ANNUAL REPORT

PROJECT NO. 10

AGRICULTURAL ENGINEERING DEPARTMENT

EXTENSION DIVISION

VIRGINIA POLYTECHNIC INSTITUTE

December 1, 1953 to November 30, 1954

Blacksburg, Virginia
December 28, 1964

Director L. B. Dietrick
Agricultural Extension Division
Virginia Polytechnic Institute
Blacksburg, Virginia

Dear Director Dietrick:

I am submitting herewith annual report of extension work in Agricultural Engineering, in accordance with Project No. 10, Cooperative Extension Work in Agriculture and Home Economics, Virginia Polytechnic Institute, for the period beginning December 1, 1963, and ending November 30, 1964.

Respectfully submitted,

E. T. Swink
Extension Agricultural Engineer

ETS:NLP

TABLE OF CONTENTS

ANNUAL REPORT

PROJECT NO. 10

Agricultural Engineering Department
Extension Division
Virginia Polytechnic Institute

December 1, 1953 through November 30, 1954

****

DEPARTMENT ORGANIZATION

PERSONNEL AND ASSIGNMENTS

Chas. E. Seitz served as Head of the agricultural engineering department and was administratively responsible for the Extension, Research and Teaching division programs until his retirement in January 1954. On February 26, 1954, Dean L. E. Dietrick appointed a staff committee to administer the affairs and programs of the department until another department head was selected. This committee was comprised of Professor J. H. Lillard (Research), Professor S. H. Byrne (College), and Professor E. T. Swink (Extension). Effective July 1, 1954, E. T. Swink was appointed head of the department. Since that date he has been administratively responsible for the Extension, Research and College programs. Effective July 1, 1954, G. D. Kite was appointed project leader for the Extension Division of the department and he has directed the Extension field work of the department since that date. Each member of the Extension staff was responsible for planning and conducting a major phase of the Extension program under the supervision of the project leader and the head of the department.

EXTENSION DIVISION STAFF
(November 30, 1954)

E. T. Swink, B. S., M. S., P. E., Extension Agricultural Engineer and Head of the department.

G. D. Kite, B. S., M. S., Extension Agricultural Engineer, and Project Leader, responsible for the Extension program in the field, with major subject matter responsibility in the farm structures phase of the program.

/

James A. Waller, Jr., B. S., M. S., P. E., Associate Extension Agricultural Engineer, has major responsibility for the farm and home equipment phase of the program and also handles the work in drainage, irrigation and water supply.

J. L. Calhoun, B. S., M. S., Associate Extension Agricultural Engineer, is responsible for the rural electrification phase of the program. During 1954 he served as acting secretary of the Virginia Farm Electrification Council.

C. D. Wheary, B. S., Associate Extension Agricultural Engineer, is responsible for the rural housing phase of the program.

H. H. Gee, B. S., Assistant Extension Agricultural Engineer, in charge of the farm building plan service.

F. E. Charlton, Clerk A, operates the Ozalid printing machine, maintains the plan files and is in charge of the file and supply room.

Mrs. Jack Boulding, Clerk-Stenographer B, handles the clerical and stenographic work for Messrs. Kite, Waller, Wheary and Gee.

Mrs. Robert Askew, Clerk-Stenographer B, handles the clerical and stenographic work in rural electrification. She replaced Mrs. Basil Price who resigned in September to accept a position in the Research Division.

RESEARCH DIVISION STAFF
(November 30, 1954)

E. T. Swink, B. S., M. S., P. E., Agricultural Engineer, Head of the Department.

J. H. Lillard, B. S., M. S., P. E., Agricultural Engineer, Leader, Agricultural Engineering Research Division.

P. B. Potter, B. S., A. E., P. E., Agricultural Engineer, Rural Housing and Farm Structures.

V. H. Baker, B. S., M. S., Ph.D., P. E., Agricultural Engineer, Farm Electrification and Crop Processing.

U. F. Karp, B. S., M. S., P. E., Associate Agricultural Engineer, Household Engineering (1/2 Time).

McNeil Marshall, B. S., P. E., Associate Agricultural Engineer, Farm Structures.

J. N. Jones, B. S., M. S., Associate Agricultural Engineer, (ARS), Soil and Water Conservation.

James M. Stanley, B. S., Associate Agricultural Engineer, (ARS), Farm Electrification.

J. R. Moody, B. S., M. S., Assistant Soil Technologist, Soil and Water Conservation.

J. B. Burford, B. S., Assistant Agricultural Engineer, Agricultural Hydrology (Appointed in August to replace H. M. Holtan who resigned in April).

Mrs. Basil Price, Clerk-Stenographer (ARS), Soil and Water Conservation (Appointed in September to replace Mrs. Edith Chafin who resigned in September).

Mrs. Fannie A. Reynolds, Laboratory Technician, Soil and Water Conservation (Appointed to replace Mrs. Jane E. Britten, resigned).

Mrs. Dorothy Cooper, Clerk-Stenographer, Farm Electrification (Appointed in July to replace Miss Eunice Boyd who resigned in June).

J. R. Price, Agricultural Aide (ARS), Soil and Water Conservation.

Dan R. Berner, Agricultural Aide (ARS), Soil and Water Conservation.

O. H. Shepherd, Field Assistant (ARS), Soil and Water Conservation.

Miss Louise Howard, Clerk-Typist, Soil and Water Conservation.

E. S. Bell, Jr., B. S., Engineering Aide, (ARS), Farm Electrification.

Harley Carroll, Laboratory Mechanic, Soil and Water Conservation (1/2 time).

AFFILIATE PERSONNEL

Assistant Professor A. L. Yeatts, Jr., B. S., M. S., was assigned to the Agricultural Engineering Department by the Vocational Education Department in September to assist with instruction in farm shop. He replaces Assistant Professor E. G. Thompson who was granted educational leave for graduate study.

COLLEGE DIVISION STAFF
(November 30, 1954)

E. T. Swink, B. S., M. S., P. E., Professor, Head of the Department and teaches Rural Electrification.

S. H. Byrne, B. S., M. S., Ph.D., Professor, Course Advisor and in charge of the College Division. Major teaching duties in the field of farm structures.

J. W. Sjogren, B. S., M. S., Associate Professor, Major teaching duties in Farm Power and Machinery.

U. F. Karp, B. S., M. S., P. E., Associate Professor, Teaching duties in rural electrification, household equipment, soil and water conservation (1/2 College).

T. J. Wakeman, B. S., M. S., Associate Professor, In charge of farm shop for vocational education instruction.

B. L. Parsons, B. S., Assistant Professor, teaching duties in Surveying, Farm power and machinery.

V. L. McCoy, Instructor, Farm Shop.

J. P. H. Mason, B. S., Graduate Assistant, teaching Agricultural Drawing, and Machinery.

Miss Hallie Lee Pedigo, Clerk-Stenographer for Head of Department and Teaching Staff.

Mrs. Cecil Starr Kester, Clerk-Stenographer, farm shop.

Harley Carroll, Laboratory Mechanic (1/2 time).

RM

WORK ACCOMPLISHED - 1954

ADMINISTRATION

In addition to handling the routine administrative duties relative to the Extension program including correspondence, conferences, and a limited amount of project work in the field, the head of the department attended the following important meetings in the interest of the Extension program:

1. Attended National 4-H Club Congress in Chicago and presented talk at power suppliers conference held in connection therewith.

2. Developed program for rural electric division of American Society of Agricultural Engineers and presided at sessions of the national meeting in Chicago as chairman of the Division.

3. Presented talk on "How Association Members Can Make Better Use of V. P. I. In Serving the Equipment Needs of Virginia Farmers" at annual meeting of the Virginia Farm Equipment Association in Roanoke.

4. Attended meeting of the United Cooperatives College Conference Board at Purdue University.

5. Represented the department at the Farm Equipment Research Conference sponsored by the National Farm Equipment Institute at Raleigh, North Carolina.

6. Organized program of rural electric division ASAE for annual June meeting at St. Paul, Minnesota, and presided at the division sessions.

7. Participated in summer meeting of United Cooperatives College Conference Board at North Bay, Ontario.

8. Presented talk on the rural electrification research and educational programs of the department at the July meeting of the Virginia Association of Electric Cooperatives in Roanoke.

9. Assisted with the State 4-H Farm and Home Electric Congress in Richmond.

10. Presented talk on "A Power Use Program for Virginia" at the October meeting of the Virginia Association of Electric Cooperatives at Old Point Comfort.

The head of the department served in the following capacities during the year in furtherance of the Extension program from the standpoint of administration:

1. Chairman of the Virginia Farm Electrification Council and its Executive Committee.

2. Member, United Cooperatives College Conference Board.

3. Member, Research Conference Committee to Farm Electrification Section, ARS.

4. Chairman, State Water Systems Program Committee.

SUPPORT TO EXTENSION PROGRAM GIVEN BY RESEARCH AND COLLEGE DIVISIONS

The personnel of the Research Division of the department cooperated with Extension personnel and the head of the department in many ways to increase the effectiveness of our Extension effort. These activities included:

1. News stories and articles prepared and published:

   Story on Irrigation - Southern Planter
   Story on Irrigation - Electricity on the Farm
   Story on Poultry House Ventilation - The Virginia Poultryman
   Chapter on Pasture Irrigation for 1965 USDA Yearbook of Agriculture
   Three newspaper releases on irrigation.
   One newspaper release on erosion losses.
   One newspaper release on mulch tillage.
   Two newspaper releases on poultry house ventilation.

2. Lectures and talks before groups attending short courses at VPI or at meetings out in the state (other than technical meetings):

   Three talks at Extension Irrigation Conference - 75 people
   Six talks at SCS meetings in State - 125 people
   One talk at Va. Ag. Teachers Machinery Short Course - 75 people
   One talk at Eastern Virginia Bankers Meeting - 75 people

3. Field trips within the state to work with county technicians or farmers.

   Six field trips to various counties on special drainage problems.

   Gave assistance in design of six irrigation systems involving special problems.

RM

4. Tours conducted at VPI for visiting groups (Institute of Rural Affairs, etc.):

Tours through Department Laboratories for 4-H groups - est. 250 people
Tour of field experiments for SCS technicians - 35 people
Ditto, Agronomy Field Day - 100 people
Ditto, Agronomy Students - 45 people
Ditto, Franklin County Farmer Group - 30 people
Ditto, Veterans classes - 50 people
Ditto, 4-H boys - 60 people
Ditto, Numerous small groups of 2 to 15 people - 75 people

5. Special Consultations with individual farmers and field technicians regarding special problems. Estimated 150

6. Publications prepared that were useful to Extension workers:

Tentative Sprinkler Irrigation Guides for Eastern Virginia (Cooperative with USDA)
Completed preparation of material for joint Agronomy-Agricultural Engineering leaflet on Subsoiling (in press)

Members of the teaching staff in the College Division assisted materially with the Extension program. The following are examples of this assistance.

1. Professors J. W. Sjogren and R. L. Parsons assisted with the leader training meeting at VPI for the 4-H Tractor Maintenance project.

2. Professor J. W. Sjogren assisted with the Regional 4-H Tractor Contest at the Atlantic Rural Exposition.

RURAL ELECTRIFICATION

The Project and Personnel

The rural electrification phase of the project was conducted by E. T. Swink and J. L. Calhoun. During the period December 1, 1963 through June 30, 1964, E. T. Swink was employed 3/4 time by Extension and 1/4 time by the College. He was employed only 1/3 time by Extension as Administrative Head of the department for the remainder of the year, therefore, a very limited amount of time was given to field work. J. L. Calhoun devoted full time to this program.

Virginia continued to make progress toward the goal of complete electrification of its farms during 1964. USDA statistics showed that 97% of the farms in the state were receiving electric service on June 30, 1964. Only 10 states in the country had a higher percentage of farms electrified, and Virginia leads all southern states in this respect. Electric service is a valuable tool for farmers and when properly used, can enable them to improve production efficiency and living conditions. The broad objective of this phase of the Extension program has been to conduct educational activities that would take information on the efficient use of electricity in the home and on the farm to the rural people of the state.

The nature of electricity as a source of energy is such that most farm people need specialized assistance on many of its applications on the farm. In order to make such assistance readily available, the specialists have encouraged power suppliers to employ agricultural engineers and home economists to do educational work with the rural consumers they serve. Some 65 agricultural engineers and 35 home economists are now doing this type of work for power suppliers. These workers cooperate with the Extension specialists and with County Extension agents in developing and executing educational programs. These people sell no service or equipment and their work is entirely of an advisory or educational nature. The specialists rely heavily on the work of these power supplier representatives to make the project work most effective.

Cooperating Agencies and Organizations

The scope of rural electrification and its implications as related to farming and home making is so broad, that the Extension specialists enlist the active cooperation of many other agencies and organizations in taking the program to the maximum number of rural people. The following groups cooperated in this effort during 1964.

(1) Electric Power Suppliers: Agricultural engineers, rural service engineers and home economists employed by the electric cooperatives and power companies cooperated with the specialists in planning programs for both adults and 4-H Club members, executing field activities

and assisting county Extension agents. They rendered valuable assistance in assisting farmers and homemakers with individual problems on the selection, installation, use, and care of electrical equipment. Much of the subject matter and reference material used in this work was supplied by the Extension specialists.

(2) Manufacturers, Distributors, and Dealers of Farm and Home Electrical Equipment: Equipment for demonstrations, educational literature, and assistance on educational meetings and conferences were supplied by this group.

(3) Other Extension Specialists and Subject Matter Departments: Since the use of electricity cuts across practically all fields of agriculture and home economics, the specialists cooperated with other Departments concerned in the school of agriculture. An effort was made to keep personnel in other departments informed on electrical developments and applications as they related to their particular fields of work. This was done through office conferences, collaboration on field activities and in the preparation of subject matter material.

(4) State Department of Education: Teachers of vocational agriculture and home economics are placing increased emphasis upon the use of electricity in their teaching programs. The specialists assisted with training programs for teachers and provided subject matter material for their use as references. The teachers and their supervisors cooperated in the statewide water systems program during 1954, and other educational programs of the Virginia Farm Electrification Council.

(5) Farmers Home Administration: This agency cooperated in getting appropriate information on the use of electricity to its clients and participated actively in the educational programs of the Virginia Farm Electrification Council.

(6) Farm Organizations: The Virginia State Grange and the Virginia Farm Bureau Federation are interested in the advancement of rural electrification. Both organizations are members of the Virginia Farm Electrification Council and assist in getting information on the use of electricity to their members.

The Virginia Farm Electrification Council

The Virginia Farm Electrification Council was organized in 1945 to coordinate and expand the research and educational activities of the agencies and organizations interested in the efficient use of electricity in the home and on the farm. The program of the Council is recognized as the state-wide program in farm electrification. Since this program is primarily an educational one, the Extension Service participated extensively in the activities leading toward the attainment of established goals. The Council program for 1953-54 was developed by seven standing committees as follows: (1) Research, (2) Field Studies, (3) Home Economics, (4) 4-H Club, (5) Vocational Agriculture and Vocational Home Economics, (6) Visual Aids, and (7) Publicity. The specialists served as members of the standing committees that were con-

cerned with their project. The specialists also served on a special state water systems committee to develop a program on water systems under the sponsorship of the Council.

During the year, the Council continued to prove its value as a medium for coordinating and expanding the research and educational phases of farm electrification. The program has, however, been handicapped because of the absence of a full-time Council secretary. During the year steps were taken to obtain funds to re-establish the position of Council secretary. In 1953-54, E. T. Swink served as Chairman of the Council and J. L. Calhoun served as acting secretary. A copy of the Council program for 1953-54 is included in the exhibit section of this report.

Major Activities and Accomplishments

This project is set up to cover the entire field of the utilization of electricity in the home and on the farm. Special attention was given to certain electrical applications during the year because of their newness, timeliness, or the demand for information on them on the part of rural people. These activities are summarized as follows:

(1) The Design, Selection, Use, and Maintenance of Farm and Home Electrical Equipment.

(a) Crop Drying and Handling Equipment. The rapid changes that are occurring in harvesting methods and equipment for hay, corn and small grain, and the market requirements for these products are increasing the importance of crop drying equipment on the farm. The need for reducing losses, maintaining quality of product, and saving labor, add to the importance of crop drying and handling equipment on the farm.

The dry weather during 1953 and 1954 tended to cause farmers to minimize the importance of crop drying on the farm. As a result, the number of installations reported was much lower than normally would have occurred. It is estimated that about 50 such installations were made during 1954. The proven need for and value of facilities for drying hay, corn and small grain under normal Virginia weather conditions has been well established by both research and farm experience. Field studies have shown that in a normal year, hay losses amount to 25% of the total crop when field curing is used in the harvesting operation. Farmers have reported being docked as much as 25¢ per bushel on corn that contains too much moisture when marketed. Crop drying equipment on farms can practically eliminate these losses. It is estimated that nearly 1050 crop drying installations have been made on farms in 85 counties in Virginia since the practice has become accepted. The specialists continued to provide designs and recommendations for crop drying installations during the year.

Information on crop drying and handling equipment was disseminated by the specialists through news and magazine articles, radio programs and through meetings and tours conducted by county Extension agents.

RM

Other Extension specialists were provided with appropriate information on the subject for use in their particular programs with farmers.

The specialists cooperated with the Virginia Division of Markets and the Agricultural Stabilization and Conservation Service in conducting a series of regional meetings on the conditioning and storage of grain. Topics discussed included storage structures and drying facilities.

(b) Farm Water Systems: The installation of a pressure water system on the farm not only provides the basis for modernizing the farm home, but it saves chore labor in farm production, and often has an important influence in sound farm management. The case of the James Atkinson farm in Bedford County illustrates these points. The source of water on this farm is a spring located at the foot of a long hill below the house and farm buildings. For many generations, the main source of income on this farm was the tobacco crop. An attempt was made to produce enough grain and hay for only a small amount of livestock. One of the main reasons this family wanted electric service was to enable them to install an electric pump to deliver water from the spring to the top of the hill for the house and livestock. As soon as the pump was installed, water was piped into the kitchen and plans were gotten underway to further improve the home. Probably more important, new plans were developed for a system of farming that involved a dairy unit to supplement farm income. These plans would have been impossible without the electric water system.

Although most Virginia farms had electric service at the beginning of 1954, the best available information showed that less than 40% of them had pressure water systems. In view of this situation, the specialists undertook an intensive educational program on water systems during 1954. The program was planned as a joint effort with all other educational agencies through the Virginia Farm Electrification Council. A summary of the procedure used in planning and conducting this program follows:

(1) A state water systems committee comprised of administrative representatives of all educational agencies and organizations in the state, including the Extension Service, was appointed. This committee agreed upon a general program plan and appointed a sub-committee to develop the details.

(2) After the sub-committee had developed a recommended program, the full committee met to discuss the recommendations and adopt a program. A copy of the "Virginia Water Systems Program for 1954" is included in the exhibit section of this report. This mimeographed program was judged to be the best organized and presented Extension activity among 31 entries at the annual meeting of the American Society of Agricultural Engineers and was given the society's Blue Ribbon Award.

(3) The specialists discussed the program with the district Extension Agents and presented it to the entire specialist and administrative staff to fully inform them and enlist their active support and participation.

(4) The program stated the situation in Virginia, recommended a procedure to be followed at the county level, and included suggestions for educational activities at the county and local level. The County

RM

Agricultural Agent was designated to call a meeting of professional workers and leaders in the county. At this meeting the need for such a program was discussed. In counties where it was decided to conduct an intensive program on water systems, a county water systems chairman was elected. Twenty-nine counties organized such a program.

(5) A state water systems publicity committee was appointed to prepare radio, television and news material to publicize the program through the Extension information office. This Committee also prepared suggested publicity material which was supplied to county chairmen for local use.

(6) The month of September was designated as "Water Systems Emphasis Month" and county activities were scheduled to reach peak intensity during this period and the ensuing weeks.

(7) A state-wide water system contest was conducted during the period September 1 - October 15 to develop interest. Water system manufacturers and distributors donated almost $1000 for contest prizes and to pay the cost of printing contest entry blanks. A copy of the entry blank is included in the exhibit section of this report.

(8) Approximately 1275 persons entered the contest from 85 Virginia counties.

(9) The radio and television program schedule prepared by the publicity committee and released by the Extension Information office to its network of cooperating stations included:

Seven slides for spot T. V. announcements.
Four tape recordings of five minutes each.
Four tape recordings of fifteen minutes each.
Two television films of approximately ten minutes each prepared by Extension Specialists in cooperation with the film laboratory of the State Department of Education.
Numerous spot announcements on other tape recordings.

(10) Governor Stanley publicly endorsed the water systems program and made a statement by tape recording which was carried on radio stations throughout the state. The Southern Planter supported the program with a feature story and an editorial.

(11) The specialists assisted county agents as much as possible with the program at the county level. Different methods were used in the counties that worked on the program, depending on conditions. County activities included local publicity, local contests to supplement the state contest, exhibits and displays by dealers, educational meetings, demonstrations, and field days. Most counties made surveys to obtain lists of farms that did not have water systems and wanted individual assistance.

(12) The Extension leaflet "Running Water Pays" and USDA Misc. Publication 674 were used extensively as subject matter information pieces. These were supplemented by the contest entry blanks and manufacturers' literature.

It is too early to obtain an accurate measurement of the success of this program. Several cooperating water system manufacturers report a marked increase in water system sales during September, October and November. One company reported that factory orders from Virginia during this period were three to four times the volume that was received, during the same period last year. Water system manufacturers also report that their dealers are definitely more conscious of their responsibility for selling and servicing this equipment as a result of this program. Continued emphasis on this program will be encouraged in 1955.

(c) Fluorescent Lights for Sorting Tobacco. The use of the correct type of fluorescent lights has proved to be a valuable aid to farmers in sorting tobacco. This practice enables them to do a more uniform job of sorting either at night or in day time, resulting in a higher net sales return for their crop and better use of labor. The specialists revised the leaflet "Have Good Light for Sorting Tobacco" and it was made available to Extension agents, other specialists, and power suppliers for their use in advising farmers about the correct lighting units for their practice.

(d) Electric Brooding. Within the past six years, infrared energy as a method of brooding poultry, pigs, lambs, and calves has become quite popular. In 1949, the Virginia Agricultural Experiment Station initiated a research project on brooding poultry with infrared lamps. The results of this study have provided valuable information on this relatively new method of brooding. To meet the demand for facts on infrared brooding, the Virginia and West Virginia Farm Electrification Councils prepared a six-page leaflet on this subject in 1951. This publication entitled, "Infrared Brooding", has proved to be the most popular circular or bulletin that has ever been issued in Virginia on a farm electrification topic. About 125,000 copies of this leaflet have been printed and it is likely that another printing will be required within the next few months. To supplement the information in the leaflet, "Infrared Brooding", the specialists prepared three circulars on how to build one lamp, two lamp, four lamp and six lamp infrared poultry brooders.

Infrared lamps are adapted for brooding both small and large flocks. The initial cost of the equipment is relatively low and most farmers are pleased with the infrared method of brooding. These factors account for the popularity of poultry brooding with infrared energy.

The use of infrared lamps for brooding pigs is also on the increase. Lamp brooders are not being used extensively. Some farmers are using infrared lamps for brooding calves, even though no research results are available which substantiate the value of this practice.

During the year a set of 35 mm. color slides was developed showing the step-by-step construction of a four lamp infrared poultry brooder as described in Circular 466. Two tape recordings were prepared on the use of infrared lamps for brooding and for other purposes. These recordings were forwarded to approximately 35 radio stations in Virginia.

(e) Equipment Repair and Maintenance. Electrical equipment must be maintained if it is to render efficient service. With proper training, the users of electrical equipment can accomplish many repairs

Infrared poultry brooding continued to be popular during the year. The brooders in this picture are home-made. Note that old feed sacks are used for curtains around the brooders. The specialists have developed plans for building infrared poultry brooders of various sizes.

Infrared lamps can be used for many other purposes besides brooding. This Franklin county dairy farmer installed three infrared lamps over the wash vat in the milk room to provide warmth for washing utensils. Several farmers in Virginia are using this source of heat in their milk rooms.

themselves. By doing so, it is possible to keep electrical equipment in service with reduced repair bills. Simple electrical repairs training is one phase of the 4-H Farm and Home Electric Project. This type of instruction has also been given at leader training meetings for home demonstration club members in many counties in Virginia. In addition to the work of the specialists, representatives of the electric power suppliers have cooperated with county Extension agents in numerous meetings in which youth and adults were shown how to make electrical repairs.

During the year the specialists assisted county Extension workers in five counties in giving simple electrical repairs instruction at eight meetings attended by 294 adults and 4-H members.

The subject matter used as a reference on simple electrical repairs training is a leaflet entitled, "First Aid for Electrical Appliances". Since this publication was first issued in 1948, a total of approximately 40,000 copies have been printed. During the year, 7,270 copies of this leaflet were reprinted.

The specialists also conducted leader training meetings on cleaning and adjusting sewing machines in three counties with 47 people present.

2. 4-H Club Farm and Home Electric Program.

4-H Club work constitutes one of the major phases of the Extension project in rural electrification. The importance of educational activities for the benefit of 4-H members has long been recognized by the specialists. The extension of electric service into the rural areas has developed in a relatively short span of years. In view of the fact that youth accepts new ideas and methods readily, it was realized that boys and girls must be included in the overall effort to acquaint rural people with the efficient use of electric service.

A 4-H Club project in rural electrification was offered for the first time in 1949. Prior to the announcement of the project, various educational activities were conducted for 4-H members with only limited success. In 1950, the enrollment in the project showed a decrease over the previous year. It was recognized that additional incentive awards were needed to stimulate interest in the project. The electric power suppliers in Virginia agreed to provide the funds necessary to hold a State 4-H Farm and Home Electric Congress to honor county, district, and state winners in the project. These additional awards were offered for the first time in 1951 and have been available during each succeeding year. In 1953 and 1954, all electric power suppliers in Virginia co-sponsored the program. This included five power companies, 15 electric cooperatives, and one municipal system. For the 1955 program, all of these power suppliers are again serving as co-sponsors with the exception of one cooperative. This cooperative declined to participate in the program because the 4-H Electric project is not being offered in any of the counties in its service area.

The additional awards at the county, district, and state levels have been largely responsible for a great increase in the 4-H Farm and Home Electric project enrollment. These awards have also stimulated boys and girls to do more effective project work.

RM

Club members enrolled in Unit I of the 4-H Farm and Home Electric project in Culpeper county being trained to make simple electrical repairs.

These Henrico county 4-H members are enrolled in Unit II. They are being taught how to plan the home wiring. The project training includes a wide variety of electrification subjects.

Govenor Thomas B. Stanley attended the first luncheon at the State 4-H Farm and Home Electric Congress and gave the address of welcome.

Club members gave demonstrations during the Congress. This Rockbridge county girl gave a demonstration on proper lighting for study.

These 4-H boys and girls provided entertainment during group meals at the State 4-H Farm and Home Electric Congress.

County exhibits were a feature of the Congress program. The purpose of these exhibits is to tell the story of the 4-H Electric project in the county. This display by Bedford county was placed in the blue award group by the judges.

The project is divided into two phases - Unit I and Unit II. Unit I is for beginners and Unit II is more advanced. The enrollment of white club members in this project in 1954 was 7718 from 82 counties. Negro enrollment was 1114 from 15 counties, making a total of 8832 4-H Club members enrolled in 1954, the highest yet recorded. There was a 50 per cent increase in enrollment in Unit II as compared to last year. This indicates that Club members are taking the project more than a single year.

The State 4-H Farm and Home Electric Congress was held at the Jefferson Hotel, Richmond, Virginia, September 1-3, 1954. Each qualifying county was authorized an all-expense trip to the Congress for one girl, one boy, and one Extension agent. A county was required to have 12 girls completing the project to send a girl, and 12 boys completing the project to be eligible to send a boy. Ten 2-jewel gold watches were presented to the girl and boy winner in each Extension district. Cash awards totaling $150 were presented to the counties with the best exhibits on display at the Congress. The total expenses for the Congress amounted to $5,210.58.

Sixty-five counties met the requirements and had delegates in attendance, as compared to 64 counties last year. The total registration at the Congress was 286 people, including 127 4-H members, 60 Extension agents, 13 Extension specialists, 53 power supplier representatives, and 13 others. Since some people attended a portion of the program without registering, it is estimated that the total attendance was 295.

The project training gives boys and girls an opportunity to gain valuable knowledge on electricity and its use in the home and on the farm. 4-H members enrolled in Unit I studied such topics as simple electrical repairs, fuses and how to replace them, home lighting, making and remodeling lamps, pig brooders, lamb brooders, and care of home and farm electrical equipment. Boys and girls in Unit II dealt with more advanced subjects. They studied simple electrical terms and how to use them, how to read a kilowatt-hour meter, electric rates and how to figure electric bills, planning wiring and lighting systems for the home and farm, planning a pressure water system, planning an improved ironing center, planning a labor-saving kitchen, and planning a modern home laundry. They also learned how to build certain electrical devices. In addition, they continued their study on care of electrical equipment.

This project is planned to permit maximum leadership development among Club members. Boys and girls who have completed Unit I of the project are encouraged to serve as junior leaders. Some Club members have progressed sufficiently to be designated as Unit I project leaders.

It is apparent that the county Extension agents now have a better understanding of the project. As a consequence, they are planning and conducting the project more effectively than was true in past years. In this connection, the series of 13 one-day area meetings held in 1953 for the benefit of Extension agents and power supplier representatives has proven to be most valuable. At these meetings various aspects of the 4-H Electric project were explained along with general 4-H project work. Since these meetings were held, there has been less misunderstanding on offering the project in the various counties that existed previously.

These ten district winners in the 4-H Farm and Home Electric project were awarded 21-jewel gold watches for their accomplishments.

A plaque was presented to delegates from Bedford county for conducting the most outstanding 4-H electric program in Virginia in 1954.

Mary Ann Foster of York county was announced state winner in the 4-H Farm and Home Electric program at the Congress. She was awarded an all-expense trip to the National 4-H Congress. At this event, she was honored as one of six national winners in the program and was awarded a $300 college scholarship.

Mary Ann became interested in electricity through her father who is an electrician. When the 4-H Farm and Home Electric project was introduced to her club, she was the first member to enroll.

Mary Ann assisted her father in rewiring his shop. She helped install new switches and convenience outlets in their home and has improved the lighting in every room of their house. Mary Ann and seven other Club members wired a member's home and helped install a yard light. The Foster's now have an improved ironing center as a result of her work. These are only a few of Mary Ann's accomplishments in the 4-H Electric project.

This National winner has given 17 demonstrations and four talks. She presented a demonstration on TV entitled, "Care and Use of Fans" and repeated it at the Tri-County fair. Mary Ann served as a junior leader in the Navajo 4-H Club and assisted with the project instruction. Twenty-six members of this club completed the project in 1954. This York county girl has been in Club work eight years and has completed 40 projects.

In summary of this project, Mary Ann said, "I can truly say that there is no finer project for a girl or boy. There is so much to learn that it takes more than just one year's work to acquire the knowledge that you can use in future years wherever you roam. During these past four years, I have formed the same idea as those who say, 'Electricity is man's best friend'."

The specialists assisted eight counties with planning conferences and leader training meetings pertaining to the project which were attended by 355 people. Classes on the project were taught at a 4-H camp with a participation of 150 boys and girls. The specialists have encouraged the Extension agents to request electric power assistance in training leaders and Club members. The state is fortunate to have a large group of agricultural engineers and home economists employed by the electric power suppliers. These employees have been most cooperative with county Extension workers, and have made a valuable contribution toward the success of the 4-H Farm and Home Electric Project.

During the year some of the project material was revised. Minor changes were made in the Unit I and Unit II record books. MB-5, "The Place of Electricity in the Home and on the Farm" was revised and designated Circular 623. MB-6, "Care of Farm Electrical Equipment", was also revised and designated Circular 617. MB-4 was in the process of revision at the end of the year. It was necessary to reprint a total of 54,720 copies of the record books and reference materials in 1954. It is estimated that 50,000 copies of publications were distributed during the year for the use of Club members enrolled in the project.

It is anticipated that the project enrollment in 1955 will be approximately the same as for 1954. It is expected, however, that the quality of the project work accomplished by Club members will continue to reflect steady improvement.

There are two major problems that will tend to retard the future growth of this project. The first problem is the need for subject matter training on electrification for county Extension agents. Most of the county Extension workers received very limited instruction in this field during their college training. The second problem is the need for more project and junior leaders. In many cases, power supplier personnel have been serving as project leaders. If their services could be used more fully to train local leaders, the future growth and development of the project would be assured.

Schools and Short Courses

The specialists cooperated in planning and conducting in-service training programs for county Extension agents, vocational agriculture teachers, and power supplier representatives. Assistance was rendered in these programs as follows:

1. Short Course for Virginia Electric and Power Company Personnel. The specialists cooperated in planning the program for this school which was held in Richmond January 5 and 6, 1954. The purpose was to present up-to-date information on electrification subjects for the benefit of the company's agricultural engineers and rural representatives. J. L. Calhoun presented an illustrated talk and discussion on farm lighting. Thirty-five people attended this school.

2. In-service Training for County Extension Agents. The specialists assisted with the instruction for the in-service training program held at Blacksburg in February. During the period February 17-20,

the specialists presented instruction to this group on pressure water systems. Fifty-five agents were present.

3. Induction Trainee Program: Eighteen new Extension workers were trained during the period June 20-25, 1964. The specialists assisted with the instruction by presenting material on method demonstrations. This included a discussion period followed by presenting a demonstration on the small portable motor.

4. In-service Training for Vocational Agriculture Teachers: The specialists served on a committee to plan a series of two-day working conferences on pressure water systems for vocational agriculture teachers in Virginia. This training program was one phase of the total water systems program. Three instructional teams were organized and three schools were conducted simultaneously at three different locations in the state. These two-day working conferences were concluded by actually installing a pressure water system on a farm. Fifteen of these schools were held during July and August with an attendance of 320 teachers.

Meetings and Conferences

The specialists participated in numerous meetings and conferences during the year. Those related directly to the rural electrification Extension project in Virginia involved 103 field conferences attended by 312 people, 13 committee meetings with 81 present, and 41 meetings with an attendance of 3,547. The meetings considered of greatest importance in the program are listed below:

1. A state-wide meeting on pressure water systems was held in Richmond on March 25. The purpose of this meeting was to discuss, revise and adopt a Virginia farm water systems program. Thirty representatives of organizations cooperating in the program were present. The group adopted a program which formed the basis for an extensive water systems program in 1964.

2. The fourth state 4-H Farm and Home Electric Congress was held at the Jefferson Hotel in Richmond on September 1-3. The purpose of the Congress was to honor county, district and state winners in the 4-H Electric project. This event is sponsored by the Extension Service in cooperation with the electric power suppliers in Virginia. The expenses of the Congress amounting to $3,210.58, were paid by the power suppliers. Approximately 285 people attended this event.

3. Two meetings of the Executive committee of the Virginia Farm Electrification Council were held during the year, one on March 19 and the other on November 16. E. T. Swink served as chairman and J. L. Calhoun was acting secretary of the committee in 1964.

Publicity

A calendar of publicity is included in the plan of work each year. This publicity schedule lists the topics to be emphasized each month through the press and the radio.

During the year the specialists prepared 11 news articles and wrote 10 special feature articles. They presented 14 radio programs and prepared scripts for two other radio programs which were forwarded to county chairmen and to county agricultural agents for use in the water systems program. One television program was presented and two other TV shows were produced on movie film in cooperation with the State Board of Education. These two sound films are the first TV movies that have been prepared by the Virginia Agricultural Extension Service.

The major feature articles prepared during the year are listed below:

1. "Farm's Biggest Benefit is Water System" - E. T. Swink - Article for Appalachian Electric Service Reporter - Spring, 1954.
2. "Dairyman Solves Hay Loss Problem" - J. L. Calhoun - Article for The Southern Planter, March, 1954.
3. "Advantages of Drying Small Grain" - E. T. Swink - Article for The Southern Planter, April, 1954.
4. "Barn Hay Drying Pays Off" - J. L. Calhoun - Article for Extension Service News, April, 1954.
5. "A Farm Water System Pays its Way" - E. T. Swink - Article for The Southern Planter, May, 1954.
6. "How to Dry Corn in the Crib" - E. T. Swink - Article for The Southern Planter, July, 1954.
7. "Farmer Finds Answer to the Water Problem" - J. L. Calhoun - Article for The Southern Planter, September, 1954.
8. "Hay Drying" - J. L. Calhoun - Article for The Progressive Farmer to be published in 1955.

Two papers were printed in the state and deal with the use of electric service in the home and on the farm. "Rural Virginia" is distributed to approximately 69,000 members of electric cooperatives. The "Appalachian Electric Service Reporter" is sent to approximately 106,000 rural customers in Virginia served by the Appalachian Electric Power Company.

Fourteen tape recordings were prepared for release through the V. P. I. tape recording service. These programs were distributed to from 18 to 35 Virginia radio stations.

The tape recordings and the TV programs by the specialists are listed below:

December 9	Tape recording on uses of infrared lamps - J. L. Calhoun
December 18	Tape recording on making a motor portable - E. T. Swink

January 11	Tape recording on infrared poultry brooders - J. L. Calhoun
February 24	Tape recording on hay-drying - J. L. Calhoun
April 12	"Attic Fans for Summer Comfort", WSLS-TV, Roanoke, Va. J. L. Calhoun
May 4	Tape recording on water systems - E. T. Swink
May 26	Tape recording on attic fans - J. L. Calhoun
May 26	Tape recording on portable elevators - J. L. Calhoun
July 25	Tape recording on water systems - J. L. Calhoun
July 23	Tape recording on corn drying - J. L. Calhoun
August 6	Tape recording on water systems - E. T. Swink
August 12	Tape recording on water systems - E. T. Swink
August 19	Tape recording on water systems contest - J. L. Calhoun
September 27	Tape recording on progress of water systems contest - J. L. Calhoun
September	TV program on film, "Running Water Pays in the Home" - J. L. Calhoun
September	TV program on film, "Running Water Pays on the Farm" - J. L. Calhoun
October 26	Tape recording on electric feed grinding equipment - J. L. Calhoun

Publications

The demand for copies of leaflets, circulars and bulletins on electrification topics continued during the year. In 1954, it was necessary to reprint the following materials that are for specific use in the 4-H Farm and Home Electric Project.

Circular 531 - Unit I Record Book (Revised) 10,000 copies
Circular 532 - Unit II Record Book (Revised) 5,000 copies
Circular 496 - "Some Do's and Don'ts for Home Lighting", 2,000 copies
Circular 617 - "Care of Farm Electrical Equipment (Revised), 5,000 copies
Circular 638 - "The Place of Electricity in the Home and on the Farm" (Revised), 5,000 copies

The following publications issued by the Virginia Farm Electrification Council were reprinted in 1954. These leaflets are available to Council members at actual printing cost.

VFEC-4 (Circular 606) "First Aid for Electrical Appliances", 7,720 copies
VFEC-5 "Running Water Pays - 15,100 copies

The specialists assisted in preparing VFEC-10, "Field Study Report Electric Ranges in Virginia Rural Homes 1950-52". This report was reproduced by mimeograph and by the multilith process. One thousand copies of this report were obtained for distribution to professional workers, distributors, and manufacturers of electric ranges.

The specialists also developed the leaflet entitled, "1955 Virginia 4-H Electric Program". This publication lists the awards available and presents other facts on the program. Ten thousand copies were

procured for distribution to counties planning to offer the 4-H Electric Project in 1955.

An article entitled "Safe Water" was prepared for inclusion in the manual for the 4-H Health Project. Prior to release, this material was forwarded to the State Department of Health for approval. One thousand copies were mimeographed.

The specialists also assisted in developing the entry blank and the poster for the Virginia Farm Water Systems Contest. Fifty thousand copies of the entry blank were printed along with 1000 copies of the poster.

More than 15,000 copies of electrification publications were distributed through the offices of the specialists. In addition, 45,000 copies of the water systems contest entry blank were distributed together with 980 copies of the poster. It is estimated that the Extension supply room distributed 65,000 copies of publications on farm electrification. The majority of this material was for use in the 4-H Farm and Home Electric project.

