ADMINISTRATIVE REPORT **DATE: January 10, 2000**
PUBLIC HEALTH SERVICE/CDC/NIOSH/DSR
FACE-99-05

TO: **Director, National Institute for Occupational Safety and Health**

FROM: **Division of Safety Research, NIOSH**

SUBJECT: **15-year-old Campground Laborer Dies After Striking a Camper Trailer Hitch While Operating a Utility Vehicle--Ohio**

SUMMARY

A 15-year-old male laborer (the victim) died after striking a camper trailer hitch while he was operating a six-wheeled, 18-horsepower (hp) utility vehicle on a private campground. On the morning of the incident the victim drove a utility vehicle between campsites, stopping at each campsite to clean debris from fire pits. Evidence suggests that he was driving across a campsite-access driveway when he collided with the trailer hitch of a fifth-wheel camper trailer. A camper located nearby heard the utility vehicle running. As he was walking to his car, he saw the victim lying with his feet in the vehicle and his upper body leaning over the side. The camper reported that he called to the victim to ask if he was okay and received no response. When the camper got closer he could see that the victim's hands and face were blue. He ran to the campground store and asked the attendant to call 911. When he returned to the site, he saw that other campers were attending to the victim. He then ran to the roadway at the main entrance of the campground and directed local emergency medical services (EMS) to the site. In the meantime, other campers and staff pulled the victim from the vehicle. A camper, who was a registered nurse, assessed the victim. Finding that the victim had no pulse or respirations, she began cardiopulmonary resuscitation (CPR). EMS arrived within 15 minutes and transported the victim to an area hospital where he was pronounced dead. NIOSH investigators concluded that, to help prevent similar occurrences, employers should:

- ***know and comply with child labor laws which include prohibitions against certain types of work for 14- and 15-year-olds because of concerns about their safety and well-being***

- *heed manufacturers' warnings about operation of utility vehicles including warnings that drivers should not be younger than 16 years old*

- *develop, implement, and enforce a policy that requires employees to use a preestablished route to access fire pits*

- *develop, implement, and enforce a comprehensive safety program for all workers which includes, but is not limited to, training in hazard identification, avoidance, and abatement.*

Additional notes/recommendations:

- *Government agencies should increase their efforts to inform the public about child labor laws*

- *Parents should discuss the type of work their children are performing and become familiar with the occupations which are prohibited for minors.*

INTRODUCTION

On August 18, 1999, a 15-year-old male laborer (the victim) died after striking a fifth-wheel camper trailer hitch while he was operating a six-wheeled, 18-hp utility vehicle at a private campground. On August 27, 1999, officials of the Wage and Hour Division of the Department of Labor notified the Division of Safety Research (DSR) of this fatality and requested technical assistance. On September 2, 1999, a DSR occupational safety and health specialist and an investigator from the Ohio Fatality Assessment and Control Evaluation (FACE) program conducted an investigation of the incident. The incident was reviewed with personnel from the State and Federal Wage and Hour Divisions, OSHA, law enforcement, and the medical examiner's office. The owners of the campground were interviewed and went with investigators to examine the site and to view the utility vehicle used on the day of the incident. Photographs were obtained and measurements were taken during the course of the investigation.

The employers had operated the family-owned campground for approximately 24 years and employed 19 employees, 8 of whom were under 18 years of age. They provided on-the-job training for work tasks assigned to their employees. On-the-job training included training in the operation of the utility vehicle used in the incident. The employer's written safety plan covered swimming pool emergencies but did not address other safety issues. During 1999, three staff meetings were held where personnel issues and swimming

pool emergency procedures were addressed. The victim had been hired to work three 8-hour shifts per week from March through November, 1999. The incident occurred during the victim's sixth month of work at the campground. This was the first fatality experienced by the employer.

