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*Med-Evac evolved in combat, not in a book, and, appropriately, the author's suggestions for increased efficiency stem from his combat experience.*



*LtCol Allgood was killed on 26 Mar 68 while serving with 1st MAW in Vietnam. A naval aviator with an infantry background, LtCol Allgood was an experienced teacher and a qualified grammar school principal. He had been in Vietnam since 21 Aug 67.*

# MED-EVAC

## Vietnam Style

By LtCol Frank E. Allgood



*Med-Evac using UH-1E*

**T**HERE are four phases in Med-Evac work, excluding evacuation to the States, as it is conducted today. These are the field, pick up, flight, and medical facility phases. Each needs defining.

The field phase is from the time the Marine is wounded, or becomes ill, until the Med-Evac helicopter arrives overhead. During this phase first aid is given, the wound or illness classified as to seriousness and a helo request submitted. The unit with the casualty must initiate a Med-Evac request immediately.

The second phase is from that time the Med-Evac helicopter is overhead until it has climbed back to altitude with the Med-Evac aboard. This is the heart of the Med-Evac pilot's work—the pick up in the field! The flight phase is the delivery of the casualty to a medical facility. While the treatment phase can be described as the receiving, evaluation and treatment of the casualty after arrival at a medical facility.

The rapid execution of phases two and three is dependent upon the Med-Evac pilot. The other two phases also offer opportunities for the evacuation pilot to speed up their execution. An absolute for all four phases is adequate communications. Inexperienced ground radio operators, poor aircraft radios and the lack of smoke or air panels have delayed many Med-Evac missions. The one delay that is hard to accept is the time spent between the moment of wounding until the helicopter pilots get the request. The fastest helos available cannot regain time lost before the pilot received the Med-Evac request. Any delay over a few seconds due to either communication, hardware or procedures is unacceptable.

Complete records of time required to conduct Med-Evac mission are not normally kept by helicopter squadrons. However HMM-363 did keep records for several weeks. Some interesting facts appeared. The fastest execution of a Med-Evac mission was 18 minutes from receipt of the request in the Squadron Ready Room until the casualty was inside the NSA Hospital. While several missions required over an hour, these were due mainly to very hot zones and the necessity to neutralize the area around the zone. A rough average appeared

## MED-EVAC

to be about 25 minutes in the First Marine Division TAOR. Although the surgical team aboard *USS Iwo Jima* reported a nine minute evacuation in 1967, it is believed the helicopter was already in the zone when the Marine was wounded.

To further understand field medical evacuation an analysis of the mission is necessary. Speed with its close relation to time is an important facet. But even more important is the necessity for *safe* transportation of casualties. The type of warfare being conducted in Vietnam does not provide secure routes of communication to the rear. Often there is no rear. Mines, booby traps and snipers can make overland evacuation difficult. The medical evacuation system must provide not only a rapid but a safe means to transport our ill and wounded.

The execution of the Med-Evac mission is dependent upon many variables. Some are uncontrollable such as weather. Others, like the type of helicopter assigned to Med-Evac work, are controllable. Other factors that can be partially influenced are enemy situation and darkness. Sound tactics can, to some degree, control the situation. Yet close analysis will show there are a variety of ways that the medical evacuation missions in Vietnam are being conducted. Perhaps this is good. Commanders must have authority to accomplish their mission as they believe best for their command.

The overall Med-Evac system in Vietnam has functioned reasonably well. However we need data, which is available, compiled and processed so we can determine what is a good norm for time required to pick up casualties. It is important to remember that our Med-Evac system in operation from Khe Sanh to Hoi An grew in response to combat needs in the field. *It did not come out of published sources.*

FMFM 3-3, Helicopterborne Operations, contains less than one page on medical evacuations. However, several principles are set forth and certain guide lines established. But for a mission as important as medical evacuation is in Vietnam, FMFM 3-3 can offer little assistance.

