

The Evolution of Dust-off in Vietnam and my Personal
Experience as a Dust-off Medic by
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I. The Evolution of Dust-off in Vietnam

War is a bad thing, we all agree to that, but it must be conceded that throughout history wars have accelerated technological innovation. Because the stakes were so high and the opposing camps both so technologically advanced, World War II was especially fruitful in this regard. We think of radar, of jet planes, of atomic bombs, just to name a few of the advances attributable to the war. We also think of penicillin, which illustrates that wars not only advance the technology of death with ever more sophisticated and frightful weapons, but also the technology of life through newer medicines and more refined techniques for treating the injured. And because these innovations usually have a broader application to the civilian population as a whole, they offer lingering compensation to the destruction and waste of the wars that engendered them in the first place.

In our own history, the American Civil War probably did more to improve the care and treatment of soldiers than any other conflict. Prior to this event, no integrated medical corps existed to treat battlefield casualties and to maintain sanitary conditions in military camps. In the course of this long and bloody struggle, dedicated men such as Major Jonathan Letterman, among many others, successfully argued for an organized and trained medical corps with its own command and control structure. These men also refined many of the techniques for handling mass casualty situations, such as the use of triage and utilization of forward aid stations, which in one form or another are still in use today. The Civil War also advanced the science of surgery and improved our understanding of the importance of sterile technique, both of which had immediate benefit to the civilian population as well.¹

The Vietnam War, likewise, produced notable innovations in medicine that later carried over to civilian life. Chief among these was the development of the helicopter

ambulance, which is now commonly referred to as “medevac,” but which in Vietnam was universally referred to as “dust-off.” In this paper I will outline the evolution of dust-off and, then, in accord with the title of this conference, “The Experience of Vietnam,” will relay how my personal experience of Vietnam intersected with dust-off.

Medevac as we know it today resulted from the convergence of two war-inspired technologies, one in medicine and the other in flight, and this convergence took place fully in Vietnam for the first time. Let us first look at the medical innovations and then at the advances in flight, specifically the helicopter, which enabled this marriage.

We have already looked briefly at the advances in military medicine made during the American Civil War, but to these we must add one more improvement of great weight, which on the surface of it seems simple and self-evident, but only became accepted practice for the U.S Army during the First World War although it had been introduced at a much earlier date in Europe.² This was to embed trained non-combatant medical personnel in the form of combat medics within the ranks of the fighting units. This gave the advantage of offering immediate first-aid to victims of gunshot, blast, and shrapnel. Timely intervention of this nature, it soon became abundantly clear, made a dramatic difference in survival rates of the wounded. It is beyond the purview of this paper to explore the expanding role of the combat medic in detail during the course of the nineteenth and twentieth centuries, but suffice it to say that the concept of prompt first-aid by trained and equipped personnel represented a tremendous advance in both wartime and civilian practice.

Now let us look at the development of helicopters. The concept behind helicopters is actually quite old. The Chinese developed toys as early as the fourth century that are in fact crude helicopters. Likewise, a famous sketch by Leonardo de Vinci reveals an understanding of the principles that enable these machines to fly. The twentieth century saw a race to develop the first serviceable helicopter and, once again, it was war that propelled the process to completion. Germans developed the first operational helicopter to be placed into military

service, the Focke-Wulf Fa 223 Dragon.³ To the Germans also belongs the distinction of the first documented medical evacuation by a helicopter. The American, however, were close behind the Germans with the introduction of the Sikorsky R-4B helicopter in 1945.⁴ In the waning months of World War II, the U.S. Army conducted its first medevac mission under fire in Manila when five pilots evacuated 75-80 soldiers one or two at a time.