INVESTIGATION

The victim began work at approximately 10 a.m. on the day of the incident. He had been hired for the summer to work as a lifeguard, game room attendant, and as a general laborer at a privately owned campground that had 220 campsites. On the day of the incident, the victim worked alone driving a six-wheeled, 18-hp utility vehicle equipped with a rear bed to each campsite (Figure 1). His job was to clean out each fire pit, a job he had performed many times. According to the employers, there was a standard operating procedure for cleaning fire pits but it was not written. The job consisted of driving the utility vehicle to each fire pit, slowing to a stop, shifting into neutral gear, turning off the engine, engaging the parking brake, exiting the vehicle, shoveling debris into the rear bed, placing the shovel in the bed, getting back onto the vehicle, starting the engine, shifting into forward gear, and driving to the next fire pit. Each of the employers had ridden with the victim several times until they were satisfied that the victim could operate the utility vehicle and perform the assigned tasks.

The victim was last seen at approximately 10:30 a.m. by a camper who reported that the victim had checked the fire pit at his campsite and had then driven toward another campsite. At approximately 10:45 a.m., the camper heard the utility vehicle running nearby and while walking over to his car, saw the victim lying with his feet in the vehicle and his upper body extending outside the driver's side of the vehicle. He called to the victim to ask if he was okay and received no response. When he got closer he saw that the victim's hands and face were blue. He ran to the camp store, located about 200 yards from his campsite, and asked the attendant to call 911.

The camper returned to the site and saw that other campers were attending to the victim. The camper ran to the roadway at the entrance to the campground to direct EMS to the site. In the meantime, other campers and staff pulled the victim from the utility vehicle. A nurse was among the campers that offered assistance. She assessed the victim's status and found that his face and hands were a deep purple color, he had no carotid pulse or respirations, his pupils were dilated, his upper chest and neck were mottled, and he had a 6-to-8-inch abrasion from his right upper abdomen to his right upper flank. She began cardiopulmonary

resuscitation (CPR). EMS arrived at approximately 11 a.m., provided emergency care and transferred the victim to an area hospital where he was pronounced dead at 11:49 a.m.

The police officer who had responded to the incident was interviewed by FACE investigators, and reported that he was unable to determine the cause of the victim's injuries when he initially investigated the incident. He learned from campers that no one had moved the utility vehicle or any of its controls, other than turning it off, during rescue efforts. He examined the utility vehicle and found that it was in neutral gear, and the parking brake was engaged. The vehicle was not damaged. The grassy area under and around the utility vehicle was flat and dry. There was no evidence of torn up grass, tire marks, or any type of collision. Because there was no damage to the utility vehicle or any other signs of a collision, he considered the possibility that the victim may have died from injuries incurred prior to his arrival at work.

An investigator from the coroner's office visited the site on two occasions following the incident and conducted an extensive investigation. Accompanied by the employers, he drove a golf cart along the route driven by the victim on the morning of his death. He examined and photographed the area around the last fire pit the victim had cleaned and the area where the victim and the utility vehicle were found (the utility vehicle had been moved to a storage shed prior to the investigator's arrival). He reviewed the photographs with the police officer who had responded to the incident the day before. It was then that they noted that the trailer hitch for a fifth-wheel camper trailer, which was parked on the lot where the victim was found, was about 15 feet from-and directly in front of-the site where the victim and the vehicle were found. The owner of the fifth-wheel camper trailer informed the coroner's investigator that he had not moved or changed the elevation of the unit since the time the victim was discovered.

The coroner's investigator noted that the most logical fire pit to have been cleaned next was on the adjacent site to the east. He noted that the trailer hitch in question was in a direct line of travel between the utility vehicle and the fire pit to be cleaned next. The hitch of the fifth-wheel camper trailer had a round post which extended down from a metal plate measuring 14 by 12 by 8 inches that was affixed under the extended portion of the camper (Figure 2). The round post was 2⅞ inches in diameter and was located 43½ inches above the ground. The location of the victim's chest and abdominal injuries were consistent with the measurements of the camper's hitch height, suggesting that an impact had occurred. Additionally, grease found on the victim's torn shirt matched grease taken from the hitch.

