmen were rescued by the helicopters. It would have taken a ground party more than three weeks just to reach the point where the survivors were found.[16]

On the basis of the land rescue missions conducted by the 8th ERS in China and the difficult terrain in which the squadron had operated, the helicopter had been "provided a thorough test...in rescue operations, and the results were extremely satisfactory."[17] By 1946, helicopters were considered standard unit equipment for the emergency rescue squadrons. The AAF had already received nearly 400 Sikorsky R-4s, and the newer R-5 and R-6 models, into

its inventory. However, very few helicopters were ever deployed to the various combat theaters. Those that did make it over-seas were never used for air sea rescue operations. But, in the period following World War II, design improvements and operational tests confirmed the helicopter's effectiveness in both land and sea rescue operations. By 1950, the helicopter had become "an integral part of a rescue squadron's equipment."[18]

The Air Rescue Service

The defeat of Japan in August 1945, marked the end of World War II. In the wake of the war's destructive path, the United States and the Soviet Union stood as the only two major powers in the world. Tensions between the two superpowers quickly developed during the postwar period as Soviet expansion was challenged by the Truman administration's commitment to contain the spread of communism. Yet, despite its newly emerged and recognized importance in global affairs, the U.S. Armed Forces were immediately beset with a tidal wave of American public opinion to demobilize. In the process that followed, a point system--based on merit and used to prioritize the discharge of servicemen--resulted in not only a severe reduction in force size, but also the loss of the most experienced members. This dual effect of demobilization decimated the military services to the point that they soon lacked the power necessary to back up American foreign policy--a condition that would not be rectified for nearly two years. Consequently, by December 1946, the AAF could claim only two aircraft groups to be in any state of combat readiness.[19]

Even as the issues of demobilization and military preparedness were being resolved, the continuance of the AAF's emergency rescue organization came into question. During the war, jurisdiction over air search and rescue operations had never been fully established. Both the Army and Navy had assumed rescue responsibility for their own airmen. With the end of hostilities, the Navy began deactivating its rescue units, relegating the task to the Coast Guard and its own regular patrol squadrons.[20] Supported by Naval authorities, the Coast Guard began to reassert its claim to primacy in air sea rescue, envisioning a postwar need for "patrolling the transoceanic air lanes...much as the Coast Guard cutter fleet now patrols the sea lanes--acting as a sentinel, warning of danger, and rescuing survivors of planes forced down at sea."[21]

However, the AAF refuted the Coast Guard's claim, contending that since the Coast Guard's peacetime rescue mandate was to cover the American continental regions and coastlines, its capability to operate a global service under varying conditions would not be adequate for AAF requirements. While recognizing the Coast Guard's traditional role in rescue, AAF opinion remained reluctant to relinquish responsibility for its own airmen to an organization outside its control. Therefore, the AAF position favored the retention of its own rescue units, concerned that its worldwide rescue needs could not otherwise be satisfied.[22]

The dispute concerning overall rescue responsibility continued into 1946, until a proposal by Lieutenant General Hoyt S. Vandenberg was adopted. Vandenberg's proposal recommended that search and rescue responsibilities for all components of the AAF be dele-

gated to the Air Transport Command (ATC). Further, the Air Transport Command would be directed to accomplish the following:[23]

> *...establish and maintain a land-air search and rescue organization within the United States and sea-search and rescue agencies along ATC foreign routes, organize mobile rescue squadrons for assignment to each theater air command, and establish liaison with Coast Guard commanders for continental search and rescue.*

Vandenberg's proposal provided the basic structure by which the AAF reorganized its rescue operations. His recommendations became formalized on March 13, 1946, when the Air Rescue Service (ARS) was created and assigned to the Air Transport Command.[24]

The Air Rescue Service underwent many organizational changes during its first few years. Initially, its rescue activities were confined to missions within the United States. On September 18, 1947, the United States Air Force (USAF) was created under the terms of the National Security Act of 1947. As a part of the Air Force, ARS was reassigned from ATC to the Military Air Transport Service (MATS) in June 1948. Under MATS, ARS began to extend its operations overseas, establishing units in Labrador, Bermuda, Libya, the Azores, and Saudi Arabia. Eventually, all of the overseas emergency rescue squadrons were administratively transferred to ARS--though operational control was retained by the local air commander--and redesignated "Rescue Squadrons" (in 1950, their designation was again changed to "Air Rescue Squadrons").[25] By September 1949, ARS consisted of seven operational squadrons providing worldwide rescue coverage.

Besides undergoing various organizational changes, some ARS units were also assigned new aircraft. In March 1947, the first

lifeboat carrying SB-29s were assigned to ARS. The SB-29 was far better adapted to its rescue role than the SB-17, although SB-17s continued in service for several more years. Grumman SA-16 amphibians began to replace the OA-10s. Designed specifically for air sea rescue, the SA-16 could carry 10 passengers at a cruising speed of 225 miles per hour and had an effective search radius of over 1,000 miles. Sikorsky R-5 (later called the H-5) helicopters had already replaced the YR-4As. The R-5 could carry 5 passengers at a speed of 125 miles per hour and had a fuel endurance of up to four hours. In addition, ARS squadrons were equipped with L-5 light airplanes and C-47 search aircraft.[26]

Centralization under ARS and the prospect of obtaining new aircraft did not resolve all of the problems for the widely dispersed rescue squadrons. Until 1949, a critical shortage of trained enlisted personnel was a continuous problem. Even then, airmen in some critical career fields--including pilots and navigators--remained in short supply. Maintenance troubles and parts shortages caused high out-of-commission rates, greatly diminishing rescue effectiveness. Despite these problems, USAF air rescue activity began to recover from its postwar decline. In 1949, ARS was involved in 1,066 search and rescues as opposed to 435 such missions just two years prior.[27] This increased activity reflects the successful implementation of the USAF global rescue concept. The amphibians and lifeboat planes stationed throughout the world provided long-range rescue coverage for strategic bombers and transport aircraft transiting global routes. The few helicopters in the ARS inventory were used in a limited role for local area

coverage. However, the rescue units were to be given yet another challenge. On June 25, 1950, the Korean War began.

Air Rescue in the Korean War

It was ironic that when the North Korean Communists began their campaign against South Korea, the U.S. Air Force, like its AAF predecessor prior to World War II, was primarily equipped and trained to conduct strategic bombardment operations. The overall effectiveness of the AAF's bomber commands during World War II had fallen short of the results promised by its doctrine of strategic offensive air power. The dream of air power primacy propagated by Mitchell's prophecy had been dispelled. Strategic bombardment alone did not produce victory. Its decisiveness in ending the war was being variously regarded as having anywhere from "important" to "relatively modest" influence.[28] But, with the introduction of a nuclear capability near the end of the war, postwar analysis of strategic bombing became a controversial issue. The atomic age led many advocates of air power to conclude the following:[29]

> *...the mushroom cloud was like the fire storm, a milestone in the realization of a doctrine a half-century old....the surrender of Japan while its shores were still inviolate brought triumphant affirmation of the doctrine and the dream. The air weapon had become the supreme weapon--or so it seemed.*

Proponents of strategic air power in the nuclear age found a willing supporter in the Truman Administration. The concept that long-range strategic bombers armed with nuclear weapons could impose a deterrent effect on communist plans for expansion, provided Truman with an economical means to pursue his policy of Soviet con-

tainment. Consequently, the Air Force's Strategic Air Command was built up at the expense of conventional forces. By 1950, the Air Force was far better prepared to fight a strategic intercontinental nuclear war than a limited tactical conflict. Its small and specialized force structure had become "insufficient...to provide an adequate tactical air force."[30]

