STORIES IN PICTURES

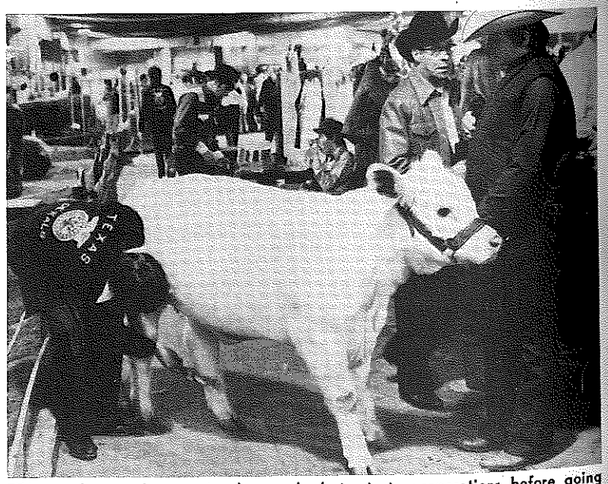
by Paul W. Newlin

Students in conservation are competing in the bulldozer trenching and backfilling contest at the New York State Conservation Contests. (Photo courtesy Richard Jones, Cornell)

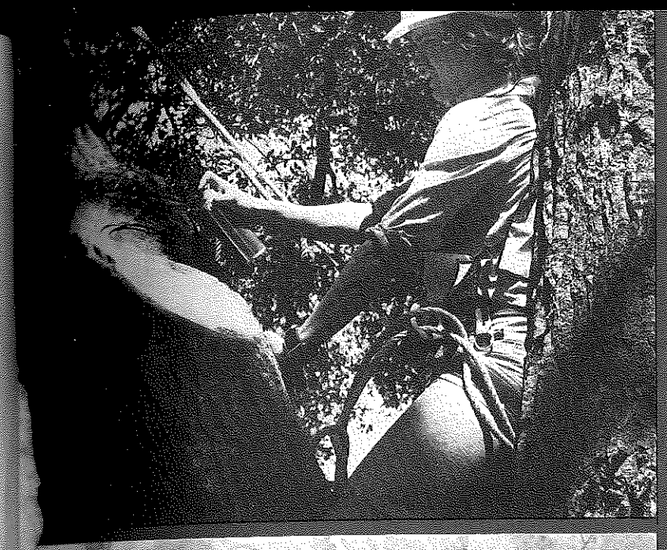
Horticulture students in New York are constructing corsages in the Floral Arrangement category of the Horticulture Contest. (Photo courtesy Richard Jones, Cornell)

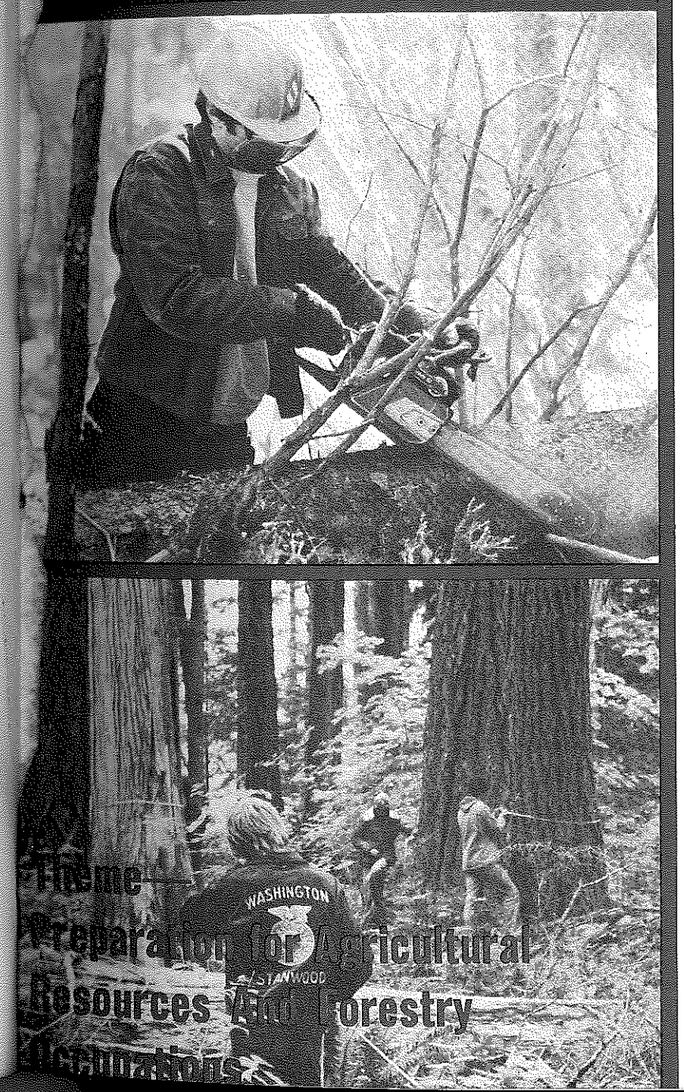
Future Farmers of America in Oklahoma compete in a tractor driving contest at the Muskogee State Fair. Students test skill against the stop watch. (Photo courtesy Paul Newlin)

A lot of soap, water and elbow grease goes into preparing a show animal for the show ring. These youngsters are preparing a steer for the Houston Livestock Show and Rodeo. (Photo courtesy the Houston Livestock Show and Rodeo)



FFA members and vo-ag teachers make last minute preparations before going to the show ring for the Houston Livestock Show and Rodeo. (Photo courtesy Houston Livestock Show and Rodeo)





AGRICULTURAL EDUCATION

Volume 50 Number 4

October 1977

EDPRESS

AGRICULTURAL EDUCATION

October 1977 Volume 50 Number 4

TABLE OF CONTENTS

COVER PHOTOS

Top Photo—After you saw off tree limbs, it is necessary to paint the stumps to promote healing and discourage sprouting. Mike Tolin, Livermore, Calif., does the job with a spray can. Note hard hat and safety line. Safety is high on the curriculum list. (Photo courtesy of Ray Morton and Monte Monteagle Photo, Pleasanton, Calif. Related article on page 84)

Center Photo—Proper protection is important in using a chain saw. Note the personal safety equipment: hard hat, face shield, left hand safety mitten, cutting chaps and chain brake on the saw. (Photo courtesy Joseph Krug, Calais, Maine. Related article on page 78)

Bottom Photo—Trees, Washington's renewable natural resource, provides a group of Future Farmers of America a means of learning by doing. They are learning how to inventory a forest plot so that the sales value of the trees can be determined prior to a sale. (Photo courtesy Jack Zimmer, Washington State University)

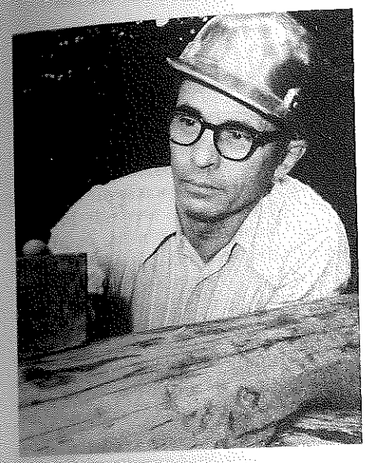
This publication is the monthly professional journal of agricultural education. The journal is published by THE AGRICULTURAL EDUCATION MAGAZINE, INC., and is printed at the Lawhead Press, Inc., 900 East State Street, Athens, Ohio 45701.

Second-class postage paid at Athens, Ohio.

Send articles and pictures to the Editor or to the appropriate Special Editor.

SUBSCRIPTION PRICE: $5 per year. Foreign subscriptions $10 surface mail, $20 air mail (except Canada). Student subscriptions in groups (one address) $3 for eight issues. Single copies and back issues less than ten years old are available at $1 each. All back issues are available on microfilm from Xerox University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106. In submitting subscriptions, designate new or renewal and address including ZIP code. Send all subscriptions and requests for hardcopy back issues to the business manager: Charles W. Lebo, Business Manager, RD 2, Box 639, Halifax, PA 17032

GUEST EDITORIAL Vocational Training For Forestry Occupations



Warner C. Deitz

by
Warner C. Deitz
Conservation Instructor
Adirondack Educational Center
Saranac Lake, New York

A sound vocational training program must be built on fundamental educational principles.

Educators have as a primary goal the preparation of young people to be technically capable for employment in a career of the student's choice. During the course of technical training there will also occur opportunities for the educator to influence those attitudes and standards which will guide the student in successful relations with fellow workers on future jobs.

This article deals with the manner in which the attainment of these educational goals is attempted in the training of high school junior and senior students in a forestry occupation program. These students attend a Board of Cooperative Education Services Center for one-half of each school day over a period of two years. The remaining one-half school day is spent in their home schools in pursuit of academic subjects. The BOCES program is presented under the title of Conservation. Forestry is emphasized because the school is located in a forested region with principal land uses devoted to timber production and outdoor recreation.

NEW STUDENT ORIENTATION

Perhaps one of the most important effects made initially is a clear explanation to new students of what the school program involves and what careers they may be qualified to enter following graduation. Some new entrants have illusions of stepping from vocational school into glamorous roles as District Rangers, Wildlife Managers, or highly paid administrative positions. These students need to have the facts so as to prevent later disillusionment. Along this same line, an effort is made to determine those students who have plans for going on to college. To these students, the importance of an academic study program to provide the required college entrance subjects is emphasized. If the vocational program will interfere with the achievement of the college entrance requirements, it is recommended that the vocational program be dropped. However, they are encouraged to make every effort to maintain both the necessary academic subjects and the vocational enrollment. This is because vocational training can be beneficial college preparation as it provides a practical experience background which can aid a student in an understanding of things which may be presented only on a theory basis in college.

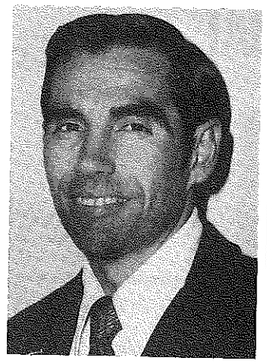
THE ESSENTIAL EDUCATIONAL PHILOSOPHY USED

An educational principle that forms the foundation for the program is that students shall learn by doing. It is important to note that the nearer this effort can be brought to resemble the real world of work, the greater benefit it will be to the students. For example, this last school year the students had available a 150-acre tract where they built woods roads and harvested saw logs, log cabin logs, pulpwood, and firewood. The project offered basic work experiences, equipment breakdowns and inclement weather. Also, the students saw the fruit of their labors in the finished piles of forest products.

Another fundamental principle is that every student shall be involved. A class is divided into work crews with 2 to 5 individuals per crew. Crew size depends upon the job at hand. A specific duty or work area is assigned to each crew and a crew is responsible for satisfactory completion of the assignment. When assignments vary between crews, there is a rotation of crew assignments. Care is taken to insure that each crew member is participating. Every student needs to be given the opportunity to develop the skill being worked upon. For example, a student may be quaking in his boots to tackle the felling of a 70-foot high tree—but under close supervision, and using the instructed principles, he brings it down successfully and just where he intended it to fall. This develops a student's confidence in his own abilities, and with confidence comes greater capability.

(Continued on page 82)

—AG RESOURCES—
—FORESTRY—
GROWING OCCUPATIONAL AREAS



FROM YOUR EDITOR

James P. Key

Opportunities for employment in occupations in the natural resources and forestry areas are increasing each year.

With the growing awareness and concern about our dwindling supply of natural resources comes the need for more workers in this area to develop and protect those natural resources remaining so they may be utilized most effectively and efficiently.

Forestry occupations have been the backbone of our nation since the beginning. With the upsurge in home building and other uses of wood products, the demand in these occupations has increased tremendously. In turn, there is a strong need for training for these occupations through agricultural education in the secondary and post secondary programs.

As can be seen from the articles in this issue, programs have been effectively implemented at both these levels which are producing skilled workers for natural resources and forestry areas. There have been some programs developed for the urban areas in tree care. This indicates that teachers of agriculture are good at identifying the needs of the communities and developing the programs to meet those needs.

I would say the Agriculture Teachers of America deserve a strong commendation for the fine job they are doing in preparing individuals for occupations in all phases of agriculture and for meeting the needs of those local communities. Keep up the good work!

One article written by a senior in Agricultural Education raises some important issues concerning the teacher shortage in agriculture. Whether you agree with the conclusions or not, the issues raised are very real and it is good to see our future teachers are concerned about the problems of our profession.

