

# AGricultural EDucation

Department of  
AGRICULTURAL EDUCATION  
UNIVERSITY OF ARIZONA  
TUCSON, ARIZONA

Featuring—Today's Classrooms and Shops

MAY, 1964

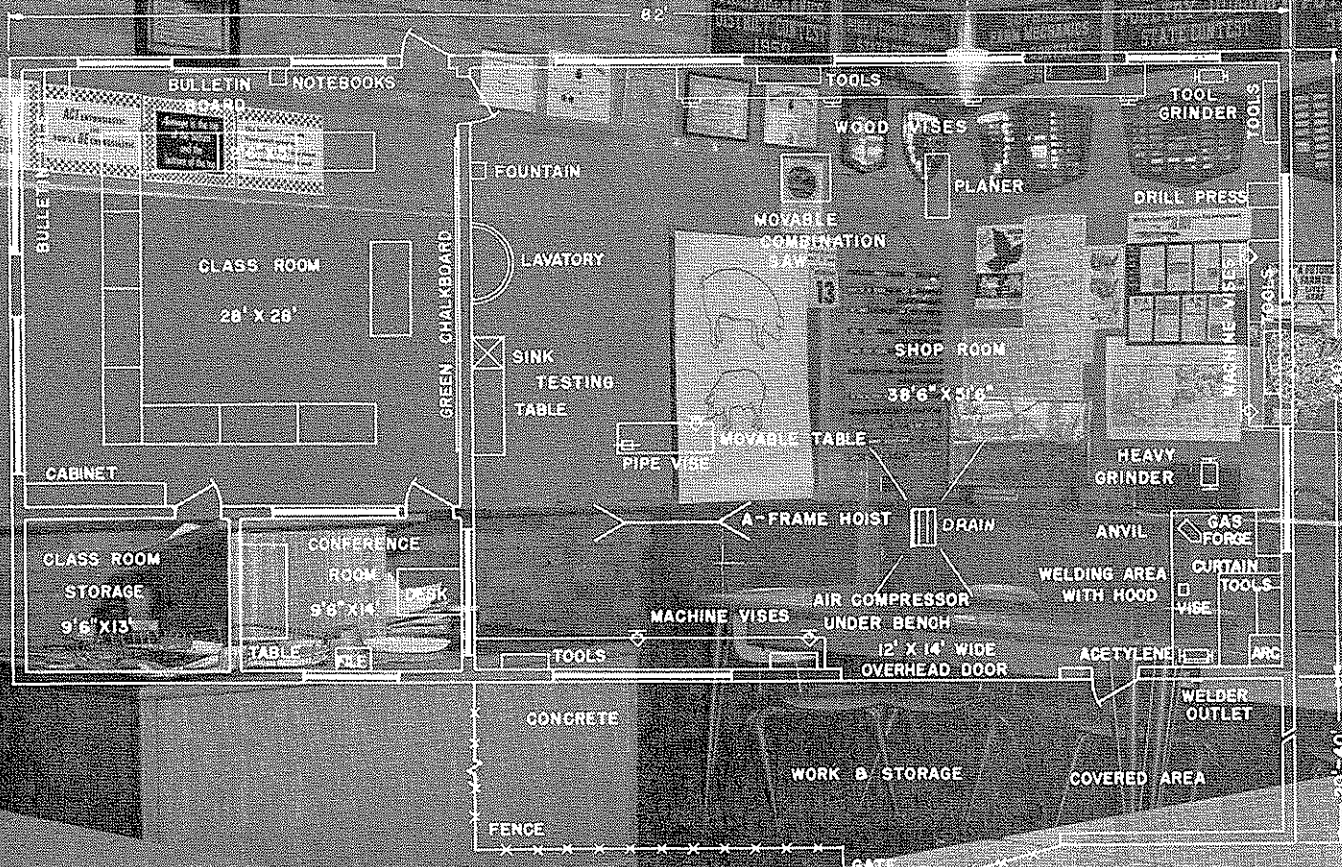


FIG. 20 SHOP FLOOR PLAN "B"

FACILITIES FOR 28-45 STUDENTS.  
FOR A ONE UNIT DEPARTMENT THIS  
SPACE IS A MINIMUM.

PLAN TWO  
VOCATIONAL AGRICULTURE  
CLASS ROOM & SHOP



A monthly magazine for professional workers in Agricultural Education. Managed by an editorial board chosen by the Agricultural Section of the American Vocational Association and published at cost by Interstate Printers and Publishers, Danville, Illinois.

THE INTERSTATE  DANVILLE, ILL.

# The Agricultural Education Magazine

Volume 36

May 1964

Number 11

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Subscription price, \$3.00 per year, payable at the office of the Interstate Printers and Publishers, 19-27 N. Jackson St., Danville, Illinois. Foreign subscriptions, \$3.25. Single copies, 35 cents. In submitting subscriptions, designate by appropriate symbols new subscribers, renewals and changes in address. Contributions should be sent to the Special Editors or to the Editor. No advertising is accepted. Second-class postage paid at Danville, Illinois.

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## The Cover

Today's classrooms and shops start with an active program of vocational agriculture which results in a blue print for improved facilities and is finally translated into new and improved facilities. The classroom is at Brighton, Colorado, and the floor plan is from Ohio.

## Guest Editorial

### Educational Facilities for Agricultural Education

JOE P. BAIL, Teacher Education, Cornell University

Any modern elementary or high school building of today is as different from one of the early 1900's as night is from day! Not only does the exterior appearance differ, but the interior is far more functional, pleasing to the eye, and adaptable to present and future needs. Have we in Agricultural Education kept pace or do we still adhere to the conventional facilities of yester years?

Perhaps it would not be "too far out" to suggest that any new facility in agricultural education should reflect the following points: (1) Functional, (2) Adaptable, and (3) Attractive. Let's take a look at each of these points in more detail.

*Functional.* This suggests that the building and related facilities are suitable and fill the need reflected in a well-organized modern program of instruction. The teacher is not limited in his teaching because of a lack of suitable and convenient facilities. The facilities are designed with the teacher and learner in mind.

*Adaptable.* The facilities are not so fixed nor permanent that changes in program cannot be made. There is no sacred area that is designed for one purpose and one purpose only. Such features as folding room dividers, adjustable seating arrangements, and many other features should be common.

*Attractive.* Classrooms, laboratories, or shops need not be dull. Proper decoration, setting, and a little imagination can turn most facilities into a place where students and teachers alike feel at home, where they can take pride in the facilities, and where improved learning can take place. In short, the facilities should inspire all concerned to give their best regardless of the educational activity underway.

What are the essentials of a modern facility for agricultural education? Perhaps no single answer can be given which would be acceptable throughout the country. However, a few key points would seem to be in order. Let's start with the classroom.

1. *Classroom.* For the Student—Size Sufficient to meet the needs of the largest class. Proper lighting, both natural and artificial, are a must. Minimum standards of lighting should be adhered to and generally surpassed. Seating should provide the flexibility needed to work with different groups. Comfort and simplicity should be stressed.

(Continued on next page)

## From the Editor's Desk

### Eight Steps In Improving Facilities

The real justification for modern classrooms and shops for vocational agriculture lies in the contribution which they can make to the education of the students. Modern facilities provide a pleasant inspiring environment for learning. They permit the use of modern education procedures. They boost the morale of students and teachers alike. In spite of these advantages, 235 thousand classes in the U.S. were held this year in classrooms built prior to 1920. Some of these classrooms are still used for vocational agriculture. On the other hand, many communities have built modern facilities for vocational agriculture as evidenced by the articles in this issue.

Some teachers ask—"What can I do to secure the kind of facilities which are needed in my program?" While there is no universal panacea here are some suggestions which have worked.

- *An active, well organized program of vocational agriculture involving high school, young farmer and adult farmer students is the first step.*

In the final analysis dollars are spent where they will benefit the largest number of people who have the greatest educational needs. Most new churches are built to relieve crowded sanctuaries rather than for anticipated congregations.

- *The entire community must be well informed as to what is being done and what is accomplished through the vocational agriculture department.*

The larger the community, the more important public understanding becomes. In any community, however, an appreciation for vocational agriculture must extend beyond those who receive its immediate benefits.

- *The best possible use must be made of present facilities even though they may be inadequate.*

Poorly kept and inadequately used facilities suggest that even though new facilities were provided that the same practices would prevail. It's a matter of doing the best you can, where you are with what you have until improvement can be made.

- *Any proposal for facilities for vocational agriculture must be related to the needs of the entire school for classrooms.*

The schools of this nation are facing a classroom shortage. Last year reports show a shortage of 124,300 classrooms in comparison to a total of 1,486,684. Preferential treatment for the vocational agriculture

(Continued on next page)

## Facilities . . .

For the teacher—An adequate chalkboard, display board, and bulletin board are essential. These are used daily by the effective teacher. Complete facilities for the use of audio-visual aids should exist. Although not a new idea, a demonstration table with all the necessary conveniences (electrical outlets, water, gas, etc.) is a must. This table should be functional and adaptable—to testing milk, soil, or plant tissues, demonstrating classroom units, or serving as a base for the preparation of teaching materials. Needless to say, the full room should be easily covered by a sweep of the instructor's eyes.

2. *Agricultural Shop.* Provisions for the instruction in the major areas of agricultural mechanics as well as other units of instruction should be provided. This suggests an area of the shop which is adaptable for groups to be seated, which can be used for display purposes, or may be useful as a demonstration area for units taught in the classroom. Safety must be built into the facilities—as well as an awareness on the part of the teacher.

3. *Storage.* Adequate space and arrangements for storing instructional supplies and materials, shop or classroom projects, and other items should be provided. Not all of this space need be within the building. An attractive adjacent area for storing or parking machinery may be useful for a good part of the year. The storage space and overall facilities are so arranged that good housekeeping becomes the "teacher's choice" and not the "teacher's chore."

4. *Land Laboratory.* Increasing attention is being given to carrying out classroom teaching by actually applying the principles learned, whether in plant or animal production, farm management, or agricultural mechanization. Special agricultural laboratories, such as greenhouses, forestry plots, demonstration plots, are becoming common. These should be provided as a regular part of the facilities when these areas are a part of the instructional program.

5. *Office.* The modern teacher of agriculture should be provided with adequate facilities to meet his need as a professional person. Provision for files, storage of unusual teaching materials, adequate room for counseling with students, and provisions for small group meetings should all be considered.

6. *Showcase.* This is a place where

agriculture can be kept before the school public and the general public. It is more than a showcase where trophies are displayed. Attractive exhibits can be shown, new products and ideas called to the attention of groups, and actual work of students be reviewed.

In conclusion, any facility for agricultural education should reflect the goals and objectives of the teaching program, keeping in mind the criteria of functional, adaptable and attractive. Remember too that facilities are only a means to an end—and not an end in themselves. High quality teaching is still the bulwark upon which our program succeeds or fails. □

## Eight Steps . . .

department over other departments in the school cannot be justified nor will it be to the advantage of the program.

- *Administrators, school board members and participants in the vocational agriculture program should have opportunities to visit desirable facilities.*

There is no substitute for first hand observation. Such visits, if arranged in connection with district meetings and contests, can serve a double purpose.

- *Specialized assistance should be secured both for planning and construction.*

Architects and state supervisors can assist in presenting ideas on many different types of facilities. Teachers should generally avoid using classes to build or improve facilities. The function of the teacher is to teach rather than to serve as a painter, blacklayer or construction foreman.

- *Plans should be made in terms of present as well as future needs and trends.*

Classrooms and shops are relatively permanent. Plans which indicate consideration for the future and facilities which are adaptable to multipurpose uses are most acceptable to the taxpayer.

- *Improvement of facilities should be a continuous process.*

Facilities include equipment as well as classrooms and shops. Some items of equipment should be added each year. The same principle can also apply to adding desirable features to the classroom and shop. □

*Ralph J. Woodin*

## LETTERS

Sir:

"A Step Ahead" is unquestionably the finest movie on the subject of opportunities in agriculture that has been published. We are deeply grateful to the New Holland Machine Company for producing it, and to the New Holland distributors and dealers for making it available to teachers of vocational agriculture. The movie will make a valuable contribution in showing young people of the farm that there are good careers in the broad field of agriculture where their farm background and experience will be valuable assets to them.

We heartily recommend the movie to teachers who wish to broaden the understanding among farm boys and girls, and their parents of the wide diversity of opportunities that exist in agriculture. And while the movie is directed principally at young people of the farm, it also should have significance for adult members of civic and service clubs who realize that farmers and agricultural workers have an important contribution to make in their respective communities.

A. W. TENNEY  
National Advisor  
Future Farmers of America

Sir:

In the article "Teaching Farm Building Construction," I feel that Mr. Hen-

derson has hit upon many good points.

It would be wonderful if we could accomplish what he outlines in a Farm Building Construction Course but in my school the securing of the necessary materials would be a big problem. I think also that this type of teaching unit would fit into a Young Farmer unit to a much better advantage. They would be more receptive to the unit and the material to be covered.

