Introduction

This book’s title, *How the Helicopter Changed Modern Warfare*, covers a wide variety of related subjects, ranging from the use of the helicopter in training to reconnaissance to major operations, such as Operation IRAQI FREEDOM. To me, there is one area in which the helicopter’s effect upon modern warfare is far more important than all of the others combined, and that is its role in aero-medical evacuation (MEDEVAC) and combat recovery operations. Many others feel that the most important role of the helicopter has been in revolutionizing tactics and bringing power to distant points in the battlefield. I respect these views but remain wedded to the idea that it has contributed most to MEDEVAC operations.

There are a number of terms for such vital military operations, and some have been made famous through the media. MEDEVACs of the Korean War showed the efficacy of using helicopters for casualty recovery. U.S. Army, Air Force, and Marine Corps helicopters were utilized for this purpose in what was initially called casualty evacuation (CASEVAC). These efforts were highlighted in the wildly successful television series “M*A*S*H.” Post-Korea, the U.S. Army adopted larger helicopters for this mission and included medics on board to provide in-flight medical care, thus increasing the survival rates of casualties. This true combination of medical service with aviation assets was subsequently labeled MEDEVAC and was turned into an art form by U.S. Army MEDEVAC units in the Vietnam War. Those units primarily used the call-sign “DUSTOFF,” a call-sign much revered by soldiers to this day.

Paralleling the adaptation of the helicopter to the CASEVAC and MEDEVAC role, the U.S. Air Force and U.S. Navy also adapted the helicopter for rescue operations. The very first rescue was conducted by the U.S. Coast Guard, under the leadership of Cdr. Frank Erickson on January 3, 1944. Erickson, who led Coast Guard helicopter activities, flew blood plasma under appalling weather conditions to the survivors of the USS *Turner*, a destroyer that had sunk after an explosion off Sandy Hook, New Jersey.

The earliest use of helicopters in combat took place in the waning days of World
War II and will be covered later. However, they were few in number. It was not until the conflict in Korea that helicopters were formed into units dedicated to search and rescue (SAR). Using first-generation machines and primitive communications systems, USAF and Navy helicopters recovered crewmembers from 10 percent of all fixed-wing Allied aircraft shot down in the war. A decade later, those same rescue forces returned to combat in the skies of Southeast Asia and successfully conducted SAR operations for more than four thousand Allied crewmembers, including in some instances special operations forces trapped deep in enemy territory.

Rescue teams put their lives at stake on every mission and are famous for their bravery. (Courtesy of U.S. Army Museum, Fort Rucker)

It should be noted that MEDEVAC and SAR are overlapping terms, just as the people and equipment participating have overlapping means and techniques in the
pursuit of the basic goal: the rescue of an individual or group in need. Air-rescue efforts extend back to the First World War, but the focus of this book is the use of the helicopter in those efforts.

From late World War II on, the Coast Guard and the Air Force used helicopters for rescue missions on an ad hoc basis. The rewards of these efforts, both in terms of compassion and efficiency, were very obvious in wartime, so much so that more and more resources would be devoted to them—as long as a war was going on. Unfortunately, those rewards, as compelling as they are, did not have the same effect on budget considerations during peacetime. All of the armed services failed to devote an adequate amount of attention and funding to such air-rescue services during peacetime interludes. In this new century, with war a familiar and continuing commodity, a jaded public and Congress have not encouraged sufficient financing of R&D in the field. Despite the increasingly difficult conditions under which rescue forces operate in the Middle East wars, there has been insufficient effort to provide the latest and most effective equipment in adequate numbers.

After the long and divisive Vietnam War, almost all our rescue forces returned to duty in the United States. From their home stations, USAF rescue forces were frequently called out to perform SAR missions for both downed military aircraft and civilian emergencies. In the 1980s, while training and organizing our forces to deal with the growing threat of Soviet expansion in Europe, Air Force rescue planners realized that the techniques to perform “peacetime” SAR and actual combat recovery of personnel endangered by enemy forces were really quite different. They began to refer to the latter operation as combat search and rescue (CSAR), a term that much more clearly identified the reality of the mission.

