

## **The Hot Load, Time Saver or Time Waster**

*By Rex Alexander*

There are few things in our industry that will generate more emotion and controversy or have people taking sides faster than the topic of hot loading patients. Having been a pilot in the air medical business for 14 years, I have had the opportunity to see the good, the bad, and the ugly from both sides of this issue several hundred times over.



To outline all of the different processes used in today's industry for hot loading a patient would require more space than I have available to write. Needless to say, there are many ways to accomplish this process and to do it safely. So let's get to the meat of the issue, why do we hot load patients? In the majority of everyone's mind it is to save time and expedite transport, but are we really saving time or is there a false perception of time savings, in both our eyes and our customer's eyes?

A statement made by a volunteer firefighter a few months ago during a review of a particular scene transport illustrates this perception of speed very well. When I asked him how long it took the helicopter to land, load and takeoff again he stated, "I'm not exactly sure but they loaded the patient hot so I know it must have been pretty fast, maybe five or six minutes." He was basing the speed of the process on the fact that the helicopter did not shut down but continued to run. After further review of that particular transport, I discovered that the helicopter was actually on the scene, running hot, for 14 minutes.

After reviewing our data from the past four years, I found that the fastest time for a hot load that we had recorded was just over six minutes which occurred only one time. Following that particular hot load, the data showed that there were two at seven minutes, two at eight minutes, one at nine minutes, and three at ten minutes with remaining 43 hot loads at 11 minutes or greater, the longest being 26 minutes. In an effort to insure an accurate comparison, I only evaluated those cold loads which had similar circumstances and parameters as the hot loads. The fastest time recorded for a cold load on the scene was seven minutes, this occurred three times. Following this there were three cold loads at nine minutes and four at ten minutes. What I discovered was that given similar circumstances, we could complete a cold load in the same amount of time as a hot load and in most cases we could do it even faster.

While it is true that given the multiple differences between aircraft types, geographical locations, demographics, environments, protocols, regulations and the like, these numbers do not represent all programs. They do however raise questions and open the door for further examination and discussion. One very important discovery that I made after this investigation, was that we had a very clear cut written procedure for hot loading our

patients, as do most programs. What we did not have was a clear cut procedure for cold loading patients. In an effort to see if I could further improve on our cold loading times, I attempted to devise a better process by primarily focusing on adjusting the pilot's role. Instead of assisting the medical team, I focused strictly on the helicopter. Armed with a stopwatch and the helicopter checklist, I set about to create a new modified cold loading procedure.

The procedure that I devised is as follows, after landing, I performed the standard two minute engine cool down followed by engine shutdown with the rotors coming to a full stop 45-50 seconds later, total time 2.8 minutes. After exiting the helicopter, I completed my standard walk around and scene survey but instead of going to find the medical team, I got back in the helicopter, put my seat belt back on, pulled out my checklist and complete all of my prestart checks up to the point of starting the engines.



Then, I waited. This portion of the process took approximately 2.5 minutes. Given ideal circumstances, the medical team would be loading the patient and getting into the helicopter for departure at about the same time I was finishing my prestart checks. Once the team was on board, I then start the engines and prepare for liftoff, an additional 2.5 minutes. After several trial runs, my total time for the new cold loading procedure under ideal circumstances from landing to takeoff was between 7.8 and 8.0 minutes.

As luck would have it, I soon got the opportunity to test my new procedure out and compare it to our hot loading process. On two separate occasions, within one week of each other, we responded to the same location, working with the same ground units, and under very similar circumstances. On the first run, we accomplished a hot load in 7.8 minutes using our standard procedure. On the second run, we accomplished a cold load in 8.3 minutes utilizing the new procedure. Now of course, this was only two transports, but given more repetitions, I believe that we could get this time down to an even eight minutes on a regular basis without compromising safety.

So why then do we continue to feel that hot loads are so much faster when in many cases we are actually taking longer, increasing our risk exposure and burning extra jet fuel? Again, I think it is perception. If the rotor blades are turning and the engines are making noise, we assume the process is being completed faster. The problem is so do our customers, who now become annoyed with us when we shutdown because in their eyes we are wasting valuable time when in actuality we may be speeding up the total process. There are times that a hot load may be more prudent over a cold load. Many programs have an unwritten rule and many emergency agencies strongly encourage that when landing on a busy interstate highway, helicopters should not shutdown if the scene time will be less than 15-20 minutes. This is just in case the helicopter will not restart after shutdown. But if there is little or no difference between loading hot and loading cold and you are not on an interstate highway, why load hot?



Some of the benefits of loading cold over hot are a less stressful environment for crews, first responders and patients not to mention a much quieter environment and a lower risk exposure for everyone involved. All of which have been shown to permit clearer thinking, better communications, and better decision making.

This in turn allows for increased speed, accuracy, and safety. With a clear procedure and proper training under similar circumstances, most programs should be able to cold load a patient

safely in 8-9 minutes on a regular basis. The only way that you will know if this is right for your program is to find a stopwatch, grab your checklist, and go find out for yourself.

Whether performing hot loads, cold loads, or talking about takeoff times, one very important question we must all ask ourselves everyday is how fast is too fast? At what point do we start trading safety for speed? This is the point that our risk exposure skyrockets into unacceptable territory and we need to stop, back up and reevaluate. Good luck and fly safe.