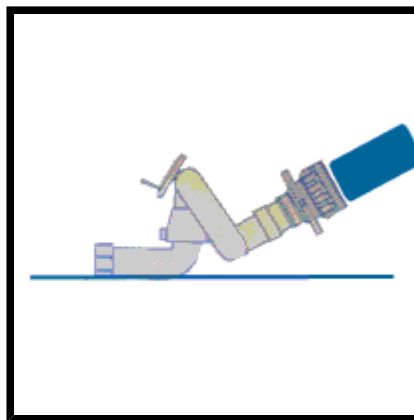


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DECK GUN OPERATIONS

By Charles Bailey, tinhelmet



* As much as we hate to admit it sometimes the fire department has to switch to a defensive position. When we do this the point is rather simple; interior operations are too hazardous and we must apply water from the outside.

What defensive operations do not signify is cessation of operation. Crews must still remain intact and orders must still be followed. Too many times the incident commander calls for the exterior attack and people take the time to catch up with their friends.

Just because we have switched to exterior operations does not mean that we do not need to be proficient at what we do. We need to place wagon pipes into service quickly, safely, and effectively. The same truth holds for ladder pipe and tower ladder operations. This article reviews the basics of wagon pipe operations. It covers safe operating parameters and some general points about their use.

Tinhelmet is going out on a limb here and say that when it is time to go to ladder pipe operations it is also time to send the straight trucks home and bring in the tower ladders to finish the job. They are easier and faster to set up, much more versatile in their maneuvering ability,

and much more precise in where they apply water.

RATIONALE

The point of the deck gun is to apply a large volume of water to the fire. We should ideally position the gun so that the stream is able to hit the ceiling or underside of the roof of a given building. While the water does not actually bounce off of the ceiling like a light beam would bounce off of glass it does break up into large water droplets. Those water droplets are what absorb the BTUs being generated by the fire.

If the stream is not being broken up at all it is probably just passing through the building and not having much effect on the fire. Of course this can still look effective. No matter what the fire department does the fire will go out soon enough. Eventually the fire will run out of fuel and when it does it will go out.

FLOW

One of the most common mistakes with the deck gun is the failure to choose the proper size nozzle for the needed fire flow. Many times I have witnessed the deck gun flowing with the smallest tip, usually a 1-3/8" tip. You could flow that much, 500gpm, using two handlines. The point is if you are going to large flow then go to large flow and choose the appropriate tip for the job.

Engine drivers have to remember to put their pumps into volume for this operation. Other considerations include the diameter of the piping between the tank and the pump. If you are doing a blitz attack off of tank water the primary restriction is the tank to pump piping. In most cases you cannot flow the rated capacity of the pump, even for a short duration straight off the booster tank. It is imperative to flow test you deck gun just like all of your other lines. Find out what you can flow before you need to flow it.

Older models of deck guns required the supply hose to be looped. The purpose of that loop was to resist motion. New deck guns do not need this as most of them have automatic shut-off switches. When the gun elevates too much the flow restrictor kicks in and shuts- the gun down. A firefighter has to secure the deck gun and then reset the switch before water can flow again.

With the exception of some of Blitzfire nozzles, deck guns have two 2 1/2" inlets. At short distances, less than 50', it is possible to generate 500 gpm through one 3" line. If you need to stretch any farther than that you really should stretch two lines. If your deck gun is equipped with a pressure gauge at the gun itself it should read 80 psi right? That is the required nozzle pressure. (If I am wrong let me know)

Just like with ladder pipes you should try to keep the supply engine within 300' of the deck gun. You can do the math for this one.

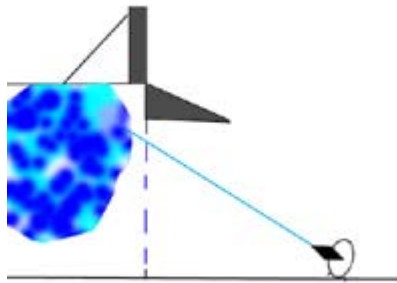
HOSE BED SET-UP

The deck gun is one of those tools that you rarely need but when you do you really do. Pre-connecting a large line and 500 gpm master stream off the pumper decreases the amount of time needed to deploy the gun. When you need to protect exposures or set up a quick blitz you are able to do so.

However, most places do not have the deck-gun pre-connected to the engine. The second best thing to do is to set up one of the supply beds to supply this line. This line begins with a female thread and terminates in 200' of 3" hose the terminal end of which is a male coupling. When the driver needs to make the hook-up he will be able to stretch to the gun, connect his line (s), and then run the second line with the next male coupling. When done this way the stretch to the gun is made much easier. Another benefit of this set up is that it is great for leader line and for supplying the fire department connections too.

REACH/ANGLE

In order to get the proper angle for reach and penetration into the structure most times it is necessary to take the deck gun off the engine and place it on the ground in front of the structure. It is simply pointless to put water onto a roof or wall with fire behind it. Both of those structures are designed to keep water out. The absolute beauty of the deck gun is its long reach. Set it up where it is safe. Try to bounce the stream off of interior walls, ceilings, or the underside of the roof. Officers are reminded that the point is to create large water droplets to absorb BTUs.



COLLAPSE ZONE

When placing the gun it is important to remember to either place it outside the collapse zone or to place it in position and leave it alone. The collapse zone is typically between one and 1.5 the height of the building. Crews must make allowances for flying debris when setting up the collapse zone. Also remember that firefighters still die on exterior operations. Most recently I think was the mill fire in Baltimore where they lost one member in a collapse during exterior operations.

OPERATING PARAMETERS

Each model of deck gun comes with some important operating guidelines. The most critical factors are the range of elevation and the angle of sweep (side to side) motion.

* Physics says that every action has an equal and opposite reaction. Physics applies to deck guns as well. When the stream exits the front of the nozzle it puts a great deal of force on the gun. It is critical that the gun



be tied to a substantial object in anticipation of this force. If the nozzle falls below a critical angle the system will not be able to resist all the force it generates and the nozzle will fly backwards.



Physics also explains why the deck gun should not swing too much to either side while being used on the ground. When used properly the deck gun is secured to an object in front of it that prevents it from moving backwards. When the angle off of this securing line becomes too severe the line no

longer holds the gun and it can fly up, up and away.

The safest way to charge and shut down the lines to the deck gun is from the pump panel of the supply engine. It is not advisable to put shut-off valves in between the pump panel and the deck gun itself.

FINISHING UP

The deck gun is a valuable tool when used properly. However, used improperly it can be dangerous. Crews still need to remember the basics like:

Staying out of the collapse zone

Remembering the proper pump pressures

Securing the deck gun

Knowing how to reset the restriction valve

Remembering to match the tip size to the needed fire flow.

I hope this was a good review for some and a good start for others. As always e-mail me if I got something wrong or if you have any ideas.

*Graphic was based on the drawing on the foot of a Task Force Tip deck gun base. I just animated it.