MORE RESPONSIBILITY FOR TEACHERS AND TEACHER EDUCATORS

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Many teachers do not realize the responsibility they accept upon becoming teachers of vocational agriculture. One of the best examples of this responsibility is in the agricultural mechanics laboratory. Safety has traditionally been included as a part of the curricula in agricultural education, especially in agricultural mechanics. Teachers demonstrate the use of machinery and equipment and include the aspect of safety. They present lectures pertaining to safety, and use a variety of other teaching techniques and devices. However, one can visit many agricultural mechanics laboratories and immediately discover a variety of potentially hazardous situations. A project was undertaken by the Department of Agricultural and Extension Education at Mississippi State University to help remedy this situation.

Objectives

The main objective of the project was to involve approximately 25 secondary and/or post secondary teachers of agricultural mechanics in an inservice education program designed to improve the quality of instruction, supervision, and administration relative to safety in agricultural mechanics laboratories. Upon completion of the training period, the participants were to:

1. Have an understanding of their legal obligations under the Occupational Safety and Health Act of 1970 (OSHA) and under applicable State legislation.

2. Have developed the competencies necessary to effectively determine if and when agricultural mechanics laboratories meet accepted safety standards.

3. Have an understanding of necessary actions to follow to correct possible safety hazards in agricultural mechanics facilities and equipment.

4. Have developed the abilities needed to instruct in-school and adult students regarding their responsibilities pertaining to safety in agricultural mechanics.

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5. Be able to develop materials and to use materials developed by the project staff pertaining to safety in agricultural mechanics laboratories and in agribusinesses, both on and off the farm.

6. Be familiar with organizations and institutions from which information and assistance could be obtained.

7. Be able to effectively organize and implement comprehensive safety programs involving school-based resources (such as FFA safety committees) and community-based resources (such as local radio stations and newspapers).

Procedure

To accomplish these objectives, the project was designed in three phases--project organization and resource development, group training, and individualized instruction.

In Phase I, the project staff, with the assistance of safety and health consultants, identified and summarized occupational safety and health information essential to teachers of vocational agriculture. Materials found to be useful in this project were developed and/or purchased. Letters were written to various occupational safety and health organizations, school supply companies, industrial machine companies, agribusiness agencies, and others requesting catalogs of instructional safety materials which might be used on the secondary school level. These materials and teaching aids were used to prepare for the group teaching phase and to develop a handbook for the participating teachers to use to evaluate their laboratories and safety programs.

In Phase II, the project staff and resource persons determined the safety hazards which seemed to be most common in agricultural mechanics laboratories. This information served as a basis for the intensive group training sessions which were held at the Pontotoc Vocational Technical Education Center in Pontotoc, Mississippi. These training sessions focused on safety knowledge and skills needed by agricultural mechanics instructors. The training sessions dealt with the following topics: teacher obligations under the Occupational Safety and Health Act and under applicable State legislation; determining if and when agricultural mechanics laboratories meet accepted safety standards; actions to take to alleviate safety hazards; instructional materials and techniques regarding safety; safe and efficient agricultural mechanics laboratory supervision and management; organizations from which assistance may be obtained in organizing

comprehensive school and community based safety programs. In these group sessions, a variety of teaching techniques was used. The use of an FFA safety committee was strongly encouraged by the project staff during the training sessions as a motivating force in developing total safety programs. The FFA safety committee should be a continous part of the agricultural mechanics program.

In Phase III, the project staff and/or resource persons inspected agricultural mechanics laboratories. The laboratories were surveyed and suggestions were made so that safety hazards could be alleviated, if possible. Individualized instruction was given to the participating agricultural mechanics teachers to help each develop an effective safety program and to insure that the facilities and equipment met acceptable safety standards. One of the major techniques used in this part of the project was a model of the method used by federal inspectors under OSHA. Members of the project staff and a resource person from the Division of Safety and Health, Mississippi State Board of Health, visited each mechanics laboratory and inspected the facilities just as if it was an actual federal OSHA inspection of a covered facility. The inspectors "wrote up" each violation on a standard form and discussed each violation with the instructor.

