	FAIRFAX COUNTY FIRE & RESCUE DEPARTMENT **TRAINING BULLETIN**		
	NUMBER:	**DATE:**	**DISTRIBUTION: I**
	ISSUED BY: Captain I Daniel D. Shaw, Fire Station 409-C		
	APPROVED BY:		
	SUBJECT: Nozzle Inspection		

The nozzle is a vital tool used daily to successfully complete our job of extinguishing fires. Our job is inherently dangerous and this is only compounded by our close proximity to the seat of the fire when we advance hoselines into burning structures. This fireground task demonstrates the need for a comprehensive and mandated inspection of this last line of defense between you and a fire, the nozzle.

We currently have an inspection policy for our Personal Protective Equipment (monthly), for the Self Contained Breathing Apparatus (daily) that allows us to enter the IDLH, and for our Apparatus that delivers us to the fireground (daily). Yet, we currently do not have provisions in place to inspect the tool that will place us in the most dangerous position on the fireground, the seat of the fire. Additionally, many have not been trained on what, or how, to inspect a combination nozzle or the smooth bore nozzle. Nor are they aware that the inspection is a required part of the NFPA 1962 Standard for Inspection, Care, and Use of Fire hose, Couplings, and Nozzles and the Service Testing of Fire Hose.

Standard Operating Procedure 3.07.01 will now reflect a first day inspection * procedure for all of our nozzles carried on apparatus. This checklist is inclusive of nozzles that are on pre-connected hoselines, highrise packs, Mercury Monitor, and stored in a reserve manner (pump operators compartment, highrise bag).

The nozzle inspection takes only a few moments but may effectively eliminate many of the potentially hazardous situations that can arise from nozzle malfunction and/or failure. Additionally, the skills demonstrated during this first day inspection will train all personnel on troubleshooting procedures that may be utilized if a nozzle malfunctions in an IDLH.

(* - Nothing precludes personnel from inspecting their respective nozzles and appliances on a daily basis. This proactive action is strongly encouraged)

First day Nozzle Inspection Checklist
Date:_____

Waterway is clear of obstructions.	
<u>Fog nozzle</u> - Turbine teeth of nozzle are not missing (no more than ¼ of total teeth missing or broken)	
<u>Smooth bore</u> - No damage to the tip.	
All tips rotate as designed, remove easily, and are not out-of-round.	
All controls and adjustments (fog nozzle) function properly: • **Gallon selector (95, 125, 150, 200, FLUSH)** • **Breakaway nozzle** • **Stream selection (right – straight, left – fog)**	
Shutoff valve (bale) operates as designed and closes appropriately. Ensure the bale lever is secure and has no cracks.	
No missing or broken parts.	
All thread gaskets are in good condition.	
All couplings: • **Rotate freely** • **Are not out-of-round** • **Are not damaged** ***Lubricate as needed with a Manufacturers lubricant (Zep 45 Pentrant Lubricant)***	

*If a noticeable amount of road grit and grime is on the nozzle the entire appliance should be washed and flushed in clean water.

1. Waterway is clear of obstructions.

The first check is to open the bale of the nozzle and then, viewing from either end, ensure that the entire length of the nozzle is free and clear of any possible obstructions

2. No physical damage to the tip.

Visually inspect that the tip has not been damaged and/or missing any parts. Check the smooth bore to ensure that the tip is not dented or out-of-round. Check the fog nozzle to ensure none of the turbine teeth are broken or damaged. No more than ¼ of total teeth should be missing, replace immediately if more are missing. The turbine teeth ring should rotate freely. Ensure the baffle is secure and not damaged.

3. All tips rotate, remove easily, and are not out-of-round.

All nozzle tips should manually rotate freely right and left. The firefighter should be able to easily remove all smooth bore and fog tips. Inspect the interior of the tip to ensure it is rounded and not damaged. Also, the threads should be free of obstructions and attach easily. Personnel shall ensure all tips are re-attached hand tight.

4. All controls and adjustments (fog nozzle):

- **Stream selection (right – straight, left – fog)**
- **Gallon selector (95, 125, 150, 200, FLUSH)**
- **Breakaway nozzle**

All firefighters should be familiar with the nozzles that they carry. This should include physical recognition, with gloved hands, of the various grooves and lugs that denote the various parts of nozzle. For instance, the stream selector has long lugs, the gallonage selector has shorter and wider lugs, and finally, the break-away portion of nozzle has tactile grooves. The tasks associated with these parts could easily be required of a firefighter in a "zero" visibility environment.

The firefighter shall, starting at the tip of the nozzle, ensure the tip can rotate freely to left and right. The firefighter can then slide their hand down to the gallonage selection ring and ensure that the nozzle can freely rotate (should click at each amount) from the 95 GPM selection to the Flush option. Once fully inspected, the firefighter shall set the gallonage to 150 GPM. Lastly, the firefighter shall slide their hand down to the grooved ring separating the fog nozzle from the 7/8" smooth bore slug. The breakaway fog nozzle should freely rotate and separate from the slug.

