THEME: Safety Education

Special Report: The National Seminar in Agricultural Education
The National Seminar

After more than two years of planning, the National Seminar on Agricultural Education was held in Kansas City, Missouri, July 15-17, 1980. (An article giving more details on the Seminar is presented on pages 18-20.) The individuals who planned and carried out the Seminar are to be commended.

Did the real issues surface at the Seminar? Were the participants able to identify the issues and accurately suggest action steps? Of course, it is impossible to predict what the future holds. Another factor in the identification of issues is that the profession of agricultural education tends to strongly cling to tradition. We are sometimes so involved with our programs that we believe that the way they are the way they should be.

We need research that addresses substantive aspects of our programs. We need to answer many questions: Does agricultural education make a difference? How important is it adult young people? How important is it to our societal and economic well-being? What are the implications of this for agricultural education practice? What should be the nature of our research?

We need research that addresses substantive aspects of our programs.

The Cover

The cover photograph shows Harold Crawford of Iowa State University making an opening presentation to the participants at the National Seminar in Agricultural Education. Dr. Crawford served as Program Chairperson for the Seminar held July 15-17, 1980, in Kansas City, Missouri.

September, 1980

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Table of Contents

Page

Editor’s Page

1

Safety Education

Jasper S. Lee

3

Safeguards: A Relatively Responsibility

James H. Daniels

4

What Is Your SQL? Victor A. Bekkum and Thomas H. Hoerner

4

Safety — What Sets the Standards Bill E. Key

5

How to Survive Gound Fault Current W. Forrest Bear

9

The Eyes Have It Or Do They? Thomas A. Hoerner and Victor A. Bekkum

10

Safety Instruction — Is It Enough? Carl L. Reynolds

13

Book Review

13

Living With Your Job Clifford Van Berkum

14

Make Safety an Integral Part of the Program David W. Prystupa & Rick Foster

15

Book Reviews

17

Special Report: The National Seminar — Agricultural Education: Shaping the Future Jasper S. Lee

18

Inservice Training Is A Means of Survival for New Teachers Donald D. Brown

21

Book Review

22

FFA Page: FFA Roots Allen L. Utech

23

Stories in Pictures: Safety Education What Not to Do!...24

ARTICLE SUBMISSION

Articles and photographs should be submitted to the Editor, Regional Editors, or Special Editors. Articles to be considered for publication should be at least 80 double-spaced typewritten pages. All submissions will be acknowledged by the Editor. No titles are to be returned. All photographs should be submitted in black and white. A duplicate copy of all photographs must be submitted. Articles submitted for publication should be typewritten double-spaced and include information about the author(s). Two copies of articles should be submitted. A manuscript photograph should accompany an article when one is on file with the Editor.

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**THEME**

Safety: A Relevant Responsibility

There is increasing concern about the duties and responsibilities of educators. In the past, teachers were expected to provide everything for everybody. Very often duties and responsibilities have been implied rather than defined; however, the teachers of today, through the bargaining process are seeking more exact definitions.

Perhaps the most important responsibility of any teacher in an agricultural mechanics setting is to ensure the safety of the students. Concern for safety stems from three standpoints - moral, professional, and legal.

In a morally-conscious society, all individuals are expected to conduct themselves in a manner that will minimize the risk of creating a hazard to others. No rational, sane, or moral individual would desire that his/her action, or lack of action, cause a co-worker, student, or anyone else to be injured.

In the interest of maintaining the high standards and principles of good vocational agriculture programs, it is a professional responsibility of every teacher to update and police all areas of safety. We owe it to ourselves, the students, the administrators, and the parents, as well as the profession. Certainly it is agreed that personal injury or death, especially when caused by carelessness or negligence, severely damages the reputation of teachers, schools, and vocational agriculture programs in general.

According to state and federal laws, teachers are legally responsible for the safety of their students. There are individuals who will take any opportunity to bring a lawsuit against someone else. Teachers are certainly not exempt from this. The key word from the legal standpoint is negligence. According to Alexander, et al., in Public School Law: Negligence is conduct falling below an established standard which results in injury to another person. It involves an unreasonably great risk which causes damage or harm.

By James H. Daniels, Theme Editor

Editor's Note: Dr. Daniels is Associate Professor of Agricultural Education at Clemson University.

B. Victor A. Bezemek and Thomas A. Hoenker

Editor's Note: Dr. Bezemek is Assistant Professor of Agricultural Engineering at Iowa State University. Dr. Hoenker is a Professor in the same Department.

To others. Negligence differs from an intentional tort in that negligent acts are neither expected nor intended. With negligence, a reasonable man (person) in the position of the actor could have anticipated the harmful results.

An accident which is unavoidable and could not have been prevented by reasonable care does not constitute negligence. No liability exists for an unavoidable accident.

Elements of Negligence

To have a valid cause of action for negligence, certain prerequisites must exist. The necessary elements are:

1. A duty (or obligation) of the actor (teacher) to protect others against unreasonable risks;
2. A failure on the part of the actor to exercise a standard of care commensurate with the risks involved;
3. The conduct of the actor must be the proximate (or legal) cause of the injury; and
4. Injury, actual loss or damage must result from the act.

When confronted with the legal aspects of teaching agriculture, many beginning teachers will comment that they are almost too timid to allow the students to use power tools because of the potential hazards and liabilities.

The following articles address safety from the standpoint of teaching vocational agriculture/agribusiness, primarily agricultural mechanics. It should be pointed out that these articles are not intended to frighten or intimidate the readers, but rather it is hoped that they will generate interest in making laboratories safer places to work and learn.

Using the portable circular saw as an example, a closer look will be made of some specifics of safety instruction in the classroom and laboratory.