Research and Field Studies

A strong research program is essential for an effective Extension project in rural electrification. Two agricultural engineers at V. P. I. are devoting full-time to farm electrification research and another spends one-half time on home electrification research problems. Two agricultural engineers are also located at the Tidewater Field Station. These men are on a cooperative basis with U. S. D. A. and are studying problems involved in drying peanuts and corn. An excellent spirit of cooperation exists between the research staff and the specialists. During the year many conferences were held with the research staff to discuss investigations in progress and other problems upon which research work is needed. On November 30, the specialists attended a meeting of the Research committee of the Virginia Farm Electrification Council. Eleven people were present and the group made recommendations on future research needs.

The field studies project was discontinued during the year, because of the lack of funds and personnel. Facts assembled through field study investigations have proven to be of great value in the Extension project in rural electrification.

Miscellaneous Activities of the Specialists

The specialists participated in numerous activities during the year, some of which were not included in plan of work. Meetings and conferences were attended for professional improvement and other assign-

ments and activities contributed directly or indirectly to the total Extension program.

1. Meetings attended for professional improvement.

a. E. T. Swink attended the National 4-H Club Congress in Chicago. He presented a talk on the work of the special study committee on the 4-H Farm and Home Electric program at the power supplier conference on December 2.

b. E. T. Swink attended the winter meeting of the American Society of Agricultural Engineers held in Chicago on December 6-9.
He served as chairman of the Rural Electric Division of ASAE during 1953-54.

c. J. L. Calhoun attended the West Virginia Farm Electrification Council meeting and annual rural electrification conference at Jackson's Mill on March 29-31. He presented a flannel board talk on water systems at this meeting.

d. E. T. Swink attended the Farm Equipment Research Conference at Raleigh, North Carolina, April 28-30.

e. E. T. Swink and J. L. Calhoun attended the annual meeting of the Virginia Section of the American Society of Agricultural Engineers at Natural Bridge, April 30 and May 1. Swink gave a talk at the meeting and Calhoun presented a committee report.

f. E. T. Swink attended the annual meeting of the American Society of Agricultural Engineers held at the University of Minnesota, June 20-23.

g. J. L. Calhoun attended the Inter-Industry Farm Electric Utilization Council meeting at Columbus, Ohio, on October 12. Representatives from all northeastern states were present.

2. Committee Assignments on Which the Specialists Worked during 1954.

a. E. T. Swink continued to serve as chairman of a National Study Committee on the 4-H Farm and Home Electric Program. This committee was appointed by the 4-H Sub-committee of the Land Grant College Association. The committee met three times during the year with an attendance of 17 people. The final report of this committee was prepared and submitted in October. The committee recommendations have been accepted and the 1955 National 4-H Electric Awards program will be based on the committee recommendations. The name of the program will be changed to "National 4-H Electric Awards Program".

b. J. L. Calhoun served as a member of the Virginia 4-H Camps Committee.

c. J. L. Calhoun served as chairman of the Headquarters Committee for the State 4-H Short Course in June.

d. E. T. Swink served as chairman of the Registration Committee for the State 4-H Farm and Home Electric Congress in September.

e. J. L. Calhoun served as chairman of the Hotel Committee for the State 4-H Farm and Home Electric Congress in September.

f. J. L. Calhoun served as chairman of the Meals Committee for the Institute of Rural Affairs in July.

g. J. L. Calhoun served on the committee on Extension of the American Society of Agricultural Engineers.

h. J. L. Calhoun served as chairman of the Visual Aids committee and as a member of six other standing committees of the Virginia Farm Electrification Council.

i. J. L. Calhoun served as Acting Secretary of the Virginia Farm Electrification Council.

j. E. T. Swink served as chairman of the Banquet Committee for the 1954 Annual Extension Conference.

k. E. T. Swink served as chairman of a committee to plan the "Information Cafeteria" for the Annual Extension Conference and J. L. Calhoun served as a member of this committee.

l. E. T. Swink and J. L. Calhoun served on a committee to plan an in-service training program on pressure water systems for vocational agriculture teachers in Virginia.

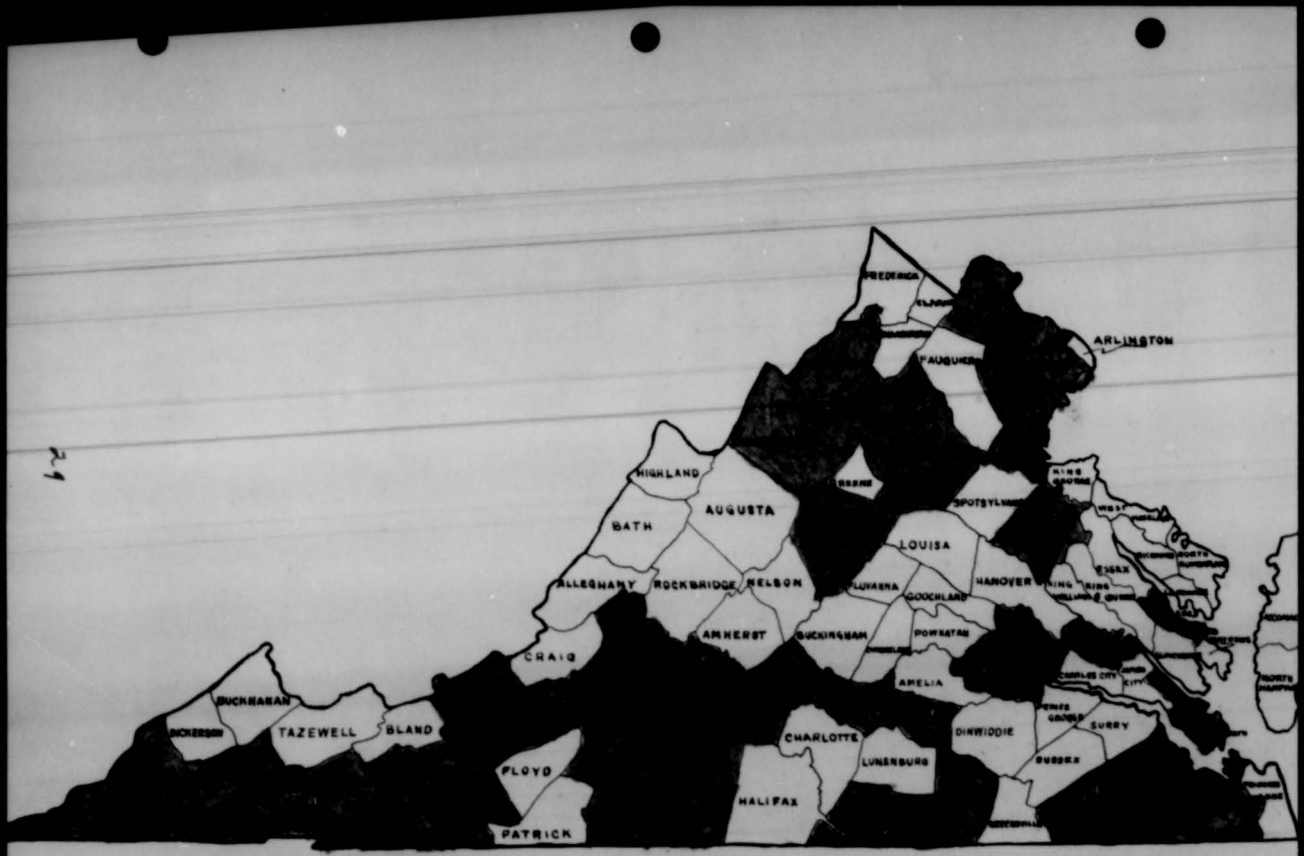
m. J. L. Calhoun served as a member of the Roanoke Area Judging Team in the Community Improvement Contest in November.

n. E. T. Swink served as a member of the 4-H Club Committee of the Virginia Farm Electrification Council.

o. J. L. Calhoun was appointed chairman of the Local Arrangements Committee for the annual meeting of the American Society of Agricultural Engineers to be held in Roanoke in June, 1956.

p. J. L. Calhoun served as chairman of a sub-committee to plan and conduct the Virginia Farm Water Systems Contest which was offered during the period September 1 to October 15, 1954.

q. E. T. Swink served as a member of the Clayton Lake Camp Committee.



Counties in which the specialists worked personally during 1954 on the rural electrification program. Cooperating power suppliers gave local assistance to the specialists in handling certain phases of the program in practically all counties.

FARM STRUCTURES AND RURAL HOUSING

This phase of the Extension Agricultural Engineering Program was conducted by three Agricultural Engineering Specialists; namely: Farm Building Specialist, Home and Farm Building Plan Service Specialist and the Rural Housing Specialist. The report of each specialist is included in the following:

Personnel Assignments

Members of this section were:

G. D. Kite - Extension Agricultural Engineer
(Farm Building Specialist)
C. D. Wheary - Associate Extension Agricultural Engineer
(Rural Housing Specialist)
Herbert H. Gee - Assistant Extension Agricultural Engineer
(Farm Building and Rural Housing Plan
Service Specialist)
F. E. Charlton - Clerk
Mrs. John C. Bouldin - Stenographer (part-time)

Personnel Duties

G. D. Kite is assigned the duties of the Farm Building Specialist and is designated Section Leader of the Farm Building and Rural Housing Section. As Farm Building Specialist, he supervised the Farm Building Plan Service and conducted the Extension program on all phases of farm buildings, excepting the farm house, through meetings with groups of farmers and other interested people, through radio, news articles, TV programs, correspondence and individual farm visits. As Section Leader, he directed the program and coordinated the activities of the specialists in the section. In July he was appointed Project Leader for the Extension work in Agricultural Engineering.

C. D. Wheary is the Rural Housing Specialist. He conducted the Extension program on Rural Housing through county and special group meetings and by radio, TV programs, news articles, conferences, correspondence and personal visits to farm houses.

Herbert H. Gee, the Plan Service Specialist, was in charge of the drafting and plan supply room. He prepared standard and special plans for farm buildings and livestock equipment, training aids when needed, revised existing plans when they were out-moded, supervised the developing and mailing of plans and the maintenance of the drafting and blueprinting supplies.

F. E. Charlton, Clerk, operated the Ozalid machine for reproducing copies of plans, listed the plans to be mailed, kept the bulletin file

RM

of the Section supplied with bulletins and performed miscellaneous duties about the department. Beginning in September he was given responsibility for keeping the supplies and equipment in order for the department file, mimeographing and mailing room.

Mrs. John C. Bouldin, the stenographer-secretary, was responsible for the stenographic work of this section and of one other specialist in the department. More than one-half of her time was required for the work of members of this section.

The Farm Buildings Program

This year the Farm Buildings Program emphasized dairy and livestock buildings and equipment, grain storages, farm fences and the harvesting, storing and feeding of silage. Considering the overall price squeeze on farmers an effort was made to furnish information that would permit better labor efficiency, more economical buildings and fences and better storage methods and facilities for crops.

Timely information was given in one farm magazine story and in four news articles that were supplied to most of the newspapers in the state. Two TV programs and nine radio programs were presented. Additional information was furnished by writing 787 individual letters and distributing 8,095 plans for buildings and equipment and more than 2,000 bulletins.

Five new standard plans were added to the Plan Service and four old plans were completely revised. Forty-nine special plans for buildings, equipment and farmstead layouts were prepared.

The specialists participated in 63 meetings and demonstrations that were attended by 2,802 persons. They made 192 farm visits to give information to approximately 300 persons on specific problems.

Office Activities - Methods and Accomplishments

The Farm Building Specialist spent approximately 56% of his time in the office attending to correspondence, committee activities, program schedules, Plan Service and the preparation of plans and subject matter material for TV and radio programs, news articles, meetings and demonstrations. The specialist wrote the structures and machinery section of a proposed bulletin on the subject of Silage Production, Harvesting, Storing and Feeding. Additional committee work is to be done in the final preparation of this bulletin.

The Plan Service Specialist was responsible for the operation of the Plan Service which included the preparation of plans and training aids and their distribution. In addition to this activity he assisted with the office

work of the Rural Housing and Farm Building Program. He assisted with office calls and wrote 137 letters to furnish information that was requested on building plans, construction, materials and equipment. He served on the following committees for Extension activities at V.P.I.: Quarters Committee for Institute of Rural Affairs, Food Committee for Agricultural Faculty Picnic, Chairman of Committee for special program for 4-H Short Course, judge for state 4-H Tractor Operators Contest. For professional improvement he attended 2 Department Staff Meetings, 4 Agricultural Faculty Meetings, 6 monthly Extension Staff Conferences, Annual Extension Agents Conference and Institute of Rural Affairs. Other meetings attended were Dairy Fieldman's Short Course, "Concrete" Conference, "Irrigation" Conference and State Section Meeting of American Society of Agricultural Engineers.

Information Service

The specialists wrote 787 individual letters and 4 circular letters to farm people, Extension Agents and commercial organizations giving information on building plans, materials, construction and equipment. Some of the requests for this information required a search of information and in some cases special drawings. More than 2,000 bulletins and circulars were distributed in answer to requests. Many students called at the office for information on farm buildings that was needed for their class work and for their family farms.

Radio Television and News Articles

The specialist used the radio, television and newspapers to extend his program. Nine radio programs on timely topics were presented, some for local stations and some for tape recordings to be sent to stations throughout the state. Four news articles were prepared for distribution to state newspapers and one farm magazine article was prepared.

One TV program on "Constructing Better Farm Fences" was given on the Roanoke station. The specialist participated, as a member of a panel, in a TV program on the Lynchburg station to discuss "The Grain Storage Situation in the State".

Rural Housing and Farm Building Plan Service

The Plan Service is an important part of the Extension Program. Building and equipment plans developed on the basis of research information and on practical applications are excellent sources of information. They are considered by many builders as necessary tools in their profession. During the year the Extension Service distributed approximately 8,095 plans for farm houses, farm buildings and livestock equipment to persons who requested them.

Number of Plans Distributed According to Type

A - Farmhouse Plans	362
B - Dairy Barns and Equipment	1485

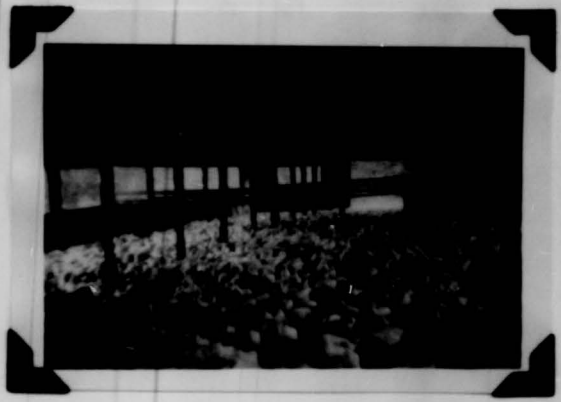
Economical pole building for sheep and cattle shelter on the Tinsley Farm in Culpeper County. Can also be used for hay and machinery storage (V.P.I. Plan K-1.25).

C - Beef Cattle Barns and Equipment	1195
D - Horse Barns and Equipment	40
E - Sheep Barns and Equipment	245
F - Poultry Houses and Equipment	1457
G - Hog Houses and Equipment	1011
H - General Purpose Barns	52
J - Storage Buildings and Equipment	679
K - Machinery Sheds and Farm Shop Equipment	295
L - Tobacco Barns and Equipment	177
M - Public and Camp Buildings and Equipment	44
N - Miscellaneous Buildings and Equipment	820
Special	233
Total	8095

The Plan Service is organized for the purpose of providing a number of standard plans for economical, convenient and functional buildings and equipment that may be effectively used on most Virginia farms. In the Plan Service, there are approximately 65 standard plans for farm houses and 278 standard plans for farm buildings and livestock equipment. Copies of these plans are supplied on request and at no cost to Virginia farmers. The availability of these plans is publicized by Extension Agents and Specialists at meetings, schools and farm tours and on radio and TV programs as well as in news articles. Bulletins that list the complete set of plans are available for reference in the County Extension offices and in the High School Agricultural Departments.

As requests for plans were received from County Agents and farmers copies were reproduced on the Ozalid machine and mailed within a period of several days. The equipment and personnel of this section were also used to prepare and reproduce charts, graphs, plans, etc. for Extension specialists of other departments and on a custom basis for other departments of the college.

Plans in the Plan Service must be kept up-to-date to effectively support the agricultural programs throughout the state. To properly revise old plans and design the new plans, considerable basic information must sometimes be obtained. When research information is not available, information must be obtained where there is some practical application of the principles.



Interior of economical pole-type broiler house in Nottoway County. Minimum cost buildings properly planned and constructed provide adequate comfort.

A wide, one-story poultry house designed for efficient use of labor and maximum comfort of birds. Roof ventilators, large end doors and adequate windows provide adequate ventilating facilities.

The Plan Service Specialist is assigned the duties of op maintaining the Plan Service. He does the drafting and desi the guidance of the Farm Building and Rural Housing Specialis operates the Ozalid machine for reproducing the plans.

Five new standard plans were added to the Plan Service and four old plans were revised in this program. In addition to the standard plans, thirty-five plans for special buildings, equipment and farmstead arrangements were prepared for situations where standard plans and bulletin information were insufficient. Three plans were drawn for a proposed bulletin and five plans drawn for the revision of a circular. Other sketches and charts were prepared for teaching aids and committee activities.

Plans for buildings that were added to the Plan Service during the year:

B-3.22 Milkhouse - for pipe line milkers, 14'x24'.

F-1.17A Pole-type poultry house, 32'x70', used for layers, broilers or turkeys.

F-1.18A Pole-type poultry house, 40'x60', used for layers, broilers or turkeys.

(also sketches of suggested arrangement for equipment).

K-1.20 Pole-type machinery storage building, 26'x60'.

K-1.25 Pole-type sheep or livestock shelter, may be also used as a machinery storage, 30'x60'.

The Standard plans for buildings and equipment that were revised:

B-2.50 Milking Room-Milk Room House Unit, for the Virginia Market 13'-4" x 62'-0".

F-5.19 Dropping Pit

J-1.18 Granary storage, gambrel roof, capacity 2,000 bushels of corn and 2,500 bushels of grain.

Circular 445 - Cattle Cutting Pens, Chute, etc.

The following plans were drawn for a proposed bulletin:

Bunker silo

Trench silo

Wagon unloading device

Virginia Extension Plan Service activities are coordinated with

Modern three-stall (elevated) milking parlor and pole barn on Bland County Farm. An efficient and economical unit.

Another use for portable baled hay elevator; filling the tower silo. Power cost is less than with blowers.

the Plan Services of other states and the U.S.D.A. Many Virginia plans have been proposed for the Plan Book for the Southeastern States. The Farm Building Specialist has been Chairman of the Plan Service Committee of the Southern States for a number of years. The interchange of plans between the different states and the U.S.D.A. improves the Plan Service activities.

Field Activities - Methods and Results

The Farm Building Specialist devoted approximately 44 percent of his time to the field activities of the farm building program and worked in 63 counties. He participated in 63 meetings, farm tours and demonstrations with 2802 persons in attendance. An additional 300 persons were given information on 192 farm visits. Thirteen meetings in the state and one outside the state were attended for professional improvement. Almost two weeks were spent in judging 12 communities participating in the Bristol Area Community Improvement Contest. More than 20,369 miles were traveled to perform this work.

The major field activities had to do with dairy and livestock buildings and equipment, grain storages, poultry buildings, farmstead planning and farm fences. This program was conducted through county and area meetings and demonstrations and farm visits.

The Plan Service Specialist spent approximately six days on the field activities. He participated in one farm tour and assisted in setting up one farm fence demonstration. He was a member of a team of Extension personnel that accompanied 17 foreign visitors on a four day trip to different parts of the state to observe phases of the Extension activities and methods.

Farm Visits

The specialist visited 192 farms and farm homes to give specific recommendations and information on building and equipment problems to more than 300 persons in answer to requests received from County Agents and farmers. Many of the buildings and facilities constructed by information given during these farm visits will serve as demonstration buildings for other farmers in that immediate area. The use of new and improved farm buildings as demonstrations in County Extension programs is on the increase. These buildings serve as demonstrations for organized groups and individual farmers.

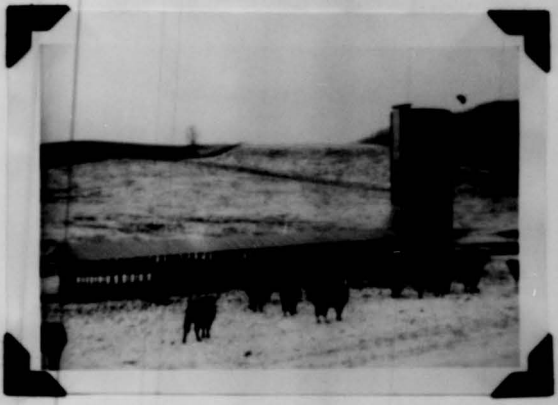
Meetings - Demonstrations

An important part of the field activities was the participation in meetings, schools, farm tours and demonstrations for farmers and people in associated work. In performing this phase of the program the specialist conducted or participated in 63 meetings that were attended by 2802 persons.

Meetings and Demonstrations Conducted or Participated in by Specialists on Farm Structures Program

Number		Attendance
2	- Leader training Meetings for 4-H boys and leaders	93

A chain conveyor system for feeding silage to feeder cattle on Sam Oliver Farm in Nansemond County. A great labor saver. End of conveyor extends to edge of trench silo where silage is loaded by a tractor scoop.



A Smythe County farmer built this arrangement to reduce labor for feeding silage to his beef cow herd, One man can feed sixty head in 30 to 40 minutes.

Number		Attendance
52	- County or Community Meetings and Demonstrations	2266
7	- Area and State Meetings	414
2	- Area Committee Meetings	29
63	- Total	2802

Most of the Meetings participated in this year were on a cooperative basis with one or more Specialists from other subject matter departments. This arrangement provided for the farmers a broad field of information on the particular subject being discussed or demonstrated. These meetings were planned to support the agricultural programs of the respective counties.

One of the larger series of meetings consisted of 19 county livestock schools in which specialists from the Animal Husbandry Department and the Farm Building Specialist participated. A talk, illustrated with slides, on appropriate farm buildings and livestock equipment was given at each school by the building specialist. He also participated in the Beef Cattleman's Short Course held at V.P.I. Farm buildings and livestock equipment are essential parts of every livestock farm from the standpoint of economical operation, labor efficiency, handling and storing hay, silage and grain and shelter for livestock and machinery.

A program on Better Farm Fences was emphasized again this year. The cost of fencing is an important item each year for every livestock and dairy farmer in the state of Virginia. The use of long lasting materials and improved methods of construction would reduce annual fencing costs on every farm by extending the life of the fences by 30 to 50 percent.

On a state wide basis, one TV program and two radio programs were presented and two newspaper articles were written. Demonstrations were conducted in eleven counties with 417 persons attending as a part of the county programs. In many instances the fence demonstration was a part of a farm program that involved forestry, animal husbandry, dairy, pasture or other associated activities.

Farm fencing was included as a part of the discussion presented by the Farm Building Specialist at approximately thirty other county meetings.

The demonstration fences were generally erected on or adjacent to well traveled highways so they would serve as long-time demonstrations. It is planned to erect signs at these demonstrations. Because of the length of time required to set-up a demonstration fence, it seemed best to erect the fence sometime prior to the day of the demonstration. During the demonstration, the planning materials and method of erection were discussed. A commercial leaflet on Fencing was distributed to each person at the demonstration.

Farm Fence Demonstration - Specialist is discussing fencing materials and methods of erection.

Fence Demonstration erected along main highway in Botetourt County. Creosoted posts and horizontal wood brace units make the demonstration outstanding.

Fencing demonstrations were held as separate projects or joint projects with the specialist from the Forestry, Agronomy, Dairy or Animal Husbandry Departments. A fencing project is closely associated with some projects in all of those departments.

A supply of new publications, "Planning Farm Fences" and "Building Farm Fences" was purchased from the Association of Southern Agricultural Engineers and Vocational Education, University of Georgia, Athens, Ga. for use in this program. Copies of these publications were distributed to all County Extension offices. All High School Agricultural Departments will be furnished copies of these publications by the Vocational Agricultural Department of V.P.I.

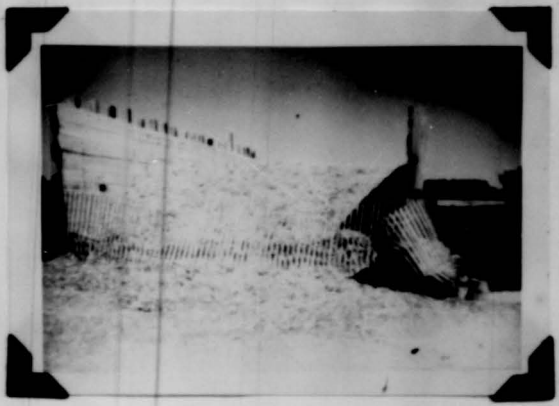
Emergency Grain Storage - During the early summer an intensified program was conducted in cooperation with the State Agricultural Stablization Committee and the Extension Marketing and Entomoligist Specialists to encourage the construction of more on-the-farm storages and the improvement of existing storages for small grains. Because of the large amount of grain already in the commercial storages it was anticipated the storage facilities would be inadequate for the new crop. It seemed that more and improved on-the-farm storages were the only solution. Farm storages in which grain was to be stored for ASC loans had to provide protection against weather, rodents, insects, birds.

Specialists of the Extension Service, including the Farm Building Specialist, met with the State ASC Committee to discuss the situation and to organize a program.

The program included discussions on the following topics: Grain Storage situation in the state by ASC representatives, Grain Marketing by Extension Marketing Specialist, Rodent, Insect and Bird Control by Extension Entomologist and Storage Buildings (Materials and construction, drying facilities) by the Building Specialist. Three area meetings were conducted for key personnel of the counties in those areas. Approximately 290 persons attended those three meetings. To continue the program, meetings were conducted in six counties where 157 persons participated. Farm visits were made in some areas to give on-the-spot recommendations for storage construction.

As a result of this program and the availability of some unexpected commercial storage, the grain storage problem at harvest time was orderly and satisfactory for all parties concerned. This program demonstrated how Extension Specialists of different departments can work together and with other state agencies to effectively do an emergency job.

The specialists participated in 4 poultry schools, two dairy schools and six farmers meetings to discuss the subject for which the meeting was held. Slides and building and equipment models were generally used to support the discussion.



Bunker Silo constructed with poles and plank. Adaptable to self-feeding. Economical in cost. Easily filled.

Booster Buck Rake filling trench silo with long grass silage on V.P.I. farm. More economical and faster than other methods.

Record of Meetings

Leader Training Meetings:

1 - 4-H	Tractor Maintenance School, V.P.I.	45
1 - 4-H	Tractor Maintenance School (Negro) Petersburg State College, Petersburg, Va.	38
2		93

Community or County Meetings and Demonstrations

Number		Attendance
4	Poultry Schools	310
6	Grain Storage Meetings	157
19	Livestock Schools	942
11	Farm Fence Demonstrations	417
4	Farm Tours and Field Days	206
2	Dairy Schools	110
6	Farmers Meetings (Misc.)	124
52		2266

Area and State Meetings

1	Beef Cattle Short Course, V.P.I.	52
3	Grain Storage Meetings	290
1	Dairy Fieldman's Short Course, V.P.I.	43
1	Dairy Production Committee	15
1	Grain Storage Committee	14
7		414

Meetings Attended for Professional Improvement

6	Monthly Extension Staff Conferences
2	Agricultural Engineering Department Staff Meetings
2	Agricultural Faculty Meetings
1	Annual Extension Agents Conference (4 days)
1	Institute of Rural Affairs (3 days)
1	Annual Meeting, Association of Southern Agricultural Workers, Dallas, Texas (3 days)
1	Annual Meeting, Virginia Section, American Society of Agricultural Engineers (1½ days)
14	Total

Community Project Activities

Approximately 20 counties in southwestern Virginia had one or more communities participating in organized Community Improvement Contests. Farm and home activities as well as community projects were included in this program. This program could be another means of reaching more people with Extension programs. This specialist was invited and participated in two community programs in Giles County by discussing farm home and building plans and construction.

The specialist was one of three judges for the Community Improvement Contest that was sponsored by the Bristol Chamber of Commerce. Nine communities in Virginia and three communities in Tennessee were judged in this contest.

Some communities throughout the State have community projects on which help could be offered if the Extension Specialists were requested by the County Extension Agents. The Housing Specialist assisted with some Community House projects and some educational buildings for rural churches. This specialist met with a committee in Bluefield, Virginia regarding proposed plans for a Farmer's Produce Market. He also met with a committee of Apple Growers in Wise County regarding the possibilities of purchasing and remodeling a discarded ice plant for a community apple storage building.

4-H Projects

The Specialist cooperated in the Extension 4-H Activities by assisting with three projects during the year. A talk on Farm Machinery Storage Buildings was given to the boys and their leaders who attended the State

4-H Tractor Maintenance School at V.P.I. and a similar school for the Negro 4-H boys at Virginia State College, Petersburg, Virginia. Approximately 93 boys and leaders attended both schools.

During the Annual State 4-H Club Short Course at V.P.I., the Specialist was co-chairman of the Vespers Committee which was responsible for four evening Vesper Programs.

Assistance Given to or Received From Other Subject Matter Specialists

The Extension Specialists in Agricultural Engineering cooperated fully with the specialists of other subject matter departments and received excellent cooperation from those specialists. Some of the programs of the respective departments were of such a nature that participation by the several different departments could more effectively accomplish the overall results. Farm buildings and equipment are, out of necessity, an important phase of livestock production, dairy farming, poultry production, farm management, forestry, crop production, grain storage and protection from insects, etc.

The Specialist participated in meetings, schools and farm tours on state, district, county and community levels with specialists of other subject matter departments. For example, the specialist discussed farm buildings and livestock equipment at some of the livestock schools, poultry buildings and ventilation at poultry schools, grain storage and drying at grain storage, conditioning and marketing schools. On many individual farm projects the specialist worked with specialists of other departments according to the nature of the project. When plans for buildings and equipment were revised or new plans prepared, specialist of the appropriate department was consulted.

Close working relationship between the different specialists seems to be one of the most effective means of planning and conducting programs and assisting in the problems on a farm unit basis.

Cooperation with other State Agencies and Institutions and Commercial Organizations

Close cooperation was maintained with the State Dairy and Food Division, the State Health Department and their milk inspectors and sanitarians to promote the pregram for improved farm dairy buildings. The Specialist assisted the personnel of those agencies whenever they requested it. The recommendations submitted by those agencies for the improvement of dairy buildings to meet sanitary requirements were considered whenever new plans were prepared or old plans revised. The Specialist participated in several meetings conducted by those organizations.

The Extension Service furnished plans for most of the Grade "A" dairy units that were constructed in the State.

The Regulations for the production of Grade "A" milk for the State of Virginia and the District of Columbia contain some requirements which are not necessary for the sanitary production of milk. The specialist met with Production and Marketing Committee of the State Dairymen's Association and representatives of the State Dairy and Food Division and the Maryland-Virginia Milk Producers Association to discuss possible changes in the regulations to permit an improvement in the efficiency of our farm dairy units. The efforts of the specialist were unsuccessful.

Excellent cooperation was maintained with the Farm coordinators for the State Department of Mental Hygiene and Hospitals and the Department of Penal Institutions. Recommendations were made to those coordinators on problems relating to the farm buildings and equipment on farms operated by those departments.

On V.P.I. projects the specialist worked with the College Architect and the Head of the Animal Husbandry Department in developing the initial plans for buildings for the new Livestock Center. A two day trip was made with these men to inspect some special buildings now in use throughout the State in order to get some new ideas on arrangement, construction, etc.

The specialist cooperated with several commercial organizations regarding the uses of their materials for farm building construction. Recommendations were given for the use of steel and aluminum for buildings and treated lumber and poles for building and fence construction. Publications on uses of concrete and masonry were supplied by the Portland Cement Association for professional use as well as fordistribution to our farmers.

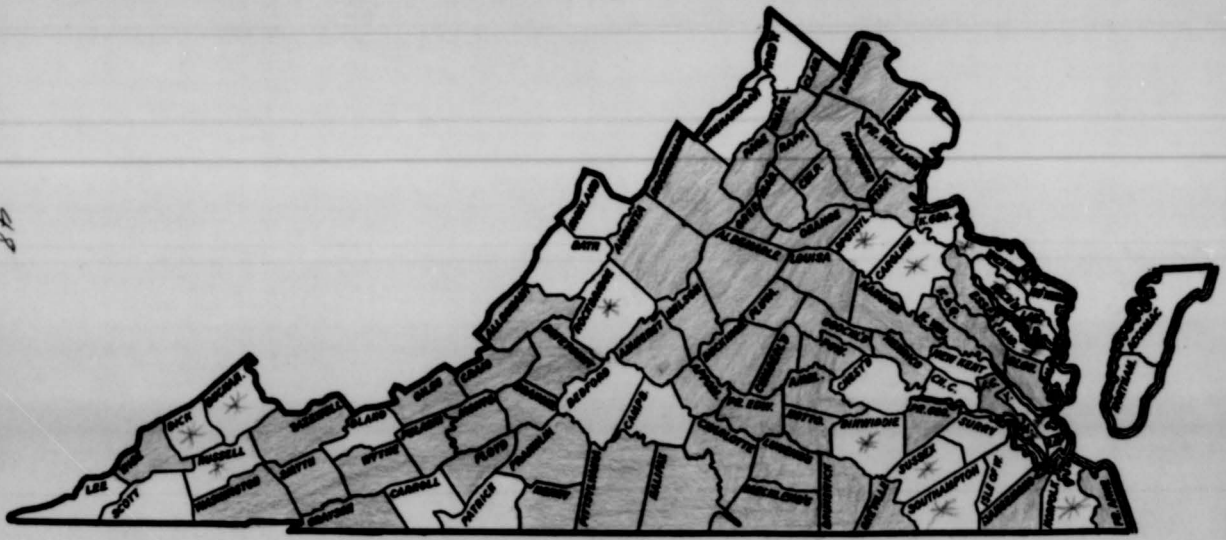
Regional Extension Projects

A regional project for Southeastern States that has been in progress for a number of years is the revision of the Regional Plan Books for Farm Houses and Farm Service Buildings and Equipment. The specialist has been chairman of the Plan Service Committee for this project for a number of years. There has been good cooperation by the Extension Agricultural Engineers specializing in Rural Housing and Farm Structures in the southeastern states and Mr. Robert Dodge, Head, Plan Service, U.S.D.A., Beltsville, Maryland.

This year a number of house and building plans that were submitted by the respective states were circulated, checked and commented upon by the specialist for possible acceptance for the regional plan books. The Beef Cattle Building and Equipment bulletin is expected to be distributed in 1955.

The activities of this committee will probably continue until all other sections of the Plan Service booklet are completed.

Ext. Form 16



Counties (63) in which Specialists worked on Farm Building Program

Counties not worked in 1954 or 1953 on this program

RURAL HOUSING PROJECT

Activities and Accomplishments 1954

As in 1953 there was a slight drop in net farm income in 1954, but there was no perceptible decline in the number of farm families who built or remodeled houses during the year. This conclusion is based on discussions by the Housing Specialist with county agricultural workers, building materials dealers and farm leaders in the State.

It would be conservative to estimate that 4,000 farm families were reached through the Extension Rural Housing program. A large number of these were reached directly through farm visits, demonstrations and meetings in the 43 counties worked in by the Specialist. Others were reached through the 275 letters written to farm people in answering requests for information on housing. It would be illogical to estimate the number reached somewhat indirectly by television shows, radio talks and news articles.

The Housing Specialist participated in 40 group meetings in 1954 with an estimated attendance of 800. This number seems small but most of these meetings were for training Home Demonstration Club Leaders. The methods and subject matter given these leaders were used by them in their County housing program, so an estimated 1500 to 2000 farm people were reached by this method.

In 1954 the Housing Specialist prepared 43 farmhouse remodeling plans in the office. About half this number were made at the farm homes visited. It is reasonable to state that most of these plans have been or will be used. Eighteen special plans were made for buildings such as: community houses and Sunday School room additions to rural churches.

During the year 1,375 bulletins and leaflets on housing were distributed in connection with the Rural Housing Program. The Agricultural Extension Plan Service sent out 365 farm house plans in 1954. Even if 10% of these plans were used the cost of construction would be over a half million dollars. The Housing Specialist prepared three leaflets pertaining to home outdoor living areas and 3,000 copies of these were distributed.

The Rural Housing Specialist with County Extension Agents made 108 farm and home visits in 43 different counties in 1954. It is estimated that better than 75% of the families assisted have used or will use the plans or information given them for improving their farm houses.

Methods and Results in Major Phases of Rural Housing Program

Farm and Home Visits

A very important and probably the most successful method of helping farm families to improve their houses is that of working directly with them in their home. Most requests from farm people for assistance with their housing

problems are made to the County Agent or Home Demonstration Agent. In many cases the Agents are able to give the necessary assistance. However, due to the technical aspects of house planning and the fact that most Agents have not had adequate training along this line, the Housing Specialist is called to assist with a majority of the work. One of the Extension Agents always accompanied the Specialist on home visits and assisted in working out the particular problems. Generally, the procedure is to let the farm family outline their problem or plans, then the agent and specialist offer suggestions on possible solutions. In most cases a sketch or plan for the building or remodeling is requested. Sometimes, simple sketches are made at the farm, but in many cases it is necessary for the Specialist to take notes and prepare more detailed drawings at headquarters.

There were a wide variety of housing problems to be worked out on these home visits. There were problems concerning such things as rearranging rooms, planning kitchens, termite control, bathroom additions, planning central heating systems and general remodeling.

Home visits utilize considerable time and relatively few people are reached directly by this method. However, the method is justifiable in that it serves a threefold purpose. The individual family gets direct assistance which makes it less likely that mistakes will be made in remodeling. The County Extension Agents get some training which will enable them to assist other families with similar problems. The completed projects serve as result demonstrations in the respective counties.

The County Extension Agents and Specialist made 108 home visits in 43 counties during the year. A majority of these were for assisting farm families in planning farm house remodeling. As has been the case in previous years, most of them wanted suggestions for locating a bathroom or extra bedroom and for planning more convenient kitchens.

Always the farm family wanted a sketch or plan which they could give to a carpenter who would do the work. An example of these sketches is shown as Figure 1 of this report. Mr. Kipps of Madison County wanted to add a bathroom, a first floor bedroom and a combination dining room and den to his two story farm house. By converting his present kitchen to a dining room and den and making a new addition as shown in the sketch, the problem was worked out very well.

Meetings or Demonstrations

The Rural Housing Specialist with County Agents or Home Demonstration Agents conducted 40 meetings or demonstrations in 1954. These consisted of leader training meetings, subject matter discussions with farm groups, and planning meetings with committees. Details of some of the most important are given in the following paragraphs:

Twelve leader training meetings on household mechanics were held in 1954.

