

Keller

1966

ANNUAL REPORT OF THE

EXTENSION WOOD PRODUCTS SECTION

N. C. AGRICULTURAL EXTENSION SERVICE

N. C. STATE UNIVERSITY, RALEIGH, N. C.

Within the restrictions of time and size of document, it is both impractical and impossible to report in detail all the activities and accomplishments of the Extension Wood Products Section personnel. Thus, for the Calender Year 1966, this report will take the form of a gross statistical resume and a narrative highlighting of key program activities and results.

In directing the overall section program towards implementing educational services in six problem areas the following methods were employed:

1. Answering requests for technical information	702
2. Visits to firms and other off-campus work	357
3. Preparation of news releases and articles	7
4. Preparation of publications	5
5. TV and Radio Broadcasts	28
6. Distribution of publications	2076
7. Instruction at meetings, workshops, short courses, etc.	84
8. Attendance at meetings, workshops, short courses, etc.	2321

95
- 2786

All of the above activities were carried out under AMA Project IV work, with each specialist devoting 100 percent of his extension teaching effort to the program. Specialist Keppler devoted approximately 50% of his time to state projects and 50% of his time to Federal Extension Service projects under contractual agreements.

It is evident that two problems remain prominent in the forest and wood-based industries. These are the needs to improve operational efficiency to reduce the unit cost of manufacturing and marketing, and the needs to more accurately evaluate new processes and products as opportunities for profit improvement. Consequently most of the section's efforts have been directed to these problems.

PERCENT OF TIME DEVOTED TO PROGRAM PROBLEM AREAS IN 1966

<u>ACTIVITY</u>	<u>SPECIALISTS</u>					Average
	Hobbs	Huxster	Weidhaas	Thomason	Keppler	
1. Resource Development	18	15			5	7.6
2. Individual Producer Marketing Decisions	14		25		10	9.8
3. Marketing Policy	7					1.4
4. Increasing the Efficiency of Marketing Firms	32	65	50	70	50	53.4
5. Market Development and Expansion	16	15	5		5	8.2
6. New and Improved Process and Products	13	5	20	30	30	19.6
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	100%	100%	100%	100%	100%	100%

1. RESOURCE DEVELOPMENT

a. Audience

Members of Forest-based industries, County Extension personnel, general public.

b. Activities

Committee meetings with, and the preparation of educational information for county extension and lay-leaders. The objective is to motivate these leaders to enlarge upon the forestry and wood products utilization and marketing contribution to the county and state economics.

Assist in the production of a 16 mm color-sound movie depicting the origin, economic development and outlook for North Carolina forestry and forest-based industries. Contribute to the publicizing, distribution, and evaluation of the film as a tool to enhance resource development.

Assemble and compile significant statistical facts relating to the industry for use by civic clubs, television, and radio stations, newspapers, students, individuals and other public agencies.

Prepared and distributed a slide set and lecture dealing with the problems and opportunities as well as means for improvement of economic conditions in the forest-based industries through extension education.

Contributed to an Economic Geography Atlas of North Carolina in the subject area of Forestry and Forest Industries.

c. Results

As estimated additional thirty counties intend to develop specific educational efforts in forestry and forest industry subject areas.

Thirty copies of the educational film have been ordered. The original film has been shown over a hundred times. It has also been televised on educational T.V. and is booked for in advance.

The film is also a potential tool for career orientation among high school students. This is significant in that one of the industry's greatest needs is for technically educated specialists.

d. Personnel Involved

Hobbs, Huxster, Keller, Jones (J.C.), Ellis, Thomas, Keppler.

2. INDIVIDUAL PRODUCER MARKETING DECISIONS

a. Audience

Wood Products industry in general, but more specifically the smaller firm managements who are finding it increasingly difficult to operate profitably.

b. Activities

Work with nine demonstration firms in evaluation of production and marketing methods, assisting the firm managers to plan changes.

Assist a small wood preservative treating plant to make a market analysis for pressure treated construction lumber and evaluation of the financial returns related to expansion of production and marketing facilities.

Work with a group of furniture manufacturers in danger of losing markets for Eastern White Pine furniture to western and northern manufacturers. After identifying the problem, improved quality control procedures were initiated, and a pilot project in improved kiln drying through modified schedules was undertaken to reduce degrade.

c. Results

Four of the nine demonstration mills made substantial changes in production and marketing. Two more mills plan changes. One firm changed to a kiln dried operation and increased its sales \$12,000 per year.