**Classroom**

Most students are anxious to get into the agricultural mechanics laboratory. Before going, answer these questions: How many students are aware of the dangers in using power tools? What are the safety devices on the tools and how are they handled to be effective? What adjustments must be made for the safest operation? What personal protective equipment is required? Classroom study is beneficial before going to the laboratory.

Laboratory

The second phase of safety instruction should occur in the laboratory setting. Demonstrate safety checks, such as those in Figure 3. Do not take for granted that students will make adjustments only after unhooking the cord or that they will check the guard for free movement on the portable circular saw. Figure 3 shows safety posters being used to emphasize specific safety precautions. Safety posters can also be used for part identification.

In addition to demonstrating the safety checks, the safe and proper use of power tools with proper personal protective equipment should be shown. For example, with the portable circular saw it is essential to demonstrate not only

(Continued on Page 6)

Figure 2. A transparency master of the Portable Circular Saw.

In addition to safety manuals, transparencies, such as the example on the portable circular saw shown in Figure 2, are very helpful in teaching the parts, adjustment, and operation of a power tool. Instructional packets, such as the one available with the "Power Tool Safety and Operation" manual, include teaching ideas and outlines in addition to transparencies. Teacher activities and student activities in the instructional packet provide excellent learning opportunities for developing safety awareness.

Figure 3. Safety Instruction Manuals.

How is the supply of safety manuals? Two manuals that provide essential safety information are shown in Figure 1. A recent publication is "Developing Shop Safety Skills" by the American Association of Vocational Instruction Materials (AAAIM), Athens, Georgia. This basic reference provides concepts and principles of shop safety and practices and procedures that help develop safety skills and attitudes. The "Power Tool Safety and Operation" manual by Hobar Publications, illustrates the safe use of specific portable and stationary power tools. Emphasis is placed on the identification of the parts of each tool, safe operational procedures, general safety practices, and completion questions for self-study. While it is not the intent of this article to review safety manuals, the point is to be sure to have and use instructional materials on safety.

Figure 3. Safety posters are excellent instructional aids.
Safety Ideas

The basic safety instructional program described in this article should certainly be considered minimal. The progressively and enterprising instructor will want to include additional ideas and activities to further develop safety in the laboratory. Consider the following as individual or class projects:

- Safety poster assignments or contents — Have students design safety posters for specific tools or instructional areas. A contest with prizes will provide additional incentive. Post the completed signs in appropriate places.
- Safety survey — Have students conduct a survey of the community to determine the causes of tool-related accidents in homes, shops, and businesses.
- Safety meeting — Have students organize and conduct a safety meeting for parents, friends, and neighbors. The students should demonstrate the safe and proper operating procedures for many tools used in the home or on the farm.
- Safety inspection — Provide students with a laboratory safety inspection form to help locate possible hazards before beginning laboratory work. Such a form may be useful in the home or farm workshop.
- Safety superintendent — Assign each student the responsibility of identifying safety hazards in the lab for a day or a week during the instructional unit.
- Safety test questions — Use a student written assignment to develop test questions on safety for a specific tool or area.
- Safety activity ideas — There are many that are related to your program or community.

Safety Instructional Checks

Safety instruction in agricultural mechanics must be well planned and carried out. It must be an integral part of the total instructional program. For a comprehensive safety program, include the following checks:

- Classroom safety — Student activities should include the study of safety manuals and power tool posters, Transparencies of the power tools help to teach part identification, adjustment, and operational procedures. Instructional packets provide additional teaching ideas for student activities. The needed instructional materials should be available.
- Laboratory demonstrations — Demonstrate safety checks and proper uses of power tools to students. Select one or two students to in turn demonstrate proper techniques to the class. Have safety posters displayed, and refer to them for safety tips.
- Safety exams — Administer exams for specific power tools and for safety in general. Evaluate and review these with students before filing as a record.
- Required and approved activities — Continue to stress safety, including the use of personal protective equipment and safe tool operation.
- Special safety activity — Conduct a special class or FFA chapter activity on safety. Examples include poster campaigns, safety surveys, safety meetings, and safety inspections. Follow these checks in your safety instructional program and we believe your SQ will measure up!
It may be that your machines are too old and guards can no longer be purchased for them. If so, you can make guards or tool rests for them. Many instructors could, in fact, make better protective devices than those offered commercially. This may be an area of student involvement, since many students have the ability to correct many of our safety infractions. This could range from building a cabinet for the fire blanket to designing and constructing a belt guard for the air compressor. You may even consider devoting an entire week or even two weeks of class time to correcting safety infractions. This would not only solve many problems, but it could have a positive effect on the students in regard to safety consciousness.

A tool rests for a power grinder can be made from five to six inches of angle iron, often found in the scrap bin. The size of the angle iron is determined by the size of the stone. A belt guard for an air compressor can be made with two or three dollars worth of metal, a fraction of the cost of a commercially made guard.

Obviously, all of the various cures of safety infractions cannot be included in this article. In fact, every school shop has different problems. These must often be solved in different manners. We all must do something and not procrastinate.

Possible student injury could be reduced by making a list of all safety infractions and then attacking each one as if it were our enemy. To create such a list, it is best to go to the Occupational Safety and Health in Vocational Education guide. To get a copy, write:

U.S. Department of Health, Education and Welfare
Public Health Service
Center for Disease Control
National Institute for Occupational Safety and Health
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati, OH 45226
Ask for: DHW (NIOSH) Publication No. 79-125

For machinery guarding standards, get these publications:

FEDERAL REGISTER, June 24, 1974
ESSENTIALS OF MACHINE GUARDING, OSHA 2227
U.S. Department of Labor
Occupational Safety and Health Administration
Washington, DC 20210

The ground fault current is the most common cause of electrical shocks. A ground fault current occurs when there is a fault in an electrical circuit which permits the current flowing in the "hot" wire to leak to an unintended ground instead of returning in the neutral wire. This condition occurs when insulation, connections, worn insulation, and moisture in appliances, tools, and motorized equipment that have deteriorated from age and abuse.