The helicopter came into its own in the Korean conflict but it was relegated mainly to a support role. Powered by piston engines, the weight to cargo ratio was not favorable for a more active responsibility. Also, as is often the case, the military itself was behind the curve in regard to implementing the new technology. Both of these considerations limited the medical application of helicopters during the conflict as well. Still, the systematic and widespread use of helicopters to evacuate casualties took place for the first time in Korea and this was closely connected to the so-called MASH unit (Mobile Army Surgical Hospital), popularized by the movie and TV series of the same name. The helicopter usually employed for this purpose was the Bell H-13 Sioux, a light machine, which, as anyone who has watched the movie will recall, bore an unsettling resemblance to a giant insect. Two stretchers were attached to the skids on either side of the bubble-like cockpit. Thus outfitted, the chopper could transport only two patients at a time, which restricted its usage to back hauling the most critically wounded from forward aid stations to surgical hospitals in the rear. The small size also precluded trained medical personnel on board for in-flight attention.⁵

Recognizing the potential for helicopters but aware of their limitations in respect to power and load, the Army let out bids for a new utility machine powered by turbine rather than piston in the post-Korean period. The result was the storied Huey UH-1A, which in its many variations and refinements became the workhorse of Vietnam and the most recognizable image associated with the conflict. The Huey, as universally termed, was the first turbine-powered U.S. helicopter to go into production. It was first assigned to the 101st Airborne Division at Fort Lewis, Washington, and first appeared in Vietnam in 1962.⁶

Dust-off, as it developed, is closely associated with the Huey, with two names, Major Charles Kelly and Captain Patrick Brady, and with one unit, the 57th Medical Detachment, which both men commanded. Charles L. Kelly was both a helicopter pilot and commander of the 57th Medical Detachment from January 11, 1964, until he was killed in action in July of the same year while trying to evacuate a wounded American advisor along with several ARVN wounded. The 57th had been equipped with Hueys when it arrived in Vietnam in 1962, but it was Kelly who first recognized the full potential of the new helicopter. He aggressively expanded its role by extracting casualties directly from the battlefield--often in the middle of firefights--rather than back hauling from forward aid stations. He was also the first to use trained medics in flight to attend to the wounded. These twin innovations earned for him the title of "Father of Dust-off." The name "dust-off" also harks back to Kelly's radio call signal at the time of his death. The term quickly spread across Vietnam.

Upon Kelly's death, Captain Brady continued and expanded his predecessor's aggressive tactics, often in the face of determined criticism from peers and superiors. Brady also argued successfully for a unified command and control structure allowing for full control of the machines assigned to the 57th. Pre-Brady, responsibility for maintenance and fueling was unclear and worse yet, outranking commanders of other units would occasionally commandeer the unit's helicopters for their own purposes. Post-Brady, these problems no longer existed, and as the concept quickly spread across Vietnam, both the tactics and organizational innovations of Kelly and Brady became SOP. The particular élan and esprit de corps of dust-off embodied in the motto "so that others may live," also quickly became the guiding spirit in all the units throughout Vietnam.

The exploits of the various dust-off crews have become legendary and spawned any books and articles. Of all the storied pilots and medics, none has garnered more attention than Michael Novosel. During two tours in Vietnam, Novosel flew over 2,500 missions and extracted 5,589 wounded personnel, among them his own son, Michael J. Novosel, Jr. For a

particularly hazardous action in 1969, when he completed 15 extractions while exposed to enemy fire and, although wounded, rescued 29 men, Novosel was awarded the Medal of Honor.

In conclusion, dust-off crews evacuated untold thousands during the course of the war and many thousands owe their lives to the in-flight medical attention they received.⁷ Four points distinguished dust-off in Vietnam from earlier air-rescue operations and continue to define medevac to this day, whether military or civilian: 1) an integrated command and control structure; 2) dedicated aircraft specially outfitted and superbly suited for the mission; 3) specialized training for both pilots and medics; and, 4) medical assistance in transit by flight medics.

Because of the aggressive precedent set by Kelly and Brady and adopted by all subsequent units, we must acknowledge that dust-off was one of the most dangerous jobs in Vietnam. Many of the units were all volunteer. Fully one third of dust off personnel were either killed or wounded as a result of hostile fire or crashes. The Medical Department lost 199 helicopters in Vietnam, 90 commissioned and warrant officers killed, and another 380 wounded or injured. Casualties among crew chiefs and flight medics included 121 killed and 545 wounded or injured.⁸

From Vietnam the concept has spread and evolved. Now, every major military force in the world has something similar to dust-off. Very importantly, the civilian world has also embraced the concept fully. Every hospital worth its salt now has medevac capability, a direct filial descendant of dust-off Vietnam.

