

Exploration of the Impact of Permanent Drivers for STFD

By: Kevin R. Flichman
Lieutenant
Sycamore Township Fire and Rescue
8540 Kenwood Road
Cincinnati, OH 45236

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CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

1. This paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

2. I have affirmed the use of proper spelling and grammar in this document by using the spell and grammar check functions of a word processing software program and correcting the errors as suggested by the program.

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ABSTRACT

This study examines un-reported and reported accidents with the use of multiple drivers in order to determine if the use of permanent drivers can be effective in minimizing accidents and addressing maintenance issues more attentively. It will include a review of driver education programs using an evaluated research methodology. The paper will also further the understanding of a culture in which individualism by empowerment can help reduce risk factors in emergency response, operations and daily routines.

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INTRODUCTION

Statement of the Problem

Reliable fire apparatus operators/drivers are important assets of a municipal fire department. Firefighters depend on the performance capabilities of these personnel when delivering emergency services to protect life, property, and the environment. If these services are to be provided without interruption, fire apparatus operators must be properly trained and reevaluated on an annual basis. The operation of an emergency vehicle is one of the most common tasks in which today's fire and emergency service organizations engage. It is also one of the most dangerous (FEMA, 1996). And yet, we allow someone with a standard driver's license to operate an expensive apparatus with firefighters on board. The outcome of this practice has too often been serious injury, death, and legal ramifications to citizens and emergency personnel alike (FEMA, 1996).

This study examines the unacceptable number of emergency service vehicle accidents and damage in Sycamore Township.

The Purpose of the Study

The purpose of this study is to determine what impact permanent driving positions may have on operator performance and vehicle maintenance compared to having random drivers assigned as needed.

Research Questions

The research questions this study will investigate are:

1. What impact will assigning permanent drivers have on vehicle damage and operations of vehicle?
2. What impact will assigning permanent drivers have on the reporting of maintenance and repair needs of vehicles compared to randomly assigned drivers?

3. How will assigning permanent drivers (improve) impact the performance of the vehicle when responding to fire and EMS incidents?

BACKGROUND AND SIGNIFICANCE

Sycamore Township has a population of over 20,000 people during nighttime hours and over 100,000 people during the daytime. Sycamore Township currently operate two firehouses and staff two engine companies: one ladder company, and two medic units. Our staffing is a minimum of 12 and a maximum of 16 personnel. Our roster has 31 career positions and 65 part-time employees. The career positions work a 24/72 schedule and the part-time employees work anywhere from 12 to 24 hour shifts and might only work once a month. Sycamore Township make approximately 4,500 calls a year. This is double the number of calls made 10 years ago.

Currently, any one that has been cleared as an operator/driver can operate the apparatus on an emergency basis. We do not have an annual operator/driver recertification process, but one will be implemented by the end of 2009. The operator/driver break down is 28 career employees and 39 part-time employees out of the overall roster of 96 personnel. Some personnel might only drive a few times a year and might not operate the pump or aerial at all on an annual basis.

The financial benefit of permanent drivers to Sycamore Township will also be investigated. The potential impact this study could have on Sycamore Township is to have a reduction in accidents, accident cost, and maintenance cost and to have more efficient operations on emergency scenes.

LITERATURE REVIEW

The literature review will cover the safety issues relating to driver/operator responsibilities, does repetition equals retention, and look into the benefits of empowering the employees. The NFPA 1451 Standard for a Fire Service Vehicle Operations Training Program, states, “whenever new or unfamiliar vehicles are placed into service, training and education relating to those vehicles shall be provided for all affected members” (2007, Chapter 5.2.4). In