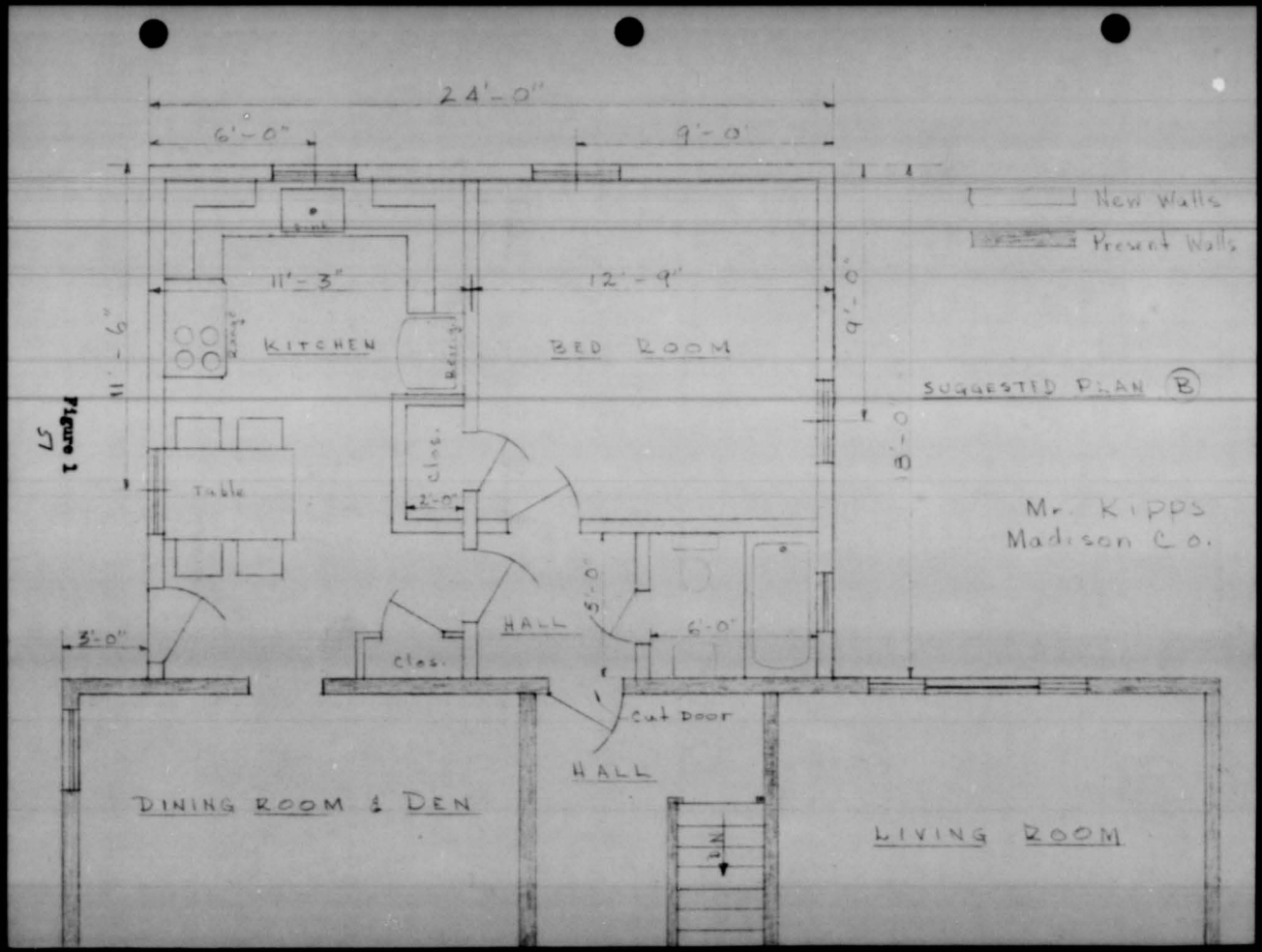

24'-0"
6'-0"
9'-0"
New Walls
Present Walls
11'-3"
12'-9"
9'-0"
11'-6"
KITCHEN
BED ROOM
SUGGESTED PLAN (B)
Table
clos.
2'-0"
10'-0"
Mr. KIPPS
Madison Co.
3'-0"
clos.
HALL
5'-0"
6'-0"
cut door
HALL
DINING ROOM & DEN
LIVING ROOM
DN

Figure 1

At these schools the Home Demonstration Club leaders were shown how to do household repairs such as - replacing broken window glass, patching cracks in plaster and repairing leaky faucets. These things seem simple and not too important, but if such repairs are not made when needed the result can be costly and inconvenient renovations later. The women show a great deal of interest in this work and Home Demonstration Agents report there is noticeable home improvements resulting from the simple home repairs training.

The Specialist met with ten Community Improvement Clubs to discuss farm house improvement activities. Two of these meetings were in the form of workshops at which the Specialist gave demonstrations on making farm signs. At several meetings the discussion was on planning and locating bathrooms when the water system is installed. These talks were in support of the Extension Service's concentrated program to get more farm families to install water systems. Other subjects discussed with these groups were: "Ways To Cut Costs When Building New or Remodeling", "Home Heating and Insulating", and "Paints and Painting".

The Housing Specialist worked with 6 Rural Church Committees during 1954. In two cases the groups were working on plans for rural minister's homes. The other groups were making plans for Sunday School room additions to their rural churches. Strictly interpreted, this was not rural housing work, but it served as a very useful extension teaching method. By working with these rural groups the Specialist was able to teach them principles of good planning and its importance. He was able to give local carpenters information on good construction practices, and point out the importance of using quality materials and using them correctly. When they are planned and built well, these Sunday School buildings serve as good demonstrations of economical construction. Such information services and demonstrations are bound to result in improved farm building practices.

Information Service

The information material prepared and sent out by the Rural Housing Specialist is an important phase of the Extension Rural Housing Program. About 40 special remodeling plans for farm houses were prepared by the Specialist and blueprints of them were mailed to the farm families. All these families stated that they definitely planned to do the work according to the plans within the next year. During the year 18 special plans for buildings such as Rural Church additions and Community Houses were drawn.

About 275 letters were written answering requests for information pertaining to housing. The Specialist distributed 1375 bulletins and circulars on various phases of housing to rural people requesting information. The Farmhouse Plan Bulletin No. 174 was reprinted and County workers were supplied with copies to be loaned to farm people who were planning to build.

Three leaflets showing plans and lists of materials for lawn furniture

were prepared by the Housing Specialist. The titles of these leaflets were: "How To Make Picnic Tables", "Lawn Chair Plan" and "Masonry Block Barbecue Grill". The County Extension Agents requested that these leaflets be prepared to meet the large number of requests which they were receiving from rural people for plans of this type. More than 2,500 copies of these leaflets have been sent out.

The Rural Housing Specialist prepared some cost estimates in tabulated form on housing and housing materials. This material will be used in an Extension Handbook on farm and home unit planning. The handbook will include materials from all Extension subject matter departments. It was assembled primarily for use by County Agricultural Extension workers in the intensified program on Farm and Home Development.

Publicity

Two television programs were presented by the Housing Specialist over television station WSLS in Roanoke, Virginia. The purpose of the first TV presentation was to show the merits of the expansible house. Floor plan cut-outs and the flannel board were used to show how extra rooms could be added easily and economically when the original plan allowed for future expansion. The second program was on "Planning and Locating Bathrooms" with particular emphasis on locating bathrooms in rural houses which have been built without them. Again the Specialist used cut-outs and flannel board to show several suggested locations for bathrooms in one story, and two story houses.

The Specialist presented 3 radio programs over Radio V.P.I. and 2 tape recordings which were distributed to radio stations throughout the State. Some of the subjects of these programs were: "House Insulation", "Home Heating Systems", and "Points in House Planning". On two occasions the Housing Specialist assisted Home Demonstration Agents with radio programs in their counties. News articles on "New Expansible House Plans" and "Home Heating Systems" were prepared by the Specialist and sent to about 75 daily or weekly newspapers in the State.

Fair Exhibits

The Rural Housing Specialist was Chairman of an Agricultural Extension Committee on Recreation. This committee was directed to erect an exhibit at the Virginia State Fair in Richmond, Virginia as a part of a State Interagency Exhibit on recreation. The Extension Committee set up a simulated home outdoor living area complete with picnic table, lawn chairs and barbecue grill. 4-H Club boys and girls from nearby counties assisted a Specialist with demonstrations on barbecuing chicken. A sign in the background stated: "The V.P.I. Agricultural Extension Service Teaches That Families Who Play Together, Stay Together". It also stated that plans for lawn furniture and information on outdoor cooking was available on request. Several thousand people came in to watch the demonstrations and request information. As a

result of the exhibit approximately 1,000 plans for picnic tables, lawn chairs and barbecue grills and 2,500 leaflets on "How To Barbecue Chicken" were distributed.

The Housing Specialist worked with two Home Demonstration Clubs in planning fair exhibits on simple household repairs. These exhibits were set up at County and Regional Fairs.

Office Conferences and Interviews

On an average of 60 to 80 times each year individual farmers, groups of farmers, County Extension workers and others come by the Housing Specialist's office at V.P.I. for discussions on some phase of rural housing. Because these conferences take a considerable amount of the Specialist's time and are methods of disseminating housing information, they must be considered important in the Extension Rural Housing Program.

Special Activities

The Housing Specialist served on the Registration Committee for the Annual All Star and 4-H Club Short Course and the In-Service Training Short Course for County Extension Workers held at V.P.I. in 1954. He also took part in the program of instruction for the Agents In-Service Training Group.

The Housing Specialist assisted other specialists of the 4-H Club Department in conducting the District and State 4-H Tractor Operators Contests which were held on the V.P.I. Campus.

During the Institute of Rural Affairs at V.P.I. the Specialist served on the Quarters Committee and gave an illustrated talk to the Home Economics Section one afternoon on "Planning and Locating Bathrooms for Convenience and Economy".

Cooperation with Other Departments and Agencies

The Extension Housing Program on the State level is conducted jointly by the Home Improvement Specialist who is a Home Economist and the Rural Housing Specialist who is an Agricultural Engineer. Each of these specialists keeps the other informed on his plans and activities. Much of the housing program planning is done jointly by these specialists. Nearly all of the county-wide meetings were conducted by the two specialists working together with the country farm and home agents.

The Housing Specialist must necessarily cooperate at all times with all other subject matter specialists in the Agricultural Engineering Department, the Home Economics Department, the Entomology, and the Economics Department. Specialists from these Departments very often take an active part in the Rural Housing Program in Virginia. They also furnish the Housing Specialist with much valuable and essential information for carrying out a successful housing program.

Good working relationship is maintained with the building material manufacturers and dealers. These people are interested in the rural housing program. They are in a position to exert considerable influence on house planning and construction. When requested, these agencies have furnished many useful educational aids such as bulletins, movies, charts, and sample materials to assist with the Extension program.

Close cooperation is maintained with the Farmers' Home Administration in Virginia. Whenever possible, F.H.A. engineers and other field workers use house plans from the Extension Plan Service. Whenever possible, F.H.A. workers attend housing meetings and in several instances they have taken part in the program. Much useful information has been received by the Housing Specialist from conferences with F.H.A. engineers.

The Housing Specialists work with many other agencies such as: The State Grange, State Health Department, Vocational Agriculture Departments, Electric Power Companies, and Cooperatives, Farmers' Clubs, Rural Ministers, Church Groups, Civic Clubs and Rural Youth Organizations.

Farm House Remodeling Project - Case History

The following case history of a rural house remodeling project is an example of the methods used and the results which may be expected by Virginia Agricultural Extension Workers in their rural housing program.

Mr. and Mrs. Mister are a middle-aged couple who live in Northampton County, Virginia. Their grandson, about 10 years old lives with them. Their home is a two-story frame house with three bedrooms upstairs and a living room, dining room and kitchen downstairs.

They had been planning for several years to do some home improvements such as - installing a water system, building kitchen cabinets and building clothes closets. She learned through her Home Demonstration Club activities that the Extension Service could give her some assistance in planning her remodeling, so she contacted the Home Demonstration Agent and asked for her help with the plans.

At the time this request was received the Extension Housing Specialists were planning a two day Home Demonstration Agents training school for that area on planning house remodeling. The Agents and Specialists, with Mrs. Mister's cooperation, decided to use her house as the problem to be worked out in the school.

The group visited the home and talked to Mr. and Mrs. Mister to find out their needs and desires. They found that the Misters wanted first of all a pressure water system. Mrs. Mister also wanted a convenient kitchen, a utility room, a bathroom and some bedroom clothes closets. She did not have money enough to get everything in a short time; however, she wanted a complete long time plan. The study group took the measurements which would be

required in preparing a sketch of the house as it was.

Using the measurements taken on their visit the Agents prepared scale drawings of parts of the house which would be changed. This sketch is shown in Figure 2. The group then worked on possible plans for remodeling and finally agreed on the plan as shown in Figure 3 and Figure 4.

Blueprints of the plan were given to Mrs. Mister in the summer of 1953. The Housing Specialist and the Home Demonstration Agent visited Mrs. Mister in 1954 and she was delighted to show what she had accomplished to date. They had installed a water system, hot water tank and kitchen sink at a cost of $302.98. Kitchen cabinets which were bought in ready to assemble form and installed by the family cost them $108.50. Mrs. Mister was particularly pleased with her utility room which was made by enclosing a part of the back porch for $20.00. Mr. Mister built a clothes closet with sliding doors in the bedroom upstairs at a total cost of $32.08.

To date the Misters have done all the remodeling according to plans in Figures 3 and 4 except the bathroom installation in the enclosed porch on the second floor. They had planned to do the bathroom this year but had a hospital bill and some doctors bills which took the money which they planned to use for this job. They say it will be done as soon as possible. The total cost of all remodeling to date is $498.08.

The remodeling job which Mr. and Mrs. Mister have done for such a reasonable cost is a good example of what farm families with low or moderate income can do to make their homes more comfortable and convenient. The Misters made full use of the remodeling plans and information on construction which were furnished to them by the Agricultural Extension Service. This information guided them in purchasing the correct materials and doing much of the construction themselves. As a result they were able to get a remodeling job for $498.00 which would have cost an estimated $900.00 if it had been done by a contractor. The project is also serving as a result demonstration in the community.

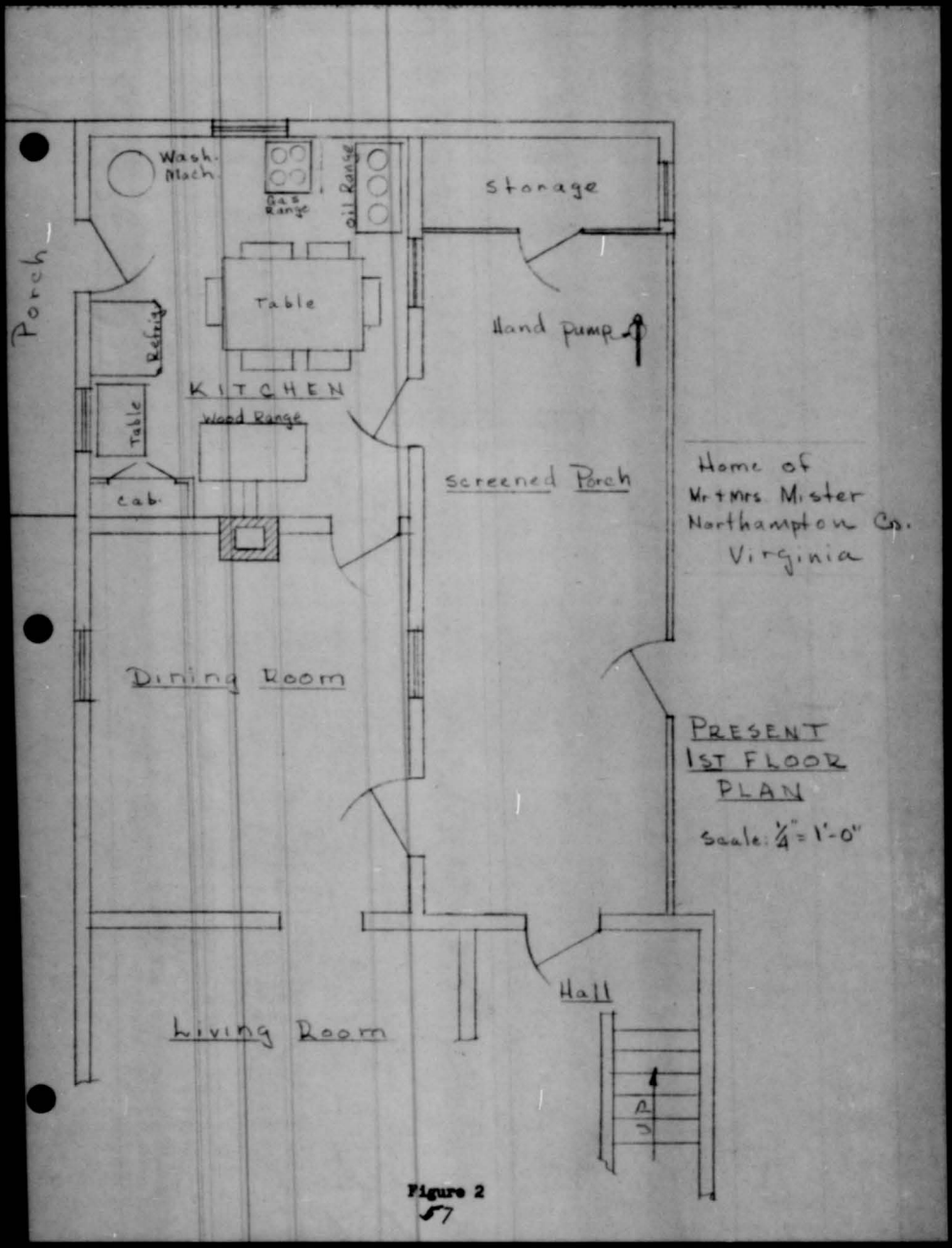

Wash. Mach.
Gas Range
Oil Range
Storage
Porch
Table
Refrig.
Hand pump
KITCHEN
Wood Range
Table
cab.
screened Porch
Home of
Mr + Mrs Mister
Northampton Co.
Virginia
Dining Room
PRESENT
1ST FLOOR
PLAN
Scale: ¼" = 1'-0"
Hall
Living Room
UP

Figure 2
57

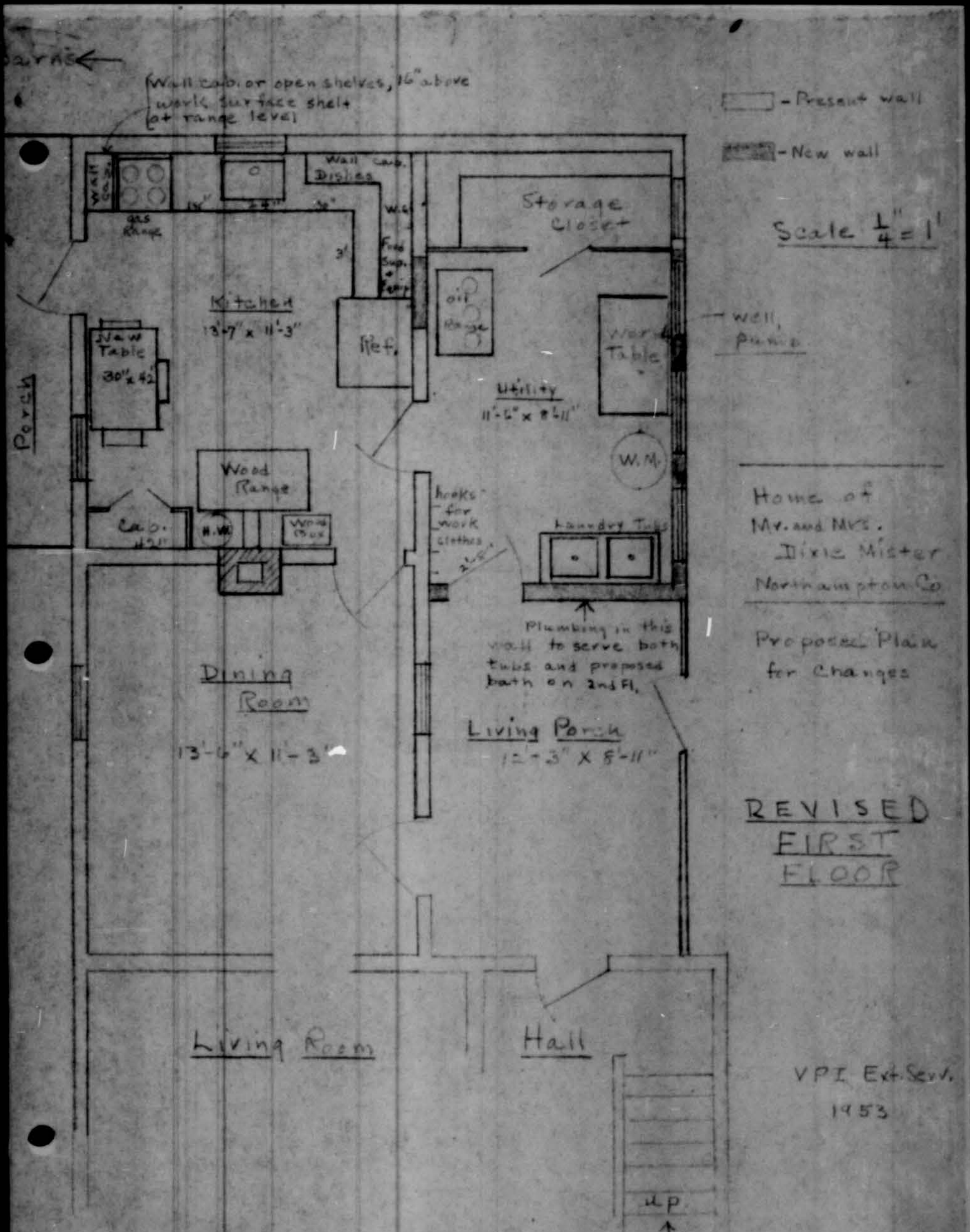

Wall cab. or open shelves, 16" above
work surface shelf
at range level
- Present wall
- New wall
Scale 1/4" = 1'
Wall Cab.
Dishes
Gas Range
Storage Closet
Kitchen
13'-7" x 11'-3"
Ref.
Oil Range
Work Table
Well, Pump
New Table
30" x 42"
Porch
Utility
11'-6" x 8'-11"
W.M.
Wood Range
Cab.
H.W.
Wood Box
hooks for work clothes
Laundry Tubs
Home of
Mr. and Mrs.
Dixie Mister
Northampton Co.
Proposed Plan
for Changes
Plumbing in this wall to serve both tubs and proposed bath on 2nd Fl.
Dining Room
13'-6" x 11'-3"
Living Porch
12'-3" x 8'-11"
REVISED
FIRST
FLOOR
Living Room
Hall
VPI Ext. Serv.
1953
up

Figure 3

Ext. Form 16

60

COUNTIES WORKED IN ON RURAL HOUSING - 1954

Farm and Home Equipment Project
Work Accomplished - - 1954
J. A. Waller, Jr., Specialist

The following pages will tell of the accomplishments of this specialist during the past year. His activities have been 4-H Tractor Maintenance Schools on the County and State levels for both negro and white, Area Fruit Growers' Meetings, 4-H Tractor Operators Contests on the County, District, State and Regional levels, domestic water systems, farm ponds, irrigation, Intitiute of Rural Affairs, judging farm machinery, Commercial, Industrial and Educational exhibits at the Atlantic Rural Exposition, Epsilon Sigma Phi activities, American Society of Agricultural Engineers, Professional Engineers, drainage, stationary sprayers and sanitation.

Again this specialist has worked alone in attempting to do a good job with all of the activities coming under this project heading. The 4-H tractor work and the irrigation work have been increasingly heavy. Another dry year has meant more requests for information on irrigation and domestic water supply. Many areas have been critically short of an adequate supply of domestic water. Close cooperation has been given to other agencies working to increase the number of Virginia farms having running water under pressure. The best service possible under present conditions will be rendered with the hope of giving more complete service with adequate help.

Domestic Water Supply

A real effort was made to close the gap between the 95% or more of Virginia farmers who have electric service and the 35% or less of Virginia farmers who have running water under pressure. A number of county water supply committee meetings were attended to explain the program, several county wide meetings of farm people were held to discuss the different water systems and a number of individual water supply surveys were made.

This lack of water system is not necessarily a financial problem in many cases. My belief is that there has not been done a thorough job of selling farm families on the benefits of having the use of a well planned water system.

The situation concerning the ground water in the state is more critical than last year. There was little reserve water in the subsoil and below at the beginning of this year. The rainfall for the year has been very light. It will probably get worse before it gets better.

Several different methods were used in trying to get farm people interested in installing water systems. Demonstration meetings were held. County wide meetings using large charts to describe the different systems were held and a big contest was conducted - all with only fair results.

During the year 5 County meetings were held and 26 individual surveys were made by this specialist. These surveys were for electric, gravity, gasoline engine and hydraulic ram jobs.

No better system has been tried than to select several counties each year, give them concentrated publicity and individual surveys and recommendations. The cooperation of all dealers and professional workers is important.

4-H TRACTOR MAINTENANCE PROGRAM

The 4-H Tractor Maintenance Project is one of the most helpful programs available to farm boys. This specialist cooperated with the 4-H Club department in conducting the project during 1954. Two schools were conducted for training white and negro leaders for this program. These trained leaders played a leading role in carrying the program at the County level. A total of 673 boys were enrolled in this project in 1954. The specialist gave as much assistance on this project at the County level as time permitted.

Ninth Annual State 4-H Tractor Maintenance Training School at V.P.I.

The training school for white leaders was held at V.P.I. on December 7,8,9. There were 42 leaders and 3 Extension Agents from 25 counties in attendance.

The first day was devoted to topics of general tractor interest and on which no shop work was planned. The leading representative of the sponsor, the American Oil Company, lead off with a talk on the overall 4-H tractor maintenance program. The boys are interested in knowing what other states are doing and how our progress compares with theirs.

Safety is so very important in connection with tractor work that we feel no program is complete without giving it a prominent place. Mr. O'Bryne, Extension Forester, is the best informed man, locally, and he has kindly handled this subject for a number of years. Other subjects, handled the first day were, The Care and Use of Rubber Tires on Farm Equipment, What Makes a Tractor Engine Run, Transmissions, Final Drive and Power Takeoff, The Importance of Housing Farm Equipment and an explanation of the 4-H tractor operators contests. During the evening motion pictures of farm safety and tractor maintenance were shown.

At the start of the second day all of the boys who had been to one of these state level schools before were taken out of the group and assigned to other members of the agricultural engineering staff for some more advanced work on tractor maintenance. Professor Sjogren did a good job on this.

Most of the discussions and shop work on actual tractor maintenance were grouped for the second day. The carburetion, ignition and cooling systems were discussed by service men from the Richmond factory branches of the Ford, Allis-Chalmers and Oliver Companies respectively. In each case the discussion was followed by a shop period on the same system. The boys were divided into four groups and so rotated that all boys worked on all four tractors during the day. Mr. Sobeck, lubrication engineer, American Oil Company, handled the discussion on tractor lubrications and used a Farmall tractor. Used tractors were used and were loaned by nearby farmers. They were given a change of oil and a grease job for their trouble.

The third day was given over to the importance of leadership, organi-

zation and conducting Community or County 4-H Tractor Maintenance Schools. This section of the program was handled by Mr. Skelton and Mr. Turner of the 4-H Club Department, V.P.I.

See complete program and schedule in exhibit section.

4-H Tractor Maintenance School
Virginia State College, Petersburg, Virginia

The annual 4-H Tractor Maintenance School for negro 4-H Club members was held at the Virginia State Collete, Petersburg, Virginia on March 4-5.

The program and schedule was similar to the one held at V.P.I. in December. Lectures on the important tractor systems were given by competent tractor service men. The lectures were followed up by well handled shop periods covering the topics discussed. The same service men were in charge of the work on their respective tractors in the classroom and in the shop.

This specialist helps with the program, shop work, securing speakers, servicemen and tractors.

This year there were 38 club members and leaders from 12 different counties.

State 4-H Tractor Maintenance Clinic at
Virginia State College - March 4th - 5th, 1954. 63

Ninth Annual 4-H Tractor Maintenance School

4-H Tractor Maintenance Boys who Have Attended a Previous School Getting Some Advanced Work on Tractors.

Mr. Sowers, of Sowers Farm Machinery Co., Christriansburg Instructing on Allis-Chalmers Tractor.

Mr. McCulloch, of Ford Tractor-Equipment Corp., Richmond, going over Ford Tractor.

Mr. Layne, International Harvester Co., Richmond, Explaining Maintenance on Farmall Tractor.

Mr. Hogan, The Oliver Corp., Richmond, Pointing out Vital Parts for Proper Maintenance on Oliver Tractor.

4-H TRACTOR OPERATOR'S CONTEST

This has been the most active year in 4-H Tractor Operation - on County, district, state and regional levels. In addition, assistance has been given with these contests at such fairs as Northern Neck and Giles County. It is a very important activity and more emphasis should be placed on it.

ON COUNTY LEVEL

While most of the County Contests are handled by County Extension personnel, this specialist has helped with several contests each year. Richmond, Westmoreland and Botetourt counties were given assistance this year.

ON DISTRICT LEVEL

Just prior to the State 4-H Short Course at V.P.I. the district 4-H tractor operators contests are held in the different extension districts. This year one was held in Bedford, Honbridge, Luray and Blacksburg. From each district the top three operators are eligible to come to V.P.I. to compete in the State Contest.

ON STATE LEVEL

The same rules and size and shape of courses are used at all contests regardless of level. From twelve to fifteen boys - top score operators at district contests - drive in the State Contest. The winner this year was John Etzler from Botetourt County. He will represent Virginia in the Atlantic States Exposition Contest.

ON REGIONAL LEVEL

This is the contest held at the Atlantic Rural Exposition in Richmond. This was the fourth year it has been held. It was held September 28th. State winners from Maine, New Hampshire, New Jersey, Rhode Island, Pennsylvania, Maryland, New York, Delaware, North Carolina, South Carolina, West Virginia, Florida and Virginia took part in the contest. This is the most outstanding contest of its kind in the Country. It was larger this year than ever before. The American Oil Company is the sponsor and it is expected that within a few years all of the states in its territory will enter. This means seventeen states. There is no national contest but this one serves as such.

The total contest is made up of four parts: a fifty question written exam, a practical check-over exam, a driving test under simulated farm conditions and a belting up exercise. Each boy is scored on all four parts. The point off system is used - the low score wins. A parade of contestants with their respective tractors is formed and lead from the entrance gate to the area where the contest is held. After the contest the contestants are paraded before the Grandstand in their order of winning.

At 6:00 P.M. a banquet was held at the William Byrd Hotel for all

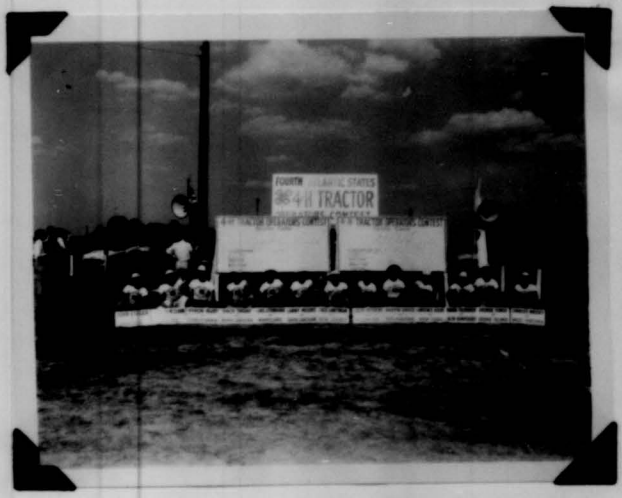
State 4-H Tractor Operators Contest
at V.P.I. - Backing up the alley.

State 4-H Tractor Operators Contest
at V.P.I. - Over the course.

State 4-H Tractor Operators
Contest at V.P.I. - Returning
the manure spreader to the shed.

Parade of 4-H Tractor Operation Contestants
Moving Through Atlantic Rural Exposition Grounds.

4-H Contestant Doing Belting Exercise at
Atlantic Rural Contest.



Atlantic Rural Exposition 4-H Tractor Operation Contestants From Thirteen States In Order of Placing.

contestants, coaches, judges, etc. Awards were made and officials presented from the Exposition, Farm Equipment Association, American Oil Company, and V.P.I. Agricultural Extension Service.

It is a pleasure to report that the Virginia Contestant was the winner of the 1954 Contest. This means that Virginia has won two out of four times. This years winner is John Etzler of Botetourt County.

Irrigation Surveys

1954 was the most active year in sprinkler irrigation that we have had. The largest number of requests for help on irrigation was received. During the year 69 visits were made to farms in response to requests for help. Many of these farms had good conditions for the successful operation of a sprinkler irrigation system. On these farms definite recommendations were given and in many cases complete designs and estimates of equipment were furnished. These designs included size and type of pump, size and kind of power unit, size and length of main and lateral lines and size and style of sprinkler and nozzles. Also, an operation schedule was furnished.

Most of these systems will eventually go in. If and when they do and assuming an average of only 25 acres each 1775 acres of land would be watered.

Outstanding examples of large scale sprinkler irrigation are:

Beef Cattle and General Farming - Mt. Airy Farm, near Mt. Jackson, 150 acres irrigated of corn, hay and pasture. Also, using large size hay drier. His water supply is the Shenandoah River.
Dairy - H. C. Rountree, Suffolk, is irrigating 100 acres of pasture and hay for a large dairy herd. He retails whole milk. He has a large hay drier. His source of water is two large ponds.
Orchard - Thomas H. Beasley, Starkey, is irrigating about 100 acres of peaches and apples. His water supply is a good creek. He is lifting water to over 500 ft. of total head.
Truck - Taylor and Caldwell, Walkerton, irrigated about 200 acres of English peas, sugar corn and other vegetables. All of these users are well pleased with the results they have gotten.

Outstanding examples of smaller successful installations are:

Tobacco - Emmit Cooke, Gretna, is irrigating about 5 acres of tobacco, and with great success. He almost paid for his system the first year he used it. He was our only tobacco irrigator four years ago. There are over 100 now.
Pasture - S. C. Snead, Shawsville, is doing a fine job of irrigating 80 acres of pasture for feeder cattle. His source of water is Roanoke River.
Vegetables - Gordon Hall, Pulaski, is irrigating 6 acres of truck crops from a large spring. He retails vegetables in Pulaski with much success.
Dairy - F. W. Slemp, Big Stone Gap, is irrigating 20 acres of pasture for a 40 cow dairy herd. All of these users are well pleased.

Irrigation Working Conference

March 18-19 was the time of the third annual irrigation working conference on the V.P.I. campus. It was considered so successful that it was unanimously decided by those present to hold a similar conference here in March, 1955. Many arrangements for next years conference have been made. One hundred fifty very interested people from over the state and quite a few from outside the state were present. The purpose in holding these conferences is to give the best possible information and training to all dealers of irrigation equipment, professional workers and others who help Virginia farmers on their irrigation problems.

Much time and effort is devoted to planning and preparing a strong program. We take first things first. We start with a good discussion on the adaptability of Virginia soils to irrigation. This must include such essential knowledge as infiltration rates, internal water movement, holding capacity, drainage, productivity and so forth. This knowledge is absolutely basic to good design.

The next discussion covers some of the more important Virginia crops from the standpoint of high acre income in relation to irrigation. At the present time many vegetables, tobacco and under favorable conditions some hay and pasture lands are profitable crops to irrigate. Information on crops as to their effective root zone depth, peak moisture use rate, moisture replacement and irrigation frequency must be know to properly design an irrigation system. The V.P.I. Soils and Agronomy Departments have given excellent cooperation on handling these topics.

Following the soils and crops discussions we get into the selection of the proper equipment. The equipment consists of a proper type and size pump, a matched power unit, cofrect size main and lateral lines and sprinklers of the right size and with well selected nozzles. Pumps for ponds, creeks, rivers, etc. are almost always single centrifugal pumps. Pumps for use in wells are usually turbine pumps. Considerable time is devoted to the application of electric motors, gaoline engines and Diesel engines to irrigation pumps. The selection of adequate size mains and laterals is emphasized. A representative of a sprinkler maker talks on the selection and use of the right size sprinkler and nozzles to fit each installation. The first day is devoted to the different steps entering into good designing of irrigation systems. The second day is devoted to more general and miscellaneous subjects. A progress report on irrigation research in Virginia is given, the present status of irrigation in Virginia is reported on, water supplies are discussed, water rights are becoming important and must be considered, dealer responsibility receives attention and the distribution of fertilizer through an irrigation system is explained and demonstrated.

A field trip to the college farms to show soil texture and characteristics is always interesting.

The specialist developed the program and conducted the conference. See a copy of the program in the exhibit section.

Setting Up The System

Pasture Irrigation

Field Testing Moisture In Soil

Irrigating Flue-cured Tobacco

Area Fruit Growers' Meetings

This was the ninth year that this specialist has cooperated with the V.P.I. Horticultural Department in holding ten area fruit growers' meetings. These meetings are held at strategic places for fruit growers such as Boones Mill, Stuart, Burkeville, Lancaster, Orchard Gap, Washington, Mt. Jackson, Winchester, Crozet and Wise. These points can be easily reached by the fruit growers in the state.

The cooperation which this specialist gives consists of contacting the host county agents concerning all local arrangements, publicising all the meetings throughout the state and to invite orchard supply and equipment people to participate by having exhibits or demonstrations of their products. At most of the meetings the different types of sprayers, tractors, mowers, pruners and clippers are shown or demonstrated. Frequently displays of insect pests, spray materials and fruit containers are made. This specialist has charge of all demonstrations.

The different counties or areas in cooperation with the Horticultural Department arrange the programs most suitable for their respective conditions and needs. These programs usually include discussions on planting, culture, spraying, harvesting and marketing apples and peaches. These meetings are well attended by interested fruit growers. The meetings this year were attended by 425 orchard owners, managers and foremen.

See the exhibit section for complete schedule of meetings and sample copy of program.

Farm Ponds

During the past several years of very dry weather many farmers became interested in building a farm pond. A well constructed farm pond is a very valuable asset. Quite often the pond is more valuable than the land was on which the pond stands.

A good farm pond supplements other more prescious water supplies. Enough of them may even raise the water table somewhat. They serve as a water supply for fire protection, livestock, irrigation when large enough, and orchard spraying as well as for many recreational purposes.

Since this is one of the principle practices on which assistance is given by the Soil Conservation Service this specialist gets a limited number of requests.

This specialist gave assistance on the construction of 16 farm ponds.

Sanitation

Quite a number of requests for help on sewage disposal systems have been received. Since the State Department of Health maintains sanitation personnel available to all counties only a few surveys were made. Many suggestions were made and a supply of up to date literature issued by the State Department of Health is kept on hand for mailing to farm people interested in the construction and use of sewage systems - principally the septic tank.

Drainage

Drainage continues to be one of the activities of this specialist. However, since it is also one of the chief practices stressed by the Soil Conservation Service few large scale tile drainage jobs are done as formally. Five jobs were done and these were random lines.

Considerable interest continues in ditching with dynamite. This is often the most practical and economical method of draining. Demonstrations have been given but many local men can use it without technical help.

Epsilon Sigma Phi

Considerable assistance was given during the year on things pertaining to Epsilon Sigma Phi, the National Honorary Extension Fraternity. This was committee work and acting as advisor to the Chief.

All local arrangements were handled for the annual business meeting and an active part was taken in the initiation of a rather large class of candidates.

Judging

This was the fifth straight year that this specialist was asked to be chairman of the committee to judge all farm machinery, commercial, industrial, educational and state agency exhibits at the Atlantic Rural Exposition.

There are many entries in each class and much time and effort are requires to do a conscientious job.

Things to consider in these exhibits are overall arrangement and attractiveness, effectiveness as an aid to teaching, quality of the product, courtesy and proficiency of the personnel in charge and the comfort of the visiting public.

American Society of Agricultural Engineers

Business Meeting

Again the annual meeting of the Virginia Section, American Society of Agricultural Engineers, was held at Natural Bridge, Virginia. The meeting days were April 30th-May 1st. The program was balanced by having good speakers handle topics covering farm and home equipment, soil and water conservation, farm buildings and farm electrification.

This specialist served on the nominating committee. Also, he secured quite a number of prizes. It has been found than an occasional drawing for a prize tends to improve attendance and hold interest of the members. The power suppliers and commercial people are generous in donating the prizes.

The memberships agreed to hold the summer session at Camp Farrar during the long weekend.

Summer Meeting

A.S.A.E. members of the Virginia Section had a very enjoyable weekend at 4-H Camp Farrar. Many of them brought their families for a vacation. The total attendance was 46. It was a pleasure meeting entirely - no formal program was attempted. Informal discussions on agricultural engineering work were held and many helpful contacts with agricultural engineers out in the state were made. The food was excellent and all charges were very moderate. There was plenty of recreation and it consisted of swimming, sun taning and horseshoe pitching.