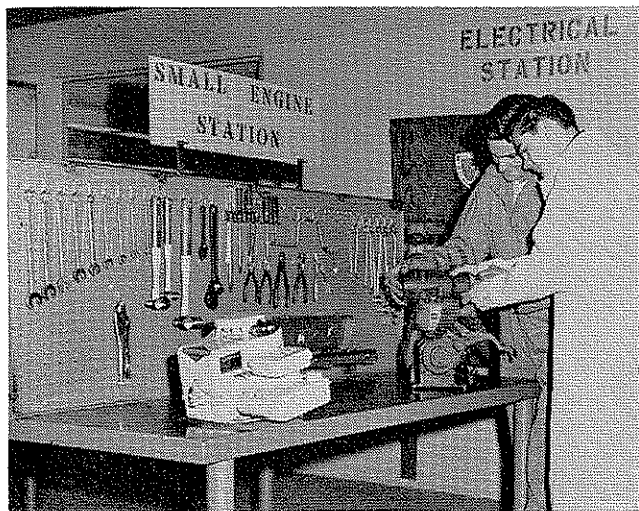
J. JOE WRIGHT  
West Liberty, Iowa

Sir:

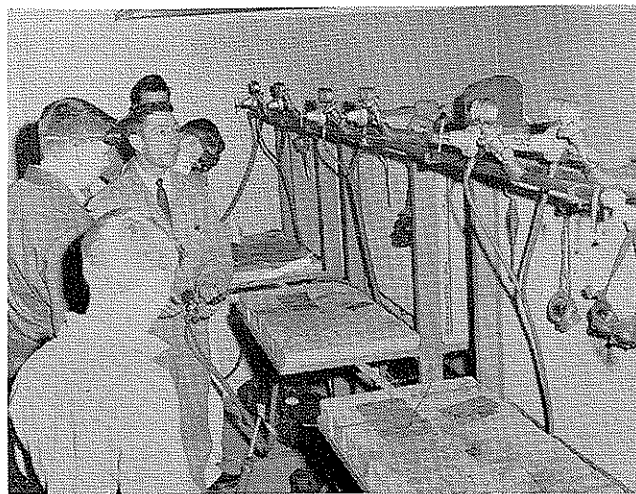
Congratulations to educationalists Coster, Nelson and Woerdehoff for their fine work. Theirs may appear at first glance to be purely clinical research, but it definitely is not. It is among the types of studies vitally needed today to help vocational agriculture adjust to some of the severe demands being made upon it.

We in vo-ag can better keep up to date on the changing trends and needs from this sort of clear, concise and to-the-point research. We can see the direction toward which public understanding of our program is heading. Being warned beforehand we can take steps to correct what might become an unfavorable image of vo-ag, either by increasing our

(Continued on page 254)



THE SMALL ENGINE station contains the necessary tools and equipment to completely overhaul this type of power unit. A work area is provided on each side of this tool board.



OXYGEN and acetylene for these stations all comes from one source, with each individual student able to regulate the gas at his station. Each student becomes proficient in both gas and electric welding before moving on to other stations.

Here in our community we have attempted to design our vocational agriculture department to meet the needs of the students enrolling in vocational agriculture at our school.

Due to the close proximity of our community to a large metropolitan center, a high percentage of our graduates, being unable to become established in the business of farming, quite naturally migrate into jobs related to agriculture. The needs of these students can best be met by providing basic training in the various areas of agricultural mechanics.

#### Shop Designed for Learning

We designed our physical plant with the thought in mind that a classroom and shop that was well lighted, heated, ventilated and easily cleaned would provide a better atmosphere for learning.

## A Modern Oklahoma Shop

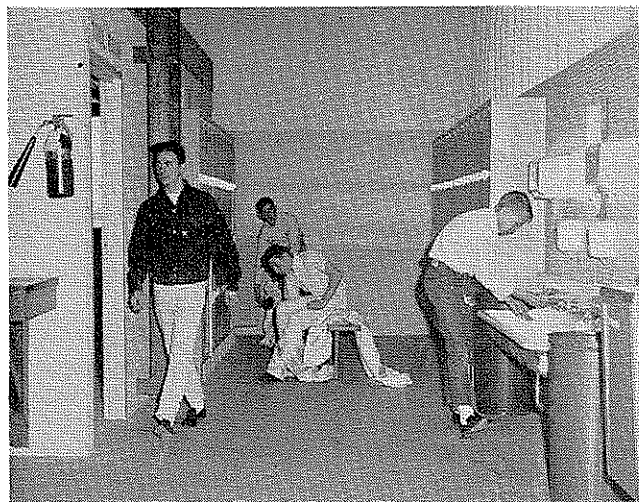
EDWARD PERRY, Vocational Agriculture Instructor, Jenks, Oklahoma

The classroom has an area of 648 square feet with adequate storage space for reference and laboratory material. The office is 8' X 10' and is enclosed in glass, giving a full view of classroom and shop. The agriculture mechanics shop has an area of 1800 square feet. This includes a 6' X 24' tool and supply room and a 10' X 24' locker and wash-up area.

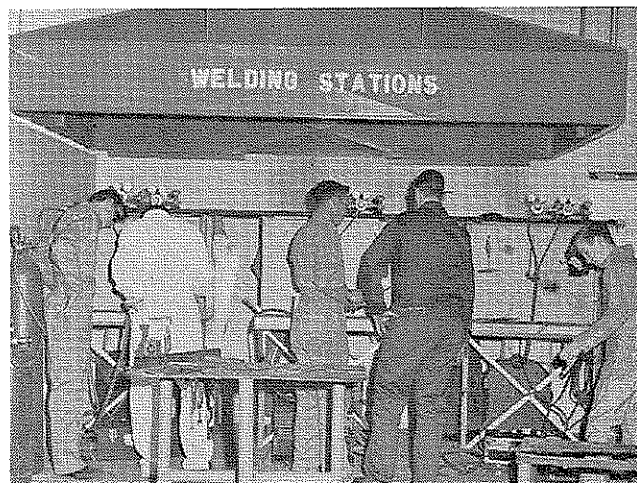
Providing individual lockers for work clothing and plenty of lavatory space for the students to clean up at the end of the period, has proved to be a real asset in our shop program.

A 60' X 11' patio gives us 660 square feet of outside work area. This area is under roof and provides room for stationary equipment. This patio area is well lighted and adequately wired.

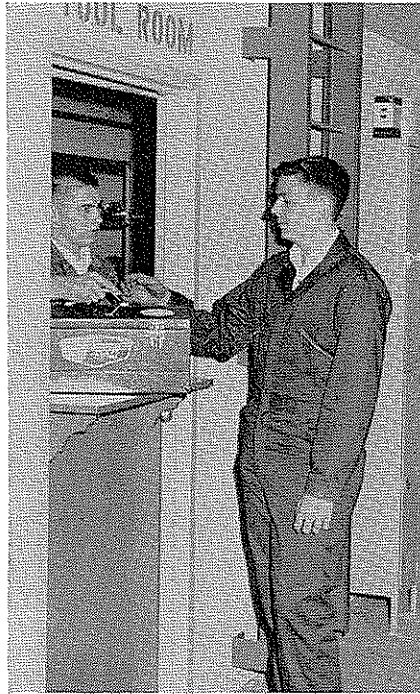
Our shop is set up and equipped for station method of instruction. All equipment for the various stations is arranged around the outer perimeter of the shop, leaving the center area open for tractor maintenance and repair, as well as the layout and construction of larger pieces of equipment.



LOCKERS and a lavatory provide adequate space for students to wash and keep their shop clothing. A clean-up period follows each session in the shop.



TWELVE students can work at the welding stations in the Jenks shop. Oxyacetylene stations are on the near side of this station, and arc welding is on the back side. An overhead exhaust system removes all smoke and odor from the shop.



ONE STUDENT is in charge of the tool room on a rotating basis at the Jenks shop. This box contains all the necessary tools and equipment for acetylene welding, with other tool boxes provided for other learning stations.

### Welding Emphasized

The welding stations are designed to accommodate both electric arc and oxyacetylene welding. These stations are under a 8' X 12' canopy, equipped with an exhaust fan which eliminates smoke and fumes that have been a problem in the past. This station can

Ed Perry has taught vocational agriculture for 14 years, 10 years at Jenks. He completely planned the new vocational agriculture shop and classroom facilities at Jenks, Oklahoma High School. He designed the shop to scale, including each piece of permanent machinery and each training station. The Jenks shop was one of the first in Oklahoma to start teaching inert gas welding and includes every modern method of effective shop teaching.

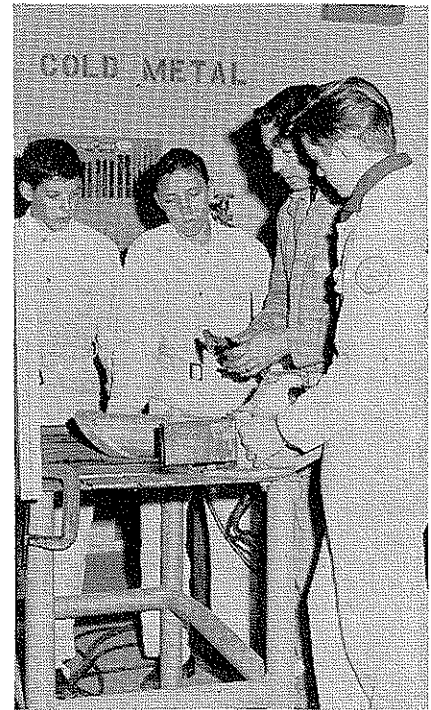


Edward Perry

Byrle Killian  
Special Editor

accommodate 12 students at one time. Recently, we added Heli-arc or inert gas welding to our shop. This type of welding will be of real value to our students, since we can now give basic instruction in welding metal alloys that cannot be readily welded with either oxyacetylene or the electric arc. Instruction at this station is reserved for students who have become proficient in oxyacetylene and electric arc welding.

Other work stations include cold metal, soldering, plumbing, tractor maintenance and repair, rope and leather, electrical wiring, small engine repair, concrete, and paints and painting.



FAMILIARIZATION with inert gas welding is given by instructor Perry as three students at Jenks pay close attention. Students desiring to learn this method of welding will be given the opportunity here.

All necessary tools and equipment are provided at each station and are openly displayed.

By utilizing our shop space in this manner and providing the necessary tools at each station, we can handle 20 to 25 students per hour without too much lost motion or time. □

## Now Here's an Idea

### Mapping Farm Visits

By Mike Cullen, Willmar, Minnesota

#### EDITOR'S NOTE

Each year the "Exchange of Ideas" is a feature of the N.V.A.T.A. Convention. To enter the contest, any N.V.A.T.A. member may report an idea which he has obtained from another teacher at the Convention. Some of the winning ideas will be reported in the "Magazine in this and in future issues.

Here's an idea which I picked up in visiting with Kenneth Melin, Park River, North Dakota.

Ralph Butterfield of Wishek, North Dakota has simplified his farm visit planning by taking a county highway map and covering it with plastic. He takes an ordinary map, mounts it on a piece of cardboard and covers it with clear plastic. He puts tape on

each edge and uses a grease pencil to mark his visits.

Each student's farm is located with a small round sport of book binding tape and a number with grease pencil. Along the edge of the map, each student's name can be typed on the map. As the student is visited the round tape is removed and placed by his name. If this is done each month it serves as a record of visits for the month. You may record the date of the visit by the name or use a small piece of tape on which to record the date of the visit. A change in your map can be made with a piece of Kleenex or you can start all over again. □

### Recognizing F.F.A. Mothers

Walter Penrod, Teacher of Vocational Agriculture, North Manchester, Indiana.

This idea was obtained from Norman Helgedick, Teacher of Vocational Agriculture, Lancaster, Missouri.

The role of mothers in molding our F.F.A. boys has often been overlooked according to Norman Helgedick of Lancaster, Missouri. We have given our boys and their fathers much publicity and encouragement during the past years.

The Council Bluff F.F.A. boys decided that with their limited funds if they were to pay proper tribute to all their mothers at their parent and son banquet a method would need to be found to minimize the cost. After thinking about a beautiful corsage for each mother, it was decided this would be an appropriate tribute.

By purchasing from a local florist the raw materials such as national blue ribbon, golden pompoms, and wire, a beautiful corsage was prepared for each mother and a lesson within the school in floral arrangement was taught. □

Common sense, in an uncommon degree, is what the world calls wisdom. —Coleridge

# Facilities for Multiple Teacher Departments

RALPH J. WOODIN, Teacher Education, The Ohio State University



Ralph J. Woodin

Like many other states Ohio has developed recommendations for vocational agriculture facilities. These suggestions on facilities for multiple teacher facilities are a part of a bulletin "Facilities Recommended for Vocational Agriculture Departments in Ohio."

Classroom facilities should be of ample size for Future Farmer meetings and for classes of Young and Adult Farmers. Increased farm mechanization has emphasized the need for farm mechanics instruction which is an integral part of the local program of Vocational Agriculture. The shop facilities should be ample for the type of farm mechanics instruction needed in the community.

Effective programs of vocational agriculture depend upon both competent instructors and adequate teaching facilities. Considerations for a department of vocational agriculture should include a convenient site, sufficient classroom size, a conference room, well-equipped shop, provisions for storage of equipment and supplies,

student lockers and well planned building utilities.

These recommendations are designed to provide suggestions to school administrators, boards of education, and school architects in planning satisfactory facilities in a high school. Architects should consult with local teachers and state supervisory staff in planning department classrooms and shops to meet needs of individual communities.

Persons planning facilities should consider future expansion and development of the school, particularly as it may affect the program of vocational agriculture. Departments which anticipate enrollments exceeding 45 students should recognize the possibility of a multiple teacher unit.