Chapter A.10.2.1, NFPA 1451 also states that the fire department driver/operator is not expected to be a mechanic (2007). However, the driver/operator is expected to perform routine maintenance such as replacing light bulbs, checking and maintaining fluid levels and tire pressures, and keeping vehicles clean. Additional items that should be checked include the following: “(1) Windshield and all windows are clean, (2) Driver’s seat is adjusted properly, (3) Mirrors are adjusted properly, (4) Seat belts are easily accessed, (5) Lights and warning devices are in working order, (6) All compartments and vehicle doors are closed” (NFPA 1451, 2007, Chapter A.10.2.3). Fire service vehicle drivers/operators also should perform routine tests, inspections, and servicing functions on the specified systems and components, according to manufacturer’s specifications, so that the safe operational status of the vehicle is verified (NFPA 1451, 2007). Areas to be checked include: (1) batteries, (2) braking system, (3) coolant system, (4) electrical system, (5) fuel, (6) hydraulic fluids, (7) lubrication, (8) oil, (9) tires, (10) steering system, (11) belts, and (12) tools, appliances, and equipment. Furthermore, “a driver/operator must have an annual physical” (NFPA 1500, 2007). FEMA’s Drivers Training Program (1996) defined the personnel selection process, and the characteristics of an apparatus operator. It also spells out the human aspects of an operator/driver. Accident reports, maintenance reports, discipline reports, and emails reference to apparatus operations at Sycamore Township Fire and Rescue were also reviewed to substantiate that there is an issue.

Globerson (1984) reports that employees all denote an improvement of task performance through repetition. He further states that an employee who is given the same group of tasks is more efficient than an employee who only does the task on a fill-in basis. Sullivan (2005) states that, “the notion of habitual consistency is the cornerstone of any effective training regime and

curriculum. After all, it's not what you know but what you do with what you know that leads us to the next point" (p. 1). Wilson (2000) states "Repetition is Retention." (p. 1)

A potential contributing factor in differences in personnel performance could be due to generational difference, Chari Darneal (2007), states: "Our work ethics is not the way it was compared to the older generations" (p.1). They also comment that access to the Internet is partly to blame. "It is easier to surf the net, instant message your friends, shop on line, and text on the cell, than to do their job and duties." (p 1) They also state that it comes down to allowing this behavior, and not setting clear goals.

Another potential contributing factor to work ethics and performance is empowerment of the employees. Allowing any one to drive and operate the apparatus does not encourage empowerment. A broad definition of empowerment means giving employees the power to do their job (Bizhelp24, 2005). Another definition of empowerment is empowerment is the process of enabling or authorizing an individual to think, behave, and take action, and control work and decision making in autonomous ways (Heathfield, 2008). People are an organization's most important asset because unlike technologies, products, and structures, they cannot be copied by competitors. No one can match your highly charged, motivated people who care. People are your firm's repository of knowledge and they are central to your company's competitive advantage, (Kotelnikov, 2009).

PROCEDURES

The research used two test groups (Group A and Group B) to answer the research questions. Group A included four permanent fire apparatus operators (FAO) who drove and operated engine company 92 once every fourth day (Sycamore Township works a 24/72 schedule). Group B included any available (non-permanent) fire apparatus operators (FAO) driving engine company 93.

Both Group A and Group B were trained on all aspects of the duties of the position, including driving, pump operations, friction loss, equipment knowledge, and laws as stated in the Ohio Revised Code. Then a written test (Appendix 1) and a practical test (Appendix 2) were given to all the FAO's in the department. The permanent drivers were assigned an engine company 92. At the end of a three-month period all the FAO's were retested using a written and practical test to see which group better retained the knowledge and skills taught three months prior. These tests were given by two Sycamore Township Fire and Rescue instructors so that there was no bias.

At the start of the three-month study all FAO's also were taken around both engine companies to verify current damage and/or maintenance issues so that any new damage and/or maintenance issues could be tracked during this study. Both engine companies were checked to see if there was any new damage or maintenance issue that had not been reported. This was done by a visual inspection of the apparatus and a weekly truck check. All findings were documented according to whether it is from Group A or B. This inspection was completed on a weekly basis by two different individuals and the researcher in order to have a checks and balances system.

RESULTS

In the three-month study, using an evaluative process of observation and written and practical testing, the following are the results based on the questions in the introduction section of this research project.

Question 1: What impact will assigning permanent drivers have on vehicle damage and operations of vehicle?

There was a drop in reported accidents in both groups. Each group had one reported accident in this three-month study. The reported accidents included one in which a compartment door came open during a response and struck a vehicle on engine 92 and one in which engine 93 struck a vehicle with the front bumper. As far as unreported accidents, the permanent drivers had none. The non-permanent drivers had five unreported accidents.