I would like to say a word of thanks to you for the good supply of high quality articles and pictures you have been sending me. My only regret is that all of them cannot be used. Keep up the good work. The competition for space in the magazine will increase the quality of your professional journal.

Thanks also for your increased subscriptions. To those 14 states with 100% subscription, I would say congratulations for this fine show of professionalism. This is a real reflection of the strength of your teacher organization and the cooperation you exhibit among teachers, supervisors, and teacher educators. Keep up the good work! —*Ed.*

(Please submit articles 2½ months in advance of Theme to allow publication time.)

COMING ISSUES COMING ISSUES COMING ISSUES

COMING ISSUES

NOVEMBER — Multiple Teacher Programs — Patterns and Priorities

DECEMBER — Ornamental Horticulture Occupations — A Growing Field

JANUARY — Agricultural Supplies and Services — Supplying and Serving the Nation

FEBRUARY — The FFA — Training Leaders for Agriculture

MARCH — International Education in Agriculture — Serving Our Friends There and Here

APRIL — Serving Adults — Young Farmers, Adult Farmers, Agribusinessmen

MAY — Post-Secondary Education in Agriculture — An Emerging Partner

JUNE — Cooperative Education in Agriculture — Learning on the Job

JULY — Careers in Agriculture — Summer Employment Opportunities

AUGUST — Teacher Education in Agriculture — Laying the Foundation for Good Teaching

SEPTEMBER — Student Competition — An Incentive Approach

OCTOBER — Supervisors and Consultants — Important Members of the Team

COMING ISSUES

LET'S GET THE WOOD OUT!

by
John W. Parsons
Forestry Instructor
Foster Vocational Center
Farmington, ME

THE AREA AND SCHOOL

Logging operations are a principal endeavor in Franklin County, Maine, most of the year. Some of the years, operations must be suspended due to the deep snows, and every spring brings the period known as mud season. The sounds of chain saws and power equipment are familiar to all. Over 90% of the county is forested, providing the raw materials for the local wood-using industries. The job of harvesting and transporting these materials is no longer done by the rough and tumble logger of the past. To develop these skills, and associated knowledge, we have developed a program in forestry at the Foster Vocational Center.

Today's techniques require men with numerous skills unknown to loggers of as little as 30 years ago.

The Foster Center is an area vocational center, which means that students from all over the county, as well as some of the towns adjacent to the county, attend the Center. For many students this means extra miles riding school buses, as well as a longer school day. The extra effort is no deterrent and each year it's necessary to turn some applicants away. We have increased our class enrollment from 16 students to 22 students in each class, and although this is a 38% increase, we still have more applicants than we can safely handle.

The forestry program is a two year course beginning in the student's junior class year. Our schools operate on a seven period daily schedule. The forestry class uses three of these daily periods; juniors in the morning session, and seniors in the afternoon session. The remaining periods allow the students time for busing to and from their home schools; and to complete classes in other subjects. A major advantage to the student of this type of scheduling, is that it allows specialized training in a chosen field, without disruption of the student's normal social and scholastic environment.

THE JUNIOR YEAR

After a maximum of a week's preparation in the classroom, the class moves right into the woods. Their work is basically timber stand improvement revolving around pruning and thinning. During this period they are taught to identify the standing trees as well as to be able to identify sticks of wood by species. Naturally, the proper use and maintenance of chain saws is an integral part of their training. The removal of the pulpwood from their thinning is accomplished by the use of a John Deere 350 crawler tractor operated by the students. In order to determine the area of the stand, simple surveys are made using a staff compass and Gunter's chain. During this period the students are carefully evaluated and the more capable individuals are used as crew bosses and instructors. This technique has worked effectively and is carried on throughout the two year course. For many, this is the first opportunity to direct the activity of others, and such an experience should come with supervision and assistance. In addition to aiding the teacher, the students gain insight and experience in dealing with each other. Being "the boss" requires the individual to plan ahead and to coordinate various activities, resulting in a much better appreciation of the task performed.

During the winter period (January to April) much of the class activity returns to the classroom, and the routine becomes similar to the usual concept of education. The students take notes, have tests and quizzes, and view audio visual training aids. The material covered includes: tree physiology; selected insects and diseases; forest products; interpretation and preparation of maps; forest measurements; and harvesting methods. Also during this period, the State Forest Service provides personnel who train the class in forest fire control work. The training involves both classroom sessions and, later in the spring, an outdoor session.

In mid April the class returns to the woods to begin the harvesting operation. They go on to the same operation, in which the seniors are involved, to facilitate the use of equipment. During the remainder of the school year several students are trained to operate a 440 John Deere skidder. These students become the student instructors for the senior year, just as last fall's crawler operators are now training other students to operate the crawler.

THE SENIOR YEAR

Harvesting operations comprise the major portion of the senior class efforts. Since harvesting involves the use of skills and techniques, it is necessary to provide ample practice. Both clear cutting and selective cutting are practiced on selected sites. The students harvest large, mature and over-mature trees of both the coniferous and deciduous types. They are taught to utilize each tree to its greatest potential value—pulpwood vs. saw logs, etc. They learn to identify which trees should be removed from the stand to improve the residual stand, and how to properly dispose of slash. Since the aesthetic value of a forest is high, students are taught to use harvesting equipment carefully to avoid damaging the forest floor and the remaining trees.

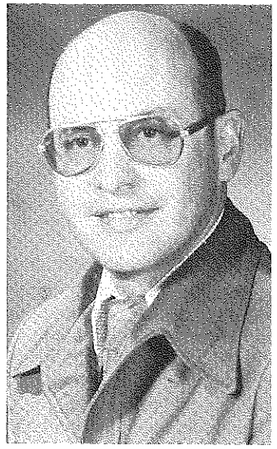
While the majority of the class is involved in the harvesting operation, groups of six students operate the school saw mill. The students perform all of the duties in the mill, as well as operating a truck-mounted hydraulic loader. They saw lumber out of logs harvested by the senior class. This involves all the class in a complete operation from the stump to salable lumber. Our mill has only been operational for a year, so there is much potential development in this area.

During the winter period (January to April) the class spends one class period weekly in the classroom. At this time they are given instruction in the

(Concluded on page 83)

WOOD HARVESTING TRAINING AT THE POST-SECONDARY LEVEL

by
Joseph S. Krug
Department Chairman, Wood Harvesting
Washington County Vocational Technical Institute
Calais, Maine



Joseph S. Krug

Many young people would like to work in the great out-of-doors in one occupation or another, and woods work offers this opportunity.

For those who like the feeling of seeing their labor rewarded in the size of their paycheck, woods work as a cord-cutter or logger provides the answer, with great financial and personal rewards for those who are successful.

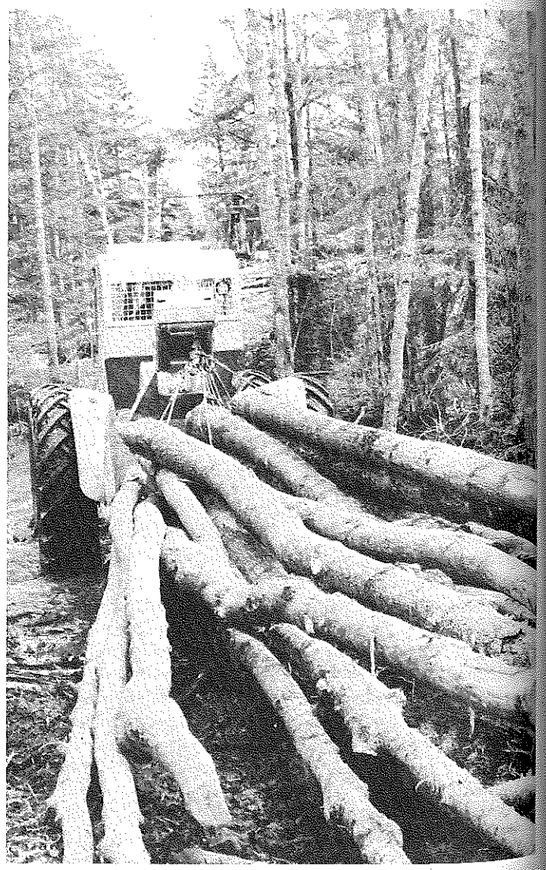
To gain employment in this field with one of the larger paper companies in the northeast, one must be 18 years of age and have at least 6 months prior harvesting experience, or have successfully completed a recognized wood harvesting training program.

PROGRAM DEVELOPMENT

Washington County Vocational Technical Institute's Wood Harvesting Training Program was developed out of a need for well qualified woods workers. There has been a steady increase in the demand for wood products over the past two decades, and at the same time a steady decline in the number of people entering this field. This decline was due to lack of experience for new employees, changes in harvesting methods, and lack of available training. It was also discovered that no other training facility was available at the post-secondary level within 1500 miles to perform this service. Therefore, a training program for woods workers was initiated at WCVTI.

With curriculum planned, instructors hired, WCVTI, on July 10, 1972, started to train wood harvesters. A wood harvester or woods worker, by WCVTI's definition, is one who is capable of harvesting standing timber with a chainsaw and rubber tired skidder, with the degree of efficiency to make a comfortable living. He is also an individual who understands what is happening around him with regards to the total wood harvesting picture. He should also have the ability to properly maintain his equipment and to keep his production standards at a level acceptable to himself and to industry.

The major aim of the program is to develop the student so that upon completion of the program, an entry level skill, or better, is possessed. The time frame within which this is accomplished is 22 weeks.



Loading heavy and going slow will produce the wood at the yard.

Part of the seven 664B Clark Rangers, ready to go to work.

During the 22 week training program the curriculum can be divided into three (3) major sections. These sections are chainsaw and skidder operation (Wood Harvesting) 65%, chainsaw and skidder maintenance 25%, subjects related to wood harvesting 10%.

The actual harvesting phase of the program is divided into three (3) sections. The first section is the production of four (4) foot wood of small diameter limits, the second phase is the production of tree length wood of intermediate size. The last phase is the production of mature tree length wood out of one of Georgia-Pacific's regular cutting camps. This last phase is considered the grand finale of the program.

WCVTI offers six (6) wood harvesting training programs per year with the starting dates staggered by approximately two (2) months. This is accomplished with the aid of five (5) instructors, one (1) mechanic and one (1) department chairman.

To date, approximately 70% of all graduates are working in the woods or woods related occupations.

EQUIPMENT AND FACILITIES

To accomplish their task, the equipment needed is as follows:

15—rubber tired cable skidders (7 of which are the result of an agreement with the Clark Equipment Company and Chadwick-BaRoss Company of Bangor, Maine)
1—Grapple skidder
1—D-7 Dozer
1—Back-hoe, front-end loader
1—4-wheel drive Suburban with 2-way radio
1—4-wheel drive ¾ ton pickup
4—6x6 army trucks
1—portable fuel trailer
60—chain saws

The classroom, shop and storage facilities consist of one building 40 feet by 100 feet, another 40 feet by 120 feet and one 14 feet by 24 feet.

The land area needed for a program such as this is tremendous, and the lack of adequate land could be a deterrent to any such program.

The WCVTI campus contains 300 acres of wood lot. The school property also adjoins the Moosehorn National Wildlife Refuge which contains approximately 18,000 acres. Stumpage is presently being purchased from the Refuge and, as already mentioned, six (6) weeks of each class is spent cutting on Georgia-Pacific holdings, which helps eliminate any land base problems we might have.

BENEFITS

Many goals and objectives could be stated in regards to WCVTI's Wood Harvesting Program, but it is safe to say that training safe, competent, productive woods workers would be the number one objective. Through curriculum design and staff leadership, the program attempts to impart the following benefits to each student:

1. Inform and show the student what is expected of him in woods work.
2. Develop in the student the methods to maintain high daily production standards.
3. Develop the student into a productive wage earner.
4. Show the student how to work safely and develop in him an awareness of safety procedures.
5. Inform and show the student what goes on around him in woods work.
6. Teach the student how to reduce lost time on the job.
7. Provide the student with means to be a more valuable employee.
8. Develop in the student the benefits of proper maintenance.
9. Develop in the student the correct operating methods.
10. Develop in the student a better job attitude by being better informed and prepared.

The cost to each student involves: tuition—$233 resident, $466 non-resident, $150 personal equipment and books, and approximately $700 for room and board. This is considered a small investment for a fine future.