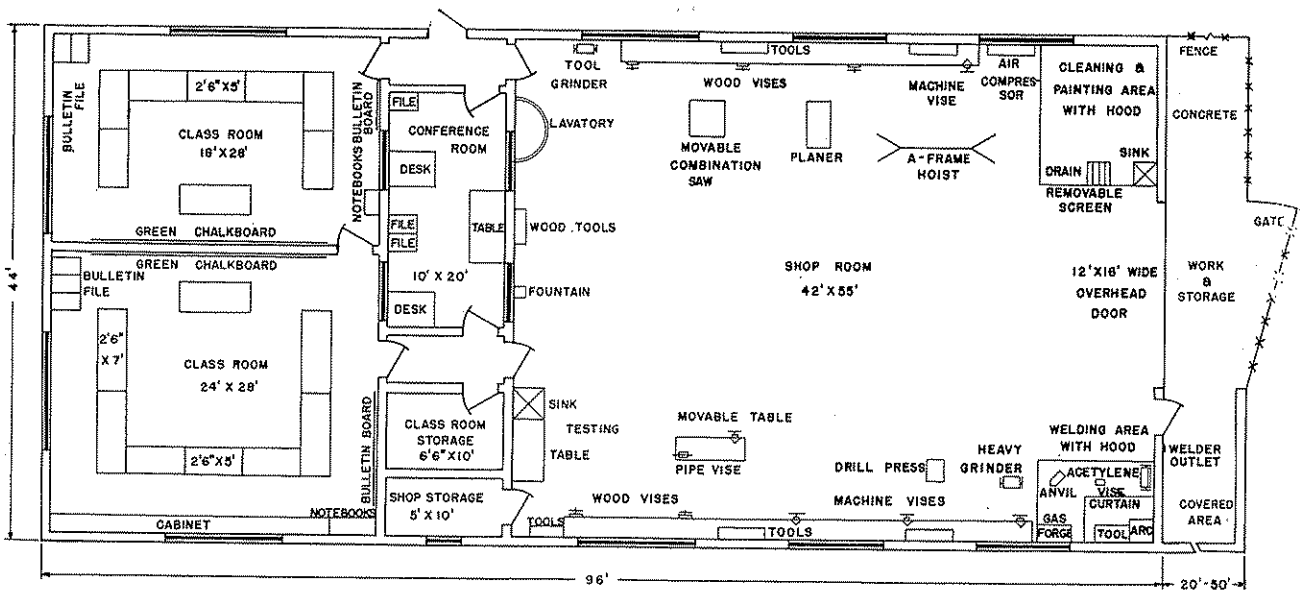
### Site

The classroom and shop for vocational agriculture may be a part of an existing high school building, an addition or a separate structure. Both rooms should be planned with outside entrances which give access to the de-

partment without use of other parts of the school plant. This is especially desirable for evening meetings and provides economies in heating and utilities.

The shop should be located so that large farm equipment can be easily moved in and out. An adjacent, fenced-in area of 500 square feet or more which is hard-surfaced will permit space for both outside mechanics work as well as storage. The location of the shop should be such that temporary outside storage does not detract from the appearance of the school building.

**MULTIPLE CLASSROOMS**—Departments with present or potential enrollments exceeding 45 high school students justify multiple classrooms. The second room should be conveniently located to other department facilities, reference materials, library and teaching aids. Planning for multiple room departments should follow general recommendations outlined for single room units. □



FACILITIES FOR 45-60 STUDENTS.  
FOR TWO OR MORE UNITS ADDITIONAL  
SHOP AND CLASS ROOM SPACE ARE NEEDED.

PLAN THREE  
VOCATIONAL AGRICULTURE  
CLASS ROOM & SHOP



# Facilities for Farm Shop Unlimited

HERBERT W. MACKEY, Vocational Agriculture Teacher, Norman, Oklahoma



Herbert W. Mackey

*Herb Mackey has taught at the Norman, Oklahoma High School since 1948. He has established an outstanding shop program, along with other phases of vocational agriculture instruction. The Norman department is used as a teacher training center. Mackey has been active in inservice training, including observation of shop procedures at Tinker Air Force Base, where he serves as a Major in the inactive reserves.*

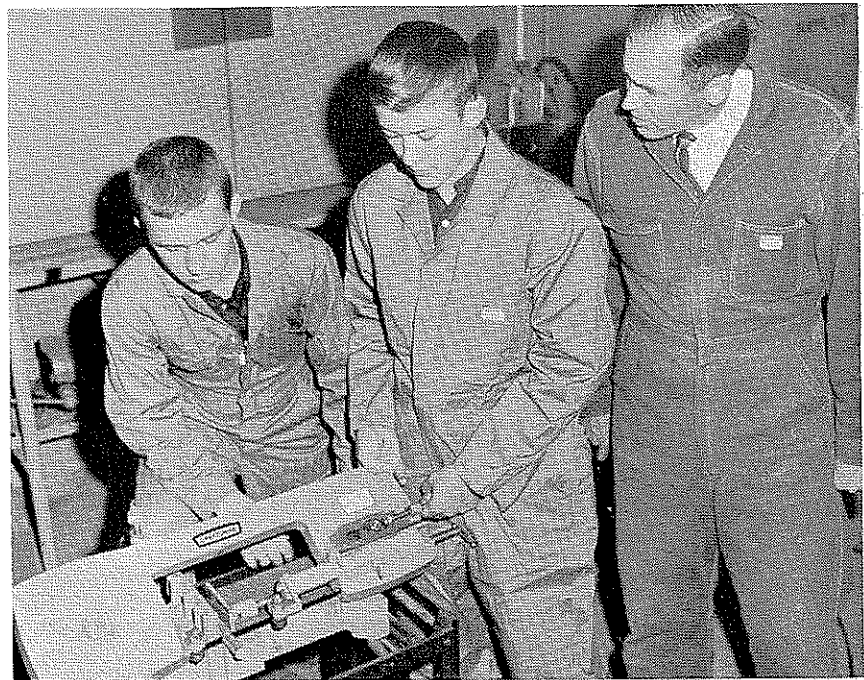
*Byrle Killian,  
Special editor*

A farm shop facility must serve a useful purpose. It must tend to make the job of teaching less difficult for the instructor and to promote the ease of action, operation, and learning of the students. The ideal farm shop situation has adequate facilities plus a well qualified instructor who is capable of teaching all the necessary skills which are needed in modern agriculture. The lack of either can seriously hamper a farm shop program.

Our farm shop is small in size (740 square feet), but this does not limit our activities. The only stationary equipment is the large drill press. Everything else is movable, as we use automatic reel-type extension cords. This allows for a great degree of flexibility to fit our needs. Four undesirable characteristics of our physical shop stand to be corrected to make it an ideal shop; these characteristics would be an increase in space, a larger outside door, an improved exhaust system, and a larger outdoor storage.

## Necessary Equipment

We have the following equipment in our shop: drill press, two pedestal grinders, one roll-around flex shaft grinder, four electric welders, one gas welder, one air compressor and paint equipment, two power hacksaws, one portable spot welder, one auxillary power plant, one floor jack, one chain



TWO STUDENTS operate the power hacksaw under the supervision of instructor Mackey. Coveralls are a required uniform in the Norman farm shop.



A SPOT WELDER in the Norman shop is a handy and fast way to secure sheet metals. Students use this machine on many projects requiring thinner types of metals.



hoist, three electric drills of various sizes, one power hand grinder and polisher, a complete set of soldering equipment (conventional and instant heat), two vises, two anvils, one bench punch (capacity of ½ inch metal), mechanic tools, including an impact wrench, glazing equipment, pipe vice and dies, two tap and die sets, one power hand saw, and ample storage space. This is the equipment that is used. We do not have any equipment that is not put to use.

I want to mention the usefulness of our bench punch. This little piece of equipment will save many hours of work and lots of drill bits. We can punch holes ⅛ inch to ½ inch in diameter through ½ inch metal very quickly.

We would like to add to our inventory one inert gas welder (Heli-arc), one hydraulic tube and bar bending machine, a hydraulic press, and one metal turning lathe.

Our farm shop skills are taught to

the entire class, small groups and to individuals. In this manner, we can reach every boy regardless of his learning ability, and we do not hold back those who are eager and capable of faster progress. The only woodwork that is taught is rafter cutting and the use of the framing square.

I have been pleased by the interest and proficiency attained in our farm shop. Cooperation is a standard operating procedure. This is very noticeable when tractor and machinery overhaul is being performed.

#### Safety is Stressed

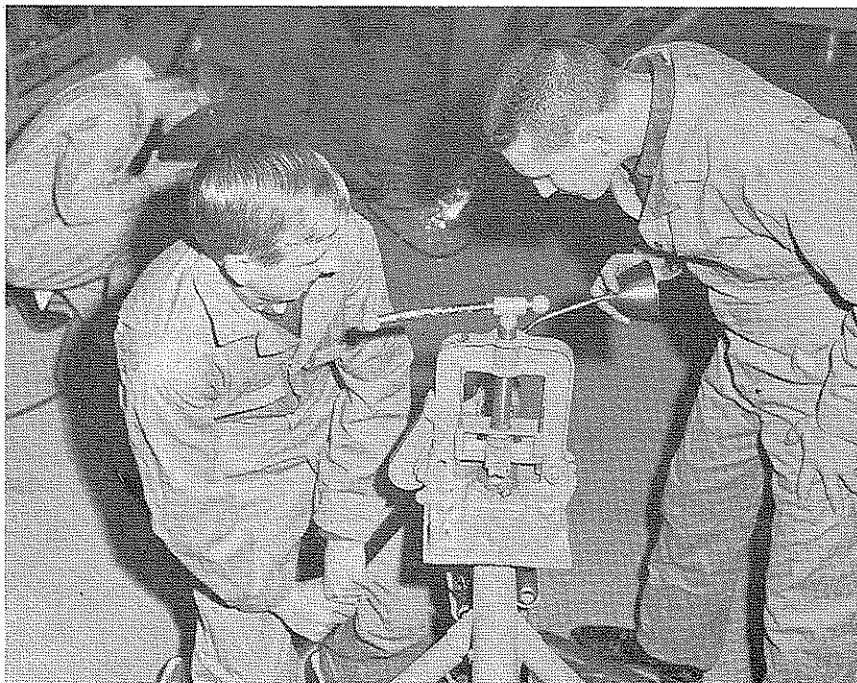
The entire farm shop is an eye hazard area, and safety glasses should be worn at all times. We stress safety in our farm shop, and we believe it will always pay dividends. Shop clothing is a must if you are to get maximum participation from the students. Coveralls are very good shop clothes and also may be used on field trips.

Our shop is used by our adult and young farmer classes. A lot of the equipment used in our agriculture work is made in our farm shop, such as rope, feeders, scales, and many other items. We are constantly trying to improve our facilities, and I personally strive to improve myself so that I may be capable of teaching new skills necessary to meet the student needs.

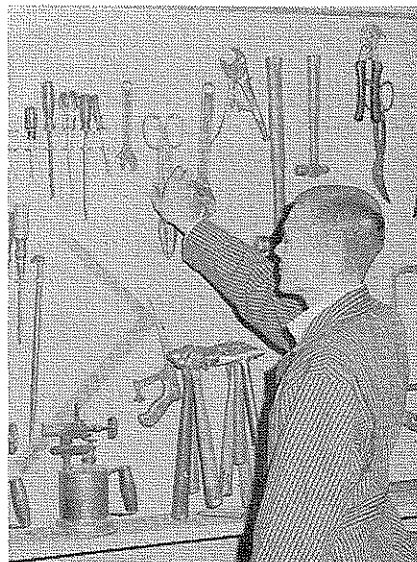
In our modern-day vocational agriculture, the farm shop will offer a way to meet the challenge as no other single means can. □



**A HOLE PUNCH** saves many hours of drilling and many dollars worth of bits at the Norman shop. One student punches holes in a project, while another tries a bolt in the punching job he has just completed. Holes can be punched in metal up to one-half inch thick with this device.



**PIPE THREADING** and fitting is just one of the many skills which all vocational agriculture students at Norman learn.



**TOOLS** are kept categorized in closed cabinets at the Norman shop. This cabinet contains the metal working tools.

# Both Sides

## Teaching Voc Ag Is a Full Time Job

HAROLD R. CRAWFORD, Teacher of Vocational Agriculture, Sac City, Iowa



H. R. Crawford

At the outset of this article I would like to make my position clear as to whether a vocational agriculture teacher can teach and farm too. It isn't that I do not think a teacher can do this, but rather it's that I do not think a teacher should try to do this. Teaching vocational agriculture is a full time job in itself; farming, too, is another full time job. When I refer to farming, I think not only of the teacher who lives on and operates a farm, but also the one who manages farms as a sideline, either his own or for others. When one teaches, he has an opportunity to serve mankind and to work with our nation's greatest crop, namely farm reared boys. Youth are a demanding lot with which to work and teaching them takes a considerable amount of time, effort, and patience. This is the work which the school board has hired and expects the teacher to do.

Why would a teacher of vocational agriculture want to teach and farm at the same time? I presume the answers are many, but in all probability the most likely answers would be: (1) It's an additional source of income and a way of building up one's net worth. (2) It keeps one close to practical agriculture. (3) It's so relaxing to get out on the farm away from the classroom and office.

### Teaching May Become a Sideline

Let's consider the first reason. I will not deny that farming as a sideline will add to a man's net worth and provide him more capital. But when we attempt this, is it the farm that is the sideline or is the situation reversed, and the teaching of vocational agriculture the sideline. To operate and manage a farm success-

fully requires constant thought, planning, and work; and above all, is very demanding on the person's time. When a teacher is doing this, he can not be using his time for the job which the community has hired him to do. Another factor to consider is the expense and inconvenience of travel to and from school. Vocational agriculture teachers have much night work and need to be away from home many evenings, so there would always be the feeling of coming and going as well as the expense of travel. This could be a minor factor with some teachers but it is one that must be considered.