When the hostilities in Korea began, it was immediately recognized that the Air Force would have to conduct tactical air operations in support of the hard-pressed ground forces. Close air support was needed to provide additional fire power against attacking communist forces. Likewise, an intensive air interdiction program was essential to disrupt and disorganize the enemy advance. The Air Force was also required to protect against air attack by destroying any intruding enemy air forces . Almost all of these air activities were confined to a relatively small theater of operations near enemy lines. Under such conditions the Air Force began flying combat missions with a very limited tactical force and little training in ground support operations. A rapid build-up of tactical air units ensued. In support of these forces, new air rescue tactics and procedures were needed.[31]

Search and rescue operations in Korea were the responsibility of the 3rd ARS, headquartered in Japan since the end of World War II. On July 22, 1950, the 3rd ARS sent an H-5 helicopter detachment to Taegu, Korea. The H-5s primarily performed evacuation duties until the Rescue Control Center (RCC) was established in the Joint Operations Center on August 27. The RCC's task was to coordinate and monitor all USAF rescue efforts in Korea. Through

close cooperation with the United Nations Command forces, the H-5s began to conduct missions to rescue airmen downed behind enemy lines for the first time as a standard procedure.[32]

The first rescue of an airman from behind enemy lines occurred on September 4, 1950. Employing friendly fighter aircraft for protective air cover, Lieutenant Paul Van Boven dashed across enemy lines in his H-5, landed and picked-up Captain Robert Wayne.[33] The following month, a 3rd ARS helicopter was again called upon to operate behind the lines, this time to save a British pilot. The mission required a 125-mile round trip into enemy occupied territory. Arriving at the crash site, the H-5 crew found the injured pilot still inside his wrecked airplane. The H-5 landed near the wreckage and a paramedic sprinted under enemy fire to assist the wounded flyer from his aircraft. Carrying the survivor on his shoulders, the paramedic made his way through the small-arms fire back to the waiting helicopter. On the return flight, the airman was given an emergency transfusion--the first ever to be given in a helicopter while flying over a combat zone.[34]

The successes achieved by the 3rd ARS in Korea "were aided by the ignorance, superstition, and poor marksmanship of the enemy and by the driving motivation of the American to take care of his own."[35] The helicopter crews' exploitation of these circumstances often resulted in some rather daring rescues. In one such episode during June 1951, a Marine pilot was forced down near enemy-held positions. Armed only with a .45 automatic pistol, he fought off the Chinese soldiers until all of his ammunition was expended. When the helicopter arrived on the scene, the Marine pilot had al-

ready been taken prisoner. Unwilling as yet to give up the rescue attempt, the helicopter pilot swung his aircraft in low over the site of the captured American. As the helicopter moved in, one of the crew began firing at the enemy soldiers with a carbine. In the confusion that followed, the Chinese captors fled into the brush, leaving their prisoner behind. A rope was lowered from the hovering aircraft and the Marine pilot was quickly pulled aboard. In the melee, the helicopter was hit several times. With gas leaking from a punctured fuel tank, the helicopter and its precious human cargo returned safely.[36]

It addition to introducing rescue operations behind the lines to recover downed airmen, helicopters also pioneered the development of air evacuation of combat wounded. Within a few days after their arrival in Korea, helicopters from the 3rd ARS initiated airlift operations transporting wounded ground troops to field surgical hospital units that had been set up in rear areas. By August 29, 1950, the small helicopter detachment had evacuated 83 soldiers whom an Army surgeon said "would never have survived a ten-to-fourteen-hour trip by ambulance to a field hospital."[37]

Evacuation of front-line casualties by helicopter proved so successful that the Air Force began stripping other commands of their H-5s, sending 14 of these to the 3rd ARS. In March 1951, two test models of the new Sikorsky H-19 helicopter arrived in Korea. The larger and more powerful H-19 could carry 10 passengers in addition to its pilot and a medical technician. One of the new helicopters assisted the 3rd ARS H-5s in a massive medical evacuation effort. On March 24-25, the helicopters rescued 148

injured and wounded paratroopers from the Munsan-ni drop zone. Flying a total of 77 sorties, the rescue crews flew through heavy mortar and small arms fire which damaged two of the helicopters. The H-19 proved to be well suited for the rescue mission and, in February 1952, H-19s began replacing the H-5s.[38]

Medical evacuation by helicopter helped decrease the mortality rate of wounded front line troops. During World War II, 45 out of every 1,000 men to reach a hospital died. In Korea, only 25 out of 1,000 such cases were fatal. By mid-1951, the Army had enough of its own helicopters to take over the major portion of medical evacuation duties. Even so, the 3rd ARS continued to perform the "med-evac" mission whenever needed. By the end of the war, the Air Rescue Service alone had evacuated almost 10,000 wounded.[39]

While helicopters conducted air land rescue activities, ARS fixed-wing aircraft were heavily involved in air sea rescue operations. Initially, SB-17s were employed to fly rescue orbits for bomber strikes launched from air bases in Japan and Okinawa. At the request of Bomber Command, SB-17s held pre-designated orbit positions over the Japan Sea whenever bombers crossed into Korea. In the event a ditching or bail-out over water became likely, a radio call to the nearest SB-17 on orbit patrol began the rescue process. In 1952, the newer SB-29s started to arrive in enough quantities to replace the SB-17s. The longer-ranged SB-29s were used to escort the bomber flights to their coast-in points. While the strike aircraft were over land, the rescue SB-29s waited off the Korean coast where immediate assistance could be provided to distressed aircraft returning from their targets.[40]

SA-16 amphibians also conducted offshore rescue operations. During the first month of the war, the 3rd ARS received a detachment of the new aircraft. The Korean based SA-16s flew offshore patrols and maintained crews on alert status ready to respond in the event an airplane went down off the coast. On August 15, 1950, an SA-16 was dispatched to recover a pilot who had bailed-out of his F-51 Mustang off the southern coast of Korea. In one the fastest rescues of the war, the SA-16 crew retrieved the downed pilot in less than five minutes after he entered the water.[41]

An SA-16 also had occasion to conduct a rescue mission behind enemy lines. In a heroic feat that earned him the Distinguished Service Cross, First Lieutenant John J. Najarian saved an American fighter pilot shot down over North Korea. On June 11, 1951, Captain Kenneth Stewart bailed-out of his damaged Mustang fighter at twilight and parachuted into the Taedong River. Arriving after dark, Najarian prepared to set his SA-16 down on the Taedong's shallow waters with its lights out so as to offer a less obvious target to the relentless fire coming from both banks of the river. Covering flights of F-51 Mustangs suppressed the enemy flak and used their landing lights to illuminate hazardous low-hanging power lines, while Najarian maneuvered his SA-16 down onto the river's surface. With the survivor on board, Najarian took-off in almost total darkness and safely returned to base.[42]

Amphibious SA-16 operations were generally limited to smooth seas. If the waves ran higher than five feet, a water landing was often too dangerous to attempt. The rough seas associated with the cold Korean winters was particularly bothersome to rescue

efforts because, even when protected by anti-exposure suits, downed airmen could not survive very long in the frigid Yellow Sea. Helicopters once again provided a solution. With H-5s and H-19s stationed at various points along the coast, a helicopter could usually get to an airman that went down within its area of coverage, hover over the rough sea, and pluck the survivor out of the water by means of a hoist and sling. The H-19s were especially useful for air sea rescues because of their greater operating radius.[43] Korean War Ace Captain Joseph McConnell was among the many to benefit by the use of helicopters in air sea rescue. On April 12, 1953, Captain McConnell had just scored his eighth victory when he felt his F-86 Sabre Jet shudder and slow. He radioed for help and within a few minutes after he ejected into the Yellow Sea, an H-19 was overhead to pick him out of the water. Captain McConnell went on to become the leading jet ace of the war.[44]