While helicopters may have achieved brilliant wartime results in conducting special operations, their MEDEVAC and CSAR roles have so many dimensions and such an effect upon morale that they stand above all others, no matter how meritorious those might be. The most important of these dimensions is a humanitarian one, in which heroic participants voluntarily place their lives on the line each time they go out to rescue a fellow airman. This humanitarian aspect lifts morale, inspires others, and in general provides the few elevating moments to be found in warfare.

There is also an innately practical side to these efforts. The crewmembers of modern aircraft receive millions of dollars of training over several years and cannot be easily replaced. Saving their lives and returning them to duty provides a very real monetary reward for the effort.

As will be seen, the helicopter has been employed on missions of mercy since World War II, and its role has grown as its capability has increased. Sadly, as with
almost everything related to helicopters, funding for the humanitarian role of the helicopter has not been adequate. Nonetheless, the very nature of the role summons the utmost from the people who participate in it, and thus, despite all obstacles, it reaches new heights of efficiency every year.

The helicopters involved in these operations, as well as the fixed-wing aircraft that often accomplish CSAR sorties, require the very best of the personnel flying and maintaining them. They must not only be heroic but wonderfully skilled, able to cope with surprises, and able to innovate as required. The self-sacrifice implicit in the rescue role attracts only the very best and bravest volunteers, and the standards of their service then transform them into accomplished experts in their art. The men and women who perform rescue operations are a unique community, admired and even beloved by all because of their continuing demonstrations of self-sacrifice in peace or war.

The standards established by the military in these humanitarian roles has, fortunately, spilled over to the civilian community, where similar self-sacrifice is an accepted practice in the execution of civilian medical and air-rescue duties.

SAR capabilities increased over time as the capabilities of the helicopter increased, especially during the Vietnam War. For this reason, I’ve chosen to include material on these duties in separate sections, rather than including it in discussions of the general employment of the helicopter.

**Why the Helicopter?**

The virtue of the helicopter is its ability to expand and sustain airborne operations in a way that fixed-wing aircraft cannot, that is, taking off and landing vertically, flying at ultra-low air speeds, and even hovering where necessary. As the man who might be regarded as the patron saint of helicopters, the great Igor Sikorsky, said, “If a man is in need of rescue, an airplane can come in and throw flowers on him, and that’s just about all. But a direct-lift aircraft could come in and save his life.”

The vertical landing and takeoff capability reduced or eliminated the requirement for prepared runways. It thus developed that geography and terrain often determine that helicopters are the weapon of choice, especially in supporting ground combat operations. It was less immediately apparent that vertical-lift aircraft could have enormous effect upon seaborne operations, ranging from rescue efforts to anti-submarine warfare and mine-laying to such modern requirements as combat-
ing pirates.

Of all the American services, the United States Marines seized upon the helicopter the most eagerly. The Marine leaders perceived that the amphibious warfare so typical of World War II would have to be fought under far different circumstances in the nuclear age and immediately began tailoring its doctrine, force structure, and equipment to take advantage of the helicopter. The use of the helicopter in MEDEVACs was implicit in Marine Corps doctrine, even though it was sometimes subordinate to the operational role.

The helicopter started out fitfully, as most weapons do, and had a long gestation period. However, even the early models that served in the Korean War proved that while they were sometimes cranky, often vulnerable, and not easy to fly, they were indispensable. As the twentieth century continued its war-torn course, with conflicts erupting all over the world as colonial empires declined, the helicopter became more and more important. Its capabilities increasingly affected the nature of modern warfare, and they continue to do so.

The helicopter eventually and inadvertently reached its first peak of importance during the Vietnam War. There, time, circumstance, politics, and policy converged with technology and adequate funding to create a true “helicopter war” in which rotary-wing aircraft became the symbol of the battlefield. With the helicopter, the American forces could force decisions on whatever battlefield it chose. The North Vietnamese forces also used the helicopter but on a much smaller scale.

While the operational use of the helicopter declined after the Vietnam War, the years 1965 to 1985 saw the introduction of the operating fleets that still define today’s active inventories and, sadly, even the production possibilities for the immediate future. Unfortunately rising costs, arguments over roles and missions, and changed operational situations cancelled some potentially great advances in helicopters.

