Mississippi State Fire Academy
Trench Rescue Operations Level Skill

Objective: NFPA 1006 11.2.1 2017 Ed.

Primary Task: Support a Nonintersecting straight wall trench of 8 ft or less

PERFORMANCE EVALUATIONS & INSTRUCTION SHEET

Performance Steps

1. Support a nonintersecting trench straight wall trench of 2.4 m (8ft) or less as a member of a team
2. Use a size-up information, an action plan, a trench tool kit, and assignments
3. Use strategies to minimize the further movement of soil effectively
4. The trench walls, lip, and spoil pile are monitored continuously
5. Rescue teams and personnel remain in the safe zone
6. Sloughs or wall shears are mitigated
7. Emergency procedures and warning systems are established & understood by participating personnel
8. Incident specific PPE is utilized
9. Physical hazards are identified and managed
10. Victim and rescuer protection is maximized
11. Victim extrication methods are considered
12. A rapid intervention team is staged

INSTRUCTIONS TO THE CANDIDATE

The candidate, given equipment likely to be used in a trench rescue, a trench, or trench prop, shall explain and / or demonstrate how to properly shore a straight trench of 8 ft or less. The candidate shall make all appropriate air cart, regulator, hose, deadman, and shore connections. Shores will be installed in the correct sequence and correct pressure for the given soil. There will be no uncontrolled release of air or energy. Correct PPE is will be used. Hazards are identified. Provisions of rescuer safety and extrication are made. Provisions for RIT and patient extrication and transfer are stated.

Shoring Sequence

Full Points-(all must apply)

- First panel set and set of shores in closest proximity to the patient is stated
- Pneumatic shores: Middle / Bottom / Top
- Wood Shores: Top / Middle / Bottom

Shore Measurement and Installation

Full Points-(all must apply)

- Measurement is accurate and level strongback to strongback
- Measurement is calculated by subtracting the dimensions of 2x (panel + strongback)
- Correctly sized strut is chosen
- (Paratech) No more than two extensions
- (Paratech) Extensions not longer than 3 ft
- Shore is installed remotely or with lowering ropes (student articulates- if working alone)
- Shore is within-15 degrees of level
- Two #8 nails toe-nailed to each foot
- Feet chosen have full contact with strongback

Shoring Spacing

Full Points-(all must apply)

*Either • Student correctly refers to and states correct spacing based on manufacturers or OSHA tabulated
*Or • Candidate states and explains MSFA rule of thumb: 2'-4'-2': 2' from top, 4' centers vertically and
*Or • Candidate state and explains Martinette's: 18"-24" from lip, 4' spacing vertically and horizontally,
*And • Correct measurement and placement of center shore takes place: middle distance between top

Operation of Air Cart

Full Points-(all must apply)

- All valves and regulators are checked and verified prior to operation
- Correct high pressure cylinder valve is turned on
- Orients Selection valve to correct bottle
- Ensures all valves are closed
- Makes appropriate hose connections and locks collars in place
- Chooses correct / appropriate: tool, deadman controller, or other adjunct for operation
- Selects *high pressure* side of the cart an explains why
- Adjusts regulator to the correct pressure for job application (explains why)
- Opens valve to desired hose(s)

Shore Pressure

Full Points-(all must apply)

(Paratech) • States or demonstrates shooting: 200 PSI for C Soil (formerly 250)

(Paratech) • States or demonstrates shooting: 200 PSI for B Soil

(Paratech) • States or demonstrates shooting: 150 PSI for A Soil

- States or demonstrates regulating: 118(120) PSI for High Pressure Air Bags
- States or demonstrates regulating: 7 PSI for Low Pressure Trench Cushions
- States or demonstrates regulating: 14 PSI for Medium Pressure Lift Cushions
- States or demonstrates regulating: 90 PSI for shop tools: palm nailer, nail gun, impact wrench

** • States or demonstrates shooting appropriate pressure for A, B, C, Soils for Air Shore / ProsSpan

Demobilizes Air Cart / Shores / Tools

Full Points-(all must apply)

- Method 1:
  - Turn high pressure cylinder off
  - Turn Down / Bleed Down Regulators & Lines
  - Release / Discharge remaining air through deadman(Red & Green buttons at same time), air
- Method 2:
  - Turn Down / Bleed Down Regulators & Lines
  - Release / Discharge remaining air through deadman(Red & Green buttons at same time), air
  - Turn off valves to air line(s)
  - Turn high pressure cylinder off
  - Open Up / Release Air: by turning valve open above the regulator block

(And) • Pneumatic Shores removed in sequence: Top-Bottom-Middle

- Middle pneumatic shore is removed remotely from outside the trench

Demonstrates / Explains Use of Tool Side of the Cart

Full Points-(all must apply)

- Explains reason for other side of cart: i.e. different air fittings & pressure
- Correctly states / applies pressure for various shop tools (90 PSI)
- Provides examples of useful tools: Palm Nailer, Nail Gun, Impact Wrench, Blower

Provisions for RIT

Full Points-(all must apply)

- Candidate explains need and provisions for a RIT team
  - Candidate explains staging location
  - Candidate explains RIT Team training and equipment
  - Candidate explains rescue provisions: ladders, tag lines, spotters, safety officer

Safety / PPE / Victim Extrication Evaluation Criteria:

Full Points-(all must apply)

- Candidate utilizes appropriate PPE: Protective toe boots, helmet, gloves, eye protection, ear
- Candidate abides by safety zones, uses ground pads, & non-entry techniques when possible
- Candidate makes decisions to the greatest benefit of potential victims
- Shoring considerations allow for efficient rescue and extrication
- Candidate's use of system and components prevents unsafe conditions (whipping lines, air burst, over loading, over pressurizing)

Time Evaluation Criteria:

Full Points-

- Under 10 minutes