How Dangerous?

Ground fault currents are dangerous when people are in their path or complete an electrical circuit. Electricity follows the path of least resistance. When you contact an electrically "hot" point and an "excellent ground" such as water, damp earth, metal plumbing fixture, wet concrete or other metal, you become an electrical conductor. The current flow (amperes) through your body does the "killing." The amount of ampere flow depends upon the resistance of your body and the voltage in the circuit. Whether you are to be an injured patient or a statistic in the obituary column will depend on the combination of ohms resistance, voltage, and ampere flow in your body. It could happen to the other person. Remember, one out of five accidents with electricity is FATAL!

NIPA/ANSI/NEC

The exact code numbers and pages related to electrical safety in the National Fire Protection Association, American National Standards Institute, and the National Electrical Code publications are not being listed. If these three organizations and their concern for safety and human life don't impress you, it is doubtful if the endorsement of the Occupational Safety Health Act (OSHA) of these organizations and their regulations will either. For those who know that accidents occur to others, and that they do not have any personal liability responsibility, stop reading and proceed to the next article. All others are to continue.

GFC Protection

Provide ground fault current protection for 120 volt, single phase, and 15 and 20 ampere receptacles under these conditions:

1. In bathrooms and garages of dwellings.
2. In outdoor circuits where there is direct grade level access to the dwelling.
3. In the vicinity of swimming pools.
4. In laundry rooms and kitchen circuits near the sink (not code but common sense).
5. At construction sites where the receptacle outlets are not a part of the permanent wiring of the building or structure.

If the polarized black and white conductor circuits do not provide the necessary protection, and if the black,
How To Survive Ground Fault Contest

(Continued from Page 9)

ify the external features of the GFCI to the consuming public. Note Figure 2 for some common styles of GFCI units.

Unit A is a circuit breaker with a built-in GFCI. An extension cord unit is illustrated in "B." Unit "C" is a GFCI duplex receptacle. "D" illustrates a unit which can be plugged in and fastened to a regular duplex receptacle.

Agricultural Mechanics Utilization

The GFCI circuit breaker (A) should be installed in the circuit for the outdoor duplex receptacle. It could also be used on the duplex receptacle in the classroom laboratory near the sink. If that isn't feasible, units (C) and (D) could be used. Duplex receptacles near deep sinks and washing areas could have unit (C) installed. The extension cord unit (B) can be used with portable electric tools at many locations such as the laboratory, the driveway in front of the overhead door, and at construction sites.

Why Me and GFCI?

Some educators ask this question, "Why me and a concern for the GFCI?" If a citizen and you become involved with a ground fault current, you might not be around next January to complete your Income Tax Form. If you are an educator working with youth in the agriculture mechanics laboratory, outside the laboratory on the driveway, in a court yard, at a construction site, or on the school's land laboratory, an accident and/or fatality might occur. An accident or fatality could result in a lawsuit to determine your personal liability responsibility. Either of these situations will attract the attention of your beneficiary and/or you!

**THEME**

The Eyes Have It — Or Do They?

In agricultural mechanics, the eyes have it — or do they? In visiting high school agricultural mechanics departments, we find programs where the eyes do not have it. The proper type of eye protection is not being used. Most states have laws regulating the wearing of proper eye protection in shop courses. Unfortunately, too many teachers ignore or through neglect do not require students to wear eye protection while working in the agricultural mechanics laboratory.

One excuse we hear from teachers is that he or she is just not sure what type of eye protection is required for specific conditions or operations. Do I require style A or B when working in the carpentry laboratory? Must I require side shields in the welding laboratory? Are goggles approved eye protection or must students wear spectacle-type eye protection? If regular street-wear glasses are hardened, do they meet the state regulations? There are many questions and concerns regarding proper eye protection. The purpose of this article is to attempt to answer these questions and present up-to-date information on the latest standards of eye protection.

By Thomas A. Hoerner and Victor A. Berkim
Editor's Note: Doctors Hoerner and Berkim are authors of two articles in this issue of the Magazine. Both are at Iowa State University.

What Is Required in Eye Protection?

Proper eye protection means industrial quality eye protection and not safety glasses (street-wear glasses). In simple terms, industrial quality specifications are:

- Lens thickness 3.0 mm and not more than 3.8 mm
- Lens must be hardened by heat treating.
- Frames must be fire resistant.
- Lenses must be inserted from front of frames.

Each lens is drop-ball tested with a 1" steel ball weighing 2.4 oz. from a height of 50 inches.

Plastic lenses used in flexible goggles or face shields must be at least 0.000 inch thick.