The pressure treating firm phased out its marginal fence post treating operations and concentrated production in the treatment of structural lumber which resulted in a two fold increase in net profitability. The firm now faces the decision to enlarge facilities. However, the owner was advised that presently he does not possess the managerial capabilities and other resources to successfully operate a larger facility.

Reduction of degrade and defects in White Pine dimension stock has enabled locally produced lumber to maintain its market.

d. Personnel Involved

Hobbs, Huxster, Weidhaas, Gilmore, Carter, Keppler.

3. MARKETING POLICY

a. Audience

Softwood Lumber Industry, Wood technologists, retail lumber dealers, architects, engineers, contractors, and consumer groups.

b. Activity

Frustrations and misunderstandings have grown out of the proposed lumber standards SPR (Revised) 16-53 and lumber grading practices. Educational information was made available and disseminated to interested parties through conferences, seminars, and reports. The industry was assisted in evaluating the advantages and disadvantages of the proposed changes with respect to both short and long time ramifications.

c. Results

More rational and intelligent decisions, both pro and con, regarding the voting as whether to accept or reject the proposed changes in standards.

d. Personnel Involved

Hobbs

4. INCREASING EFFICIENCY OF FIRMS

a. Audiences

Owners, managers, and key production personnel of harvesting, manufacturing and marketing firms.

b. Activities

Develop a cost, ratios, and operational analysis for a demonstrational firm to assist the management to make and evaluate short and long term planning. Enlarge upon these methods in teaching similar techniques to additional firms.

Develop a monograph and visual aids relating to inventory control models for purchasing agents, and demonstrate how this information could be incorporated into existing systems.

Conduct short courses in operations analysis for sawmill managers. Followed up this activity with a case study of machine loading in a firm owned by one of the attendees.

Developed a Foreman's Training Workshop in the subject area of methods improvement and employee relations.

Assisted the Paper Industry Management Association conduct two workshop seminars in the subject areas of "The Art of Delegation" and "Problem Solving for Improvement".

Developed a monograph and visual aids as teaching tools in the subject area of production scheduling and inventory control for slow moving lumber items. Used this information in teaching industrial audiences.

Developed information relating to the most efficient ways of producing dimension stock from lumber. A publication and visual aids were prepared to depict operating techniques and principles of efficient rough mill operations. Information which will assist firms to improve lumber yields and reduce material costs was provided on an individual basis to numerous furniture plants. This was followed up with a two day seminar which was attended by over 100 management persons.

On an individual basis, numerous companies were provided with information related to solving drying problems, and resulted in reduced drying costs through a better understanding and application of the wood seasoning processes.

Coordinated efforts and communications of machinery manufacturers, consultants, and furniture fabricators in the technology of radio-frequency drying of wood.

Assisted in the organization of a short course in the subject area of wood finishing. The objective was to provide industry with improved finishing technology and particularly to conserve costly coating materials. This is being followed up by consultation with the School of Forestry on a research project aimed at quantifying the types of losses incurred in various spraying methods.

Through individual consultation with wood products manufacturers, motivated them to improved operational efficiency through application of work simplification methods, quality control and plant layout principles.

Assisted managements of wood harvesting and processing firms to better evaluate rolling stock and transportation systems improvements. Prerequisite to this endeavor, it was necessary to teach the methods of collecting and analyzing cost and production coefficients as well as the evaluation of truck performance. The collection, refinement and dissemination of this information is a continuing project.

The management of primary processing firms have been (and are being) taught how to improve upon the collection analysis and use of production and cost information for economic decision purposes. Demonstrations in the use of board tallying machines, electric pulse counters, time-lapse photography, recording charts and manual records have been initiated in numerous firms and operations. Results have been demonstrated at mill locations, presented at association meetings and at the county level. Publications in this subject area are being developed.

In cooperation with the Eastern North Carolina Lumber Manufacturers Association, The Pitt County Technical Institute and several equipment manufacturers organized and coordinated a short course in mill maintenance. The objective was to develop competent skills within sawmill maintenance personnel to trouble-shoot electrical systems on riderless sawmill carriages. Forty-five people attended the course. Equipment suppliers were impressed with the "feedback" of problems with their equipment and were encouraged to conduct additional courses.

Developed case studies, lecturettes and visual aids in the areas of Project Planning and Control employing P.E.R.T. and C.P.M., the Organization of Human Resources in Industrial Environments and Long Range Planning of Physical Facilities. This is an attempt to extend the F.E.S. Harvard Workshop teaching methodologies to industrial audiences.

c. Results

A more precise use of cost and production data collected through more rational methods has resulted in:

- (1) Improved control of cost items
- (2) Movement to a more profitable product mix
- (3) Better planning of purchases and reduced inventory costs including out-of-stock costs.
- (4) Increased interest in the industry to further application of Operations Research to purchase and inventory problems in the furniture trades.
- (5) The use of larger, better transportation equipment and leasing and contract haul systems. This in turn has facilitated the more economical tree-length harvesting and utilization methods.

