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Continuing Education Course #477  
Heavy Civil Construction Safety  
Part 3. Equipment Operation Safety

1. The referenced Bindspot Diagrams are available from which public agency website?
  - a. OSHA The Occupational Safety and Health Administration
  - b. USACE The U.S. Army Corps of Engineers
  - c. NAOSH The National Administration for Occupational Safety and Health
  - d. NIOSH The National Institute for Occupational Safety and Health
  
2. What does OSHA stand for?
  - a. The Occupational Safety and Health Administration
  - b. The Occupational Safety and Health Act of 1970
  - c. The Occupational Safety and Health Association
  - d. The Occupational Support and Health Administration
  
3. What injures more truck drivers than any other cause?
  - a. Raised truck bed incidents
  - b. On road accidents from speeding
  - c. Injuries from falls off the truck while getting on or off
  - d. Bumpy and unmaintained haul roads
  
4. What can cause air brake failure for a truck?
  - a. Failure to bleed off water from air tanks routinely
  - b. Continued application of the service brakes on a downhill road
  - c. Fanning the brakes on a downhill road
  - d. All of the above
  
5. Which is not a hazard specific to RediMix Trucks:
  - a. Injuries from improper use of concrete chutes
  - b. Rotating load in the drum adds to instability
  - c. Ability to climb haul road and ramp grades greater than 15%
  - d. Clearance issues due to the hopper which protrudes out behind the truck
  
6. If the concrete in an agitator truck will not discharge, what should be done
  - a. Raise the height of the body as high as possible with the gate closed
  - b. Drop the body of the truck quickly and then stopping it with the hoist valve
  - c. Rock the agitator by reversing direction and try using body vibrators
  - d. none of the above
  
7. What causes for accidents in staging yards when parking scrapers end to end?
  - a. Scrapers with front and rear engines have rear engine shut offs located directly in the back of the scraper, in the center of the machine

- b. Scrapers are long, and the distance is hard to judge by the operators when baking
  - c. The retarder on many units is a foot pedal located right next to the brake, which can be easily mistaken
  - d. all of the above
8. Safe scraper operation practices include?
- a. Keeping the bowl as high as possible to raise the equipment center of gravity
  - b. The bowl should be high enough to clear obstacles, but low enough to maintain stability.
  - c. Always keep the bowl low, don't worry about obstacles, the scraper is powerful enough to blast through anything.
  - d. Keep the apron open after discharging and spreading material so it is immediately ready for reload
9. What does ROPS stand for?
- a. Roll Over Protection Seatbelts
  - b. Roll Over Protection Structure
  - c. Road Obstruction Protection Structure
  - d. Road Operator Protection Seatbelts
10. When a dozer is working a slope it should:
- a. Travel up and down the slope perpendicular to the slope
  - b. Travel side to side longitudinally parallel to the slope
  - c. Use the blade as a brake if it starts to slide
  - d. Slope work should be performed by other equipment, dozers don't work on slopes.
11. Why do graders have operator access problems?
- a. Because they are more maneuverable than most heavy equipment
  - b. Because they have poor lines of sight
  - c. Because the travel of the blade prevents providing steps low enough to the ground to be proper first steps
  - d. Because they are often operated on or near active roadways
12. What is the best way to position a hook on a Loader Bucket for lifting pipe?
- a. put hooks inside of the bucket on the top edge
  - b. put hooks on the underside of the bucket at the rear
  - c. put hooks on the top of the bucket near the edge
  - d. lift with slings rigged from the teeth
13. What common practices should not be allowed to avoid injuries to people working around loaders?
- a. People standing in the buckets to use as a raised platform
  - b. People hitching a ride on the loader while riding outside the cab near the pivot point
  - c. Loaders excavating material from high banks
  - d. Both A & B
14. OSHA requires a Professional Engineer stamped design for:
- a. All trenches where workers are exposed to the excavation
  - b. Trenches over 20 feet in depth
  - c. Trenches in stable rock
  - d. Professional Engineers are not needed for trenching excavation
15. What can affect the lifting capacity of an excavator?
- a. The size of the excavator bucket being used
  - b. The position of the load being lifted

- c. The outside air temperature when the lift is being made
  - d. Both A & B
16. When paving roads in lane closures along active travel lanes it is important not to exit the machine:
- a. During Lunch Break
  - b. While stopped with the parking brake on.
  - c. On the traffic side of the machine.
  - d. Unless you can jump clear with both feet.
17. What is a safety step to help avoid paving hazards?
- a. Before starting the machine make sure all controls are in neutral and the parking brake is on.
  - b. Remove all guards while paving to avoid jams and obstructions
  - c. Install automatics with the paver running so you can see the auger running
  - d. Store trash on the operator's platform to keep it away from the burners
18. Rollers can be exempt from the backup alarm rule because?
- a. There is no backup alarm rule
  - b. They are too loud when the vibrators are running and the alarm can't be heard
  - c. They have excellent view from the rear and are made to run equally forward and backward
  - d. They move so slow they do not pose a danger
19. The vibration from rollers may cause damage to:
- a. The soils they are compacting and shouldn't be used
  - b. Sensitive manufacturing facilities and Hospitals
  - c. Rivers, lakes, and other large bodies of water
  - d. The vibrations are so minor they cannot cause damages
20. Besides full length work pants, shirts with sleeves, sturdy work boots, a hardhat, work gloves, reflective vests, and safety glasses, what other personal protective gear should milling crew members wear?
- a. Hearing Protection
  - b. Fall protection harnesses
  - c. Chaps and leggings
  - d. Fire retardant clothing
21. What are the uses for hooks attached to the milling machine sides?
- a. Hooks should not be attached to the sides of a milling machine
  - b. All of the above
22. What types of catastrophic accidents could a track drill be exposed to?
- a. Drilling into unexploded explosives
  - b. High speed traffic accidents with on-road construction
  - c. Fires due to fuel oil build-up on the burners
  - d. Vibratory damage to hospitals and manufacturing facilities
23. Prior to servicing or to clear a jam up on the conveyor, OSHA requires:
- a. The belt needs to be running so the mechanic can see where the problems are for a quick fix
  - b. The conveyor to be locked out to prevent accidental startup while the work is being performed
  - c. The boom be extended vertically to dislodge any obstructions caught in the belt
  - d. All guards to be removed to prevent future jams and clear obstructions.
24. To increase knowledge and understanding of safety, the reader should consider getting their:

- a. OSHA 300-hour Construction Safety and Health Card
- b. OSHA 30-hour Construction Safety and Health Card
- c. OSHA 3-hour Construction Safety and Health Card
- d. OSHA 3000-hour Construction Safety and Health Card

25. With Heavy Civil Equipment Operations, when is it acceptable to sacrifice the safety of an operation for added production?

- a. If the schedule critical path shows negative float
- b. If the budgeted costs show losses for a particular item
- c. If the project inspectors aren't available during a planned activity
- d. It is never acceptable to sacrifice safety for production!

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