(Continued on Page 12)

THE AGRICULTURAL EDUCATION MAGAZINE

**APPLICATIONS**

**OPERATION**

Acetylene, Burning, Acetylene-Cutting, Acetylene-Welding

**HAZARDS**

Sparks, Harmful Rays, Molten Metal, Flying Particles

**PROTECTORS**

7, 8, 9

Chemical Handling

Splat, Acid Burns, Fumes

2 (For severe exposure and 10)

Chipping

Flying Particles

1, 3, 5, 6, 7A, 8A

Electric (Arc) Welding

Sparks, Intense Rays, Molten Metal

11 (In combination with 4, 5, 6, in tinted lenses, advisable)

Furnace Operations

Glare, Heat, Molten Metal

7, 9, 9 (For severe exposure and 10)

Grinding — Light

Flying Particles

1, 3, 5, 6 (For severe exposure and 10)

Grinding — Heavy

Flying Particles

1, 3, 7A, 8A (For severe exposure and 10)

Laboratory

Chemical, Splash, Glass Breakage

2 (10 in combination with 5, 6)

Machining

Flying Particles

1, 3, 5, 6 (For severe exposure and 10)

Molten Metals

Heat, Glare, Sparks, Splash

7, 8 (In combination with 5, 6, in tinted lenses)

Spot Welding

Flying Particles, Sparks

1, 3, 4, 5, 6 (Tinted lenses advisable; for severe exposure 10)

CAUTION:

- Face shields alone do not provide adequate protection.
- Plastic lenses are suitable for protection against molten metal splashes.
- Contact lenses of themselves, do not provide eye protection to the industrial scene and shall not be worn in a hazardous environment without appropriate auxiliary safety eyewear.

This material is reproduced with permission from American National Standard Practice for Occupational and Educational Eye and Face Protection ANSI Z87.1-1979, copyright 1979 by the American National Standards Institute, copies of which may be purchased from the American National Standards Institute, 1430 Broadway, New York, New York 10018.

SEPTEMBER, 1980

**Figure 2. Selection Chart for Eye and Face Protectors for Use in Industry, Schools, and Colleges**

The Selection Chart offers general recommendations only. Final selection of eye and face protective devices is the responsibility of management and safety specialists. (For laser protection, refer to American National Standard for Safe Use of Lasers, ANSI Z136.1—1978.)

1. GOGGLES, Flexview, Regular Ventilation
2. GOGGLES, Flexview, Hooded Ventilation
3. GOGGLES, Customized, Regular Ventilation
4. GOGGLES, without Side Shields
5. SPECTACLES, Eyeglass Type Standard
6. SPECTACLES, Serra Flat Hold Standard
7. WELDING GOGGLES, Eyepiece Type, Tinted Lenses (Ultra-violet)
8. CHIPPING GOGGLES, Eye-piece Type, Clear Safety Lenses
9. WELDING GOGGLES, Over-spectacles Type, Clear Safety Lenses
10. WELDING GOGGLES, Over-spectacles Type, Tinted Plate Lens
11. WELDING HELMET

Non-sideshielded spectacles are available for limited hazard use requiring only frontal protection.

*See Table A, "Selection of Shade Numbers for Welding Filters," in Section A2 of the Appendix.*
Safety Instruction — Is It Enough?

By CARL L. REYNOLDS
Editor's Note: Dr. CARL L. REYNOLDS is Assistant Pro- fessor of Agricultural Education at the University of Wisconsin.

Physiological limitations include such factors as strength, endurance, and fatigue. A student's ability to perform at his or her best is adversely af-fected by such factors as noise levels, dust levels, and overall physical health.

Psychological factors are the second important category that must be con-sidered in developing a sound safety program. Moods and emotions have a definite impact on the efficiency and safety of the workers. The teachers must be made aware that their "frame of mind" can effect the safety of themselves and their classmates. The following atti-tudes can adversely affect the concern of students for safety:

1. Low self esteem
2. Conflicts
3. Daydreaming
4. Depression
5. Insecurity
6. Financial problems

Students in vocational agriculture have such strongly identified goals that sound safety practices are set aside in the interest of accomplishing those goals. A student who is trying to com- plete a project in the class time allowed often forgoes critical safety steps. He might, for example, fail to check for leaks when installing new oxygen-acetylene cylinders, and the re-sulting undetected leak may cause a fire. The bolts on a machine are rusted and will not budge; the student grabs a torch and begins to cut them off. He fails to take the time to consider that the fuel tank is only inches away.

Constant attention must be given to insure that students maintain a con-tinuous safety attitude. One suggestion is to assign a student each period to serve as class safety officer. His or her duties would include such tasks as re-porting any defective equipment or missing safety guards or shields and watching for unsafe practices. The findings of safety inspections by stu-dents should be reported to the teacher.

A strong safety program is a neces-sity in every vocational agriculture shop facility. The program must in- clude formal safety instruction, safety tools and equipment, and the development of a safety attitude on the part of all persons working in the shop. A safety program insuring this attitude must be maintained throughout the year.


The title of this book gives a com- plete description of the contents. It contains over 900 different landscape plants, listing common and scientific names, with a cross index. Most of the plants have a line drawing to show leaf, bud, or stem characteristics. Each description has the common informa- tion. Presumably, the book is intended for professional nurserymen, students in horticulture classes, and is useful as a reference in a vocational horticulture class if de-tailed and accurate information is required.

Dennis L. Parrish
Montgomery Co. J.V.S.
Clayton, Ohio
"I am a teacher of vocational agriculture by choice and not by chance."

There are the words from the first line of a paragraph of creed for vocational agriculture students. They are the words of the FFA Chapter or professional organization would we have if we wanted to give any effort.

Ten Years

The third time for doubt about one's occupation comes after ten years of experience. At this point in a person's life, he or she has passed thirty years of age. The instructor rationalizes in his or her mind that if one ever wanted to leave teaching, this is the time to do it. The kids aren't in high school yet and so moving wouldn't be too emotional for the family. If I don't change jobs now, no one will want me because I will soon be too old.

Problem — Not Setting Priorities

One of the reasons many vocational agriculture instructors find themselves in one of the three situations previously described is that they haven't found out how to live with their jobs. They haven't been able to set priorities!