The Operations Analysis Short Course and Case Study enabled one processor to evaluate and successfully carry out a \$50,000 plant renovation which resulted in a 30% production increase.)

Assistance in lumber seasoning technology was instrumental in helping one firm to avoid a \$100,000 investment in an unproven system.) ✓

In reference to improving lumber utilization through the application of research disseminated through yield seminars, 62% of those in attendance indicated the intended use of the research. Estimates of savings by individual companies were \$6,000, \$25,000, \$50,000, \$150,000, and 10 percent of current lumber costs.)

A greater understanding and appreciation of finishing materials wastes has been gained by industry as a result of short course activities.

Reductions of delay time due to electrical troubles have been facilitated in numerous sawmilling firms.

Initial activities in the area of inventory and purchasing have been instrumental in establishing interest in research in these subject areas by the School of Forestry and the U. S. Forest Service.

Information related to work simplification and methods improvement enabled a small fabricating firm to reduce labor costs by 10 percent.

d. Personnel Involved

Hobbs, Weidhaas, Thomason, Huxster, Keppler, Gilmore, Thomas, Carter, Fanny, Stuart, Nichols.

5. MARKET DEVELOPMENT AND EXPANSION

a. Audience

Owners, Managers, Marketing, and Sales Personnel of Wood Processing Firms and Consumer groups, Architects, Engineers.

b. Activities

Assembled and compiled educational information relating to the economic considerations of consumer preferences and the impact of competition from non-wood materials and products. Further demonstrate the need for high quality standards and their relationship to application under commercial conditions. A moderate sized firm supplying lumber products to the homebuilding industry in the upper south and east faced production curtailment and loss of \$25,400 in annual revenue due to the construction slowdown. Contacts with a mid-western industrial account on a trial basis proved that quality and services of the firm were satisfactory and resulted in a \$50,000 gross annual revenue.

Information has been provided to primary manufacturers regarding opportunities in the development of markets for residues and more complete utilization of raw materials.

Demonstrations have been developed relating to sound programs of product and process diversification: particularly among primary processors.

Consumer oriented T.V. programs dealing with the specification and application of wood and wood products have been produced -- often with the help of a trade association. Emphasis is given to defining of proper grade use, quality and strength properties. Requests for additional information following 14 TV programs normally run from 25 to 200.

Source and availability data relating to planer mill wastes have been compiled. This information is pertinent to the feasibility analysis of new enterprises such as particle board and hardboard manufacturing. It has been prepared at the request of the N. C. Department of Conservation. Plant location alternatives and analyses have been included.

Contacts have been initiated to determine the possible need for and use of econometric studies of the factors involved in the demand, supply and costs of certain wood products. Eastern manufacturers have been slow in employing such marketing analysis tools.

c. Results

The dissemination of information related to marketing alternatives and opportunities has been instrumental in helping the North Carolina lumber industry to improve their sales level while West Coast producers have suffered greatly from construction cut-backs.

One primary producer is currently negotiating arrangements for the sale of sawdust for pulping purposes. This is expected to increase mill income by \$24,600 per year.

Several demonstration firms engaged in product diversification have invested in capital improvements of 25 to 300 thousand dollars. The "tight money" situation has restricted more efforts and accomplishments along these lines.

Information regarding wood residues for use in particle products have been provided to prospective entrepreneurs.

d. Personnel Involved

Huxster, Weidhaas, Hobbs, Keppler, Thomason

6. NEW AND IMPROVED PROCESSES AND PRODUCTS

a. Audience

Managers, and owners of wood processing enterprises.

b. Activities

Projects have been initiated to investigate the feasibility of long length logging and the tree concentration yards as a marketing medium. Ultimately all primary processors need this information as it applies to their specific situations. Demonstration firms are being evaluated for their potential use of this technology.

An educational project in the subject area of analyzing Dry Kiln investments from the stand point of Return on Investment based on discounted cash flows has been established. Publication of this information has been accomplished and a slide lecture has been prepared.

An evaluation of radically new process for producing dimension lumber and pulp chips has been made. Investments are large and the marketing limitations for the product somewhat restrictive. However, under favorable conditions returns on investment up to 42 percent are realistic.