Question 2: What impact will assigning permanent drivers have on the reporting of maintenance and repair needs of vehicles compared to randomly assigned drivers?

There were still maintenance issues with both groups. The main difference was that the permanent drivers fixed or repaired most faults themselves instead of having to take the apparatus out for repair. The fire engine that the permanent drivers operated was in better operating condition than it had been in the last few years. Everything was operating correctly and there was not a list of needed repairs.

The fire engine driven by the non-permanent drivers reported improvements in certain aspects, such as light bulbs being replaced and light fixtures repaired. A critical maintenance issue that occurred was the failure to check the antifreeze level resulting in damages costing the Township \$10,000 in repairs.

Question 3: How will assigning permanent drivers improve the performance of the vehicle when responding to fire and EMS incidents?

At the start of the study all drivers were given an eight-hour class covering all aspects of the responsibilities, duties, and knowledge needed to be an effective diver/operator. They were then given a written and practical test. All drivers passed the practical test; the average score on the written test was 96 percent. After the study, another written test and practical test were given to all drivers to measure their retention of knowledge and skills. The permanent driver group scored an average of 92 percent on the written test and the non-permanent drivers scored an average of 82 percent on the written test. The permanent drivers performed well on the practical test. All four of the members passed with no issues and immediate recall of the information. The non-permanent drivers did not perform as well as they had initially struggling to recall the information on both the written and practical tests.

Overall the results where that (1) the Group A permanent drivers had no unreported accidents while reporting one accident as described above, (2) the maintenance costs for the vehicle where lower than those of the Group B vehicle, and (3) the driver group seemed to retain the knowledge and skills better than Group B. The communication between the permanent drivers was more efficient than with the non-permanent drivers. Group A performed better in terms of maintaining the apparatus, as far its cleanliness, care of the equipment carried on board, and reporting that they felt empowered by being able to claim ownership of the apparatus.

DISCUSSION

The results of the research provided some answers to the three research questions and supported the information found during the literature review. Certainly, the importance of the

driver/operator in the fire service cannot be disputed. It has often been pointed out that unless the fire truck gets to the fire safely; both the truck and the firefighters are useless. This is supported by the Fire Chief's Handbook: "The driver of an emergency fire vehicle carries a heavy responsibility for the safety of the vehicle, his comrades and other vehicles and pedestrians along his route" (Casey, 1978, p. 223). After the safe arrival on the fire scene, it is equally important from a safety and effectiveness standpoint to have a competent operator at the controls of the fire apparatus. Firefighters are expected to be proficient in all aspects of firefighting, EMS, haz mat, and rescue services, and there are more responsibilities being added every year.

The biggest hurdle the research had to overcome was that a selected group would be driving the engine all the time, and that was conceived as not fair. In the past, instead of assigning personnel where they best fit and could help the organization, firefighters were assigned based on what vehicle position they rode on last. This practice never let anyone specialize in anything. As stated in the literature review, Globerson (1984) reported that employees all showed an improvement in task performance when they were given an opportunity to perform it repeatedly. He further stated that an employee who is giving the same group of tasks is more efficient than employee who only does the task on a fill in basis. Wilson (2000) stated that repetition is retention.

Permanent drivers benefited Sycamore Township in many different ways. The number of accidents went down and there were no unreported accidents. The maintenance costs were lower with the permanent driver group and the overall condition of the apparatus appeared to be improved. The effectiveness of the permanent drivers based on the testing and driving reports on incidents showed improvement. The communication between the drivers also was reported to be better because there were only four personnel to pass information to instead of a potential eight

individuals in a four-day period. This researcher observed a decrease in comments such as “that dent has always been there” or “I thought someone else wrote a repair order,” or “it’s not my responsibility.”

Assigning permanent drivers did not cost the Township any additional money because it is not a promoted position. The permanently assigned driver made the same salary as he did before he was placed as a permanent driver, and this did two things: it allowed the driver to specialize in a certain area at no cost to the Township and it allowed the FAO to realize he/she could be reassigned at anytime if the person did not perform well or fulfill the job responsibilities. This keeps employees from becoming stagnant or lax in their responsibilities.

