

Wood Products Extension Section
N. C. Agricultural Extension Service
N. C. State of the University of North Carolina
Raleigh, North Carolina

January 8, 1965

TO: William Keppler, Jr.
FROM: William T. Huxster, Jr.
SUBJECT: Annual Report for Calendar Year 1964

Summary: 100% of the specialist's time was devoted to AMA work.
The details in problem areas are as follows:

Short Range Problems in Managerial Decision Making	40%
Long Range Problems in Managerial Decision Making	15%
Consumer Educationa	5%
Understanding the Market Structure	10%
Improved Market Technology	25%
Miscellaneous	<u>5%</u>
TOTAL	100%
Number of requests for technical assistance	160
Number of visits to firms	51
Dollars and cents savings in either decreased costs or increased returns to individual firms	\$308,000

Key Problem Areas: (Bill, you may want to include some of these in your narration, I am putting them down for the record primarily for this section.)

1. How to effectively accomplish the assigning of priorities to problem areas and developing disciplines within the section to maximize effectiveness of the section (Team Approach).
2. How to be effective in accomplishing the role of the vital link. N. C. Research Staff research programs normally do not dovetail with present industry problems. (The exception is the Forest Economist).

3. How to effectively coordinate marketing and production activities on industry problems of mutual interest.
Example: Harvesting, log grades, mensuration practices.
4. How to effectively develop the Team Approach between this section and other extension departments on problems requiring additional disciplines. Example: Agricultural Engineering, Industrial Engineering Extension, and Marketing Department.
5. How to decrease the backlog of commitments? My individual backlog seems to continue to expand. The alternatives appear to be either additional manpower in this section or to be exceedingly judicious in assuming additional work.

Results:

Problem Area No. 1 - A lack of managerial skills to make short run adjustments of operations.

- A. A problem study was conducted in a pine dimension plant which was captive to a large sawmill operation and was operating at a loss. Through application of time study techniques, production scheduling, inventory control, product pricing, developing a coordination between sales and production, managerial staff an annual increase in returns will be in excess of \$30,000 per year. Teaching techniques used were those of assisting company employees to conduct problem studies, assist them with analysis, and lead discussions and keyman critiques.
- B. Normally, planing mill costs are recorded in average cost per unit. A problem study was conducted to develop ways and means for management to have access to production costs by product. The resulting information developed to provide management with marginal log size criteria, efficiency of trading of input materials and standard costs of products. This composite of information provided the sales department with better information relative to making sales decisions. Annual increased returns will be approximately \$15,000 per annum for the planing mill function.
- C. North Carolina produces approximately 1.9 million cords of five foot pulpwood annually. Most of this is produced by the bobtail truck. The efficient use of pallets can reduce truck transportation costs by \$2.00 per cord. Part of this saving must be allocated to the prehauling function

1.9
2
3.9

which consists of moving loaded pallets from the stump to a staging area. Problem study was initiated to develop production coefficients and cost data on the prehauling function. The resulting information will provide the pulpwood industry with a design criteria with which to motivate change from the bobtail system to the more efficient pallet system. Additional problem studies were conducted in tractor skidding of tree length materials, and equipment to load long pulpwood and sawlogs. Presently derived information indicates that pulpwood production costs can be reduced \$2 per cord with efficient highly mechanized pulpwood producers. The education effort has just begun in this area however.

- D. The age-old problem of obtaining logs cut to desired lengths was investigated at three firms. Suggestions were made to management relative to methodology needed to correct this deficiency. Resulting savings and raw material can amount to \$30,000 annually at these three firms. The techniques employed were utilized in two short courses and three keyman critiques during the year.
- E. Problem studies were continued in the area of developing machine efficiencies so that the concept of Systems Analysis of sawmills could more fully be exploited. Differences in machine efficiency enabled one sawmill after making small modifications to increase its net returns \$28,000. The technique used was time study at two different installations with resulting written reports and keyman critique with management of the firm in question.
- F. To support and enrich the continual development of Systems Analysis in the educational program. Considerable time and effort was expanded on completion of the film Systems Analysis in Sawmills. This film is a 30 minute color with synchronized sound and was financed by the Federal Extension Service.
- G. Short courses were conducted to include planning, coordination, and/or participation and involved the Sawmill Operations Workshop which had 25 sawmill managers. This was held in N. C. A similar workshop was held for 18 sawmill managers in Miss. Both courses met with great response and enthusiasm. A one-day seminar at Hickory in cooperation with N. C. Forest Service to update sawmill operators in that area. Six keyman critiques were held with individual firms during the course of the year, which entailed the use of visuals, practical exercises, and problem solving for those individuals in attendance.

A Pulpwood Dealers Short course was conducted for approximately 40 pulpwood dealers in this state to bring them up to date on the latest research being conducted in the logging area. This latter course was in cooperation with the American Pulpwood Association.

