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Effective vs. Efficient: A lesson in Creative Fire Tactics

Is the answer to cut trucks companies and combine apparatus?

By Jim Silvernail

There is absolutely no doubt that there is an epidemic in America. Fire Departments across the nation have braced for budgetary downfalls and major cutbacks from city hall. Fire Chiefs and Commissioners have been forced to tighten the bottom line and even cut companies.



One option we have in suburban America is to use and embrace of the elements of the “quint” concept. The quint concept and partial quint concept have been widely accepted in this demographic due to the lack of adequate resources, lower fire volumes and the pursuit of efficiency. The use of the quint concept system; however, is not limited to suburban application. In fact, more urban agencies are turning to the concept to attempt to solve the problems of budgetary downfalls. Is this trend for everyone?

This subject may be controversial; however, my intent is not to suggest or dictate a better system for your agency. My intent is to stimulate your thought process and to facilitate the assessment of your agency’s needs in relation to tactics and strategies. This is not a time to remain close-minded and to relax with *tradition*. Those who rest on tradition and history have no future.

Current Events

What is currently happening in America today? Since September 11, 2001, the United States has experienced an economic downturn. Cities across the country have experienced deterioration and budgetary short comings.

Examples:

- In 2013, the city of Cincinnati will be faced with \$11 million in budget cuts between the fire and police departments, possibly cutting 16 to 20 fire companies and laying off 120 firefighters. This mandate has been issued in order to balance a \$35 million deficit by July 1, 2014.
- In July of 2012, the mayor of Detroit called for \$23 million in budget cuts from the fire department budget, affecting 16 companies and possibly laying off 164 firefighters.
- The city of New York called for the reduction of \$8.9 million in the FDNY budget in 2013. This reduction is planned by cutting 1 fire station and reducing 4 overnight shifts.

Examples like these are not easy to accommodate, forcing many fire service leaders to make unpopular cuts and leading to the creation of new departmental procedures. The decisions not only decrease services, but they also increase safety hazards for our line firefighters. These situations create added pressures for chief and company officers in relation to risk vs. reward scenarios. This example is clearly illustrated in Detroit, where command officers are asked not to tax resources on abandoned structures.

A Solution

In 1986, the city of St. Louis and Chief Neil J. Svetanics was faced with a similar dilemma. Urban sprawl and declining commerce were forcing St. Louis to make budget cuts. To make matters worse, he was left with an aging fleet of apparatus. At the time, the city of St. Louis had 30 engine houses consisting of: 30

engines, 10 trucks and 2 heavy rescues. Chief Svetanics was placed in the position to shut down engine houses.

Instead of shutting down the engine houses and creating larger gaps between response areas, Chief Svetanics engineered a new concept, The Total Quint Concept. He decided not to close engine houses and found a way to eliminate companies without increasing response times. The Chief combined companies which had both a pump and an aerial device. He purchased 34 new quint apparatus, 4 of which were equipped with 100' aerial device and considered hook & ladders. This eliminated 6 companies and cut manpower through attrition, satisfying his budgetary downfall.

A similar example can be found in Richmond VA. In the late 1990's the city of Richmond boasted a savings of \$13 million by adopting the quint concept, cutting 50 line positions through attrition.

Defining the Quint Concept

Many agencies across the United States use some element of the quint concept in their operations. Most; however, do not use a total quint concept approach. In fact, it is very difficult to operate with a total quint concept unless your circumstances allow for the complete adaptation. Various agencies use a "partial" approach where engines and engines with aerial devices (quints) are strategic placed within response areas. These systems may have either limited or no true truck companies.

Regardless of operating a partial or total quint concept, the traditional practices of operating separate engine and truck company functions have been eliminated. Now engines can operate as trucks, and ladder companies can operate as engines. The apparatus type does not dictate which functions the crew will perform.

Even the largest fire department in the world, the FDNY, has an element of combination use. The FDNY utilizes an engine company with extra rescue capabilities that is considered an element of special operations command (SOC).

These units are designated as squad companies and operate as an engine if arriving within the third due engine response. If the company does not arrive before this order, it operates as a rescue company, predominantly performing truck work. The reason for the creation of these squad companies was the fact that it is not efficient to assign more than 1 heavy rescue company per borough in New York City.

Many suburban and urban based agencies have turned to this squad solution, creating the rescue/engine. Fire departments have found that in difficult financial times it is not efficient to staff an apparatus, specifically a heavy rescue, that does not have a pump or runs limited specialized, emergency responses. These entities have found that the rescue/engine can satisfy their technical rescue needs while simultaneously operating as an engine company.

The Trend: Effective vs. Efficient

The quint concept is not very popular in many parts of the country, particularly in urban settings. I have been chastised and received numerous criticisms for writing about the subject matter, even being termed a “job cutter.” This is not my intent. My intent is; however, to provide education and a safety net for tactics and strategies to those organizations who either use the system without a game plan or for those who hastily adopt it.

In regard to a coordinated fire attack, there is nothing more effective than a timely, coordinated team effort between engine crews and the functions that facilitate or assist these crews (truck work). In a system where well-trained truck companies and engine companies arrive simultaneously or in close proximity, this is almost a guarantee. Both companies know their duties and commit. As a former company officer for over 10 years and as a battalion chief, I can attest to this. However, there is a conflict between the words effective and efficient.

Does this mean that agencies who operate without truck companies cannot be effective? The answer is: *no*. Are agencies who operate with the quint concept always efficient? Not always. Policy makers cannot expect to instantly gain efficiency just by cutting companies and combining resources. Effective policies

and procedures require a strategic plan and implementation. Efficiency cannot be realized without achieving effectiveness. Many times I hear from firefighters across the country who state: “so my chief saw this quint concept idea and decided to cut the truck company and give me an engine with a 75’ aerial. He told me to make it work.” Without a strategic or implementation plan, there could possibly be a major disconnect and imminent failure for this scenario.