An Apprenticeship Well Served

While the use of helicopters during World War II marked a very small beginning in land rescue operations, the Korean War provided a full-fledged apprenticeship. Before the war began, helicopters were assigned a limited role in the global ARS mission that was primarily dedicated to air sea rescue coverage for long-range strategic bombers. Due to the need for tactical air support in conjunction with ground forces in Korea, a tactical air rescue capability became necessary. Helicopters soon demonstrated that downed airmen could be rescued from behind enemy lines provided that enemy resistance was light or could be suppressed by fighters

flying rescue escort. When the Korean War ended on July 27, 1953, the helicopter had emerged as the primary rescue vehicle in combat operations. During the war, the Air Rescue Service flew 9,680 servicemen to safety behind friendly lines. Out of this total, 9,219 were airlifted by helicopters. In combat rescue operations, ARS crews saved 170 USAF airmen and 826 other American and United Nations military personnel from enemy held territory. Of these, 846 were rescued by helicopters. The H-5s and H-19s were also the principal aircraft used to accomplish air medical evacuation, the secondary mission assigned to ARS. In this role, 8,598 wounded were evacuated from forward combat areas.[45]

Although these figures represent a sizable achievement, rescue resources were often spread too thin to cover all rescue situations. Further, it was becoming apparent that "in the future--as new search and rescue equipment was produced and rescue units gained the ability to penetrate deeper into enemy territory--a larger search and rescue force would be required to support a tactical air force in combat."[46] In November 1952, most of the ARS squadrons were upgraded to group status with their individual flights redesignated as squadrons. ARS then consisted of 11 groups with 41 squadrons. But true to American tradition, post-war austerity forced ARS to reduce its force to the minimum necessary to cover over-water routes and isolated areas. By the end of 1956, ARS had shrunk to 8 groups with 29 squadrons. Finally, on June 18, 1957, despite its outstanding Korean War achievements, the 3rd Air Rescue Group was inactivated. However, in less than ten years the famed rescue unit--renamed the 3rd Aerospace Rescue

and Recovery Group (ARRGp) would once again be called-up for service. Reactivated on January 8, 1966, the 3rd ARRGp began rescue operations for the recovery of downed American airmen from the jungles of Vietnam.[47]

CHAPTER V

SOUTHEAST ASIA: THE TRIUMPH OF COMBAT RESCUE

When the history of the war in Vietnam is finally written, the story of Air Rescue may well become one of the most outstanding human dramas in the entire history of the Air Force.

-- SECRETARY OF THE AIR FORCE HAROLD BROWN[1]

It was in Korea that combat rescue first emerged. During the war, new techniques and procedures to rescue airmen from behind enemy lines became standard operating practices. Among the many lessons learned from this experience was that the "development of Rescue forces must keep pace with the development of the tactical forces which they support."[2] Heavy reliance on conventional air support for friendly ground forces characterized tactical air power throughout the Korean Conflict. By improvising with whatever means they had available, the ARS units gradually developed rescue tactics designed to recover airmen downed in a tactical combat environment.

However, during the post Korean war period, U.S. national defense policy returned to the strategic concept of nuclear deterrence. The conflict in Korea was considered an aberration in which American military forces would never again become involved. With emphasis on a nuclear force structure, U.S. officials reasoned "that if one could deter a general war, one could also deter

or win small wars."[3] Thus, USAF air power doctrine during the 1950s advocated training and equipment specifically tailored for the delivery of nuclear weapons in either general or tactical warfare.[4] The need for conventional tactical air operations, including combat rescue, in future military engagements was considered a remote and avoidable possibility.

ARS After the Korean War

Similar to its role after World War II, the mission of ARS during the post Korean War period was to provide peacetime rescue support for Air Force operations worldwide. Its mission statement specifically excluded training and aircraft designed for combat rescue operations.[5] Because of the declining emphasis on conventional warfare, rescue resources were reduced to an all-time low. In 1960, 14 rescue squadrons were inactivated. As a result, ARS consisted of only three squadrons with 1,450 assigned personnel by the end of the year.[6]

Meanwhile, the Air Force was trying to acquire new missions for ARS. During 1961, rescue duties were expanded into three new operational roles. In February, ARS was assigned the responsibility of coordinating all search and rescue efforts within the contiguous United States. Three Rescue Coordination Centers (RCCs), located at Hamilton AFB in California, Hensley Naval Air Station in Texas, and Robins AFB in Georgia, were tasked to handle this new mission. Working in close cooperation with both civil and military agencies, these rescue centers could call upon a variety of resources to assist in the prosecution of any rescue

emergency. During a typical year, such as 1965, the RCCs took part in 439 rescue missions involving 6,348 aircraft and 1,170 people.[7]

Another new mission acquired by ARS included providing local base rescue (LBR) support for American air bases in the United States and overseas. In October 1961, a total of 70 rescue detachments equipped primarily with turbine-powered HH-43 Huskie helicopters were organized worldwide. The mission of the LBR detachment was to provide rescue coverage within a 75-mile radius around its designated air base. By 1967, these rescue units had achieved an enviable record of over 2,000 lives saved.[8]

The U.S. space program also helped to bolster the rescue mission in the early 1960s. Rescue units participated in all of the manned space flights in the Mercury through Apollo programs. Rescue aircraft were positioned to cover the launch pad and at key areas all around the world between 40° North and 40° South.[9] In May 1962, the effectiveness of the rescue units was demonstrated when astronaut Scott Carpenter's Aurora 7 spacecraft splashed down 250 miles from the recovery ships. Two pararescuemen parachuted from an ARS SC-54 airplane into the Atlantic Ocean to install a flotation device around the base of the capsule. They remained with Aurora 7 and its astronaut until Navy helicopters from the *USS Intrepid* arrived to recover the three men. Carpenter later remarked that the actions of the pararescuemen probably saved his spacecraft from sinking.[10]

These new missions marked a period of renewed interest in air rescue. During 1961-1962, ARS was authorized to increase its to-

tal number of squadrons to ten, with an overall manning allocation of 2,700.[11] This period also marked the beginnings of a renewed interest in combat rescue. On January 10, 1962, the first rescue team arrived in South Vietnam. Based at Tan Son Nhut, the mission assigned to the six-man team--designated Detachment 3, Pacific Air Rescue Center--was to establish a search and rescue network for the recovery of American servicemen from the jungles of Southeast Asia.[12]

Rescue Operations During the Advisory Years

It is an ancient, but still terrible, irony that while many leaders of men create division in pursuit of grand ambitions, the children of man are united in the simple elusive desire for a life of fruitful and rewarding toil.

-- PRESIDENT LYNDON B. JOHNSON[13]

American involvement in Southeast Asia began with the United States Senate's approval of the Southeast Asia Treaty. Signed in 1954, the treaty offered protection against communist aggression to any of the non-communist states that grew out of former French Indo-China. In 1959, communist activity in the form of guerrilla warfare threatened the security of South Vietnam and Laos. The insurgents were supported by the communist government in North Vietnam. Using Laos as a corridor to infiltrate arms and trained men into South Vietnam, the Viet Cong guerrillas escalated their operations against the Diem regime.[14] Meanwhile, communist Pathet Lao forces increased their pressure against the government of Laos.[15]

Late in 1961, President Kennedy increased U.S. assistance to Southeast Asia. To aid South Vietnamese military efforts to cope

with the escalating insurgency, the President ordered U.S. military personnel into Southeast Asia to act as advisors in the field.[16] The first Air Force elements--called Farm Gate--arrived in October. The Farm Gate aircraft were prohibited from engaging in combat unless a Vietnamese airman was aboard or when the mission required the special skills of an American pilot. U.S. aircraft also flew reconnaissance and defoliation missions. On February 2, 1962, an American C-123 defoliant spray airplane crashed during a training mission. All three crew members were killed. They were the first U.S. Air Force casualties of the Vietnam War.[17]