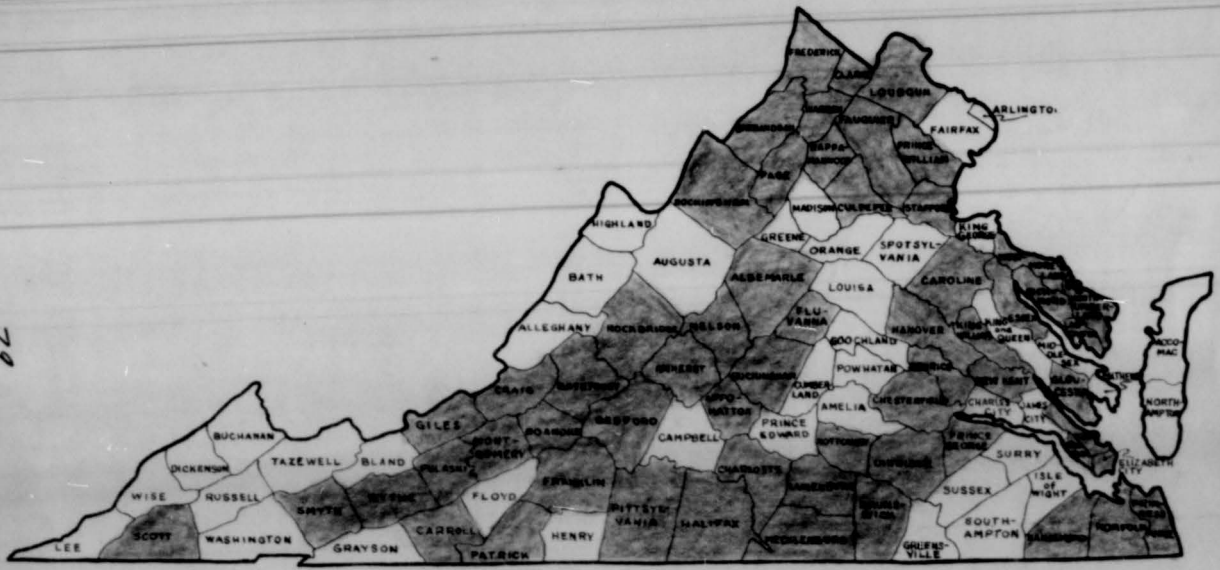
The Farrow family had its annual reunion at the same time. This limited our supply of cabins somewhat. These summer meetings mean much to the life and interest of the section and should be continued.

Professional Engineer

In March this specialist made application to the Department of Professional and Occupational Registration, Commonwealth of Virginia, to be certified a Professional Engineer - (Agricultural). Much supporting evidence of experience, qualifications and endorsements accompanied the application.

In June he was notified that the application had been approved by the Board of Examiners and to report to V.M.I. for an oral examination. The specialist presented himself as requested and was examined by the three Board Members. Samples of his work in water supply, drainage (tile), farm ponds, stationary spray systems, farm electrification and irrigation were exhibited. He was then informed that he had passed the examination.

Subsequently he became a member of the local and national socities as well as the State Society of Professional Engineers. This step was taken with the thought of gaining professional improvement personally and of elevating the standing of the department and Institute by increasing the number of Professional Engineers.



Counties in which work was done in 1954

Extent Planned Goals Were Achieved

Activity

1953	1954
1. Conduct two state level 4-H Tractor Maintenance Schools (one white and one negro).	1. Conducted two state level 4-H Tractor Maintenance Schools. The school at V.P.I. was attended by 45 older boys and leaders from 25 different counties. The one at Virginia State College (negro) was attended by 38 club boys and leaders from 12 different counties.
2. Assist with holding four county, four district, one state and one regional 4-H Tractor Operator's Contest.	2. Conducted three county, four district, one state and one regional 4-H Tractor Operator's Contests.
3. Hold County Meetings in six counties on farm water supply.	3. Held five county-wide water supply meetings. Gave other assistance on special program.
4. Hold discussions on irrigation in ten counties.	4. Held irrigation meetings in eight different counties, one district agents groups and at the Institute of Rural Affairs (Horticulture group).
5. Handle all requests received on farm drainage problems.	5. Made four surveys to improve 65 acres.
6. Handle all requests received for help on farm ponds.	6. Made 14 surveys for farm ponds to impound 21 acres of water surface.
7. Serve on local committees as requested.	7. Served on eight committees.

Result

1. Make 35 surveys for farm water systems.	1. Made 28 surveys.
2. Enroll 150 4-H boys and leaders in Tractor Maintenance Schools.	2. Enrolled 673.
3. Enroll 125 in Tractor Operation.	3. Enrolled about 175.
4. Hold 15 group discussions on irrigation.	4. Held 16 discussions.
5. Assist with 25 farm ponds.	5. Worked on 16 ponds.
6. Work on 65 irrigation layouts.	6. Worked on 69 jobs to water 1800 ac.
7. Contact 8,000 people in all counties.	7. Contacted 7650 people.

(Results cont.)

8. For the 5th consecutive year judged the farm machinery, commercial, industrial, State agency and educational exhibits at Atlantic Rural Exposition.

9. Assisted Horticultural Department in holding eight area fruit growers meetings attended by 425 fruit men.

10. Held annual State irrigation working conference attended by 149 dealers, engineers and farmers.

Statistical Summary

Days at Headquarters	149
Days in Field	141
Miles Traveled	17,438
Number of Farm Visits	134
Different Counties Worked In	58
Number of Individual Letters Written	792
Number of Radio Programs Given	6
Number of Bulletins Sent Out	234
Number of Subject Matter Talks Given	85
Number of Conferences with Individual Agents	102
Meetings Attended - 44 - Attendance	4095
News Articles Prepared	4
Large Conferences Held - 1 - Attendance	150
Field Tours Conducted	9
Water Surveys Made	31
Drainage Surveys Made	5
Acres Drainage Improved	65
Number of Farm Ponds Surveyed	17
Number Acres in Ponds	27
Irrigation Surveys Made	71
Acres of Land Irrigated	1775
Total Number of all Surveys Made	119
County Water Supply Meetings - 5 - Attendance	60
Sketches and Drawings Made	32
Irrigation Field Days Held - 3 - Attendance	115
Held Two State Level and Two County Level 4-H Tractor Maintenance Schools with Attendance of	135
Cooperated with Horticulture Department in Holding Eight Fruit Growers Meetings with Attendance of	425
Assisted with Annual Epsilon Sigma Phi Meeting with Attendance of	110
Was Judge at Atlantic Rural Exposition on Farm Machinery, Industrial, Commercial, Educational and State Agency Exhibits (Fifth straight year) . . . . . Total Number of 4-H Members Worked With	435
Estimated Number of Farm People Reached by all Contacts	7650

Summary
Brief Outline of Work Accomplished

This year somewhat more time was spent in the office than in the field. During the 149 days spent at headquarters 792 individual letters were written, 32 drawings were made, 234 bulletins were sent out, 6 radio programs were given, and several newspaper articles were prepared. Also, he outlined 56 talks and planned or participated in 44 meetings with an attendance of 4095 people. He assisted with the business meeting and initiation of Epsilon Sigma Phi and served on a number of professional and extension committees.

Considerable more time was spent in the office this year than normally because of the greatly increased interest in sprinkler irrigation. Individual designs of systems were made. These designs require much more time on a drawing board in design work than on the farms collecting data. Last year 19 drawings were made - this year 32 were made.

The annual state 4-H Tractor Maintenance Schools (83 attended), the 4-H Tractor-Operators Contests (600 attended) and the Annual Irrigation Sprinkler Conference (150 attended) were the largest single activities. All will be repeated. The state level 4-H Maintenance Schools are held at V.P.I. and Virginia State College. About 40 different counties are represented. These are more mature boys who, after being instructed, are expected to conduct similar schools on a community or county level, thereby, giving considerable spread to this activity. A total of 569 boys enrolled in this activity. The tractor operation program is quite popular with 4-H Club Members and some 175 boys were enrolled this year. County, district, State and regional elimination contests are held. The Virginia State winner at the V.P.I. Short Course was John Etsler of Botetourt County. John represented Virginia at the Atlantic Rural Exposition in the regional contest, and took first place over representatives of twelve other states. This is the second time in the four years of this contest that a Virginia boy has won first place.

17,438 miles were traveled in the field on visits to 58 different counties (many counties several times) in which 134 farm visits were made. In these counties 31 water supply surveys were made, 71 surveys for irrigation, 5 on drainage and 17 on farm ponds. A total of 119 surveys were made. Also, the usual cooperation was given to the V.P.I. Horticultural Department in holding 8 area fuit growers schools with 425 orchard owners, operators and foremen in attendance.

Assistance was given to the Virginia Farm Electrification Council in holding 5 county meetings to explain the 1954 water systems program.

The estimated number of people reached on all work was 7,650.

Outlook for 1955

From the press, government reports and trade journals we learn that there are expected to be no shortages of any farm articles or materials in 1955. Outlook reports from various sources indicate that farmers will have somewhat less net income than they had in 1954 with which to buy farm equipment. The farm equipment manufacturers are producing about all that the country can absorb and surpluses are accumulating in some lines. Farm tractors in all types and sizes, electric motors, trucks, steel pipe and miscellaneous equipment are expected to be available in abundance. There is no shooting war going on but the armed forces are expected to continue buying heavily for their own use and for the use of friendly countries. No crippling strikers are on the horizon to seriously interfere with present production schedules.

Due to the special emphasis placed on water systems during 1954, no doubt a good many systems will be installed in 1955. A concerted effort will be made to get water systems in at least 50% of Virginia farm homes. (About 35% now). Prices are high for both water systems and fixtures as well as for labor but there will be adequate supplies of all lines of plumbing.

Irrigation equipment, pumps, power units, main and lateral lines and sprinklers are expected to be in ample supply. At present practically all irrigation pipe lines are made of aluminum. The United States Steel Company has announced that it will soon be in production of plastic irrigation pipe in sizes 2 in. to 6 in.

At present there are about 375 portable irrigation systems in Virginia. Quite likely these installations will increase at the rate of about 100 systems each year particularly if the weather continues dry.

Increased emphasis will be placed on the construction of farm ponds. The water table and the water supply is critically low. These ponds are great aids in supplementing precious ground water and are used for spraying, live stock, fire protection and when large enough for irrigation. Also, for many recreational uses.

Considerable work has been done on the third annual sprinkler irrigation school. It will be held for two days about the last of March. Last year 150 dealers, equipment manufacturers agents, professional workers, and others attended. We expect 200 this year. The program will be the best one to date. Since it is not possible for this specialist to design all systems requested, it is felt that we should get the best available information for the people who will do it. This means the dealers in most cases.

If the services of a farm machinery man become available, for 1955, this specialist would like to devote his time largely to irrigation with some time being spent on drainage, farm water systems and farm ponds. Irrigation is developing fast.

In general then, the 1955 outlook is very good indeed. The years work is looked forward to with pleasure and the hope of greater accomplishments.

SUMMARY OF ACCOMPLISHMENTS
EXTENSION PROJECT IN AGRICULTURAL ENGINEERING
1964

The major activities and accomplishments in the agricultural engineering project during 1964 are briefly summarized in the following paragraphs:

Farm Water Supply. A pressure water supply on the farm saves labor, aids in production, and is a necessary foundation stone for modernizing the farm home. Although 97% of Virginia farms have electric service, less than 40% of the rural homes had pressure water systems at the beginning of 1964. An intensive statewide educational program to interest more farm families in installing pressure water systems was conducted through the Virginia Farm Electrification Council. The goal of this program was to have 10,000 more rural homes obtain the benefits of running water during the year.

Through a well organized plan, 29 counties set up emphasis programs involving meetings, surveys, demonstrations and publicity. September was designated as water system emphasis month. Pump manufacturers and distributors donated almost $1,000 to finance a statewide contest among rural people on water systems. Additional awards were provided in many counties to supplement the state awards. Contest entries were submitted by approximately 1275 persons from throughout the state. First prize was a $550 United States Savings Bond and there were 14 smaller prizes in bonds. Intensive publicity on the value of running water in the home and on the farm was given through newspapers, magazines, radio and television during the month of September and ensuing weeks.

Pump manufacturers report definite indications of increased sales, and they also say that their dealers have a more aggressive attitude on their responsibility for selling and servicing water systems. It is too early to obtain reliable figures on the number of farms that installed water systems, however, it is known that much progress was made toward attaining the goal of 10,000 installations.

Irrigation. There was an accelerated interest in supplemental irrigation throughout the state. A two day irrigation conference was sponsored by the department to bring equipment suppliers and professional workers up to date on latest irrigation recommendations and practices. Approximately 150 persons attended the conference. The demand from counties for assistance on irrigation was heavy during the year. Advice and recommendations were given to 71 farmers involving approximately 1778 acres of land for irrigation. In many cases, detailed plans and designs were prepared for farm operators. It is estimated that 378 portable irrigation systems have been installed in the state, most of them during the last 3 years. Case studies show that supplemental irrigation paid handsome dividends, especially on high value crops, this year. Assistance was given 17 farmers on pond location and design, some of which were for irrigation purposes.

The Design, Selection, Use and Maintenance of Farm and Home Electrical Equipment: Continued progress was made toward the goal of making electric service available to all farms. Power suppliers have done a magnificent job in their rural line extension programs. As of June 30, 1954 USDA reports showed that 97% of Virginia's farms had electric service. Virginia leads all southern states in percent of farms electrified and only 10 states in the Nation are ahead of Virginia in this respect. The proper use of electricity aids in improving production efficiency and rural living. Specialists conducted numerous activities that were planned to provide timely information and assistance to farm people to help them to derive greater benefits from electric service.

Research and farmer experience show that crop drying equipment on farms is practical for reducing losses, maintaining product quality, and aiding in marketing. Engineering assistance was given on the design of farm installations and information was given through meetings, radio and news articles. Although drought conditions prevailed through the harvesting season, approximately 50 drying installations were made for hay, corn and grain. It is estimated 1060 such installations have been made on farms in 85 counties in the state. Farmers have reported that the improved quality of forced air dried hay makes it worth $10 more per ton and that field losses are thereby eliminated. Drying corn and small grain on the farm reduces harvesting losses and saves as much as 25¢ per bushel on dockage for excess moisture when the grain is marketed.

Talks, lectures or radio programs were presented, or training meetings were held during the year on many other electrical equipment topics including: infrared brooding; water systems; simple electrical repairs; stock water heaters; window and attic fans; water heaters; elevators and conveyors; farm wiring; yard lighting; portable motors; and electrical safety. Power supplier representatives were of great assistance to specialists and county Extension workers in putting on educational programs at the county level.

Farm Buildings: The farm buildings program was planned to furnish information and assistance to farmers on planning new buildings and improving labor efficiency by the careful planning and arrangement of buildings and equipment; and lowering costs through the wise choice of materials and construction methods, to assist farmers in counteracting the present price squeeze with which they are confronted. Major emphasis was placed on dairy and livestock buildings and equipment; grain storages; silage harvesting, storage and feeding; and fencing.

Subject matter information and assistance was provided to farm people through 63 meetings and demonstrations attended by 2302 persons; 192 farm visits on specific problems; 5 newspaper and magazine articles, 2 television programs and 9 radio programs. Specialists wrote 787 individual letters, many of which were to furnish information on building problems. Farmers requested and were furnished 8,096 plans for buildings and equipment through the plan service. More than 2000 bulletins were distributed as a source of information. Five new standard plans were developed and 4 old plans were completely revised for the plan service. Specialists prepared 49 special plans for buildings, equipment and farmstead lay outs.

Rural Housing. This phase of the project was planned to provide rural people with information and assistance on plans and materials for new houses; remodelling and improving old houses; house heating systems; and house maintenance. The work was conducted through training meetings; demonstrations, visits to individual homes, and through mass media including newspapers, radio and television. Plans for 43 house remodelling jobs were prepared in the office and 365 plans for houses were supplied to people requesting them through the plan service. It is estimated that if only 10% of the plans supplied were used, the cost of constructing the houses involved would amount to more than a half million dollars. It is further estimated that better than 75% of the families assisted have or will use the plans and information provided them.

4-H Club Projects. Specialists cooperated with the 4-H Club department in conducting two important projects in agricultural engineering: The 4-H Tractor Maintenance Project was gotten underway in 1964 with two day leader training schools at V. P. I. and Va. State College. A total of 80 leaders from 37 counties received intensive training at these schools. These leaders, with the assistance of Extension Agents, local dealers, and limited specialists' help, conducted the program at the County level. Enrollment for the year totaled 673 in 42 counties. This project provides excellent training to farm boys on the care, maintenance and safe operation of farm tractors. Although not a specific part of the project, approximately 175 Virginia 4-H Club boys participated in tractor operators contests at county, district, state and regional level. John Etzler, a 4-H Club boy from Botetourt County won the regional contest in competition with 12 other state winners in Richmond on September 23.

The 4-H Farm and Home Electric Project continued to grow during 1964. Total enrollment was 8852 boys and girls from more than 68 counties. The general objective of this project is to provide an opportunity for 4-H club members to learn about electricity and how to use it efficiently and safely in the home and on the farm. Awards for this project are provided by the Westinghouse Educational Foundation and Virginia power suppliers. Every power supplier serving rural territory in Virginia contributed toward a fund of more than $5200 to finance the Awards program. Most of the power suppliers gave valuable personnel assistance to specialists and county Extension Workers in training project leaders and assisting with the program at both the county and state level. The highlight of this program was the state 4-H Farm and Home Electric Congress held in Richmond on September 2 and 3. The Congress this year was attended by 235 county and district winners, Extension agents, power suppliers, and guests. Mary Ann Foster of York County was the state winner and was awarded the all expense paid trip to the National 4-H Club Congress. Mary Ann became one of the National winners at Chicago and was awarded a $500 college scholarship. She was the first girl to be named a national winner in this program since 1961. Her leadership record in this project, as well as in other 4-H projects is outstanding and is exemplary of what can be accomplished.

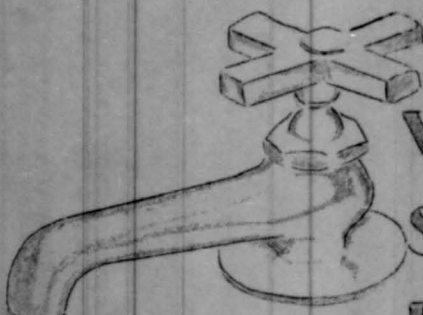
Training Activities, Methods and Materials. The specialists conducted 61 leader training meetings with an attendance of 2248. They prepared 32 newspaper and magazine articles; presented 35 radio programs, many of which were on tape for all cooperating radio stations; presented 6 television programs including two films made for showing on 5 stations. They

distributed 16,890 publications from headquarters and at field meetings and an estimated 65,000 publications were sent from the supply room in connection with the agricultural engineering Extension program. Drawings and plans were prepared for 167 special jobs in addition to 8095 plans that were supplied farmers through the plan service.

A total of 11 publications on agricultural engineering subjects were prepared, revised, or reprinted during the year. The total production on these was 62,820 copies. In addition to these publications, a poster on the water systems contest was prepared along with the contest entry blank. Fifty thousand copies of the entry blank and 1000 of the posters were printed.

Cooperation with other Departments and Agencies: Agricultural Engineering Specialists cooperated with other subject matter departments and numerous other State and Federal agencies in carrying on their project in 1964. These included: Field meetings with horticulture for orchardists; work with Agronomists and the Agricultural Stabilization and Conservation Service on grain storage and drying; meeting with Agricultural Economics on grain storage and marketing; cooperation with Agronomy on use of fluorescent lights for sorting tobacco; State Department of Education and Farmers Home Administration on the water supply program, housing, and building plans; Entomology on insect traps; Dairy on buildings, equipment and hay drying; State Department of Agriculture on building plans, sanitation and marketing; Animal Husbandry on building plans and equipment and Forestry on fencing; to list only a few examples.

***** EXHIBIT SECTION *****



Virginia WATER SYSTEMS PROGRAM

For 1954

CONTENTS

RM

Virginia

WATER SYSTEMS PROGRAM

For 1954

Introduction

The primary purpose of this material is to provide suggestions to counties for conducting a water systems program. Why and how this program was developed are set forth in the following questions and answers.

What is it? This program is a coordinated effort on the part of agencies and organizations working with rural people to bring the benefits of running water to more rural homes. Only about 40% of Virginia's farms are enjoying the advantages of water under pressure. The goal for 1954 is to install 10,000 pressure water systems in Virginia.

Why is it Needed? On most farms, the water supply can be put under pressure more satisfactorily and economically with an electric pump than by any other method. More than 95% of the farms in Virginia have electric service. There are about 80,000 farms in Virginia with electric service that do not have water under pressure. A pressure water system is one of the most valuable assets for the home and farm. It saves labor, provides conveniences, improves health conditions and can be used in many ways to increase farm production and efficiency. When all the benefits are considered, many farms cannot afford to be without water under pressure.

Who is Sponsoring it? It is being sponsored by the Virginia Farm Electrification Council. The members of this organization are:

From Virginia Polytechnic Institute:
- Dean of Agriculture
- Director of Agricultural Experiment Station
- Director of Agricultural Extension Service
- Assistant Director of Agricultural Extension Service in Charge of Home Demonstration Work
- Head of Agricultural Engineering Department
- Head of Vocational Education Department
- Extension Specialist in Farm Electrification
- Project Leader, Farm Electrification Research

From Virginia State Department of Education:
- State Director, Vocational Education
- Supervisor of Vocational Agriculture
- Supervisor of Home Economics Education

Farmers Home Administration
Virginia Farm Bureau Federation
Virginia State Grange

Electric Service Organizations:
- Accomack-Northampton Electric Cooperative
- Appalachian Electric Power Company
- Community Electric Cooperative
- Craig-Botetourt Electric Cooperative
- Eastern Shore Public Service Company
- Mecklenburg Electric Cooperative
- Northern Neck Electric Cooperative
- Northern Piedmont Electric Cooperative
- Northern Virginia Power Company
- Old Dominion Power Company
- Virginia Electric Cooperative
- Virginia Electric and Power Company
- Water, Gas and Electric Department, City of Danville

Secretary of Council

What other Organizations are Assisting with This Program? The following organizations are cooperating in this program:

Farmers' Union
Southern States Cooperative
State Department of Public Health
Virginia Association of Plumbing and Heating Contractors
Virginia Bankers Association

Virginia State Chamber of Commerce
Virginia Farm Equipment Association
Virginia Federation of Home Demonstration Clubs
Virginia Home Economics Association
Virginia League of Municipalities
Virginia Retail Hardware Association
Pump manufacturers, distributors, dealers and well drillers

How was this Program Developed?

It was planned by a state water systems committee appointed by the Virginia Farm Electrification Council. This committee is composed of the administrative heads of educational agencies and organizations serving rural people, together with representatives of farm organizations and electric power suppliers. This committee was appointed in November, 1952 and it developed a program for 1953. Even though plans for the program were developed too late for adequate planning at the county level, 29 counties conducted a water systems program in 1953.

It was announced last fall that a similar program would be offered in 1954. A tentative program was prepared, distributed and discussed with the administrative heads of the organizations concerned. A state meeting was held in Richmond on March 25 to adopt a state water systems program. The suggestions contained herein were adopted at that meeting.

SUGGESTIONS FOR DEVELOPING A COUNTY WATER SYSTEMS PROGRAM

The following suggestions were prepared by the state water systems committee to assist counties in developing an effective program:

1. Hold a preliminary planning meeting not later than May 15, 1954.

   a. The county agriculture agent will call a meeting of all professional agricultural workers and representatives of county-wide organizations of farm people. These include vocational agriculture and home economics teachers, county Extension agents, Farmers Home Administration representatives, electric power suppliers, county health departments, home demonstration organizations, Grange, Farm Bureau, Farmers Union, Ruritan, and any other organizations which may be concerned with the program. It is important that some of the leading farmers and homemakers in the county be invited to this meeting. The purpose of this meeting is to consider the need for a county-wide educational program on pressure water systems and to develop preliminary plans for such a program.

   b. This group should elect a chairman to preside at the remainder of the meeting to discuss the situation on water systems in the county. We suggest that the group discuss the following points in consideration of the present situation:

      (1) What is the percentage of rural homes without running water? (attached sheet gives figures obtained from 1950 census)

(2) What are the problems and difficulties that keep people from installing pressure water systems?

a. Do the people know the value of having running water in the home and on the farm?

b. Do farm people have the information they need to select and install water systems properly?

c. Are dependable sources of water a problem in this county?

d. Are local water systems dealers adequately equipped and endeavoring to sell, install, and service water systems and accessory equipment?

e. Do local banks and other financing agencies offer financial plans at reasonable rates for the installation of water systems?

f. Are materials for septic tanks and sewage disposal facilities available locally?

A thorough discussion of the above problems and others that may arise during the meeting will determine the need for educational work on water systems in your county. It is recommended that your group decide at this meeting whether to conduct a water systems program on a county or on an individual community basis.

2. The following procedure is recommended for counties that plan to conduct an intensive water system campaign in 1954:

a. Elect a county water systems program chairman. It is strongly recommended that this office be held by a lay person in your county.

When requested to do so, notify the state water systems committee of the name and address of the person elected county water systems chairman.

b. Determine the correct status of pressure water systems in your county. If a county-wide survey was not completed in 1953, make a survey this year. Several counties made these surveys last year through the schools. Your group probably knows from past experience which survey method would be most desirable. If you make a survey, complete it as soon as possible (suggested survey form attached).

c. Use effective publicity. It can have a profound effect on the value of the program. We recommend appointing a publicity committee: include a representative of the local press and of the local radio station and representatives of other agencies in the county who are in a position to obtain material for publicity purposes. This committee should coordinate local publicity with the water systems publicity material to be released by the Virginia Farm Electrification Council for use during the month of September.

d. Develop a preliminary plan for conducting a water systems program in your county.

3. Hold a meeting for completing plans for a county program on farm and home water systems (Hold this meeting as soon as possible after survey is completed).

a. Urge all groups that attended the preliminary planning meeting to attend this meeting. In addition, invite representa-

tives of local banks, other financing agencies, water system dealers, well drillers, local plumbers, civic organizations, community improvement clubs, etc., and urge them to attend. Professional workers who attended the first meeting should consult these people personally to assure their attendance.

b. Review the county situation on farm and home water systems. Report on the county survey which has just been completed.

c. Present the preliminary plan for the program which wa developed after the first meeting. Request ideas and suggestions on improving this plan from all representatives present. Have them plan how they can cooperate in carrying out an effective county or community program on water systems.

d. With the mutual cooperation of all agencies, organizations, and groups concerned, develop a working plan and program to create a desire for running water. The following points may be helpful:

(1) Schedule meetings at the county or community level to provide information on water systems for people who do not have running water in their homes and on their farms. Ask local dealers to cooperate by exhibiting automatic electric pumps and allied equipment at these meetings. Request assistance from pump manufacturers, power supplier agricultural engineers, Extension specialists, or other available qualified people in presenting the subject matter

at these meetings and demonstrations.

(2) Give consideration to conducting a demonstration on the installation of a water system. Locate a farm family interested in installing a water system and make arrangements to use the installation on their farm for demonstration purposes. Plan the demonstration so that you can complete the installation in a day. Enlist the cooperation of local dealers and others in making the demonstration effective. Give the demonstration wide publicity through the press and the radio. Such demonstrations have proven effective in acquainting farm people with the selection and installation of electric water pumps and allied equipment.

(3) Educational movies recommended for use with groups are "Running Water on the Farm," available through the Agricultural Extension Service Film Library, Blacksburg, Virginia, or Visual Instruction Section, General Electric Company, Schenectady, New York; and "The Next Step" available through Agricultural Extension Service Film Library or Castle Films Inc., R.C.A. Bldg., New York 20, N.Y. You may borrow these films at no cost except return transportation.

(4) Publications available for general distribution include VFEC-5 "Running Water Pays", and USDA Misc. Publication 674, "Planning the Electric Water System and Plumbing For Your Farmstead." These are available from the Agricultural Extension Service and electric power suppliers. Distribute by

mail the leaflet, "Running Water Pays" to people without running water to interest them in attending meetings or demonstrations. The other publication might be distributed at meetings. Excellent manuals on the selection and installation of water systems are available for professional workers and farm leaders from leading water system manufacturers through their local dealers.

(5) We suggest that all organized groups of farm people devote at least one meeting or instruction period to a discussion of farm and home water systems and their use. (Vocational classes, Home Demonstration Clubs, Grange meetings, Farmers Clubs, community improvement clubs, Ruritan Clubs, or other meetings of farm people)

(6) Use all available types of publicity to support the program.

a. Prepare newspaper articles using local success stories and farmer experiences on the value of water under pressure in the home and on the farm.

b. Make wide use of local radio stations to present programs that give information and create a desire for water under pressure.

c. Urge dealers to publicize the benefits of water under pressure in newspaper and radio advertising.

d. Suggest that dealers develop attractive window displays and exhibits of water system installations and equipment.

e. Suggest that dealers mail product literature to homes that do not have pressure water systems.

4. Make a check between November 15 and December 1, 1954 on water systems sales and installations to determine what progress has been made as a result of your program.

* *

SUGGESTED FORM TO BE USED IN MAKING COUNTY WATER SYSTEM SURVEY

Name _____ Address _____

1. Do you have water under pressure in your home? (Yes___) (No___)
2. If answer to question 1. is, "No", is it because of: cost____, insufficient water supply _____, need for more information _____.
3. Is the water system you now have adequate and satisfactory? Yes___No___
4. If you do not have a pressure water system, would you like to have a water systems plan made (without obligation) for your home and farm?

Yes_____No_____

DATA FROM 1950 CENSUS ON FARMS WITH ELECTRIC SERVICE AND ELECTRIC WATER PUMPS IN VIRGINIA

County	Total No. Farms	Farms With Electric Service		Farms With Electric Water Pumps	
		No.	Percent	No.	Percent
Accomack	1405	1000	71	559	40
Albemarle	1957	1551	79	745	38
Alleghany	566			176	31
Amelia	1098	728	66	291	26
Amherst	1337	918	67	240	18
Appomattox	964	761	79	298	31
Arlington	24	15	62	10	42
Augusta	3068	2872	94	1237	40
Bath	472	365	77	63	13
Bedford	3180	2684	84	1212	38
Bland	787	653	83	173	22
Botetourt	1339	1252	94	661	50
Brunswick	2501	1606	64	432	17
Buchanan	2341	1767	75	192	8
Buckingham	1520	789	52	259	17
Campbell	2278	1817	80	757	33
Caroline	1236	907	73	355	29
Carroll	4185	3272	78	822	20
Charles City	400	234	59	109	27
Charlotte	2010	1418	71	428	21
Chesterfield	1422	1277	90	852	60
Clarke	423	342	76	226	53
Craig	449	318	71	97	21
Culpeper	1115	912	82	432	39
Cumberland	1054	606	58	241	23
Dickinson	1851	1386	75	185	10
Dinwiddie	1789	1278	72	453	25
Elizabeth City	151	123	81	28	19
Essex	647	364	56	177	27
Fairfax	1656	1393	84	1068	64
Fauquier	1581	1260	80	719	45
Floyd	2322	1878	81	422	18
Fluvanna	889	553	62	201	22
Franklin	3122	2580	83	896	29
Frederick	1548	1271	87	575	37
Giles	1070	872	82	143	14
Gloucester	842	553	68	297	35
Goochland	888	607	68	282	33
Grayson	2819	2316	83	423	23
Greene	701	501	72	146	21
Greenville	1332	679	66	172	13

County	Total No. Farms	Farms With Electric Service		Farms With Electric Water Pumps	
		No.	Percent	No.	Percent
Halifax	5619	2979	53	664	11
Hanover	1859	1421	76	829	45
Henrico	1049	958	91	727	69
Henry	1699	1395	82	583	34
Highland	609	463	77	68	11
Isle of Wight	1246	993	80	468	38
James City	256	188	74	116	45
King & Queen	951	596	63	236	25
King George	585	416	71	216	37
King William	528	344	65	164	31
Lancaster	627	451	72	256	41
Lee	3166	2091	66	216	7
Loudon	1609	1406	88	912	57
Louisa	1545	1131	74	440	28
Lunenburg	1849	1357	74	385	21
Madison	1149	916	79	409	36
Matthews	713	600	85	265	37
Mecklenburg	4034	2530	63	820	20
Middlesex	643	438	68	218	34
Montgomery	1596	1430	90	450	28
Nansemond	1472	1142	78	495	29
Nelson	1417	934	66	248	18
New Kent	368	300	82	134	36
Norfolk	1034	949	92	769	74
Northampton	603	488	81	295	49
Northumberland	900	576	64	256	26
Nottoway	1226	842	69	382	31
Orange	1119	898	80	470	42
Page	1141	868	76	266	23
Patrick	2424	1947	80	388	16
Pittsylvania	6181	3942	64	1129	18
Powhatan	651	481	74	243	37
Prince Edward	1340	989	74	363	36
Prince George	745	579	78	287	49
Prince William	867	802	92	517	60
Princess Anne	894	771	86	506	57
Pulaski	1162	1020	88	233	20
Rappahannock	687	490	72	90	13
Richmond	675	432	64	182	27
Roanoke	1443	1308	91	743	51
Rockbridge	1751	1366	78	489	28
Rockingham	3581	3144	88	1545	43
Russell	2734	2175	80	198	7
Scott	3454	2600	75	285	8
Shenandoah	2088	1785	85	585	28

County	Total No. Farms	Farms With Electric Service		Farms With Electric Water Pumps	
		No.	Percent	No.	Percent
Smyth	1895	1771	94	356	18
Southampton	2174	1222	57	419	19
Spottsylvania	1153	922	80	392	34
Stafford	800	632	79	307	37
Surry	716	462	65	229	32
Sussex	1280	761	59	289	22
Tazewell	1712	1459	85	234	14
Warren	588	463	79	151	26
Warwick	146			45	31
Washington	3814	3023	80	633	17
Westmoreland	843	548	65	248	29
Wise	1749	1560	89	190	11
Wythe	1835	1600	88	435	24
York	291	281	97	121	41
Indep. Cities	367	202	55	57	15
Totals and %	150997	114273	76	40702	27
Estimated as of Jan. 1, 1954	150997	144950	96	60400	40

NOTE: The 1950 census figures are out of date now. The figures on water systems are for electric pumps only. The figure on total farms in each county with pressure water systems of all types would have been slightly higher than those shown.

ASSISTANCE TO BE PROVIDED AT THE STATE LEVEL

The following action will be taken at the state level to augment the program:

1. The administrative staffs of each cooperating organization will formulate plans for putting the program into operation according to the policies and procedures that they can use most effectively.

2. The state water systems committee will hold a meeting for pump manufacturer and distributor representatives to explain the program and to request their cooperation and support.

3. A state-wide contest will be conducted as a means of focusing attention on the need for and the advantages of water under pressure. A sub-committee is developing plans for this contest. Details of this contest will be announced at a later date.

4. The publicity committee of the Virginia Farm Electrification Council will be responsible for the publicity phase of the program at the state level. This committee will inform the press, radio stations, and television stations about the program and request their cooperation in publicizing the benefits of water under pressure. In addition, this committee will prepare news stories for distribution to daily and weekly newspapers in Virginia. It will develop radio releases and make tape recordings for distribution to the radio stations in the state. The publicity committee will also prepare sample news stories and radio programs for distribution to the county water systems chairmen. The committee will encourage manufacturers and distributors to use the water systems program material in their advertising programs.

5. The state water systems committee will be responsible for sending a sample copy of leaflets and bulletins on water systems to the county chairmen. This committee will also advise the county chairmen on how to procure additional copies of the material distributed.

ENTER THE

VIRGINIA FARM WATER SYSTEMS CONTEST

1955 VIRGINIA 4-H ELECTRIC PROGRAM

Learn . . . . and WIN

MEDALS • WATCHES • TRIPS
COLLEGE SCHOLARSHIPS

This program is conducted by the Virginia Agricultural Extension Service and co-sponsored by the Westinghouse Educational Foundation and the following Electric Power Suppliers:

Accomack-Northampton Electric Cooperative
Appalachian Electric Power Company
B A R C Electric Cooperative
Central Virginia Electric Cooperative
Community Electric Cooperative
Craig-Botetourt Electric Cooperative
Eastern Shore Public Service Company
Mecklenburg Electric Cooperative
Northern Neck Electric Cooperative
Northern Piedmont Electric Cooperative
Northern Virginia Power Company
Old Dominion Power Company
Powell Valley Electric Cooperative
Prince William Electric Cooperative
Shenandoah Valley Electric Cooperative
Southside Electric Cooperative
Tri-County Electric Cooperative
Virginia Electric Cooperative
Virginia Electric & Power Company
Water, Gas and Electric Departments, City of Danville

Learn all you can about electricity

What You Should Do

1. See your county Extension agent or local leader and enroll in Unit I or Unit II of the 4-H Electric Project.

2. Attend project training meetings and do your best to learn more about electricity and its uses.

3. Apply your knowledge to improve the use of electricity in your home and on your farm.

4. Help others by demonstrating to them what you have learned.

5. Keep an accurate record of your work in your project record book.

6. Turn in your completed record book when your county Extension agent or local leader requests it.

Don't Forget That . . .

To receive any award, 4-H Club members must be enrolled in Unit I or Unit II of the Electric Project, working under the supervision of the Agricultural Extension Service. Club members with a limited knowledge of electricity and its uses should enroll in Unit I. Girls and boys who have completed Unit I, or who have had similar training and experience in this field, should enroll in Unit II.

Keep a complete record of your work in your record book.

The records of all the delegates who will attend the Congress must be in the state 4-H Club office, Blacksburg, not later than August 1, 1955. These records will be judged to select district and state winners.

4-H CLUB 4-H Electric Project PROJECT

CARE.... OF FARM ELECTRICAL EQUIPMENT

VIRGINIA POLYTECHNIC INSTITUTE AND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING. EXTENSION SERVICE, L. B. DIETRICK, DIRECTOR
BLACKSBURG, VIRGINIA

Printed and Distributed in Furtherance of the Acts of Congress of May 8 and June 30, 1914

Circular 617 (ME - 5) Revised June, 1954

4-H Electric Project

CARE OF FARM ELECTRICAL EQUIPMENT

It is easy to care for farm electrical equipment. It requires little time, but care is important. By keeping your equipment in good condition, it will last longer and give you better service.

Farm Lighting

1. Keep lamp bulbs clean. A film of dirt absorbs 15 to 20 per cent of the light. Wipe off dust and dirt with a damp cloth.

2. Most fixtures used for farm lighting have white reflecting surfaces. Clean these surfaces with a damp cloth.

3. Keep extra lamp bulbs on hand at all times.

4. Replace small bulbs with larger ones in areas where more light is needed.

Water Pump

1. Read and study the manufacturer's directions on lubricating the pump. If your copy has been lost, ask your dealer for another copy. The oiling needed varies among different makes and type of pumps. That is why it is important to follow the manufacturer's instructions.

2. If your pump uses a belt, keep it tight enough to prevent slippage. There is usually some provision on the motor base for belt adjustment.

3. Sometimes pressure tanks get "water-logged". This means the tank contains too much water and not enough air. If the pump starts each time a faucet is opened you can be pretty sure the tank is "water-logged". To correct this trouble, cut off the pump and drain the pressure tank. If the same trouble develops again within a few days, call your dealer or service man.

4. Another condition is called an "air-bound" tank. In this case, the tank has too much air and not enough water. If both water and air comes out when a faucet is opened, the chances are that the pressure tank is "air-bound". The excess air can be released by removing the plug in the top of the pressure tank. If the same trouble develops again within a few days, call your dealer or service man.

5. Some types of pumps have packing glands. They are lubricated with water. Adjust them so they leak about two or three drops of water per minute.

6. After several years of use, piston type pumps will drop off in the amount of water they pump. This is generally caused by worn leathers and valves. When this happens, the worn parts should be replaced. It is usually best to have your dealer or service man make these repairs.

7. Be sure the pump location is dry. Moisture is hard on the motor and will cause the pump to rust.

8. Follow the manufacturer's directions on other points in caring for your automatic electric water system.

Farm Motor

1. Motors can be bought with sleeve bearings or with ball bearings. Sleeve-bearing motors are generally lubricated with oil, while ball-bearing motors may require oil or grease. For oiling, use SAE No. 20W lubricating oil. Add oil once each month as needed. Avoid the use of too much oil. If motor has an oil reservoir, drain off old oil once each year and refill with clean oil. Motors with grease fittings should be lubricated once each year. Follow the manufacturer's directions on lubricating your particular type of motor.

2. Do not allow much dirt to gather in the windings and air passages of a motor. This may cause overheating and result in serious damage to the motor. To clean a motor, loosen the bolts from the end shields and remove the shields from the body of the motor. Use a tire pump or air from an air compressor to blow out the dirt. A vacuum cleaner can also be used for this purpose.

