



# **GOLDER RANCH FIRE DISTRICT**

## **Firefighter I and II Practical Skill Sheets**

### **Pressurized Gas Cylinder Fire**

#### **Standards:**

NFPA 1000: 5.3.3 (2019 Edition)

#### **Task/Performance Outcome:**

The candidate shall demonstrate the ability to manage a pressurized cylinder under direct flame impingement and a pressurized cylinder where the contents from the discharge valve are on fire. The candidate shall manage these evolutions so that they are completed safely, effectively, efficiently and crew integrity is always maintained.

When a pressurized gas cylinder is under direct flame impingement, the cylinder's contents become further pressurized creating the potential for a boiling liquid expanding vapor explosion (BLEVE). To reduce the risk of a BLEVE the cylinder should be cooled by applying water to the upper half of the cylinder. Due to the increased risk, a portable master stream device should be utilized to ensure personnel remain as far away as possible from the pressurized gas cylinder.

When gas is exiting a pressurized cylinder discharge valve and the gas is on fire, the situation can be mitigated by turning off the discharge valve. To accomplish this, the candidate will work with a silent partner to advance a flowing charged 1 ¾" hose line towards the pressurized gas cylinder approaching from the sides. The candidate should continually progress from a straight stream to a wide fog stream as they approach the cylinder to protect the crew. Upon reaching the cylinder, with a wide fog stream in place protecting the crew, the captain will turn off the discharge valve. Once the discharge valve is secured, the crew should slowly back away from the cylinder while the candidate continually focuses the hose stream on the cylinder adjusting the nozzle from a wide fog for protection to a straight stream for cylinder cooling. The crew should never turn their backs on the cylinder as they retreat to a safe location.

#### **Required Personal Protective Equipment (PPE):**

Full turnout ensemble and full SCBA ensemble on air.

#### **Required Equipment:**

- Radio for each firefighter
- Flashlight for each firefighter
- Thermal Imaging Camera (Captain)

#### **Critical Fail Criteria:**

Failure consists of the following:

- Failure to be seated and belted upon arrival.
- Failure to wear the required PPE.
- Failure to physically address their accountability on the passport of their assigned apparatus.
- Failure to exit the apparatus safely and with three points of contact.
- Glaring, gross errors, as documented by the evaluator.
- An apparent lack of efficiency and comfort with the activity, as documented by the evaluator.
- Less than 80% of available points scored.

#### **Evolution Details:**

The evaluator will advise the candidate of the scenario they will be evaluated on, as outlined above in the Task/Performance Outcome section. The evaluator will provide the candidate an empty pressurized gas cylinder, silent partner, and captain to successfully complete the scenario. The candidate must deploy the hose line off the truck by themselves. For the pressurized gas cylinder with direct flame impingement, the candidate must deploy 200' of 2 ½" or 3" hose, connect the portable ground monitor, and adjust the nozzle to place the straight stream on the cylinder. For the pressurized gas cylinder with flames from a discharge valve, the firefighter must be on the nozzle.



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Actions		Points Available	Points Earned
<b>Time starts upon instructor prompt or when first boot hits the ground.</b>			
Pressurized gas cylinder with direct flame impingement	Portable ground monitor and 200' of 2 ½" or 3" hose removed from apparatus	1	
	Positions ground monitor uphill and upwind	1	
	Secures ground monitor and signals for water	1	
	Straight stream is placed on upper half of the cylinder effectively cooling and protecting it from impingement	1	
	Turns on SCBA, dons mask, and goes on air if in IDLH	1	
	<b>Time documented when candidate has completed the above criteria. *See the time frames outlined below*</b>	3	
Pressurized gas cylinder with flames from discharge valve			
	Safely selects & removes correct hose	1	
	Safely removes entire hose from apparatus	1	
	Deploys hose to an appropriate location uphill and upwind	1	
	Secures nozzle and signals for water	1	
	Adjusts nozzle pattern then bleeds for five seconds	1	
	Turns on SCBA, dons mask, and goes on air	1	
	<b>Time documented when candidate has completed the above criteria. *See the time frames outlined below*</b>	3	
	Communicates and coordinates with partner to advance hose effectively with straight stream directed towards upper half of cylinder without extinguishing flames	1	
	Continually adjusts hose stream from straight to wide fog as they approach the cylinder to protect crew members	1	
	Captain closes discharge valve to secure the leak	1	



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	Crew slowly backs away from cylinder continually adjusting from wide fog to straight stream as they retreat, never turning their back on the cylinder	1	
<b>Time stops upon candidate and crew retreating to starting location</b>			
<b>Gas cylinder impingement total (7/8 to pass)</b>		<b>8</b>	
<b>Gas cylinder with flames from discharge valve total (11/13 to pass)</b>		<b>13</b>	

1:30 or less = 3 points

1:30 - 1:45 = 2 points

1:46 - 2:00 = 1 point

2:01 or more = Fail

Cancer Reduction Cab (CRC) Suppression Apparatus Configuration: Add 30 seconds to each category.

Candidate: \_\_\_\_\_ Evaluator: \_\_\_\_\_ Total: \_\_\_\_\_/8  
Total: \_\_\_\_\_/13

Circle one:

Pass/Fail on points/fail on critical criteria

Comments \_\_\_\_\_  
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