As Farm Gate aircraft began to participate more directly in tactical air operations, the need for air rescue became inevitable. The activation of Detachment 3 and the Pacific Air Rescue Center at Tan Son Nhut signaled the start of combat rescue in Southeast Asia. Even so, this represented a meager beginning. Initially, the rescue detachment was not assigned any aircraft to support its mission.[18] Because ARS did not have an official wartime tasking, there was a lack of standard rescue procedures and equipment designed for a hostile environment. Nor, were there any rescue units trained to conduct combat rescue operations. Furthermore, the Farm Gate missions were supposedly being conducted for training purposes only. The presence of completely equipped rescue units would have highlighted the politically sensitive fact that American airmen were flying combat missions.[19]

Because of these limitations, Detachment 3 was entirely dependent on whatever helicopters the Army or Marines happened to have

operating in the vicinity of a rescue scene and what little help the South Vietnamese could offer. Eventually, a general procedure evolved. Whenever the detachment received a report that an airplane was overdue or forced down, a rescue controller called upon all available aircraft to search for the missing plane. Once the wreckage was found, the search and rescue commander assembled a rescue party to fly out to the crash site by helicopter and locate any survivors. If enemy troop activity threatened the crash site, Vietnamese soldiers were tasked to secure a suitable landing zone near the downed airplane's position. When the area was made safe enough for the helicopters to land, the rescue party was put on the ground. The rescue party searched the crash site, assisted the survivors, and carried out any human remains to the helicopter landing zone for recovery back to base.[20]

The events of September 29, 1964, demonstrate how the earliest rescue operations in Southeast Asia were conducted. An American Air Force pilot, Captain George A. Austin, and his Vietnamese observer were flying at 600 feet over the mountainous jungle area of South Vietnam when a lucky Viet Cong shot or a malfunction caused the engine of his O-1F observation aircraft to quit. Surprisingly, both men escaped serious injury as the O-1F crashed into the top of the 200-foot high jungle canopy and settled to the ground. Hiding about 100 meters from the burning wreckage, Austin established radio contact with a nearby friendly outpost. The two men were instructed to proceed south and locate a clearing suitable for a helicopter to make a landing. The Air Rescue Center was notified and plans were made to recover the two survivors.

Since the Army had UH-1B helicopters in the immediate area, the Air Rescue Center elected to use these for the rescue attempt. A UH-1B was directed to fly a four-man rescue team to the crash site. The rescue team, equipped with chain saws, slid down a rope suspended from the helicopter to the survivors. They attempted to enlarge the small clearing so the helicopter could land to make a pick-up. Unfortunately, the chain saws froze when the lubricating oil was gone. On the advice of the helicopter crew, the six men on the ground began making their way towards another clearing. Meanwhile, Marine H-34 helicopters based 105 miles away at Da Nang were asked to assist. The Marine H-34s configured with cables and hoists were better suited for the recovery.

By this time, the Viet Cong caught up with the survivors and their rescue team. As the men on the ground sought cover and prepared their weapons for a fight, Vietnamese Air Force Skyraiders and the Army UH-1Bs provided air cover. The air cover helped keep the Viet Cong at bay. But, as darkness approached the enemy began to move in. Suddenly, just at the sky was turning dark, the Marine H-34s arrived. Hovering overhead, the H-34s lowered their cables repeatedly until, fifteen minutes later, all of the men had been recovered.[21]

Reliance on external resources for aircraft support created problems for the rescue detachment. Despite good intentions, Army and Marine helicopters were neither trained nor equipped to conduct combat rescue operations. An example of the difficulties encountered by the early rescue forces occurred on March 9, 1963. An Army OV-1 reconnaissance airplane crashed near the top of a

6,000 foot mountain in the central highlands. Two Marine H-34D helicopters were dispatched to insert a four-man rescue team at the crash site. One of the helicopters attempted to lower a member of the rescue party down to the ground on a cable. However, the cable was not long enough to penetrate the tall jungle canopy. When the helicopter tried to hover lower, it lost power and crashed. The Vietnamese ranger who was on the cable at the time was killed, but the aircrew managed to escape the wreckage before it exploded. The co-pilot, however, later died from the severe burns he had received.

The following morning, another rescue attempt was made. A second Marine helicopter crashed while trying to put the rescue team on the ground. Two of the crew were injured, but this time no one was killed. Eventually, the bodies of the OV-1 pilot, the Vietnamese ranger, and the Marine co-pilot were recovered. The rescue attempt cost two lives and caused two aircraft to be lost. It was clear that a specialized rescue force was required to more effectively operate over the dense jungles and rugged mountain terrain of Southeast Asia.[22]

At the time, the only helicopters in the ARS inventory were the HH-43B Huskies. While these aircraft were well-suited for the local base rescue program, they were considered inadequate for combat rescue operations. Impressed by the performance of the newly developed Sikorsky CH-3 helicopter, the Commander of ARS recommended several of these aircraft be purchased for the combat rescue mission.[23] In the meantime, ARS opted to modify the HH-43Bs with armor plate, more powerful engines, gun mounts, and 250-foot

cables to facilitate rescue operations in a hostile jungle environment. Redesignated HH-43Fs, the modified helicopters were not available until October 1964.[24]

In May 1964, increased communist activities sponsored by the North Vietnamese government forced the U.S. to step-up air reconnaissance flights over Laos. The sensitive aspects of these types of missions added impetus to the growing need for the presence of an adequate rescue force. The capture of American airmen in Laos could have produced serious international political repercussions. In accordance with a Joint Chiefs of Staff directive to send rescue units to Southeast Asia, two HH-43Bs along with their crews and mechanics arrived at Nakhon Phanom near the Thailand-Laos border on June 20.[25]

During this same period, Grumman HU-16 amphibian rescue airplanes (formerly known as SA-16s) arrived in South Vietnam and Thailand. The HU-16s were deployed to provide air sea rescue and to maintain command and control communications for land rescue missions.[26] On August 7, 1964, Congress adopted the Gulf of Tonkin resolution, authorizing the commitment of U.S. Armed Forces to assist South Vietnam preserve its independence.[27] A frenzied build-up of U.S. forces in South Vietnam followed, placing increased demands on the need for rescue units. In October, the first ARS unit outfitted with modified HH-43F helicopters arrived in South Vietnam. By the end of the year, a total of five helicopter units were in operation at various locations in South Vietnam and Thailand. At last, ARS had its own dedicated resources entrenched in Southeast Asia.[28]

Combat Rescue in Southeast Asia

The survival of a independent government in South Vietnam is so important to the security of all of Southeast Asia and to the free world that we must be prepared to take all necessary measures...to prevent a Communist victory.

-- SECRETARY OF DEFENSE ROBERT S. MCNAMARA[29]

The first large-scale combat rescue effort in Southeast Asia began on November 18, 1964. An Air Force F-100 fighter aircraft was shot down by enemy antiaircraft fire in central Laos near the North Vietnamese border. An ARS HU-16 was dispatched out of Thailand to direct the search and rescue operation. Arriving at a safe holding area, the HU-16 asked for tactical support aircraft to locate the survivor and suppress any enemy resistance near the rescue scene. Meanwhile, the rescue HH-43s at Nakhon Phanom were placed on alert.

Some Navy A-1E Skyraiders responded and flew to the last known position of the downed F-100. Immediately upon their arrival, the Skyraiders encountered enemy fire from Pathet Lao antiaircraft positions. While attacking the enemy gun emplacements, one of the Navy pilots observed what appeared to be the burning crash site of the missing Air Force fighter. The HH-43s were instructed to take-off and rendezvous with the Skyraiders for escort to the suspected crash site. Once on scene, however, the helicopter pilots were unable to find any wreckage and determined that the fire was due to other causes.

The following day, another HU-16 was launched to resume the search. At mid-morning the downed airman's parachute was sighted.