Planning Skills on the Part of Managers

- A. Work was conducted consisting of keyman critiques, visual presentations, and discussions with procurement organization of a pulp and paper company. To provide the design criteria for locating pulpwood procurement points using location theory. The basic educational mission was to equip professional personnel below top management with managerial tools necessary to effect cost reductions in pulpwood procurement. The resulting changes reduced procurement costs by \$75,000 annually.
- B. A three dimensional model of sawmill equipment and components was designed and built to assist managers in the long range planning aspects of plant layout. The model with its component parts can be used to duplicate almost any existing sawmills or envisioned sawmill. To date the model was used in short courses previously mentioned, keyman critiques, and with two sawmill managers who are actively planning and completely new mills. The latter mills will represent \$700,000 capital investment.
- C. By presenting methods of analyzing economical and technical information and through mill visits a mill management was motivated into the element decision of long range modernization program. Within six months additional capital of \$60,000 was invested to reduce labor costs by \$28,000 annually. The three year plan will represent some \$200,000 in capitalization and an increased annual returns of \$60,000 a year.
- D. Many of the larger enterprises are creating positions for logging engineers within their organizations. Considerable effort has been devoted to assist these engineers with their long range planning relative to the type of logging studies to be conducted and to make decisions on areas that will prove most beneficial in assisting the industry to rapidly adopt new equipment, systems, and methodology.

Problem Areas Number 3: A lack of consumer knowledge about wood products and the market system.

- A. Conducted a television show relative to the visit to the sawmill to familiarize the consumer with the type of equipment necessary to produce quality products.
- B. Supplied basic statistics for a farm magazine article exemplifying the importance of the furniture industry to N. C.
- C. Participated in two student career days to create an awareness of the modernization of the Wood Products Industry.
- D. Conducted a problem study with one individual firm to analyze existing sales records to predict consumer demands and trends.

Problem Areas Number 4: Lack of knowledge of markets structure

- A. Through a cooperative effort of the poultry specialist, Marion Jones, ^{and} the Wilkes County Agent provided marketing information to the broiler producers of the county relative to the availability of chicken litter. This increased demand for chicken litter will mean approximately \$24,000 in increased returns to the lumber industry per year. *also letter Hollis*
- B. Work has been initiated in cooperation with Dr. Peter J. Dyson to determine the feasibility of a log or tree concentration yard in N. C. Methods used will be to collect and analyze physical input output information available from industry, state and private agencies, individual interviews and possibly problem studies.
- C. Acted as an advisor to Tennessee Vally Authority relative to an economic study of wood products industry opportunity in French Broad Basin.
- D. Coopedated with Dr. Peter J. Dyson in his supervised student summer employment program. These students were placed with sawmills, pulpwood companies to conduct problem studies throughout the summer.
- E. Participated in a hardwood plywood institute regional meeting to motivate the hardwood plywood industry to actively engage in employee recruitment and training and to make them aware of the potential of technically trained personnel.

- F. Acted as an advisory capacity to the Wood Science and Technology Department relative to the summer practicum.
- G. Participated in a Florida State University School of Forestry Curriculum Advisory Committee.
- H. Dessiminated information ^{thru} to personal contacts and correspondents regarding technical problems regarding Southern Yellow Pine plywood.

Problem 5: Lack of knowledge of technology necessary in planning and controlling both short and long range adjustments.

- A. Conducted a problem study for bucking long logs to optimum grade. The resulting yield information influenced management to change current policies relative to scaling practices and types of raw material they would purchase. The results of the study has been incorporated into the Sawmill Operations Workshop.
- B. Cooperated with the Wood Science and Technology Department headed by Dr. Eric C. Ellwood in evaluating the effects of the furniture industry using 1/36 black walnut veneer as opposed to the industry standard thickness of 1/28. The results of this study was presented to the Department of Commerce hearings. Industry eventually adopted a 1/32" veneer standard enabling a 15% greater utilization of black walnut supply. Ultimately it will be practical to use 1/36" veneer as improved quality control techniques and equipment are implemented.
- C. In plant assistance was given to two furniture factories having drying problems and tension wood problems. The results enabled one firm to improve drying practices and reduce the amount of culls. The other plant has included the necessary equipment in their capitalization plans. Both plants are now actively attending the Southeastern Dry Kiln Club meetings which the specialists ^{have} cooperated with Robert C. Gilmore of the Wood Products Laboratory and the U. S. Forest Service personnel at the Southeastern Experiment Station in Asheville. This kiln drying club creates a medium in which dry kiln operators throughout the state and Virginia can meet and solve common problems Attendance at these meetings through the last year has averaged 40 kiln operators.

- D. Cooperated with Robert C. Campbell of the U. S. Forest Service, Southeastern Experiment Station in planning and conducting a pine log grade yield study.

Problem 6: Miscellaneous Contributions

- A. Conducted a Sawmill Operations Workshop in Mississippi to the Mississippi Pine Manufacturers Association in cooperation with the Mississippi Extension Service. The technical information in results have already been covered in this report. However, prior to the end of the short course industry voted to contribute \$18,000 towards a two year pilot wood products extension program in that state. In addition they voted to cooperate very closely with the Mississippi Land Grant Univ.
- B. Provided technical information and program planning techniques and methods of presentation to 17 Peace Corps Volunteers destined for Chile.
- C.. Assisted an extension specialist from West Virginia, Mississippi, Washington, Louisiana, and Florida in planning and conducting a Wood Products Extension program.
- D. Cooperated with the Federal Extension Service and the Ga. Extension Service in the conduction of a team approach in conducting problem studies and analyzing a wood products firm in Georgia. The Georgia staff was quite varied in disciplines and areas of responsibilities. Results indicated that the enterdisciplinary approach will work. Maximum effort must be devoted to buyer, planning and organization to effectively accomplish results.