Any good teacher will recognize that it is of vital importance for the teacher of vocational agriculture to keep abreast of new developments and to keep close to practical agriculture. This I consider a must, especially when working with adult and young farmers. But does the teacher have to farm or manage farms to accomplish this goal. I don't think so. There are other ways which may be included in the regular routine of the teacher to see agriculture in its practical state. I would rank, on the farm visits and project supervision with high-school boys, young and adult farmers, as the best way to keep close to agriculture. Probably this will not be the teacher's goal when he sets out on a farm visit, but before he returns home, if he has been alert at all, I am sure the teacher will have learned as well as have taught. The vocational agriculture teacher has an opportunity to take boys and farmers on field trips and tours. Often these trips or tours are to farms where new innovations have been put into practice, and here again the teacher can see and learn about real situations. Many times the vocational agriculture teacher could not have had these on his own farm anyway, due to lack of funds or time. School or F.F.A. farms are another means of learning the practical side of agriculture. As an example, when raising corn on the

F.F.A. or school farm, the teacher can actually see and teach how plant population affects yields, what it costs to grow an acre of corn, why the fields are rough on spring plowing, and why the corn picker must be adjusted correctly. I would grant that it will take almost as much time to adequately supervise the operation of a school farm as it will one of your own, but at least you are doing your job with boys and devoting your time to education, and not as a part-time farmer.

### Farming May Become Another Worry

Yes, it is relaxing to leave school and go out on the farm where it's quiet and there is no one around to bother you. I think all of us need some other interest or hobby to relieve our mind of the tensions and problems that arise in the everyday school situation. My point is that I feel the operation of a farm or practicing farm management will be so big that it's beyond the stage of a hobby. Instead of it being a relaxing experience for the teacher, it becomes a burden and another worry. One can not use the argument that the teacher can spend his Saturdays on the farm because even they are not his own.

I believe that teaching vocational agriculture is a full time job, and that the teacher is providing the opportunity for criticism from his community if he tries to farm and teach too. We vocational agriculture teachers have more work to do now with the regular teaching duties than we can get done, so I question the advisability of taking on such a large task or sideline, as farming; even though we will admit that it may supplement the teacher's income, keep him close to agriculture, or be a relaxing experience.

Let us all be thankful that we have the opportunity to work with farm boys and men, and to aid in the molding of young lives which will be the future of agriculture. Let this be our first concern.

# of the Issue

## Teaching and Farming Can Be Combined

JOE HARPER, Teacher of Vocational Agriculture, Colo, Iowa



Joe Harper

If a man says he believes in a particular type of life, others will come closer to believing him if this is the type of life he lives. I believe in agriculture and in rural living, and want to live this type of life. I am convinced that this can be done, that a vocational agriculture teacher can teach and farm too.

I have always had a dream of owning and operating my own farm and I am doing it while still teaching vocational agriculture. Many vo-ag instructors have a desire to farm and this can be satisfied without his leaving the teaching field.

My department has three day school classes, an FFA membership of 47, an adult evening school of 45 farmers, and a young farmer class of 25. This is a full time job and yet I manage my farm in addition, using my free time before eight in the morning and after six in the evening.

I live on the 120 acre farm I am buying. I carry on a livestock program of a purebred herd of Durocs and a small flock of sheep. Perhaps one reason I am able to handle the operation is that I rent out the crop land. We use a rather unique arrangement, renting this land to the church. I manage it for the church, with the farmers in the church doing the work, and their half of the proceeds goes into the building fund. This takes the time consuming field work out of my hands and yet I am able to be a very definite part of the operation. This community service project has certainly helped to fill the need of each of us being of service.

### Farming Makes You a Better Teacher

Sure there are problems when you are teaching and farming, but I am sure the many advantages outweigh

the disadvantages. Let's speak first of the things to be gained. The experience you receive in actual farm management is tremendous. When you talk to farmers about budgeting, cost of fertilizer, new feeding methods, financing, and timeliness of operation, you know what you are talking about. The actual experience makes you think and teach much more practical ideas and information.

Your own operation can serve as a good way to demonstrate new ideas and methods. As an example, I talked to both my young farmer class and my adult class about the use of feeding stalls for brood sows to control feed intake. No one ever tried them. However, this year there are several using them after I designed, built, and am using some rather inexpensive, portable stalls, with good success.

### Family Benefits From Farm Life

One of the big advantages to me, is the advantage to my family. My children are learning good work habits and what real work is. They are given responsibilities and are learning some dependability. They now have an opportunity to make some money and a way to reach the goal of having finances for their own college education. I am proud of my farm heritage and want my children to have the same desirable background.

All of us are concerned about money. Farming will give extra income and with this extra income we can keep our good ag men teaching rather than leaving for greener pastures. Don't forget that this is an investment for future security. Many teachers make investments of all types during their careers. Why not make this investment in the business they are teaching, are telling others is a good business, and are interested in?

The teacher that is teaching and farming too, is more apt to stay in the community, and longer tenure is one of our greatest needs for improving

the programs in individual vocational agriculture departments.

To do the same thing day and night can get a person down. We need a change once in awhile. Many teachers spend time playing golf, fishing or working in a store part time. I can relax just as well after a hard day at school by doing a few chores, by stretching some muscles out on the farm.

### Dangers to Avoid

For anyone to attempt to teach and farm too, there are several things of which he must be careful. First, and foremost, he must not slight his work as a teacher for the work that needs to be done on the farm. If farm visits need to be made, they come first. This requires some planning, some budgeting of time. I have helped to solve this problem by renting out my crop land.

Before considering such an undertaking, consider the attitude of your wife and children. If they are not enthused about this venture you are in for trouble. They all need to realize that there will be work and that they will have to do their share and sometimes more.

The vocational agriculture teacher needs to be careful he doesn't use his farm in ways that will cause criticism. I feel that some field trips to my farm are of value. If we need a good class of livestock for a judging workout, they are easily lined up right there. But it can be overdone. Perhaps one field trip to show methods of pruning fruit trees is of value, but more trips to finish the job is wrong. Hiring students to work on your farm is a good way to give the boy an opportunity to increase his income but might open the door for criticism.

Farming while teaching requires extra work, at both jobs. But the satisfaction to me and to my family, the knowledge and experience gained, and the prestige gained, makes me happy and proud that I am teaching and farming too. □

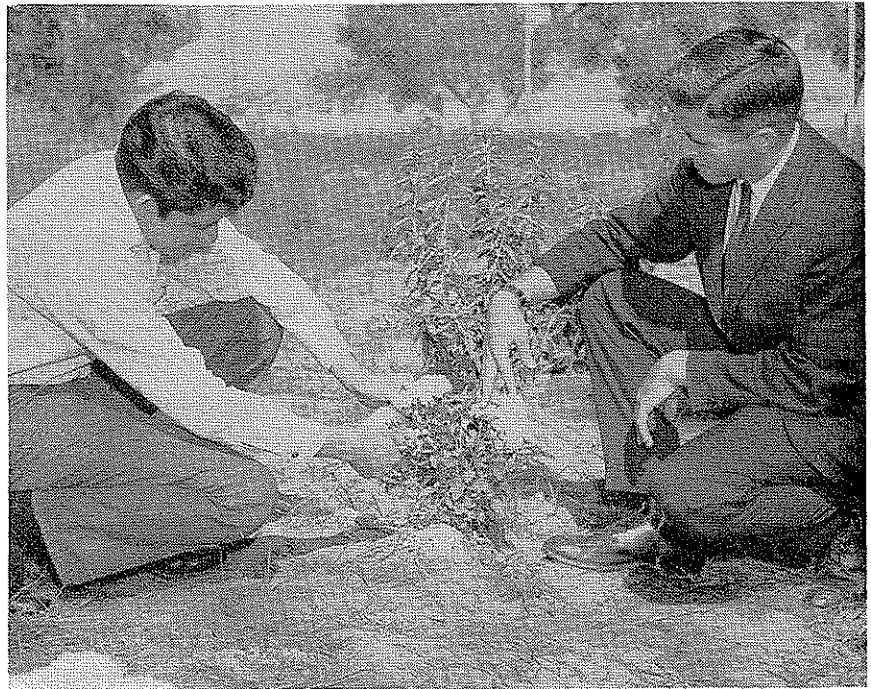


Richard Clugston

Bowie High School is located in the densely populated low-income section of El Paso, Texas, less than four blocks from Juarez, Mexico. All students are of Latin American origin. While the vocational agriculture program will soon complete its twentieth year of operation, less than two percent of the more than 1000 boys enrolled in vo-ag during this period have been "farm boys." Over the years, students have changed little; the vocational agriculture curriculum and farm laboratory program have changed markedly.

The school farm laboratory, located on the high school campus, originally consisted of ten acres of land used for cotton production, swine and lamb feeding facilities. The entire farm laboratory program was operated on a cooperative basis with students sharing in all work necessary to the operation of the laboratory. Since 1945, much of the land utilized for cotton production has been converted into two football practice fields, a baseball diamond, and surfaced courts for basketball and tennis. Additional land adjacent to the high school campus was acquired and the present laboratory occupies approximately 3½ acres of land. As the use of the land has changed, so has the philosophy of the program to meet the needs of boys located within a city of almost 300,000 population.

Twenty years ago, efforts were made to train boys as small farm operators and workers on larger farms. Ten years ago, the program's philosophy



Checking chrysanthemums in the nursery area are Frank Candelaria, a senior vocational agriculture student, and Mr. Clugston.

## Vo-Ag in Downtown El Paso

RICHARD D. CLUGSTON, Teacher of Vocational Agriculture, El Paso, Texas

was one of developing a knowledge and appreciation of agriculture as a vocation or avocation. Within the past six years, with the understanding and support of the El Paso Public Schools administration, the farm laboratory has been developed into one of the most concentrated and yet diversified in the area.

A program has evolved which, while it emphasizes economic and orna-

mental horticulture, landscaping and home and garden maintenance, also provides students with an over-all view of agriculture and experiences in many of those areas.

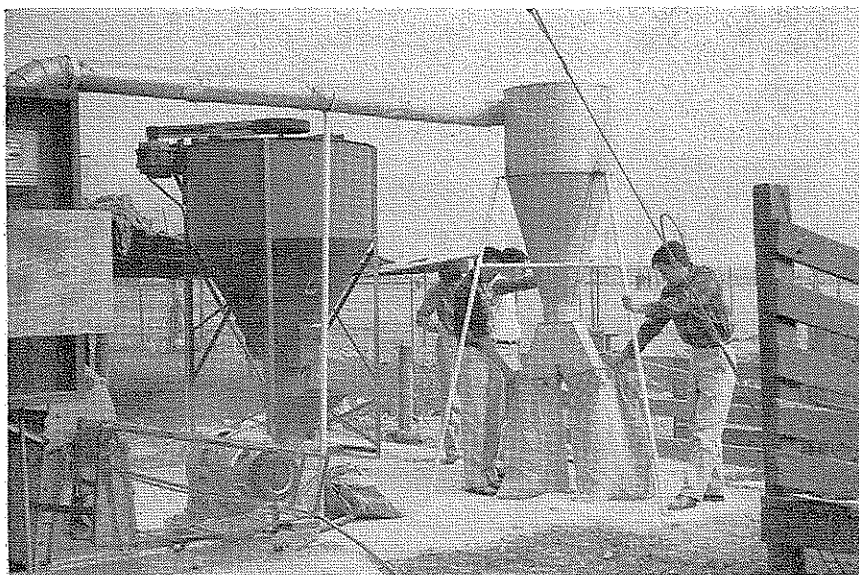
The Bowie High School Farm Laboratory has three greenhouses. One, a 14 X 21 feet glass house equipped with automatic heating, ventilating and humidification equipment is used for house plants, orchids, and plant



Students poured the foundation for this surplus 20 X 56 foot quonset-type building purchased for \$250.00. The completed building is used for the farm flock of Rambouillet sheep.



This 20 X 80 feet plastic covered greenhouse was constructed by students in less than 10 days. Scrap boiler pipe, obtained from the school system, was used in the basic frame, along with new lumber. The entire greenhouse was built at a cost of less than \$1500.00.



Feed preparation equipment—used for livestock projects.

propagation. A 9 X 12 feet portable plastic house is used for bedding plants and special demonstrations and a plastic-covered 20 X 80 feet greenhouse equipped with automatic heating and cooling equipment is utilized for students' individual projects. Hot

beds and cold frames are located near these houses. All greenhouses are watered through an automatic fertilizer injection system providing continuous low-level feeding of plants. A two-acre nursery and vegetable garden area is located adjacent to these facilities.

In addition to horticultural facilities, the farm laboratory has swine facilities

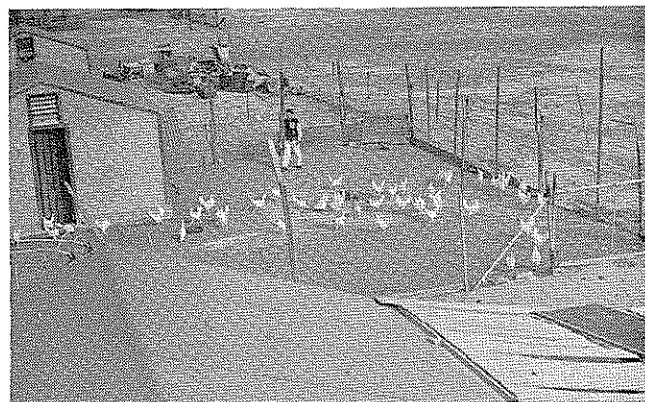
consisting of four breeding pens, a farrowing house and 20 concrete fattening pens equipped with individual automatic water fountains. Eight pens are maintained for beef and dairy calf feeding and a 20 X 56 feet quonset-type sheep barn is designed to be used as an open barn for the laboratory flock or it can be converted into a lambing barn with 24 pens within an hour's time. A flock of 200 hens are also housed on the farm laboratory. All livestock and poultry feeds are prepared on the farm utilizing a 9-ton bulk storage tank, feed grinder, mixer, scales and mixed feed storage facilities.