RECOMMENDATIONS

After this limited research and analysis, several recommendations can be made. While the Sycamore Township Fire and Rescue Department has a good overall operational track record and extensive training program, improvements in the area of driver/operator standards would enhance the departments overall effectiveness and liability protection. The results of this research have yielded several valuable pieces of documentation that should be used to this end. The department has the resources, leadership and desire to make these positive changes. While some challenging organizational culture issues exist, we know from the OFE Program that these kinds of challenges are inevitable whenever changes are to be attempted in a fire service organization. Though a strategic and incremental process, a solid and comprehensive permanent driver/operator standard can be affected in the Sycamore Township Fire and Rescue Department.

To successfully implement the permanent driver/operator standards, the following steps should be taken:

1. An SOG should be created outlining the roles and responsibilities of the driver/operator.
2. An SOG should be created outlining how to back fill the position if the permanent driver/operator is off.
3. An SOG should be created outlining the process for selecting the permanent driver/operator.
4. An annual reevaluation of the permanent driver operator practice consisting of a written and practical test should be implemented.

As previously noted, some of the more valuable information from this study resulted from the driver testing process and then allowing the firefighter to specialize in the specific area of driving and operating the same vehicle on a regular basis.

The research reported in this paper should be replicated with other individuals in the department to further test the validity of the results and to obtain a buy-in from the whole department. The organization should be fair in allowing individuals to test for and try out as an operator/driver. Once the testing and driving trial procedure is proven to be effective in selecting the better candidates to be permanent drivers, the department should be consistent in holding the permanently assigned driver to a higher standard of performance than would be expected of a randomly assigned driver. Only then, will the full measure of benefits be realized.

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APPENDIX 1-WRITTEN TEST

Sycamore Township Fire Department
Apparatus Driver / Operator Test

Name _____ Date _____
Score _____ Pass Fail

1. Standard Operating Procedures for driving and operating a fire apparatus are in place for the primary purpose to:
 - a) Keep you out of court in the event of an accident.
 - b) To educate and maintain practice safe and efficient operations of FD vehicles.
 - c) Allow the driver to drive as fast as it takes to a call.
 - d) To save wear and tear on apparatus.

2. Members driving fire department vehicles are bound by all laws, ordinances and regulations set forth in Ohio State.
 - a) True

- b) False
3. The primary focus for a fire apparatus driver responding to a call is to:
 - a) Listen to all radio traffic.
 - b) Monitor the “map book” for proper road travel.
 - c) Adjust to Road, Traffic and Weather Conditions.
 - d) Communicate with the fire fighter in the jump seat for on scene instructions.
 4. Drivers shall start the apparatus in motion as soon as:
 - a) The OIC gets in the truck.
 - b) The roadway is clear.
 - c) You are ready to go.
 - d) All members are seated with seat belts on.
 5. When approaching an intersection, under emergency operation you should:
 - a) Slow down, and then look in all directions.
 - b) Slow down, look to the left and have the officer look to the right.
 - c) Come to a complete stop; wait for the officer to signal you to proceed.
 - d) Slow down / stop, proceed with due regard to traffic.
 6. During the emergency response the driver shall:
 - a) Use warning signals at all times.
 - b) Use air horns for heavy traffic.
 - c) Change siren tones are helpful.
 - d) All the above.
 7. Passing moving apparatus on an emergency call is prohibited unless.
 - a) The apparatus is too slow.
 - b) You are on a 3 or more lane highway.
 - c) A signal is received from the apparatus that is being passed that it is safe to pass.
 8. Where insufficient seating is not available for personnel to ride on the fire truck, the OIC may allow extra persons to ride the tailboard of the apparatus.
 - a) True
 - b) False
 9. During backing operations of the fire apparatus the driver shall not:
 - a) Back faster than the spotter can walk.
 - b) Use residential driveways.
 - c) Continue if there is poor visibility of spotter.
 - d) All the above.

10. When backing a fire apparatus you should not proceed until:
 - a) Everyone is in their seats with seat belts on.
 - b) A spotter is in place, assisting with backing.
 - c) A 360 degree walk around has been done before backing.
 - d) No obstacles can be seen in rear view mirrors.

11. During an emergency response, drivers shall bring the apparatus to a complete stop if:
 - a) Law enforcement officers direct you to.
 - b) Encountering a stopped school bus with warning lights flashing.
 - c) Cannot account for all lanes of traffic at an intersection.
 - d) All the above.