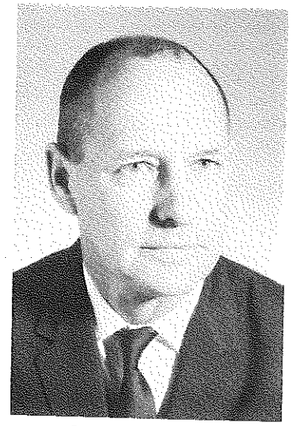
It is felt by the WCVTI Wood Harvesting Department Chairman that the keys to a successful program are good instructors, strict discipline and early removal of incapable or unproductive students. ◆◆◆

For further information you may write:
Dean of Students
Washington County Vocational
Technical Institute
River Road
Calais, Maine 04619

Good filing technique makes for a fast cutting saw.

A NATURAL RESOURCES MANAGEMENT PROGRAM

by
George B. Lancaster, Instructor
Agricultural Education in
Natural Resources Management
Louisa County Occupational Center
Mineral, Virginia



George B. Lancaster

The Natural Resources Management Program at Louisa County High School began as a forestry class in 1971. Through surveys and observations over a number of years, the need for a class in forestry was established.

Louisa County is entirely rural except for a couple of small towns and villages. The land is rolling and located near the foothills of the Blue Ridge Mountains. Approximately 70 percent of the land is woodland (nearly 233,000 acres); 6 percent of all sales in the county are from forest products. There are six large lumber processing plants in Louisa County, two pulpwood yards and two others within 20 miles driving distance of any point in the county. Several thousand acres of woodland are owned for production purposes by business firms such as Continental Can Co.

Within three years our program was broadened to include Forestry, Soils, Water, Air, Wildlife and Recreation. Most of the open land and some woodland in Louisa County is subject to erosion. With the help of the Federal and State Governments, a half dozen flood control lakes and watersheds have been constructed or are in the process of being developed to control water and soil erosion. As of this date, 725 smaller, privately owned farm ponds have been constructed and are in use. Thousands of acres are being strip cropped.

Lake Anna, which is associated with a nuclear power plant, runs along most of the entire north side of the county. Outdoor recreation is becoming a big thing; hunting, fishing, and water skiing are the primary activities. Air, water and land will have to be watched very closely because of being exposed to pollution.

OFFERINGS

Three years of instruction in Natural Resources Management are offered at our school. It is the accepted policy that two years of basic Agriculture Science and Mechanics be completed by the students before entering NRM to give the students information in plant, soil and animal life.

FACILITIES AVAILABLE

We have approximately 30 acres of outdoor classroom to work with. All of these facilities are on the school grounds and within a five minute walk of the school building. The facilities first started being developed by Vo. Ag. Classes long before Forestry or NRM became option courses. Several of our forestry plots were planted as early as 1952; however, most of the facilities have been developed within the past 6 years. The 30 acres of land has been used for the following:

- Plots of Loblolly Pines planted in 1952, 1955, and 1957
- A 40 year old plot of shortleaf pines, naturally seeded
- 5 Scotch pine plots for Christmas trees
- 7 plots of Loblolly pines from 1 through 6 years old
- A white pine area of about ½ acre
- 3 acres being prepared for controlled burning this Fall and planting of seedlings in the Spring of 1978
- An area used for soil conservation practices
- Shrubs and plants used for beauty, borders and wildlife
- Three prepared areas planted to wildlife feed each spring
- Three salt licks for deer
- A 3½ acre school lake stocked with fish, ducks and geese
- A swamp area constructed by the NRM students for school laboratory use
- A tile-drained area constructed by the students
- Soil erosion control areas
- Two excavations for studying soil profiles
- A nature trail around the entire school grounds with labeled tree species, squirrel boxes, bird houses, fox grape vines, bridges, bee trees, etc.

AVAILABLE MACHINERY AND EQUIPMENT

A list of the machinery and equipment owned by the school for use in the NRM program follows:

- A 2000 Ford Tractor
- A dual wheel trailer for hauling pulpwood and saw logs which was constructed in the ag shop
- A heavy disk, heavy spring release cultivator, front end loader and front and rear blades for the tractor
- Three chain saws, 2 transits, 2 levels, leveling rods, line poles, axes, bush hooks, grass slingers, grub hoes, hilling hoes, rakes, bow saw, 2-man timber saw, pressure sprayer, lopping shears, hedge shears, etc.
- Clinometers, abney levels, biltmore sticks, foresters compasses, measuring tapes, chain tape, increment borer and diameter tape.

Available safety equipment includes such items as helmets, leg and foot guards, first aid kit and breathing protectors.

(Concluded on next page)

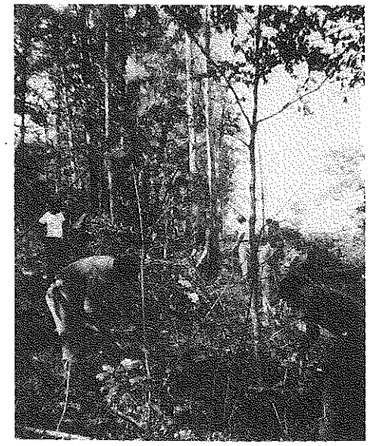
INSTRUCTIONAL AREAS

Forestry Instruction
Tree Identification
Timber Stand Improvement
Measuring Standing Timber (cruising)
Determining Tree Values
Determining and Applying Management practices
The Forest Products Industry
Insects, Pests and Diseases of the Forest
Construction, Care — Repair of Chainsaws
Managing Young Forest Stands
Reproducing the Forest
Site Factors
Plant Succession
Stand Competition
Forest Types
Career Opportunities in Forestry
Analyzing Stands
Intermediate and Harvest Cuttings
Wood Harvesting Systems
Forest Products Marketing
Growing Christmas Trees
Preparing Land for Planting Seedlings
Control Burning and Clearing Land

Crops and Soils
Career Opportunities in Soils Work
Composition, Characteristics and Importance of Soils
Study of Soil Profiles
Determining Land Capabilities and Planning for Use
Soil Erosion Control
Managing Farm Soils
Watersheds and Water Control
Applying Plantfoods, Lime etc.
Estimating Costs and Returns on Forestry, Crop and Machinery Enterprises
Keeping Records
Turf Management
Handling and Applying Pesticides
Estimating Cubic Yards of Soil in an Area

Surveying, Air, Water, Recreation and General
Using Topographic Maps and Aerial Photographs
Using Transits, Levels and Compasses in: Running Levels, Establishing Contours, Laying out Water Divergence Ditches, Closing Traverses, Running Bearings and, Surveying Land. Determining Slopes, Laying out Building Foundations, and Determining Acreages by Using Triangles, and Rectangles.
Career Opportunities in Wildlife, Recreation, Forestry, etc.
Caring for and Managing Farm Ponds
Developing and Caring for the Nature Trail
Study of different species of wild game and fish including habitat, management, feed habits, and laws.

At the present time, we are working closely with the Job Bank in conjunction with the Virginia Employment Commission. The Job Bank lists special categories of jobs available in Forestry, Farming, Recreation, etc. Job Bank gives a description of the job, location, salaries, where to apply, and other pertinent information. We think this is going to help a great deal in assisting students to find employment upon leaving school, or even part-time jobs. ◆



Clearing a hardwood area to plant loblolly seedlings.

The school lake with one of the forestry plots in the background.

BOOK REVIEW

HISTORY OF FINANCIAL SELF-HELP, by W. Gifford Hoag. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1976, 292 pp., $6.95

The FARM CREDIT SYSTEM is a welcome addition to the understanding of agricultural finance. The historical explanation of development of the farm credit system, together with the financial needs of production agriculture, makes a readable presentation. Being divided into five parts with 31 short readable chapters adds to the appeal of this well written book.

Three viewpoints—how the system originated, how the system progressed, and where the system will go in the future—are treated. The five parts of the book are: (1) Significance to Farmers and the Economy, (2) Pioneering Innovations, (3) Basic Principles and Major Guidelines Developed, (4) Working Relationships with Other Organizations and Groups, (5) Farmers' Needs for Credit—Explode After Slow Buildup.

The book will be most valuable as background reading for teachers and students of agricultural finance at the post-secondary level. Farm and ranch management students and adults studying to upgrade farm management skills will find this book useful. High school students may use this book as they progress into the use of borrowed capital for their own production enterprises.

W. Gifford Hoag, the author, writes clearly and concisely. His experience in agricultural finance, along with assistance from friends and acquaintances in the farm credit system, adds credibility to his writing. The use of short chapters makes this book an easy to use reference.

The only problem I foresee is in updating the statistics. This problem, however, is not insurmountable for the user who keeps current in the field of agricultural finance.

I recommend that everyone working with farmers and ranchers read and study THE FARM CREDIT SYSTEM—A HISTORY OF FINANCIAL SELF-HELP.

Wayne Berry
Agribusiness Instructor-Coordinator
University of North Dakota-
Williston Center
Williston, North Dakota

SPECIFIC FORESTRY TRAINING

Actual course content may vary somewhat depending upon field projects which may be available for student participation. However the essential components are as follows:

1. *Safety orientation:* An emphatic point is made with the students concerning the fact that the class work is hazardous and that each individual is responsible for their own and their fellow classmates' well-being. Specified safety equipment to protect feet, head, eyes and hearing is shown. As each new subject of instruction is started, safe working practices are demonstrated and the point is made that careless disregard for safety rules is primary cause for disciplinary action. Incidentally, the American Pulpwood Association Booklet, *What the Occupational Safety and Health Law Means to Loggers,* is an excellent manual on safety practices.
2. *Equipment operation:* Standard operation and daily maintenance of the following equipment is given:
   a. Crawler tractor with angle, tilt blade and winch
   b. Dump truck with low-boy equipment trailer
   c. Wheeled tractor with front-end loader and back hoe
   d. Chain saw
   e. Forestry hand tools such as axes, bow saws, pruning saws, and fire fighting tools
3. *Surveying:*
   a. Map and aerial photograph interpretation
   b. Property deed interpretation and boundary line location using staff compass, tape, and abney hand level
   c. Boundary location using a 1-minute transit
   d. Differential leveling with engineer's level
4. *Tree identification of local trees*
5. *Timber cruising:*
   a. Timber cruising and topographic mapping is done using staff compass, tape and abney control. Cruise pilots are established on mechanical spacing and tallied trees determined by prism angle gauge.
   b. Tree dimensions are determined by ocular estimation, diameter tape and cruising stick. Volumes are computed by use of volume tables.
6. *Timber harvesting:*
   a. Marking of timber for cutting
   b. Harvesting practices to protect the environment
   c. Road layout and construction
   d. Tree felling, lopping, skidding
   e. Bucking of trees into products
   f. Scaling of logs by various log rules, and cordwood measurement by standard or face cords
   g. Loading and hauling of logs and pulpwood
7. *Tree planting* of local conifers for future tree crops
8. *Outdoor recreation:*
   a. Hiking trails, layout and clearing
   b. Rustic structures construction—These include such things as log lean-to's, benches, tables, and chairs.
   c. Drinking water supplies
   d. Solid waste disposal by use of sanitary land fill
   e. Sewage disposal systems

It should be noted that in recent years Federal and State regulations and funding grants have been aimed at environmental quality through provisions for improved drinking water, and adequate solid waste and sewage disposal. There has thus been created an enlarged job market in these areas. Because of this potential employment, the subjects of drinking water, and solid waste and sewage disposal are expanded beyond the level needed for outdoor recreation campgrounds and made also to cover household and municipal systems. Cooperation of local village officers, State Department of Environmental Conservation and Department of Health personnel have been most helpful in aiding instruction in these subjects.

9. *Wildlife management:*

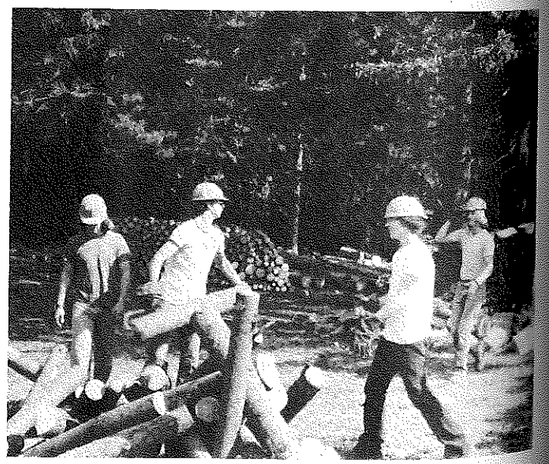
Fundamental principles of wildlife are covered; however, it is presented primarily as a part of forest management practices and also to enhance the student's personal knowledge of fish, game and birds. Students are advised that, if they wish a wildlife career, it is a specialized program which requires college training.