First year students normally carry individual livestock and vegetable garden projects, while second year students usually carry two livestock projects or a livestock and a plant project. Third and fourth year students concentrate on the horticultural areas of the program.

A program was recently initiated with the parks department of the City of El Paso to provide summer employment for selected students in the program. Additional employment opportunities are available for students with local nurseries, florist shops, seed stores, commercial landscape concerns, and grounds-keeping for commercial and industrial concerns. □



Jose Alvarez pots a house plant in the glass greenhouse. This greenhouse has an automatically controlled humidification system for year-round humidity control which is quite necessary in the dry Southwest.



Laying house and hens on the school farm laboratory. Buildings were obtained from local military base.

## More Articles from Teachers Needed

Articles written by teachers made up only about one third of those carried in the *Agricultural Education Magazine* during the past year. While articles came from 38 different states many of these came from staff members and teacher educators. Less

than half of the states last year had a single article written by a teacher of vocational agriculture.

Most readers agree that teacher articles are especially interesting due to the day to day contacts which teachers have with their students and

their communities. Many teachers have ideas which should be shared with the profession through contributions to the magazine. Articles which offer specific suggestions for teaching are always welcome copy. Such writing is a professional responsibility which every teacher should accept.

The first step for many teachers is to decide to prepare an article by a given date. Having made this decision certain general suggestions regarding the content and format of contribution may be needed. Editor □

Listed below are some suggestions to writers which may expedite the publishing of these stories.

1. Write articles which will have interest and value to the readers, a great majority of whom are teachers of vocational agriculture.
2. Avoid a provincial or "one-state" point of view. Remember you are writing for teachers located in each of our 50 states as well as readers in most foreign countries. Your article may be read by a teacher as far north as Alaska, as far south as Florida, as far west as California, and as far east as Maine.
3. Write your article specifically for the Agricultural Education Magazine. Graduate papers, speeches, departmental bulletins, research publications, and articles from state publications should be rewritten in order to be appropriate.
4. Unless you are writing an editorial, keep your own personal opinion in the background, concentrating on what, when, where, who, and why. Remember that what happened last month has much more news value than what happened last year.
5. Document your ideas. References to research, to books and periodical articles often lend necessary support to your own ideas.
6. Check back issues for the past four or five years to make sure that you are not repeating a previous article.
7. Whenever possible, relate your article to a theme. Themes are announced periodically throughout the year.
8. Provide appropriate pictures to illustrate your articles. Pictures should be clear and sharp. 5 x 7 single weight glossy enlargements are preferable to contact prints. Include captions but do not paste or fasten to the picture with paper clips. Use letters A, B, C, etc., on both caption and prints if more than one picture is submitted.
9. Include a small picture of yourself with your article unless one had been published in the magazine during the past three years.
10. Include tables, graphs, and line drawings if appropriate.
11. Keep your articles brief and to the point. Most articles should range from two to six double spaced pages. A three-page article with one illustrative picture, a picture of the writer and headlines will occupy approximately one page, a desirable length.
12. Leave the upper ¼ of the first page blank, starting with your headline about three inches from the top of the page. In the upper right hand corner of the first page, give your name, the date the article was submitted, and the month in which you wish the article to appear.
13. All articles should be typewritten and double spaced. This also applies to titles, footnotes, and photo captions.
14. Submit articles to the special editor for your area. Special editors are listed each month on the inside cover page of the magazine. Editor □

### Letters

(Continued from page 244)

public information activities, or by actually improving our program.

My only suggestion to further researchers in this area is that they call upon and obtain opinions from people completely outside the field of education. These people are the ones who are at a safe enough distance from the trees to see the forest, and from whom one may get selfish, but generally unbiased, answers.

Another use we may make of this type of research is in curriculum adjustment. In the light of this and similar research, supervisors can see the vocational education needs of our society expressed in the study's findings. A mental picture of these needs can be matched against that of the finished product of vo-ag education, and if there are serious discrepancies between the two images, sometimes often drastic changes need to be made in the program.

Alabama is presently involved with extensive research along this line for the express purpose of locating those discrepancies if they do exist. Fifteen hundred people were interviewed in the Alabama survey, and their opinions, though not completely tabulated as yet, are going to have a profound effect on vocational agriculture in our State.

T. L. FAULKNER, State Supervisor  
Vocational Agricultural Education  
Alabama

Sir:

After reading your editorial, "Farm Mechanics Teaching Starts in the Shop but"—I'd add this supplement *classroom instruction to provide depth of understanding of underlying basic principles of science.*

So right you are; but do our teachers and administrators realize the necessary

practices in agriculture mechanics are increasing daily, that the basic sciences are the same now as when the pyramids were built, the same when the submarine, Thresher sank and will be the same when we learn how to toast peanuts properly on the surface of the moon. The only difference will be new and improved practices of old principles of the sciences. To us in agriculture mechanics if we ever understood that borax used as a flux in forge welding expelled the nitrogen, hydrogen and oxygen from the welded area, we would understand the use of fluxes in the adhesion, cohesion and fusion of metals today. A one day study of fluxes as a basic unit would make this understandable the remainder of the lives of each student. After such an understanding the application in soldering, bronzing, arc, TIG, Mig welding and what comes in the future would be more application of the same basic principles of chemistry and physics.

Ralph, I must add, in the classroom another must is to learn to read and interpret the printed page before and after shop practice. Facts show that we do not use many references in agriculture mechanics. Many of our theorists would say all in the classroom first. I say no, because they must see some of the actuality in the shop to know what it is they are studying about in the classroom before much learning can take place. I believe at least one third of the time devoted in agricultural mechanics should be spent in study.

I am combining in one statement your second, third and fourth supplements that you believe field trips and supervised experience programs should be provided for application opportunities for the basic sciences in the area of agricultural mechanics on the farm and in agriculture industry. Furthermore, you stated that young and adult farmers could apply what they learned on the high school level to the more complex problems such as material handling and the like. There is nothing I know to add except write it more often and help all of us to accept this very progressive concept.

T. J. WAKEMAN, Professor  
Farm Mechanics Education  
Virginia Polytechnic Institute

Sir:

Many of the problems and plans for the future in Carl Albrecht's editorial, "Agricultural Mechanics—What Now?" can only be solved by taking some of the following steps:

1. Larger school areas serving a larger potential of students.
2. Multiple teacher departments in agriculture, not necessarily vocational, if we are to serve the needs of education in agriculture. I speak of education in agriculture as it pertains to elementary, high school and post high school training.
3. Specialization on the part of instructors of vocational agriculture, instead of generalization.
4. Special courses in Agricultural Engineering, taught by professors trained to give the type of instruction needed by teachers, in-

stead of expecting teachers to take professional courses and teach service courses on the high school level.

5. An acceptance on everyone's part that all we can hope to do on the high school level is to develop a general understanding of agriculture and all its related facets, other than training for specific occupations, including farming.
6. Accept the fact that a department of vocational agriculture operated by one teacher cannot be a panacea to all the problems encountered in agriculture.
7. Keep shop class enrollment down to a group small enough to teach skills and decision-making. One teacher cannot supervise over 12-15 students effectively.
8. Shops will need to be properly equipped to give training in all

the six areas of agricultural engineering.

9. Develop some new objectives of what we are attempting to do on various levels of attainment.

Sincerely yours,  
CURRIS R. WESTON  
Agricultural Education and  
Agricultural Engineering  
University of Missouri

Sir:

Our address in India is still American Embassy—A. I. D., APO 675, New York, N. Y., even though other addresses are used for "within India mailings" for various reasons.

At "The Delhi Training and Orientation Centre for Foreign Technicians in India," I had the privilege of attending the Fifty-eighth Orientation Course which began on Monday, September 9, 1963.

As far as I'm concerned, the course was an excellent example of a highly effective way of introducing technicians to a complex culture and country.

Agriculture is of great importance to the country of India. People here would be delighted to have problems of over-production of agricultural products. Problems of concern to Indian agriculturists are those associated with under-production.

My copies of the Agricultural Education Magazine are read with interest by department of agriculture staff members and several others at the Regional College of Education, Ajmer. Of course, this professional publication helps me to keep in touch with important developments in the United States.

BENTON K. BRISTOL, Consultant  
Agricultural Education  
Pushkar Road, Ajmer  
Rajasthan, India



NEW ADDITION to Dover, Oklahoma, High School.

## A New 8,000 Square Foot Vocational Agriculture Building

DALE A. COTTON, Executive Secretary, Oklahoma FFA Association, Stillwater, Oklahoma

Several hundred patrons of the Dover, Oklahoma School District were present for the recent dedication of new school facilities. The 8,160 square foot structure, built at a cost of \$76,759.50, is devoted primarily to the vocational agriculture department, containing the agriculture classroom, shop, office, and laboratory. A school cafeteria is also included in the structure.

Most of the space is devoted to the shop area which is 90' X 37'. Included in the shop area are a tool room, separate heating facilities, 14 welder outlets, three-phase electrical wiring for large equipment, exits to the outside and to the classroom, rest rooms and washing facilities, and large overhead doors to accommodate projects.

The classroom is 20' X 30'. The laboratory is 14' X 20', and the office is 12' X 12', with glass windows for

observation of both the shop and classroom.

Garland Hollars, Superintendent of the Dover School, and Robert Lohmann, Vocational Agriculture Instructor, have been active in helping to plan the new addition.

Power tools and hand tools have been purchased to equip the shop. Included in the equipment now in use are five arc welders, two gas welders, a DC welder, power hacksaw, pedestal grinder, portable grinder, chain hoist, portable generator, and drill press. Included in the hand tools are a skill saw, sander, sabre saw, nibbler, sets of wrenches, saws, punches, chisels, etc.

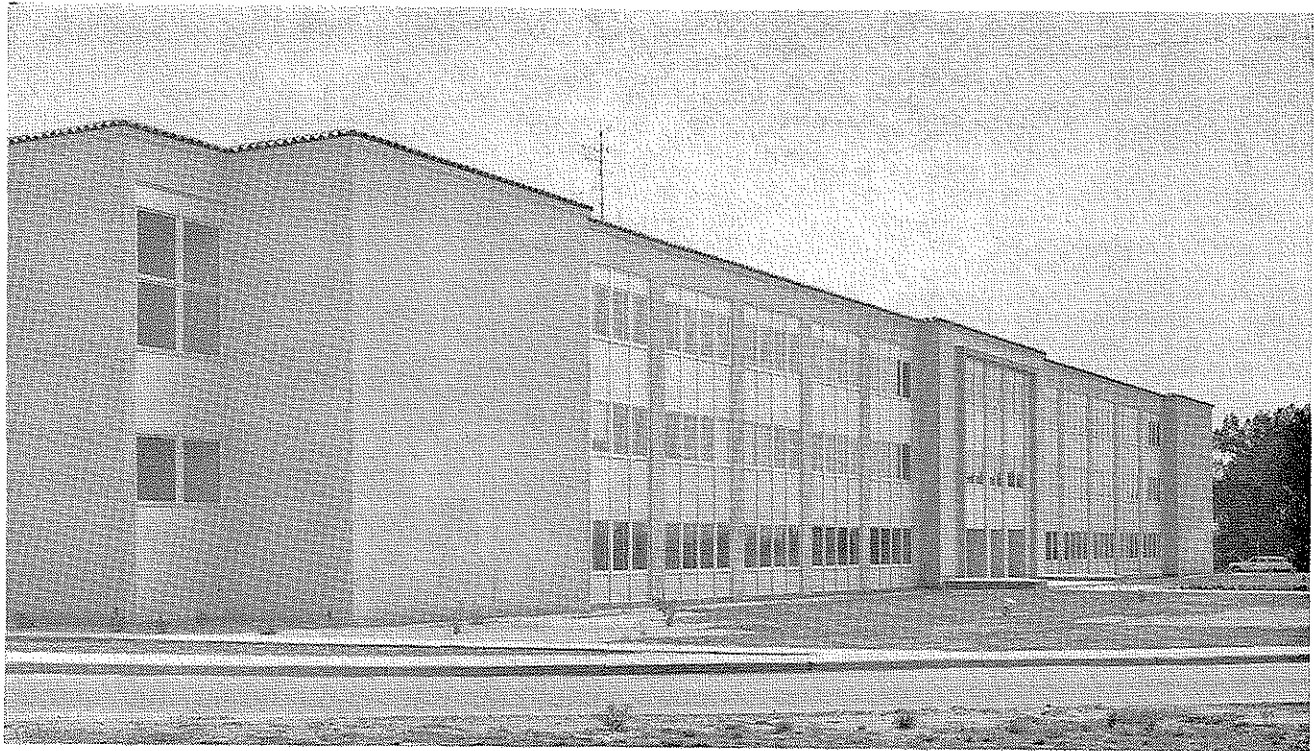
Patrons of the community seem to be most enthused about the new shop. At a recent organizational meeting for an adult class, 51 adults attended who wanted to learn more about shop work.

After seeing the fine projects the FFA members are building, farmers have asked the department to build 27 livestock feeders, four stock racks for pick-ups, four portable loading chutes, and one cattle squeeze chute.

At the dedicatory service, Chris White, Teacher Trainer from Oklahoma State University, was the main speaker, with Duane Croka, School Board President, and Ray Counts, Chairman of the Building Committee, speaking briefly.

The President of the FFA Chapter, Kenny Neeland, participated in the ribbon cutting ceremony, and other FFA members participated in the program.