II My personal experience

The Vietnam experience, perhaps more so than any other American war, was not confined to the battlefield; it encompassed both a significant before and after event for most who served, and so it was for me: before, the angst of the draft; after, the trauma of readjustment. As to the before: the generational conflict of the sixties and seventies forced

upon those who faced the draft a personal choice like no other war: many believed the rationalizations of their government and thought it their patriotic duty to serve; others rejected the rationalizations of the war strongly and when confronted with a notice from their draft board to report for duty, faced difficult choices. My personal choice: I was willing to serve, but only if I could do so as a non-combative, for I was firmly opposed to the war. I therefore applied for conscientious objector status, which, to my surprise, was granted by my local draft board. Like all COs, this meant that I would be trained as a combat medic at Ft Sam Houston in San Antonio, TX. I was duly trained and found myself on a plane for Vietnam the same day that Americans landed on the moon for the first time, on July 20, 1969.

My first assignment was as a medic with an artillery battery; Company A, 2/33 Artillery, 1st Infantry Division. I spent about two months with the company, which, with the exception of an occasional mortar or rocket attack, was fairly uneventful. It did provide, however, the experience of being in the field as opposed to the rear. What a contrast.

After two months in the artillery battery I was reassigned to the 25th Infantry Division headquartered at the massive U.S. military complex at Cu Chi.⁹ Here I had very little to do and simply made role call and marked time. It was a very boring existence, but the dominant experience for most in Vietnam, for less than 20% of those who served, I am told, ever set foot outside the wire of these immense installations.

Here I witnessed firsthand the enormous gulf between the draftees and the lifer sergeants, who, from our perspective, seemed to rule the army. It was inescapable and all-pervasive: the drug culture, the racial divides, the festering discontent and hatred between the generations that on occasion led to deplorable incidents of “fragging.” It was if the boredom and captivity of the rear area intensified tensions in a way I had not experienced in the field. It appeared that the Army was on the verge of collapse from within.

My inactivity did not last long. President Nixon and Henry Kissinger launched the

Cambodian invasion in May of 1970. I was reassigned to an infantry unit, the 2/27 Wolfhounds, but ended up serving as a medic on convoys transporting material and troops into Cambodia and bringing out captured rice and other booty. This was the most trying experience for me of the war because our convoys were routinely ambushed.

The Cambodian invasion ended in June without really accomplishing very much. The stated goal, to capture COSVN, the command and control section of the Viet Cong, which was assumed to be in Cambodia across the border, proved elusive. It had been located not in Cambodia but literally under the feet of the Army at Cu Chi, from whence the invasion had originated. After the war it came to light that all along the Viet Cong maintained a vast underground complex, a virtual city, at Cu Chi, which was never discovered or suspected by the Americans. To me there is no more telling symbol of the disconnect between the rhetoric and the reality of the war than the Viet Cong tunnel city underneath the massive American military base at Cu Chi.

After Cambodia I was reassigned to the 1st Air Cavalry stationed at Phuoc Vinh northeast of Saigon. By now I was a seasoned medic and I resolved to volunteer for medevac. I had come to admire, even envy these crews, and I let these considerations carry me away. It is not a good idea to volunteer for things in the Army. I was accepted and after a week or so of on-the-job training became part of the team. For the next six months or so this was my job, and I loved it.

We were organized thus: there were four crews and four birds. Each crew consisted of a pilot, co-pilot, crew chief, gunner, and medic. We rotated between first-up, second-up, third-up, and stand-by. First-up did a twenty-four hour shift; second-up backed them up, while third-up backhauled patients from forward aid stations to the 25th Surgical Hospital at Saigon. Stand-by usually meant a day off. We had private quarters and with every fourth day off, we had it good. The only problem is our job was quite dangerous, as the statistics I quoted earlier show. It finally caught up with me. I had settled into my new job so well that I

voluntarily extended my tour in Vietnam two months under a program that allowed me early dismissal from active service. Like I said, it is not good to volunteer for things.