12. The best location for the “first due Engine Company” at a structure fire is:
 - a) In the street at the end of the driveway.
 - b) A little before or after the structure.
 - c) On the same side of the street as the hydrant.
 - d) Centered in the street, away from curbs and ditches.

13. The ideal place for a ladder or aerial unit on a structure fire is:
 - a) Pulled beyond the scene so ladders can be pulled easier.
 - b) Directly across from the engine so one operator can run both apparatuses.
 - c) In front of the structure.
 - d) Pulled or backed into the driveway.

14. If a unit is involved in an auto accident you should.
 - a) Proceed onto the emergency.
 - b) Stop, check for injuries, and proceed to the emergency.
 - c) Stop, check for injuries, notify OIC, and call police.
 - d) Stop, check for injuries, swap info, and proceed to the emergency

15. If smoke is coming from a structure as you enter the block of the structure fire, as an operator you should:
 - a) “Hit” a hydrant on the way in.
 - b) Advise other units to respond “code 3”.
 - c) Call for backup.
 - d) Setup incident command.

16. Which supply line will provide the most water from a hydrant?
 - a) 3 – 2 ½ inch lines.
 - b) 2 – 3 inch lines.
 - c) 1 – 5 inch line.
 - d) 1- 2 ½ and 1 – 3 inch line.

17. List at least 3 tools or appliances that may be used at a hydrant when using a water supply:
 - a) Adaptor, hydrant wrench, inline gate
 - b) Nozzle, inductor, bresbin distributor

c) Adaptor, hux bar, gated wye.

18. There are two different types of fire hydrants in the township; each has different size outlets, what are the sizes of each outlet on the hydrants.

- a) 2.5", 3", 4.5"
- b) 1.5", 2.5", 5"
- c) 2.5", 4.5"
- d) 2.5", 5"

19. What type of pump shift is used on STFD fire apparatus?

- a) Electric
- b) Manual
- c) Air
- d) Chain drive

20. Water Hammer is a serious problem and can cause major damage to fire department equipment. Explain water hammer and how it can be prevented.

Water Hammer _____

How can it be prevented? _____

21. Define "Pump Cavitations".

a) _____

b) What can cause it: _____

22. What is the normal air pressure of a truck air system?

- a) 60 lbs
- b) 80 lbs
- c) 100 lbs
- d) 120 lbs

23. Below what air pressure will the truck wheels lock up and you should not try to move it.

- a) 60 lbs

- b) 80 lbs
 - c) 100 lbs
 - d) 120 lbs
24. If the apparatus has no air pressure in the brake system will the truck roll?
- a) Yes
 - b) No
25. When the parking brake is applied, what is locked?
- a) The front and rear axles.
 - b) The transmission
 - c) The rear wheels
 - d) The drive shaft
26. Assuming that you have a hydrant wrapped, the pump engaged and the parking brake set your next goal at a working structure fire is to:
- a) Connect the supply line to the hydrant and wait for the next unit arriving to turn on the hydrant.
 - b) When given the order, charge the hose line by using tank water, set the engine pressure.
 - c) Set up incident command
 - d) Help crew with forcible entry
27. What is the nozzle pressure of a hand line fog nozzle?
- a) 100 psi
 - b) 120 psi
 - c) 150 psi
 - d) 50 psi
28. What is the nozzle pressure of a mounted master stream appliance with smooth bore tip?
- a) 100 psi
 - b) 50 psi
 - c) 80 psi
 - d) 150 psi
29. What is the nozzle pressure of a hand held 2 ½ inch strait bore nozzle.
- a) 80 psi
 - b) 100 psi
 - c) 50 psi
 - d) 150 psi
30. If flowing water from a strait tip using ladder pipe operations, what are the tip sizes, and GPMs that can be flowed.
- a) Tip size _____ GPM _____
 - b) Tip size _____ GPM _____