The coroner's investigator concluded that the most likely path the victim drove was alongside the length of the fifth-wheel camper trailer and that he turned too sharply as he cut across the access driveway in front of the fifth-wheel camper toward the next fire pit. The front portion of the utility vehicle passed under the hitch, which the victim may have failed to see, as it blended in with the surroundings. He collided with the hitch, striking it with his chest and abdominal area (Figure 2). The highest point on the utility vehicle, forward of the driver's seat, was the steering wheel (43 inches from the ground to the top of the steering wheel), which cleared the base of the hitch by ½ inch. The forward movement of the vehicle would have compressed the victim between the camper hitch and other parts of the utility vehicle with sufficient force to cause the lethal injuries. There was no evidence indicating the traveling speed of the utility vehicle at the time of impact. The coroner's investigator further reasoned that the victim was found partially in the vehicle and a short distance away from the hitch, because the victim possibly placed the vehicle in reverse, dislodging himself from the hitch, and the vehicle then traveled only a short distance to where the victim collapsed.

As noted earlier, the utility vehicle was not running and was in neutral gear, with the parking brake engaged, when the police investigated. The possibility exists that the victim may have shifted the utility vehicle into reverse after he struck the hitch, backed up, shifted into neutral, and engaged the brake before he collapsed. It is also possible that those performing rescue operations placed the utility vehicle in neutral and engaged the parking brake without remembering doing so, as their focus was on assisting the victim.

FACE investigators interviewed the employers and were given a tour of the campground. The campground was clean and orderly. The grounds, buildings, and equipment appeared to be well maintained.

The fifth-wheel camper trailer involved in the incident was still parked on the lot where the incident occurred (see Figure 2). The employers stated that they had never experienced injuries due to residents or employees striking this type of hitch in the past.

FACE investigators were shown the utility vehicle used on the day of the incident. The employers said it had been taken out of use and placed in the equipment shed to spare the victim's friends more emotional trauma. The employers stated that the victim had used the utility vehicle to clean fire pits many times and had experienced no problems. After the incident, the vehicle was checked by personnel from both the police and the coroner's office. They observed as one of the employers demonstrated the vehicles's

operation. The employer started the vehicle, placing it in forward and then in reverse, with the hand-operated parking brake applied. The parking brake was functional and prevented the vehicle from moving in either direction with the accelerator fully depressed. The vehicle remained stationary when placed in forward or reverse without acceleration even if the parking brake and foot brake were not engaged. FACE Investigators noted that a manufacturer's warning sticker affixed to the dash indicated that no one under 16 years of age should drive the vehicle (Figure 3).

CAUSE OF DEATH:

The Medical Examiner listed the cause of death as blunt force injuries of the chest.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should know and comply with child labor laws which include prohibitions against certain types of work by 14- and 15-year-olds because of concerns about their safety and well-being.[1]

Discussion: The employment standards for 14- and 15-year-olds are published in Subpart C of part 570 of Title 29 of the Code of Federal Regulations, Child Labor Regulation No. 3, and are summarized in a bulletin (WH-1330). Child Labor Regulation No. 3 limits the types of work that 14- and 15-year-olds can perform because of concerns about their safety and well-being. Youths 14 and 15 years old, who are employed in nonagricultural jobs, are prohibited from operating any power-driven machinery, other than specified machines in office and retail settings, while at work (WH 1330 p. 2-3).

Additionally, the Fair Labor Standards Act Subpart E of Part 570 of Title 29 of the Code of Federal Regulations provides a minimum age of 18 years for any nonagricultural occupation which the Secretary of Labor deems particularly hazardous for youths. The 17 hazardous occupations orders (HOs) are summarized in WH-1330 and deal with manufacturing and storing explosives; motor-vehicle driving and outside helper; coal mining; logging and saw-milling; power-driven woodworking machines; exposure to radioactive substances; power-driven hoisting apparatus; power-driven metal-forming, punching, and shearing machines; mining, other than coal mining; slaughtering, or meat-packing, processing, or rendering; power-driven bakery machines; power-driven paper-products machines; manufacturing brick, tile, and kindred products; power-driven circular saws, band saws, and guillotine shears; wrecking, demolition, and ship breaking operations; roofing operations; excavation operations (WH-1330 p. 3-11).

Employers who employ any worker who is less than 18 years of age should contact the U.S. Department of Labor, Wage and Hour Division, and the agency in their State that regulates child labor to obtain information regarding appropriate work assignments for young workers. See the attached bulletin (WH 1330) for more information regarding permissible work for 14- and 15-year-olds and for the hazardous orders which apply for all youths under 18 years of age.