The HU-16 relayed the position back to base and called for the helicopters to proceed to the area and make the pick-up. However, poor weather conditions delayed the helicopters from taking-off for nearly two hours. Finally, a pair of helicopters belonging to Air America--a government contracted company--got airborne and headed out to the rescue site. Fighter aircraft sent to suppress enemy ground fire, made it possible for one of the helicopters to get into position over the downed pilot. The helicopter's co-pilot was lowered on a cable to retrieve the airman. However, he discovered that the man had died of injuries apparently sustained when he landed.[30]

This massive search and rescue effort typified the pattern of events that characterized the recovery of downed airmen in Southeast Asia. Combat rescue missions generally occurred in three distinct phases: search, suppression, and recovery.[31] During the search phase, any means was used to pinpoint the survivor's location. This usually required radio contact with the survivor or his wingman who could report the distressed airman's last known position. An ARS HU-16, HC-54, or in later years, HC-130, aircraft on ground alert or fixed in a nearby precautionary orbit was notified of the situation and assumed responsibility for the rescue effort as the airborne mission commander (AMC).

Once the survivor was found, a forward air controller (FAC) could be called in to direct the suppression phase. Acting as the on-scene-commander, the FAC kept the AMC informed of all developments regarding the rescue site. Requests for suppression forces were passed to the AMC who in turn forwarded the requirement to

ground based tactical air control centers. Flights of fighter aircraft were either launched or diverted from their primary targets to participate in the rescue effort. When enough of the enemy guns had been silenced to make it possible to attempt a pick-up, the AMC directed the helicopters into the area.

Although the amphibious HU-16s achieved a total of 47 aircrew recoveries prior to their replacement by HC-130s in 1967, helicopters were the principal vehicles used throughout the war for recovery.[32] The ARS helicopter crews worked in pairs; one going in low to make the recovery while the second stayed at high altitude and stood by to lend assistance if needed. In August 1965, Air Force A-1E Skyraiders began flying protective escort for the more vulnerable and slow moving helicopters. Also working in pairs, the heavily armed A-1Es flew progressive circles around the rescue helicopters in what became known as a "daisy chain" pattern as they maneuvered in and out of the rescue scene. If enemy fire was encountered, the A-1Es were in a position to attack while the helicopters egressed from the area. In the absence of FACs, the A-1Es were also used to locate survivors and direct the enemy suppression forces.[33]

The aggregate of forces used to recover downed airmen comprised the search and rescue task force (SARTF). The composition of a SARTF was limited only by the imagination of the rescue controller and the availability of resources. In some cases, ships were called upon to pick-up aviators down at sea or to lay down battery barrages on enemy forces opposing rescue efforts. Likewise, ground troops were sometimes used to link-up with survivors

and escort them to safety on foot. However, helicopters were the key elements of most SARTFs, and despite their limited capabilities, the HH-43s greatly improved combat rescue operations in Southeast Asia. By mid-1965, rescues were being performed that just a year earlier would never have been possible.[34]

A typical HH-43 rescue mission took place on June 23, 1965, when an F-105 was shot down over North Vietnam. After making a distress call, the pilot ejected from his crippled ship and began a normal parachute descent. As he broke through the jungle canopy, a tree snagged his chute, and the pilot found himself suspended upside down 150 feet above the ground. He managed to swing himself into a crotch of the tree and free himself from his parachute harness. Using the emergency radio in his survival kit, the downed pilot made contact with an HC-54 rescue airplane that had set up an orbit near the area in response to the distress call. Half an hour later, four A-1Es arrived on the scene and located the survivor's position. Shortly thereafter, an HH-43 from a forward operating base in Laos came into view. The downed airman fired off a signal flare. Spotting it, the HH-43 maneuvered overhead and lowered its cable and penetrator--a device designed to penetrate the thick jungle canopy--down to the survivor. The F-105 pilot grabbed it, strapped himself on, and was hoisted aboard the helicopter. A few hours later, the rescued man was celebrating his deliverance at Nakhon Phanom officer's club.[35]

Not all rescue missions were so happily resolved. Sometimes, the enemy's resistance not only blocked recovery attempts but also caused additional loses. Such was the case when on September 20,

1965, two HH-43 were dispatched to pick-up a downed F-105 pilot from North Vietnam. As the helicopters approached the site, the F-105 pilot popped his signal smoke to indicate his location. He did not know that the enemy was concealed and dispersed all around to make him the live bait of a trap. As the "low" HH-43 hovered overhead to make the recovery, the enemy opened fire with automatic weapons. The rescue helicopter faltered, then fell to the ground. The "high" HH-43 tried to get to the downed crew, but was driven back by the intense ground fire. A massive SARTF was assembled, but failed to find any trace of the downed rescuemen.[36]

Although the HH-43s were poorly equipped to perform the combat rescue mission, by late 1966 the rescue units had established themselves as a "necessary and viable part of the Air Force operations in Southeast Asia."[37] During the three-year period beginning in 1964, collective Air Force-Navy rescue forces were credited with 647 lives saved. Of these, 222 were combat aircrew rescues, 161 of which were attributed to Air Force rescue efforts. From inside North Vietnam 48 airmen had been recovered, with 62 more retrieved from Laos. Depending on their situation, downed airmen could expect a one in three chance of being rescued.[38] But, as the war escalated, several changes were necessary for the ARS units to keep pace with the tactical forces they were mandated to support.

Reorganization and Modernization

The first significant improvement in combat rescue capabilities occurred in November 1965, with the arrival in Southeast Asia of six HH-3E Jolly Green Giant helicopters. The Sikorsky built

HH-3Es had a maximum ceiling of 10,000 feet and a range of over 640 nautical miles. A variable-speed hoist was externally mounted for recovery operations. The hoist was equipped with 240 feet of cable stressed for 600-pound loads and a jungle penetrator device. Operating out of Udorn, Thailand, or Da Nang, South Vietnam, the HH-3Es were capable of reaching any point in North Vietnam and returning back to home base.[39]

The ARS fixed-wing fleet also benefited from new airplanes. In 1966, Lockheed HC-130 Hercules turbo-prop aircraft began to replace the HU-16s and other fixed-wing airplanes assigned to the rescue units.[40] The principal advantage of the HC-130 was its long cruising range and endurance. This was especially important when performing the AMC rescue mission. Its long loiter time and improved avionics permitted a greater capability to monitor rescue operations and locate downed airmen.

During 1966, ARS underwent an organizational change in addition to obtaining new aircraft. On January 8, ARS was redesignated the Aerospace Rescue and Recovery Service (ARRS). That same day, Detachment 3 at Tan Son Nhut received new status as the reactivated 3rd Aerospace Rescue and Recovery Group (ARRGp).[41] Concurrently, the operational rescue units at Da Nang and Tan Son Nhut became the 37th and 38th Aerospace Rescue and Recovery Squadrons, respectively. The 37th was responsible for aircrew recovery in North Vietnam, Laos, and the Gulf of Tonkin. The 38th was tasked with rescue coverage in Thailand and South Vietnam.[42]

In 1967, ARRS units began receiving the more powerful HH-53 Super Jolly Green Giant rescue helicopter. Configured with three

7.62-millimeter miniguns for self-protection, the HH-53s could haul up to 38 passengers and fly at a top speed of 195 miles per hour. Together with the HH-3Es, these helicopters became the mainstay of rescue operations in Southeast Asia. They were outfitted with improved communications and navigation gear, heavier armor plating, explosion-resistant fuel tanks, and bullet-resistant windshields and sideview panels.[43]

These improvements made the "Jolly Greens" a much superior aircraft than the HH-43s. However, they still lacked the capacity to loiter for extended periods over enemy territory. This was an important consideration because most rescue missions required that the helicopters hold at a safe orbit point while the strike aircraft neutralized the recovery area. Furthermore, when the helicopters carried a full fuel load, it imposed serious restrictions on their ability to hover in higher terrains or on hot days.[44]

A solution to this problem was soon found. In December 1966, the first in-flight transfer of fuel from an HC-130 tanker to an HH-3 helicopter took place during a test program conducted near Wright-Patterson AFB, Ohio.[45] The first operational use of aerial refueling occurred in 1967 when an HH-3E was assigned an orbit mission over the Gulf of Tonkin. With the help of two in-flight fuel transfers from an HC-130 tanker, the Jolly Green helicopter was able to remain airborne for eight hours.[46] Consequently, air refueling became a standard practice during combat rescue missions.