c) Tip size _____ GPM _____

31. What is the engine pressure that should be pump into a standpipe / sprinkler system?
- 100 psi + or - elevation
 - 150 psi + or - elevation
 - 300 psi + or - elevation
 - 250 psi + or – elevation
32. What is the friction loss for 5 inch hose if flowing 1000 GPM?
- 15 psi per 100'
 - 14.7 psi per 100'
 - 6.6 psi per 100'
 - 10 psi per 100'
33. A 2 ½ inch play pipe nozzle can be used as a reducer to 1 ¾ inch hose.
- True
 - False
34. On a “Mid-Force” flow nozzle with hose length at 200 ft, engine pressure 160psi, what are the GPMs that will be flowing at a low setting using Ponn Hose?
- 174 gpm
 - 250 gpm
 - 153 gpm
 - 141 gpm
35. On a Vindicator Nozzle with 160 psi discharge pressure with 200' of 1.75” hose is capable of flowing:
- 150 GPM
 - 175 GPM
 - 225 GPM
 - 300 GPM
36. If operating 2- 1 ¾ inch lines at 160 psi, 1- 2 ½ inch line at 90 psi, 1 – 3 inch line at 100 psi. what would the relief valve pressure be set at?
- 160 psi
 - 90 psi
 - 180 psi
 - Total of all lines
37. What is the nozzle pressure of a master stream with a fog tip?
- 100
 - 50
 - 150

- d) 10 x sections
38. How many 50 foot sections of 1.75" hose can be used passed the eductor?
a) 2 sections
b) none
c) 3 sections
d) 4 sections
39. What percentage do you set the eductor at for Universal Gold foam on class B fires?
a) .05 to 1%
b) 1 to 3%
c) 3 to 6%
d) Don't use on class B fires.
40. What is the pressure at the eductor for foam operations?
a) 100 psi
b) 150 psi
c) 175 psi
d) 200 psi
41. When figuring pump pressure, what is the psi used to determine elevation above and below the pump. _____
42. If you add a 100 feet of hose line to a 1 3/4 hose you must also increase the:
a) Engine pressure
b) Nozzle Pressure
c) Gallons per minute
d) All the above
43. Explain what AFFF means in relation to foam. _____

44. To assure proper concentration mixture of foam, the GPMs of the eductor must be the same as the GPM of the nozzle.
a) True
b) False
45. An automatic nozzle can be used for foam application.
a) True
b) False
46. Class A foam should be used at a mixture of 1% to 3 % when extinguishing class A fires:
a) True
b) False

47. In winter time operations the pump should remain full of water and the discharges and intakes should be drained from the valve to the outlet.
- True
 - False
48. In winter time operations and you are setting out in the cold you should circulate water through your pump to keep it from freezing.
- True
 - False
49. In Summer time operations you should use a short section of 2.5" diverter line from a discharge to keep the pump cool while hooked into a hydrant.
- True
 - False
50. What is the definition of "Due Regard"?
- Being careful while responding on an emergency
 - Being safe
 - Regard for the safety of all persons and property upon the highway
 - None of the above
51. What is the critical speed of a curve?
- The posted speed limit
 - The speed at which a truck will leave the highway
 - A sharp curve to the left
 - A sharp curve to the right
52. According to the Ohio Revised Code (RC); which of the following statements is most correct?
- Drivers of emergency vehicles may exceed the speed limits a long as they drive with due regard to the safety of others
 - Drivers of emergency vehicles may exceed the speed limits as long as they are operating emergency lighting and audible signals
 - Drivers of emergency vehicles may exceed the speed limits as long as a true emergency exists
 - Both A & B is correct
53. What effect do EV accidents have on your community?
- Concept of non-professionalism
 - Budgetary impacts
 - Potential lawsuits
 - All of the above
54. NFPA 1500 states at railroad crossings you must:
- Stop at RR crossings that are activated

- b. Slow down and look both left and right
- c. Stop at all unguarded RR crossings
- d. Both A & C is correct

55. You are engineering on a working structure fire, your engine was first to arrive. You have multiple hose lines off your truck flowing water. Listed below are the lines that are off your truck.

As the engineer of this truck you need to figure out the maximum engine pressure, break down the D.P. of each line. First you need to determine what GPMs that will be used for each line then what the engine pressure will be.