STUDENT PERSONAL DEVELOPMENT

As was discussed at the beginning of this article, there are also opportunities for an educator to influence the personal development of students. This may be productive to various degrees and is certainly worth the effort. Some of the procedures are as follows:

1. *Day by day work situations:*

The crew assignments procedure is an effective tool in developing work habits. It brings into play the pressure of fellow crew members upon each student to carry a fair share of the work load. Crew work also simplifies the instructor's evaluation of progress. A student observed displaying some undesirable trait such as laziness or disregard for tool care is called aside by the instructor and talked with privately to try to correct the problem. Also, honestly telling them when they are doing a good job should not be neglected.



Another useful technique in responsibility training is a posted weekly duty roster for chores such as getting out and returning all tools for a day's project, shop clean-up and attendance report. In this way, there is no question about where the responsibility rests. Of course, care must be exercised that there is equal rotation of these assignments.

2. *Leadership development:*

Formation of a student club is an important element in training. Election of officers, conduct of meetings and each student's participation in determining club policy is an important exercise in involvement. Decisions for club projects are good at developing civic awareness.

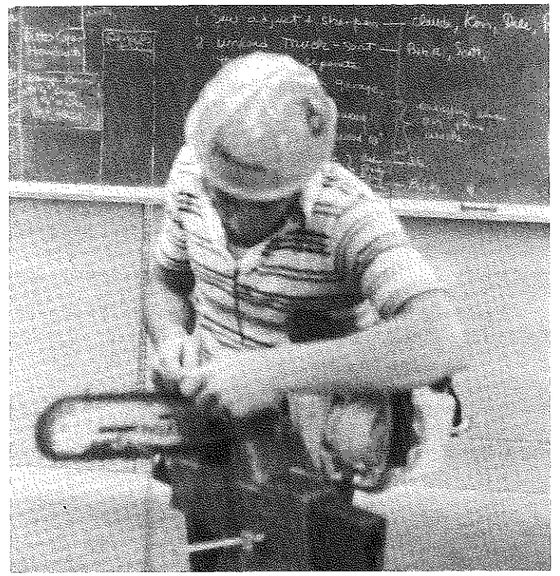
The club can be used for furthering education beyond the classroom. As an example of this, during the past school year the club earned over $1000.00; the bulk of this money was utilized to sponsor a three-day educational field trip and to purchase a gift to the school.

3. *Career orientation:*

A reference library is available for student use. This is presently quite limited in nature, but does include forestry and conservation magazines, college catalogs, government pamphlets, industrial brochures, and a few reference textbooks. Students having a curiosity in a certain subject matter find this library useful.

Students are required to maintain a loose-leaf notebook of all classroom handouts. These are graded before the final exam and returned to the students. The main objective in doing this is to insure that they will have their handouts for future reference when needed.

Before graduation, students are aided in preparing a resume of their qualifications for use in job applications. It is interesting to see the pleasure they express in seeing a formal statement of their qualifications. Also the resume is a good confidence boost to the fearsome task of students presenting themselves to the employment market for the first time.



CONCLUSION

The program outlined in this article has met with a reasonable degree of success. However, as teachers know, career education is a dynamic, always changing process. There will be deletions and additions to this program as circumstances dictate. One thing evident is the need for greater emphasis upon the actual placement of graduates into productive employment. Young people need the opportunity for work in a job of their training as a natural follow-through of the educational process. ◆◆◆

financial and business aspects of logging. Included in this area are: payroll deductions; income tax preparation; equipment financing; simple business records; title and deeds, etc. Bankers, equipment dealers, insurance men, and other are often used as speakers and these sessions often prove quite interesting to all. Unless the outside temperature is below 10°F and windy, or we are experiencing heavy snow, the class operates outdoors all winter long.

OPERATIONAL PRACTICES

Safety, naturally, is of major concern in such a program. To date, our safety record has been excellent. The most serious accident in the 8 years the program has been operational was a chain saw cut requiring 7 stitches. Each student is provided a hard hat, and ballistic nylon safety chaps for use when operating chain saws. Each student must purchase their own hard toed safety boots. This includes a pair of regular leather boots and a pair of felt lined pacs for winter use. Also each student must have suitable outside work clothing and gloves. The cost to each student is between $40 and $50 for personal equipment. Much of this equipment is made available through the school and many of the students have purchased safety equipment to take home for other family members and friends who do woods work. In addition to the safety equipment, many of the safety aspects taught at school also arrive home.

The school has little wood land, so most of the field work is done on privately owned lots. A small charge is made for the service rendered, and the money earned is used to purchase new saws, supplies, and to slightly subsidize the boots purchased by the students. At the present time, we have between three and five years work lined up, and numerous requests to check woodlots for possible future operational sites. We have constant requests for custom log sawing at the mill.

After 8 years of operating, the program can be considered successful. Enrollment has never been a problem; we wish it were practical to include more students in our classes. Each year it has been necessary to select our class from larger numbers of applicants. At any one time, a survey of our graduates shows between 30-40% active in the forestry or logging field. The community has shown considerable interest in what we are doing and our public relations are very good. In the state of Maine this type of program is on the increase and is now being offered in about a dozen different schools. With the current national trend toward ecology and conservation, this type of program might well fit into many schools across the nation. ◆◆◆

Tree Care Service—Branching Out in Vocational Agriculture

by
Ray Morton
Graduate Student
Ohio State University

The vocational agriculture department in Pleasanton, California, is teaching young men and women to climb, prune, and care for landscape trees as part of a class in arboriculture, or tree care service. Graduates with a "B" grade or better are almost sure of a well paying job.

The course in arboriculture, started in 1972, is sponsored by the Livermore and Amador Valley High School Districts' Regional Occupational Program (R.O.P.). Approximately 60 high school and adult students, including two young women, have completed the program. So far, every successful graduate seeking a job has been placed. Several graduates have gone into business for themselves, although this is discouraged. It is felt that graduates with entry-level competency need to work with experienced climbers a while to gain more experience.

CLASS ORGANIZATION

The class is organized for one semester of instruction. The period of instruction covers 160 hours in 16 weeks. The ideal class size is 12-15 students for one instructor. Safety becomes critical beyond 15 students. Class meetings are scheduled 2-3 afternoons each week, lasting 4-5 hours each session. Seventy-five percent of the time is given to laboratory experiences completed in the field. The remaining 25% is spent on related instruction. An abbreviated course outline is in Table 1.

Grading is based upon performance criteria established for "A," "B," and "C" grades. Students below "C" retake the course or drop out. Students receiving "A" or "B" grades are recommended for job placement. All students completing the course with a "C" or above receive a Certificate of Completion, including a list of instructional units and hours.

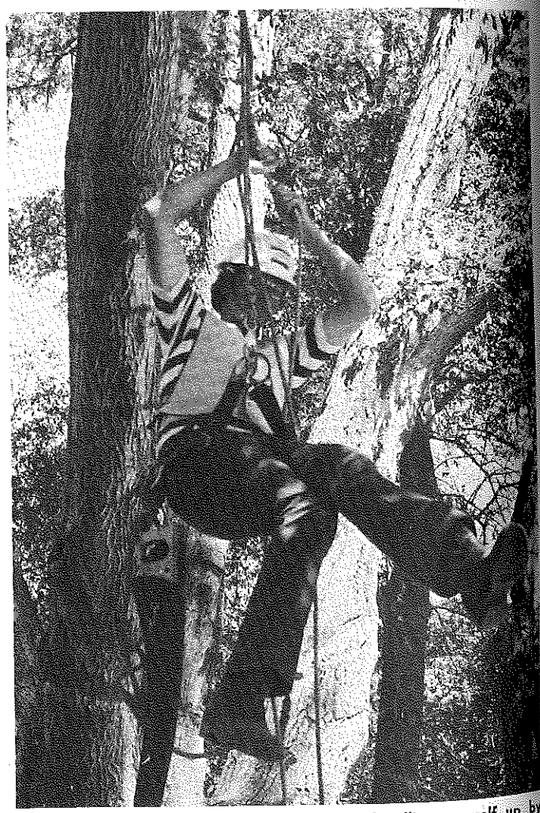
TABLE No. 1

Unit of Instruction	*% Time Allotted*
1. Introduction; occupational guidance and placement; administration	5
2. Ropework	5
3. Safety; principles and practices (included as part of other units)	15
4. Climbing techniques	5
5. Pruning; principles and practices	30
6. Power equipment; principles, practices and field maintenance (chainsaws, aerial baskets, chipper, and hydraulic loppers)	20
7. Advanced techniques; large limb removal; felling; topping	10
8. Tree identification; disease identification and principles of control	7
9. Field trips; guest speakers	3

NECESSARY COOPERATION

The partnership between business, public service agencies, and the local school districts was crucial in making this program work. Davey Tree Expert, Inc., a nationwide tree service company, was instrumental in establishing this program. The idea for this class was actually Davey's, set into operation by Roy Isler, the director for the Livermore-Amador's R.O.P. The vo-ag instructors that became involved—John Greici, Jr., Ray Morton, and Phil Pierpont—

(Concluded on next page)



UP HE GOES! — Sort of in the tradition of pulling yourself up by your bootstraps, Ray Morton, Instructor for the Amador Valley High School's class in tree trimming, pulls himself upward toward a tree limb where some pruning must be done. Morton says strength isn't the prime necessity — it's agility, no fear of height and special skills you develop. (Photo courtesy Monte Monteagle Photo, East Bay Regional Park System)

CONTINUED TREE CARE SERVICE . . .

received most of their training from Davey Tree Co. personnel. The East Bay Regional Park System and the city governments of Livermore and Pleasanton provided job sites, equipment, and personnel to supplement the school instructors. Local landscape maintenance firms and nursery businesses have indicated interest in co-sponsoring other training programs of this nature.

There are, however, some important questions to consider before you go "out on a limb" and offer arboriculture as part of your Natural Resources, Forestry, or Horticulture programs:

(1) Are there established tree service companies in your community to train you (the instructor), supplement your instruction with loans of personnel and expensive equipment, and hire your graduates?

(2) Can your school district afford to support this program? Insurance is expensive and the approximate initial cost for minimum operation is $250 per student.

(3) Can you devote time per week for two or three 4-5 hour class sessions? This class requires large blocks of time for travel, instruction, and practice. This is one group of students you do not want to hurry!

(4) Are you willing to climb with your students? Sound health, agility, and freedom from vertigo are prerequisites for instructors and students alike.

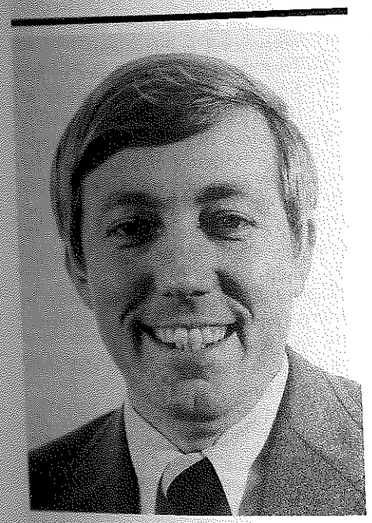
Arboriculture is fun to teach, although safety hazards are always cause for concern. The instructors of this program state that there has not been a serious accident in four years of operation. The reason for this successful record is due to the instructors' and students' constant awareness of the potential for serious accidents. Safety is a part of each lesson and practice session.

OPPORTUNITIES

For those students that complete the course, the job market is good. Trained tree care workers are in short supply at the moment. This profession is high-paying, challenging, and advancement is fairly rapid. Most executive managers of large tree care service companies began by climbing and pruning landscape trees.

The best endorsement of this unique program has been given by graduates themselves. Many stated that the course was the first class (that they could remember) that emphasized immediate application of knowledge and skills to solve real-world problems. Hanging from a 5/8 inch manila climbing rope, 75 feet above the ground, with a chain saw on full throttle, does demand mature behavior! ◆◆◆

NEW FFA EXECUTIVE SECRETARY



C. Coleman Harris

C. Coleman Harris has been employed by the U. S. Office of Education, Department of Health, Education, and Welfare to assume responsibilities of Executive Secretary of the Future Farmers of America (FFA) as prescribed in the FFA Charter, Public Law 740. The announcement was made by Richard E. Carlson, Director, Division of Vocational and Technical Education. Harris, who has been serving as Acting Executive Secretary since the retirement of Wm. Paul Gray last December, assumed his new position on July 5.

An FFA employee for 10 years, Harris was hired by the National Organization in 1967 as a Program Specialist to develop FFA award programs and regional leadership programs. In 1971 Harris was named Associate National FFA Executive Secretary and was given more responsibility for the development of FFA leadership programs as well as for working with the National FFA Officers.

