



CHIEF'S FILE CABINET

Ronny J. Coleman

The Diamond "T"

A term that has come to express the essence a victim surviving a emergency medical services emergency is the phrase "golden-hour". Contained in that catchy phrase is the idea that if you can't do all of the right things to an injured or very sick person within the first 60 minutes of being called to the scene, the chance of a successful outcome deteriorates rapidly. It's a good phrase. It's succinct. It's clear. The idea of using the visual image of gold as an expression of value gives the phrase that sense of importance that accompanies the value of gold.

Well chief, what is the corollary phrase for our core mission; firefighting. Do you have one? – And, if gold is valuable, what's even more valuable in terms of being worthy of our respect as a commodity of value?

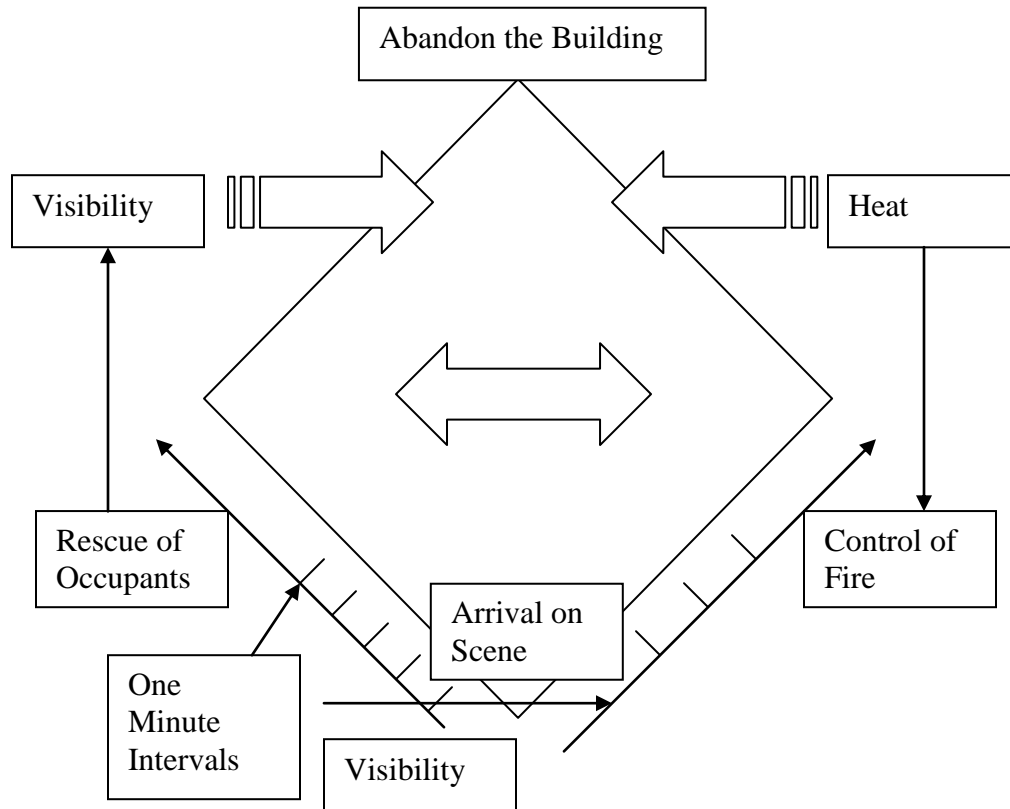
Perhaps, there is a clue to the value of things in the world of precious metals and stones as they are related to some public affairs event. Let me suggest that when organizations go out to find sponsors of organizational funding activity they often call their top contributors either platinum or diamond partners. Just for sake of this column let's agree that ounce for ounce platinum is worth more than gold. If you agree with that assumption, then perhaps you can agree that a diamond is highly valued jewel. If you don't think that is true – check out the costs of a diamond ring these days

I would like to suggest that there is a hypothetical diamond that exists on every fire. It is not one that is made of carbon under pressure, but it certainly has a high price tag. And here is what it looks like:



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Perhaps we can begin to evaluate what I call the Diamond Time of Firefighting. You see fire is not as forgiving as a medical emergency. There is a period of time, usually about the first ten or fifteen minutes of a fire unit being on scene when the vast majority of truly effective fire fighting and rescue operations occur. Once a fire goes beyond that first “burning” period things can deteriorate quite rapidly. Firefighters can get hurt. Fire loss increase very rapidly.