After Vietnam, planners tended to see the helicopter less and less as a war-winning weapon as the perception of future wars changed and it was believed that any conflict would include a nuclear exchange. The loss of emphasis on the helicopter stemmed not so much from any decline in capability or lack of utility but rather from the budget imperatives of other weapons deemed to be more essential to the probable conflict. It is a hard fact that helicopters are inevitably less efficient and more costly than fixed-wing options and therefore are the weapon of choice only when they can do something no other weapon system can. Furthermore, when contemplating the acquisition of a new weapon system, fixed-wing advocates see the
world differently than do rotary-wing advocates. The helicopter began a resurgence after Vietnam with the introduction of the Bell AH-1 and new weaponry, such as the TOW (Tube launched Optically tracked Wire guided) missile.

All around the globe, other governments and military services had similar experiences in their use of the helicopter. It was an ideal instrument for the Soviet Union, given its vast expanse of territory, and its development there was carefully nourished. Ironically, the growth of counter-helicopter weapons proved to be a substantial factor in the decline of the Soviet Union’s empire.

An absolutely essential element in understanding the development of the helicopter as a vitally important military weapon is recognizing the importance that individuals have had upon its creation and use. In industry, government, and the military, fielding a weapon system inevitably requires the devoted advocacy of individuals who stake their careers upon the success of the weapon system they promote.

Unfortunately for the majority, the process works both ways. Inevitably many more people devote their careers to programs that do not come to fruition and thus don’t earn the rewards they sought. Two perhaps extreme examples serve to illustrate this dilemma. On the one hand, there was Gen. Bernard A. “Bernie” Schriever, whose successful advocacy resulted in monumental achievements in both ballistic missile and space programs. On the other hand, the equally devoted but unsuccessful efforts of Vice Adm. Charles E. Rosendahl failed to make the dirigible a mighty instrument for the Navy.

In any career field in industry, government, or the military, an individual has but a relatively short time to make his or her influence felt. This is most true in government, where the tide of politics can shift influence every few years and where diligent staffers, working on projects important to a congressional constituency, can find themselves suddenly out of a job. The case is less severe in industry, but the period of influence is often shorter than in the military, because it takes longer to gain positions of responsibility. There is (or was for most of the twentieth century) more employment stability in industry than there is in politics, but only exceptionally brilliant engineers, such as Lockheed’s Clarence “Kelly” Johnson, are able to push past their contemporaries to top positions.

Members of the military have relatively longer periods in which to make their influence felt, but even these periods are too short given the length of time required for the development of modern weapon systems. A nominal, full-term service ca-
reer is thirty years. Those who become flag officers, and thus reach positions of the greatest influence, may serve for another four, six, or eight years. The last ten to fifteen years of a flag officer’s career are naturally the most important in terms of the effect of his or her advocacy upon future weapon systems. In almost every case, the mindset of the flag officers will have been established by their earlier experience in the field.

In a similar way, although their career length might be more extended, earnest individuals in government and industry sought to improve the capability of helicopters. In industry, young engineers often develop ideas for weapon systems, and they naturally seek out their counterparts in the military services. The same is true in government, although, as noted, the determining factor is often the relative economic effect that a proposed weapon system has upon the constituency of the congressman or senator.

The three centers of advocacy are government, industry, and the military, and they are the nexus of the infamous term “military-industrial complex.” Despite the invidious connotation imparted to the term by Pres. Dwight D. Eisenhower in his farewell address, no modern weapon system could exist in any nation without the willing cooperation and exchange of information among the members of the three groups. And while there are inevitably abuses of the relationship (usually well reported upon), the system works for the most part in the nation’s interest. There were many who commented on the irony of President Eisenhower’s adverse characterization of the very establishment of which he had been so important a part in two of the three categories.

Given that any successful weapon system must have advocates in each of the three categories, and that the effective careers of each of the advocates is often very short, it is something of a miracle that a complex weapon system such as the helicopter can ever be fielded. This is all the more true because in almost all nations, helicopter advocates have always had to swim upstream, fighting three major and sometimes contradictory battles.