Recommendation #2: Employers should heed manufacturers' warnings about operation of utility vehicles including warnings that drivers should not be younger than 16 years old.

Discussion: A yellow and black warning label affixed to the dash of the utility vehicle (Figure 3) reads "Warning" "Young drivers increase chance of death. Young drivers may not be able to control vehicle. No drivers younger than 16 years old." This manufacturer's warning provided important safety information and should have been adhered to at all times.

Recommendation #3: Employers should develop, implement, and enforce a policy that requires employees to use a preestablished route to access fire pits.

Discussion: Employers should perform an assessment of the campground and designate the safest possible routes for workers to travel when driving vehicles to fire pits at the campground. These preestablished routes should be sufficiently removed from stationary obstacles to prevent collision, and employer policy should prohibit all driver shortcuts, i.e., cutting across campsite driveways. Campers should be advised of these preestablished routes so that they can work together with the campground owners and employees to keep these routes unobstructed and remain outside the travel routes.

Recommendation #4: Employers should develop, implement and enforce a comprehensive safety program for all workers which includes, but is not limited to, training in hazard identification, avoidance, and abatement.

Discussion: The employers did not have a comprehensive safety and health program that included instruction for each employee in the recognition, avoidance, and abatement of unsafe conditions applicable to the work environment. Youths less than 18 years of age should receive training on prohibited work tasks and settings (activities deemed to be especially dangerous for youths by the employer and/or child labor regulations), as well as hazards and safe work practices that apply to work they are permitted to

perform. Training in recognizing and avoiding hazards should be given to all workers, coupled with employer assessments that workers are competent in the recognition of hazards and safe work practices. In this incident, employees were provided with on-the-job training in the use of the utility vehicle but there was no evidence that the training included standard operating procedures (SOPs) for general safe operation of the utility vehicle or designated routes that should be used to reach fire pits. Employers should obtain an Operator's Manual from the manufacturer and use it to develop SOPs and for worker training in safe operation of the utility vehicle.

ADDITIONAL NOTES/RECOMMENDATIONS

Government agencies should increase their efforts to inform the public about child labor laws.

Discussion: Employers are responsible for the safety and health of their employees and should always obtain information from the appropriate Federal, State and Local enforcement authorities. The employers in this situation stated that they were completely unaware that children under 16 were not allowed to operate power-driven machinery, such as the 18-hp utility vehicle used in the incident. It has been reported in the literature that employers, parents, and teens are often unaware of work activities that are prohibited by child labor laws.[3] Federal, State and local government agencies should work together with employers and the general public to foster knowledge about the types of work youths are prohibited from performing because of concerns about their safety and well-being.

Parents should discuss the type of work their children are performing and become familiar with the occupations which are prohibited for minors.

Discussion: In this incident, the victim's parents were aware that their son was driving a utility vehicle to perform his job. They were not aware that the Department of Labor prohibits employers from assigning 14- and 15-year-olds to tasks which involve the operation of this type of power-driven machine. Parents can obtain information about the effects of work on youths and learn more about the types of work that are prohibited under Child Labor by utilizing the references provided in this report. When parents are fully aware of the age-specific types of work their children are permitted to perform they will be in a better position to help their children make appropriate employment decisions. Once their children are employed, parents should communicate regularly with their children about their work and should be prepared to intervene

if they have concerns about their safety and well-being.

REFERENCES

1. DOL [1990b]. Child labor requirements in nonagricultural occupations under the Fair Labor Standards Act. Washington D.C.: U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division, WH 1330.

2. National Research Council, et al. [1998]. Protecting youth at work: health, safety, and development of working adolescents and children in the United States. Washington, DC: National Academy Press.

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Figure 1: Utility vehicle used in the incident. The vehicle's steering wheel cleared the trailer hitch. The victim's upper body struck against the hitch.

Figure 2: The most likely path the victim drove was alongside the length of the camper. When he turned the vehicle to the left to cut across the access driveway toward the next fire pit, he turned too sharply in front of the fifth-wheel camper. The front portion of the vehicle and the steering wheel cleared under the hitch, but the seated victim collided with the hitch. An arrow placed on the photograph indicates the strike point.

