

NIOSH
ALERT
ALERT
ALERT
ALERT
ALERT
ALERT



Request for Assistance in

**Preventing Grain Auger
Electrocutions**

July 1986

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Institute for Occupational Safety and Health

DISCLAIMER

Mention of the name of any company or product does not constitute endorsement by the National Institute for Occupational Safety and Health

DHHS (NIOSH) Publication No. 86-119

Copies of this and other NIOSH documents are available from

Publications Dissemination, DSDTT
National Institute for Occupational Safety and Health
4676 Columbia Parkway
Cincinnati, Ohio 45226
(513) 841-4287

REQUEST FOR ASSISTANCE IN PREVENTING GRAIN AUGER ELECTROCUTIONS

WARNING!

MOVING GRAIN AUGERS IN THEIR ELEVATED POSITION MAY RESULT IN ELECTROCUTION IF THEY CONTACT OVERHEAD POWER LINES WHILE BEING MOVED. FARM OWNERS AND MANAGERS SHOULD ENSURE THAT AUGERS ARE IN THE LOWERED POSITION PRIOR TO MOVING THEM.

SUMMARY

This Alert requests the assistance of farm owners/managers, farm/agricultural workers, and farm equipment manufacturers in the prevention of electrocutions which may occur while moving metal grain augers. The grain auger is an essential piece of farm equipment which is used to move grain from one location to another. However, every year accidents occur when this piece of equipment is improperly moved in the elevated position and it comes into contact with high voltage power lines. This has resulted in one or more fatalities per incident. This Alert describes two separate incidents that resulted in five fatalities, and occurred within the same week (150 miles apart). Neither of the incidents fell under OSHA jurisdiction because both farms were family operations employing fewer than 10 workers.

BACKGROUND

The grain auger is a portable piece of farm equipment, 50 to 60 feet long, and weighing several hundred pounds. It is used to move grain from one location to another (e.g., unloading grain from a truck or trailer and loading it into a dryer or storage bin). It is moved to a desired location on inflatable-type car tires and then raised into position by means of a hand crank attached to a steel pulley system; the discharge end is elevated to the top of a dryer or bin, and the opposite end is lowered in order to pick up the grain to be moved. The auger is usually powered by connecting a universal joint to the power takeoff on a tractor or other piece of farm equipment. After transferring the grain, the auger should be lowered to a horizontal position for safe transportation to another location. However, the auger is not always lowered before being moved, and this unsafe practice could pose a life threatening hazard if the auger comes into contact with overhead electrical lines or if it were to tip over during transport.

CASE REPORTS OF TWO FATAL INCIDENTS

These case reports resulted from NIOSH investigations of the circumstances that led to the five fatalities described below. The investigations were conducted as part of the NIOSH Fatal Accident Circumstances and Epidemiology Program.

Case #1 - TWO ELECTROCUTED, THREE INJURED

During mid-morning on October 14, 1985, five farm workers were in the process of moving a portable grain auger. To move the auger from a 30-foot tall grain drying bin to another location, it was raised to approximately 35 feet (an angle of about 45 degrees) so that the top could clear the bin. The workers then pulled the grain auger machine back approximately 15 feet from the grain bin, rotated the rear of the auger 90 degrees, and began pushing the auger to the new location. As the workers pushed the auger forward, approximately 90 feet, it contacted an electrical line which was about 25 feet above the ground. Two of the workmen were electrocuted and three others were injured.

Case #2 - THREE ELECTROCUTED

During the early morning of October 18, 1985, two farm workers and the farm owner were moving a portable grain auger from a grain bin, approximately 30 feet high, to another location. The auger was first raised to 35 feet to clear the top of the grain bin and then pulled back approximately 15 feet. The workers swiveled the auger 90 degrees to allow a

straight path to the truck, approximately 40 yards away, that was to be loaded with grain. As the workers pushed the auger forward, it contacted a 7200 volt electrical line which was 25 feet above the ground. The two workers and the farm owner were electrocuted.

REGULATORY STATUS

OSHA estimates that over 90% of all farms in the United States are not covered by OSHA regulations. OSHA regulations are not applicable to most farms because they employ fewer than 10 employees. However, for farms employing 11 or more workers (family members do not count in this number), OSHA jurisdiction does apply and mandatory compliance is required to 29 CFR 1928.57, Guarding of Farm Field Equipment, Farm Machinery & Farmstead, Sub Part D.

CONCLUSIONS

Based on the information collected on the two cases cited, it can be concluded that the five fatalities occurred as a result of the following:

1. The lack of hazard recognition.
2. The failure to lower the grain augers to the horizontal position before moving them to other locations.

RECOMMENDATIONS

NIOSH recommends that all farm owners/managers, farm/agricultural workers, and farm equipment manufacturers be made familiar with, and reinforce the following steps:

1. Hazard Awareness

A survey of the farm should be conducted to identify hazards posed by the locations of overhead electrical lines. When all such hazards are identified and documented for future reference, workers should be informed of their location and instructed in the steps necessary to safely move grain augers.

2. Safe Movement of Grain Augers and Other Farm Equipment

Grain augers pose a life threatening hazard when moved in an elevated position if they contact overhead electrical lines or if they tip over. Therefore, it is essential that grain augers be lowered to a horizontal position before being moved from one location to another. In addition, all other equipment to be moved should be evaluated in order to determine the most appropriate method that will ensure worker safety during its

transport. Manufacturers of grain augers are urged to consider design modifications that will prevent grain augers from being moved while in an elevated position.

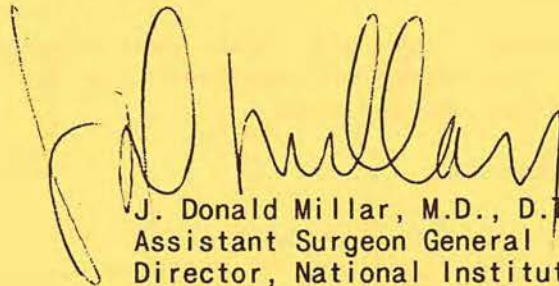
3. Safety Signs

It is recommended that users and manufacturers of grain augers affix safety signs onto the equipment that warn the user of the potential hazards of moving the auger in its upright position. A safety sign to draw attention to avoiding electrical hazards when moving grain augers is provided with this Alert. This sign should be placed on the grain auger in a conspicuous location so that it will alert workers of life threatening hazards.

We are requesting editors of appropriate trade and farm journals, members of farm extension associations, and those responsible for safety and health (e.g. inspectors, managers, and agricultural extension specialists) to bring these recommendations to the attention of farm workers, managers, and owners.

Requests for additional information on control practices or questions related to this announcement should be directed to Mr. John B. Moran, Director, Division of Safety Research, National Institute for Occupational Safety and Health, 944 Chestnut Ridge Road, Morgantown, West Virginia 26505, Telephone (304) 291-4595.

We greatly appreciate your assistance.

A handwritten signature in dark ink, appearing to read "J. Donald Millar". The signature is fluid and cursive, with a large initial "J" and "M".

J. Donald Millar, M.D., D.T.P.H. (Lond.)
Assistant Surgeon General
Director, National Institute for
Occupational Safety and Health
Centers for Disease Control



DANGER

**ELECTROCUTION HAZARD
FROM**

**STRIKING OVERHEAD POWER LINES
LOWER AUGER BEFORE MOVING**

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
ROBERT A. TAFT LABORATORIES
4676 COLUMBIA PARKWAY, CINCINNATI, OHIO 45226

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

FIRST CLASS



POSTAGE AND FEES PAID
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
HHS 396