There are a number of things that require an instructor's time and efforts. Certainly teaching should be one that should be strongly considered because this is what each person is getting paid to do. A person who considers this to be a central duty and takes days off from the district a honest days work for a day's work, will be appreciated in that community.

Another priority should be the family. Too often, when the instructor is younger and he or she is trying to do the best job possible in teaching, the family takes second billing. After they leave home and are "grown up," the instructor begins to realize he or she should have spent more time with the children. How many times have your children asked you to play ball, fishing, play basketball, or want your presence elsewhere? Can you make adjustments in your schedule so you can play with them? This should be one of your highest priorities.

We can also spend our time and efforts in community affairs if we feel community minded. As soon as one joins service organizations, they put you too much into the FFA Chapter or professional organization would we have if we wanted to give any effort.

And then there are those extracurricular duties required of teachers at basketball, football, wrestling, and basketball events, such as taking tickets, ball duty, and keeping score. Instructors who are selfish with their time in these areas can often be shunned by other faculty members, especially when it comes to FFA activities. Too often the vocational agriculture department becomes an entity in itself instead of part of the entire school system.

The last priority is that of leisure time and pursuit of hobbies. Sometimes these can be incorporated with our other priorities. Maybe time just has to be budgeted as one budgets the pay check at the end of each month. Budgeting time will work if one takes the time to set it up. Like most budgets, there will have to be some adjustments made during the academic because unforeseen conflicts. Flexibility has always been necessary with a budget!

A budget must be balanced! Anytime you set priorities, you have to weigh the rest, the person using the time budget becomes unbalanced. An instructor who is teaching a school district a honest days work for a day's pay, will be appreciated in that community.

The "Cure"

This article doesn't provide the perfect answer to the problems of vocational agriculture teachers. When anxiety does set in, is it time to take the child off the wall and read it again, visit your biggest booster in the community to fill your ego cup, set your priorities in order so that you feel balanced again, and budget your time so the schedule so you can make a calendar, setting aside for family, leisure time, and rest of your priorities.

BY CLIFFORD VAN BERKUM
Editor's Note: The author is a teacher of vocational agriculture at Normandy Community School, Salem City, Iowa.

CAREER MAKEUP

Living With Your Job

CAREER MAKEUP

Make Safety An Integral Part Of Your Program

You are the vocational agriculture instructor in an agricultural mechanics large industrial shop helping Jim with a problem with an oxycarbon-400 welder. As you finish, you turn around and see nothing but is also given to the protection provided teachers by a comprehensive safety education program in case of accidents and subsequent liable suits. Being able to verify which students are capable of operating agricultural equipment and being able to produce proof that students have been instructed in a comprehensive safety program may be enough evidence to make the difference in the legal action because of an accident.

Several steps can be taken to help ensure that your students will not become accident victims while participating in agricultural mechanics. You can improve your safety instruction by making it an integral part of your total program. Some suggestions to improve your total safety program are:

Teach an Introductory Unit in General Safety Education

It has generally been an accepted practice to provide a safety unit before students enter the shop. This unit may lawfully be required by the individual instructor. In many cases, however, this instruction is not followed because it is not provided. Care must be taken to use this introductory unit to cover basic information and safety procedures in the agricultural mechanics laboratory.

Teach Specific Safety Information in Conjunction with Specific Agricultural Mechanic Units

As part of each agricultural mechanic unit, provide indepth safety information regarding hazards that exist relating to safe operation of machines and equipment. Teaching specific safety skills while studying particular equipment will make the instructions directly and meaningfully interesting to students.

(Continued on Page 16)
Make Safety An Integral Part of Your Program

(Continued From Page 15)

Administrator Safety Exams
Follow-up to all use of instruction with a safety exam and require passing scores to be 100 percent before students are allowed to enter the shop and/or operate specific equipment. This may mean that students will have to retake exams as required. All students are accountable for those items initially missed which will ensure that they are knowledgeable enough to work safely.

Maintain a Safety File For Each Student
After completion of safety exams, place them in files that are kept for each student. Be sure the files on safety are readily accessible to the students. Materials that indicate the qualifications of students for operating equipment and knowledge of safety aspects should be kept up-to-date at all times. Having students sign their safety exams is an excellent method that is retained as a proof of standards that are aware of the safety aspects in agriculture.

Maintain Personal Emergency Data on Each Student
Develop a personal data sheet on students that will be kept for personal use by personnel to contact in case of an emergency, known allergies, blood type, required medications, family doctor, family dentist, and any physical or emotional handicaps that the student may possess. Keep this data in a safe place on the side of each student's folder for easy access.

Train Students in First Aid, Emergency Procedures, and CPR
Be sure students are aware of common first aid procedures that are used to treat injuries that occur in the agricultural mechanics laboratory. An awareness of the location of first aid equipment and first aid procedures is a knowledge of emergency procedures are important steps in safety awareness. Safety emergency procedures should be posted in appropriate locations so students can review these procedures in case of an accident or emergency situation. Another activity to increase the preparedness of students is the teaching of CPR (Cardiopulmonary Resuscitation). Emergency Medical Technicians should be readily available in most communities to provide CPR training to students and faculty alike. Vocational agricultural instructors may wish to qualify as CPR instructors and provide training to their students themselves.

Require Practicums for Operating and Maintaining Power Equipment
As students pass safety exams designed to acquaint them with safety procedures for each piece of equipment, they must also be taught to maintain actual safe operation of the particular machine. Provide an authorization card allowing students to solicit the use of each machine only after they have successfully demonstrated its safe operation.

Involves Students in Your Safety Program
Display posters and safety publications in appropriate locations throughout the classroom and the agricultural mechanics laboratory. Involves students in the FFA Chapter Safety Award Program, being sure to complete Division No. 2A of the Classroom and Shop School Safety.