3. Clean the commutator using a cloth dampened with kerosene. If the commutator needs polishing, use No. 00 sandpaper or finer, for the purpose. Do not use coarse sandpaper or emery cloth.

4. Little used motors in dusty or dirty locations are good places for rats or mice to build nests. They may gnaw the insulation in the motor. To keep out rats and mice, fasten hardware cloth over the openings in the motor.

5. Don't overload the motor. This will cause the motor to overheat and it will finally burn out. Motors get quite warm when running under normal load for some time. If you can hold the palm of your hand on the motor for one or two seconds, you can be pretty sure the motor isn't too hot to cause damage.

Pig Brooder

Hover Type

1. Be sure the brooder is fastened well in the corner of the farrowing pen. It should be bolted or nailed in place.

2. See that a guard is fastened above the top front of brooder. This will keep the sow from getting on the hover.

3. Check the guard below the lamp bulb. This guard, made of chicken wire or hardware cloth, is to keep the litter from touching the lamp bulb. If litter comes in contact with the bulb, a fire might be started.

4. Check the service cord, socket, reflector, and lamp bulb before use to be sure this unit is in good condition.

5. Check the brooder twice a day. See that the lamp bulb is burning. Remove litter that may have clogged the entrance to the brooder.

6. Observe the comfort of the pigs. In cold weather, put in a larger bulb. When weather is warm, a smaller bulb can be used.

Infrared Type

1. Before using the brooder, check the wiring, service cord socket and infrared lamp bulb. See that all of these items are in good condition. Correct any defects that you find.

2. Check to see that the infrared bulb cannot swing closer than 24 inches above the litter.

3. Check the partition in the corner of the farrowing pen. See that boards are fastened securely so the sow cannot reach the lamp bulb.

4. Don't allow water to be splashed on the infrared lamp bulb.

5. Check the brooder twice a day. See that the lamp bulb is burning.

6. Observe the comfort of the pigs. In cold weather adjust the lamp so it is 24 to 30 inches above the litter. In warmer weather the lamp can be raised to 36 inches.

Lamb Brooder

Hover Type

1. Be sure the brooder is fastened in place. It can be secured with nails or bolts.

2. Before using the brooder, check the service cord, socket, reflector, and bulb to see that these parts are in good condition.

3. See that no litter comes in contact with the lamp bulb.

4. Check the brooder twice a day to see that it is operating properly.

5. In very cold weather use a larger lamp bulb in the brooder.

Infrared Type

1. Before using the brooder, check the wiring, service cord, socket and infrared lamp bulb. See that all of these items are in good condition. Repair any defects found.

2. Check to see that the infrared bulb cannot swing closer than 36 inches above the floor.

3. Check the partition that separates the ewe from the lamp. See that it is fastened securely. Provide an opening 18 inches high for the lambs to move freely to and from the brooder.

4. Don't allow water to be splashed on the infrared lamp bulb.

5. Check the brooder twice a day. See that the lamp bulb is burning.

6. Observe the comfort of the lambs. In cold weather adjust the lamp so it is 36 to 40 inches above the floor. In warmer weather the lamp can be raised to a height of 48 inches above the floor. One day under the brooder is usually enough for lambs.

Chick Brooder

Hover Type

1. Read and study the manufacturer's instructions.

2. A week or two before the chicks arrive, set the brooder in the place it is to be used. Tighten all screws and bolts. Examine the thermostat, heating element, attraction light, pilot light, fan and motor, and the thermometer to see that these parts are in good condition. Repair or replace all defective parts found.

3. Connect brooder to the electrical outlet and observe its operation for several hours. See that it holds a fairly even temperature.

4. Keep the brooder clean while in operation. If the brooder has a slanting-type hover, wax the top of the brooder. This will make it slick so the chicks can't roost on top of the brooder. If the brooder has a flat top, put several layers of old newspapers on it. This will help keep the top of the brooder clean.

5. Keep the heating element clean by brushing it with a light brush. Use care in cleaning the element to prevent damage.

6. Some brooders have thermostats with exposed contact points; others have enclosed contact points. If exposed contact points get pitted, clean them with a fine file or stone.

7. If the brooder has a fan, oil the motor each week with a few drops of light oil. Wipe off excess oil.

8. Adjust the thermostat according to the manufacturer's directions. The temperature can be reduced gradually as the chicks grow older.

9. Adjust the ventilator so the chicks will get more air under the hover at night than during the day.

10. At the end of the brooding season, clean, disinfect, and dry the brooder. It is a good idea to set the brooder in the sun for a day or two. The sun will help dry and sterilize the brooder. Store the brooder in a clean, dry place. If the thermostat is likely to be broken, remove it and store separately in a cool dry place.

Infrared Type

1. Install brooder at least two days before chicks arrive. See that all parts of the brooder are in good condition. Repair any defects found.

2. If your brooder has a thermostat, operate the brooder several hours to be sure the thermostat is operating properly.

3. Adjust brooder height so bottom of lamps are 18 inches above the litter. See that brooder is mounted so lamps cannot possibly get closer than 18 inches above the litter.

4. Turn brooder on two hours before chicks are placed under it. If your brooder has more than one lamp and a thermostat, adjust thermostat so all lamps will remain on during first week.

5. Place a chick guard 12 to 18 inches high around brooder just outside comfort zone. Move this guard farther from brooder as chicks grow. Remove chick guard when birds are about 10 days old.

6. Observe chicks to see if they are getting proper amount of heat. If your brooder has a thermostat, adjust it to suit the chick's comfort. If they tend to crowd under the center of the lamp, they need more heat. If they form a large circle under the lamp, they are getting too much heat.

7. As the chicks grow, more ventilation is needed. Ventilate your house, even in cold weather. Avoid drafts.

8. Check the brooder at least twice a day to see that it is operating properly.

Milking Machine

1. Keep oil in vacuum pump at proper level.

2. Change oil in pump at intervals recommended by the manufacturer. Use proper type and weight of oil.

3. Care for the motor as outlined on Page 2.

4. Care for the pulsator as directed by the manufacturer.

5. Inspect milking machine and replace worn or defective parts.

6. Keep milking machine clean. Observe the following instructions:

a. When milker is assembled and ready to operate, draw a pail full of water or a pail full of chlorine solution through the teat cups into the milker pail. Disconnect from vacuum line and shake pail.

b. Immediately after milking last cow, draw a pail of cool or lukewarm water through the teat cups into the pail. Raise and lower teat cups in and out of water while water is being drawn through. Disconnect from vacuum line and shake pail.

c. Now draw a pail of hot cleaning solution through teat cups with teat cups remaining down in the solution.

d. Rinse by drawing pail full of hot water through teat cups into milker pail.

e. Sterilize using choice of:

(1) Draw a pail full of hot water (185°) through teat cups into milker pail. (Use water only once).

(2) Use solution rack for chlorine or lye sterilization.

(3) Disassemble and store rubber parts in chlorine or lye solution.

f. Repeat jobs b, c, d, and e after each milking.

g. Once each week, and oftener if needed, probably once each day or once every other day, completely disassemble the milker and brush all parts completely while immersed in hot cleaning solution. Do this between jobs c and e above.

h. Once each week with parts disassembled, place all rubbers that contact milk in a container and boil them in a lye solution for ten minutes, (8 teaspoons of lye flakes for 1 gal. water). Have 2 sets of teat cup

liners and change them weekly, allowing a weeks rest before using again. This practice extends the useful life of the liners.

i. Clean and sterilize the pail, top and other metal parts in the same manner as the milk utensils.

j. Keep air line clean. Draw a pail full of hot cleaning solution, followed by a pail full of hot water, through the air line. Draw from stall cock farthest from pump. If more than 12 stalls, draw at 12 stall intervals. Empty safety pail at pump between each drawing.

Feed Grinder

1. Lubricate the grinder as directed by the manufacturer.

2. To prevent damage to the grinder, keep such articles as rocks, nails, and pieces of iron from entering the mill.

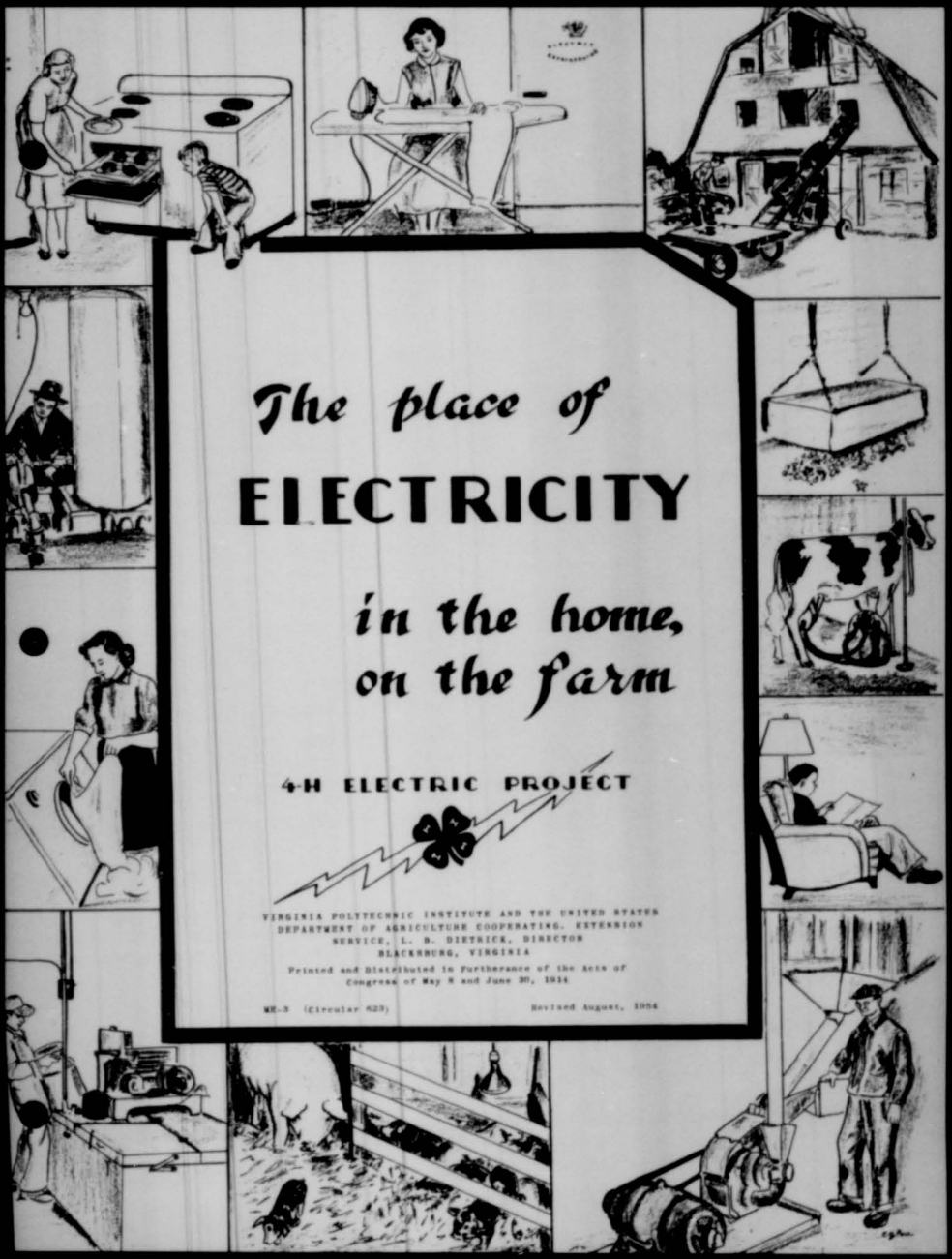
3. Check the grinder for loose bolts and nuts. Tighten those that may have worked loose.

4. Feed the mill evenly to prevent clogging and overloading of the motor.

5. If you have a hammer mill, inspect the hammers for wear. If badly worn, reverse or replace them. Keep extra screens for the mill in a protected place to prevent them from getting damaged.

6. If you have a burr mill, check the burrs for wear. Replace them if they are badly worn. Don't run the grinder empty with the burrs adjusted for grinding.


AGRICULTURAL
EXTENSION SERVICE



The place of ELECTRICITY in the home, on the farm

4-H ELECTRIC PROJECT

VIRGINIA POLYTECHNIC INSTITUTE AND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING. EXTENSION SERVICE, L. B. DIETRICK, DIRECTOR
BLACKSBURG, VIRGINIA

Printed and Distributed in Furtherance of the Acts of Congress of May 8 and June 30, 1914

ME-3 (Circular 623) Revised August, 1954

4-H ELECTRIC PROJECT
THE PLACE OF ELECTRICITY IN THE HOME AND ON THE FARM

1. Introduction

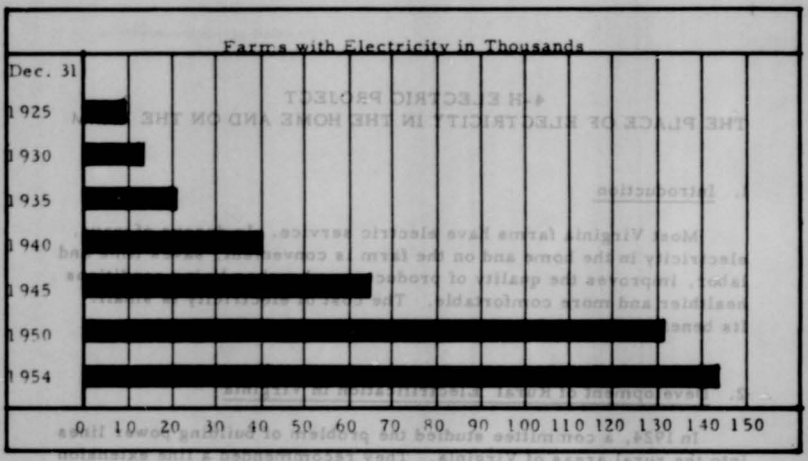
Most Virginia farms have electric service. In dozens of ways, electricity in the home and on the farm is convenient, saves time and labor, improves the quality of products, and makes living conditions healthier and more comfortable. The cost of electricity is small. Its benefits are great.

2. Development of Rural Electrification in Virginia

In 1924, a committee studied the problem of building power lines into the rural areas of Virginia. They recommended a line extension program. In 1929 most of the power companies in the state adopted this program. It was called "The Virginia Plan." Before this time, many farmers had to pay for building the lines in order to get electric service. Under "The Virginia Plan," the power companies paid for and built the power lines and the people getting the service agreed to buy enough electricity each month to justify the investment in the lines. More than 10,000 Virginia farms got electric service under "The Virginia Plan."

The Rural Electrification Administration of the Federal government was established in 1935. This act of Congress made money available for loan to cooperatives, power companies, and cities to build rural power systems. These loans are made on a long-term basis at low interest rates. The Rural Electrification Administration has lent money to 16 Cooperatives in Virginia to build thousands of miles of rural lines. The power companies have also done a big job in extending their service to farm people. Most farm people now enjoy the benefits of electricity.

GROWTH OF RURAL ELECTRIFICATION IN VIRGINIA



3. Electricity Can Do Many Jobs

Electricity is like the "one-man track team," the athlete who wins in the high jump, broad jump, hurdles, and dashes. Electricity does dozens of jobs in the home and on the farm. Electricity is the only kind of fuel or energy that is practical for making light, heat, cold and power. Wood will heat the cook stove, but it will not light the chicken house. Kerosene will heat water, but it will not play the radio. Fuel oil will heat a chick brooder, but it is not practical for running a milk cooler. Bottled gas will provide energy for refrigeration, but it will not run the washing machine. Coal will give heat to sterilize dairy utensils, but it will not run the milking machine. Gasoline will drive the ensilage cutter, but it is not practical for running a food mixer. Electricity will do all these jobs and several hundred more. It is safe, efficient and cheap.

4. Advantages of Electricity Over Other Types of Fuel or Energy

Electricity has other advantages:

a. It is safe to use - With a good wiring system and properly installed equipment, electricity is one of the safest forms of energy available. There is nothing to catch fire or explode. Electricity gives off no fumes or odors.

b. It is always ready for service at the flip of a switch - Electricity is on the job 24 hours a day. There is no fuel to haul or store, no tank to fill, no soot, ash, or waste to remove and haul away. These features save time, trouble, and expense.

c. It allows automatic operation of equipment - Because there are many ways to control it, electricity saves labor and reduces production costs. Time switches, thermostats, pressure switches, and other controls make electrical equipment automatic. You save the cost of many operations.

d. It is comparatively low in cost - The rates for electricity are the same in the country as in town. Rate reductions, plus wider use of the service, have brought the cost of electricity down to only one-third of its cost 25 years ago. In fact, the average consumer pays less per unit of electricity today than ever before. The cost of other forms of energy has risen steadily during recent years. Electric rates are set up so that the more current you use each month, the lower the unit cost becomes. It is like getting wholesale prices when you buy certain items in large quantities. These facts make electricity the cheapest form of energy for doing many jobs and fully justify its expanded use in the home and on the farm.

e. Limitations of electricity on the farm - Some uses of electricity are more expensive than other methods. For example, in most places, heating our homes and our tobacco curing barns with electricity is not practical. These heating jobs can be done with electricity, but other types of fuel are less expensive.

Most power suppliers must limit the size of individual motors on rural lines to 5 or 7 1/2 h.p. except under unusual conditions. Electric motors of these sizes are large enough to run feed grinders, ensilage cutters, wood saws, hay driers, and other equipment. When larger power units are needed, the capacity of the power line must be increased or in some cases using two motors to operate the machine is practical.

5. Steps in making the best use of electricity -

You must plan properly if you are to make the best use of electricity in your home and on your farm. Consider the following points carefully:

a. A good wiring system - Think of the wiring system as electrical highways to carry the current to points of use. Plan the wiring for the convenient use of electricity. Be sure it is large enough to take care of both present and future needs for electricity. Have a reliable electrician install the wiring system.

b. Selecting electrical equipment - When you get electricity, make the "change-over" to electrical methods gradually. Plan to install first those appliances that will give the greatest returns. By studying the situation and needs in your home and on your farm, you will gain the most from the change to electrical methods. Consider equipment that will save time, provide convenience, improve the quality of products, or reduce production costs in some other way. Develop a plan for electrifying the various operations in the home and on the farm over a period of several years. To do this, make a list of the electrical methods needed most and buy the equipment as conditions and finances permit.

c. Buying and installing electrical equipment - The first step is to find out the proper type and size of equipment you need. Both good and bad electrical equipment are for sale. Get equipment made by a reliable manufacturer and be sure it is properly installed and operated. To be sure of obtaining proper service on the equipment, buy from a local dealer in whom you have confidence.


AGRICULTURAL
VIRGINIA
POLYTECHNIC
INSTITUTE
AND DEPT. OF AGRICULTURE
COUNTY
GOVERNMENTS
COOPERATING
EXTENSION SERVICE

RECORD BOOK
UNIT I

4-H
Electric Project

YEAR 19____

NAME _____ AGE ____

ADDRESS _____

COUNTY _____ NAME OF CLUB _____

VIRGINIA POLYTECHNIC INSTITUTE AND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING. EXTENSION SERVICE, L. B. DIETRICK, DIRECTOR, BLACKSBURG, VA.

Printed and Distributed in the furtherance of the Acts of Congress of May 8 and June 30, 1914

CIRCULAR 531 Revised June, 1954

THE CREED

"I believe in Boys' and Girls' 4-H Club work for the opportunity it gives me to become a useful citizen.

I believe in the training of my HEAD for the power it will give me to THINK, PLAN, and REASON.

I believe in the training of my HEART for the nobleness it will give me to be kind, sympathetic and true.

I believe in the training of my HANDS for the ability it will give me to be HELPFUL, SKILLFUL and USEFUL.

I believe in the training of my HEALTH for the strength it will give me to ENJOY LIFE, RESIST DISEASE and MAKE FOR EFFICIENCY.

I believe in the United States of America, and in my responsibility for their development.

I am, therefore, willing to devote my efforts for the fulfillment of these things which I believe."

THE PLEDGE

Every club member and leader should know and be able to repeat at any time the following National 4-H Club Pledge:

" I pledge
my head to clearer thinking,
my heart to greater loyalty,
my hands to larger service, and
my health to better living,
for my club, my community and my country."

THE NATIONAL 4-H CLUB MOTTO

The 4-H motto, "To Make the Best Better," should be the aim of every club member and leader.

• • • •

4-H CLUB FARM AND HOME ELECTRIC PROJECT

Requirements - Unit I

This project is for 4-H Club girls and boys who have had no training in electricity or electrical equipment. Club members who have had some training or experience in this field may enroll in Unit II of this project.

To complete this project you must do the following: (References shown in parenthesis will be available from your Extension Agent or leader. They contain the information that will help you do the jobs required.)

1. Study some of the reasons why electricity is so important to the modern farmer and homemaker. (MF-3)

2. a. List all the electrical equipment now in use in your home or on your farm. This can be done by checking the list given in your project record book.

   b. Discuss with your parents what additional electrical equipment is needed most and list it.

   c. List any equipment that was bought or made during this Club year and show what it cost.

3. Do any two or more of the following jobs, or other jobs requiring equal skill or knowledge:

   a. Improve the lighting in at least one room of your home. (For example, remodel ceiling fixtures; shade bare bulbs; plan lighting for study, ironing or laundry center.) (Circular 495)

   b. Convert an oil lamp to electric or remodel or make a lamp. (Leaflet "New Lamps for Old")

   c. Repair four service cords. (V.F.E.C.-4)

   d. Build a pig brooder. (F. B. 2039)

   e. Build a lamb brooder. (F. B. 2039)

   f. Learn about fuses and how to replace them. (V.F.E.C.-4)

   g. Build a heavy duty extension cord. ("Electrical Equipment You Can Build".)

4. Care for two or more electrical appliances, such as the following, for a period of at least one month each:

In the Home (MF-4)	On the Farm (MF-5)
a. Lights and lamps in home	e. Refrigerator
b. Iron	f. Farm Lighting
c. Toaster	g. Pig brooder
d. Vacuum Cleaner	h. Lamb brooder

5. Do one of the following:

   a. Show others something you have learned in carrying out this project, by giving one or more talks or demonstrations. (Electrical Demonstrations you can Perform)

   b. Visit one or more farms or homes where electricity is being used for many jobs. List the uses of electricity you observed on each visit.

6. Complete this Record Book.

RECORD BOOK - UNIT I

This record book must be filled in by each 4-H Club member enrolled in this project. Completion of this record fulfills requirement No. 6.

1. Did you study ME-3 entitled "The Place of Electricity in the Home and on the Farm? Yes ____ No ____

2. a. Check below the electrical equipment being used in your home and on your farm. Use blank spaces to add items not included in the list.

In Your Home		On Your Farm	
Electrical Equipment	Have now (check √)	Electrical Equipment	Have now (check √)
Churn		Chick Brooder	
Clock		Clipper	
Fan		Dairy Water Heater	
Home Food Freezer		Ensilage Cutter	
Iron		Food Grinder	
Ironer		Hay-Drier	
Lighting		Hay Hoist	
Percolator		Hotbed	
Radio		Lighting	
Range		Milk Cooler	
Refrigerator		Milking Machine	
Roaster		Paint Sprayer	
Sewing Machine		Pig Brooder	
Space Heater		Portable Elevator	
Toaster		Poultry House Lighting	
Vacuum Cleaner		Poultry Water Warmer	
Waffle Iron		Supplemental Irrigation	
Washing Machine		Tool Grinder	
Water Heater		Water Pump	
Water Pump		Wood Saw	

b. Discuss with your parents what additional electrical equipment is needed most and list it below:

Additional Electrical equipment needed most in your home.	Additional Electrical equipment needed most on your farm.

c. List the electrical equipment that was bought or made during the year and the cost of each.

For use in your home		For use on your farm	
Equipment bought or made	Cost	Equipment bought or made	Cost

3. Check below the jobs you did during this year. (Two required)

a. Improved the lighting in one room of my home. _____
b. Converted an oil lamp to electric, or remodeled or made a lamp. _____
c. Repaired at least four service cords. _____
d. Built a pig brooder. _____
e. Built a lamb brooder. _____
f. Learned about fuses and how to replace them. _____
g. _____ _____
h. _____ _____
i. _____ _____
j. _____ _____
k. _____ _____

Explain below what you learned in doing the jobs you checked above. Show the cost of the materials used and the approximate retail price value of what you built. (Use Page 4 and additional sheets if needed)

4. Check below the electrical equipment you cared for and the number of months you cared for it. (Must care for at least two electrical devices for at least one month each.)

Equipment	Cared for (check ✓)	No. of months	Equipment	Cared for (check ✓)	No. of months
Lights, lamps in home			Refrigerator		
Iron			Farm lighting		
Toaster			Pig brooder		
Vacuum cleaner			Lamb brooder		
Other Equipment			Other Equipment		

State below what you did in caring for the equipment you checked above. (Use space below, page 6 and additional sheets if needed.)

5. List talks or demonstrations you gave on electrification to your club or to other groups (one required);

OR .....

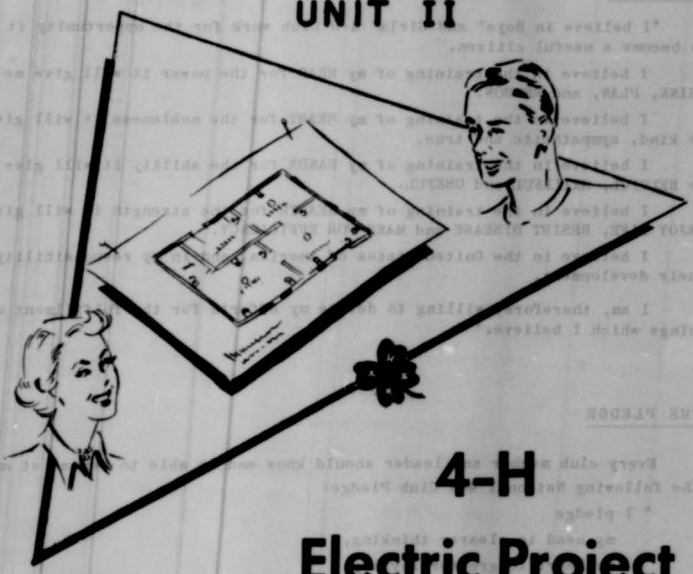
List the electrified farms or homes you visited and the uses of electricity you observed at each place. (one required).

a. Talks and demonstrations given:

Date	Subject	Talk or Demonstration	Kind of meeting	Attendance

b. Names and addresses of electrified farms or homes visited and uses of electricity observed at each place. (Use space below, page 8 and add sheets if needed.)

RECORD BOOK
UNIT II



4-H
Electric Project

YEAR 19 ____

NAME _____ AGE ____

ADDRESS _____

COUNTY _____ NAME OF CLUB _____

VIRGINIA POLYTECHNIC INSTITUTE AND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING. EXTENSION SERVICE, L. B. DIETRICK, DIRECTOR, BLACKSBURG, VA.

Printed and Distributed in the Furtherance of the Acts of Congress of May 8 and June 30, 1914

Circular 532 Revised June, 1954

THE CREED

"I believe in Boys' and Girls' 4-H Club work for the opportunity it gives me to become a useful citizen.

I believe in the training of my HEAD for the power it will give me to THINK, PLAN, and REASON.

I believe in the training of my HEART for the nobleness it will give me to be kind, sympathetic and true.

I believe in the training of my HANDS for the ability it will give me to be HELPFUL, SKILLFUL and USEFUL.

I believe in the training of my HEALTH for the strength it will give me to ENJOY LIFE, RESIST DISEASE and MAKE FOR EFFICIENCY.

I believe in the United States of America, and in my responsibility for their development.

I am, therefore, willing to devote my efforts for the fulfillment of these things which I believe."

THE PLEDGE

Every club member and leader should know and be able to repeat at any time the following National 4-H Club Pledge:

" I pledge
my head to clearer thinking,
my heart to greater loyalty,
my hands to larger service, and
my health to better living,
for my club, my community and my country."

THE NATIONAL 4-H CLUB MOTTO

The 4-H motto, "To Make the Best Better," should be the aim of every club member and leader.

* * * *

4-H CLUB FARM AND HOME ELECTRIC PROJECT

Requirements - Unit II

Unit II of this project is for 4-H girls and boys who have completed Unit I or who have had some training or experience with electricity and electrical equipment. By completing this project, you will gain practical knowledge on the efficient use of electricity in the home and on the farm.

To complete this project, you must do the following: (References shown in parenthesis will be available from your Extension Agent or leader. They contain information that will help you do the jobs required. Your Extension agent and power supplier can furnish additional references that will be helpful).

1. Study the following electrical terms and learn how to use them: ("Highways of Wire" or "Understanding Electrical Terms".)

   a. Volt
   b. Ampere
   c. Watt
   d. Kilowatt
   Kilowatt-hour

2. Learn to read a kilowatt-hour meter. Read the kilowatt-hour meter on your farm or at your home on the first day of each month for at least six consecutive months. Get a copy of your electric rate and figure your electric bill for each month. ("Computing the cost of Electrical Service" or "Highways of Wire")

3. Do one of the following:

   a. *Plan an improved wiring and lighting system for your home.* (Misc. Pub. 597)

      (1) Make a sketch showing location of present outlets. Include light, switch, convenience, and individual equipment outlet.

      (2) Plan the wiring and lighting system you would like to have. Include light, switch, convenience and individual equipment outlets.

      (3) List the improvements you made this year and what they cost.

   b. *Plan a wiring and lighting system for your farm buildings and yards.* (Misc. Pub. 597)

      (1) Make a sketch showing location of present outlets. Include light, switch, convenience, and individual equipment outlets and location of meter.

      (2) Plan the wiring and lighting system you would like to have. Include light, switch, convenience and individual equipment outlets and location of meter.

      (3) List the improvements you made this year and what they cost.

   c. *Plan a water system for your home or farm.* (Misc. Pub. 674)

      (1) Make a sketch of your present water system.

      (2) Plan the water system you would like to have. Show source of water, location of buildings, underground piping and water outlets.

      (3) List the improvements you made this year and what they cost.

4. Do one or more of the following jobs, or other jobs requiring equal skill or knowledge:

   a. Plan an improved ironing center. (Circular 544)
   b. Build an electric chick brooder. (*)
   c. Make a time switch for poultry house lighting. (*)
   d. Build an electric poultry water warmer. (*)
   e. Make a 1/3 or 1/4 horsepower electric motor portable and adapt it to one or more machines such as sausage grinder, tool grinder, churn, corn sheller, etc. (*)
   f. Plan a labor-saving electric kitchen. (Ext. Cir. 409)
   g. Plan a labor-saving home laundry. ("Home Laundering Principles")
   h. Build a movable work bench light. (*)
   i. Build an electric drill stand. (*)
   j. Install a signal system. (*)
   k. Install a room ventilating unit. (*)
   l. Install an electric fence. (*)
   m. Build and install an electric egg cooler. (*)
   n. Build an egg candler. (*)
   o. Install an electric feed grinder. (*)
   p. Build an electric hot bed. (*)
   q. Make a study and choose the piece of electrical equipment your family should purchase next.

5. Care for one or more electrical appliances, such as the following, for a period of at least one month: (ME-4, ME-5)

   a. Washing machine
   b. Range
   c. Home food freezer
   d. Electric roaster
   e. Water system
   f. Farm motor
   g. Electric brooder (any type)
   h. Milking machine
   i. Feed grinder

6. Do one or more of the following:

   a. Show other people, such as younger 4-H Club members, something you have learned in carrying out this project by giving one or more talks or demonstrations. ("Electrical Demonstrations You Can Perform")

   b. Visit one or more well-electrified farms or homes. Study and list the ways you saw electricity being used. Which was the most important use of electricity you observed on each visit and why?

7. Complete this record book.

---

* Refers to "Electrical Farm Equipment You Can Build". Your Extension Agent and power supplier can give you additional references that will be helpful in doing these jobs.

RECORD BOOK - UNIT II

This record book must be filled in by each 4-H Club member enrolled in the project. Completion of this record fulfills requirement No. 7. Use additional sheets as needed.

1. Did you study "Understanding Electrical Terms"? Yes_____; No _____;

Define the following electrical terms:

a. Volt _____

b. Ampere _____

c. Watt _____

d. Kilowatt _____

e. Kilowatt-hour _____

2. Read the kilowatt-hour meter at your farm or home on the first of each month for at least six consecutive months, and fill in the blank spaces below:

Date	Meter Reading	No. of kilowatt-hours used last month.	Cost for the month figured by rate shown on page 4.*
		xxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxx

* This figure may differ from the bill received from your electric service organization because of different meter reading dates.

List below the electric rate schedule for your home or farm. (Get a copy of this rate schedule from the organization that serves your home or farm with electricity.)

First _____ kwhrs. @ _____ ¢ per kwhr.
Next _____ kwhrs. @ _____ ¢ per kwhr.
Next _____ kwhrs. @ _____ ¢ per kwhr.
Next _____ kwhrs. @ _____ ¢ per kwhr.
All over _____ kwhrs. @ _____ ¢ per kwhr.

3. Check (√) the system you planned: (One required)

a. Wiring and lighting for the home. _____
b. Wiring and lighting for the farm buildings and yards. _____
c. Water system layout for the home or farm. _____

Make a sketch of present and planned layouts of the system you checked above. List what improvements you made this year and what they cost.

(1) Sketch of present system: (Use cross-section paper)

(2) Sketch of system you would like to have: (Use cross-section paper)

(3) List below the improvements in your wiring, lighting or water system you made this year including cost. (Attach additional sheets if needed.)

4. Check (✓) below the jobs you completed this year. (At least one required).

a. Planned an improved ironing center. _____
b. Built an electric chick brooder. _____
c. Made a time switch for poultry house lighting. _____
d. Built an electric poultry water warmer. _____
e. Made a 1/4 or 1/3 horsepower electric motor portable and adapted it to one or more machines such as sausage grinder, tool grinder, churn, corn shellar, etc. _____
f. Planned a labor-saving electric kitchen. _____
g. Planned a labor-saving home laundry. _____
h. Built a light for a movable work bench. _____
i. Built an electric drill for stand. _____
j. Installed a signal system. _____
k. Installed a room ventilating unit. _____
l. Installed an electric fence. _____
m. Built and installed an electric egg cooler. _____
n. Built an egg candler. _____
o. Installed an electric feed grinder. _____
p. Built an electric hot bed. _____
q. Made a study and determined the piece of electrical equipment my family should purchase next. _____
r. _____
s. _____
t. _____
u. _____

Describe the jobs you checked above and explain what you learned in doing them. If job "q" is taken, give reasons for selecting the piece of equipment named and state what its use will mean to you and to your family. (Use space below, page 6 and additional sheets if needed).

5. Check below the electrical appliances you cared for and the number of months you cared for each. (Must care for one or more electrical Appliances for at least one month each).

Equipment	Cared for (Check√)	No. of months	Equipment	Cared for (Check√)	No. of months
a. Washing machine			f. Farm motor		
b. Range			g. Electric brooder		
c. Home food freezer			h. Milking machine		
d. Electric roaster			i. Feed grinder		
e. Water system					

State what you did in caring for the equipment you checked above. (Use space below, page 8, and additional sheets if needed).

6. Show what you did on the following activities: (One required--choose part a. or b. or both)

a. List talks or demonstrations you gave.

Date	Subject	Talk or demonstration	Kind of meeting	Attendance

b. Give the names of the electricied farms or homes you visited. (One required). List the uses of electricity you saw at each place visited. Select the most important use of electricity you observed on each visit, and give the reasons for your choice. (Use space below, page 10, and additional sheets if needed).

—Staff Photo

Mary Ann Foster (third from left) Receives 4-H Award From Dr. W. E. Skelton
County Winners Are Norval A. Boone (left), Tommy Laughon and Ida Jo Berger

4-H Electric Program Winner Is York Girl

A York County girl, 18-year-old Mary Ann Foster, was named the winner of the 1954 State 4-H Farm and Home Electric program here yesterday at the concluding meeting of the two-day congress at the Hotel Jefferson.

Miss Foster, who will be given a trip to the National 4-H Club Congress in Chicago in November, was cited at a luncheon for her leadership and activities in electrical programs.

Dr. W. E. Skelton, State 4-H club agent, of Virginia Polytechnic Institute, said in presenting a certificate to Miss Foster that she has been president of her local club for three years, improved the lighting in her home, aided her father in rewiring their home and presented demonstrations and talks on electricity.

Bedford County was cited by Dr. Skelton as the top Virginia county for the second consecutive year for its program on electricity.

During the past year the county program has been responsible for improving lighting in 371 homes, repaired 868 electric cords, built chicken brooders and installed 19 electric fences, 20 hot-water heaters and seven water systems.

Representing the county at the meeting and receiving the award were Norval A. Boone, county agent, and Tommy Laughon and Ida Jo Berger.

Maude E. Wallace, assistant director of the Agricultural Extension Service at VPI, told the meeting that application on the farm and in the home of what 4-H club members learn is more important that the projects they undertake. Development of the boy and girl and Virginia is our objectives, she said.

Water Systems Program Cited

A farm water system program in Virginia for 1954 has won national acclaim from the American Association of Agricultural Engineers.

At the recent annual meeting of ASAE in Minneapolis, Minn., the Virginia program, as described in a brochure prepared by the Virginia Rural Electrification Council, was placed top in the nation in the educational program division.

The brochure points out that more than 95% of the farms in Virginia now have electric service. But there are about 80,000 farms in Virginia with electric service. But there are about 80,-

TODAY!

IME

Richmond Times Dispatch

Typical Special Article.

THE SOUTHERN PLANTER

Two crop drying bins, each 20'x30' on the farm of Millard Turner, Broadway, Virginia. The portable crop drier is located between the bins. The drier is connected to a main duct between the bins and air can be forced into either one. Each bin has a perforated metal floor for drying small grain, corn or baled hay.

Advantages of Drying Small Grain

The Crop Drier Is Rapidly Becoming Standard Equipment On Thousands Of Southern Dairy and Grain Farms.

THERE are numerous reasons why facilities for drying small grain with forced air is proving to be a worth while practice on many farms. Some of these reasons follow.

1. The crop can be harvested as soon as the grain is mature, thereby greatly reducing the chances of storm damage and loss in the field.

2. The crop can be harvested faster because combines can then be operated in early morning and late evening.

3. When the grain is dried as soon as it

By

E. T. SWINK

Extension Service,

V. P. I.

motor for drying corn by moving it to the corn crib in the fall of the year.

Several manufacturers now have steel drying bins on the market for use with a portable crop drier. These bins are capable of handling the output of a large combine when operated with heated air. Plans are available for constructing similar types of bins on the farm with drying capacities of up to 1,000 bushels per 24 hours.

The conventional hay drying duct system can be used for drying small grain in bags, provided that no hay is on the system. The loosely filled bags of grain are placed in a single tight layer over the duct system for drying. If there is not enough grain to cover the entire duct system, the main duct can be blocked off so that the fan will deliver air into that part of it which is covered with the bagged grain.

Must Meet These Requirements

Some of the general requirements that must be met in effectively drying small

DRYING SMALL GRAIN

(Continued from preceding page)

be uniform if even drying is to be expected.

4. In designing the duct system to deliver the air from the fan into the grain, dimensions should be used that will keep air velocity below 1,000 feet per minute.

5. If heated air is used for drying, the air temperature must be kept below 110° F. for seed grain and it should not exceed 140° F. for feed grain. The heat should be cut off and the fan allowed to run an additional 30 to 45 minutes at the end of the drying period. This lowers the temperature of the grain to approximately that of outside air.

6. Care should be taken to see that the grain is not dried too much, especially if it is to be marketed immediately. The grain on top will be the last to dry and that on the bottom will be the driest. Since the grain mass will be mixed as it is handled from the drier, its moisture content will become fairly uniform soon thereafter.

These Shetland ponies provide Billy Johnson with lots of fun in his leisure moments.

Please Mention The Southern Planter.

NEW TOWELS 12 for $1.00

TOWEL SHOP, Dept. 282, Box 881, St. Louis 1, Mo.

Make Money and Friends as a PRACTICAL NURSE

FREE

POST GRADUATE HOSPITAL SCHOOL of NURSING

1850 Addison Blvd., Chicago 5, Illinois

GET YOURS TODAY

Typical Special Article

Hay drier on J. E. Hawkins farm, Chesterfield County, Virginia. Drying building is 20 ft. by 30 ft. Note open gable for escape of moist air. Crop-drier is located in air tunnel at right of picture. Fuel oil tank is beside air tunnel.