The total quint concept is not for everyone. In fact, it doesn’t even work for my own suburban fire agency. As I stated previously, I was a company officer in a partial quint concept for over ten years prior to being promoted to battalion chief and experienced numerous challenges which tested our operational system. There are many factors that an organization must consider before purchasing the complete quint package. These factors include:

- **Hose lays:** Many rear mounted aerial devices do not allow for different hose lays and an over-abundance of length. Without getting into full detail, there are certain areas within response zones, such as commercial and court-yard setbacks, which will require long deployments of both large diameter attack lines, feeder lines and supply hose. Straight engine hose beds are much bigger and allow for these types of configurations. A system without engines loses this capability.
- **Water:** There are certain response areas which lack adequate, permanent water supplies. In these situations it is important to arrive with a larger water supply for initial fire attack prior to establishing a mobile water supply system. Often, this will require larger booster tanks, in excess of 1000 gallons. Could you imagine the weight of a 1000 gallon, 75’ aerial?
- **Versatility:** Many response areas in rural and suburban settings do not have the same street widths and accessibility as the urban landscape. In my former response area, there were numerous urban interface areas where a ladder truck or quint would definitely not be able to make progress down a long, narrow, winding street and make access to the setback structure.

- Stress on vehicles: Is your engine company expected to run an overabundance of medical runs? Numerous EMS runs can cause stress on a large, heavy vehicle such as an aerial. The repetition of starting and quick stopping many times in a tour can tax the maintenance of the apparatus.

Finally, the argument can also be made that the quint concept has eroded the specialty of the truck company and specific skills which require repetition. How can an individual become proficient at a skill set if there is no concentration on finite work tasks and no specialization? This point is very difficult to argue. Is this sacrifice worth the price for efficiency? Can we still remain effective? This question should be considered and the organization should be able to conduct an accurate self-evaluation of tactics to determine the justification.

Failure Points in Tactics

Failure for the quint concept occurs when a coordinated fire attack is not performed consistently safe. In other words, all essential fireground functions are not being initiated in a timely coordinated matter, leading to the desired tactical outcome. This system requires a set of guidelines and discipline. Standard operating guidelines should be in place to provide a preferred framework to ensure these functions are accounted for. The largest mistake which I have witnessed in the quint concept system is the failure to implement adequate truck functions. Because every apparatus has a pump and attack lines, each company is compelled to work as an engine and attempts to pull a line to get the first water on the fire. But who is doing the truck work?

Basic failure points include:

- There wasn't enough manpower to effectively make the stretch.
- Crews could not locate the fire in a timely manner.
- There wasn't adequate ventilation to facilitate the movement of the attack line.
- Crews were not able to both stretch the line and to open up the walls and ceilings to fully extinguish the hidden body of fire.

- Crews were distracted, attempting to complete too many functions, such as search and rescue.
- Adequate water supply was not established.

Effective Elements

In order for a quint concept or truck-less system to be effective, certain elements must be in place or implemented by an agency. These main elements include:

- **Training:** Each member must be proficient in each fireground function, including both engine and truck operations. Company officers must have the ability to read a fire scene and the current situation in order to know which functions to initiate to successfully impact the scene.
- **Standard Operating Guidelines:** SOPs should be written to your agencies needs and capabilities to deliver fireground tactics, safely and consistently. SOP's should be flexible, however provide a rigid framework to execute a game plan assures that all fireground functions are implemented in their prioritized, timely manner.

When I write SOPs for agencies utilizing a quint or truck-less system, I use a "1+1" concept as an underwriting principle. Basically this concept states, for every company engaged in engine work or hoseline deployment there should be a facilitating (or truck) crew operating in conjunction. For example, if the first due crew decides to initiate an interior attack with a hoseline, the next due crew should complete the "1+1" and assume fire floor truck operations to help facilitate the handline efforts. Therefore, they are the truck company. The same holds true for secondary or back up lines, with the next arriving either facilitating the line or conducting in-complete truck functions.

- **Discipline:** Company officers should know their duties and fully understand their established SOPs and act accordingly. Not all fireground functions are as exciting as actually being on the tip of the nozzle, crawling down a

hallway. However, there are corresponding functions which help facilitate this action which or as important, such as outside vent. Company officers should be accountable for these functions and not deviate.

The Answer

The answer, unfortunately, is not clear cut and it is not generic. Fire service leaders must know their circumstances or be able to adapt. The quint concept is not for everyone. My advice is to truly analyze your specific situation and have a plan. As in all aspects of firefighting, situational awareness is everything! Know the difference between efficient and effective. Not all efficient solutions are effective.

About the author:

Jim Silvernail, a second generation firefighter, is a battalion chief with the Metro West Fire Protection District of St. Louis County, MO. He is the author of Suburban Fire Tactics (Fire Engineering Books and Videos, 2013). Jim has over 15 years of operational experience and is a lead instructor at the St. Louis County Fire Academy, specializing in truck company operations. He is also a member of MO-TF 1 (a FEMA Urban Search & Rescue team) and recently deployed to Hurricane Sandy in New York, NY (2012) as a planning team manager.

Chief Silvernail's formal education includes: an AAS in Fire Protection Technology, a BA in Business Administration, and an MS in Human Resource Management. In addition to Suburban Fire Tactics, Jim has written numerous articles for Fire Engineering magazine. He is a workshop instructor at the Fire Department Instructors Conference (FDIC) and presents at various regional deliveries.