New and more powerful turbine-engine helicopters with the capability to refuel in-flight allowed ARRS forces to keep up with the ever increasing tempo of the war. The rescue of a Navy airman in

April 1972, demonstrates the sophisticated manner in which complex rescues were conducted. A Navy A-6A went down while on a night mission between Laos and the demilitarized zone. At least twenty antiaircraft gun positions and two surface-to-air missile sites surrounded the survivor's location. An OV-10 FAC aircraft established radio contact with the downed airman, but bad weather during the next day and a half prevented a the SARTF from working the area. On the afternoon of the second day, the weather had lifted enough for fighter strikes to be called in to silence the enemy guns. On the third day, rescue helicopters tried to make a recovery, but new gun emplacements opened up and beat back the rescue force. On the fourth day, the rescue operation was weathered out again. Finally, on the fifth day, the rescue forces mustered for another try.

Two HH-53 Jolly Green helicopters, escorted by a pair of A-1E Sandys, took-off from Nakhon Phanom and headed out toward the rescue site. Jolly 32, piloted by Captain Ben Orrell, flew the low position, while Captain Dale Stoval in Jolly 62 provided back-up in the high position. Enroute to the initial holding point, the Sandys flew "lazy eights" around the two Jollys, watching out for enemy ground fire. The time enroute gave the helicopter crews the chance to don their armored helmets and 45 pounds of titanium body armor.

Meanwhile, King 24, the HC-130 airplane was already airborne. King 24 was the AMC for the rescue effort and the air refueling tanker for the helicopters. The AMC aircraft was working with the OV-10 FAC who was directing air strikes to neutralize enemy resis-

tance around the rescue site. More than 70 Navy A-7s and F-4s had diverted from their primary targets to lend a hand. As the armada of fighters pounded the hostile gun positions, the helicopters refueled with the HC-130. When the refueling was complete, the two Jollys had to orbit at the holding point and wait until the FAC signaled that it was safe to attempt the pick-up.

At long last, the command "start your run-in, Jolly" was received. Jolly 32 and the escorting Sandys began the 24-mile low-level trek to the survivors position. The helicopter skimmed the tree tops at 170 knots, continuously jinking to keep the ground gunners guessing. Eighteen miles out from their pick-up point, a pair of 57-millimeter guns opened fire. The A-1Es took one of the guns out, while eight Navy A-7s laid down 500 pound bombs on both sides of the Jolly to form a corridor. Just three miles from the survivor, one of Sandys spotted a trap ahead as 23-millimeter guns were seen converging their fire into the helicopter's flight path. Jolly 32 swung into a tight turn and ducked over a small hill as small arms fire from the ground impacted the big helicopter.

The Sandys wiped out the flak-trap and laid down a smoke corridor with white phosphorous bombs. Calling to the survivor on the radio to pop his smoke signal, Jolly 32 moved in for the pick-up. The helicopter hovered over the spot where red smoke was seen coming up through the 60-foot trees, and lowered its penetrator. The helicopter immediately drew fire from a nearby ridge. Mindful of the suspended cable beneath his aircraft, Orrell pivoted his helicopter around to bring the rear mini-gun to bear. Not hearing any further word from the survivor, Orrell ordered the hoist re-

tracted. Not yet willing to quit the rescue effort, he was going to make another attempt at locating the survivor. To everyone's delighted surprise, as the penetrator cleared the tree tops, the Navy airman was strapped on.[47]

Cease-Fire and Withdrawal

One of the things that war leaves in its brutal wake is the memory of acts of courage undertaken to save human life in the midst of so much taking of life.

-- HOWARD SOCHUREK[48]

The United States military commitment in South Vietnam terminated with the conclusion of peace negotiations on January 23, 1973. Following the cease-fire agreement, the rescue forces in South Vietnam were withdrawn to Thailand. The 3rd ARRGp moved its headquarters from Tan Son Nhut to Nakhon Phanom. With hostilities still unresolved in Laos and Cambodia, ARRS units continued to provide rescue coverage for U.S. forces in these areas. The communist air defenses in Laos and Cambodia were considerably less than those encountered in North Vietnam. Thus, both Air Force losses and rescue activities were light in comparison. In February, a cease-fire was signed by the Pathet Lao and the Royal Laotian Government. In August, Congress halted the bombing of Cambodia. American involvement in the air war over Southeast Asia finally ended.[49]

In April 1975, ARRS units were called upon to participate in the evacuations of U.S. personnel from Phnom Penh, Cambodia, and Saigon, Vietnam. During these operations, rescue HH-53s and

HC-130s supported the massive airlift of evacuees to safety as communist forces besieged the two capital cities. There were no ARRS loses during either operation, although some ground fire was encountered.[50] The evacuations signaled the end of U.S. presence in Vietnam and Cambodia.

Two weeks after the evacuation of Saigon, the 3rd ARRGp found itself once again involved in a combat rescue operation. On May 12, 1975, the Cambodians seized the *SS Mayaguez*, an American merchant ship, and captured its crew near the island of Koh Tang. After diplomatic efforts to secure the crew's release failed, President Ford authorized a rescue assault force to raid the island of Koh Tang to recover the ship and its crew. The rescue effort began on the morning of May 15, as elements of the Air Force, Navy, and Marines attacked the island. During the operation, seven ARRS HH-53s flew 19 sorties carrying Marine assault troops to and from the island. During the action, the rescue helicopters picked-up five airmen who were shot down by enemy ground fire. Finally, after more than eighteen hours of fighting, all 39 members of the Mayaguez crew were repatriated and all of the assault troops were evacuated from the island. American casualties included 15 men killed, 3 missing, and 50 wounded. Six of the ARRS HH-53s were damaged in the battle.[51]

The Mayaguez incident marked the last combat rescue operations in Southeast Asia. During the course of the war the ARRS units saved 3,883 lives in Southeast Asia. Of this total, 2,780 were rescued under combat conditions. But, the price had been high. Throughout the conflict, 71 American rescuemen lost their lives

and many more were wounded. A total of 45 ARRS aircraft were lost.[52] These figures tally much higher still when the losses of men and aircraft assigned to other organizations supporting rescue operations are considered. Such losses invariably caused concerned speculation about the logic and morality of risking so many to save one man. Yet, as Colonel Paul E. Leske, commander of the 3rd ARRGp once stated:[53]

> *When a man is downed, he is far more than a statistic. He is a fellow American, with a family at home, with hopes and dreams and a potential that cannot be measured. He is a man in trouble, and he needs help fast.*

It is a tribute to all rescuemen who served in Southeast Asia that they never failed to try.

CHAPTER VI

AMBIGUOUS WARFARE: THE UNCERTAIN FUTURE OF AIR RESCUE

...it must not be forgotten that there have been in the past other weapons revolutionary in their impact upon war....Of each in turn it has been said..."This new weapon invalidates all past lessons of war." And yet, at least to date, none of them did, and for each in turn the warrior found an antidote.

-- R. EARNEST AND TREVOR N. DUPUY.[1]

The development of air refueling and the introduction of turbine powered engines in helicopters during the war in Southeast Asia greatly extended the combat rescue capabilities of the ARRS units. But, extended rescue operations also presented new problems. The successful recovery of a downed airman required a rapid response from the rescue forces. Chances of rescue from enemy territory were best if recovery could be effected within 15 minutes after a survivor was forced down. After 30 minutes the possibility of rescue diminished drastically.[2] Without a nighttime or all-weather capability, delays caused by waiting for adequate flying conditions often caused the opportunity for rescue to be lost.