Dairyman Solves Hay Loss Problem

Barn Cured Hay Retains Most of Its Natural Green Color, Vitamins and Proteins, All of Which Add Food Value.

"WE NOW have no fear of losing the hay when we put the mower in the field," said dairy farmer J. E. Hawkins of Chesterfield County, Virginia. That was his way of saying that he has won a battle with the weather at hay harvest time. He did it by installing a hay-drier. "We haven't lost a bale of hay since we've had the drier," Hawkins said.

By

J. L. CALHOUN

Associate Extension Agricultural Engineer, V. P. I.

The building was constructed on a gentle slope. The drying floor is from 14 inches to 44 inches from the ground. The crop drier was placed at the end of the building where the drying floor was the greatest height above ground.

Uses Heated Air

The crop drier Hawkins uses forces heated air through the hay. It consists of a 36 inch fan driven with a 5 horsepower electric motor. The air is heated as the fan blows it over a heat exchanger. The air then passes under the slatted floor and up through the hay. Heated air increases the rate of drying the hay. Fuel oil is the source of heat. Crop driers mounted on wheels can be moved from one place to another. Since Hawkins only wanted to use his unit for drying hay, he bought a drier mounted on skids.

masonry block walls with a reinforced concrete cover. The end is open for free passage of air into the drier.

Hawkins bales his hay before it's dry enough for the leaves to shatter. Then he stacks the hay on the drier to complete the drying process. He has found that good drying results depend largely upon how the bales are placed on the drier. He stacks the bales on edge so the air will enter the cut side of the bale. The joints between bales are covered with the next layer of bales. After the drier is loaded, he chinks the cracks between bales with loose hay to reduce the escape of air. This practice improves the drying efficiency — causes the air to pass through the bales instead of around them.

Dries 600 Bales At Once

Hawkins has dried many different kinds of hay with good results. These include alfalfa, Ladino clover and orchard grass, timothy and clover, and oat hay. He never dries hay more than five bales deep. About 600 bales can be dried at one time. This amounts to about 14 tons of dried hay. This system is used to dry from 100 to 150 tons of hay per year, but it has the capacity to handle several hundred tons per season.

"Even if hay gets rained on, we bale it and get it in on the drier," Hawkins said. When the hay contains excess moisture, he runs the motor and fan without heat for a couple of hours. This drives off a lot of moisture. Then he turns on the heat to finish the drying operation. When the hay is dry, the heat is turned off and the fan and motor are run for an hour or two to cool the hay. It is then moved into storage, leaving the drier free for the next loading.

Hawkins spent $3,200 for the building, electric wiring and crop drier. The average cost of fuel and electricity amounts to about $3.35 per ton of hay dried. But he figures these costs are paying off in the milk pail. "I can take hay from the drier, grown on this farm, and within 10 days I can increase the production of my cows from 10 to 15 per cent over the average commercial hay we are able to buy," he reported. "We have also noticed drops in milk production when we switched from artificially dried hay to field cured hay."

But Hawkins doesn't think his set-up is perfect. He would like to change the location of the drier. "I would like to have it near the dairy barn so the hay could be conveyed from the drier right into the dairy barn."

Readers can get further information on hay-drying from your county agricultural agent or from the agricultural engineer with your electric power supplier.

J. E. Hawkins presses start button on his 5 h. p. crop-drier. This unit heats the air which increases the rate of drying the hay. It is mounted on skids in a small air tunnel.

Without Tubes
Costly B-Battery eliminated! All battery costs slashed 80%! Powered by 3 genuine Raytheon Transistors! Vacuum tubes banished forever! For full information, use handy coupon below. No obligation whatsoever. A postcard will do.
Electronic Research Director
Beltone Hearing Aid Co., Dept. 3653
2900 W. 36th St., Chicago 32, Ill.
Please rush complete facts on new miracle all-transistor tubeless hearing aid.
Name ....
Address ....
City .... State ....

PROGRAM

of the

Virginia Farm Electrification Council

1953-1954

CONTENTS

VIRGINIA FARM ELECTRIFICATION COUNCIL
AGRICULTURAL ENGINEERING DEPARTMENT
VIRGINIA POLYTECHNIC INSTITUTE
BLACKSBURG, VIRGINIA

OCTOBER, 1953

RM
34

[redacted]

PROGRAM

of the

Virginia Farm Electrification Council

1953-54

Foreword

The purpose of the Council, as stated in the by-laws of the organization, is "to co-ordinate and expand the farm electrification research and educational activities of the Virginia Polytechnic Institute, the electric service organizations operating in Virginia, and certain other state agencies and organizations interested in the economic use of electricity on the farms and in the homes of rural Virginia." The by-laws also set forth the general objectives of the Council and suggest methods of accomplishing them. Accordingly, the Council program is concerned with activities that contribute to the attainment of established goals. The fiscal year of the organization is November 1 through October 31.

Progress continues in extending electric service to rural homes and farms: most of Virginia's farms now have electricity. This tremendous development has created a challenging educational problem: informing farm people on the efficient use of electricity.

Success in farming depends in a large measure upon production efficiency. This factor becomes increasingly important during periods of unfavorable economic conditions for farmers. Electricity is an essential item in efficient farm production. The service can be used in many ways to save time and labor, to improve the quality of farm products, and to provide conveniences. To derive maximum benefit from electricity, farm people must know how to apply properly electric service in the home and on the farm. The fact that more than half of Virginia's farms are without water under pressure is evidence of the need for educational work on the practical application of electricity to farm and home tasks. This problem offers a challenging opportunity to the educational agencies and electric power suppliers in Virginia.

The program outlined herein contains a general plan for developing the broad aims of the Council. It also sets forth specific objectives for the year ending October 31, 1954. This program is based upon the recommendations of the standing committees. It was approved by the executive committee. In adopting this program the executive committee recognizes the important role of the standing committees in the Council program. During periods when the Council is without the services of a full-time secretary, the standing committees must assume the responsibility for directing their respective phases of the program. They must also encourage the full support and cooperation of all member organizations in attaining the goals set forth in this program.

This program is revised annually to achieve the aims and purposes for which the Council was organized.

Research

The Council will try to coordinate and expand the farm electrification research activities of all interested agencies in Virginia. It recommends that studies be continued and expanded on projects involving the use of electricity in the home and on the farm to improve working and living conditions by:

1. Reducing labor requirements
2. Reducing losses of food and feed
3. Improving quality of farm products
4. Increasing farm income

The Council recommends that the farm electrification research program study problems which will benefit the maximum number of people. Accordingly, it recommends that the following long-range research projects be undertaken as funds and personnel permit:

1. Investigate the possibility of using some form of radiant energy such as heat and light in plant beds to control growth and diseases with primary emphasis on tobacco.
2. **Crop Drying**
   a. **Peanuts**—Conduct basic research on peanut drying and storage.
   b. **Corn**—Conduct research on drying and storing corn under conditions as they exist in Virginia.
3. **Supplemental Irrigation**—Conduct basic research on supplemental irrigation to provide information needed for the design of irrigation systems and the development of irrigation procedures to meet Virginia's conditions. This information to include data on irrigation equipment, soils, crops, water resources and labor requirements. The Council thinks that, in addition to the present research program at Blacksburg, the work should be expanded to other sections of the state to include vegetable, fruit, and other selected field crops such as bright leaf tobacco.
4. **Insect Traps**—Conduct research on electric insect traps to determine their feasibility as a means of controlling injurious insects such as the tobacco hornworm, coddling moth, corn borer, and others.
5. **Infrared Energy**—Investigate the use of infrared energy for brooding poultry and for other farm uses.
6. **Home Electrical Equipment**—Investigate problems on use of automatic washers and clothes driers in rural homes.
7. **Multi-Purpose Farm Refrigerator**—Design, build, and test a multi-purpose refrigerator for use on farms.
8. **Farm Elevators**—Gather information about portable farm elevators from other states. Prepare plans for home-made elevators.

The Council Research committee will make specific recommendations annually on the projects to be emphasized during the following year. These recommendations will be submitted to the Director of the Agricultural Experiment Station and to the Head of the Division of Farm Electrification, BPISAE, USDA, for their consideration. The Council will lend full support to the Experiment Station and USDA in getting the recommended new projects under way.

PROJECTS FOR YEAR ENDING OCTOBER 31, 1954:

The research program for the year will include the following projects:

1. **Supplemental Irrigation**—Prepare and and release irrigation guides for Coastal Plain Region and revise as necessary guides for the Piedmont and Mountain Regions as rapidly as data permit. Material for this purpose will be assembled from all available sources. This material will include a step-by-step procedure in planning and preparing for a properly designed irrigation system. Continue the field plot and laboratory experiments on forage crops, pasture mixtures, and selected field crops.
2. **Farm Elevators**—Gather information about portable farm elevators from other states and from field and research experience in this state. Prepare plans for homemade portable equipment to be applicable for the handling of tobacco, hay, and grain.
3. **Multi-Purpose Farm Refrigeration** — Continue tests on component parts of the refrigerator that have been built. Make observations on the performance of field installations.
4. **Automatic Washers**—Make available as soon as possible a progress report on work that has been done. Continue studies that have been started. These studies will include

data on non-automatic as well as automatic washers.

5. **Crop Drying**
   a. **Peanut Drying** — Continue drying studies, varying the amount and condition of drying air, in an effort to make peanut drying more practical.
   b. **Corn Drying**—Study the drying of corn harvested early and late and determine field losses caused by various factors existing in the state.
6. **Infrared Energy** — Continue research that will:
   a. Develop controls for regulating infrared lamps
   b. Study ventilation requirements for infrared brooding
   c. Develop additional uses
7. **Insect Traps**—Continue the project on the use of electric insect traps to determine the degree of control of injurious insects on tobacco. The results of this work will be made available as early as practical.

RESULTS OF RESEARCH — YEAR ENDING OCTOBER 31, 1953

Supplemental Irrigation — The prolonged droughts during the last three years have afforded good opportunities to study the response to irrigation of various pasture, forage and field crops and determine when and how much to irrigate.

Results from the various tests conducted by J. H. Lillard and J. N. Jones, Agricultural Engineers, Virginia Agricultural Experiment Station, for the current 1953 season are not yet complete. In 1952, yields from native blue-grass-white clover beef animal pastures were increased about 40 percent. The animals on the irrigated lots gained approximately 70 pounds per head more than those on the unirrigated plots. This resulted in a carcass grade 0.4 grade higher. Gross returns from irrigation on the beef animal pastures are about $50 per acre. Net returns after deducting irrigation expenses were about $30 per acre.

The irrigation tests with burley tobacco during the past several years are still inconclusive. Since tobacco plants are extremely sensitive to excess water, they are often damaged when heavy natural rain fall follows irrigation. In one of the past three years, this damage actually resulted in a lower tobacco yield from the irrigated plots. In 1951, however, tobacco yield was increased by irrigation by about 185 pounds. This was an increase in sale value of approximately $120 per acre.

Under climatic conditions such as prevailed in 1951 and 1952 irrigation increased the yield of alfalfa by 25 to 30 percent or slightly more than one ton of barn dry hay per acre. Responses of field corn and small grain to the irrigation treatment has averaged about five bushels of small grain per acre increase and 15 to 20 bushels increase in corn.

During the past year, the Experiment Station has expanded the irrigation project to include tests on three important dairy pasture mixtures and a detailed plot experiment where eighteen forage crop species and mixtures are under intensive investigation.

Multi-purpose Farm Refrigerator — Virginia Agricultural Experiment Station Bulletin No. 436 on the Virginia Walk-in Farm Refrigerator has been revised. Drawings and specifications contained in the bulletin were brought up to date to reflect latest design information. Testing of components has continued on a limited scale.

Automatic Washing Machines—A series of tests of one commercial washer have been made. That portion of the experiment which was subject to statistical treatment was developed after consultation with the Department of Statistics. The Department of Statistics also assisted in analysis of data. Tests have dealt with water temperatures, quantities of water, washing times, water heater size, temperature loss in supply lines, etc. A summary of results obtained thus far will be reported in November.

Peanut Drying — Studies designed to determine a satisfactory technique for curing peanuts were conducted at the Tidewater Field Station by N. C. Teter and R. L. Givens, Agricultural Engineers of the Bureau of Plant Industry, Soils and Agricultural Engineering, USDA. Tests of an exploratory nature consisted of ventilating the peanuts with unheated air, curing the peanuts on a rack in the open, and drying peanuts with air heated to approximately 95° F after they had been windrowed, refrigerated, soaked in water, and treated with sulphur dioxide. Two rates of air flow were used in the heated air drying tests. Progress reports are on file, but no publications have been released.

Corn Drying — Corn drying and storage studies have been conducted and will be continued at the Tidewater Field Station by N.

C. Teter and R. L. Givens, Agricultural Engineers of the Bureau of Plant Industry, Soils and Agricultural Engineering, USDA. During the past year, drying studies were conducted in five ways: (1) shelled corn in an inclined column drier, (2) shelled corn in a circular metal bin with perforated floor, (3) ear corn using heated air, (4) ear corn drying using natural air, and (5) natural drying in the field. Progress reports are on file, but no publications have been released.

Infrared Brooding—Brooding poultry with infrared lamps has continued. A brooder designed to operate on 115-230 volts has been used and the results are encouraging. The energy consumption was reduced and the brooding results were very satisfactory. Results of work done in a calorimeter at Purdue University on the minimum energy requirements for brooding will be made available when released. A conference on infrared brooding was held in June 1953. The conference prepared a list of problems that needed answering. Workers in this and other states are determining answers to these problems.

Insect Traps—In cooperation with the Entomology Department, the Experiment Station started a project this year to determine the degree of control of tobacco hornworm moths effected by electric traps. Tobacco fields using the lights showed no appreciable reduction in hornworm injury when compared with check fields not using traps or insecticides. Some farmers report favorable results on the use of the trap. This work will be continued.

Steam Accumulators — Tests have been completed on two makes of electric steam accumulators to determine the steam capacity of each and the energy requirements for operating. Steam requirements for sterilizing dairy equipment have been determined for various sizes of sterilizing cabinets. Part of this material has been prepared in an available form. The remaining data will be available at a later date.

Field Studies

Make field studies of electrical equipment installed on farms of various sizes and types. Obtain data through surveys, use of instruments, or a combination of the two. Where possible, compare the use of electrical equipment to other methods of accomplishing a given task. Include such factors as operating costs, labor requirements, and the performance of the equipment under actual farm conditions. These studies will provide the basis for recommendations on the design, selection, operation, and maintenance of electrical equipment.

Schedule the following uses of electricity for field studies as rapidly as possible, but not necessarily in the order listed:

1. Water systems*
2. Feed processing
   a. Feed grinding*
   b. Feed mixing*
   c. Grain, feed and forage elevating
   d. Storage
   e. Forage blowers
   f. Corn shelling and grading
   g. Corn drying**
   h. Grain drying
3. Hay-drying
   a. Long hay*
   b. Chopped hay
   c. Baled hay*
4. Portable farm motors for
   a. Silo filling*
   b. Wood sawing*
   c. Hay hoisting*
5. Farm shop equipment
6. Electric welders
7. Germicidal lamps
8. Dairy barn cleaners
9. Dairy barn ventilation
10. Dairy sterilizers and water heaters*
11. Milk Coolers
12. Milking machines
13. Steam accumulators
14. Household equipment
    a. Dishwashers
    b. Irons
    c. Ironers
    d. Washers
    e. Clothes driers
    f. Ranges**
    g. Combination ranges**
    h. Refrigerators
       (1) Domestic
       (2) Combination walk-in and freezer
       (3) Home food freezers*
    i. Water heaters

*Preliminary field study made.
**Field study completed and reported.

15. Lamb brooders
16. Pig brooders
17. Poultry brooders**
18. Poultry house lighting and ventilation
19. Poultry water warmers
20. Soil heating
21. Stock-tank water heaters
22. Soil sterilization
23. Heating tape
24. Stationary spray plants
25. Supplemental Irrigation*
    a. Field
    b. Garden*
26. Sweet-potato curing
27. Tobacco curing
28. Insect exterminators

Council members and their representatives will cooperate in conducting field studies. Those concerned primarily in this phase of the program include the Agricultural Experiment Station, electric power suppliers, county farm and home agents, vocational agricultural teachers, and home economics teachers.

The field studies committee will advise with the project leader or the Council secretary in planning and expediting this activity. Plans will include the approximate dates studies are to be made and the information to be obtained. Interested members and committees will be kept informed on studies to be conducted. The committee will tabulate, analyze, and publish the data on each field study for distribution to the membership.

The field studies committee requests that it be kept informed of all research or field investigations, pertaining to rural electrification in Virginia. The committee will process the information assembled by such projects and make it available to all interested agencies.

Year Ending October 31, 1954

The services of a full-time field studies project leader is essential for this phase of the program to be effective. The Virginia Agricultural Experiment Station does not have funds available for employing a project leader. Equipment manufacturers, distributors, and electric power suppliers may be approached regarding funds to support this project. The field studies program must be curtailed until funds are available.

We need field study reports on the following uses of electricity:

1. Grain driers
2. Washers, water heaters, ironers and clothes driers
3. Poultry house lighting and ventilation
4. Home food freezers
5. Supplemental irrigation
6. Electric water systems

Field Studies Completed and Reports Published To Date

Outlined below is a brief progress report on field studies conducted to date:

Infrared Poultry Brooders—We conducted this study with the assistance of 22 farmers and the electric power suppliers serving these farms. We assembled the data, processed, and published it in January, 1952 in a report entitled: "Infrared Poultry Brooding on Virginia Farms 1951." We distributed copies of this report to the Council members and to other interested agencies.

Combination Ranges—This study was based upon the results of a mailed questionnaire completed by 203 families. We published the results in a report, "Field Study of Combination Ranges in Virginia 1951." We sent this information to Council members, cooperating families, manufacturers and dealers of combination ranges, Virginia home demonstration agents, home economics departments of Virginia high schools, home economics departments of all state schools in the United States, and to other interested agencies.

Corn Driers—This study was made possible through the cooperation of 25 farm users and personnel of the electric power suppliers. We issued a publication entitled, "Field Study Report, Corn Driers in Virginia, 1951". In addition, we published a leaflet on corn drying under the title, "Give Your Corn Air." The American Society of Agricultural Engineers rated this leaflet the best publication of its type in 1952. Its purpose is to guide farmers in choosing the type of corn drying installation that will fit their needs best.

Electric Ranges—We conducted this investigation during the period 1950-52. The results of the study will be published under the title, "Field Study Report, Electric Ranges in Virginia Rural Homes 1950-52". This report will be available early in the Council year.

Home Economics

The objective of the home economics committee is to help professional workers in various agencies and programs to become conscious of the contribution electricity may make to the improvement of family life so that they, in turn, may promote activities which result in this improvement.

This phase of the Council program will involve the following plans and activities:

1. We will make a study of the approximate unit cost (kitchen, bath, etc.) of a home water system installation. We will give the data secured in the study to all interested parties. In addition, we will study anticipated problems in installation and their possible solutions and record results for reference. Home economists and other professional workers will concentrate on selling the advantages of water under pressure in the home.

2. We will develop a three weeks course in household electrical equipment as part of the graduate work of the VPI Summer School of 1954. This course will be planned in the fall of 1953 and announcements will be circulated to member agencies of the Council early in 1954.

3. The Council will make available a list of the resource people to work with various agencies on training courses on the selection, use and care of electrical appliances.

4. The Council will make available to member agencies a list of visual aids and other teaching materials which they may use in carrying out the objectives of the program.

5. The Council will continue to place emphasis on the need for employing qualified and reliable electricians to do wiring jobs.

PUBLICATIONS—

We need bulletins and leaflets on many applications of electricity in the home.

Write these publications in popular style. Have them unbiased, and well illustrated. Base them on sound research.

The Council recommends using the following bulletins in the educational program:

1. How to Choose and Use Your Refrigerator, AIS—56, USDA
2. How to Choose and Use Your Washing Machine, AIS,—73, USDA
3. Home Freezers—Their Selection and Use, Misc. Pub. No. 687, USDA
4. Frozen Food Equipment for the Home, Bul. 171, Va. Agr. Extension Service

PUBLICITY—

At regular intervals a qualified person will write articles for publication in farm magazines and in daily and weekly newspapers.

RESEARCH—

The committee recommends requesting funds for additional research. Such research is urgently needed in methods of laundry work, including the washer and dryer. Continue and expand research now underway on refrigeration of foods and make findings available as soon as possible.

FIELD STUDIES—

Conduct field studies on:

1. Home Food Freezers
2. Ironers

Rural Youth

4-H Clubs

The Agricultural Extension Service, with the cooperation and assistance of electric power suppliers, will continue to sponsor organized educational activities in farm and home electrification among 4-H Club members and leaders. It will continue and develop further a flexible program. The program will center around a 4-H Club Farm and Home Electric project which will be in two phases designated as Unit I and Unit II. This project gives Club members an opportunity to learn more about electricity and its uses. It also teaches them how to demonstrate electrical ideas and how to plan practical applications of electricity.

The enrollment in the 4-H electric project has increased rapidly since the present awards program has been available. In 1950, there was a total of 1,026 4-H members in 40 counties. In 1952, 69 counties reported an enrollment of about 4,000 Club members. In 1953, an enrollment in the project of about 7,000 boys and girls was reported in 90 counties. Sixty-four of these counties qualified

to send delegates to the 4-H Electric Congress in Richmond in September 1953.

The 4-H Club Farm and Home Electric program will follow this general plan for the Club year 1953-54.

The county Extension agents will be responsible for initiating, organizing, and conducting the program in the counties. Extension rural electrification specialists, the State 4-H Club department, and personnel of the electric power suppliers will assist county Extension agents in planning the program and in training leaders.

1. **At the county level:**

a. Each county conducting this program should schedule training meetings for adult and junior leaders before giving any project instruction to members. County Extension agents will be responsible for calling and conducting these meetings. Extension rural electrification specialists and local power supplier representatives will cooperate with the agents in providing the training which should include:

(1) Explanation of the 4-H Club Farm and Home Electric Project
(2) The know-how for required work
(3) Understanding the awards program

The Extension agents or the trained leaders will give training to 4-H Club members enrolled in the project.

b. Summer camps: Each county should consider including some of the project training in the program of summer 4-H Camps. Such activities as building miniature electric motors, making study lamps, building electric brooders, and learning to make simple electrical repairs are appropriate for 4-H Club camp programs. Arrangements must be made well in advance of camp program planning.

c. Junior project leaders: Each county will encourage Club members who have completed Unit II of the project, or who have had similar training, to serve as junior project leaders.

2. **Awards:**

Club members enrolled in the Farm and Home Electric Project will have an opportunity to compete for valuable awards. A minimum of 12 boys and/or 12 girls must complete the project in order for the County to be eligible to send a boy and/or a girl delegate to the State 4-H Farm and Home Electric Congress.

a. County awards:

The following six awards will be available to girls and boys in each county:

(1) One boy and one girl will receive a two-day all expense trip to the State 4-H Farm and Home Electric Congress to be held at the Jefferson Hotel, Richmond, Virginia on September 2 and 3, 1954. (By Co-sponsoring Electric Power Suppliers.)
(2) Four other Club members will receive gold medals of honor. (By Westinghouse Educational Foundation.)

b. District awards:

The girl and boy with the best "4-H Farm and Home Electric Project" entry from each Extension district will receive a 17-jewel gold watch. (By Co-sponsoring Electric Power Suppliers.)

c. State awards:

(1) The Club member who submits the most outstanding entry in the 4-H Club Farm and Home Electric Project will receive an all-expense trip to the National 4-H Club Congress to be held in Chicago, Illinois, November 28-December 2, 1954. (By Westinghouse Educational Foundation.)

(2) The county completing the most outstanding 4-H Farm and Home Electric program during 1953 will receive a handsome bronze achievement plaque. (By Westinghouse Educational Foundation)

(3) The county exhibits at the 1954 State 4-H Farm and Home Electric Congress will be judged by the Danish system. A cash award in the amount of $150 will be pro-rated equally among the exhibitors in the blue awards group. We will encourage each county delegation to prepare and display an exhibit at the Electric Congress featuring the activities of individual 4-H members and local clubs in this project. (By Co-sponsoring Electric Power Suppliers).

Vocational Agriculture and Vocational Home Economics

The program of this committee is essentially an educational one. To be most effective it must remain reasonably constant. The chief variation from year to year will be in the ways and means of attaining the objectives of the program. The objectives are:

1. To provide the maximum of in-service training of teachers of vocational agriculture and vocational home economics in those areas or units of farm and home electrification in which instruction is most needed by members of their organized classes.
2. To assist teachers to utilize the in-service instruction in following up the class members on the farm and in the home.
3. To investigate the possibility of further improving the pre-service training programs of prospective teachers of vocational agriculture and vocational home economics in the teachers' colleges.

Ways and Means of Attaining Objectives

The series of workshops planned and conducted for teachers of vocational agriculture and vocational home economics in the area served by the Appalachian Electric Power Company have demonstrated clearly their practical value. Therefore, we will follow these plans in expanding this type of educational program:

1. The in-service training program of workshops for teachers, so successful in the past two years, will be continued and extended as rapidly as available time of staff members, funds, and local demands will permit.
2. The existing planning committees for vocational agriculture and for vocational home economics will continue. These committees will have the authority to plan and execute at least two series of teachers' workshops during the coming year, one for each of the two teacher groups.
3. In order to clarify and define the training program, we will emphasize the following units in whatever sequence the current needs and interest seem to justify:
   a. Planning the Farmstead Water System
   b. Planning the Farmstead Lighting System
   c. Operation, Care, and Maintenance of Electric Motors
   d. Selection, Construction, Operation, and Maintenance of Simple Electric Labor Saving Devices and Equipment
   e. Planning and Establishing Good Lighting for Work Centers in the Home
   f. Selection, Operation, Care, and Maintenance of Electrical Equipment in the Home
   g. Planning for the Use of Water under Pressure in the Home
4. The vocational agriculture and vocational home economics committee and the two planning committees will assist teachers in every possible way to promote good instruction in the recognized units. The committee will encourage the teachers to follow up such instruction so that it becomes common practice on the farms and in the homes of members of vocational classes. The committee suggests the following means of assisting teachers:
   a. Provide up-to-date and appropriate teaching materials to supplement those supplied in the workshops.
   b. Urge supervisors and teacher trainers to encourage the wider use of the specially prepared publications of the Southern Association of Agricultural Engineers and Vocational Agriculture.
   c. Encourage a wider use of the available farm electrification awards as incentives to F.F.A. members in applying principles of farm and home electrification in practical ways.
   d. Cooperate fully with the publicity committee in emphasizing the seasonal program of special activities set up on a monthly basis throughout the year.
5. The Council recommends further that the committee study the pre-service training programs of the teachers' colleges and encourage teacher trainers to strengthen, insofar as possible, undergraduate courses which involve rural electrification problems.

We completed or partially completed the following activities during the year:

1. Twelve training conferences of teachers of vocational agriculture. These conferences included four in Southwest Virginia and eight in the remainder of the state, reaching all the white and negro teachers. These were two-day conferences. A total of approximately 300 teachers attended them.
2. Much follow-up work to ensure the practical application of the principles and practices set up in the teaching conferences.
3. A one-day training conference for teachers of home economics in Roanoke in April 1953. "Planning and Establishing Good Lighting for Work Centers in the Home" was the unit presented. About 35 teachers attended. They represented three supervisory areas.
4. F. F. A. Foundation awards. The Vocational Agriculture Service of the State Department of Education continued its program of F.F.A. Foundation awards in the state farm electrification contest. A state prize of $100 was awarded to the boy having the best electrification program on his farm. Medals were awarded each applicant from the local chapters.

Visual Aids

The Council recognizes the value of visual aids in its educational programs. Accordingly, the Council will strive to enlarge the supply of appropriate visual aid materials for use in Virginia.

The Council will preview and evaluate films that have potential value in the educational program. It will request the producers of desirable movies to donate prints for distribution in Virginia. If these films cannot be secured free of charge, the visual aids committee will recommend to the executive committee movies that should be purchased.

Slides are a valuable aid in teaching. We need slides on many uses of electricity in the home and on the farm. In addition, we need many sets of slides which show how to do certain jobs or units. In developing slide sets, we will give emphasis to procuring 35 mm colored slides. Where appropriate slides are not available, the Council will endeavor to produce them. The slide library will be in the office of the Council secretary. A photograph file will also be kept in the secretary's office. We will encourage the contributing members of the Council to establish and maintain a photograph file of their own and to supply prints to the Council office. These pictures should be 3 x 4 inches or larger.

The Council will foster greater use of visual aids among its members. This educational method increases the effectiveness of lectures and demonstrations. Maximum use of movies, slides, film strips, and sound slide films depends upon the availability of projection equipment. We encourage Council members to buy equipment to meet their needs.

The Council will recommend to interested organizations additional movies that should be made. Members of the Council will cooperate with producers of new movies by serving as farm electrification technical advisers. They will also assist the producer representatives in selecting suitable scenes and locations.

Representatives of the Council will consult dealers and distributors in an effort to promote exhibits of farm and home electrical equipment at community, county, and state fairs. Such exhibits give farm families an opportunity to see and compare the various makes of electrical equipment and to secure information on new developments.

Distribution of Movies

The Council office will not distribute movies. Films will be distributed by the labraries of the Agricultural Extension Service and the Department of Education. Movies available in the Extension Service film library may be obtained by any Council member but preferably through local county Extension agents. Those stocked in the Department of Education film libraries may be requested through vocational agriculture and home economics teachers. Suitable films that are available from many sources are listed in the Council publication "16 mm Movies pertaining to Rural Electrification" and in the "NEMA Movie Guide."

The following program will be undertaken during the year:

1. To aid in selecting movies for various phases of the educational program, the Council recommends two publications. These are: "16 mm Movies Pertaining To Rural Electrification" and the "NEMA Movie Guide." Copies of both of these publications have been distributed to the membership.

2. Council members will be advised on sets of slides that are available for distribution in Virginia. In addition, the Council will make an effort to prepare a list of recommended slide sets obtainable on a rental or a purchase basis.

3. The member electric power suppliers will report to the Council office the visual aids materials they have secured for use in their territories.

4. The Council will give assistance to the Agricultural Extension Service and to the State Department of Education toward increasing the number of farm electrification movies in their film libraries. Appropriate movies are available on water systems, haydrying, supplemental irrigation, and on certain wiring techniques. The Council will investigate the possibility of obtaining movies on the following subjects:

a. The value of electricity in the home and on the farm
b. Safe practices in the use of electricity
c. Home lighting
d. Farm lighting
e. Power applications on the farm
f. Selection of home food freezers

5. A set of slides on infrared poultry brooding was developed in 1951. There are also slide sets on corn drying and on the State 4-H Club Farm and Home Electric Congress. Slides showing many applications of electricity in the home and on the farm can be borrowed from the Secretary's office. In addition, partial slide sets are available on the following subjects:

a. Home wiring
b. Home lighting
c. Homemade poultry brooders
d. Hay-drying
e. Water systems

6. We need many sets of slides for showing how to do certain jobs or units. A set of slides on water systems will be completed during the year. These slides will emphasize the selection and installation of electric water systems. We hope to prepare a set of slides on electric hotbeds. As needs develop, we will make plans for preparing other sets of slides for use in teaching.

7. The Council office will assemble and distribute visual aids materials, such as sound slide films, slides, and charts which are not readily obtainable through other sources. A set of charts on "Making Simple Electrical Repairs" is now available.

The Council will recommend the visual aids needed to interested organizations and will render farm electrification technical assistance to the producers. Virginia scenes and conditions should be featured in the materials that are developed.

Publicity

The Council will publicize uses of electricity through the press, radio, television, exhibits, advertising and window displays.

We will list in an annual calendar of publicity the electrical applications to receive attention each month. We urge the entire membership to adhere to this schedule in their publicity efforts. Only through the combined efforts of all members is an effective publicity program possible.

Publicity will follow this general plan:

Newspaper Articles

The Council office will prepare articles on the uses of electricity listed in the calendar of publicity and release them to the newspapers in the State. We request all representatives of the membership to cooperate in this activity by supplying "success stories" to local newspapers. Representatives of the membership should prepare similar articles and print them in publications issued by their respective organizations.

News releases will fall into two categories: (1) authoritative and (2) farmer-experience. In the authoritative classification, some recognized authority on the subject will be quoted. The Council believes that more effective results can be obtained through releases dealing with the experiences of farm people.

The Council urges representatives of educational agencies and power suppliers to cooperate with local newspaper editors in developing publicity material. One or more "Success stories" should appear in all daily and weekly newspapers on each application of electricity in the publicity schedule. The Council requests that copies of these newspaper stories be forwarded to the Council office.

Farm Magazine Articles

Rural people read farm magazines extensively. Accordingly, we will prepare several articles each year for publication in certain farm magazines.

Radio Releases

We will use some of the material in the articles mentioned above in radio releases. The Council encourages representatives of the membership participating in radio programs to feature electrical applications in their presentations. Farm electrification will be the subject of twelve radio programs each year to be presented over station WDBJ, Roanoke, through the facilities of the V.P.I. studio. In addition, short talks on these subjects will be provided by the Agricultural Extension Service of V. P. I. in a tape recording service to other radio stations in the State.

Television

Television is destined to play an important role in farm electrification educational activities. Representatives of the membership should accept every opportunity to appear on television programs. Such programs should feature the applications of electricity in the calendar of publicity. The Council will encourage the production of television programs on film in order to expand the benefits of this educational method.

Advertising and Window Displays

The Council will encourage power suppliers, manufacturers, distributors, and dealers to follow the calendar of publicity in planning advertising programs and window displays.

Special Emphasis Programs

The Council will select each year for emphasis in the publicity program uses of electricity profitable for farm people. Under this plan, we will designate a period of approximately one month for a concerted effort to acquaint farm families with a specific use of electricity. We will prepare newspaper articles for release to daily and weekly papers during the period. Farm magazine articles will appear at about the same time. We will obtain "Success stories" and release them to local daily and weekly newspapers. We will distribute material for the use of radio stations. We will request electric service organizations and dealers to emphasize the equipment through advertising and displays. We will hold meetings to discuss and demonstrate the equipment concerned.

Distribution of Material to Members

Upon request, Council members can receive copies of newspaper and radio material released by the agricultural editor at V. P. I. Members of the Council will be authorized to use these releases in publications being printed and distributed by them, provided that where possible, the Council is given credit as the source of the material. In no case, however, will any article be published prior to the indicated "release date."

All Council members and their representatives are urged to include the calendar of publicity in their program for the year. Council members who print and distribute a publication of their own are requested to follow the publicity schedule and feature the subjects listed therein. The Council recommends that representatives of the membership assist in developing news stories for local newspapers. The electrical applications in the publicity schedule should also be included in radio presentations. The Council will prepare plans for special emphasis programs and forward them to the membership well in advance of the emphasis period. If these special emphasis programs are to be effective, all interested agencies and organizations must participate in them. The publicity program for the year appears below:

Month	Subject	Press	Radio & TV	Advertising and Window Displays	Special Emphasis
November 1953	Use of Infrared Lamps	X	X	X	
	Stock Water Heaters	X	X	X	
December 1953	Small Portable Motors	X	X	X	
	Small Appliances	X	X	X	
January 1954	Infrared Poultry Brooders	X	X	X	
February 1954	Hay-Drying	X	X	X	
March 1954	Home Food Freezers	X	X	X	
April 1954	Grain Drying	X	X	X	
	Window & Attic Fans and Room Air Conditioners	X	X	X	
May 1954	Water Systems	X	X	X	May 1-31
	Water Heaters	X	X	X	
June 1954	Washing Machines	X	X	X	
	Elevators and Conveyors	X	X	X	
July 1954	Corn Drying	X	X	X	
	Electric Safety	X	X	X	
August 1954	Modernizing Farm and Home Wiring Systems	X	X	X	
	Home Lighting	X	X	X	
September 1954	Yard Lighting	X	X	X	
	Combination Electric Ranges	X	X	X	
October 1954	Home Food Freezers	X	X	X	
	Feed Grinders	X	X	X	

Meetings and Conferences

The Council will cooperate with its member agencies and organizations in planning and conducting meetings and conferences to coordinate and expedite the program. The following conferences and meetings are scheduled for the year ending October 31, 1954:

1. The annual Virginia Rural Electrification Conference will be held November 19 and 20, 1953. This conference will be sponsored jointly by the V.P.I. Agricultural Engineering Department and the Virginia Farm Electrification Council.

2. The annual meeting of the Virginia Farm Electrification Council will be held November 18, 1953.

3. The State 4-H Farm and Home Electric Congress will be held in Richmond, Virginia, September 2 and 3, 1954. This Congress will be attended by county winners in the 4-H Club Farm and Home Electric Project.

4. A group meeting of all standing committees will be held during the spring of 1954.

Officers and Standing Committees

COUNCIL OFFICERS, 1952-53

Chairman—E. T. Swink, Associate Extension Agricultural Engineer, V.P.I., Blacksburg

Vice-Chairman—H. W. Sanders, Head, Vocational Education Department, V.P.I., Blacksburg

Secretary (acting), J. L. Calhoun, Agricultural Engineering Department, V.P.I., Blacksburg

Treasurer—J. F. Boone, Treasurer of V.P.I., Blacksburg

EXECUTIVE COMMITTEE, 1952-53

*Chairman—E. T. Swink, Associate Extension Agricultural Engineer, V.P.I., Blacksburg

Vice-Chairman—H. W. Sanders, Head, Vocational Education Department, V.P.I., Blacksburg

*Secretary (acting), J. L. Calhoun, Agricultural Engineering Department, V.P.I., Blacksburg

Vocational Education Representative—W. C. Dudley, Area Supervisor, Vocational Agriculture, Appomattox

Electric Cooperative Representative—J. R. Allin, Manager, Northern Neck Electric Cooperative, Warsaw (member)

W. H. Brown, Manager, Virginia Electric Cooperative, Bowling Green (alternate)

Power Company Representative—L. L. Koontz, System Rural and Residential Sales Supervisor, Appalachian Electric Power Company, Roanoke (member)

C. P. Spellman, Director, Rural Electrification, Virginia Electric and Power Company, Richmond (alternate)

*Non-voting members.