The potential benefits of a small portable mechanized sawmill unit have been analyzed. In areas of relatively small and scattered forest ownerships, the small hardwood lumber manufacturers are being forced out of business due to increasing unit costs of production. This machine appears to be a satisfactory solution to many a small operator's dilemma. A publication providing a "how to" approach to evaluating this facility from an individual standpoint is in preparation.

c. Results

Adaptation of the long length logging methods indicate savings of 2 to 5 dollars per thousand board feet under appropriate conditions.

A North Carolina manufacturer is planning to establish a "Chip and Saw" mill as a result of the study and publication of information about this new unit.

A manufacturer was able to realize a 12 percent greater return on investment following his analysis of alternatives using methods taught by the extension specialists.

The small mechanized sawmill indicates production increases of 50 percent with the same manpower and slightly increased investment. Returns on investment appear to be in the range of 25 to 28 percent. Several secondary processors are very interested in the unit for possible use by their rough lumber suppliers.

d. Personnel Involved

Huxster, Keppler, Hobbs, Feters, Gauger, Weidhaas, Thomason, Stuart.

In addition to the preceeding programmed work, section personnel have been active in numerous other activities, some of which are enumerated below.

Secretaryship and participation to the Extension Appalachian Marketing and Utilization Technical Forestry Committee.

Secretaryship and program chairman for the Mechanical Conversion Division of the Forest Products Research Society.

Secretaryship of the Carolinas-Chesapeake Section of the Forest Products Research Society.

School of Forestry Student Recruiting Committee.

Governors Conference on Forestry Committee.

Chairman of School of Forestry Committee to develop a teaching, research, and extension program in harvesting.

University Committee to design and build a model furniture plant.

Campus Committee on Educational Television.

Extension Committee on Farm Labor Problems.

Committee to develop teaching subject matter and instructional aids for the course in Logging and Milling.

Natural Resource Committee for Extension Target II.

Resource Consultant in Wood Products Utilization and Marketing for the Western Extension Marketing Conference.

AGRICULTURAL EXTENSION SERVICE
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH

SCHOOL OF AGRICULTURE AND LIFE SCIENCES

DEPARTMENT OF FORESTRY
Box 5488 Zip 27607

MEMORANDUM

TO: W. E. Keppler, Jr.
DATE: January 27, 1967
FROM: L. H. Hobbs
SUBJECT: Annual Report for Calendar Year 1966

Summary

100% of the Specialist's time was devoted to AMA Project IV Work. The Specialist's time and program activities are classified under six categories as follows:

1. Resource Development	18%
2. Individual Producer Marketing Decisions	14
3. Marketing Policy	7
4. Increasing Efficiency of Marketing Firms and Industries	32
5. Market Development and Expansion	16
6. New and Improved Processes and Products	<u>13</u>
TOTAL	100%

Number of requests for technical assistance	255
Number of firm and other out-of-office visits	127
Number newspaper articles or stories prepared	3
Number Television broadcasts made	3
Number Radio broadcasts made	2
Number Publications distributed directly to public	99
Training meetings held by specialist	12
Attendance	78

Other adult Meetings at which specialist presented educational information or otherwise participated	27
Attendance	366
Meetings held by local leaders and attended by specialist - adult	3
Attendance	756



Resource Development

Objective - Create an awareness on the part of industry and the people of North Carolina in general as to the availability, development potential, and economic significance of the forest resources in this state.

Clientele - Forest Industry and General Public

Description of Activity

- a. Assist forest industry in production of 16 MM Color movie depicting origin, economic development and outlook of the industry.
- b. Assist industry in formulating plans for publicizing, distributing, and evaluating acceptance of the movie.
- c. Assemble and compile significant statistical facts relating to the industry for use by civic clubs, television, and radio stations, newspapers, students and individuals including other public agencies.

Results - In order to meet requests for the film, thirty prints have been purchased by the North Carolina Forestry Association. One private Company, operating nationally, has purchased its own copy as has the North Carolina Furniture Manufacturers Association. The U. S. Forest Service has indicated a desire to purchase their own copy of the film. The film has been shown to high school and college students, civic clubs, and other groups. It is currently booked solidly 2-3 weeks in advance with some advance requests for July and August of 1967. Several television stations, including the University Station, WUNC-TV-4, have televised the movie. More than a hundred bookings of the movie have been made since its premiere showing on October 17, 1966.

Industry statistical facts have been supplied to specialist, county Extension offices, civic clubs, mass media outlets and individuals upon request. These facts have been used in both Extension programs and programs of other agencies as well as those of civic and service organizations in keeping the public better informed with respect to the forest industry and its contributions to the social and economic welfare of the people of the State.