It was also recognized that the combat rescue tactics used in Southeast Asia were greatly dependent on other air resources to comprise a search and rescue task force. Without escort, combat air patrol, or strike aircraft to suppress enemy resistance, recov-

ery operations in hostile areas were very limited. In several instances, hundreds of aircraft sorties were required to divert from their primary strike missions in order to support combat rescue operations. Because the air campaign fought in Southeast Asia was limited in scope, the loss of combat sorties diverted to support rescue efforts did not significantly hinder other mission priorities. Nonetheless, it was readily appreciated that such favorable circumstances would not necessarily prevail in future conflicts.

Yet, even with a high degree of air support, the slow moving helicopters were highly vulnerable to enemy ground fire. This was especially true during hover operations. As the war in Southeast Asia progressed, an ever increasing sophistication in antiaircraft weaponry made helicopter rescues extremely risky. The addition of defensive systems and armor only added more weight to the airframe, negating the advantages enjoyed by the extra range and power that the new HH-3s and HH-53s offered. Such problems indicated that several improvements were needed to strengthen the capabilities of the air rescue forces. However, solutions to these problems received low priority in the post-war climate of the 1970s. Rather than force enhancement, rescue units again experienced a period of decline.

The Decline of ARRS

As the longest and least successful of America's foreign military operations, the war in Southeast Asia generated a postwar public attitude unfavorably disposed toward the military establish-

ment. The war had been both costly and unproductive. The American public demonstrated that it was unwilling to endure for very long "the anguishes of overseas embroilments which do not appear to be directly linked to defense of the homeland....in protracted conflicts promising little hope of a triumphant denouement."[3] An inflating economy and the traumas of the Watergate scandal added to a growing national feeling of discontent. During the decade of the 1970s, huge reductions in force and budgetary constraints gradually eroded U.S. military strength while the Soviets continued a massive buildup of both nuclear and conventional forces.[4]

Consequently, between 1972 and 1975, ARRS resources gradually diminished as U.S. military forces were being pulled out of Southeast Asia. Major cuts in the local base rescue program caused additional force reductions. By 1977, Air Force rescue units were assigned 4,183 personnel and 214 aircraft.[5] This was a strength reduction of approximately 35 percent from the 1971 wartime peak.

To help offset further cuts, the Air Force added some missions to ARRS. In 1973, rescue helicopters began flying support missions for the Strategic Air Command missile sites. In Korea and Alaska, ARRS units were assigned the mission of providing logistic support for certain isolated military outposts. In 1975, the Air Weather Service WC-130 and WC-135 airplanes were transferred to ARRS, thereby adding the weather reconnaissance and air sampling missions.[6] Finally, in 1981, ARRS resumed its designated rescue role in the space program. Approximately 200 persons and 21 aircraft provided contingency rescue support for the space shuttle *Columbia* during the first U.S. manned space flight since 1975.[7]

Despite these ancillary roles, ARRS remained steadfastly oriented toward global mobility and combat readiness in the event of a military contingency. Its stated mission read as follows:[8]

> *The primary mission of ARRS is Combat Rescue....The primary objective of the ARRS forces...is the preservation of one of the nation's most critical resources, Combat Aircrew Members....This mission demands an integration of various systems and capabilities into a cohesive and highly responsive force specifically equipped and trained to operate and survive in the hostile environment.*

The survivability of rescue forces in an increasingly sophisticated and complex combat environment remained an item of great concern for ARRS. With the low funding priority given to rescue mission requirements during the late 1970s, new and more capable aircraft were not forthcoming. As an alternative, the Air Force agreed to conduct tests during the summer of 1976 to determine the feasibility of modifying the HH-53 fleet with Pave Low III equipment. This modification would allow low altitude operations at night and in adverse weather conditions. The following year, all of the test objectives were satisfied and the Air Staff approved the modification for nine HH-53s to be completed by 1980.[9]

Meanwhile, ARRS units continued to perform their life-saving mission in a peacetime role. On June 15, 1974, the Air Force Rescue Coordination Center (AFRCC) became operational at ARRS Headquarters, Scott AFB, Illinois. The AFRCC was tasked to control and monitor all search and rescue activities conducted within the interior of the United States. Later, in 1976, a similar AFRCC was established at Kadena Air Base, Japan, allowing all search and rescue resources in the western Pacific area to be integrated under single operational control.[10]

These larger consolidated AFRCCs were designed to operate around the clock and in concert with other agencies in order to respond to any requested assistance for persons in distress. In May and June 1976, ARRS units were asked to render assistance in the Philippines during Typhoons Olga and Pamala. A total of 734 flood victims were saved by an ARRS helicopter unit stationed at Clark Air Base.[11] One month later, HH-53s and HC-130s from the 67th ARR Squadron helped evacuate American and friendly foreign nationals from Beirut, when an international crisis in Lebanon developed. Tasked with a less pleasant assignment, six rescue aircraft were deployed to Guyana following the mass suicide of 914 members of the Peoples Temple religious sect. The ARRS aircraft flew 30 sorties airlifting 903 human remains between Jonestown and Georgetown during November 20-29, 1978.[12]

Likewise, rescue units performed rescue operations within the United States, saving hundreds of lives each year. During August 1976, the 37th ARR Squadron provided aid to flood victims along the Big Thompson River, Colorado, saving 81 lives. In January 1977, 32 U.S. Army Rangers who were unexpectedly trapped in cold rainy swamps during a field exercise in Florida were rescued by ARRS helicopters. Responding to a call for assistance from a distressed vessel on Lake Erie, the 305th ARR Squadron rescued 11 persons during April 1979. Four ARRS helicopters were used to support the 1980 Winter Olympics at Lake Placid, New York. These rescue aircraft flew a total of 59 sorties and 150 hours, resulting in five lives saved. Following the 1980 volcanic explosion at Mount St. Helens, Washington, the AFRCC at Scott AFB worked for 17

days coordinating Air Force, Army, Coast Guard, and Civil Air Patrol forces in a large-scale search and rescue effort. This composite rescue force flew a total of 932 hours during 568 missions. A total of 101 saves were recorded. Of this number, the 304th ARR Squadron alone rescued 61 distressed Americans.[13]

In 1981, ARRS celebrated its 35th year of humanitarian service to the military and civilians ot all nationalities. This particular anniversary was highlighted by an event that occurred in September. A Philippine destroyer ran aground on Calayan Island. Rescue helicopters stationed at nearby Clark Air Base responded quickly to the emergency and saved 14 Philippine seamen. It was an otherwise routine rescue mission except for one fact: ARRS had just accomplished its 20,000th Save.[14] However, this milestone was soon overshadowed by a growing concern over the Air Force's ability to conduct "ambiguous warfare." An uncertain future for rescue was starting to unfold as national attention was turned toward the development of Special Operations Forces.

The Rise of Special Operations Forces

> *...at least through the remainder of this century, [the] future of peace and freedom may well depend on how effectively we meet...ambiguous warfare.*
>
> -- SECRETARY OF STATE GEORGE SCHULTZ[15]

The concept of "ambiguous warfare" coined by Secretary Schultz encompasses a wide range of military activities that involve the use of limited forces to secure limited goals. Such operations are more often referred to by the armed forces as low-intensity

conflict. What Secretary Schultz's term alludes to is much more than just military procedure. It describes the aversion the public has towards the very ambiguity that characterizes what Americans traditionally think of as "dirty little wars."[16] However, in the aftermath of the unsuccessful U.S. attempt to rescue the hostages held captive in Iran on April 24, 1980, American interest in the use of special forces for limited operations received considerable attention. Several aircraft and eight American servicemen had been lost without a single hostage recovered.[17]

In an effort to assemble a task force for another possible Iranian rescue attempt, the Air Force Vice Chief of Staff ordered the nine ARRS HH-53 Pave Low III helicopters reassigned to the 1st Special Operations Wing (SOW). On May 17, 1980, eight of these aircraft were delivered to the 1st SOW at Hurlburt Field, Florida. The ninth HH-53 was still undergoing modification. In response to this reassignment of helicopters, the Commander in Chief, Military Airlift Command, argued that all Air Force helicopters and their related missions should be assigned under his command.[18]

Meanwhile, the Holloway Special Operations Review Group had been commissioned by the Joint Chiefs of Staff to assess the Iran rescue mission. Their recommendations called for the creation of a Counterterrorist Joint Task Force as a separate field agency under the Joint Chiefs of Staff.[19] Since Special Operations Forces (SOF) have been traditionally regarded as the principle military means to meet the challenges of ambiguous, limited conflict, Congress began to place increased emphasis in the revitalization of both ground and air SOF assets.