#1 2-1 $\frac{3}{4}$ cross lays @ 200 feet: $\underline{\quad} 160 \times 2 = 320$ GPMs

#2 1-1 $\frac{3}{4}$ hose line @ 250 feet: $\underline{\quad} 160$ GPMs

#3 1- 2 $\frac{1}{2}$ strait bore on a master stream with a 1.5" inch tip:
 $\underline{\hspace{2cm}}$ GPMs

#4 1-2 $\frac{1}{2}$ hose line @ 300 feet, with a gated wye, with 100 feet of 1 $\frac{3}{4}$ flowing 160 gpm, and 200 feet of 1 $\frac{3}{4}$ flowing 160 GPMs.

What is the engine pressure for your truck? $\underline{\hspace{2cm}}$ psi.

What is the pressure for line # 1 $\underline{\hspace{2cm}}$ psi

What is the pressure for line # 2 $\underline{\hspace{2cm}}$ psi.

What is the pressure for line # 3 $\underline{\hspace{2cm}}$ psi.

What is the pressure for the line with the gated wye: $\underline{\hspace{2cm}}$ psi

What is the total GPMs you are flowing $\underline{\hspace{2cm}}$ GPMs.

Now you are the engineer of the second arriving engine, you are told to hit a hydrant and supply water to the engine on the scene. Explain how you will do this. You are 1200 feet apart.

Size hose used for supply line $\underline{\hspace{2cm}}$

Engine pressure used for supply line. $\underline{\hspace{2cm}}$ psi

Total GPMs your truck is flowing. $\underline{\hspace{2cm}}$ gpm

Color code hydrant needed for supply. $\underline{\hspace{2cm}}$

APPENDIX 2 PRATICAL TEST

SYCAMORE TOWNSHIP FIRE and RESCUE

DRIVER/OPERATOR EVALUATION SHEET

NAME: _____ **DATE:** _____

EVALUATOR: _____ **APPARATUS:** _____

WRITTEN TEST SCORE _____

PRACTICAL KNOWLEDGE TEST: Pass/Fail

Apparatus Specifications	Pump Knowledge	Hose Loads	Pump Scenario's	Equipment Knowledge
Hydraulic Extrication Equipment	Ground Ladders	Foam Equipment	Nozzles, pressures and GPM's	Meter's

DRIVING COURSE

Date	Pass/Fail
Seat belt use	
Familiar with controls	
Left Turn	
Right Turn	
Backing	
Acceleration	
Backing	
Maneuvering	
Railroad crossing	
Interstate	
Serpentine	
Confident with apparatus	

ROAD COURSE

Pull out of station 92 bay
 Turn Right on Kenwood Road
 Go west on Ronald Reagan Highway
 Exit at Ridge and turn right onto Ridge Road.
 Then turn Left on Benson Street, proceed downhill.
 Turn left on Reading Road.
 Turn right on Chaucer
 Turn right on Burkhart Do a three point turn around at end of street.
 Turn right on Chaucer Go around loop of condos (diminishing clearance)
 Turn left on Chaucer
 Turn left on Reading
 Turn right on Galbraith proceed up hill
 Turn left on Gwilada
 Turn right on Donegal
 Turn left on Wiclow
 Turn right on Belfast
 Turn left on Mantel
 Turn right on Larchview
 Turn right on Plainfield
 Turn left on Galbraith
 Turn right on Kenwood
 Turn right on Orchard
 Turn Right on Richmond
 Proceed back to quarters
 At quarters the operator will complete a serpentine in the rear lot, and back into bay from both directions (from left and right).

SERPENTINE OUTLINE AND SET UP

The serpentine exercise will be used as an evaluation of the driver's ability to steer the apparatus in close limits without stopping. The exercise should be conducted with the apparatus moving first backward, then forward. The course or path of travel for this exercise can be established by placing a minimum of three markers, each spaced 38 ft apart, in a line. Adequate space must be provided on each side of the markers for the apparatus to move freely. The driver should drive the apparatus along the left side of the markers in a straight line and stop just beyond the last marker. The driver then should begin the exercise by backing the apparatus between the markers by passing to the left of marker No. 1, to the right of marker No. 2, and to the left of marker No. 3. At this point, the driver should stop the vehicle and then drive it forward between the markers by passing to the right of marker No. 3, to the left of marker No. 2, and to the right of marker No. 1.