Fire Department

Memorandum

DATE: October 14, 2011

TO: Mayor and City Council

FROM: Charlie Hines, Fire Chief

VIA: Katie Lichtig, City Manager

SUBJECT: Fire Apparatus Utilized on Emergency Responses

This memo is in response to inquiries regarding the use of Fire Engines and the Tiller-Quint Ladder Truck on EMS responses.

Fire stations are strategically located in our community to provide a rapid response to emergencies. They are staffed 24/7 with professional Firefighters who are trained as Emergency Medical Technicians and Paramedics. Most often, they are on scene within 6 minutes and can initiate care prior to the ambulance arriving. Once the ambulance arrives, they work as a team and continue to deliver pre hospital care, often sending a Firefighter/Paramedic to the hospital in the ambulance. The reality today is that the fire service has become the first-line medical responder for critical illness and injury in virtually every community in America.

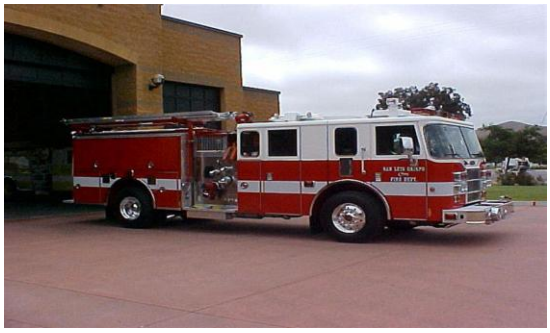
The multitude of risks present in San Luis Obispo is more often found in much larger communities:

- High Rise Buildings
- Interstate Freeway
- Major Rail Line
- Commercial Airport
- Wildland Urban Interface
- Major University (with multi-story dorms & classrooms)
- Hazardous Materials Manufacture & Storage Facilities
- Aging Baby Boomer Population
- Large indigent population
- Several Old Unreinforced Masonry Buildings
- Earthquakes
- Proximity to a Nuclear Power Plant

Consequently, the San Luis Obispo Fire Department has evolved into an “all-risk” emergency service.

The Fire Service in the United States primarily utilizes two types of apparatus to handle the majority of their emergency operations, an Engine Company and a Ladder Truck Company. They each play very different roles:

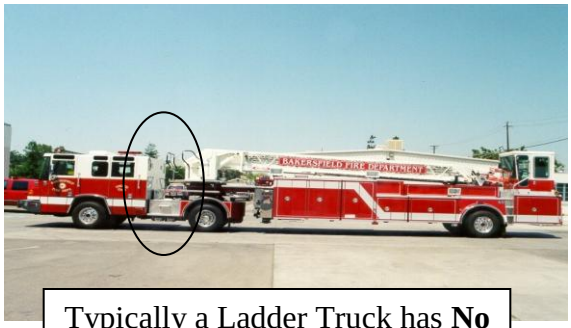
Engine Company



Primary Functions

- Fire Attack (Utilizing Water, Pump, Hose)
- EMS
- Staffing is typically 3 to 4 Firefighters (we staff with 3 Firefighters)

Ladder Truck Company



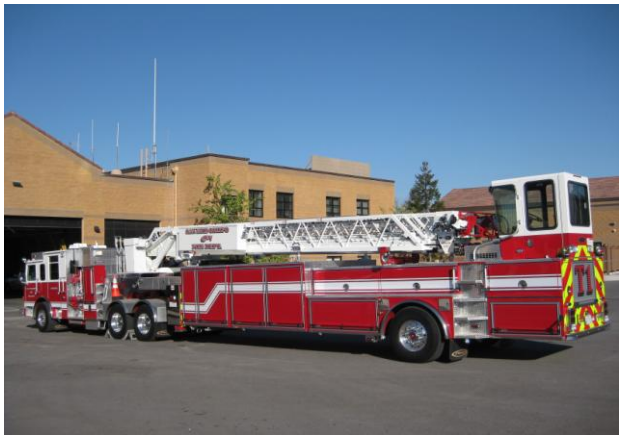
Typically a Ladder Truck has **No** Water, Pump or Hose

Primary Functions

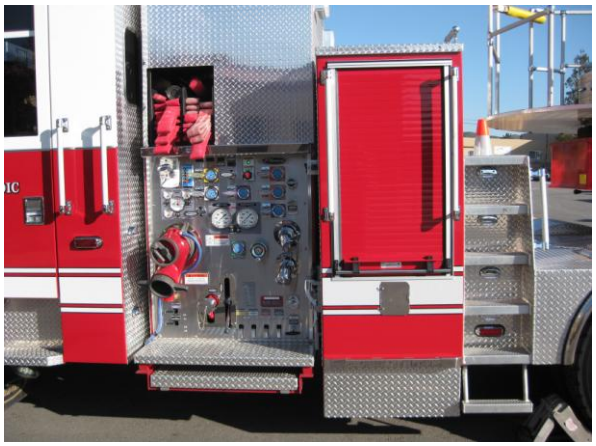
Note: *The previous Ladder Truck was equipped with only a 75 ft. ladder. Unfortunately, it couldn't reach many of the new dorms at Cal Poly or several buildings that currently exist or are planned through our downtown development plan. This necessitated the purchase of a 100 ft. Ladder Truck.*