In addition to the board of education members, other men and women in the community served on several committees in planning and conducting the dedication program. □



New facilities for agricultural education are within this new two million dollar Agriculture Building at New Mexico State University. The building is the largest college building in New Mexico (excluding Physical Education facilities).



J. D. McComas

"One of the worst facilities we have seen," was the remark of a member of the 1962 NCATE accrediting team as he viewed the "temporary" barracks building which had housed Agricultural Edu-

cation at New Mexico State University for more than 20 years. Today, the same team member would likely admit that New Mexico State has one of the better facilities available.

These facilities are most adequate for the 34 undergraduates and nine graduates enrolled in agricultural education. The new Agriculture Building housing these facilities is unique in two respects: (1) It is the largest college building in New Mexico and was built at a cost of two million dollars and, (2) It not only houses all College of Agriculture personnel, but State Vocational Home Economics, State Agricultural Education, State Department of Agriculture and State Extension personnel are all housed within the building. More than 250 persons are officed in this new building.

Having all agricultural personnel under one roof has advantages for students and faculty alike. Close cooperation can be realized as all staff

## New Agricultural Education Facilities at NMSU

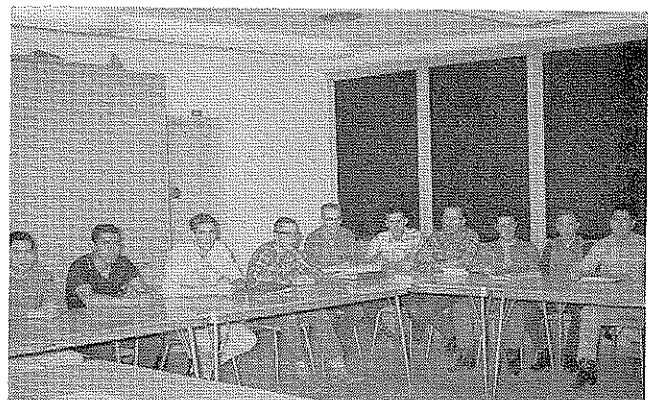
J. D. McCOMAS, Agricultural Education, New Mexico State University

and resource persons in agriculture are in close proximity. Contacts within the halls, snack bar and at meetings within the building enable faculty and staff to meet frequently. Students no longer must move to a number of buildings for courses in agriculture.

Filing and library facilities characterize the facilities provided for agricultural education students. A combination classroom and laboratory is exclusively available for agricultural students. Formal classes are conducted here, as are committee meetings and individual study. Offices are adjacent to this particular classroom facility. Additionally, two large classrooms and a number of smaller ones are shared by all de-

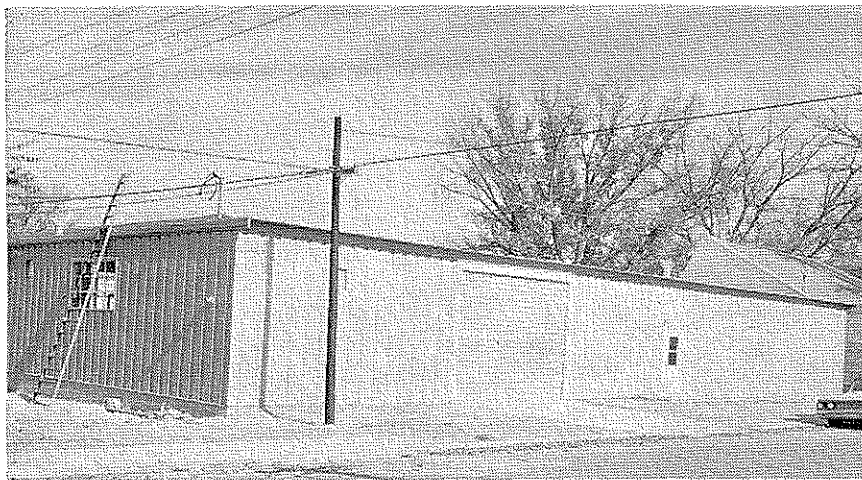
partments according to the need and size of classes.

These facilities are the nicest on campus. They add respectability to a respectable and worthwhile undergraduate and graduate program. Students enrolled in agricultural education and other departments within the College of Agriculture no longer feel they are "second class" citizens of the New Mexico State University campus.



Students enrolled in Agricultural Education 101 find the department's new conference type classroom comfortable and conducive to learning.





The nearly completed vocational agriculture facility at Wray, Colorado—all steel construction. Note the flat roof, large door and building design. Yet to be completed in an enclosed area for outside storage.

## Steel Buildings for Vocational Agriculture

LLOYD LAWSON, Agricultural Science & FFA Education, Colorado

The high cost of construction of school facilities has caused Boards of Education in Colorado to carefully evaluate all types of construction in order to build an adequate facility at the least possible cost. One type of building becoming increasingly popular is the steel structure. Not only has this type of building been used for vocational agriculture facilities, but it has recently been utilized in the construction of many entire school plants in Colorado. Some portable

classrooms are in use in large school districts as an answer to the problem of a mobile population.

During the past 5 years, 37% of the vocational agriculture departments in Colorado have erected new facilities. Of these, one-third have been steel buildings. Some of the buildings used several years ago were of the round top variety, but all used for vocational agriculture buildings in Colorado are now straight sided with a nearly flat roof or one of low profile

design. This new design, along with baked on enamel in nearly every color, makes an attractive building that fits well in with the entire school campus. We have found steel buildings to be serviceable, economical to construct, and attractive.

An example of such a building is the facility that was recently occupied at Wray, Colorado. The Board of Education agreed to construct a new facility for the vocational agriculture department. After bids were received from various contractors, a steel building was purchased. A contract was let for \$28,130 for the entire facility. This included the 40' x 100' building, six inch concrete floor, insulation, all electrical wiring and lighting, ventilation fans in the shop, all plumbing including 2 toilets, all partitions, chalkboard, concrete apron outside the shop, and heating system.

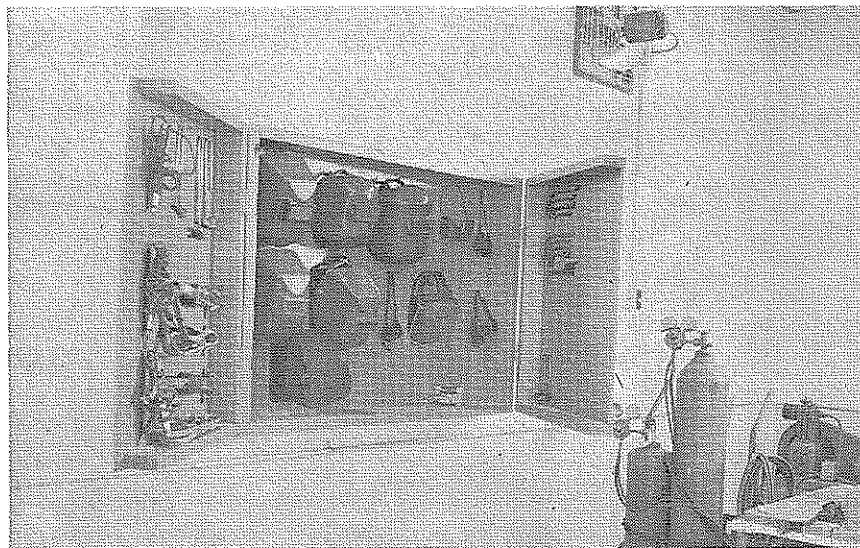


Roof structure design, insulation and smooth interior wall surface are shown in this picture.

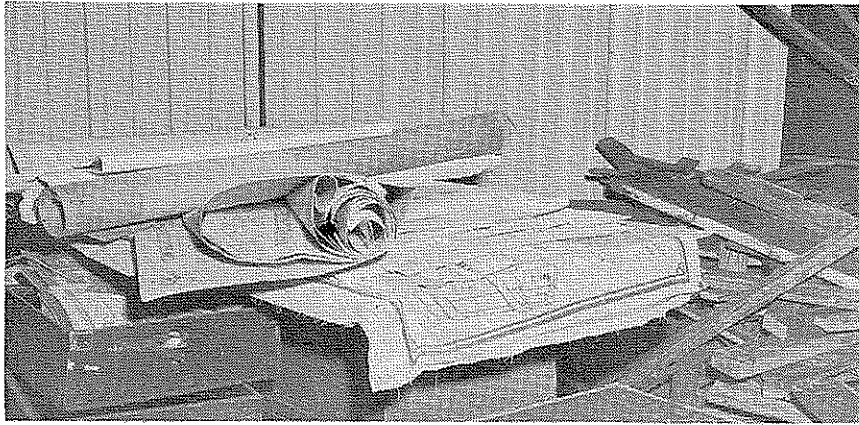
The cost was \$7.03 per square foot and the building took approximately 60 days to complete. The facility includes a classroom, class storage room, office, 2 toilets, shop storage area, and 40' x 60' shop. □

### From Former Issues

In September, 1931, H. M. Hamlin wrote of current project accounting procedures. "We impose an artificial and abstract set of records upon them, borrowing largely from industrial and business situations which do not closely parallel farming. We demand that these records be kept, however senseless they may seem to the boys. We often do not apparently care whether the boys get anything from the keeping of these records which assists them in reordering their future conduct in the business of farming. If we had really tested our records by determining their utility in managing future situations, we should long ago have rejected most of them."



Interior view of building showing smooth steel inner surface painted and ready for use.



Someone has a chart storage problem.

## A Stand for Chart Storage and Display

MERRELL BARFIELD, Teacher of Vocational Agriculture, Wharton, Texas

One of the greater problems found in teaching vocational agriculture is the proper use and storage of reference materials. Teaching aids in the form of charts have offered more problems than other visual aids.

Generous and well meaning commercial companies contribute charts, many with excellent information, in dozens of sizes. They arrive in sizes from 10" X 12" to several feet in both height and width. The smallest cannot be seen past the midway point of the room and the largest are almost impossible to store and protect for future use.

### Developing Better Charts

It is generally agreed that the charts presently being given to our vocational agriculture departments are being used, and are very helpful in explaining points that might otherwise take twice the time and effort. The time has arrived when vocational agriculture teachers should express appreciation for this help by letting companies know the type of charts that are needed and will be used most. This would insure the donor more frequent usage as well as make charts more valuable as visual teaching aids.

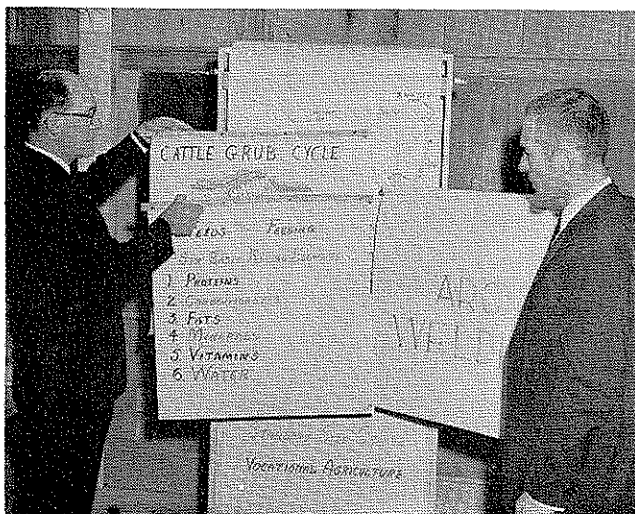
A review of many charts produced in the past reveals one or more of the following weaknesses:

1. Too complex for student use.
2. Not uniform in size and shape.
3. Difficult to store in space available in average vocational agriculture departments.
4. Color not being considered an important part of material.
5. Letter size not large enough.
6. Too much material on one chart. (Too active).

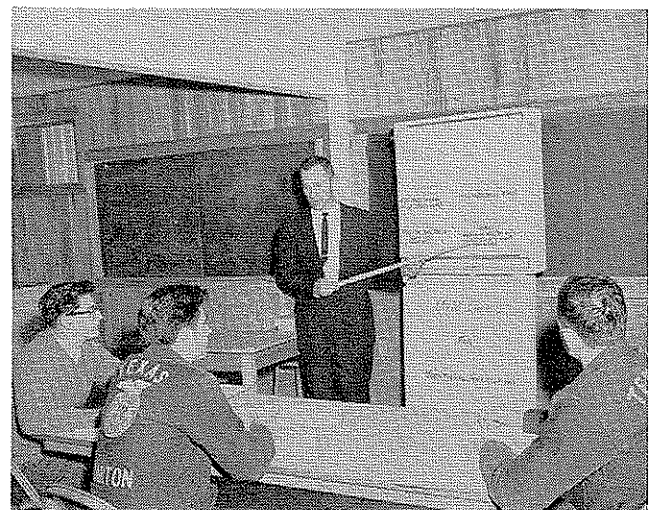
### Standardization Needed

Texas agriculture teachers feel that their first need is for standardization in size and shape. The second major consideration should be given the size of any lettering used on charts. Letters of less than 1" in height and without sufficient contrast with background are unsatisfactory for classroom use. The third need for consideration might fall into the area of simplifying the subject material. Dr. Earl Webb of Agriculture Education Department at A & M College of Texas states that it may be possible to make charts too simple but that he has never seen one. The above considerations would make charts of more value and of even greater use.

The vocational agriculture teachers of Texas at their state workshop in San Antonio, Texas, last August viewed and expressed approval of a plan calling for a uniform 28" by 28" chart with a standard storage cabinet, designed for such a chart. The storage cabinet pictured in Figure 2 was designed by the late Bob Craig of Texas A & M College and the writer.