Lubricate **all** moving parts with a manufacturer's recommended lubricant, as needed. An acceptable lubricant for FRD personnel to use is the Zep 45 Penetrant Lubricant which can be ordered on the FRD-060. Personnel shall ensure all tips are re-attached hand tight.

5. Shutoff valve (bale) operates as designed and closes appropriately.

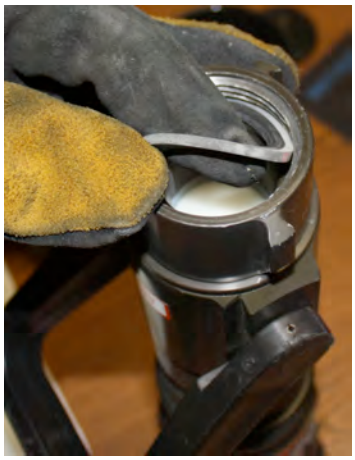
The firefighter should operate the bale through the entire range of motion from fully open to fully closed. The handle should operate as designed. Ensure that when the bale is in the fully open position the ball valve is also open all the way. Conversely, ensure when the bale is closed the ball valve completely obstructs the flow of water. Thoroughly check for stress cracks along each attachment point on the nozzle. The handle should not be broken or missing any parts.

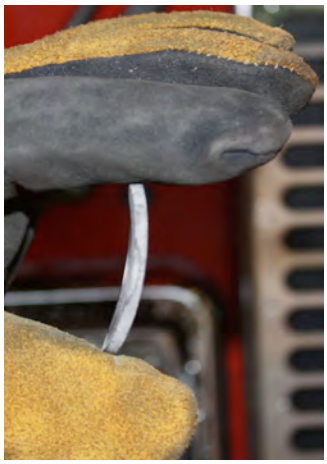
6. No missing or broken parts.

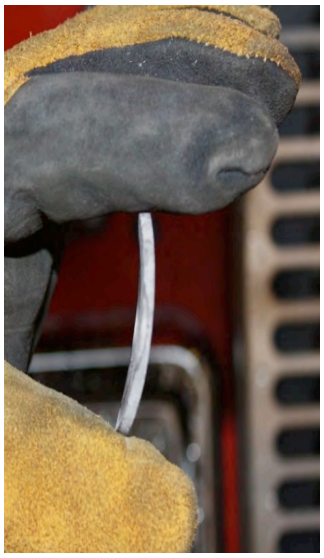
The firefighter should visually inspect the entire outer area of the nozzle to ensure that there are no missing parts, broken parts, including any moving parts. This is also a good time to inspect the condition of the gated wye on the highrise pack and leaderline. Ensure each appliance is in good working order and the handles are attached properly.

7. All thread gaskets are in good condition.

The firefighter should inspect the nozzle for the presence, tight fit, and lack of deterioration of all gaskets. A gasket is located in all parts of the nozzle which serve as a connection point, which is inclusive of the breakaway tips and the couplings. Once it is determined that the gasket is present it should be removed and inspected for deterioration. This is done by grasping the gasket between your pointer finger and thumb. Squeeze the gasket until the pointer finger and thumb are touching, than release your fingers back to the starting point. If in proper working order the gasket should quickly reform to the circular shape and not break apart. Replacement gaskets can be ordered through the Online Ordering by selecting the appropriate size coupling.







8. All couplings:
- **Rotate freely**
- **Are not out-of-round**
- **Are not damaged**

The firefighter should rotate each coupling through several revolutions to ensure the coupling rotates freely. If there is any resistance to the free movement of the coupling it should evaluated for being out-of-round. If still in a serviceable condition, a lubricant can be applied to the coupling to loosen the part.

8. All parts shall be identified in "zero" visibility environment.

While not a mandatory action, a quick review of recent line of duty deaths reveal that often a contributing factor is the inability to complete fundamental skills in tense, zero visibility environments. This includes switching GPM, identifying stream pattern, and troubleshooting nozzle obstructions. Additionally, the ability to extend a hoseline by adding additional lengths of hose is often done in zero visibility and requires a firm knowledge of the parts of your assigned nozzle.

A simple drill to aid in this vital skill is to perform the nozzle inspection checklist twice. The second time you perform the checklist, complete it as a nozzle recognition and familiarization drill with your facepiece on with the field of vision obscured. (Wax paper crumbled up in the facepiece or your nomex hood placed on the mask will quickly limit your visibility). To assist with protection of your hands and aid in making the skill fireground applicable, perform the inspection with your firefighting gloves on as demonstrated in the photos above.