The same is true of Naval publications. In fact, it is very interesting to realize how little has been published as doctrine for Med-Evac work. Although NWIP 41-6 (B) places special emphasis on non-aviation ships it does devote six pages to Helicopter Rescue Operations. Yet nothing is stated concerning Med-Evac work even though any amphibious ship could find themselves receiving Med-Evacs. NWIP 22-6 (A) has one paragraph in Chapter 7, Execution of the Ship to Shore Movement, on evacuation of casualties. It contains exactly 73 words which are devoted to general statements. Paragraph 770, Casualty Evacuation

and Medical Service, and paragraph 771 Evacuation Procedures, are both oriented towards general medical evacuation at sea. Perhaps one statement on page 7-33 really portrays how far behind we are in our Med-Evac published doctrine. It is quoted "Helicopters provide an excellent means of evacuation to ships." Again our thinking lags behind our hardware and battle field proven techniques.

The Marine Corps helicopter inventory was not acquired to perform medical evacuation as its primary function. Rather the vertical assault concept was laid down on the solid keel of the helicopter. The role of the helicopter to carry out wounded was considered a valid secondary role but only after dropping troops in zones. *To use helicopters to go into hot zones to extract wounded was thought neither prudent nor possible!* Today in Vietnam it has become standard practice! During the TET offensive in early February 1968, HMM-363, operating out of Marble Mountain Air Facility, received many requests for Med-Evacs out of hot zones. All were accomplished without loss of life or aircraft although minor battle damage was incurred as well as very light casualties to the Med-Evac crews. This would indicate the tactics employed were sound. As a result of several months experience in the medical evacuation business in Vietnam it is believed there are things that could be done to further increase our Med-Evac efficiency. An explanation is offered below:

As Marine professionals we readily endorse strong combat leadership. Yet we may be guilty of not really appreciating the need for a more sophisticated Med-Evac system. We have gone to great trouble and expense to provide 24 hour a day Sea Air Rescue (SAR), to our Air Stations. Today at Chu Lai and Danang a damaged aircraft radios ahead and the SAR helicopter is launched. Yet a Marine patrol can be out, or a unit engaged in heavy contact, and we don't even launch a Med-Evac helo until *after* the casualty occurs and a request is received. Even large operations have not, to this writer's knowledge, required that Med-Evac helos be airborne to provide a faster response. Perhaps we should re-examine our philosophy about Med-Evac. Isn't it much more important than SAR?

Recommended: That a medical evacuation billet be created at all staff levels above squadron and battalion. This officer should NOT be a medical officer but a Marine familiar with the units and their hardware. A highly qualified orthopedic surgeon does not necessarily possess the knowledge of *how* to get casualties out of the field. Many Med-Evac missions ran during the TET offensive in February 1968 required a combination of several well experienced line officers' professional military knowledge. The surgeon's role, as sacred as it is, should properly come after the

casualties and evacuation are out of the hot zones. It has been found that there is little if anything a doctor can do while the helicopter is evacuating a casualty that an *experienced* corpsman cannot do in the few minutes it takes to execute phase three of the evacuation.

Certainly the role of the surgeon should provide for drawing on his knowledge of medical matters. This can include type and number of stretchers to carry, the training of the airborne Corpsman, and many little details whereby the whole process can be shortened. But it is this writer's firm belief that the officer on the special staff responsible for medical evacuation procedures should be a Marine.

### **Combat Operations**

A discussion of Med-Evac operations in combat requires a definition of what combat entails. Merely flying over enemy positions is not flying Med-Evac combat missions. Nor is transporting a Marine casualty from the 1st Medical Battalion at Danang to either *USS Repose* or *Sanctuary*. The ground definition of a secure helicopter LZ in the field is not always applicable either. It is impossible to know if a "secure" zone in the field will remain cold. Consequently each approach, landing, and take off from such zones must be executed the same as if the zone were hot. Even if the zone is quite secure it is possible to draw fire approaching and departing.

For the purpose of this article our main concern lies with the hot (insecure), and the potentially hot zones. The overall situation, the type and model helicopter employed, and the flight tactics used, are obviously not applicable to flying into permanently secure zones such as An Hoa Airstrip or Dong Ha.