Harris is a graduate of Purdue University where he earned a Bachelor of Science Degree in Agricultural Education in 1961 and a Master's Degree in 1964. In 1964-65 he did additional graduate work at the University of Maryland as part of the National FFA Executive Fellowship program.

Prior to his employment with the National FFA Organization in Alexandria, Virginia, Harris was a teacher of vocational agriculture from 1961-64 in the Southeastern School Corporation, Walton, Indiana. In 1965 he was employed by the Indiana State Department of Public Instruction as Assistant State Supervisor of Vocational Agriculture Education and Executive Secretary.

A native of Lynn, Indiana, Harris, his wife Jean and their three children (Cindy, Sandy and Greg) have been Alexandria, Virginia, residents for the past 10 years. ◆◆◆

BROCHURE AVAILABLE

A copy of a new brochure published by the Agricultural Division of the AVA, "TEACH VOCATIONAL AGRICULTURE," is a revision of an earlier publication—"Opportunities In Teaching Vocational Agriculture." Up to 3 copies may be secured free of charge. Larger quantities can be purchased for 4¢ per copy from—NVATA, Box 4498, Lincoln, NE 68504.

Payment must accompany orders.

OOPS!

CORRECTION — "Concrete Masonry Handbook for Architects, Engineers, Builders" was reviewed in July as having 22 pages. It actually has 226 pages. Our apologies. — Ed.

Identification of Competencies for Forest Production and Logging Occupations

by
James S. McCully
Research and Curriculum Unit,
Mississippi State University

Throughout the United States, vocational agriculture programs are expanding to meet the needs of students in all areas of the modern agriculture-agribusiness industry. Such expansion must be directly related to the needs of the industry itself. Students leaving these expanded programs must possess the skills and knowledge needed to enter and advance in their chosen occupation.

The National Project for Identifying Competencies in Agricultural Occupations was begun in 1973 to coordinate a nation-wide effort to establish the importance of competencies needed to enter occupations in all segments of the agriculture-agribusiness industry. The project involved dividing the work of determining competencies among the more than forty states which participated in the study. Subcommittees were appointed for each of the seven broad agricultural areas designated by the U.S. Office of Education.

Mississippi accepted the responsibility for identifying entrance competencies needed in selected occupations in forest production and logging, hauling and transporting of forest products.

This study identified the degree of importance of interest competencies required in selected occupations in forest production and logging, hauling and transporting of forest products. During the study the following specific questions were addressed:

1. What occupations are available for entrance by trained high school students in forest production and logging, hauling and harvesting of forest products?
2. Which of these listed occupations offer satisfactory pay scales or advancement possibilities for the worker?
3. What competencies are needed for entrance into these occupations?

RESEARCH METHODOLOGY

The procedures used in conducting this study were basically the procedures recommended by the national project. Some modification, however was necessary. The original scale recommended for use in the project was modified by adding a fifth step. This allowed a wider range of responses.

The first step in the research process was to identify occupations available in the two selected areas and to select occupations for further study. After consultation with Mississippi State University (MSU) Experiment Station and Cooperative Extension Service foresters, three occupations were chosen on the basis of pay scale and advancement possibilities for trained high school students. The occupations were forestry aid, wood producer and logging skidder operator.

By interviewing persons in the forest production and logging industry and reviewing related literature, job descriptions were prepared for each of the selected occupations. Duties and specific competencies were then listed under each job description. These lists were then reviewed by Cooperative Extension Service personnel and revised. Sample survey instruments were then prepared.

These sample instruments were mailed to a pilot Employer-Employee Review Group (EERG) composed of five persons. This group included representatives of the American Pulpwood Association, Louisiana State University-MSU Logging and Forestry Operations Center, MSU School of Forestry, Mississippi Forestry Commission and a major paper company. No major revisions were indicated to be necessary by the pilot E.E.R.G.

Final copies of the survey instruments were then prepared and mailed. Each questionnaire was mailed to an Employer-Employee Review Group composed of 75 persons. The forestry aid questionnaire was mailed to government, industry and consultant foresters in three states. Names were picked at a random interval from a list supplied by Cooperative Extension Service personnel. The logging skidder operator and wood producer questionnaires were mailed to subscribers of a logging industry trade magazine. Names were picked at random by computer from subscribers in five states.

Each participant was asked to evaluate the importance of each competency according to the scale below. A score of "0" was reserved for allowing for "No Response" in calculating means. Each point of the scale was defined as follows:

6—*Essential* — Of utmost importance, competence in performing this task is absolutely essential for entry level employment.

5—*Important* — Competence in performing this task has much influence or effect on employability.

4—*Of some importance* — Competence in performing this task has some influence on employability.

3—*Of little importance* — Competence in performing this task has only slight influence on employability.

2—*Not important* — Competence in performing this task has no effect on employability.

1—*Does not apply* — This task does not apply to this job.

As instruments were returned, responses to individual competencies were recorded. At the close of the designated time period for receiving replies, the number of responses to each point of the scale were recorded. From these numbers, percentages of respondents to each point of the scale were computed. Means were computed for each competency. A grand mean was then computed for each duty or sub-duty.

(Concluded on next page)

SUMMARY OF FINDINGS

Forestry Aide. A total of 51 responses were obtained from the 75 persons surveyed concerning this occupation. Of the 152 competencies listed on the survey instrument, 11 were classified as being "Essential," 55 were rated "Important," 74 were classified as being "Of Some Importance" and 12 were "Of Little Importance." The beginning forestry aide should possess positive work attitudes such as cooperation, safety, acceptance of responsibility and general work habits. This group of competencies was found to be the most essential of all the groups listed. The beginning forestry aide should also be able to direct reforestation and conservation activities such as planting seedlings, directing planting crews and caring for seedlings prior to planting. The aide should be trained in starting backfires for control of forest fires, locating access roads to fires and conducting mop-up operations.

Respondents also indicated that beginning aides should be well trained in assisting foresters in conducting timber cruises. Specific competencies in this duty were measuring distances between plots; acting as tallyman to record number, specie and volume of trees on the plots; directing cruising operators by acting as compassman; and measuring height and diameter of trees to determine volume. Aides should also assist in marking timber for removal or deadening in timber stand improvement operations. The research tended to indicate that most foresters in the South favored the use of the Doyle scale over the Scribner or International scales of volume estimation.

Other competencies concerning this occupation which received high ratings were concerned with measuring and marking boundaries and corners, enforcing safety rules and regulations, operating trucks and tractors, and performing simple maintenance tasks on various types of equipment.

Logging Skidder Operator. A total of 31 responses was obtained from the 75 persons in the sample population. Again the respondents indicated that general work attitudes concerned with safety, personal responsibility, cooperation and personal attitudes were the most important competencies on the survey. It is interesting to note that the survey indicated that it was more important for the beginning logging skidder operator to possess maintenance competencies rather than actual skidder operation competencies. Competencies such as maintaining engine and hydraulic oil levels and maintaining coolant and fuel levels were rated as being essential. The data tended to indicate that employers were looking for a person who would perform preventive maintenance on a regular schedule. The most essential operation competency was to recognize any malfunctions in the operation of the skidder.

Other important competencies associated with the actual operation of the machine were: using winches to skid logs or pull stalled vehicles, choosing safe speed for operation, attaching cable or chain chokers, and pulling stalled vehicles to solid ground. In general the respondents indicated that they expected the beginning operator to perform only the more routine maintenance tasks. In addition to operating and maintaining the skidder, the operator should also be able to operate chainsaws, trucks and various other pieces of equipment.

Wood Producers. A total of 32 responses was obtained from the 75 persons who were mailed survey instruments. The instruments contained a total listing of 162 identified competencies. This occupation differed from the two previously discussed in that most persons employed in this field are self-employed. Competencies associated with business management such as maintaining records of income, expenses and payrolls were rated most important. Other competencies associated with supervision of workers such as training workers in using equipment, setting standards for performance and organizing the crew for continuous work were also indicated to be important. The wood producer should also be able to locate access roads, determine boundaries by visual inspection and execute contracts for purchasing timber.

The beginning wood producer should be capable of operating any machinery or equipment which would be used by his crew. This equipment included chainsaws, trucks, skidders, and loaders. Maintenance of equipment was determined to consist of the more fundamental tasks such as adding oil or other lubricants, sharpening chainsaw cutting chains, changing engine oil and filters, replacing spark plugs, etc. More technical tasks, such as replacing clutches, timing diesel injectors, etc., were indicated to be of lesser importance.

SUMMARY

This study investigated the competencies required for entrance into the occupations of forestry aide, logging skidder operator and wood producer. The researcher determined that these three occupations were available as entrance level occupations for qualified high school students. The chosen occupations offer a good pay scale and a chance for promotion to positions of more responsibility. To summarize the findings of the study, programs designed to provide training in any one of these three occupations should place emphasis on producing workers who possess the following characteristics: (1) a positive attitude toward work in general, (2) the ability to follow oral and written instructions, (3) a general knowledge of forestry and logging methods, and (4) a willingness to learn new skills and knowledge. ◆◆◆

(For a copy of the final report, interested parties should write to: Research and Curriculum Unit, Drawer DX, Miss. State, MS 39762.)

STARTING RIGHT WITH BEES, by the Editorial Staff of "Gleanings in Bee Culture." Medina, Ohio: The A. I. Root Company, Publishers, 1974, 17th Edition, 96 pages. $1.35

"Starting Right With Bees" is intended for the novice, but can be useful to the established apiculturist. The book has 20 chapters covering bee biology, establishing apiaries, hive construction, extracting and marketing honey, controlling diseases and pests, managing bees at different seasons of the year, and other areas of bee culture. The book is concisely written and has a number of illustrations which effectively expand on the manuscript.

The book has been revised a number of times by the editorial staff of "Gleanings in Bee Culture," published by The A. I. Root Company. This Company is a leader in the area of apiculture and was able to call upon a number of sources for expertise in preparing the latest revision of the book.

The book can be used with a wide audience, ranging from high school students to adults. It is written at a level appropriate for the general public. Technical terminology is at a minimum, with explanations given in language that is easily understood.

Jasper S. Lee
Dept. of Agricultural & Extension Education
Mississippi State University
Mississippi State, MS

Sources of Preparation for Agricultural Resources and Forestry Occupations

by
Brian Downing
Conservation Teacher
Warren, Washington, Hamilton and Essex Counties BOCES
Hudson Falls, NY

Today jobs that emerge from, or are related to, Agricultural Resources and Forestry Occupations are many and diverse.

The jobs range from very simple and relatively unskilled work to very technical and highly skilled work. The result is that there are many different ways to prepare for these occupations. For most of these occupations it is important that a person be able to get along with other people, be able to discuss their occupation reasonably intelligently and enjoy the out-of-doors. (This is not saying you will necessarily work out-of-doors.)

HOW TO BEGIN

I will only mention the broad scope from which a person can begin to search for ways to prepare for these occupations. It is generally accepted that the more experience a person can obtain in one's chosen occupation, the better that person should be at it. With the above assumption in mind, how can a person go about the actual preparation for Agricultural Resources and Forestry Occupations? Complete high school, preferably with emphasis on math, science, and industrial arts or vocational agriculture if it is offered. A strong background in math and science is not required unless you plan on college, but like industrial arts or vocational agriculture, it will most assuredly be valuable in the future. It should be noted that vocational agriculture is unique because it deals with reality. Carpentry, mechanics, welding, electricity, plumbing, machine operation, safety, economics, and leadership, all or part of which will be useful in the future occupation, are generally included in vocational agriculture. From here, there are two directions to move. First, go to work directly after high school and, second, go on to higher education.

ENTER WORK DIRECTLY

The person that goes to work directly after high school graduation generally has a rough road ahead, but there are some advantages. As long as he is at least eighteen years old, many employers train a person for a specific job or jobs. A young person has a greater potential to repay the cost of training than an older person. For a person who has been working ever since he was old enough, the employer realizes this person has work experience and wants to work. High school graduates are generally more willing to do any kind of work to get themselves started. Not all young people accept the fact that a person generally starts from near the bottom and works himself up to where he wants to be. There is no question that most people enter into occupations after high school. A more or less trial-and-error method of one occupation to the next is used until they find the one they like best, and agricultural and forestry occupations are no exceptions.

FURTHER EDUCATION

The person wishing to improve his chances at a specific occupational area through more education has many options. One should keep in mind that the extra education alone is not going to get one to the top. Using all one's education, hard work, and a positive attitude are still necessary. For much of this higher education, one must have a specific occupational area or even a specific job in mind before moving forward with their educational plans. What are some of the higher educational possibilities?