STANDING COMMITTEES, 1953-54

Research Committee

J. M. Stanley, Chairman, Associate Agricultural Engineer, U.S.D.A., V.P.I., Blacksburg

Maude E. Wallace, Assistant Director of Extension in Charge of Home Demonstration Work, V.P.I., Blacksburg

Martha G. Creighton, Professor of Home Economics Education, V.P.I., Blacksburg

R. E. Bass, State Supervisor, Vocational Agriculture, State Department of Education, Richmond

J. E. Stone, Chief, Program Operations, Farmers Home Administration, Richmond

M. A. Hubbard, Executive Secretary, Virginia Farm Bureau Federation, Richmond

E. J. Shiflet, Deputy Master, Virginia State Grange, Richmond

E. T. Blackwell, Agricultural Engineer, Mecklenburg Electric Cooperative, Chase City

G. O. Mullan, Farm Supervisor, The Potomac Edison Company, Hagerstown, Maryland

D. C. Stables, Agricultural Engineer, Virginia Electric and Power Company, South Boston

J. L. Calhoun, Secretary (acting), Virginia Farm Electrification Council, V.P.I., Blacksburg

Field Studies Committee

T. J. Horne, Chairman, Head, Vocational Agriculture Department, V.P.I., Blacksburg

E. T. Swink, Associate Extension Agricultural Engineer, V.P.I., Blacksburg

Helen Alverson, Extension Home Management Specialist, V.P.I., Blacksburg

H. D. Bowman, Manager, Craig-Botetourt Electric Cooperative, New Castle

A. W. Cook, System Agricultural Engineer, Appalachian Electric Power Company, Roanoke

J. L. Calhoun, Secretary (acting), Virginia Farm Electrification Council, V.P.I., Blacksburg

4-H Club Committee

Hallie L. Hughes, Chairman, Associate State 4-H Club Agent, V.P.I., Blacksburg

Jack M. Tyree, Vice-Chairman, Associate State 4-H Club Agent, V.P.I., Blacksburg

Ruth Jamison, Extension House Furnishings Specialist, V.P.I., Blacksburg

E. T. Swink, Associate Extension Agricultural Engineer, V.P.I., Blacksburg

R. W. Gouldin, Assistant Manager, Northern Neck Electric Cooperative, Warsaw

L. L. Koontz, System Rural and Residential Sales Supervisor, Appalachian Electric Power Company, Roanoke

Revell Melson, Educational Adviser, Accomack-Northampton Electric Cooperative, Parksley

Colin I. Vince, Rural Representative, Virginia Electric and Power Company, Richmond

J. L. Calhoun, Secretary (acting), Virginia Farm Electrification Council, V.P.I., Blacksburg

Vocational Agriculture and Vocational Home Economics Committee

H. W. Sanders, Chairman, Head, Vocational Education Department, V.P.I., Blacksburg

Mrs. Rowena B. Hopper, Vice-Chairman, Field Supervisor, Home Economics Education, Rt. 14, Box 229, Richmond

Lois Oliver, Field Supervisor, Home Economics Education, V.P.I., Blacksburg

W. C. Dudley, Area Supervisor, Vocational Agriculture, Appomattox

T. J. Wakeman, Teacher Trainer in Farm Shop, V.P.I., Blacksburg

W. R. Black, Senior Agricultural Engineer, Virginia Electric and Power Company, Richmond

J. B. Leonard, Agricultural Engineer, Virginia Electric Cooperative, Bowling Green

J. L. Calhoun, Secretary (acting), Virginia Farm Electrification Council, V.P.I., Blacksburg

Home Economics Committee

Maude E. Wallace, Chairman, Assistant Director of Extension in Charge of Home Demonstration Work, V.P.I., Blacksburg

Mrs. Rosa H. Loving, Vice-Chairman, Supervisor, Home Economics Education, State Department of Education, Richmond

Phyllis Owen, Home Service Director, Virginia Electric and Power Company, Richmond

J. E. Smith, Manager, Mecklenburg Electric Cooperative, Chase City

J. L. Calhoun, Secretary (acting), Virginia Farm Electrification Council, V.P.I., Blacksburg

Visual Aids Committee

J. L. Calhoun, Chairman, Secretary (acting), Virginia Farm Electrification Council, V.P.I., Blacksburg

W. P. Bradley, Associate Extension Editor, V.P.I., Blacksburg

C. S. McLearen, Associate Professor of Agricultural Education, V.P.I., Blacksburg

Woodrow McIntosh, Farm Service Engineer, Old Dominion Power Company, Norton

H. G. Ramsey, Agricultural Engineer, Northern Piedmont Electric Cooperative, Culpeper

Publicity Committee

L. M. Miller, Chairman, Supervisor Rural and Residential Sales, Appalachian Electric Power Company, Lynchburg

R. D. Michael, Editor, Agricultural Extension Service and Experiment Station, V.P.I., Blacksburg

A. Pick Butler, Director of Information, Virginia Farm Bureau Federation, Richmond

P. D. Sanders, Editor, The Southern Planter, Richmond (representing State Grange)

J. E. Woodward, Manager, Community Electric Cooperative, Windsor

J. L. Calhoun, Secretary (acting), Virginia Farm Electrification Council, V.P.I., Blacksburg

FIRST ANNUAL

SHORT COURSE FOR DAIRYMEN

December 2-3, 1953
First Christian Church
1600 Colonial Avenue
Norfolk, Virginia

SPONSORED BY

NORFOLK CHAMBER OF COMMERCE

NINTH ANNUAL STATE

4-H TRACTOR MAINTENANCE SCHOOL

VIRGINIA POLYTECHNIC INSTITUTE
Blacksburg, Virginia
December 7-8-9, 1953

Registration and all classes will be held in the Agricultural Engineering Building.

Meals will be available in the College Dining Hall. Sleeping quarters will be in the War Memorial Building.

Program*

Monday, December 7

10:00 - 10:30 A.M.	Registration, Welcome, Instructions and Announcements
10:30 - 11:00	Discussion - The 4-H Tractor Maintenance Program. Howard F. Todd, Manager, Farm Department, American Oil Company, Baltimore, Maryland
11:00 - 11:45	Discussion - Farm Safety
11:45 - 12:00	Discussion
12:00	Lunch
1:00 - 1:45	Discussion - The Use and Care of Rubber Tires on Farm Equipment R. A. Jones, American Oil Company, Roanoke, Virginia
1:45 - 2:45	Discussion - What Makes A Tractor Engine Run? B. L. Parsons, V.P.I., Agricultural Engineering Dept.
2:45 - 3:00	Rest Period
3:00 - 3:45	Discussion - Transmissions, Final Drive and Power Take-off B. C. Layne, Service Dept., International Harvester Company, Richmond, Virginia
3:45 - 4:00	Discussion - The 4-H Tractor Operator's Contest J. A. Waller, Jr., V.P.I., Extension Service
4:00 - 4:45	The Importance of Housing Farm Equipment G. D. Kite, V.P.I. Extension Service
5:30	Supper
7:30 - 9:00	Motion Pictures - Auditorium (3rd floor) Agricultural Engineering Building

Tuesday, December 8*

7:15	Breakfast
8:30 - 9:15	Discussion - Carbureters and Air Cleaners on Farm Tractors
9:15- 10:00	Shop Work - Hugh McCulloch, Universal Tractor - Equipment Corporation, Richmond, Virginia
10:00 - 10:15	Rest Period
10:15 - 11:00	Discussion - Farm Tractor Ignition Systems
11:00 - 11:45	Shop Work - Representative of Allis-Chalmers Manufacturing Company, Charlotte, N. C.
12:00	Lunch
1:00 - 1:45	Discussion - The Tractor Cooling System
1:45 - 2:30	Shop Work - C. B. Hogan, Service Manager, The Oliver Corporation, Richmond, Virginia
2:30 - 2:45	Rest Period
2:45 - 3:30	Discussion - Tractor Lubricants and Lubrication
3:30 - 4:15	Shop Work - C. C. Sobeck, Lubrication Engineer, American Oil Company, Roanoke, Virginia
4:15 - 4:30	Announcements
5:15	Supper

Wednesday, December 9

7:15	Breakfast
8:30 - 9:00	Discussion - The Importance of Leadership in Conducting Local 4-H Tractor Maintenance Schools W. E. Skelton, State 4-H Club Agent
9:00 - 9:45	Discussion - Organizing and Conducting Community or County Tractor Maintenance Schools. W. A. Turner, V.P.I. 4-H Club Department
9:45 - 10:00	Rest Period
10:00 - 10:45	Discussion - What 4-H Tractor Maintenance Has Meant To Me . Arthur Barnhart, Franklin County 1953 State Winner in Tractor Maintenance.
10:45 - 11:30	Review of Tractor Maintenance Kits

* On December 8th the 2nd and 3rd year men who are here will form a separate group for more advanced work. Members of the V.P.I. Department of Agricultural Engineering will instruct this group.

Schedule of Shop Periods
Ninth Annual State
4-H Tractor Maintenance School
Blacksburg, Virginia
December 8, 1953

Time	Groups 1.	2.	3.	4.
McCulloch - Carburetors and Air Cleaners				
9:15-9:35	Ford	A-C	Oliver	Farmall
9:35-9:55	A-C	Oliver	Farmall	Ford
Sowers - Ignition Systems				
11:00-11:20	A-C	Oliver	Farmall	Ford
11:20-11:40	Oliver	Farmall	Ford	A-C
Hogan - Colling Systems				
1:45-2:05	Oliver	Farmall	Ford	A-C
2:05-2:25	Farmall	Ford	A-C	Oliver
Sobeck - Lubrication Systems				
3:30-3:50	Farmall	Ford	A-C	Oliver
3:50-4:10	Ford	A-C	Oliver	Farmall

Note: There are four groups and about eight in each group. Each group has a leader. He will keep the members of his group together and see that they shift to different tractors as indicated. Pay close attention and get the maximum good from the clinic.

In Shop with Tractors

A-C - Sowers
Ford - McCulloch
Farmall - Layne
Oliver - Hogan

1954

AREA FRUIT GROWERS MEETINGS

Date	Town	Meeting Place	Local Contact Man
February 23	Wise	Wise Court House	J. L. McCormick, Jr. County Agent Wise, Virginia
February 26	Winchester	Livestock Pavilion	J. T. Wolfe County Agent Winchester, Virginia
March 2	Mt. Jackson	Mt. Jackson Fire Hall	J. C. Coiner County Agent Woodstock, Virginia
March 3	Washington	Court House	W. H. Lyne County Agent Washington, Virginia
March 5	Orchard Gap	Willow Hill Church	G. C. Price County Agent Hillsville, Virginia
March 9	Lancaster	Court House	H. C. McSwain County Agent Lancaster, Virginia
March 10	Burkeville	Agricultural Building	P. B. Cassell County Agent Blackstone, Virginia
March 11	Boones Mill	Lions Club Building	J. B. Flora County Agent Rocky Mount, Virginia
March 12	Stuart	Court House	F. C. Clinger County Agent Stuart, Virginia

Area Fruit School Program

Stuart, Virginia
(Courthouse)

Friday, March 12, 1954

A.M.
10:00 Are You Set Up to Irrigate? ..... Jack A. Waller
Agri. Engineering Dept. V.P.I.

10:30 "Your Orchard Operations in Light of Present Conditions"

PANEL DISCUSSION - Leader, Dr. W. P. Judkins, Head of Hort. Dept., V.P.I.

Fruit Prospects (A. H. Teske, V.P.I.)..... 15 min.

New Plantings and Care of Young Trees (F.R. Dreiling,V.P.I.)..... 20 min.

Dwarf Apple Tree Situation (Dr. W. P. Judkins) ..... 20 min.

Feeding Program and Handling the Soil (A. H. Teske) ..... 20 min.

Pruning and Spraying in 1954 (F. R. Dreiling) ..... 15 min.

12:00 Lunch

P.M.
1:15 Latest Developments in Mouse Control .....Dr. Frank Horsfall
Horticulturist, V.P.I.

1:45 "Controlling Orchard Insects and Diseases in 1954"

PANEL DISCUSSION - Leader, A. H. Teske, Horticulturist, V.P.I.

Apple Program

When to Spray for Insects (Dr.M.L.Bobb, Pied. Research Lab)..... 20 min.

When to Spray for Diseases
(Dr. S.A. Wingard, Head, Plant Pathology Dept.)..... 20 min.

The Apple Spray Schedule (A. H. Teske) ..... 20 min.

Peach Program

Catfacing Insects and Curculio (Dr. M. L. Bobb)..... 15 min.

Leaf Curl and Brown Rot (Dr. S. A. Wingard),..... 15 min.

The Peach Spray Schedule (A. H. Teske)..... 15 min.

Area Fruit School Program

Boones Mill, Virginia
(Lions Club Building)

Thursday, March 11, 1954

A.M.

10:00 Are You Set Up to Irrigate? ..... Jack A. Waller
Agri. Engineering Dept. V.P.I.

10:30 "Your Orchard Operations in Light of Present Information"

PANEL DISCUSSION - Leader, Dr. W. P. Judkins, Head of Hort. Dept. V.P.I.

Fruit Situation and New Plantings (F. R. Dreiling, V.P.I.)..... 20 min.

Feeding Program and Handling the Soil (A.H. Teske, V.P.I.)..... 20 min.

Dwarf Apple Tree Situation (Dr. W. P. Judkins)..... 20 min.

Developments in Mouse Control (Dr. Frank Horsfall, V.P.I.)..... 20 min.

Questions ..... 10 min.

12:00 Lunch

P.M.

1:15 Movie, "Apple Picking"

1:45 Chemical Thinning of Apples and Peaches ..... Dr. Frank Horsfall
Horticulturist, V.P.I.

2:15 "Your 1954 Apple and Peach Spray Programs"

PANEL DISCUSSION

Fruit Insects (Dr. M. L. Bobb, Piedmont Research Lab.)..... 20 min.

Fruit Diseases (F. R. Dreiling)..... 20 min.

A Control Schedule (A. H. Teske) ..... 20 min.

Questions and Discussion ..... 15 min.

PROGRAM

Irrigation Conference

March 18-19, 1954

Sponsored by Department
of Agricultural Engineering
V.P.I. Agricultural Extension
Service

Agricultural Auditorium
Virginia Polytechnic Institute
Blacksburg, Va.

CONTESTANTS AND COACHES

Delaware - Marvin Davis, Milford, Del. (Farmall Super C)
Coach - Maurice Field, County Club Agent, Newark, Del.

Florida - Jacky Peterski, Samsula, Fla. (Farmall C)
Coach - James N. Luttrell, Asst. County Agent, Deland, Fla.

Maryland - Charles Lethbridge, Ashton, Md. (Oliver 77)
Coach - Guy W. Gienger, Assoc. Agr. Eng., College Park, Md.

North Carolina - Mack Shoaf, Rt. 5, Winston Salem, N. C. (Farmall Super A)
Coach - W. W. Johnson, Asst. County Agent, Lexington, N. C.

New Jersey - Fred Lantinga, Port Murray, N. J. (Farmall H)
Coach - William G. Harden, Ext. Agt. Agr. Engineer, New Brunswick

New York - Laurence Bixby (Massey Harris 33)
Coach - Carlton M. Edwards, 4-H Specialist in Agr. Eng., Ithaca, N. Y.

Pennsylvania - Myron Rudy, Rt. 1, State College, Pa. (Farmall Super H)
Coach - E. A. Mintmier, Asst. State Club Leader, State College, Pa.

Rhode Island - George Turco, 77 East Ave., Westerly, R. I. (Ford)
Coach - L. F. Kinney, State Leader of 4-H Clubs, Kingston, R. I.

South Carolina - Lanny Moore, Bradly, S. C. (Allis Chalmer WD-45)
Coach - P. M. Garvin, County Agent, Greenwood, S. C.

Virginia - John Etzler, Rt. 2, Troutville, Va. (Ferguson)
Coach - E. S. Allen, Asst. County Agent, Fincastle, Va.

West Virginia - Charles Massey (Farmall C)
Coach - Waldo E. Bell, Ext. Agr. Eng., Morgantown, W. Va.

AWARDS

Cash - Donor - Virginia Farm Equipment Association

First	$25.00
Second	20.00
Third	15.00
Fourth-Twelfth	$10.00 each

Trophy - Donor - American Oil Company

Trophy for winning contest

Ribbons - Donor - Atlantic Rural Exposition

Eight Places

States	DELAWARE	FLORIDA	MARYLAND		NEW JERSEY	NEW YORK	NORTH CAROLINA	PENNSYLVANIA	RHODE ISLAND	SOUTH CAROLINA	VIRGINIA	WEST VIRGINIA	ILLEGIBLE	ILLEGIBLE
Placing														
Examination														
Safety														
Operation														
Belting														
Total														

Note - Point off system used in scoring - low score wins.

ATLANTIC STATES 4-H TRACTOR OPERATORS CONTEST
10:00 A.M., TUESDAY, SEPTEMBER 28, 1954
Atlantic Rural Exposition
Richmond, Virginia

Conducted by the Agricultural Extension Service, and Co-Sponsored by the American Oil Company, the Virginia Farm Equipment Association, Machinery Dealers, and the Atlantic Rural Exposition.

SCHEDULE

10:00 A.M. Registration of Contestants

10:00 to 10:30 Written Examination and drawing for contestant's number in contest. Briefing and organization of judges.

10:30 to 11:00 Contestants get acquainted with tractors (Dealers Instruction Period)

11:00 to 12:30 Practical Examination and lunch

12:30 to 1:00 Parade of contestants on tractors - Main Gate to Special Event Area

1:00 to 2:30 "Operation of Tractor" and "Belting"

2:50 Parade of winners on tractors in front of Grandstand

6:00 Awards Banquet for contestants, coaches, judges, parents of contestants, sponsors, etc. (Hotel William Byrd)

JUDGES

Directors of Contest - J. A. Waller, Assoc. Agr. Engineer, Blacksburg, Va.
W. A. Turner, Assoc. State 4-H Club Agent, Blacksburg, Va.

Examination (Written) - W. A. Turner, Assoc. State 4-H Club Agent, Blacksburg, Va.
(Practical) - J. W. Sjogren, Prof. Agr. Eng., Blacksburg, Va.

Running Account - Howard F. Todd, American Oil Company, Baltimore, Md.
R. C. Seavers, Jr., American Oil Company, Richmond, Va.

Course Officials -

(Course 1) Operation of Tractor
Guy W. Gienger, Assoc. Agr. Eng., University of Maryland
T. C. Skenner, Ext. Agr. Eng., University of Florida
E. T. Swink, Head, Agr. Eng. Dept., V. P. I.
W. W. Johnson, Asst. County Agent, Lexington, N. C.
James N. Luttrell, Asst. County Agent, Deland, Fla.

Belting
Carlton Edwards, 4-H Club Specialist in Agr. Eng., Ithaca, N. Y.
P. M. Garvin, County Agent, Greenwood, S. C.

Safety
J. W. Sjogren, Prof. Agr. Eng., Blacksburg, Va.
L. F. Kinney, State Leader of 4-H Clubs, Kingston, R. I.

(Course 2) Operation of Tractor
J. C. Ferguson, Agr. Eng. Ext. Specialist, Raleigh, N. C.
E. S. Allen, Asst. County Agent, Fincastle, Va.
Maurice Field, County 4-H Club Agent, Newark, Del.
C. C. Sobeck, American Oil Company, Roanoke, Va.

Belting
M. C. McKenzie, Ext. Agr. Eng., Clemson, S. C.
William G. Harden, Ext. Agr. Eng., New Brunswick, N. J.

Safety
Waldo E. Bell, Ext. Agr. Eng., Morgantown, W. Va.
E. A. Mintmier, Asst. State Club Leader, State College, Pa.

Score Board - Leon M. McNair, National Committee on Boys and Girls Club Work
E. W. Carson, District Agent, Appomattox, Va.
Lucille Graves, Assoc. State 4-H Club Agent, Blacksburg, Va.

REPRINT - VIRGINIA FARM EQUIPMENT NEWS

ATLANTIC STATES 4-H CLUB TRACTOR OPERATORS CONTEST CONTINUES TO GROW.

If implement dealers think they are in a competitive business they should have seen the competition in the 4th Annual Regional 4-H Club Tractor Operators Contest held on September 28th at the State Fair.

Thirteen boys from Maine to Florida competed in a spirited contest which was won for the second year straight by a Virginia boy. This year it was John Etzler from Troutville, Virginia driving a Ferguson tractor.

This tractor maintenance and operation program for 4-H'ers is sponsored by the American Oil Company with the help of our Association on the local level. The Association was responsible for obtaining the use of equipment and the donation of $150 prize money. The time and money was well spent building better relations between our industry and the coming generation of farm machinery customers.

Many thanks to the Manufacturers and Richmond Dealers who cooperated by supplying the equipment. Equipment from each line was represented.

ALLIS CHALMERS TAKES TOP PRIZE IN MACHINERY EXHIBIT AT STATE FAIR.

The Allis-Chalmers Manufacturing Company displayed one of the most elaborate exhibits of farm equipment even staged at the Atlantic Rural Exposition and won first prize as the best machinery exhibit. Numerous cut-a-way blowers, harvesters and other equipment were used to attract attention and for demonstration under a 120 by 60 foot tent.

More important than winning first prize was A-C's feature of the VALUE IN GOOD USED EQUIPMENT. Allis Chalmers recognizes that dealers must do a better job of merchandizing used equipment and that used equipment is a better buy for some farmers. To point this up, A-C displayed a clean, serviced tractor and implement with a sign describing its value and usefulness. Our industry needs more of this. Much more.

J. I. Case, for the first time in a number of years, along with the other manufacturers, exhibited and each display was exellent.

Atlantic Rural Exposition, Inc.
Official
STATE FAIR
of Virginia

October 12, 1954

Mr. J. A. Waller, Jr.
Associate Extension Agricultural
Engineer
Virginia Polytechnic Institute
Blacksburg, Virginia

Dear Jack:

Thanks again for the usual fine job that you did in judging for our awards of merit this year. We have heard only words of praise for the choice that was made.

Sincerely,

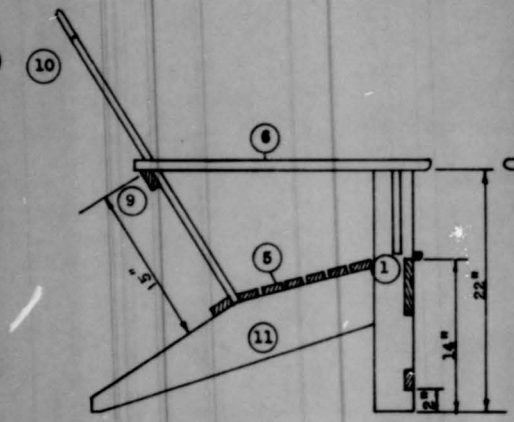
J. Linwood Rice
Public Relations Counsel

JLR/d

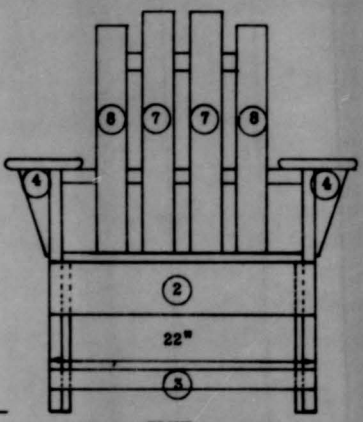
cc: Admiral Glover

COPY

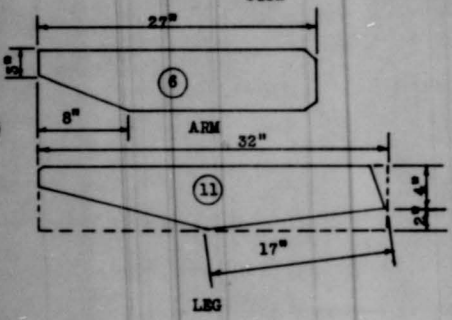
LAWN CHAIR

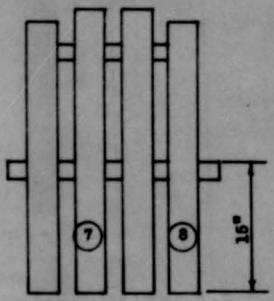


SIDE



FRONT





BACK

BILL OF MATERIALS

No.	Pieces		Exact Length
1	2	1"x4"	22" long
2	1	1"x6"	22" "
3	1	1"x2"	22" "
4	2	1"x4"	10" "
5	10	1"x2"	20½" "
6	2	1"x6"	27" "
7	2	1"x4"	32" "
8	2	1"x4"	30" "
9	1	1"x4"	24" "
10	1	1"x2"	18" "
11	2	1"x6"	32" "

½ lb. 6d finishing nails

24 - No. 8 - 1½ F.H. wood screws

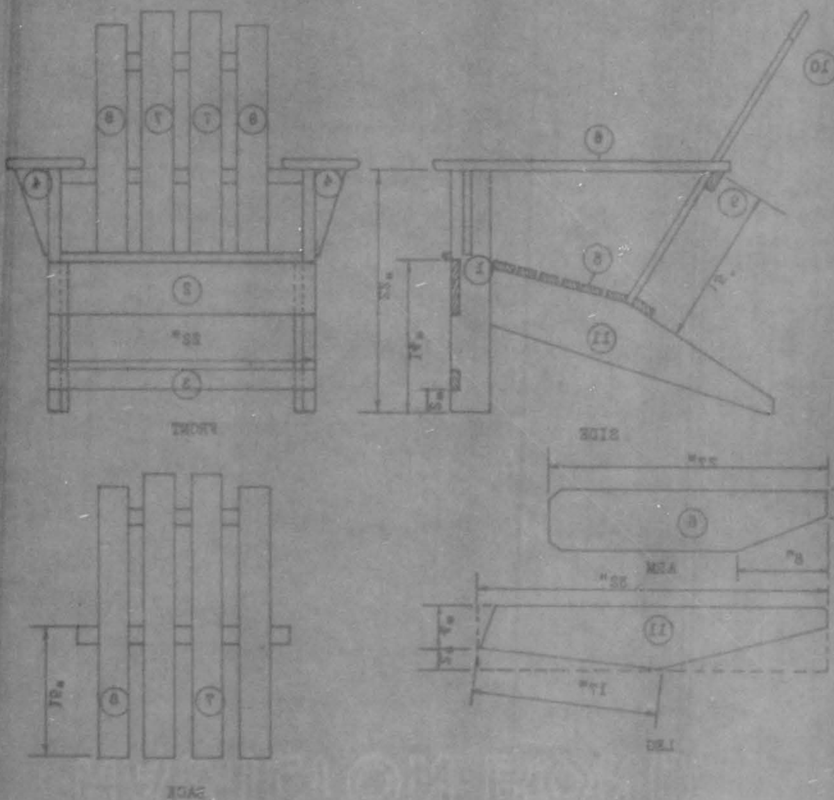
No. 20

Virginia Polytechnic Institute and the United States Department of Agriculture Cooperating: Extension Service, L. B. Dietrick, Director, Blacksburg, Virginia

October, 1954

Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914

LAWN CHAIR



BILL OF MATERIALS

No.	Pieces		Exact Length
1	2	1"x4"	22" long
2	1	1"x6"	22" "
3	1	1"x2"	22" "
4	2	1"x4"	10" "
5	10	1"x2"	20½" "
6	2	1"x6"	27" "
7	2	1"x6"	32" "
8	2	1"x4"	30" "
9	1	1"x6"	24" "
10	1	1"x2"	18" "
11	2	1"x6"	32" "

1/2 lb. 6d Finishing nails

24 - No. 8 - 1½ F.H. wood screws

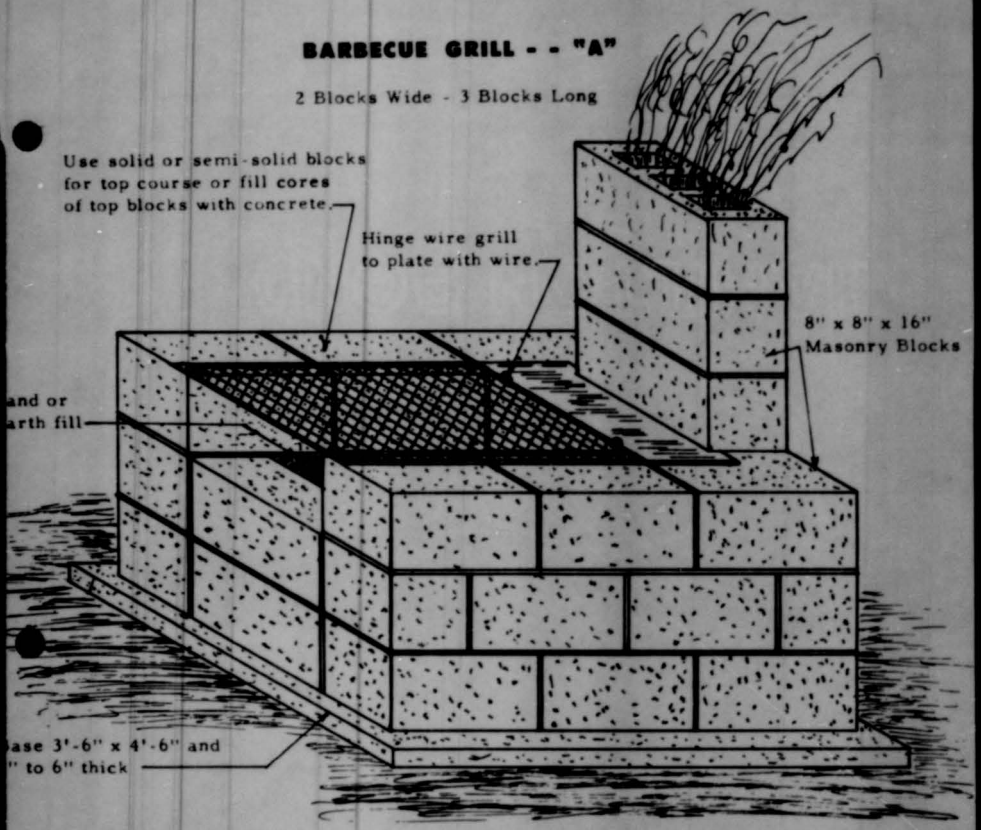
Virginia Polytechnic Institute and the United States Department of Agriculture Cooperating: Extension Service, L. R. Dietrick, Director, Blacksburg, Virginia

October, 1954

Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914

BARBECUE GRILL - - "A"

2 Blocks Wide - 3 Blocks Long



Cut through face of block to expose cores to serve as flue. One block in top course is sufficient.

Note: If Fireplace is used as incinerator or for outdoor cooking with wood, it should be lined with fire brick.

BILL OF MATERIALS

14 - Corner Blocks 8" x 8" x 16"

7 - Solid or Semi-solid blocks - 8" x 8" x 16"

4 - Corner Blocks 8" x 8" x 8"

3 - 8" x 8" x 16" - Smooth end blocks for flue

9 - Cu. Ft. of Cement for Base

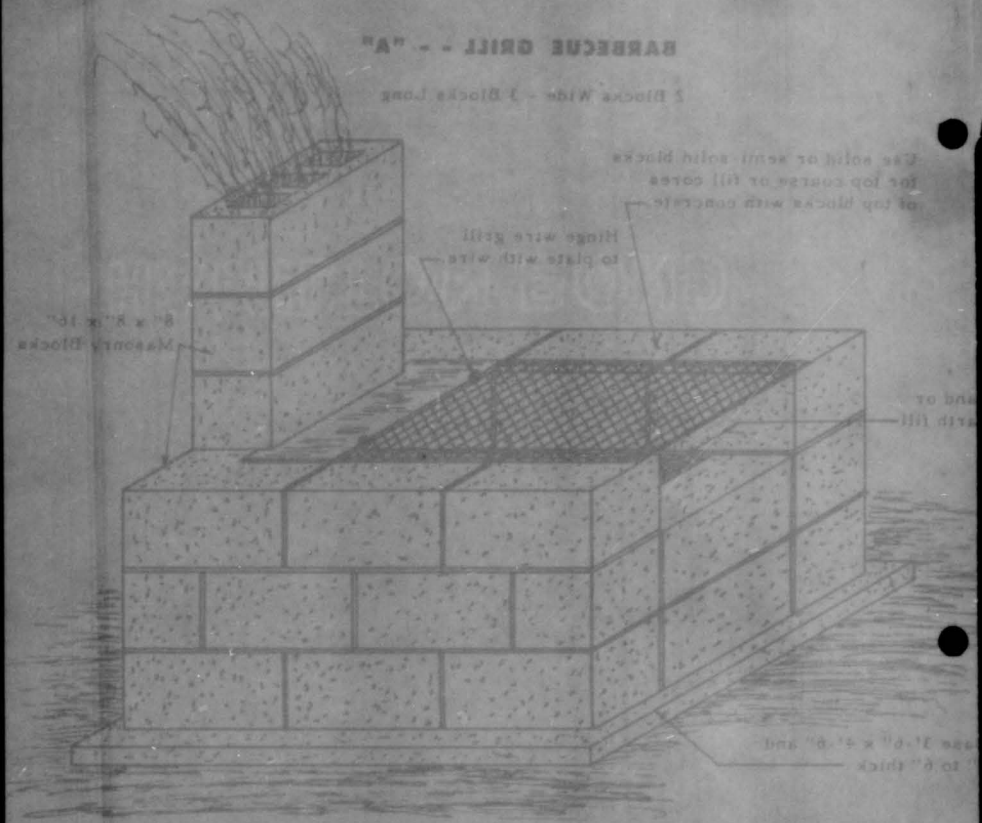
1 - Heavy Wire Grill about 22" x 30"

1 - Piece Heavy Sheet Metal about 10" x 24"

No. 19

Virginia Polytechnic Institute and the United States Department of Agriculture Cooperating: Extension Service, L. B. Dietrick, Director, Blacksburg, Virginia October, 1954

Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914



FILED

AGRICULTURAL ENGINEERING EXTENSION

PLAN OF WORK

FOR

1954

STATE OF VIRGINIA

BY

CHAS. E. SEITZ

AGRICULTURAL ENGINEER

VIRGINIA (STATE) AGRICULTURAL EXTENSION SERVICE

AGRICULTURAL ENGINEERING (NAME OF PROJECT) PLAN OF WORK

FOR

CALENDAR YEAR 1954

Major phases of project or subdivisions of project covered	Name of Worker*	Percentage of time devoted to entire project by each worker
Administration - General A. E.	Chas. E. Seitz	One-Third (1/3)
Farm & Home Equipment	J. A. Waller, Jr.	Full Time
Rural Electrification	E. T. Swink	Three-Fourths (3/4)
Rural Electrification	J. L. Calhoun	Full Time
Farm Structures	G. D. Kite	Full Time
Rural Housing	C. D. Wheary	Full Time
Farm Structures (Plan Service)	H. H. Gee	Full Time

Date Submitted: MAR 9 1954 Signed: Chas. E. Seitz
Project Leader

Date Approved: MAR 9 1954 Signed: W. H. Daughtrey
Acting State Director of Extension

Date Approved: JUN 17 1954 Signed: Ellis Ferguson
Director of Extension Work
U.S. Department of Agriculture

1077 (12-53)

VIRGINIA AGRICULTURAL EXTENSION SERVICE

PLAN OF WORK

IN

AGRICULTURAL ENGINEERING

FOR

CALENDAR YEAR 1954

Agricultural Engineering deals with problems in the conservation and development of our soils and water resources which are of primary importance in all crop and livestock production; it deals with farm machinery and operating equipment which are of much importance in reducing farm operation costs and increasing the production capacity of the individual farmer; it deals with the planning, arrangement and construction of farm buildings of all types which constitute about one-third the value of all farm property. It also deals with the extension and use of electricity and household utilities and equipment on farms which is probably of more direct influence in raising the standard of living of farm families than any other one activity of extension work.

Extension workers as a whole have had very little basic training in engineering. The major share of the engineering program must, therefore, be the responsibility of the agricultural engineering specialists. The Agricultural Engineering Specialist has the responsibility of conducting a sound educational program in cooperation with other specialists in addition to developing a practical program that can be useful in appraising these co-workers of the essential place of agricultural engineering in both general and technical education and to work out its possibilities for improving the security and well being of our rural people.

Agricultural engineering deals with so many and such varied problems connected with agriculture that it is impossible, with the limited extension personnel available, to give emphasis to more than about four major projects.

MAJOR PROJECTS:

The major emphasis this year will be placed on the following projects:

Farm and Home Equipment
Farm Electrification
Farm Structures
Rural Housing

Complete outlines of the plan of work for the specialists handling the above major projects are attached.

Administration:- The department head is employed one-third College, one-third Experiment Station and one-third Extension Service. His main extension activity during the year, in addition to administering the extension activities, will be contacts with cooperative organizations and industry in support of the various programs. He will serve on several committees.

MINOR PROJECTS:

Many requests from county and home agents and farmers are received for information and assistance on agricultural engineering projects other than the major projects listed above. These requests are often of an emergency nature, and must be taken care of as far as possible. The following minor projects will be given attention throughout the year:

Soil and Water Conservation: Mr. V. R. Hillman, agricultural engineer, State Soil Conservation Committee, will have charge of the Machinery Program for the Soil Conservation districts. He will cooperate closely with this department.

The research division of the department in Soil and Water Conservation engage in a number of extension type activities, such as meetings, schools, tours, and publicity, such as publications, news articles and radio talks. They work closely with the extension staff members.

Land Drainage: More and more requests are being made for assistance in drainage work. This is an important activity, but lack of adequate personnel will prevent major attention being given to this project. Some dozen surveys will be made for tile drainage systems, and only the most urgent requests will be taken care of.

Irrigation: Interest in irrigation has increased to such an extent that there is urgent need for a full time specialist on this project. It is hoped that funds will be available in July to allow for a full time irrigation specialists. Some 100 irrigation surveys will be made, even with the part time of a specialist on this project.

Farm Machinery: With the rapid increase in farm mechanization there is need for a full time specialist on the project. Funds have been requested in the budget for such a man and if made available this will become a major project, with at least 30 percent of the mans time being devoted to the farm tractor maintenance project.

Safety in Agriculture: Safety on the farm should be emphasized at times, but especially now, in order to conserve man power and equipment. Safety will be stressed throughout the year in conducting all projects.

Cooperation with Other Agencies: Close cooperation will be maintained with all agencies concerned with the agricultural engineering project such as T.V.A., S.C.S., R.E.A., Home Economics Groups, Electric Utilities, Vocational Teachers, Farm Machinery and Equipment Companies, etc.

Miscellaneous Engineering Problems: Many requests are received each year for engineering advice and assistance from other extension specialists. All aid possible will be given these farmers and farm organizations on a variety of engineering problems. All such requests will be taken care of as far as possible.

PLAN OF WORK

1954

EXTENSION PROJECT IN RURAL ELECTRIFICATION

1. Analysis of Project Situation: A report of the United States Department of Agriculture dated June 30, 1953 showed that 95.5% of the farms in Virginia had electric service. This means that except in a few isolated places, practically all Virginia farms either have electric service or have it available to them. The use of electricity on farms has multiplied about four times during the last 25 years. Probably about 80% of the power used on farms at the present time is consumed by household equipment.

The availability of electric service on farms presents a challenging educational problem and opportunity. Studies in Wisconsin showed that on some livestock and dairy farms, 65 to 70 percent of the total labor expended was for doing chores in and around farm buildings. There is a great opportunity to reduce chore labor by the use of electrical equipment. The present economic trend in which farmers find themselves requires that total production costs must be lowered if net farm income is to be maintained at a satisfactory level. Reduction of chore labor would be a contribution to that end. The use of crop drying equipment for corn, hay, and small grain reduces field losses, and results in a higher quality product that will yield more income at the market place, or when fed to animals on the farm. The advent of new harvesting machinery has created moisture problems that can only be solved satisfactorily with crop driers. Research and field experience has produced designs of crop driers and processing equipment that will economically fit almost any size of farm operation.

Although most Virginia farms now have electric service, it is estimated that less than 40 percent of them have a pressure water supply. No single farm improvement will contribute more to saving labor and improving living conditions than the installation of a pressure water system. Availability of a pressure water supply influences the selection and success of farming enterprises.

Electricity is a new thing to most farm people. They must be informed about electricity, electrical equipment, and how to safely use and maintain it. The broad objective of this project is to take information to farm people that will help them in deriving the maximum benefit from electric service.

Additional research work is needed and field studies should be made on the following farm and home electrical applications:

a. The use of light traps for tobacco insects
b. Tobacco curing
c. Peanut handling and curing
d. Grain drying, processing and handling
e. Feed handling equipment
f. Supplemental irrigation
g. Poultry brooding
h. Automatic grinding equipment for ear corn and small grain
i. Comparative studies of automatic washing machines

2. Major Problems: The following problems will be given special attention by the specialists during 1954:

a. The installation of pressure water systems
b. Increased enrollment and improvement of quality of work in the 4-H Club Electric project
c. Crop drying
d. Reduction of chore labor on farms
e. Selection, use, and maintenance of farm and home electrical equipment

In addition to the above listing, the specialists will handle as many requests from agents and farmers for assistance on other rural electrification problems as time permits.