Individual Producer Marketing Decisions

Objective: Develop managerial skills within individual firms which would improve the decision-making techniques with respect to business changes involving both short and long term skills.

Clientele: Wood Products industry in general, but more specifically, the smaller operators who are finding it increasingly difficult to operate profitably.

Description of Activity: The specialist worked closely with sawmill owners or in organizing means of evaluating production and marketing methods.

Results: Four of nine mills directly involved have made substantial changes in machinery and other production equipment. Two other firms are actively planning completely new mills on improved sites and another has made major changes in lumber marketing - seasoned C & Btr. rather than rough-green lumber. Two of the nine mills took no substantial action. One is still operating and the other was thrown into bankruptcy by its creditors.

Example: Small mill producing largely heavy timbers was selling high grade boards rough and green to a larger mill. A small lumber dry kiln was installed and the high grade lumber is now being sold to a millwork concern kiln dired for \$12,000 more annually than when sold as rough-green lumber.

Marketing Policy

Objective: Make available educational information relating to the new proposed lumber standards SPR (Revised) 16-53, and lumber grading practices. Assist the softwood lumber industry with an analysis and evaluation to determine advantages and disadvantages of the proposal as a basis for action with respect to both short and long term goals.

Clientele: Softwood lumber industry, Wood technologist, retail lumber dealers, architects, engineers, contractors, and consumer groups.

Description of Activity: Assemble and compile factual information and disseminate to interested groups and individuals through conferences, seminars, and reports.

Results: The obvious frustrations and misunderstandings generally associated with the proposed new softwood lumber standards in the beginning have been largely dissipated. Most groups and individuals, whether they favor or oppose the changes, understand the significance of both the revised standards and grading practices to the extent that decisions are being intelligently made on the basis of fact rather than hearsay.

Example: One lumberman stated that he had on the basis of limited information available to him decided to vote against the proposed new lumber standards. However, after discussing the matter with the specialist and reviewing a report concerning the matter prepared by the specialist he decided that it was in his interest to cast his ballot in favor of the proposal.

Increasing Efficiency of Marketing Firms and Industries

Objective: Review and improve managerial skills with respect to determining most realistically both short and long range goals.

Clientele: Wood Industry and specifically medium sized lumber manufacturing plant owners and managers.

Description of Activity: Assemble and compile educational information relating to the economic considerations of consumer preferences and the impact of competition from non-wood materials and products. Taught the need for high standards of quality control and their application under commercial operating conditions.

Results: North Carolina lumber and dimension manufacturers were able to not only hold established accounts but also pick up new ones in 1966 at a time when lumber and wood markets nationally were experiencing serious economic stresses due generally to the housing slump.

Example: Moderate sized plant that has in the past marketed the mill output largely to the homebuilding industry in the upper South and in the metropolitan areas of the east was faced with curtailment of production and loss of \$25,400 annual revenue as a result of the slowdown in home construction. Contacts with mid-western industrial account on a trial basis proved that the quality of lumber and service was satisfactory resulting in \$50,000 gross revenue annually.

Market Development and Expansion

Objective: To increase managerial, production, and marketing skills as an aid to sound business considerations in determining long-run goals.

Clientele: Lumber and similar wood industry plant owners and managers.

Description of Activity: Organized and conducted meetings with both private and public individuals and groups making available research and other educational information. Assisted in analyzing markets and interpreting results with respect to specific applications.

Results: The owners and managers of wood products plants are more concerned with diversification of production and in improving quality controls. Wood products plants and particularly lumber mills have continued to seek and find methods for more completely utilizing the whole tree in the production of consumer products. The utilization of sawdust in the manufacture of wood pulp is a commercial reality. One mill is currently negotiating arrangements to sell sawdust which will increase mill income by \$24,600 per year.

New and Improved Processes and Products

Objective: To make available to the industry pertinent research information relating to the development of new manufacturing equipment and methods including the modification and improvement of conventional lines for increased operating efficiency.

Clientele: Wood Products Plant Owners and Managers.

Description of Activity: Organized and conducted meetings and conferences with industry groups, associations, and individuals. Prepared and distributed publications. Assisted in formulating equipment evaluation procedures and techniques.

Results: More organized effort on the part of industry managers is involved in the consideration of equipment changes and alternatives. One firm had tentatively felt that a double arbor gang edger was what they needed. After systematically analyzing cost and returns they installed a 6-foot band resaw with run-around. Another had decided to install a band resaw with run-around; however, an analysis of the rate of return on capital investment required in this specific situation indicated that a different type of equipment would yield greater profits with up to 12% more return on investment than was possible with the next best alternative equipment.