One choice is correspondence schools. These have the advantages of allowing one to work at a full time job, thus getting experience, while still living at home. They usually are very complete, starting out by assuming a person knows nothing about the subject and carrying it through until a person has all the knowledge necessary to do a specific job or jobs. A person must have good self discipline and be able to function without a teacher. Some of these schools have fantastic advertisement which tends to give a distorted view of their results. Thus, it is a good idea to check them out very carefully.

A second choice is the Armed Forces. When a person signs up he is given a test which determines his strengths. Using these strong points, a recruiter sets a person up for training at jobs which use those strong points. Generally, a person in the armed services can be trained as long as he wishes. After a person is discharged from the armed services, he is eligible for loans and/or G.I. benefits which can be used to pay for additional training.

A third choice is in the technical or specialized areas. There are many of these specialized areas for which a person needs more training to do the job, to do the job more efficiently, to do the job safely, or for a license or certificate. These are usually three weeks to six months in length and are held at a specific training campus for 8-10 hour days. They are structured to produce an end product that has to be good enough to begin at an entry level in that occupation.

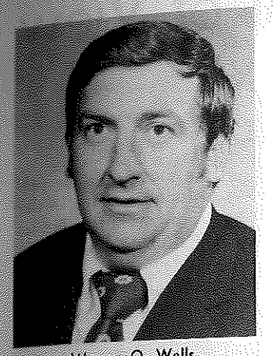
A fourth choice is the two-year colleges which afford an associate degree upon completion. This makes a person eligible to take civil service tests for various technician jobs. Many industries hire people with this background to eventually fill lower management positions. A person may also choose to continue his education further.

A fifth choice is the 4+ year colleges and universities. There are many of these and their curriculums in Agriculture Resources and Forestry are numerous. A person with this background is eligible for all kinds of pro-

(Concluded on page 95)

★ ★ ★ THIS WORKED FOR ME! ★ ★ ★

Resource Materials in Natural Resources



Warren O. Wells

by
Warren O. Wells
Agricultural Education
Holton High School
Damascus, Va.

Vocational Agriculture, due to its wide range of subjects covered, has been for years without a single volume or single source of reference materials. Therefore, most agricultural instructors have resorted to large voluminous libraries to cover the subjects taught. Then, due to a limited budget resulting in the purchases of a few books each year with some texts becoming obsolete before the library is complete, the problem of the agricultural instructor selecting and obtaining a single adequate reference text that will cover all the many individual units in each option becomes a dream. I am not criticizing the editors and publishers of the many excellent references now on the market. I realize that, due to the nature of our instruction, many subjects such as dairy cattle and arc welding cannot be incorporated into the same text for production agriculture. Also, an adequate text for mid-west production agriculture will not be adequate for deep-south production agriculture. But in the teaching of some of the options there is a trend toward a single text with some excellent results.

It is not my intention to publicize any text and I am not connected with any publishing firm. My purpose for writing this article is to share some of the aids that I have discovered in my thirteen years of teaching natural resources with other natural resource instructors.

TEXTBOOKS

I have reduced my library references in natural resources to three texts. I use the "Forestry Handbook" by R. D. Forbes as a technical teaching reference, the "Forestry in Agricultural Education in Virginia" by Agricultural Education Services, Division of State Department of Education, Richmond, Va., as a student reference of forestry in my home state of Virginia, and "Patterns of Preservation" by David Tillotson as a student text in natural resources management and conservation.

"Patterns of Preservation" is the best single text that I have found for a single option. It covers the natural resources option as I view natural resources management. The table of contents includes the following:

1. History of Conservation
2. Ecology
3. Background Science for Conservation
4. Land and Soil
5. Minerals
6. Recreation and Scenery
7. Water Resources
8. Forestry
9. Wilderness
10. Wildlife
11. Fishery Resources
12. Urban and Conservation Problems
13. Population Problems
14. Air Pollution
15. International Resource Management
16. Survival Techniques
17. Careers in Conservation

As you can see, this text covers the natural resources area. It is written on the level that a secondary school student can understand and is broken up into short, precise lesson chapters. This text is the backbone of our natural resources option, the main reason being that we teach the broad area of natural resources and do not confine the option to forestry.

SIMULATION GAMES

Another item that has put interest and class participation into the teaching of natural resources is the use of Natural Resource Educational Games. Two good examples are INDIAN VALLEY — AN EDUCATIONAL GAMING TECHNIQUE ON ENVIRONMENTAL MANAGEMENT, developed by Norman C. Thomas, M.Ed., Springfield School District, Springfield, Oregon, in cooperation with the American Forest Institute and POSSUM CREEK VALLEY, published by Southern Forest Institute.

Both of these games are about the many concepts of environmental management in relation to a local community. They cover the interests of timber management, outdoor recreational management, wildlife management, watershed management and fire protection. They provide for student participation in applying the principles that they have learned in the classroom.

These three items discussed can make a natural resources classroom a more interesting place to be. They have been a great help to me in making my classroom come alive in teaching. ◆◆

David Tillotson, *Patterns of Preservation*. Milwaukee, Wis., Great Northern Publishing Co. 1969. $12 less discount.

The Vo-Ag Teacher Shortage From A College Student's Point of View

by
Dale A. Hanson
Agricultural Education Senior
University of Wisconsin—Platteville

Each time a group of educators in Vocational Agriculture gets together to converse, the topics vary from the last golf game to the latest FFA activity, or to Monday night football. But before these gentlemen and agriculturists depart, another topic is usually discussed, that is the shortage of agriculture teachers. Every time I identify myself as a college senior majoring in agricultural education in the presence of one or more agriculture teachers, I always receive encouragement to go on to become an agriculture teacher because of the need. The reason that I and many agricultural education students like myself receive this encouragement is because there is a great deal of concern about the shortage of agriculture teachers. The problem is caused by two major factors: 1) the number who leave the field each year and 2) the reluctance of agricultural education students to go into vocational agriculture teaching rather than into a different area of agriculture.

I have studied the agriculture teacher shortage from the agricultural education student's viewpoint and have attempted to answer the question of why so many graduates don't even try to get jobs as agriculture teachers.

THE SURVEY

Right now collegiate agriculture enrollments are on the increase, so this is a step in the right direction. However, it is estimated that only 50 percent of the college agricultural education students on the national level take a teaching job. I conducted a survey of approximately 350 agricultural education students in six Midwestern universities and received a 57.4 percent response. On this survey I asked questions pertaining to the possible likes and dislikes of the field of agriculture teaching that these students held. I asked three main questions: 1) Do you plan to become a high school agriculture teacher? 56.2 percent said yes. 2) Do you plan to teach in a post-secondary vocational school? 3 percent said yes, and 3) Do you plan to enter the field of agriculture-business, agriculture production, or agriculture extension? 40.8 said yes. So out of 200 plus students who responded to the survey, 43.8 percent, nearly one-half, know now that they do not want to teach high school vocational agriculture.

In addition to these three main questions, I also included some questions directed specifically towards those who don't plan to teach to determine why they decided so. The questions that received the majority of reactions were those pertaining to education of students in their adolescent years, and questions pertaining to school administrations.

I believe that I have hit upon several of the reasons for the agriculture teacher shortage, and why nearly 50 percent of the agricultural education students never take a teaching job.

When the students I surveyed were in high school, their agriculture teacher's job may have seemed very difficult at times. True, it isn't always an easy job, but it isn't impossible. According to my survey, some don't feel comfortable around teenagers. This is a very natural reaction for adults, and it is easy to become impatient with teenagers. I feel future teachers need some understanding of the students, and an understanding of what makes American teenagers what they are today. To better understand teenagers, we need knowledge in the areas of psychology, sociology and related subjects. I don't necessarily mean formal training in these areas, although that is important also, but much of the psychology and sociology as they relate to the teaching of teenagers can best be learned by working with these teenagers. I believe that more pre-graduation contact with high school students would help promote a better understanding of teenagers on the part of students of agricultural education.

The last question on the survey pertained to school administrations. In this particular area I discovered a serious problem that will probably come as a surprise to many educators and school administrators. Of those answering my survey, 67.2 percent indicated that they believed that working for many school administrations is very difficult.

NATIONAL STUDENT TEACHING CONFERENCE

I attended the annual meeting of the National Association of Student Teachers in Agriculture, put on by the N.V.A.T.A., and held in Kansas City in conjunction with the 1976 National FFA Convention. This meeting was attended by college students from all over the country. During the two-day conference, the student delegates spent several hours in small group discussions. The main goal of these small groups was to identify, discuss, and offer solutions for problems in agricultural education. The problems most often brought up were: lack of basic skills in the high school students, difficulties in motivating students, instilling confidence in the teenagers, and the most often discussed problem was discipline in the classroom. We discussed each of these problems at length, and offered solutions for some of them, but no one was able to come up with a simple answer for the problem of discipline in the classroom.

These are some of the problems that college students are thinking about, and the uncertainty of their future in education because of these problems turns many students away from taking teaching positions.

THE ANSWER?

I am one of the 56.2 percent of college agricultural education students who plan to become a high school agriculture teacher upon graduation. But what about the 43.8 percent who don't plan to teach? To those of you who are in that 43.8 percent and are partially responsible for the agriculture teacher

(Concluded on page 94)

Leader in Agricultural Education:

ROBERT R. PRICE

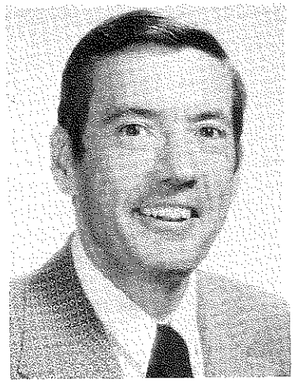
by
*H. Robert Terry**

Some years ago an Oklahoma State University Agricultural Education graduate student from an Arabian country told Dr. Robert R. Price that he felt he was deserving of the honored title, "Old Camel". When pressed for an explanation, the student related a proverb of his country which holds that, "A wise Old Camel can carry the load of several young asses." The student reasoned that since the department's other three staff members had just come aboard and were indeed young in both age and experience, the title seemed quite apt for Dr. Price. What the student really expressed was something most agricultural educators have known for a long time—that Bob Price has been an "Old Camel" carrying a big load in Agricultural Education for his entire professional career.

Fittingly, Robert Raymond Price was born April 17, 1910, at Oakwood, Oklahoma, which is near a state park area designated, "The Little Sahara." He was the only son of a prominent, progressive farmer. Following graduation from high school, Bob continued as a partner in the family farming operation for a two year period prior to beginning his college studies.

After his venture into full-time farming, Price enrolled at Oklahoma A and M College in 1930. By 1934 he had completed a B.S. Degree in Horticulture and had met the requirements for certification to teach vocational agriculture. Shortly thereafer he and Miss Emma Ingersol of Stillwater, Oklahoma, were married and the new partners embarked on their professional career.

The first stop on the career journey was at Westville, Oklahoma, for a one year stint as vocational agriculture instructor. From 1935-37 he held the same post at Stigler. Then, from 1937-42 he taught at Paden, and finally from 1942-48 he served as vocational agriculture instructor at Hitchcock and Okeene. While in the last position, he completed the M.S. Degree. His high school teaching was characterized by a thorough dedication to people. His concern was not limited to high schoolers; in each of his departments he established on-going adult and/or young farmer educational programs and was personally responsible for continually focusing on this vital aspect of a total program. He was later to be instrumental in the formation of the Oklahoma Young Farmers Association and to receive its first honorary membership.



*H. Robert Terry is Professor and Head, Department of Agricultural Education, Oklahoma State University, Stillwater, Oklahoma.

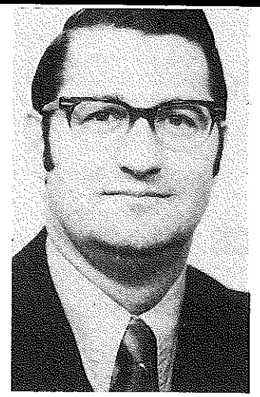
During the course of their high school teaching career, the Prices were joined by three new team members—sons, Don and John, and daughter, Faye Ann. Currently, both Don and John are full-time ministers of the United Methodist Church in Oklahoma. Faye Ann is a Professor of Early Childhood Education at Kansas State University.