Post Safety Signs Next to All Power Equipment
Displaying safety signs which show step-by-step procedures and common safety tips for each piece of equipment helps to maintain an awareness of safety. Lists of safety rules can be obtained through many commercial sources or from machinery manufacturers.

Safety Starts with You – The Instructor
Students will model their behavior after the examples they see set before them. It is imperative for instructors to practice all safety rules and regulations in an effort to set a good example for students. The instructor should always wear safety glasses at all times while in the laboratory. In order to be familiar with the right tools and procedures for a job, you cannot expect your students to develop a proper safety attitude unless you provide the correct example.

By following the above suggestions and teaching students to comprehend and demonstrate safety skills, they will be better able to take part in agricultural occupations. For safety reasons, students will be able to work in a safer atmosphere as each student only after they have successfully demonstrated its safe operation.

THE PLANT PROTECTION DISCIPLINE, by Walter H. Sill, Jr., New York, Har-

The purpose of this book is to pro- vide an overview of different aspects of crop protection from a plant protection discipline. Plant protection is a combination of crop protection and plant pest management. It incorporates many aspects of entomology, plant pathology, agronomy, nematology, and weed science.

An need is identified for individuals with Bachelor's degrees in plant protection that work in this area. The book is written for our vocational a- griculture programs.

The next time you enter your agricultural mechanics laboratory, think about this area are very narrowly trained in a specific discipline. A much more general training is needed for those people working with agricultural pro- tection. The question is: Can we plant or crop plant must be considered when recommending and providing protection for pests.

Plant protection would be a new profession. It would parallel the general practitioners in medicine. The individual would be broadly trained to work at the field level in plant protection. The growing need is for people with the application of the total control components emphasizes the need for this new discipline.

The author is chairman of the Plant Protection Department at the University of Illinois.

Eugene Anderson
Univ of Minnesota St Paul


A "how-to-do it" of news and feature article writing is presented in this concise, yet comprehensive, publication. It is divided into nine lessons, many of which have activities to be completed by the reader. Suggested solu- tions are offered for most of the activities. Topics covered in the lessons include: How to write News (Lesson 1), Report News, Feature Articles (Lesson 2), Polish Your Style (Lesson 3), Write a Better Sentence (Lesson 4), Getting Started (Lesson 5), You Own the Story (Lesson 6), Be Your Own Editor (Lesson 7), Writing Features and How to Keep on Writing.

After news is defined in Lesson 1, the structure of news articles is presented in Lesson 2 through a discussion of the inverted pyramid style of writing and the five W's and 1 H (who, what, where, when, why, and how). Lessons 3-5 provide activities where words and phrases are simplified, sentences re- written, and facts arranged into lead paragraphs. Lesson 6, "You're on Your Own," is designed to offer experience in constructing four types of articles: news, meetings, awards, and how-to-do it. Lessons 7, 8, and 9 suggest a self-theory for copy for grammatical errors before publication. Writing feature articles is covered in Lesson 10. The focus of Lesson 11 is the character included: What makes a feature go?, Test your features, and The feature thinking/writing process. The concluding lesson suggests that writing skills are best developed by constructing articles and having them reviewed by others to incorporate and cooperate.

The author has experience in agriculture and journalism and serves as news director and professor in the College of Agriculture at the University of Missouri-Columbia.

Teacher educators can use this publication in undergraduate courses where future high school vocational agriculture teachers and agriculture extension agents develop basic news and feature article writing skills. Blanche Bowen Mississippi State University

BOOK REVIEW

Opportunities for employment in the area of ornamental horticulture are discus- sed as well as use of the skills for personal enjoyment and enhancement of the home and its environment. An early chapter of the book deals with "Home Garden Design." From allowing students to do such activities as "Construction of Walks and Drives," "Grading, Establishing, and Maintaining the Lawn," and "Plants for Identi- fication and Selection," "Planting Ornamentals," "Management of Trees and Shrubs," "How to Use Garden Structures," and "The Flower Garden." The book is attractive. It has many pictures, sketches, and illustrations. High school students will like its short sections with many paragraph head- lines and figures. It is well-written and sharp. This "how-to-do-it" manual is an important contribution.

The author is Professor Emeritus of Agricultural Education, The Pennsylvania State University. He has had practical personal experience using many of the practices discussed. In addition, he has had close contact with research findings from horticul- tural experiment stations and experts in this field.

This book would be an excellent high school, technical school, or college text. Every vocational agriculture teacher and student in a vocational professional grade should have this book in their professional library. It could be a valuable reference to vocational agriculture students, home economics students, and to FFA's and 4-H's.

Joe R. Clary
North Carolina State Univ

North Dakota at Vermillion and Director of the South Dakota Center for En- vironmental Studies. His interest in plant protection and long term pursuit of the subject is evident in the book.

The book is written for those responsible for the administration of crop protection and environmental programs. It will be of interest to everyone concerned about or involved in crop pest control. Students interested in this profession will find the book to be very useful in mapping out a program to become a specialist in plant protection.

The author is chairman of the Biolo- gical Protection Department at the University of Minnesota St Paul
The National Seminar — Agricultural Education: Shaping the Future

By Lester S. Lee, Editor
This report was compiled by the Editor during the National Seminar.

Sponsorship
The Seminar was jointly sponsored by the Agricultural Education Division of the American Vocational Association and the Bureau of Occupational and Adult Education, U.S. Department of Education. Several financial contributors supported the Seminar.