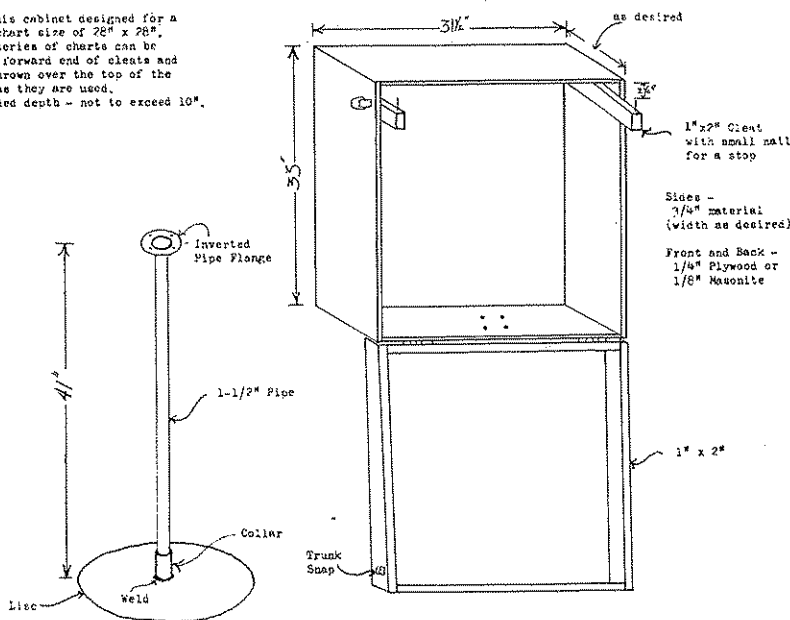
Dr. Earl Webb (left), Department of Agricultural Education at Texas A. & M., and the writer demonstrate how charts are mounted for storage and display.



Merrell Barfield uses his chart storage and display cabinet.

A COMBINATION CHART STAND & STORAGE CABINET

Note: This cabinet designed for a maximum chart size of 28" x 28". Desired series of charts can be covered to forward end of cleats and charts thrown over the top of the cabinet as they are used. Recommended depth - not to exceed 10".



**A Convenient Cabinet**

This proposed type of storage cabinet and standard size charts would eliminate the necessity of storing ran-

dom size charts in a haphazard fashion which is not conducive to their safe keeping as pictured in Figure 3.

Other features of the cabinet is

that it also doubles as a display stand. The storage cabinet can be quickly removed and another placed on the stand. This feature would enable the vocational agriculture teacher to group charts on similar subjects in different cabinets which could then be quickly interchanged as needed.

Once a chart has been placed on the rack in the storage cabinet, it becomes a simple matter to display the charts one at a time and then fold them over the top of the cabinet as pictured in Figure 4. Note that the charts are bound at the top with two pieces of 3/4" X 1/2" white pine strips which extend beyond the edge of the charts. Texas teachers feel that if this plan is placed in use through the cooperative efforts of industry, agricultural colleges, state education agencies, and vocational agriculture teachers that one more great step will be made in the march for better, and a better understood, vocational agriculture program. □

# Evaluate Adult Farmer Programs Now

RALPH A. BENTON, Teacher Education, Southern Illinois University, Carbondale



Ralph Benton

Evaluation is a process by which we determine the worth, value, or meaning of something. Evaluation is needed in all areas of vocational education in agriculture, and it is particularly important to the adult farmer program. Since attendance is voluntary at adult farmer meetings, it is imperative that the series of meetings and accompanying activities be "worthwhile" in the judgment of those attending.

This calls for a critical examination of the objectives that are proposed. It is clear that the only objectives that are effective are those the class members accept. This points to the necessity of the class members themselves having a part in determining the problems to be studied and the stating of objectives. If not the class in total, then certainly the advisory council who represents farmers and perhaps other allied occupations. Most farmers, if they want to learn anything at all, want to learn it for use in their daily lives.

Perhaps the most effective evaluations of adult farmer education in

agriculture are those which the class members themselves make. Adults believe they are capable of judging their own educational progress.

Evaluation should be an integral part of any plan for adult farmer education. It should be applied to the planning of the program, to the execution of the program, and to the results.

Evidence, or information, is essential to the evaluation of programs, methods, and results in the field of adult education. There are three times in the development of an educational activity when evidence should be gathered.<sup>1</sup>

First, *before the activity is begun.*

This establishes a "bench mark." Thus, it can be determined later how far they progressed.

Second, *while the activity is in progress.* This makes it possible to determine the amount and

rate of progress. If it is unsatisfactory, changes can be made before more time is wasted.

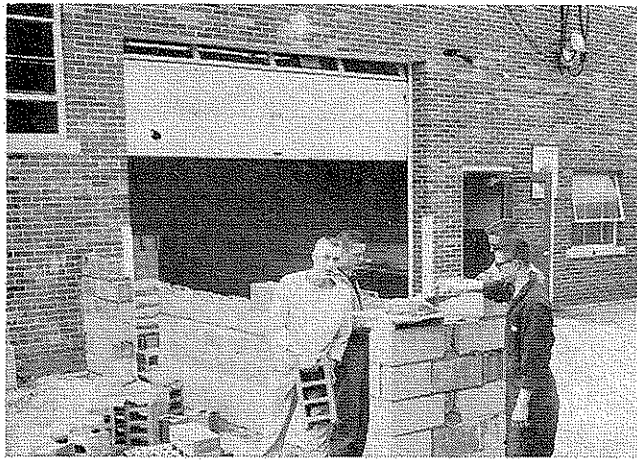
Third, *when the activity is ended.*

The evidence gathered at the completion of the course, or activity, should show the extent of the changes made in the students or to the degree to which the predetermined objectives were realized.

Teaching is successful when it causes a change in the desired direction. Changes in human behavior may be in terms of change of attitude and interest, gain in knowledge, development of skills and abilities, and increased understanding. Evaluation, then, is made in terms of these changes in behavior. The adoption of a recommended economic or social practice, frequently used in adult education as a measure of results, is a sign of change in behavior.

These concepts, when applied to an adult farmer class, and specifically to its members, will result in a stronger, more effective program. □

<sup>1</sup>Morgan, Barton, Holmes, Glenn E., and Bundy, Clarence E. "Methods in Adult Education." The Interstate Printers and Publishers, 1960, p. 157.



Skill in block laying was developed.



Practice in placing structural steel was provided.

## Iowa Students Build Addition to Shop

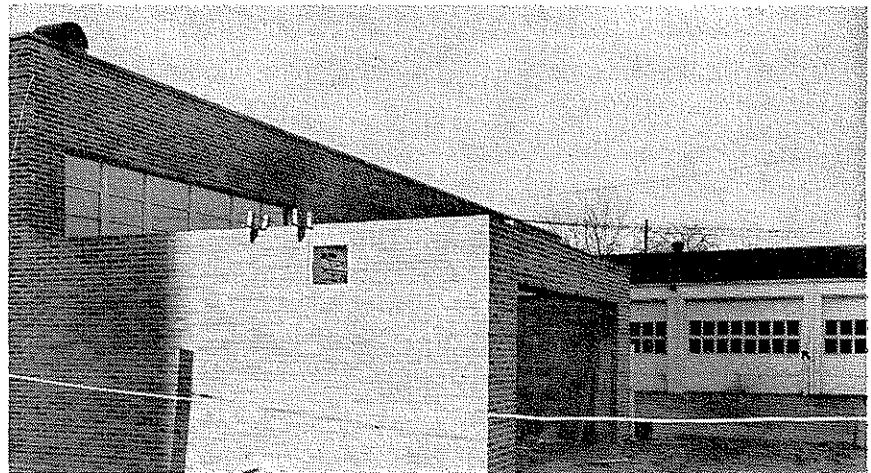
FRED L. GOUDGE, Teacher of Vocational Agriculture, Akron, Iowa

Our department solved the problem of overnight storage of school autos in the Vo-ag farm mechanics shop by building a 20' x 22' multi-purpose garage. This room will provide an area to operate steam cleaner and spray paint equipment.

The plans and estimate of materials were drawn up and discussed by our Vo-ag IV class at the beginning of the fall semester 1962. The local Board of Education agreed to furnish funds if the labor and skills could be supplied by students.

A procedure for practicing and developing skill in laying concrete blocks was arranged with the aid of an experienced "lay Assistant." The method included a temporary block wall simulating laying up the corners as suggested in "Recommended Practices for Laying Concrete Block," Portland Cement Association, 1954.

Sugar was added to the mortar so the blocks could be removed and used again. A local metal supply company provided detailed plans and materials for welding the metal roof trusses.



The completed addition to the Akron, Iowa, farm shop.

### Vo-Ag Appeal Continues Strong

It is encouraging to read that apparently more boys than ever before are studying vocational agriculture in high school. This is indicated by the fact that the Future Farmers of America (FFA) has a record membership of 395,812 for the 1962-63 school year.

Why encouraging? Well, obviously it seems to indicate that despite the trend toward fewer farms and farm-

ers, farm boys are still interested in studying ag. If there is a place for fewer of them in actual farming than would have been the case 20 years ago, there is no lack of opportunity for them in agricultural occupations off the farm, or as it is sometimes stated, in ag-related jobs. It shows, too, a general realization that people who are employed in agriculture must be well educated and well trained.

The entire agricultural complex in this country employs many millions

of persons. A substantial part of these need education in agriculture. The FFA in nearly 10,000 high schools gives several hundred thousand boys a year a fine start toward that education.

From *The Agricultural Situation*, September 2, 1963.

Dr. Bishop, a North Carolina rural economist says that "The change of 25,000,000 farmers to a non-farm role is perhaps the greatest contribution of Vo-Ag in the U. S. A.

# Liabilities in School Shops

J. B. MORTON, Supervisor, Oklahoma Vocational Agriculture Service



J. B. Morton

*J. B. Morton, Stillwater, Oklahoma, graduated from Oklahoma State University in 1942, taught one year as a Veteran Agriculture Instructor at Binger, taught vocational agriculture at Binger, Rocky and Clinton prior to joining the State Vocational Agriculture Staff as Supervisor of the Northeast District in 1954. Last year Morton was on leave at North Carolina State University to do work on his advanced degree.*

*Byrle Killian,  
Special Editor*

Exactly how the district immunity doctrine came to be applied in this country is stated to be one of the mysteries of legal evolution. The courts appear to be generally agreed that the doctrine had its origin in England. This case, in 1788, involved the liability of a municipality in tort, not a school district. Twenty-four years later the doctrine had crossed the Atlantic and fastened itself upon the jurisprudence of this country in a Massachusetts case. Since that date it has led an embattled existence.

This doctrine has been widely recognized by courts as controversial and unjust and has been subjected to wide and frequent criticism by courts and writers. The fact that this doctrine still remains in effect in a majority of the states is one of the mysteries of American law. State legislatures generally have failed or declined to modify or abrogate the doctrine. Repudiation of the rule has lacked the necessary political urgency often required for legislative action.

In a few states, tort liability has been imposed upon school districts for several years, either by statutes or judicial decision. Among them are California, Illinois, New York, Washington, and Wisconsin. There have been important modifications by statute in other states, notably in school transportation and by the statute under which districts are permitted or required to defend, at district expense, teachers against whom tort actions have been brought. While there has

been no "avalanche" of statutes modifying the doctrine, such statutory changes are significant in indicating the trend.

## Liability for Negligence

In view of the surroundings in which they work, vocational agriculture teachers have a legal responsibility to act with caution and prudence to keep their special classrooms free of hazards and accidents. A teacher has omitted a specific legal duty and is liable for negligence in the event a pupil is hurt, (1) if he fails to adequately instruct the pupil on the correct method of using a dangerous machine or tool; (2) if he fails to warn of the dangers that may arise if safety rules are disobeyed; (3) if the use of safety devices is ignored; (4) if personal protection equipment is not worn. The teacher leaves himself open to a charge of negligence if he fails to properly supervise the activities in the shop to prevent pupils from inflicting harm on each other.

School districts in most states are not liable for injury which pupils might sustain during vocational education classes. As in all instances involving negligence, school districts are insulated from tort liability under the governmental immunity rule. Even in the state of Washington, where the rule has been partially abrogated, school districts are exonerated from tort liability for injuries connected with vocational equipment.

The trend in school liabilities is changing toward giving the teachers and the school districts less protection, but in states where schools are protected by governmental immunity, school districts owe it to pupils to provide proper machines and tools, equipped with safety guards that meet the standards set by government agencies for industrial workers, and to maintain them in good working order.

## Teacher Protection

Shop accidents can be prevented and the chance of being sued for

negligence can be avoided if the vocational education teacher follows these rules suggested by the NEA:\*

1. Reports knowledge of hazardous conditions and defects relating to the shop, the machinery, and equipment to the proper school authorities.
2. Regularly inspects machinery, equipment, and environmental factors for safety.
3. Posts in his shop conspicuous notices of regulations, possible hazards, safeguards, and precautions.
4. Makes certain that appropriate safety devices and guards are available and used by students.
5. Makes sure students know and understand pertinent safe practices relating to the activities in which they are engaged.
6. Requires students to wear appropriate personal protective equipment, such as goggles, aprons, helmets, and gloves during hazardous activities.
7. Adequately instructs and demonstrates the use of power tools or other hazardous equipment before initially permitting such use by a pupil; permits initial use only under direct supervision of the teacher.
8. Shuts off power tools if he must leave the shop.
9. Exercises continuous supervision to see that shop safety practices are observed.
10. Makes himself a model for pupils to follow by personally obeying all safety rules and practices. □

\*National Edition Association. National Commission on Safety Education. *Who is Liable for Pupil Injury?* NEA Research Division, Washington D. C., February 1963.