With four days left in Vietnam and nine days left in the Army, I was on stand-by. It had been an active day: first-up and second-up were out on missions; third-up was on the way to the 25th Surgical Hospital in Saigon with a load of patients. A frantic mission came through to HQ. A reconnaissance helicopter had been shot down. A special team had been inserted to secure the bird and rescue the crew but it had been ambushed and penned down. Several of the members had sustained life-threatening wounds that required immediate evacuation. The call came for volunteers. All who were in the vicinity responded without hesitation and within ten minutes we had a crew together and were in the air. We had only five clicks (kilometers) to fly from base camp but were already over the impenetrable triple canopy jungle that covered most of our area of operations that stretched from the north of Saigon all the way to the Cambodian border. The mission would require use of the hoist, which meant we would have to hover over the site, run down a cable with a d-ring and lift the patients up into the chopper one by one using a special litter for that purpose. The hoist was the most dangerous kind of mission, for reasons that are self-evident. But we had no choice in this case because of the tall trees and thick jungle. We hovered down and began the hoist only to come under As we were starting this maneuver we came under intense machine gun fire from very close range. Both the crew chief and I were struck by this burst of fire and the helicopter took perhaps twenty rounds. Realizing that our position was perilous, not only for us but also for the troops on the ground over which we were hovering, the pilot and co-pilot quickly lifted the machine up and were able to fly the short distance back to base camp.

The war was over for me. My wounds were not life-threatening, but required several months of convalescence in varying hospitals, after which, with little ado, I was thrust back into civilian life. The readjustment was difficult, and this transition was also part of the Vietnam experience for me as well as for hundreds of thousands of others.

In conclusion, I look back on my Vietnam experience as on the balance positive. This might sound odd to many, but this is part of the paradox of war; the intensity of it all forges bonds and heightens awareness in a way that the inexorable passing of time cannot erase from memory. And for me, as a historian, I have to say it was a chance to experience history as well as study it. But above all, I value my association with dust-off, an organization that in the midst of so much death and destruction left a legacy of life so simply and poignantly embodied in our motto, "So that others may live."

Notes:

¹ Wikipedia contributors, "Medicine in the Civil War," *Wikipedia, The Free Encyclopedia*, (accessed June 10, 2013)

² Napoleon, apparently, was the first to embed trained medical personnel within the ranks of his infantry. The practice was so generally accepted among European armies that by 1862 the Geneva Conventions in setting down the rules of warfare decreed that it was a war crime to fire upon non-combatant medics performing their duties on the battlefield.

³ Wikipedia contributors, "Focke-Achgelis Fa 223," *Wikipedia, The Free Encyclopedia*, (accessed June 10, 2013)

⁴ Wikipedia contributors, "Sikorsky R-4," *Wikipedia, The Free Encyclopedia*, (accessed June 10, 2013)

⁵ Wikipedia contributors, "UH-1 Iroquois," *Wikipedia, The Free Encyclopedia*, (accessed June 10, 2013)

⁶ See: Peter Dorland and James Nanney, *Dust Off: Army Aeromedical Evacuation In Vietnam* (Washington: Center Of Military History United States Army, 1982), 117

⁷ The number was between 850,000 and 900,000 soldiers and civilians. See: Peter Dorland and James Nanney, *Dust Off: Army Aeromedical Evacuation In Vietnam* (Washington: Center Of Military History United States Army, 1982), 116, 117.

⁸ Statistics taken from Peter Dorland and James Nanney, *Dust Off: Army Aeromedical Evacuation In Vietnam* (Washington: Center Of Military History United States Army, 1982), 117

⁹ In line with the policy of Vietnamization introduced by President Nixon and Henry Kissinger after the Tet offensive of 1968/69, the 1st Infantry Division, as luck would have it, was the first division to be withdrawn. For those of us there, however, this simply meant reassignment within the country.