In 1980, the Air Staff began to consider proposals regarding the relative importance of all Air Force helicopter missions. Two decisions were reached. The first decision took the form of an Air Force-Army joint initiative intended to enhance cohesion and cooperation between the two services. Accordingly, Initiative Number 17 recommended that the Air Force transfer all helicopter operations--with the exception of search and rescue--to the Army. U.S. Army Chief of Staff General J. A. Wickham, Jr. explained that this arrangement was prompted by the growing conviction that "the rotary-wing SOF insertion capability ought to be [performed by] the service with the most rotary-wing birds, the Army....After all, we have hundreds of helicopters and thousands of pilots, and it's our people who are going to be transported."[20] Congress, however, expressed considerable reservations about the transfer of responsibility for helicopter special operations airlift support to the Army, with the result that Initiative 17 has not as yet been fully resolved.[21]

Consequently, the Air Force was compelled to retain and modernize its long-range rotary-wing inventory in order to satisfy congressional demands for a more responsive SOF air arm. In the long term, the Air Force expects to upgrade its vertical take-off and landing operational capability with the development of the CV-22 Osprey tiltrotor aircraft. The CV-22 is part helicopter and part conventional airplane. During take-offs and landings and while in hover flight, its engine nacelles--one mounted on each wing tip--are positioned perpendicular to the ground so that the large diameter rotors function like that of a helicopter. For straight and

level flight, the engine nacelles are rotated 90 degrees forward, allowing conventional flight at speeds of greater than 300 knots and an operating radius of 644 nautical miles. Currently, the Air Force has 80 CV-22s on order, the first of which is scheduled for delivery in the later part of 1992. The new tiltrotor aircraft is planned for use in special operations, with the possibility that more could be ordered for combat rescue.[22]

In another decision designed to alleviate special operations shortcomings in the near term, the Air Staff directed that all ARRS and SOF units be consolidated under a single command. Thus, On March 1, 1983, the Twenty-Third Air Force was activated under the Military Airlift Command and assigned the dual missions of combat rescue and special operations. Major General William J. Mall, Jr. became the Twenty-Third's first commander.[23] The terms of reference for the establishment of the new command called for separate subordinate commands for both combat rescue and special operations. ARRS fulfilled this role for the rescue units. However, after seven months of operation, General Mall found it necessary to reorganize his command structure.[24]

The Twenty-Third's headquarters and ARRS had been forced to share certain administrative tasks, since there was not enough manpower or room at the headquarters building at Scott Air Force Base to fill all of the functions required of the two staffs. In fact, General Mall said: "We were taking a small force and spreading it too thin."[25] Therefore, it was decided that the mission of ARRS was to be diminished. On October 1, 1983, all of the operational rescue units were reassigned from ARRS directly to Headquarters,

Twenty-Third Air Force. ARRS remained active, but its revised mission included only rescue coordination activities within the contiguous United States and the supervision of American participation in the new worldwide Search and Rescue Satellite system.[26]

By 1986, the orientation of the Twenty-Third Air Force had become focused mainly on special operations. In the absence of its own intermediate headquarters, the rescue units were subsequently tasked with "providing multimission capability to support special operations" since such was "within the inherent capabilities of the aircraft and crew."[27] In this manner, combat rescue was reduced to a subsidiary function of special operations. There no longer existed an organization singularly dedicated to the plight of downed American airmen.

The Lessons of the Past

We should take from the past its fire and not its ashes.

-- JEAN JAURES[28]

History has demonstrated how the regard for human life became a fundamental value of the American national character. Its basis is centered on a deeply rooted belief in the concept of human dignity. It is the very cornerstone of the foundation upon which American democratic practices were founded. Among the earliest expressions of humanitarian values that helped manifest the American national character was the establishment of rescue services for mariners in distress. With the advent of the airplane, Americans, long inspired by the tradition of life-saving at sea, found a new

vehicle in which to extend rescue operations over greater distances and in shorter spans of time.

But, in addition to becoming a means for rescue, the airplane also became the cause of rescue activities in combat. Because of their light-weight construction, the airplanes during World War I provided little protection for an aviator to escape almost certain death or capture when shot down. When an aviator did survive being forced down in enemy held territory, his only chance for rescue was if a fellow airmen could land nearby to effect the recovery. It was from such crude beginnings that the long and proud tradition of combat rescue eventually emerged.

During World War II, the rescue of airmen forced down at sea became an acute problem. The solution was the formation of the AAF Emergency Rescue Service, the earliest predecessor of today's Aerospace Rescue and Recovery Service. Equipped with both fixed and rotary winged aircraft, the Emergency Rescue Squadrons were among the first to develop combat rescue tactics for sea and land aircrew recoveries. These same tactics were expanded in scope during the Korean Conflict and finally, highly refined in Southeast Asia.

The creation of an Air Force rescue service to recover American airmen under combat conditions has been historically rationalized by three principle concepts:[29]

> *Sentiment played an important part in the effort to provide rescue services, but there was much more involved than mere sentiment....Not only did it help sustain the morale of combat crews. It also saved for later combat service pilots and crewmen who had been trained at great expense of time and money and who often had the priceless advantage of combat experience.*

Collectively, these ideals represent the essence of a singular dedication that motivated American rescuemen in past wars. This dedication was displayed on countless occasions as American rescuemen pressed forward into combat against uncertain odds to save a fellow airman from capture or death at the hands of the enemy.

Today, the future of air rescue is uncertain. The integration of the ARRS unit resources and the combat rescue mission within a consolidated special operations force structure can be regarded as having mixed benefits. In a practical sense, consolidation may provide the only realistic means by which a modern and survivable rescue force can be fielded in today's sophisticated combat environment. Rescue requirements have traditionally received the most meager of considerations during peacetime, only to be elevated to critical levels of concern after hostilities begin. As a part of the SOF structure, rescue capabilities may benefit from the current wave of "strong support from civilian as well as military leadership."[30] More than just rhetoric, this support has, during the past few years, been backed by substantial budget increases for the SOF organizations.

On the other hand, a combined SOF-combat rescue organizational arrangement removes a large measure of the *esprit de corps* that is generated by air rescue units whose sole mission is dedicated to the saving of life. In the absence of an elite rescue force, the benefit of enhanced aircrew morale that has historically been attributed to the presence of air rescue may be lost. American airmen have come to appreciate that with the commitment of air rescue forces, there is always some chance of being saved if shot down.

Recently announced plans for the creation of a joint service Special Operations Force Command further diminishes the future prospects of combat rescue operations by removing rescue resources even further from the mainstream of Air Force activity. With the emphasis needed to satisfy joint special operations mission requirements, aircrew training can only be accomplished at the expense of efforts given to the planning and preparation for future combat rescue operations. Nor, is it likely that SOF assets will be sufficiently available to conduct combat rescue activities in a timely manner during future contingency operations, especially when rescue requirements conflict with their other mission priorities. Under such circumstances, it is easy to envision the rescue practices of the past emerging once again to fulfill a neglected need. As in the early stages of World War II, and the conflicts in Korean and Southeast Asia, rescue operations will be conducted in haphazard fashion using whatever resources can be obtained. And, once again, it will appear that the painful lessons of previous wars were sadly forgotten.

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