3. Numerical Goals for Calendar Year: (NOTE: Numbers in parenthesis indicate accomplished activities in 1953)

A. Activity Goals	1953	1954
(1) Leader training meetings to be held for adult and Club groups	(48) 24	40
(2) Method demonstrations to be planned and presented	(15) 15	20
(3) Result demonstrations to be planned and established	(15) 15	15
(4) Conferences to be held on subject matter problems	(200) 200	200
(5) Clinics and work shops on which assistance will be given	(5) 15	10
(6) Farm tours to inspect electrical installations	(18) 10	20
(7) Newspaper and farm magazine articles to be prepared	(27) 20	25
(8) Radio talks to be presented Television programs to be presented	(16) 14 (2)	18
(9) Special papers to be prepared	(2) 10	2
(10) Leaflets and bulletins and circulars to be prepared	(6) 4	5
(11) Publications to be distributed	(85,000)	75,000
B. Result Goals (all numbers are estimates)		
(1) Approximate number of additional farms connected for electric service	6,000	3,000
(2) Pressure water systems installed	4,500	6,000
(3) Enrollment in 4-H Electric project	8,090	8,300
(4) Crop driers installed	60	100
(5) Reduction in chore labor (no way to estimate)		
(6) Number given instruction on selection, use and maintenance of equipment	10,000	11,000

RM

…dure:

…er Systems: Plans and suggestions for organizing and conducting a statewide program, and for setting the program up at the county level will be developed by a special committee. All educational agencies, power suppliers, pump manufacturers and distributors will be represented on this committee, and local representatives will cooperate in planning at the county level. Detailed plans for the program will be mailed to county agents, county Extension workers and all cooperating agencies not later than March 1. The month of September will be "water systems emphasis month." Specialists will prepare one feature magazine article, present one radio and one television program and prepare several tape recordings for the statewide tape service. Specialists will prepare sample radio programs and news stories for use at the county level. Meetings and demonstrations will be held at the county and community level with Extension agents, power suppliers, dealers and other educational agency representatives cooperating.

b. 4-H Club Electric Project: Details of this program were put in the hands of district agents, county Extension agents and power suppliers in September, 1953 thru regular channels and procedures. A special effort will be made to train more local project leaders with power suppliers assistance. The State 4-H Electric Congress will be held in Richmond, September 2-3, 1954. Details of the program are contained in "Learn and Win in the 1954 Virginia 4-H Club Farm and Home Electric Program" announcement leaflet and the project record books.

c. Crop Drying: Specialists will present one radio program and two tape recordings, news stories and two magazine articles to publicize this subject at appropriate times. Specialists will cooperate with agronomy and dairy departments in presenting crop drying information at schools for farmer groups and will encourage county Extension agents to plan and conduct such schools. Specialists will assist county Extension agents in conducting meetings and tours to result demonstrations of crop driers. Power suppliers will assist with tours and demonstrations. Dealers and power suppliers will assist individual farmers on the selection and design of equipment installations, based on general recommendations of the specialists.

d. Reduction of Chore Labor: Specialists will prepare radio programs and news stories on the use of elevators, conveyors, water systems, small portable motors, lighting equipment and other electrical applications aimed at reducing chore labor. This idea will be injected into talks at demonstrations to encourage farmers to select and install equipment that will minimize labor requirements.

e. Selection, Use and Maintenance of Farm and Home Electrical Equipment: All educational activities of the specialists dealing with electrical equipment and wiring will be conducted to guide farmers on this problem as it applies to the base subject under discussion. Specialists will assist home demonstration agents in conducting leader training meetings on simple electrical repairs. Use and maintenance of equipment is a major phase of the 4-H Electric project and will be emphasized in project work with 4-H Club members by the specialists, county Ext… agents, leaders and power suppliers.

f. Other Rural Electrification Activities: Specialists will assist county Extension agents with other problems and programs dealing with electrical applications as requested and as time permits.

g. Publicity: The specialists will publicize certain applications of electricity during the year. The publicity schedules outlined below will be followed in 1954.

Calendar of Publicity, 1954

Month	Subject	Press	Radio	Special Emphasis
Dec. '53	Small Portable Motors	X	X	
Jan. '54	Infrared Poultry Brooders	X	X	
Feb. '54	Hay-Drying	X	X	
Mar. '54	Home Food Freezers	X	X	
Apr. '54	Grain Drying	X	X	
	Window & Attic Fans and Room Air Conditioners	X	X	
May '54	Water Heaters	X	X	
June '54	Elevators and Conveyors	X	X	
July '54	Corn Drying	X	X	
	Electric Safety	X	X	
Aug. '54	Modernising Farm and Home Wiring Systems	X	X	
Sept. '54	Water Systems	X	X	Sept. 1-30
Oct. '54	Feed Grinders	X	X	
Nov. '54	Stock Water Heaters	X	X	

5. Cooperation: The following agencies and organizations will cooperate as shown in carrying out the Extension project in rural electrification:

Cooperating agency or organization	Assistance to be given by Agr. Engr. Specialists	Assistance to be received from agency
Va. Farm Electrification Council	Serve as Chairman and acting secretary and members of executive committee. Serve on special committees in planning and carrying out program.	Aid in preparation of printed material and publicity material. Visual aids assistance. Help of personnel of member electric service organizations.
Distributors and dealers in farm electrical equipment	Advise on adaptability and use of equipment under Virginia conditions.	Loan of equipment for demonstrations and instruction. Supply literature for use in program.
Electric Power Suppliers	Assist in organizing and carrying out educational activities; to create a desire for electric service, farm wiring, selection, and use of equipment. Provide special training for personnel.	Supply personnel to assist in carrying out Extension project and conducting field studies. Supply progress data on consumers connected, etc.
USDA Specialists	Supply information on local conditions and needs for literature, training and teaching aids.	Provide guidance in planning programs and supply literature and teaching aids.
Farmers Home Administration	Advise on home wiring, lighting and applications of electricity.	These suggestions to be included in plans and specifications for remodeling and building farm homes.
Other subject matter specialists	Assist other specialists by showing them the place of electricity in their special field of work.	Assistance on subject matter accuracy in publications and other teaching material. Carry proper information on place of electricity in their subject matter field as applied to the farm.
Department of Vocational Education	Advise on subject matter material for use in training programs for teachers	Cooperate in special programs such as farm water systems to be emphasized by the specialists.

6. Publications, Visual and Other Teaching Aids:

a. The following publications already available will be used in connection with the rural electrification project during 1954:

The Place of Electricity in the Home & on the Farm (ME-3)	3,000
Care of Home Electrical Equipment (ME-4)	6,000
Care of Farm Electrical Equipment (ME-5)	6,000
Electric Pig Brooder (Circular 472)	1,000
Convenient Farm Kitchens (Circular 409)	1,000
Improved Ironing Center (Circular 544)	500
Electric Brooding (Farmers' Bulletin 2039)	1,000
Some Do's and Dont's For Home Lighting (Circular 495 or ME-6)	3,000
First Aid For Electrical Appliances (VPEC-4)	6,000

Unit I - Record Book (Circular 531)	5,000
Unit II - Record Book (Circular 532)	4,000
Highways of Wire (Westinghouse)	3,000
New Lamps For Old (Extension Leaflet)	3,000
Electrical Farm Equipment You Can Build (Westinghouse)	7,000
Electrical Demonstrations You Can Perform (Westinghouse)	7,000
Understanding Electrical Terms (SAAE & VAE)	900
Computing the Cost of Electrical Service (SAAE & VAE)	900
Modern Home Laundry	2,000
Planning Your Farmstead Wiring & Lighting (Misc. Pub. 597)	3,000
Planning the Electric Water Systems & Plumbing For Your Farmstead (Misc. Pub. 674)	4,000
Learn & Win in the 1954 Va. 4-H Club Farm and Home Electric Program (Announcement Leaflet)	10,000
Dry Your Hay The Electric Way (VFEC-2)	3,000
Drying Shelled Corn and Small Grain with Heated Air (Leaflet 331)	500
Drying Ear Corn with Unheated Air (Leaflet 334)	500
Drying Ear Corn With Heated Air (Leaflet 333)	500

b. New publications to be prepared for use in the rural electrification project include:

(1.) "Electric Range Field Study Report." (Virginia Farm Electrification Council - 100 copies)

(2.) "Summary of Electric Range Field Study" - Circular_____, 500 copies

(3.) "1955 Virginia 4-H Electric Program" - 10,000 copies.

c. The following publications will be revised and reprinted during 1954:

(1.) "First Aid for Electrical Appliances" - VFEC-4 - 7,500 copies
(2.) "Have Good Light For Sorting Tobacco" - Cir. 484 - 3,000 copies
(3.) "Running Water Pays" - VFEC-5 - 7,500 copies
(4.) As many of the references used in the 4-H Club Electric project as may be needed. Number of copies (estimated) - 25,000

d. Photographs to be taken - 150

e. Colored Slides:
(1.) Slide set on "Use, Selection and Installation of Electric Water Systems.
(2.) Miscellaneous slides of farm and home electrical equipment - 75

f. New Movies to be placed in Extension Film Library - 1

7. Calendar of Work: The following schedule will serve as a guide in the year's work. The number of days to be devoted to each activity is only an estimate. Requests from the counties and other conditions existing at the time will largely govern the distribution of time among the various activities.

Major Activities	E. T. Swink	J. L. Calhoun	Month
Annual Report	8	6	December
4-H Club material	1	2	
Publicity	2	2	
Miscellaneous	6	6	
Annual Leave	1	6	
Plan of Work	6	2	
Preparing subject matter	1	2	January
Pig, lamb, and chick brooding	1	2	
Hay drying	1	3	
Publicity	1	1	
Publications	0	3	
4-H Club work	1	13	
Reduction of Chore Labor	1	1	
Miscellaneous	21 (Teaching)	2	
Hay drying	1	3	February
Meetings and conferences	1	2	
Water Systems	1	2	
Reduction of Chore Labor	0	1	
Publicity	1	1	
4-H Club work	2	11	
Miscellaneous	19 (Teaching)	1	
Equipment Repair	0	1	
Publications	1	2	
Reduction of Chore Labor	1	2	March
4-H Club work	2	5	
Publicity	1	2	
Hay Drying	1	6	
Grain Driers	2	2	
Equipment Repair & Maintenance	1	2	
Miscellaneous	19 (Teaching)	8	
Home Food Freezers	1	1	April
Hay Drying	4	7	
Publicity	1	1	
Grain Driers	4	3	
4-H Club Work	3	6	
Equipment Repair & Maintenance	1	1	
Reducing Chore Labor	1	2	
Miscellaneous	11	5	
Reducing Chore Labor	2	2	May
Hay Drying	4	4	
Equipment Repair	2	2	
Publicity	1	1	
Water Systems	2	5	
Grain Driers	5	3	
4-H Club work	4	7	
Miscellaneous	6	2	
Grain Driers	3	4	June
Corn Driers	4	3	
Publicity	1	1	
4-H Club work	5	6	
Water Systems	4	4	
Hay Drying	4	5	
Rural Telephones	1	2	
Miscellaneous	4	1	

RM

Major Activities	E. T. Swink	J. L. Calhoun	Month
Reduction of Chore Labor	3	2	July
Short Courses	7	6	
Publicity	1	2	
4-H Club Work	3	4	
Water Systems	5	2	
Corn Drying	5	4	
Grain Drying	2	2	
Miscellaneous	1	5	
Water Systems	4	4	August
Corn Drying	4	4	
Publicity	1	1	
4-H Club Work	6	6	
Extension Conference	5	5	
Miscellaneous	6	6	
Water Systems	7	7	September
Publicity	1	1	
Feed Grinding	1	1	
Corn Drying	5	5	
4-H Club Work	6	8	
Reduction of Chore Labor	2	2	
Miscellaneous	4	2	
Water Systems	3	4	October
Publications	2	2	
Feed Grinding	1	2	
Publicity	1	1	
Corn Drying	5	5	
4-H Club Work	4	7	
Planning Conferences	2	2	
Miscellaneous	8	3	
Farmstead Wiring & Lighting	2	4	November
Reduction of Chore Labor	2	2	
4-H Club Work	3	6	
Publicity	1	1	
Annual R. E. Conference	6	6	
Equipment Repair & Maintenance	1	3	
Miscellaneous	11	4	

E. T. Swink will serve as project leader and will devote three-fourths of his time to this project. He will spend about 100 days in the field and the remainder of his Extension time in the office. J. L. Calhoun will devote full-time to the project and will spend about 150 days in the field. Approximately 20% of the specialists time will be devoted to 4-H Club work.

Counties served only by private utilities

Counties served by both utilities and cooperatives

The Extension project in Rural Electrification will reach almost all counties directly in 1954 and will affect all of them indirectly. Representatives of power suppliers will cooperate with the specialists in their respective service areas as shown on this map.

PLAN OF WORK

FOR

FARM STRUCTURES AND RURAL HOUSING

This phase of the Extension Agricultural Engineering Program will be conducted by three specialists, namely: The Farm Building Specialist, Rural Housing Specialist, and the Plan Service Specialist. The Plan of Work for each of these Specialists is included in this Section of the departmental Plan of Work.

FARM BUILDINGS

1. Analysis of Project Situation

The value of farm building repairs and new construction that might be expected in 1954 is questionable. The continuing price squeeze that is being experienced by all farmers, especially the dairy, beef and poultry producers will no doubt have a marked effect on the amount of building activity. It is believed that farm building repairs and new construction will be about the same as for 1953 but considerably below that for 1950.

The number of building and equipment plans supplied to farmers in 1953 was approximately 9400. This was an increase of 18% of the number of plans distributed in 1952.

The outlook for agriculture in general and especially for several specific types of agriculture is causing the farmers to be quite cautious at the present. The squeeze on net profits will delay much repair and remodeling of buildings. Changes in building arrangements and in equipment used will aid many farmers by lowering labor costs. The changes to accomplish this purpose can be quite expensive for many farmers in the purchase of new labor saving machinery and building remodeling.

The outlook for materials and equipment which might be needed on Virginia farms is quite good. The cost of those items is expected to remain at the present price level.

The actual need for building repairs and remodeling and for new buildings will remain about the same as in the past few years. The financial situation on farms limits the activity for improvements.

Masonry block continues to be the major material for most foundations and walls of rural houses and farm buildings. Where there is a possible fire hazard, masonry block walls and partitions are especially desirable.

The use of pole-type construction for some farm buildings is increasing each year. The ease of construction, low comparative first cost and adaptability are the main factors contributing to this trend. Shelters for machinery, hay, sheep, calves and cows and poultry houses are the types of buildings most suitable for pole construction.

Many new trench silos have been put into use in the past several years. The effects of the drought in 1953 was a main contributing factor for the big increase that year. The low comparative first cost and the ease of filling are additional factors that give the trench silo an advantage over the other types.

The work of the Plan Service will be intensified to make available more plans for buildings and equipment. More publicity will be given by means of radio, newspapers and in meetings regarding the plans that are available and how they may be obtained. Special emphasis will be given to plans for home made equipment for livestock farms. The Plan Service Specialist will be in the office practically all the time. He will assist the Farm Building and the Housing Specialists with their office correspondence and with their field work when necessary.

More research is needed on the following farm building projects(listed in the order of importance):

1. Housing for poultry-layers and broilers-ventilating and heating systems, most desirable widths, insulation requirements and feeding and nesting facilities.

2. Sweet potato curing and storing buildings.

3. Equipment for feeding and handling beef cattle (self or semi-self feeding hay and silage units).

4. Trussed rafter construction for farm buildings.

5. Miscellaneous homemade equipment and facilities for reducing labor requirements.

RM

2. Major Problems

a. To develop more interest in Farm Structures among other Extension Workers and to train the farm and home agents on the program and on the subject matter.
b. To obtain more information on functional requirements and their practical application for all types of farm buildings.
c. To obtain reliable and basic information on new building materials and new methods of construction for more permanent construction and economical costs of farm buildings.
d. To select and design the new types of farm structures that will be needed by farm people in their future agricultural programs.

3. Numerical Goals for 1954

A. Activity Goals	1953	1954
Radio Talks	10	12
Television Programs	2	2
News Articles	4	8
Meetings participated in	72	80
Building and Equipment Plans Distributed	9400	10,000
Standard Building & Equipment Plans Prepared	10	15
Farm and Home Visits	242	250
People expected to be reached	15,000	15,000

B. Result Goals

1. Approximately 15,000 rural and farm people expected to be reached directly through this program. Additional thousands of people will be reached indirectly.

2. It is impossible to estimate, within reason, the number of people who will adapt some of the recommended practices or use some of the information that will be furnished in this program. The value of the improvements and the savings in money and labor resulting from this program are not estimable. Evidences of the program can be seen on many farms throughout the state, the number of improvements being increased each year.

4. Methods of Procedure

a. Farm Building Plan Service

This Service includes approximately 275 standard plans for farm buildings and livestock equipment that are available for Virginia farmers to select for

their particular situation. Some of these plans will be suitable for almost every farm in the state. An up-to-date list of these plans is available in each County Agent's office and in each High School Agricultural office. County Agents will be encouraged to emphasize better farm buildings by more use of these plans.

Copies of standard plans will be supplied to farmers as they request them. No charge will be made for these plans to residents of Virginia. A charge of $.15 per sheet will be made to non-residents of the state.

b. Meetings

Meetings and field demonstrations for special interest groups, farm organizations, veterans' classes, and other governmental agencies will be conducted when requested. Information on timely topics relating to farm buildings will be given. More meetings in cooperation with Specialists in other subject matter departments will be participated in this year.

Special emphasis will be given to a "Better Fence Erection" program this year.

c. Tours

Organized tours for farmers to inspect new types of farm buildings will be encouraged. This type of project is especially effective in a county where a progressive agricultural program is being conducted.

Extension Agents and farmers will be encouraged to visit farms where the use of a remodeled or a new building is making it possible to do a better job in the present agricultural program of that farm. Since the suggestion was made several years ago that individuals visit other farms to see new methods, new equipment and new buildings, many farmers have made new friends and obtained much good information from farmers who are doing a good job.

d. Farm Visits

The Specialist will visit farms on request to assist in developing and selecting plans for farm building construction and remodeling, to recommend locations and arrangements and to give technical information on selection and use of building materials, construction details, etc.

e. Conferences and Interviews

Individuals and small groups or committees will be contacted through conferences and interviews in the counties, at selected meeting places away from headquarters and in the department at headquarters. These contacts will

include discussions on building plans, remodeling, repairing, structural details, building materials and plans for programs and meetings.

f. Information Service

Articles on timely topics will be written for daily and weekly newspapers throughout the year.

Radio talks will be given at the V.P.I. Station as scheduled and at stations throughout the state when practical.

The specialists will write individual and circular letters giving information and recommendations in answer to requests received from farm people, Extension Agents and other interested people. Building and equipment plans, sketches and bulletins will be furnished when needed.

5. Cooperation

The following agencies and organizations will cooperate as shown in carrying out the Extension program in Farm Building:

Cooperating Agency or Organization	Assistance to be given by Specialist	Assistance to be received from Agency or Individuals
Farmers' Home Administration	Plans for Farm Buildings and equipment will be furnished to county and district supervisors.	Advice on conditions that require new and adjusted building and equipment plans.
Other subject matter Specialists of Extension Service and Experiment Station	Recommendations and information on buildings, equipment, arrangements for allied projects.	Assistance on requirements for animals and other facilities peculiar to their subjects.
U.S.D.A. Specialists	Supply information on local conditions and needs for literature, training and teaching aids.	Provide guidance in planning programs, supply bulletins and building and equipment plans and teaching aids.
Trade Associations and Material and Equipment Manufacturers	Advice on local farm situations regarding use of materials and equipment, and literature needed by farmers on materials and their applications.	Literature and teaching aids and equipment. Recommendations and information on special projects.

State Dairy and Food Division, State Health Departments, Md-Va. Milk Producers Assoc., Health Dept. of N.C., W. Va., Tenn. and Washington, D. C.	Recommendations and information on location, types, materials for dairy buildings. Plans for dairy buildings will be furnished.	Advice on requirements for dairy units from dairy inspection standpoint. Assistance to farmers on dairy building progra
County Extension Agents, Extension District Agents	Development of county program on farm buildings. Furnish plans and information to agents and farmers.	Make local arrangements, advise on local conditions. Make information available to farmers.
Dealers of building materials and equipment.	Furnish building and equipment plans, technical information on farm applications.	Advise on trade area situations, make information available to farmers.

6. Publications

The U.S.D.A. has been working on the revision of the bulletin, "Plans of Farm Buildings for the Southeastern States" since 1947. It is expected that this publication will be issued in 1954.

The Farm Building Specialist will contribute to a bulletin on "Silage; Production, Harvesting, Storage and Feeding". This bulletin is being prepared by specialists in several other departments.

A bulletin on "Poultry Housing" is planned for this year as a joint project between the Poultry and the Agricultural Engineering Departments.

7. Calendar of Work

The program on Farm Buildings is an all-year project. This year certain phases will be emphasized at certain periods of the year, depending on the uses of the building relative to the farming activities.

Subjects will be emphasized as follows:

Spring - Hay Storages
Silos
Corn and grain storages
Livestock Shelters and Equipment
Tobacco Curing and Storing Barns
Fencing

Summer - Silos
Livestock Shelters
Fencing

Fall - Livestock Feeding Facilities
Barnyard arrangement, Fencing and Gates
Farm Road Location and Repair

All Year - Poultry Houses
Dairy Buildings
Farmstead Arrangement
Building and Fence Repairs
Labor-saving Facilities

Farm visits will be made and meetings and demonstrations will be conducted when requested by the County Farm Agents.

State Institutions will be assisted with their farm building projects when requested.

It is anticipated that 40 to 50 percent of the year will be devoted to field work; i.e., farm visits, meetings, field demonstrations, conferences and field studies, and 50 to 60 percent to office work; i.e., planning new buildings and equipment, committee meetings, interviews and conferences, program development, writing news articles, preparing radio talks, and furnishing information by means of individual letters, circular letters, plans, sketches and bulletins.

The plan Service Specialist will be in the office practically all the time. His major activities will be the preparation of new plans and the revision of old plans whenever they are needed.

RURAL HOUSING

1. Analysis of Project Situation

Farm income was less in 1953 than in 1952, but there was very little indicated drop in farm house construction and remodeling. There were indications that there was a slight increase in farm house remodeling during the year. Farm housing in Virginia is improving every year. More rural people are becoming aware of the importance of proper planning, good construction, and use of good materials in order to get comfortable, efficient and low cost farm housing. There are too many farm families, however, who are building and remodeling without giving these things proper consideration. The Extension Service must continue to try to reach more farm people planning house improvements if rural housing is to continue to improve in Virginia.

The number of farm homes with running water, bathrooms, central heat and insulation is still discouraging in Virginia. Over 95% have electricity available but only about 55% have running water. Less than 30% have bathroom facilities and less than 25% have central heat. Only about 20% of the farm homes in Virginia have adequate insulation for comfort and economy of heating.

The trend in farm house construction continues toward one-story houses. Not enough farm people have accepted the idea of the expansible house. This fact has led to many costly problems as families outgrow their small one-story houses. They find that it is impractical and very expensive to add rooms to a house which was not planned for expansion. This field is one which should be stressed more in the Extension Housing Program.

There is little change in the outlook on building materials in 1954. The supply should be good with little change in price.

Credit will probably be somewhat easier next year, but farm people will probably be slow to go in debt as long as farm income is on the decline.

Present indications are that new farm house building and remodeling of old houses will not decline very much in 1954. Due to the many recently organized Community Improvement Groups which stress house improvement, there will probably be an increase in the number of farm families doing

some house remodeling in the next year or two.

Those in Extension concerned with farm house improvement in Virginia must attempt to reach more farm families and give them information on plans and planning before they make costly mistakes as so many have done in the past.

Too many farm people are building new homes without proper planning. The result has been t at they are dissatisfied when they move in and find that the house does not meet the needs of the family. Use of the wrong materials and improper use of good materials has also resulted in much unsatisfactory construction on the farm. Much of this is due to mis-information given by some local people who do not have either training or experience to give information on materials and methods of construction.

Most of the housing work in the counties is carried out in connection with the County Home Demonstration Agent's program. These Agents have made it known that they need and would like more subject matter concerning house planning and construction. A few two-day schools have been conducted for training Home Demonstration Agents in handling farmhouse remodeling problems, and more of these will be tried this year.

Needed Research in Rural Housing

Designing and testing simpler and less costly heating systems for farm houses with emphasis on wood burning furnaces.

More designs of the expansible type house for the farm are needed.

Continue research on simplified methods of house construction which can be understood and used by local labor.

2. Major Problems

Major problems in the Rural Housing Program are consistently the same. Some of them are:

To give more Extension Agents more subject matter training in rural housing.

To reach more farm people with information and assistance on rural house

planning before they make costly mistakes.

To teach more farm families the difference between low cost construction and cheap construction.

To bring local carpenters and contractors up to date on methods of construction.

To reach more farm people with information on the availability of plans and services offered by the Extension Service on rural housing.

3. Numerical Goals for 1954

A. Activity Goals	1953	1954
Newspaper Articles	2	4
Radio Talks	4	6
Magazine Articles	0	1
Subject Matter Meetings	20	25
Agent Training Meetings	9	10
Leader Training Meetings	27	30
Individual Letters	208	250
Bulletins Prepared	0	1
Circular Letters Prepared	2	4
Circular Letters Distributed	395	800
Leaflets Prepared	1	3
House Plans Distributed	475	600
Remodeling Sketches	41	50
New Plans Added to Files	0	15
Rural Farm and Home Visits	96	100
Office Conferences	48	50
Field Conferences	22	30
Number of Different Counties Worked In	51	60
Estimated Number of People Reached	4500	5000

B. Result Goals

1. More than 5000 farm people will be reached by the Rural Housing Program in 1954.

2. More people will install water systems, improve kitchens and put in bathrooms.

RM

3. Increased number of farm houses insulated and provided with heating systems.

4. Greater use of expansible house plans by farm families.

5. An improved understanding on the part of local carpenters of the objectives of the Rural Housing Program.

In a program such as Rural Housing it is very hard to make a logical estimate of the number of farm people who have used material or recommendations received from the Extension Housing Program.

4. Methods of Procedure

A. Rural Housing Plan Service

County Extension Agents will be supplied with extra copies of House Plan Bulletin No. 174 in order that they may have a copy to be loaned to farm people interested in building.

Ten or more new house plans will be added to the farm house plan service.

B. Meetings

Subject matter meetings and leader training meetings or demonstrations which have proven successful will be conducted in cooperation with county Extension workers. These meetings or demonstrations will be for Home Demonstration Women, Veterans' classes, Farmers' Clubs and others who ask for them. Many of the housing meetings will be conducted jointly by the Home Improvement Specialist and the Rural Housing Specialist in cooperation with the county Extension Agents.

The two Housing Specialists plan to hold some two-day training meetings for Home Demonstration Agents in two Districts. These Agents will be given training in planning farm house remodeling.

C. Farm Visits

The Specialist will visit homes with the County Extension Agents upon request to assist in developing and selecting farmhouse plans. Recommendations will also be made on methods of construction, selection of materials, and remodeling planning and procedure. Where assistance is given for remodeling, the projects will serve as result demonstrations in the community.

RM

D. Result Demonstrations and Tours

All new and remodeled farm houses will serve to a limited extent as result demonstrations in the community. Some selected projects will be used as special result demonstrations and organized tours will be conducted in several counties.

E. Conferences in Office and Field

Individuals and small groups or committees will be contacted through conferences in the counties at selected meeting places. At headquarters the Specialist will meet individuals or small groups in his office for discussing housing problems.

F. Publicity

Tape recordings will be made at V.P.I. on timely subjects pertaining to rural housing as often as possible.

Longer Radio Talks will be given over Radio V.P.I. whenever scheduled.

Possibly one or two television shows will be prepared and presented over Station WSLS-TV in Roanoke, Virginia. Articles on subjects related to farm housing will be prepared for daily and weekly newspapers.

G. Information Service

The information service will be expanded because County Farm and Home Agents have requested more subject matter on rural housing. All the time possible will be spent in preparing leaflets and circular letters giving information on housing as requested by the Agents. More house plans will be added to the service and all Agents will be kept informed on all new developments in housing. Regular correspondence concerning housing information and programs will be continued.

5. Cooperation

The following departments, agencies and organizations will cooperate as shown in planning and carrying out the Extension program in Rural Housing:

Cooperating Agency or Organization	Assistance to be given by Specialist	Assistance to be received from agency, department or organization
Subject Matter Specialists of Extension Service and Experiment Station	Recommendations based on field observation for house planning, material uses and related subjects.	Material and information related to farm building which will be useful in conducting a successful program.
U.S.D.A. Specialists	Supply information on local housing conditions and needs for plans and training aids.	Give information on program planning. Supply farmhouse plans and bulletins on subjects related to housing.
Commercial Groups: Utility Companies Builders Material Supply Dealers Manufacturers of Materials	Information regarding use and adaptability of various materials for farm housing. Advice on type of literature useful in farmhouse planning and construction.	Literature, film strips, movies, and other teaching aids. Exhibit materials and assistance with some method demonstration.
Vocational Education Dept.	Conduct some subject matter meetings and methods demonstrations with Veterans' classes and FFA classed.	Assistance in promoting strong housing programs in the Counties. Advise on local housing conditions and uses of economical materials and practices.
State Health Department	Notify Local Health Offices of sanitation conditions which need attentions. Cooperate and assist, upon request, in carrying out health programs in the state.	Participation in housing subject matter meetings and demonstrations covering such subjects as water systems, septic tank installation and others related to the health and welfare of farm families.
Farmers Home Administration	Make Extension plans available to F.H.A. Supervisors and Engineers. Keep them informed of all Extension Rural Housing activities.	Give information on F.H.A. activities related to Rural Housing. Participate when possible, in housing subject matter meetings.

6. Publications, Visual and Other Aids

Publications and leaflets which were planned and not completed last year will be included in the plans for this year because they are still needed. These are:

1. An illustrated bulletin on outdoor fireplaces, picnic tables and lawn furniture.

2. Leaflet on "Making Shutters for the Home".

3. Leaflet on "Simple Carpentry Instructions and Blueprints".

Charts and circular letters will be prepared and distributed to the County Extension Agents if needed in their rural housing program. Existing bulletins will be distributed through the usual channels.

7. Calendar of Work

The Specialist estimates that about 40% of his time will be spent in field work, and about 60% of his time will be devoted to work at headquarters.

The Extension program on Rural Housing is an all year project with no particular phase being emphasized during any period. Farm people plan, construct, or remodel houses throughout the year.

Farm and home visits will be made and meetings or demonstrations conducted whenever they are requested by the County Farm or Home Demonstration Agents.

Extension Agents have requested the Housing Specialist to assist with the following meetings, demonstrations, or farm visits to date:

Date	County or Place	Subject
January	Dinwiddie	Simple Carpentry School
January	Russell	Meeting - Central Heating Systems
January	Hanover	Household Mechanics
January	Richmond	Church Committee
February	Frederick	Simple Carpentry
February	V.P.I.	Agent Training
February	Page	Housing Clinic
February	Richmond	Home Improvement

RM

Date	County or Place	Subject
February	Hanover	Wall board Demonstration
February	Amelia	Promoting Water Systems
February	Mecklenburg	Household Mechanics
March	Prince George	Outdoor Fireplaces
March	Mecklenburg	Promoting Water Systems
March	Albemarle	Home Visits - Remodeling
March	Clarke	Household Mechanics
March	Fairfax	Household Mechanics
March	Shenandoah	Housing Clinic
March	Warren	Housing Clinic
March	Rockbridge	Paints and Painting
April	Rockbridge	Household Mechanics
April	Richmond	Simple Carpentry
April	Clarke	Simple Carpentry
April	Prince William	Housing Clinic
April	District	Agent Training-Housing
May	Sussex	Household Mechanics
May	Accomac	Simple Carpentry
May	S.W. District	Agent Training - Housing
May	S.E. District	Agent Training - Housing
June	Richmond	Simple Carpentry
June	Carroll	Household Mechanics
July	Westmoreland	Household Mechanics
July	Hanover	Home Visits
July	Charlotte	Simple Carpentry
July	Charlotte	Household Mechanics
August	Fauquier	Household Mechanics
September	Henrico	Household Mechanics

RM

PLAN OF WORK

FOR

FARM AND HOME EQUIPMENT

1. Analysis of Present Situation

From the outlook material now available it appears that for the next year the margin between what the farmer buys and what he has to sell will become less favorable to him. He will have to increase his yields, cut his production costs per unit on both. Some of the project work which I handle will assist him in doing this. Naturally, weather conditions will determine largely just where the emphasis will be placed. For instance, because of the exceedingly dry years just past, my major effort has been on sprinkler field irrigation. One hundred percent more surveys were made in 1953 than in 1952. If it should happen that next year is an unusually wet year, drainage will become more important.

While the farmer's net income will likely be somewhat reduced in 1954, he will still be interested in investing in equipment which he thinks will improve his economic situation. He probably won't buy as many items in the luxury class. As far as can be foreseen now such equipment as my activities need will be in ample supply. The farm and home extension agents can expect to receive about the same type and amount of service in 1954 as they received in 1953. The list below indicated the principle activities I will work on and the arrangement is probably in the order of assistance requested.

1. Portable sprinkler irrigation
2. 4-H Tractor Maintenance Schools
3. 4-H Tractor Operator's Contests
4. Farm and home water supply
5. Farm ponds
6. Drainage

In addition to the above activities, efforts will be made to handle miscellaneous requests for help on such jobs as small water power installations, sanitation, stationary sprayer layouts, etc.

A further statement about the kind and supply of farm equipment likely to be needed in 1954 should be made. Perhaps the farms of Virginia were

RM

never so well supplied with all kinds of equipment as they are now. The farmers have had money to buy it and it has been available. If it should become necessary to reduce production of farm tractors and farm equipment the country would be in a relatively good position. Many farmers have bought such labor savers as additional tractors, combines, feed choppers, harvesters, milkers, elevators and hay making and curing equipment. Such items are essential when farm labor is expensive and hard to get. Farm equipment will remain high in cost since the labor required to produce it is high.

Efforts will continue to be made to accomplish more through group meetings and field days. If we held strictly to educational work this would be simplier. Since the organization of the department individual or personal service work has been done and it is hard to get away from it now. Individual surveys and designs have always been made for drainage work. It is the same with water supply, irrigation, water power and stationary sprayer installations. The bulk of the drainage work is now being done by the Soil Conservation Service. My information is that this service is preparing to take over the irrigation work other than the educational phase of it. At this time both agencies are doing survey design and layout work in sprinkler irrigation.

The complete cooperation of all college departments and representatives of farm equipment companies is an aspect of this work which is definitely satisfying to this specialist. Cooperation is given to and received from the 4-H Club, Agronomy, Horticulture and other departments. Farm Machinery dealers and manufacturers are called upon to supply tractors, combines, rotary hoes, trucks, etc. and never refuse.

The 4-H tractor maintenance and operation programs merit special comment. This will be out tenth year in tractor maintenance. An average of about 40 boys have been trained on the state level per year. Assuming that each of those boys helpsten other boys when they get back to their Counties that would mean 400 boys trained in tractor maintenance per year or 4,000 boys in ten years. The program must spread to be effective.

One of the most important phases of the tractor operator's contests is the safety angle. Safety is given an important place in all contests. Much stress is given to it along with actual operation. This will continue to be done.

Sprinkler irrigation will require the major part of my time. Each farmer requesting help will be visited. Conditions will be surveyed and a design, layout and cost estimate will be supplied. More time is required in the office on each job than is necessary to get field data.

The percentage of Virginia farms having running water under pressure

remains at about 35. About 95% of our farmers have electric service. Efforts will be made to improve this situation.

Farm ponds are quite popular and the construction of them should be greatly encouraged. They aid in raising the ground water table, serve as a water supply for orchard spraying, fire protection, irrigation when large enough, fish raising and for many forms of recreation.

The Soil Conservation Service has the building of farm ponds as one of its soil and water conservation practices but quite a number of requests from areas not in Soil Conservation districts come to this specialist.

2. Major Problems

1. It is perhaps useless to again refer to the obvious fact that this specialist cannot do a good job on any individual activity because of the number and wide diversity of his activities. He would consider it preferable to be permitted to handle irrigation, water supply, drainage and farm ponds. There would be enough machinery work to justify another specialist.

2. As the practice of irrigating grows in the state it is certain that much more research data is needed on the characteristics and adaptability of Virginia soils and crops to irrigation. Also, economic studies should be made on different types of farms to determine to what extent and under what conditions irrigation is practicable.

3. A clarifying statement or memorandum of understanding is needed to spell out the exact activities of the two services.....Extension and SCS. If extension should confine itself to education alone we should know it.

3. Numerical Goals for Coming Year

(a) Activity Goals

1952	1953
1. Conduct two state level 4-H Tractor Maintenance Schools. (one white and one negro).	1. Held one school for white 4-H boys at V.P.I. and one at Virginia State College for Negro boys and leaders.
2. Assist with holding four county, four district, one state and one regional 4-H Tractor Operators' contest.	2. Assisted with two county, four district, one state and one regional 4-H Tractor Operators' Contest.

3. Hold county meetings in six counties on farm water supply.	3. Held six county meetings on farm water supply.
4. Hold discussions on irrigations in ten counties.	4. Made 60 surveys for irrigation installations.
5. Handle all requests received for help on farm drainage problems.	5. Made four surveys to improve 45 acres.
6. Handle all requests received for help on farm ponds.	6. Made 19 surveys for farm ponds to create 24 acres of water surface.
7. Serve on local committees as requested.	7. Served on six.

(b) Result Goals

1. Make 35 surveys for farm water systems.	1. Made 21 surveys.
2. Enroll 150 4-H boys and leaders in Tractor Maintenance Schools.	2. Enrolled 135.
3. Enroll 125 for 1954.	3. Had 105.
4. Hold 15 group discussions on irrigation.	4. Held 11.
5. Assist with 25 farm ponds	5. Worked on 19.
6. Work on 65 irrigation layouts.	6. Worked on 60.
7. Contact 8,000 people on all contacts.	7. Contacted 11,500.

4. Methods of Procedure

On the irrigation, water supply, farm pond and drainage discussions large size charts, outlines or actual equipment will be used. Slides and motion pictures may be used too.

For field work on these activities demonstrations, field days and result demonstrations will be used. For these jobs complete data has to be taken with a surveying instrument - elevations, distances, areas, flows, soil types, etc. must be known.

RM

When the survey has been finished the farmer gets a letter (the County Agent gets a copy) giving all data secured, and information and recommendations essential to a successful installation. Whenever it is thought helpful appropriate literature will accompany the letter. It is seldom possible to do any follow up work.

If cooperation with other departments or with commercial companies is needed it will be forthcoming. That is never a problem.

5. Cooperation

Name of Specialist or Agency	Assistance to be Given	Assistance to be Received
1. 4-H Club Department W. A. Turner W. E. Skelton (Two state Tractor Maintenance Schools are planned.)	Developing programs and conducting meetings. Contacting Extension Agents on 4-H activities.	Keep records on achievements, handl money and assist with meetings.
2. 4-H Club Department W. A. Turner Agr. Engr. Dept. J. W. Sjogren G. D. Kite Forestry Dept. J. W. O'Byrne	Act as judge. Help with layout and give general supervision to 4-H Tractor Operator's Contests on County, District, State and Regional levels. Secure or make needed equipment.	Act as judge, keep records and assist with running contests.
3. Horticulture Department A. H. Teske	Arrange area fruit growers meetings. Demonstrate spraying and other equipment.	Make out programs.
4. Forestry Department J. W. O'Byrne	Act as assistant on farm safety. Keep file of literature.	General cooperation
5. Soil Conservation Service Technicians	Where SCS has no personnel make surveys or get data for them.	Return favor by lending personnel for special service
6. Agronomy Department Roy Blaser S. S. Obenshain	Make surveys for irrigation.	Information on crops and soils for irrigation jobs.
7. Virginia State Department of Health	Cooperate in program	Supply literature on farm sanitation

Irrigation	8	April
Tractor Maintenance	2	
Tractor Operation	2	
Water Supply	5	
Farm Ponds	3	
Drainage	3	
Miscellaneous	3	
Irrigation	8	May
Water Supply	4	
Farm Ponds	3	
Drainage	2	
Tractor Operation	3	
Miscellaneous	6	
Irrigation	7	June
Tractor Operation	8	
Water Supply	3	
Farm Ponds	2	
Drainage	1	
Miscellaneous	5	
Irrigation	7	July
Drainage	5	
Water Supply	4	
Farm Ponds	4	
Miscellaneous	7	
Irrigation	7	August
Drainage	5	
Water Supply	5	
Ponds	3	
Committee Work	3	
Miscellaneous	3	
Drainage	3	September
Tractor Operation	4	
Water Supply	5	
Irrigation	6	
Ponds	3	
Miscellaneous	5	

RM

Machinery Operation	4	October
Water Supply	5	
Irrigation	4	
Drainage	3	
Ponds	3	
Miscellaneous	7	
Machinery Operation	3	November
Irrigation	4	
Drainage	3	
Farm Ponds	2	
Water Supply	4	
Annual report	4	
Miscellaneous	6	

RM