In 1948, at the urging of J. B. Perky, then State Director of Vocational Agriculture, Dr. Price joined the Agricultural Education staff at Oklahoma State as an itinerant teacher trainer. One of his early assignments was to pioneer the "block" system for the department wherein student teachers could complete a specially designed group of full semester courses during the first half of the semester prior to the student teaching experience. This system still prevails. Promotion to Associate Professor came in 1956, shortly after he had completed the Ed.D. at Pennsylvania State University. Two years later he was advanced to Professor and Head of the Department, titles he held upon his retirement June 30, 1975.

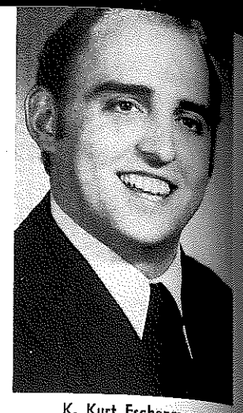
Bob Price's contributions to the profession have been many and varied. He held membership in an impressive array of professional and honorary organizations. As a teacher educator he was at the forefront in a number of national and regional undertakings. He was a charter member of and active in the American Association of Teacher Educators in Agriculture. He was a prime mover in the Southern Region Agricultural Education organization, having held many offices, including president. He also served a term as national president of Alpha Tau Alpha. He has provided much assistance to vocational agriculture teachers in recognition for which he received the NVATA Distinguished Service Award.

(Concluded on page 94)

Analysis of Timber Harvesting Occupations in Virginia



J. Dale Oliver



K. Kurt Eschenmann

by
*J. Dale Oliver and K. Kurt Eschenmann**
Teacher Education
Virginia Polytechnic Institute and State University

According to statistics from the U. S. Department of Labor *(Occupational Outlook Handbook, 1976-77:* 650), there were nearly 85,000 wage and salary workers employed in 1974 to help harvest and remove trees from forests. A much larger number—220,000—worked in sawmills and planing mills. In addition, about 50,000 workers were self-employed, most of whom were in logging.

Increased harvesting costs and technological advances have brought about a need for more and better trained workers in timber harvesting occupations. Because the building and furnishing of homes, hospitals, schools, stores, and most other structures depend upon lumber and wood products, thousands of job openings will be available each year through the mid-1980's *(Occupational Outlook Handbook, 1976-77:* 650).

This favorable employment picture for timber harvesters, along with the need for better trained personnel, has caused concern regarding the preparation of workers for this area. Such concern prompted the Virginia state supervisory staff in agricultural education to select timber harvesting as a priority area for study. This research was conducted to fulfill the obligation of Virginia as a member state of the Vocational-Technical Education Consortium of States (V-TECS). This consortium is a major effort, involving 16 states and two agencies, to develop catalogs of performance objectives, criterion-referenced measures, and performance guides in vocational education.

PROCEDURES

This study was based upon the use of task analysis procedures as a foundation for the development of job-relevant instruction. The procedures used were as follows:

1. Develop an Occupational Inventory

   The occupational or task inventory was based upon a state-of-the-art study, a review of technical procedures used by workers, and interviews with incumbent workers, supervisors, and instructors. The final inventory contained the following: background information for the workers; 77 tasks in four duty areas; and 84 pieces of equipment (Oliver, Lee, and Martin, 1975). The duty areas were: A. Planning, Supervising, Coordinating; B. Maintaining Equipment and Tools; C. Loading and Hauling; and D. Felling, Limbing, and Bucking.

2. Survey Incumbent Workers

   The sample size provided by the V-TECS staff was 150 workers. These individuals were contacted for interviewing at 30 randomly selected permanent sawmills and pulp and paper mills. Up to 10 interviews were secured at each location and the workers were asked to: provide background information; indicate the equipment used; indicate the tasks performed; and rate the relative amount of time spent on each task on a seven-point scale. Persons interviewed were employed full time in one of the following job titles adapted from the D.O.T. (U.S. Department of Labor, 1965): woods laborer, logging contractor, or logging foreman.

3. Analyze the Data

   Data from the inventories were analyzed by the V-TECS staff. The following information was provided: the percent of workers performing each task; the average percent time spent on each task; and the percentage of workers using each piece of equipment.

4. Prepare a Catalog

   The performance objectives, criterion-referenced measures and performance guides were prepared by a writing team. The members included an instructor of agricultural education, an incumbent worker, two technical writers, a criterion-referenced measurement specialist and a state-level supervisor of agricultural education. After the catalog was prepared, it was field reviewed by instructors to determine its instructional acceptability. Input from these individuals was used to develop the final version of the catalog (Oliver, Lee, Eschenmann, and Martin, 1976).

FINDINGS

As a result of the procedures followed, 127 timber harvesting workers were surveyed. All 77 tasks in the inventory were performed by two or more workers and all but eight tasks were performed by over 50 percent of all workers. The eight tasks performed by less than one-half of all workers and the percent performing were as follows:

1. Estimate tree yield (45.7 percent)
2. Hitch towed equipment (44.9 percent)
3. Mark trees to be cut (29.9 percent)
4. Attach and remove tongs (12.6 percent)
5. Fell trees according to cutting pattern using shears (5.5 percent)
6. Fell trees according to cutting pattern using feller buncher (3.9 percent)
7. Fell trees according to cutting pattern using crosscut saw or other hand tools (1.6 percent)
8. Move felled trees to a loading point using animal power (1.6 percent)

The ten tasks with the highest average percent time spent by all workers performing them are shown in Table 1. Also, shown in the table is the percent of members performing each task.

Table 1

Ten Tasks With the Highest Average Percent Time Spent by All Workers and Percent of Workers Performing

Duty Area and Task Number		Task Description	Average % Time Spent All Workers	% of Workers Performing
D	3	Fell trees according to cutting pattern using chain saw	3.16	92.9
C	9	Move felled trees to a loading point using mechanical means	2.84	89.0
D	7	Limb and top trees	2.80	89.8
C	6	Haul forest products to manufacturing sites	2.51	83.5
B	26	Sharpen and adjust machinery and equipment	2.20	95.3
D	8	Make bucking cuts	2.04	82.7
A	1	Comply with safety laws	1.98	98.4
B	7	Grease equipment	1.98	96.9
D	1	Clear logging road	1.91	92.9
C	1	Attach and remove chokers	1.91	81.1

Regarding specific job titles, there were 21 woods laborers, 92 logging contractors, and 14 logging foremen surveyed. It should be noted that while the highest percent time spent for all job titles was in the categories of felling and moving trees to a loading point, the logging contractors and logging foremen were more involved in hauling trees to the manufacturing sites.

It is interesting to note the number of tasks performed by over one-half of the workers in each job title and to examine the distribution of these tasks by duty area. First, there were 32 tasks performed by over one-half of the woods laborers, 71 performed by over one-half of the logging contractors and 62 performed by over one-half of the logging foremen. Thus, entry level workers in timber harvesting tended to perform fewer tasks than advanced workers. The distribution by duty areas of the tasks performed by over one-half of the workers is shown in Table 2. As would be expected, the logging contractors and foremen performed considerably more tasks in duty A than were performed by woods laborers. The logging contractors and foremen also tended to perform more tasks in duty C.

The writing team prepared a catalog which contained 60 performance objectives, criterion referenced measures and performance guides. In addition, the catalog contained four appendices. These appendices included the following information: (1) an equipment listing with the number and percentage of workers using each piece of equipment; (2) a list of references used to document the sources of the standards for the objectives; (3) a listing of reference materials from the state-of-the-art study; and (4) a cross-reference table to aid teachers in adapting the objectives to individual programs.

CONCLUSIONS

This study provided a picture of the tasks being performed by workers employed as woods laborers, logging contractors and logging foremen. The data can be used by secondary and post-secondary instructors in developing programs that are realistic in terms of competencies required for employment.

The catalog which has been developed can be used as a planning and management tool for the development of curricula with objectives that have been validated against actual job performance. Use of the catalog will allow teachers to concentrate more on how, rather than what to teach, knowing they are teaching career relevant skills.

The catalog can also be used to promote individualized learning. Students can know exactly what is expected of them and be secure in the knowledge that they are learning the skills needed for employment. The catalog is being made available to Virginia teachers through an in-service training program and has been distributed to V-TECS member states through the consortium distribution channels. ◆◆◆

REFERENCES CITED

Oliver, J. Dale, Delene W. Lee and Joyce Martin. *Occupational Inventory Timber Harvesting Occupations*. Blacksburg, Virginia: Virginia Polytechnic Institute and State University, May 1975.

Oliver, J. Dale, Delene W. Lee, K. Kurt Eschenmann and Joyce Martin. *A Catalog of Performance Objectives, Criterion-Referenced Measures and Performance Guides for Timber Harvesting Occupations*. Blacksburg, Virginia: Virginia Polytechnic Institute and State University, 1976.

U.S. Bureau of the Census. *Census of Population, 1970*. Characteristics of the Population, Part 48, Virginia. Washington: U.S. Government Printing Office, 1972.

U.S. Department of Labor. *Dictionary of Occupational Titles, Third Edition*, Volumes I and II. Washington: U.S. Government Printing Office, 1965.

U.S. Department of Labor. *Occupational Outlook Handbook, 1976-77*. Washington: U.S. Government Printing Office, 1976.

Table 2

Distribution by Duty Area of Tasks Performed by More than One-Half of the Workers in Each Job Title

Duty Area	Tasks Performed by More than One-Half of the Workers: Woods Laborer No. of Tasks	Woods Laborer % of Total	Logging Contractor No. of Tasks	Logging Contractor % of Total	Logging Foreman No. of Tasks	Logging Foreman % of Total
A. Planning, Supervising, Coordinating	2	6.2	27	38.0	22	35.5
B. Maintaining Equipment and Tools	20	62.5	27	38.0	24	38.7
C. Loading and Hauling	4	12.5	10	14.1	9	14.5
D. Felling, Limbing, and Bucking	6	18.8	7	9.9	7	11.3

*Dr. J. Dale Oliver, Associate Professor and Dr. K. Kurt Eschenmann, Research Associate, Division of Vocational and Technical Education, College of Education, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

CONTINUED *THE VO-AG TEACHER SHORTAGE . . .*

shortage, I offer this: The problems in teaching today are like the verbal minority and the silent majority, or, the only parts about the job of the agriculture teacher that we ever hear about

I think it is high time that teachers stop complaining about the problems, and talk about some of the good things that a job of teaching involves.

are the negative. Many college education students have been scared off from teaching by stories that they have heard about the problems of some public school teachers. In my mind, the rewards of being an agriculture teacher far outweigh the difficulties that go along with them. Being able to help a young person along the way to adulthood, and to watch him/her grow through interpersonal relationships, through experiences in learning about modern day agriculture, and through the endless opportunities offered by the Future Farmers of America, is an experience that I am looking forward to.

Agriculture teachers are doing an exceptional job, and agricultural education is a great field, but I don't feel the average college student has received a true picture of the entire job of teaching agriculture.

In vocational agriculture we have a unique advantage over other areas of education in that we have programs such as farm and home visits, work experience programs, field trips, and others that enable the agriculture teacher to see the students in their natural environment, outside the classroom. Not only that, but these types of programs make for a more open and personal type of instruction, a condition that seldom prevails in the "sterile" classroom setting.

Below are the words of Dr. Barbara Thompson, Superintendent of Wisconsin Department of Public Instruction:

"It is perhaps high time that we acknowledge the proven model created and put to practice by vocational agriculture teachers . . . (that is) to better understand and know the individual student, his family, and home environment. The willingness of a professional to deal with all of the problems that come to bear on the life of the young person seems to me to be critical. . . . I am waiting for the day when the good example set by vocational agriculture teachers will be seriously considered by school boards as an exportable model to be used with all professional educators."

From the Land Grant Act to the Vocational Education Act and its amendments in 1976, agricultural education has played a vital role in the advancement of agricultural technology. Pay scales are improving and the rewards are plenty if one goes after them. Nevertheless, many are still leaving the field, and many are reluctant to enter it. Are teenagers really that hard to get along with? Adolescence isn't a disease, it is a period of a person's life, and an adult can learn to get along with adolescents if he/she will simply understand them, and always approach them with an open mind. Teachers in public schools, college professors, and the departments of public instruction should be aware of the concerns of many future teachers, not just agriculture teachers, but teachers in all areas of education. If the problems that public schools do have aren't dealt with, and if teachers don't start talking about the positive points of teaching along with the negative, the agriculture teacher shortage will stay with us or even get worse. ◆◆◆

CONTINUED *LEADER . . .*

It was due in large measure to his efforts that the National Agricultural Education Student Teacher Conference was instituted and continues to be held each year during the National FFA Convention. He has long been an advocate of Collegiate FFA chapters as a tool for the training of prospective vocational agriculture teachers. On many occasions he has served as a special consultant to the National FFA organization. For such efforts he was designated an Honorary American Farmer and just this past fall, was honored with the FFA's VIP Award.