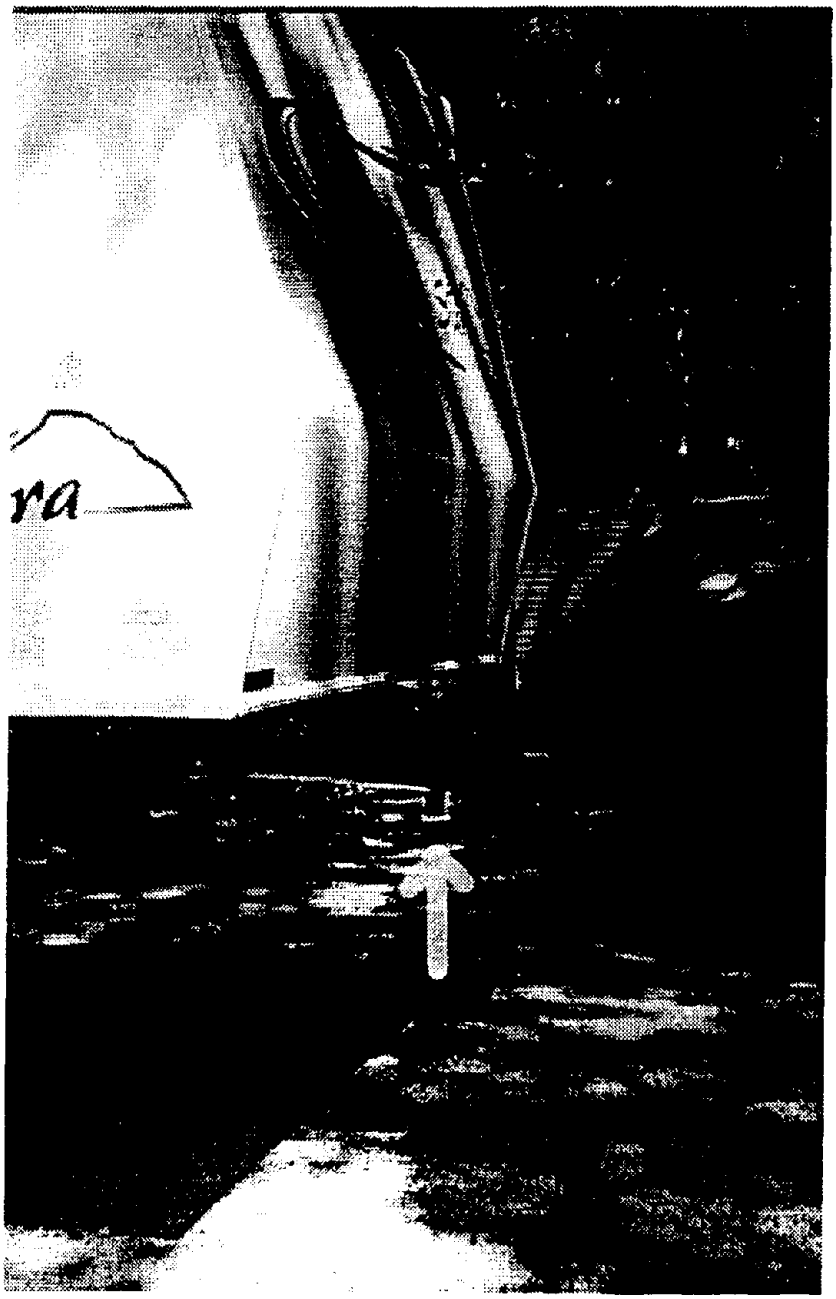

Figure 3: Manufacturer's warning sticker affixed to dash indicated that no one under 16 years of age should operate the vehicle.

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Fatality Assessment and Control Evaluation (FACE) Project

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), performs Fatality Assessment and Control Evaluation (FACE) investigations when technical assistance is requested from participating states or the Wage and Hour Division, Department of Labor. The goal of these evaluations is to prevent fatal work injuries in the future by studying the working environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact.

States participating in this study: North Carolina, Pennsylvania, South Carolina, Tennessee, and Virginia.

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