The majority of the reasons we are called to the scene of an EMS call is to stabilize the situation. When we arrive on a fire it is going from bad to worse as fast as it can. For some time now there has been an acceptance of the idea that most fire agencies respond to EMS calls at a rate of 10 to 15 times more frequently than we respond to structural fires. That is very true. Look at your own data. What is your own experience? Some say that this phenomenon is reducing the ability of the firefighter to deal effectively with bad fires.



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Let us not forget, however, that reducing the number of times we go to the scene of a structural fire does not reduce the consequences of not being able to make a difference in the outcome once we are called to them. Another way of saying that is that not having a lot of big fires is not a reason to be able to deal effectively with the next big one you have. The current phrase 24/7/365 means that probability of a fire occurring at any point in any 24 hour time continuum is very real. We have not reached the level of statistical sophistication where we can predict our next fire, much less our next big one. Moreover, every single fire in a structure has the potential of growing to the point that it will destroy that structure once the fire reaches the open flame stage. Achieves flashover and extends beyond the room or origin. .

No! I am not going to repeat the old discussion of the time-temperature curve or discuss flashover again. You already know about that. We already know that it is a formula for disaster. So, what is there to discuss?

Over the last decade we have seen a great deal of dialogue about response times haven't we? More and more there is recognition that if a fire resource is not dispatched in a timely manner then a negative consequence should be expected. That discussion has centered on the three basic elements of getting the fire department notified, the communication center or dispatch center has to transfer the alarm to those 24/7/365 resources allocated by the fire department, the stations must mobilize and respond and then lastly, there has to be a timely response, i.e., travel time for that resource.

Again, let's not be redundant. If you haven't been part of this discussion of that debate for the last five years you either have more than enough stations and apparatus, or you don't have a real fire problem. This column is not going to go down that path either.

What I am proposing is that we adopt the concept that there is actually a 10-minute window after we arrive on scene that really determines whether or not we are going to really make a difference in the outcome of a fire in a structure. It is a 10-minute period only. This is the idea we need to get our fire officers to clearly understand. Just like the golden hour; the first 10 minutes is vital to their safety.

The way this "diamond" works is fairly simple. In many discussions of the concept of travel times and deployment analysis we have discussed the concept of critical "tasking". That's the number of personnel we need on the scene to handle the problem. No matter how many fire apparatus we send to the scene, it's the people who have to do two very specific things if we want a successful outcome in a structural fire. Someone has to make sure everyone is out of the building, or go in after him or her right? The second thing is we must find the seat of the fire and put it out. Right?

Simple enough.



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But let us consider the consequences of time on that obligation. Let's say, just for argument that you, as part of a fire crew arrive on scene and you can do neither of these for a period of 15 minutes. You are outside; the victims are on the inside. The fire is potentially growing and you haven't got any idea of where it is or what it's doing. Predict for me, what degree of success you have in having a real positive outcome of this scenario. If you are an experienced fire ground officer you will probably have to admit that the outcome is going to be undesirable.

I would guess that some of you have already experienced that frustration. Early in my career I responded on a structure fire that was only about 100 yards from my fire station. It was a fully involved single-family dwelling. We could actually feel the radiant heat when we opened the station overhead doors. We could see as if dawn was occurring at 0330. Response time was in seconds. The building went to the ground and a lady died in that fire. She was dead before we ever left the station

In another scenario I responded to a fire in a supermarket where smoke conditions were so intense we could not see our own hands on the shutoffs of the nozzles, we were trying to drag into the interior. We went so far into the building we could hear the fire but could not see where it was until a truck company opened up the building. It actually took about 10 minutes, but it seemed like it was an eternity. Later it was determined to be about a half an hour.

The Diamond Time theory is based upon two ideas. The first is that if you cannot find the victims in the 1st ten minutes time frame their ability to survive decreases very rapidly. Simultaneously, if fire crews are on the inside trying to find both the victims and control the fire they can only do one at a time, or there have to be several people working concurrently. If the victims haven't been located and you do not have control of the fire then the danger to firefighters begin to increase as rapidly as survival or victims decrease. There are reciprocals of each other.

Look at the diamond again. Did you notice the one-minute increments? They are not arbitrary units. They are tick marks on the time continuum that are real, measurable and irrevocable. They pass whether you care or not. They pass whether or not you are making progress

At the bottom of the diamond is the point of departure. It's zero time. You are on scene, can see what the emergency scene looks like. The clock is ticking. You have two choices. Go in, stay out. If you go in you have two choices. Find the people – find the fire. Stay out, you risk nothing, you save nothing.