- 100 foot aerial ladder & numerous ground ladders for roof access, rescue & an elevated water tower
- Forcible Entry
- Ventilation
- Rescue – Swift Water Rescue and Tech Rescue (Confined Space/Trench/Hi Angle/Low Angle)
- Auto Extrication (Jaws of Life)
- Salvage/Overhaul
- EMS
- Staffing is typically 3 – 5 Firefighters
- Teamed up and stationed ***with*** an Engine Company (result is the need for 6 to 9 Firefighters)

Currently, San Luis Obispo does not have the resources in terms of funds and personnel to fulfill this varied mission in the traditional manner (staffing an Engine Company ***and*** a Truck Company teamed up). So we took the best qualities from each type of apparatus and created a single type of apparatus called a "Tiller Quint-Ladder Truck".



SLOFD Truck 1



Equipped ***with*** Water, Pump and Hose

Equipped with the following:

- 100 foot ladder & several ground ladders
- 5 times the Compartment Storage Space of our previous Truck co.
- Compartments are lower, to prevent back injuries
- A Tiller is more maneuverable
- A pump, water tank & hose (like an Engine co.)
- Staffed with only 4 Firefighters (at least 1 is paramedic trained)

This results in a tremendous cost savings ($200,000-$700,000 annually) while simultaneously increasing efficiency. The apparatus is a virtual "Swiss Army Knife" and capable of mitigating several types of emergencies.

So why don't we send two Firefighters in an ambulance or squad to EMS calls (Instead of the Tiller Quint or an Engine)?

The answer is quite simple. Two Firefighters, even teamed with a 2-person ambulance crew, are not enough personnel to quickly assess and treat a critically ill or injured patient efficiently. Picture a hospital emergency room with a critically ill patient surrounded by a team of doctors, nurses, technicians and specialists working feverously to save the person's life. Out in the field is no different. Remember the original concept of the paramedic program was to bring the Emergency Room to your living room.

In addition, it's not uncommon for an engine or truck company to respond to emergencies back to back to back before ever returning to the Fire Station, and we never know the type of call it is going to be. If it was a fire or rescue, it would necessitate that the squad race back to the fire station to staff the Truck Company, wasting precious minutes.

As you know, we are in a race against the clock and every second counts; fire doubles in size every 60 seconds, without oxygen the brain can experience irreversible brain damage in as little as 4 to 6 minutes. We get one chance/opportunity to get it right. That is why we respond to every structure fire with the resources and mind set to mount an aggressive offensive attack to affect a rescue. There is a critically important balance between response time and having enough staffing to successfully mitigate the emergency.

Cost/Use analysis

The cost of purchasing one new ambulance or squad to respond in would exceed $150,000. Taking 2 firefighters off the Tiller Truck to staff an ambulance would render it useless. It cannot respond or be operated with only 2 firefighters. Hiring 6 additional Firefighters to staff a Rescue Squad (2 per/shift) would exceed $800,000.

All Ladder Trucks must receive an annual third party inspection regardless if they are "front line" or in reserve status. Annual service including hydraulic filter change and hydraulic oil would be the same regardless of use. Tire consumption is slightly higher on the Truck versus an Engine Company. If the Tiller Truck were to be placed in a reserve status, firefighters would still have to regularly train and drive the apparatus to remain proficient and assure safe operations.

The maintenance and repair costs associated with these activities would be inflicted regardless of the "in-service" status of the Tiller Truck.

A more efficient and cost effective use of resources would be the implementation of a "Tiered Response/Priority Dispatch" program for EMS calls. This establishes a system whereby the most appropriate resources are sent to the call. Every call will continue to receive a response from trained medical personnel. SLOFD Firefighter/Paramedics will be dispatched on the more

serious calls, where our personnel will make a positive impact on a seriously ill or injured patient. We have recently implemented this as a pilot program.

Additional Benefits

Because of stricter requirements at the time of assembly, the Tiller Truck actually runs cleaner than any of our Fire Engines. In 2007 the EPA required a significant reduction in diesel exhaust emissions. As a result, the Tiller Truck has an extremely efficient catalytic regeneration system and reduces No2 and Co2 and traps 99.9% of soot-providing a cleaner environment. The Tiller Truck achieves the same (and at times better) fuel mileage than our Fire Engines, due to motor improvements and gearing.

Fire insurance rates are tied to a city's "Insurance Service Organization" (ISO) fire rating. San Luis Obispo currently has a rating of "2". Because of this outstanding rating, home owners and business owners alike enjoy lower fire insurance premiums. If the Tiller Quint were to be placed out of service or even placed in a reserve status, the city risks losing its prestigious fire rating, resulting in higher insurance rates.

The use of fire service equipment and personnel to provide 9-1-1 emergency response is the best approach for a community regardless of its size. The city of San Luis Obispo's current response policy insures the highest quality of pre-hospital patient care while maintaining prudent fiscal responsibility.

If you have any further questions please contact me at 781-7390.