Medical evacuation flying demands professionalism of the highest calibre. It requires rapid evaluation. It is not a place for heroics but of dedication and determination. Just as our ground unit leaders are taught to use supporting arms so must the Med-Evac pilot use all the tools at his disposal. In Vietnam, on numerous occasions, a Med-Evac flight leader has called on other aircraft, not in his flight, for assistance.

The Med-Evac pilot must know how to achieve maximum results from his own aircraft as well as that of his escort. Often it has been necessary for a Med-Evac pilot to direct fire on a specific target. This has been done in a variety of ways. Normally the Huey gunship is ideal but sometimes it is more desirable to conserve its ordnance. The infantry can provide substantial help in making the zone tenable for a few seconds for the Med-Evac chopper. This writer has called for 60 and 81 mm mortars and 3.5-in. rockets, all of which the ground delivered as requested—*on target!* Also the unit around the LZ can lay down a field of fire as

the helicopter starts in. It does require a steady pilot to fly in over a steady stream of fire even though it is friendly outgoing fire! But whatever assistance is available the Med-Evac pilot has to realize its need and availability. He must use it!

In Vietnam the Marine Corps helicopter inventory includes four different models. All have been used on occasion to transport medical evacuees. But the mission of Med-Evac has been assigned primarily to one of the HMM Squadrons. Usually this has been a UH-34D Squadron. VMO with their UH-1E, Hueys, have extracted Med-Evacs from hot zones but normally their role has been that of gunship escort. The CH-53 has hauled litter patients from one facility to another such as An Hoa to Danang but only in a limited manner and never from hot zones.

What have we learned operationally about flying hardware for Med-Evac missions? We have learned that each aircraft has its advantages. Each has weaknesses. This is not surprising since no helo in our inventory was developed, purchased, and flown for the explicit mission of Med-Evac. We have had to put them in the secondary role due to necessity.

From personal experience and close observation the UH-34D appears to be the best overall Med-Evac chopper in our inventory. Again this is oriented towards Med-Evac work in either known hot zones or potentially hot zones. The 34-D has a high rotor clearance which enables it to land in brush and grass well over 6 feet tall. Its single rotor allows much more maneuverability in going in and out of LZs than a tandem rotor helicopter. It requires a reasonably small zone and perhaps most important of all, it can sustain moderate battle damage and still fly. Classified reports of battle damage incurred by the aircraft from HMM-363 will confirm this. Obviously the 34 has limitations. It does not have the tremendous power of the CH-46, nor does it have the room. But it can lift a good load. In fact on 3 February 1968, 5 miles southwest of Danang a HMM-363 UH-34 lifted out of a hot LZ with a crew chief, an aerial gunner, a corpsman, and 13 casualties aboard.

The utilization of the Med-Evac helicopter, regardless of kind or model, is where we can make money. Why use a Med-Evac package of one transport and one gunship when if either aircraft has mechanical trouble the Med-Evac will be delayed? Could it be that we do not put enough true emphasis on the philosophy germane to evacuating our casualties: support for the troops.

We used to keep fixed wing aircraft on station for close air support. We can do the same for helicopters. Let's assign a package of two transports and one gunship to be airborne during daylight hours. These helos could be positioned near a secure outpost and anchored at 2000 feet. A common Med-Evac frequency would be their means of receiving Med-Evac requests direct from

## MED-EVAC

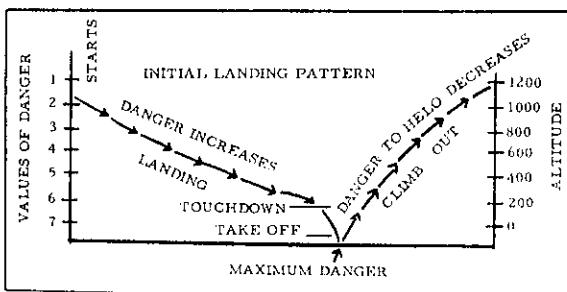
the field. The direct air support center and the applicable air officer, 14's, could indicate their consent by remaining silent. This procedure would save tremendous amounts of time. By using two transports the flight leader would have the flexibility to pick up a larger number of Med-Evacs, to continue if one aircraft became inoperative, and to use the other transport to carry extra stretchers, etc. No longer would the Med-Evac package be on the deck waiting for the request to be relayed through Wing, MAG and Squadron while a Marine lies hurt in the field.