Participation
Individuals from 46 states participated in the Seminar. The number and areas represented by the participants were as follows:

Secondary teachers of vocational agriculture/agribusiness 57
Postsecondary teachers of agriculture/agribusiness 15
Teacher educators 75
State-level supervisors 50
Administrators 6
Agricultural industry representatives 15
Graduate students 30
Guests 18

Total Participants 264

New Directions In Education
Arthur Mallory, Missouri Commissioner of Education, spoke to the Seminar on trends, issues, and new directions in education. Dr. Mallory, who describes himself as a "cheerleader for public education," previously served as a teacher and university president. His presentation is summarized here.

Trends Impacting Education
Population is getting older — This will result in a continued decline in the number of school-age youngsters and an increase in older persons.

Seminars participants worked in small groups to identify issues and action steps.

SEPTMBR, 1980

18

THE AGRICULTURAL EDUCATION MAGAZINE

19

Albert Timmerman and Byron Rawls review the Seminar program. Dr. Timmerman is President of the National Vocational Agriculture Teachers Association. Mr. Rawls is Education Program Specialist for Agricultur¢/Agribusiness, U.S. Department of Education.

Dr. Hobbs concluded by challenging each person to seek ways of solving problems. "If you're not a part of the solution, you are a part of the problem!"

New Directions in Agriculture
Dean A. Raber, Senior Vice President of the Federal Land Bank of Chicago, spoke on trends in agriculture. His primary emphasis was farming, especially farm management.

The "shoe box farmer" is dead, according to Dr. Raber. Farming has become big business and requires sophisticated record keeping and management. Mostly storing receipts in a shoe box is completely inadequate.

An analysis of what tomorrow holds depends on how we define "farm." Mr. Raber contends that there are two groups of farms: commercial and part-time. A commercial farm is one which generates $60,000, or more, of gross sales each year. A part-time farm is one producing less than $60,000 gross sales per year but more than $1,000. There are 500,000 commercial farms in the United States and 1.8 million part-time farms.

(Continued on Page 20)
Inservice Training is a Means of Survival for New Teachers

By Donald D. Brown
Editor's Note: Dr. Brown was Assistant Professor of Agricultural Education at Oklahoma State University before his death on March 29, 1980.

The competencies necessary to succeed as a vocational agriculture teacher are included in the inservice education program for the certification of vocational agriculture teachers. The retention and recitation of definitions and concepts until they are ready to be used or put to the test in actual job situations is, however, alarming low.

The rapid turnover of teachers of vocational agriculture in Oklahoma in recent years has been caused by the high percentage of members who have taught five years or less. A large majority of these teachers have entered the teaching profession immediately upon graduation from college. Teachers with less than five years experience now account for over half of the total number of teachers of vocational agriculture in Oklahoma.

The new teacher is faced not only with the task of becoming established in the community, but also with keeping up-to-date and historically competent in an ever-changing field. Providing assistance to the new teacher is a parallel challenge to teacher education and supervisory personnel.

The Beginning

In an effort to meet this challenge, the teacher educators in the Agricultural Education Department at Oklahoma State University, in conjunction with the state supervisory staff, implemented a state-wide, inservice training course for first-year teachers of vocational agriculture. This program provided a new, innovative approach to inservice training in the Southwest. New and improved activities were developed by the directors of John Jones and Robert Terry, both professors at Oklahoma State University. This program emphasized "hands-on" experiences under the watchful eye and tutelage of expert, more experienced teachers, who were readily recognized by their peers for their expertise. The tremendous acceptance and success of this program was based on the present inservice training course for first-year teachers. Beginning teachers become more aware of their needs for training, as they encounter the problems of being a vo-ag teacher. This course was designed with a time sequence directly related to the teachers expected performance. Assistance is available to new teachers when they are most highly motivated to learn and at a time that is just ahead of their expected or required performance.

The Course Organization

The inservice course begins the first month the new teacher is on the job. During the third week in July, after the new teacher has had an opportunity to survey the community, the training workshop is held at the Oklahoma State University Campus. Here, under the tutelage of the State Curriculum and Supervisory Staff, each teacher designs an annual teaching plan for each course he or she plans to teach. These teaching plans are broken down into units to be taught, the month they are to be taught, and the number of periods needed to cover the material.

Other important areas that are discussed include: getting supervised training programs started, incorporating the activities of the FFA into the vocational agriculture program, and on storage, and filing and utilizing curricula materials and correspondence.

Summer Conference Session

During the annual summer conference, which is usually held the first week in August, two days are spent discussing inservice. The first day is devoted to professional development workshops of the State and regional professional organizations. Discussions are also held on the importance of membership. The Code of Ethics is presented, stressing its importance to the individual and the group. In Oklahoma, a unique pledge plan is presented to support supervisors of deceased teachers in the following year. Other state report items are covered.

The second day is devoted to helping livestock and poultry and soils and crops and floriculture. These departments will be involved in local, county, district, and state fairs in September. These skills are demonstrated at this time to enable the beginning teacher to observe the most up-to-date techniques in livestock production, floriculture demonstrations are held by expert teachers and their high school students.

Livestock Skills Session

Late in October or early November, separate meetings are held, one in each state. These meetings are spent demonstrating and performing livestock veterinary skills. By meeting on a district basis the group becomes small enough (8-15) that each individual can actually perform each of the skills taught. Many of the common livestock skills that teachers are expected to perform and teach their students are covered. These include castration, dehorning, hoof trimming, ear tagging, vaccinating, implanting, tattooing, nose painting, and docking. Again, experienced teachers with special expertise in these areas serve as instructors. On some occasions local veterinarians are involved in the instruction.