This is truly the moment of truth for the firefighter. It's what we all joined up to do. No one ever became a hero protecting exposures. No one ever got a medal of valor operating a deck gun or a ladder pipe.



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That's why we need to be absolutely aware of the passage of time. Because when we make the choice to go in for whatever reason, the fire will continue to grow according to the laws of combustion and the building will become increasingly dangerous every minute until we get control or get out.

If trauma victims have a golden hour for survival of trauma they have a luxury that firefighters on a structure fire could only dream of having. Diamond time has 4 lines of continuity. The diamond starts with 0 at the base. It extends ten minutes in two directions. The left hand line is an indicator of the possible survival of those trapped. The right hand line is an indicator of the crews having the ability to get control.

As each minute passes the top two lines are automatically extended in opposite directions. In other words if you can't get visibility and control the chances of survival of occupants are affected.

The importance of these time frames has been recognized by some fire agencies. Fire Chief Don Oliver in Wilson North Carolina has a system in place in his communication center called the fire minute notice. His dispatchers are required to transmit a notice for every five minutes of elapsed time to the IC. If the IC receives his first notification and is still in the size up stage, the problem is going to get a lot worse before it gets better. If he receives 6 such notices and crews are still unable to achieve entry and control the problem is really serious.

The theory of the Diamond Time does not say that all fires will be controlled in 10 minutes. To the contrary, the theory recognized that there are fire control times that go into the hours, even days. When that happens, losses of life and property will increase. Moreover, danger to firefighters will continue to increase as the number of reasons why a firefighter can be injured or killed increases by order of magnitude.

Again, comparing the Diamond Time to the golden hour, one can easily recognize that there is a point on the timeline of providing medical care when a coroner is going to be more important than a paramedic. Well, there is a point in time of a structural fire when a bulldozer and a scoop shovel are more important than a nozzle and a chain saw for ventilation.

Rexford Wilson, clear back in the 1960's wrote an article in an NFPA publication entitled Time – Enemy or Ally. Later that article was updated and published as "Nine Steps to Extinguishment". It was reality based too. What seems to be the problem is that several generations of fire officers have failed to remember its basic warning – Time is really a vicious enemy on the fire-ground. Maybe we have focused upon the pre-arrival aspects, i.e. response time and have not truly explored that most important period that really results in results. *On scene performance is what fire-fighting is all about!*



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Wanna be a hero? Get there on time to go in, get the people out, so they can personally thank you for your courage and put the fire out when it is still confined to the room of origin. I may be wrong, but this is truly the most critical aspect of our job. Saving lives without giving one up; especially a firefighter.

So far, so good, I hope. If you can accept the theory, perhaps you can use it to your advantage, to your personnel's advantage and the advantage of the fire service.

Start by developing a healthy respect for diamond time. Give it as much ink as the golden hour. Use it in explaining what a fire department does when it is called to a structure fire. Make sure both your personnel and your stakeholders understand the I

Practice it on the fire-ground. If you are the fire chief, expect your subordinate leaders on the fire-ground to respect the diamond. Make it your practice to talk about time frames in critiques. Measure time frames when you can. I will guarantee that more fires will have satisfactory outcomes if they are handled with one or two ten minute periods, versus one that takes ten or twelve.

Use diamond time to indicate in your jurisdiction that you are focusing on results not the frequency of fires and justify your organizations contributions to the community's quality of life.

Many years ago I wrote an article on fire chiefs describing the various "eras" of a fires growth. In that article it was proposed that we need to staff based upon outcomes of the era that will result in the most likelihood of protecting our citizens and their property. In that matrix it was noted that if fires are handled when they are still at the point of origin, area of origin, or even room of origin things can be expected to be more satisfactory than when the fire is at the flashover stage or has taken the entire building of origin.

And, we have really gotten the fire service to pay a lot of attention to the "cascade" of events that have an effect our companies to get to the scene. Now let us concentrate on that first burning period after arrival.

What the article is proposing that the science of firefighting be simplified into that period of time when we can make the most difference or the Diamond Time.

Diamonds are not just a women's best friend, they are also an expression of how precious life and property are and how the smallest diamonds can make for the most precious fight we can give our community and the families of or firefighters.