Under his leadership the OSU Agricultural Education Department occupied a prominent position nationally and on his own campus. More than 1,850 individuals were qualified to teach vocational agriculture, at the rate of 60 to 85 each year, making it one of the largest such departments in the country. He directed programs of study for 320 Masters Degree and 52 Doctoral Degree candidates. In addition, some 236 international students from 28 different countries completed advance study programs in the department during his time of service. He was an effective, valued and sought after member of many university committees. His on-campus activities included a stint on the Faculty Council.

Despite the demands of administration, he always maintained that his place was in the classroom and an effective teacher he was. Alpha Zeta named him the College of Agriculture Teacher of the Year and he was nominated for a university-wide honor of this type by the OSU Alumni Association and Blue Key. These honors are particularly fitting since he insisted that his major accomplishment must be that of a teacher.

The United Methodist Church owes the success of many programs to the efforts and dedication of Bob Price. He has held numerous lay leadership positions locally, statewide and nationally. He presently serves on the Board of Global Ministries, the UMCOR Division, a national committee dealing with the world hunger problem.

Dr. and Mrs. Price continue to reside at 601 Hartwood in Stillwater. He is serving as a special consultant to the OSU Office of International Programs. He is also co-authoring an independent study course on world food production, advising graduate students and otherwise providing valuable assistance to the department. The balance of his time is taken up by church activities and his long-time avocational interest of home-gardening and landscaping. He and his wife are pursuing newly acquired interests in the genealogy of both families. A trip to England this past summer, given in part as a retirement gift, whetted interest in this activity.

As is evident from the above, Dr. Robert R. Price's career has been dedicated to the profession and more importantly, characterized by service to the individuals at all levels who make up the profession. He has indeed carried quite a load for all of us. All who have ever been associated with him recall the kindness, the respect, the dignity with which they were treated. Many have said they know of no other person who tries harder to pattern his life after that of the Master Teacher. We are all better people for his having come our way. ◆◆◆

NEW NVATA EXECUTIVE DIRECTOR

Sam Stenzel

The Board of Directors of the National Vocational Agricultural Teachers' Association (NVATA) has named Sam Stenzel NVATA Executive Director effective March 1, 1978. Stenzel will succeed James Wall who tendered his resignation in December, 1976, effective July 1, 1978. Wall will continue to serve the organization as Executive Director Emeritus and Consultant to the appointee from March through June. Mr. Wall was appointed NVATA Executive Secretary on a part-time basis in 1958 while teaching vocational agriculture at Waverly, Nebraska. He was named full-time Executive Director in July, 1961. As Executive Director, Stenzel will provide national leadership for expanding programs and professional services for members; provide leadership for state and federal legislation in agricultural education; promulgate a viable public relations program; and provide leadership to identify issues, concerns, and find solutions to professional problems.

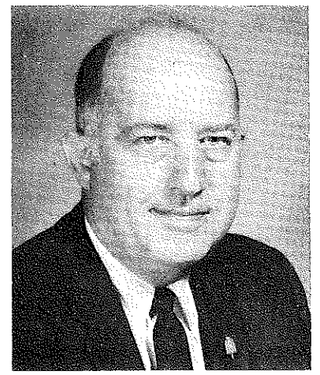
The NVATA is a national professional organization for agricultural educators, devoted primarily to serving the interests of classroom teachers of vocational agriculture in secondary and post secondary schools. It is made up of 50 affiliated state associations with over 10,000 members. The NVATA is an affiliate of the American Vocational Association. The membership includes a high percentage of state supervisors of agricultural education, teacher educators for vocational argriculture, and classroom teachers. The national office is located in Lincoln, Ne.

Stenzel has been employed in the national office as the Assistant to the Executive Secretary since July, 1972. His major responsibilities have included program and materials development, public relations, treasurer and financial secretary, recording secretary for board meetings and the national convention, assisting with officer orientation, regional leadership conferences, and the national convention, and special assignments as designated by the Board of Directors and/or the Executive Director. In addition to preparing and printing the minutes of NVATA, he has written numerous articles for professional publications. He is the co-author of the 25 year history of the organization, "Professional Leadership And Service."

He has been on the NVATA Board of Directors since 1962. He served as national treasurer from 1967-1972; NVATA president in 1964-65; regional vice president in 1963-64; and alternate regional vice president from 1961-63. He was active in the Kansas Vocational Agricultural Teachers Association, Kansas Vocational Association, Russell City Teachers Association, and other vocational and general education associations as well as civic and service organizations while teaching in Kansas.

Prior to employment in the national office, he was director of the Agricultural Science and Technology program at Colby Community College, Colby, Kansas (1970-72); taught vocational agriculture in the Russell High School, Russell, Kansas (1958-70); Almena Rural High School, Almena, Kansas (1952-58); and McDonald Rural High School, McDonald, Kansas (1950-52). He organized and implemented the vocational education programs in agriculture at the Russell High School and Colby Community College. He received a B.S. degree in agriculture at Kansas State University in 1950 and later earned a M.S. degree in Agricultural Education at the same institution. He is a native of WaKeeney, KS, and a graduate of the Trego Community High School. ◆◆◆

IOWA AGRICULTURAL EDUCATOR OF THE YEAR



Grover C. Miehe

Veteran VoAg Instructor Grover C. Miehe, Monticello, Iowa, received the C. E. Bundy Agricultural Educator of the Year Award during the 60th annual Iowa Agriculture and Agribusiness Education conference in Des Moines. The award was presented by Rudy Engstrom, Lake City, president of the IVATA, and is given in honor of the now retired but long-time head of the agricultural education department at Iowa State University. This is the fifth year the award has been given. Miehe has just completed thirty-two years as VoAg instructor.

CONTINUED *SOURCES OF PREPARATION . . .*

fessional jobs, but may have to start at an unskilled job and work his way up. Each person must decide on what his goal is, find what is required in the chosen profession, and plot his course to obtain the requirements. Don't forget to get all the practical experience possible if you choose a formal education.

SUMMARY

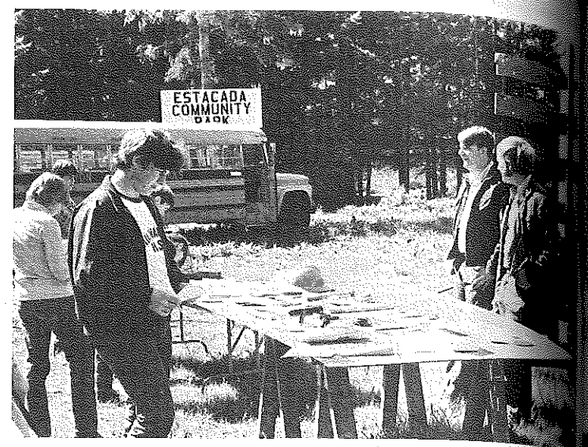
As I stated earlier, there are indeed many different directions a person can go to prepare for occupations in Agriculture Resources and Forestry. With all the different directions to go, how can we as educators expect to cover all the occupational needs of our young people? We can't. We therefore cover occupational areas which are familiar to us and hopefully add a new occupational area each year, if time permits. We can also impress upon our young people the importance of dependability, responsibility, maturity or, as stated earlier, a positive attitude and hard work. ◆◆◆

STORIES IN PICTURES

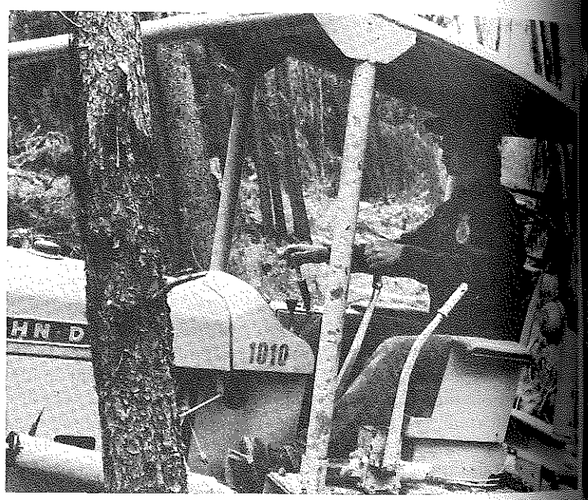
by Paul W. Newlin

Students of vocational agriculture from Oregon learn how to scale at a forestry skill contest. Students learn how to determine the amount of lumber in the logs. (Photo courtesy of Howard Brock, Salem, Oregon.)

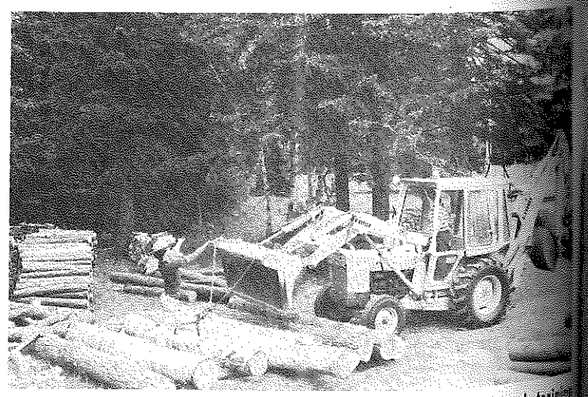
Growing new forests keeps an industry in business. A Scotch Pine area in Virginia is maintained by vocational agriculture students with a forestry plot in the background. (Photo courtesy of George Lancaster, Louisa



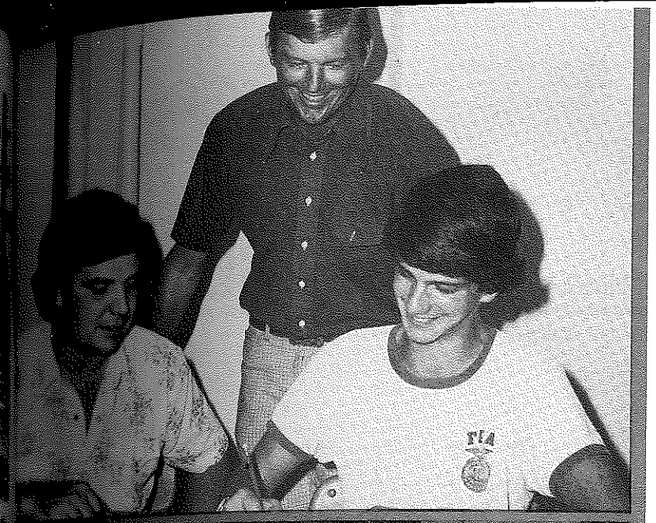
Vocational agriculture students from Oregon participate in a forestry identification and skill contest. Here they have to identify equipment for the forestry industry. (Photo courtesy of Howard Brock, Salem, Oregon)

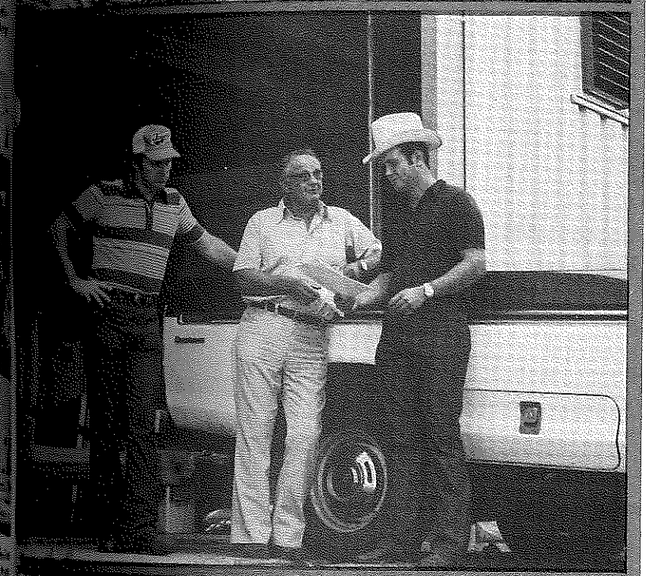


A student from the Kalispell, Mont., vocational agriculture program uses his small bulldozer to maintain his forestry project in good condition. (Photo courtesy Doug Bishop, Montana State University.)



Students in New York are decking logs as part of their vocational training in forestry occupations training. (Photo courtesy of Warner C. Dietz, Adirondack Educational Center, Saranac Lake, N.Y. Related article on page 38.)





AGRICULTURAL EDUCATION

Volume 50 Number 5

November 1977