Mid-Winter Conference Session

One day prior to the annual mid-winter conference for vo-ag teachers in... (Continued on Page 22)
Selling In Agriculturists

By Larry E. Miller, New York, N.Y., Greg Divi-
sion, McGraw-Hill Book Co., 1979, 134 pp., $5.00. Student Activity Guide $3.00 (less educational discount).

Selling in Agriculturists is a text and a student activity guide.

The Selling in Agriculturists text is divided into three major units: (1) skills needed by an agricultural salesperson, (2) principles of agricultural sales process, and (3) personal responsibilities in addition to selling.

Each unit begins with an occupational matrix. The matrix shows the relationship between occupations in agricultural sales and the skills needed to enter and succeed in those occupations.

The eleven chapters in the text begin with a pretest for the chapter. The goals are directly related to the competencies listed in the unit occupational matrix. At the end of each chapter, a set of questions to aid the student in meeting the chapter goals is given.

Unit one includes two chapters. Chapter one covers selling as an agricultural career with emphasis on career possibilities, occupational and skill needed to enter, and the various careers. The second chapter is concerned with the development of the salesperson: salesperson's behavior, self-orientation, and technical skills needed by agricultural sales persons.

Unit two includes eight chapters devoted to the sales process. Chapter three on approaching customers discusses such items as the stages in making a sale, the importance of product and service information, knowing your competition, opening a sale, and approaching the customer. Chapter four is determining the needs of the customer. This chapter is concerned with why people buy, satisfying customer needs, and how to meet different types of customer. Chapter five on presenting agricultural supplies and products includes the basic steps in selling, the five stages of a sale, and the seven principles of a good sales presentation. Chapter six is on recognizing the super-common types of objections and handle them covered in chapter six.

Also included in unit two is a test for evaluating a closing the sale. This important chapter includes a discussion of ways to bring about the close of a sale, common mistakes that may cause a salesperson to lose the sale, and procedures to follow after the sale. How to use persuasion selling and how to handle payment are covered in chapters eight and nine. The final chapter in unit two describes the basic services businesses provide their customers and why the services are important.

Unit three is a single chapter on fulfilling personal responsibilities as a salesperson. The items covered in this chapter include steps in preparing for new customers, records sales people must keep, and how to deal with the shoplifting problem.

Individualized Instruction

Throughout the entire course, time is taken care of any specific problems, questions, or individual needs. Effort is made to make the program as flexible as possible in the learning situation. Individual assistance is provided by the beginning teacher through school officials of the Agricultural Education Staff, district supervisory staff, and/or neighboring vo-ag teachers. These visits are given a priority basis and are completed during the first six months of the new teacher's contract.

Experienced teachers are used in many of the instructional areas. The instructors are selected by the District Supervisors. Constant revision and improvements are being made to vitalize the instruction.

BOOK REVIEW

The Student Activity Guide for Selling in Agriculturists is designed to help students develop problem-solving skills in a competency-based setting. The activities are to be handled as a means of achieving the chapter goals.

Each chapter of the activity guide includes a short summary of the important concepts covered in the text. Several other types of activities are included: individual and group exercises are included giving the teacher flexibility in using the guide.

Chapter one of the activity guide contains a skill chart with a listing of all goals for the entire instructional module. A handwriting instrument is used as an evaluation instrument by both the teacher and the student.

These materials are primarily suited for a second year of sales training. They may be used as a sales training instrument by both the teacher and the student.

Individualized Instruction

The final meeting for this course is held in April during the State FFA Interns Contest. The Interns contest at Oklahoma State University. Many of the teachers will take part in the Interns contest. While their team members are participating, the teachers meet in Ag Hall to discuss their experiences, complete the Interns contest forms, and submit applications for Superior and Gold Emblem Chapter awards. The current year representatives of the Chapters with a Gold emblem rating presented a report on their application. Other reports pertinent to the teachers' summer program of activities and FFA annual report are also presented at this time.

FARM BOY CAVALLIERS

Probably the most unique organization for vocational education last year was the second, Farm Boy Cavalier. This was a non-military organization of farm boys mounted on horses.

The Farm Boy Cavaliers had four chief motifs: service, honor, thrift, and loyalty. The main purposes were to work for achievements on the farm and for community betterment. You can see that BOAC ideas have been with us for some time. Cavalier moved through ranks of "Pages," "Esquires," and "Knights" by attaining achievements. Cavalier badges were earned by showing that definite work was done in such areas as follow: alfalfa or clover growing, applied chemistry, agricultural engineering, barley growing, barnyard sanitation, beef cattle feeding, bird study, blacksmithing, buttermaking, canning, carpentry, cement work, corn growing, farm animal hygiene, forestry, harness making, horseman, harness making, manure spreading, meat cutting, sausage making, meat cutting, milk production, oats raising, photography, pig raising, pipe fitting, plant diseases, plowing, poultry raising, recreational, cultural health, sheep raising, soldiery, wheat raising, and horsemanship.

A boy of any age who was able to mount a horse from the ground and ride at a gallop could become a Cavalier. A twelve year old may take three years to earn the three school badges. If he had $50.00 invested in a farm project or in a savings bank he was qualified for the rank of "Esquire." In order to become a "Knight" he had to work for achievements and have $100.00 invested or collecting interest in a savings bank. A "Knight" must have special achievement badges. Knights were those who were eligible to obtain achievement certification for community service. What else would you expect of a "Knight"? A quick way through the ranks was a possibility for Cavaliers who had previous training.

Any four farm boys could organize a troop of Farm Boy Cavalier by taking the pledge of service. The leader of the unit could be the unit leader, a secretary, and a treasurer. Officers and members had to be re-
Stories in Pictures: Safety Education What Not To Do!

(Photographs from James H. Daniels, Clemson University)