John A. Beaumont, Director, Distributive Education, U. S. Office of Education, Washington, D. C. says "Vocational education will be called upon to solve the social problems of our society. Vocational education must train the disadvantaged youth in relation to the social problem that exists. The individual who is not sufficiently trained to earn his living is economically useless."

## News and Views of the Profession



New York State Teachers of Agriculture observe a demonstration conducted by John Clark (seated at right) of the Education Department, Briggs & Stratton Corporation, during a workshop attended by 31 teachers at Fayetteville, New York. Carroll Rudd (standing at left) teacher of agriculture at Fayetteville was host for the workshop. Four other workshops arranged by the State Bureau of Agricultural Education, including a second one by Briggs & Stratton, were conducted during the summer. Ornamental horticulture, tractor adjustment service and maintenance and farm machinery service with emphasis on balers, mowers and field choppers were the other interests.

PHOTO BY W. W. SHARPE

### Short Notes

California State Polytechnic College at Santa Barbara, California announces that 80 men are enrolled in and preparing to become teachers of vocational agriculture as compared to an average of 10 to 12 for the past few years.

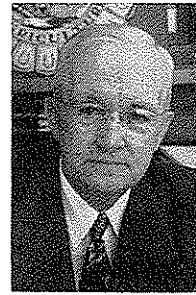
California Vocational Agriculture Teachers received an average salary of \$8,597 for the school year in 1962-63. The Ohio Young Farmer's Association held their annual convention February 14 and 15 at Nationwide Inn in Columbus. The two-day meeting was attended by about 400 young farmers and their wives.

The Tennessee Production Credit Association assists teachers of vocational agriculture in a very practical way. They prepare a calendar which contains dates of major state activities. Among the list of suggestions are tips for picture taking, television and radio programs, summer activities, public relations, newspaper articles, and demonstrations. Space is provided for teachers to write in local and regional activities.

Hamilton Hicks has announced that The d-Con Company will again sponsor a split-year diary for the NVATA. Diaries will be shipped to state association presidents who will be responsible for distributing them.

In an address before the state directors of vocational education, Dr. Joseph Strobel, Assistant Commissioner, Vocational Education, New York, stated that trends in modern industry and experience with people with low educational achievement in Manpower Development and Training programs indicate that we must be concerned with "vocational education for employability." A person who cannot read is normally not employable. A person who is unwilling to work is not employable. A person is not employable when the personal appearance, manners, or personal habits are not acceptable in the occupation for which he or she is in training or wishes training. Vocational education must concern itself with preparation of the youth or adult to the point of employability. This concept implies a greater responsibility than development of saleable skills.

### A. P. Davidson, Dies



A. P. Davidson

Allen Park Davidson, emeritus professor of agricultural education at Kansas State University died February 11. Davidson, 76, had been in failing health for the past two years.

Davidson assisted in founding the national Future Farmers of America organization in 1928 and he had major responsibilities through the years for the Kansas Association of F.F.A. program. He served continuously as state executive adviser of the Kansas Association from the founding of the organization in 1929 until 1954.

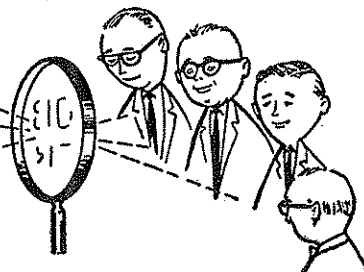
His work in vocational education has been recognized through an honorary "American Farmer" degree conferred in 1958 and through a Distinguished Service Award by the Office of Education's Division of Vocational Education.

A native of Patapsco, Md., Davidson attended Kansas State University and was graduated in 1914. Starting in 1920, he assisted with professional preparation of teachers of vocational agriculture and from 1944 until 1958 was head teacher trainer. He was retired in 1958.

Davidson was book review editor of the AGRICULTURAL EDUCATION MAGAZINE for 24 years, and is author of three histories of the Kansas Association of F.F.A.

George H. Hurt, Texas State Director of Vocational Agriculture, reports that of the 1963 High School Graduates who completed Vocational Agriculture offered in their school and were available for employment, 52.5% were employed in full-time farming or full-time Agricultural Occupations. After reviewing data obtained in a survey of the state by his office, Hurt remarked, "These data point up a need to intensify training in technical areas for the group that is entering the related agricultural occupations. This type of training can possibly be offered best in the junior-senior year of high school. Training in the basic science of agriculture, including farm mechanics and farm management, needs to be accelerated for those who will enter farming and pursue a college education."

# BOOK REVIEWS



**NVATA**  
**News**

James Wall  
Executive  
Secretary

**FARMERS IN BUSINESS** — Studies in Cooperative Enterprise, by Joseph G. Knapp, Administrator of Farmer Cooperative Service, USDA. Published by American Institute of Cooperation, 1616 H Street, N.W., Washington, D. C. 456 pages clothbound 1963 \$5.00

The book is divided into five parts, covering the nature of farmer cooperative enterprise—what it is and what it isn't; how farmer cooperatives are set up and operated; the "growth processes of five major farmer cooperatives"; new developments in the field of cooperation; and what the future may hold for farmers and their cooperatives.

The aim is to present a well-rounded picture of cooperative enterprise in American agriculture rather than a tightly-organized compendium that could serve as a textbook. In a work of this kind, few readers will start at the beginning and read to the end. This type of book does not call for such concentrated attention. I would like to think of it more as a source for browsing, or as a book that can be turned to for ideas on specific phases of cooperation, or for stimulation. This is the book's main objective—to serve as a source of information on how farmers can work together to achieve a more prosperous agriculture.

You will find this an excellent book for vocational agricultural teachers and county extension directors reference libraries.

L. A. Cheney,  
Executive Secretary  
Michigan Association of  
Farmer Cooperatives  
Lansing, Michigan

**CEREAL CROPS** by Warren H. Leonard and John H. Martin. Published by The Macmillan Company, 60 Fifth Avenue, New York 11, New York. 824 p, illustrated, 1963. Price \$10.00.

This new book records many pertinent facts essential to the scientific production of cereal crops. Each of the cereals is described individually,

including corn, wheat, rye, barley, oats, rice, sorghum, and millets. Topics treated in detail for each crop are economic importance, origin, adaptation, botanical species classification, varieties, physiology, commercial grain classes, chemical composition, processing, diseases, insect pests, genetics, cytogenetics, and breeding. The authors give particular attention to breeding and genetic characteristics of economic importance.

The text has been designed for a college course in cereal crops, however, it may be considered as a valuable reference for teachers. Significant aspects of the book are illustrated by photos, tables, and graphs.

Dr. Leonard is Professor of Agronomy at Colorado State University and Dr. Martin is Research Agronomist, U.S.D.A., Beltsville, Maryland.

Denver B. Hutson  
University of Arkansas

**THE DAIRY COW.** Craplet, C. Published by Edward Arnold (publishers) Ltd., London. Translated by Catherine T. M. Herriott. First published, 1963. pp. xv plus 452. Price \$29.50.

This very comprehensive book consists of 21 chapters organized in six parts including: Reproduction and lactation, artificial insemination, genetics and methods of reproduction, nutrition, housing and diseases.

While much of the text is well beyond the level of most high school students, many adult farmers and teachers of vocational agriculture will find much of value in the pages of the book.

The book is illustrated with sketches and graphs and with a few photographs. Pages are approximately 7½ x 10 inches in size, with type running completely across the page.

Dr. Craplet is Doctor of Veterinary Science and Head of Animal Husbandry Department in the Grignon School, France.

Raymond M. Clark,  
Michigan State Univ.

The purpose of the "Thirty Minute Club" is to encourage members to publicize activities of vocational education in agriculture.

The name indicates that a member has spent thirty minutes or more of his time in preparation of news articles or pictures for publication in farm, professional or other magazines with regional or national circulation.

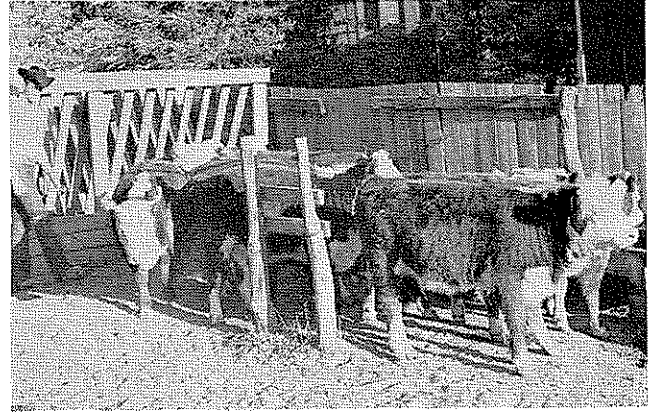
The rules and procedures are as follows:

1. Must hold a membership in a state vocational agricultural teachers association and the NVATA.
2. The year of recognition shall be from one NVATA convention to the next.
3. Editors of state newsletters and winners of the NVATA Exchange of Ideas Contests are also eligible for membership.
4. NVATA members are eligible to receive one (1) "Thirty Minute Club" card each year.
5. Must have had articles or pictures published in farm, professional or other magazines that have national or regional circulation in at least three states.
6. Each state association should appoint one officer or member to keep a record of articles and pictures published. He should request cards for those who qualify.
7. Requests for membership cards should be made by designated state association representatives to the NVATA vice-president for their region. Such requests may be made at any time during the year. Maximum effect from the cards is obtained when they are requested prior to and presented at a state conference. Requests should include the name and address of the author, name of article, and name and date of publication in which the article or pictures appeared.
8. State associations are encouraged to recognize members at their state conferences who have earned "Thirty Minute Club" cards.

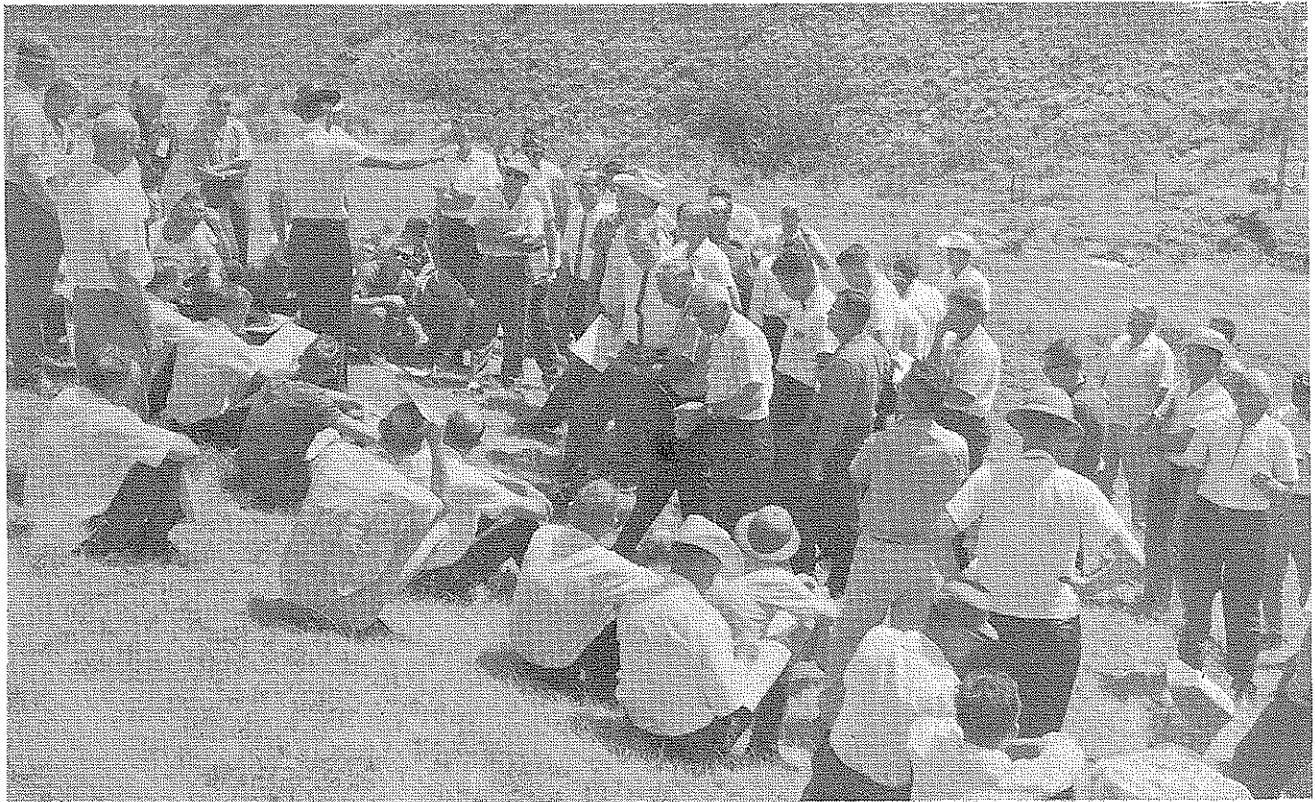
# Stories In Pictures



Typical of new equipment and new facilities for teaching Vocational Agriculture is the motor tester. In this picture Wayne Ball, Vocational Agriculture teacher at Keenesburg, Colorado, demonstrates the use of this tester to members of one of his classes.



Martin and Mauritz Mosimann are identical twin sons of Mr. and Mrs. Harry A. Mosimann. Through the advice of their advisor, James Leger, the boys were induced to go into the registered Hereford business beginning with a few heifer calves. The progress has been rapid and they now own quite a herd of registered Herefords. Their ranch is located in the mountains north and west of Las Vegas, N.M., where the boys spend the summer, and during the school year they move into Las Vegas and also move their cattle, since at their home they have facilities for taking care of them.



A field study of range plants was a feature of the 1963 Conference of the Nebraska Vocational Agriculture teachers.