Results and Conclusions

The major results and conclusions of this project are:

1. The agricultural mechanics instructors who participated showed a professional concern for the safety of their students and themselves.

2. The participants, at the end of the project, were rated by State Department of Education personnel as being able and willing to successfully prepare, organize, implement, and evaluate comprehensive safety programs.

3. Most of the participants corrected many safety hazards which were identified in their laboratories. An average of twenty-six safety hazards was identified in each laboratory.

4. Many safety hazards were common to a majority of the laboratories which were inspected. Table 1 presents a summary of the most frequently found hazards.

5. A majority of the hazards identified were ones which could be remedied in a relatively inexpensive manner. With the exception of facilities for spray painting, most

Table 1

MOST COMMON SAFETY HAZARDS
FOUND IN 19
AGRICULTURAL MECHANICS LABORATORIES
IN MISSISSIPPI

1. No exit signs
2. Air compressor belt and pulley not guarded
3. Drill press belt and pulley not guarded
4. Bench grinders not guarded, no tool rests - stone not dressed
5. Radial arm saw extends beyond table edge and will not return to original position when released
6. Extension cords not properly grounded
7. Fire extinguisher absent or not checked within one year
8. Jointer blade not guarded
9. Inadequate paint storage
10. Capacity not shown on hoist, hoist rail
11. Welding shields inadequate
12. Electrode left in electrode holder
13. Poor housekeeping
14. Hammer handles cracked
15. Mushroomed chisel heads
16. Welding exhaust fan not provided
17. No first aid kits
18. Ladder to overhead storage inadequate
19. No rails and toeboard for overhead storage
20. Floor loading capacity not posted for overhead storage
21. Capacity not marked for floor jack
22. Restroom unsanitary
23. Eye protection inadequate
24. Wall receptacle covers missing
25. Table saw blade unguarded
26. Fire extinguishers blocked
27. Stationary equipment not secured to floor
28. Air pressure over 30 psi
29. Oxygen storage inadequate
30. Acetylene storage inadequate
31. Junction box cover missing
32. Fuel and flammable materials stored in shop
33. Fuse panel not labeled
34. Fans not guarded
35. Fuel not stored in spill proof cans
36. Hand tools not grounded

laboratories could be made safe at a cost of less than $150 for materials. This is in contrast to the belief held by many teachers.

Summary

The enactment of OSHA constitutes a "safety bill of rights" for each person working in America. Standards and rules were set up to assure safe and healthful working conditions for all people. It encourages the education and training of employees in the recognition, avoidance, and prevention of unsafe or unhealthful working environments. It is the duty of the employer, as well as the employee, to comply with OSHA standards. Many teachers of agricultural mechanics are not aware of the implications which OSHA has for persons about to enter or re-enter the labor force. Nor are they aware of the implications which OSHA has for schools, especially laboratory work areas. Therefore, they have not included instruction pertaining to OSHA standards and rules in their instructional programs. Even though some safety instruction takes place, more intensive safety instruction becomes the responsibility of each vocational educator, especially after the realization that:

1. Each student is a prospective employer or employee who may become subject to OSHA standards.

2. Many students are placed in cooperative work situations and should be familiar with necessary safety standards and with OSHA.

3. Future state OSHA acts and/or federal amendments may legally bind all school personnel under requirements similar to those of industry.

4. Compliance with such safety standards by teachers and students ensures a safe place for students to learn and work.

Even though the OSHA does not cover agricultural mechanics education laboratories, it is felt that many of the standards are sound for implementation by teachers of agricultural education. This will help to provide safer places for students to learn and work as well as provide necessary training for future employers and employees. Teacher educators should make sure that teachers and teachers-to-be are aware of and can handle their legal and moral responsibilities in agricultural education.