The first of these battles was the usual problem of adapting to advances in technology. From its birth, the helicopter was relatively fragile, inherently vulnerable to mechanical failure. In combat, its slow speed and susceptibility to battle damage resulted in high loss rates. Yet it benefited greatly from many advances, including the introduction of the turbine engine, suitable armament, in-flight refueling, and an enhanced ability to operate at night. Unfortunately, advancing technology also worked against its employment, especially with the introduction of radar-guided anti-aircraft guns and surface-to-air missiles.
The second battle was the internecine strife it occasioned not only among the competing arms of the military—Army, Navy, and Air Force—but within those arms as well. This was true to some extent in all nations but particularly in the United States. The U.S. Army, the primary user of the helicopter, had to go hat in hand to Congress for many decades to gain a lesser part of the budget, because the U.S. Air Force was tasked with the principal defense of the nation. But even within the Army itself, there were many conscientious leaders who had priorities other than vertical flight. This is not to say that the contribution of the helicopter was not appreciated at all levels. The difficulty was that its contribution was not always appreciated as much as that of other weapons, ranging from atomic cannons to the tank. And as in all of these services, the cost of any weapon had to be balanced against ever-increasing personnel costs.

The third battle was the most difficult, for it was the very nature of warfare itself, which seemed to change modes each time the helicopter appeared to be on the point of asserting itself as a primary weapon. In its early days, the helicopter was perceived as a rotary-wing version of the familiar liaison plane, able to get in and out of small spaces and to carry a small load. Many regarded its MEDEVAC role as its most important duty, and it is true that in this field the helicopter had the greatest effect upon modern warfare.

As we will see, the helicopter began to come into its own in the counter-insurgency role, reaching a peak of effectiveness in the Vietnam War. In the twenty years of Cold War that followed, concepts of employing helicopters in combat changed drastically. (Only later, in the interminable wars in the Middle East, would the helicopter once again become a principal player.)

During the Cold War, the helicopter was still used on an almost daily basis as a counter-insurgency tool. Nonetheless, the world’s major powers saw it as a component of totally different kinds of warfare. These ranged from a mid-intensity conflict to one in which nuclear weapons were exchanged.

In the “mid-intensity” conflict, helicopters were seen by the Western Allies as a counter to the massive number of tanks that would be employed by the Warsaw Pact nations. Yet the vast difference in the scale of conventional forces between the West and the Soviet Union was such that most leaders, on both sides, believed that any “mid-intensity” war could quickly escalate to a nuclear war.

Nuclear weapons, whether delivered by aircraft, rocket, or artillery, made it mandatory to reduce the numbers of soldiers per square mile in the huge battle area. The coordinated employment of those soldiers, with their armor and artillery, could only be accomplished by air vehicles, and the probable nature of the battlefield
meant that these air vehicles would be helicopters rather than fixed-wing transports. Again, there is no little irony in the fact that in either the mid-level intensity war or a nuclear exchange, the importance of the helicopter was diminished and not because it was any less useful. Quite the contrary, helicopters were even more valuable in either type of warfare. But in such conflicts, other weapon systems demanded enormous funding, and the helicopter advocates inevitably lost in the budget battles.

Things change. The collapse of the Cold War and the rise of the terrorist threat have once again placed the helicopter in the forefront of modern warfare. The current importance of the helicopter can best be understood against the background of the development of rotary-wing aircraft and their employment in a globe-spanning variety of wars. At this writing, the emphasis is on the war on terrorism and on counter-insurgency, but the tide may change at any time to include the possibility of a large-scale conventional war.

We thus find the helicopter in an unusual position. Over the years, combat experience and advances in technology brought about excellent helicopters well suited for their tasks. But for the last twenty years, and for the foreseeable future, American helicopter technology has fallen behind to the point that it now offers no new designs for aircraft. It is for this reason that a foreign helicopter was selected to serve as the Lockheed Martin VH-71 presidential helicopter, a decision that was later reversed.

Understanding helicopters in modern warfare requires an understanding of the development of the helicopter over time. The stunning advances in helicopter technology have permitted equally great leaps in its employment. And it should be emphasized again that the advances in technology and employment have come about as a result of the insight of certain individuals or groups. These will be identified wherever possible by name, but naming an individual may be a necessary substitute for naming all the members of the team the individual headed.