Another operational policy that could enhance Med-Evac proficiency would be to assign the mission to one squadron on a continuous basis. This squadron could either be in direct support of a large TAOR or a major unit such as a division. For years our VMO's have been operationally controlled by our divisions. Perhaps this would be a possibility for a permanent Med-Evac squadron. HMM-363 was assigned the Med-Evac responsibility on a 24-hour daily basis for all the 1st Marine Division TAOR from 1 November 1967 to 10 February 1968. Although other squadrons picked up Med-Evacs as the situation dictated the responsibility for the mission lay with HMM-363. It is believed some very profitable knowledge was gained from these months of continuous Med-Evac ops. Certainly a sound knowledge of the enemy situation was learned. However, due to various reasons another HMM squadron, which was unfamiliar with the local 1st Marine Division TAOR and enemy forces therein, was assigned Med-Evac.

### Principles

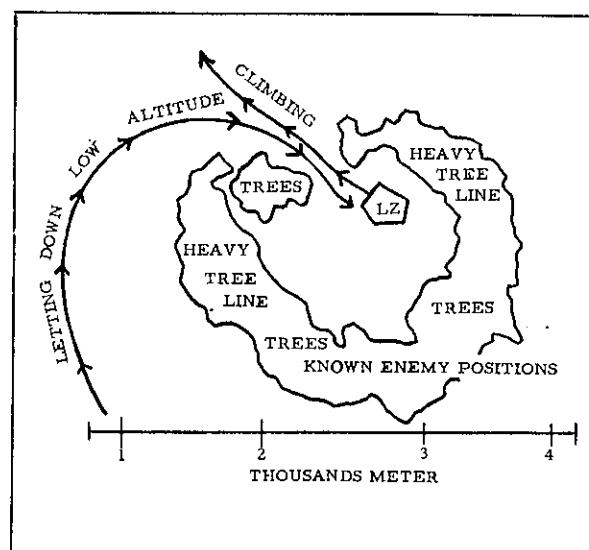
One principle, found to be constant, is the ground exposure time. G.E.T., is directly proportionate to increased danger. G.E.T. is that time the helicopter is setting in the landing zone and the easiest to hit. It is an absolute that Med-Evacs be loaded rapidly. HMM-363 found that if G.E.T. was less than 50 seconds there was little enemy activity. Fire was largely inaccurate.

Another similar finding has been the increase in danger which occurs upon landing, then peaks just prior to take off, and then reduces as climb out is



made. The maximum danger is just before take off. (See preceding chart.)

Another lesson learned is to always use the most open area for an approach and departure into a landing zone.



The above figure depicts what should always be considered a potentially hot zone. Avoid flying over excess cover and concealment available to the enemy!! Use an open approach and vary departure. When possible use terrain to mask the helo.

### Conclusion

There are many procedures and techniques that have been proven successful under fire in conducting Med-Evac pick-ups. These are passed from pilot to pilot and sometimes from squadron to squadron. Yet there exists a real danger that the valuable lessons learned will not be evaluated and their concepts recorded. Also the need exists to compile and compute data about medical evacuation by helicopter. The state of the art today, although functional, will not be satisfactory next year. As the war and its degree of involvement have widened so must our medical evacuation system change. Better records are needed. More hardware could be profitably employed. Certainly, better procedures for requesting helicopter Med-Evac could be developed. What will be needed in future years, both in hardware and organization, to support medical evacuation, should be considered. From the squad leader to the surgeon, Med-Evac has to be an all hands evolution. No phase is more important than another. Each individual in the Med-Evac chain is vital to the rapid accomplishment of the mission. The Marine casualty is the most important of all.

All effort must be made to put him in a medical facility in a minimum of time. This is Combat Leadership at its finest.

USMC