

A STUDY OF AGRICULTURAL EQUIPMENT DEALERSHIPS
IN NORTH CENTRAL OKLAHOMA AND SOUTH
CENTRAL KANSAS TO DETERMINE
THEIR EMPLOYMENT
NEEDS

By

RICHARD WILLIAM THOMAS
//
Bachelor of Science
Oklahoma State University
Stillwater, Oklahoma

1972

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the degree of
MASTER OF SCIENCE
December, 1980

Thesis
1980
T4615s
cop 2



A STUDY OF AGRICULTURAL EQUIPMENT DEALERSHIPS
IN NORTH CENTRAL OKLAHOMA AND SOUTH
CENTRAL KANSAS TO DETERMINE
THEIR EMPLOYMENT
NEEDS

Thesis Approved:

Gene W. Duggan

Major Adviser

R. W. Linnell

James P. Key

Norman A. Dushan

Dean of the Graduate College

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude and appreciation to Dr. Donald Phillips, Dr. Lloyd Briggs, and Dr. James Key for their individual advice and expertise concerning the initial development, implementation, and completion of this study.

I extend a special acknowledgement to Dr. Cecil Dugger, Dr. Richard Tinnell, and Dr. James Key for their willingness to serve on my advisory committee and offer guidance and encouragement to complete this study, also, to Dr. Edwin Wineyard and Dr. Gerald Burson of Northern Oklahoma College, Tonkawa, Oklahoma, for their advice on instrument development, data analysis, and encouragement pertaining to the completion of this study, I express my gratitude.

To Mrs. Kay Porter I grant a sincere acknowledgement for her time, effort, expert typing skills, and format assistance devoted to this study.

To all my friends and colleagues, especially Mr. Clifford Jared, at Northern Oklahoma College I appreciate their encouragement and moral support during this research project.

Others who contributed significantly toward the completion of this study are Miss Ruby Boesch and my parents, Elmer and Pauline Thomas, who supported all my efforts toward a graduate degree program. I want to give a special expression of love for my mother, Pauline, for her patience, advice, assistance, and inspiration.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
Introduction.....	1
Statement of the Problem.....	2
Statement of the Purpose.....	2
Objectives.....	3
Assumptions of the Study.....	3
Scope and Limitations of the Study.....	4
Definition of Terms.....	5
II. REVIEW OF RELATED LITERATURE.....	10
Employment Needs and Opportunities.....	10
National Studies and Research.....	17
State and Local Research in Oklahoma.....	39
Summary of Review of Literature.....	48
III. METHOD AND PROCEDURE OF THE STUDY.....	51
Study Population and Sample	52
Development of the Instrument	53
Interview Technique	54
Data Collection.....	56
Data Analysis.....	56
IV. ANALYSIS AND RESULTS OF THE STUDY AREA.....	57
Identification of Agricultural Equipment	
Occupational Titles.....	57
Verification of Present Employment Numbers.....	59
Employment Needs and Opportunities.....	63
Salary and Employee Benefits.....	64
Academic Backgrounds.....	71
Possibilities for Potential Training Programs.....	78
Employment Preferences.....	83
Physical Criteria of Dealerships.....	85
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.....	88
Summary.....	88
Conclusions.....	94
Recommendations.....	95

Chapter	Page
A SELECTED BIBLIOGRAPHY.....	98
APPENDIXES.....	102
APPENDIX A - DEALER COMMENTS AND OPINIONS.....	103
APPENDIX B - CONFIRMATION LETTER.....	111
APPENDIX C - THE SURVEY INSTRUMENT.....	113
APPENDIX D - DEALERS CONTACTED.....	122

LIST OF TABLES

Table	Page
I. Occupational Titles in Agricultural Equipment Dealerships.....	58
II. Employment by Occupational Title (1).....	60
III. Estimated Employment Needs from 1980-85 by Occupational Title.....	62
IV. Monthly Salary of Employees by Occupational Title (1)...	65
V. Estimated Monthly Salary of 1985 Employees by Occupational Title (1).....	66
VI. Employment Benefits by Occupational Title.....	69
VII. Educational Backgrounds Preferred by Employers by Occupational Title.....	72
VIII. Course Choices by Academic Groupings.....	74
IX. Additional Courses Recommended by Dealers.....	77
X. Need for an Agricultural Equipment Technician Program as Perceived by Dealers.....	78
XI. Employment Potential for Apprentice Work/study Program as Perceived by Dealers.....	79
XII. Minimum Job Training Hours Recommended by Dealers for a Work/study Program.....	80
XIII. Company In-service Training Benefits for Work/study Trainees.....	81
XIV. Availability of Company Training Aids and Equipment.....	81
XV. Hardware Equipment Loans by Dealers for a Training Program.....	82
XVI. Scholarship Fund Donations by Dealers for Students.....	83
XVII. Application Age Group Preference.....	88

Table	Page
XVIII. Marital Status Preferred.....	84
XIX. Gross Value Range of Sales and Services.....	85
XX. Service Distances of Dealerships.....	86
XXI. Dealership Sizes Rated by Full and Part-Time Employees..	87

LIST OF FIGURES

Figure	Page
1. Study Area in North Central Oklahoma and South Central Kansas.....	9
2. North Central Oklahoma and South Central Kansas Counties and Dealerships Included in the Study.....	10

CHAPTER I

INTRODUCTION

It is becoming increasingly evident that our society is becoming a complex, technical matrix of increasing magnitude, and mechanized agriculture is involved in this rapid development of technology. Its perceived importance will influence the present and future food and fiber needs of this nation and the world. As the machines and their respective systems become more sophisticated and complex, it will require technically competent personnel to select, sell, repair, and modify this equipment for more economical and efficient usage (1).

The field of agricultural equipment also overlaps into knowledge requirements for industrial and transportation equipment with selected manufacturers. This fact alone could provide a well paying and satisfying career to many students being displaced from production agriculture to urban areas. As the present trend continues, from small and intermediate operations to larger incorporated type farming operations, agricultural machinery companies and independent dealers will have to obtain more competent personnel to sell and service their products. This is the result of the sophistication and technical complexity of the new more expensive equipment (2).

Technically competent individuals, along with other skills, will be needed to supply the needs of the agricultural equipment industry. Such individuals may be trained in vocational-technical, technical-

trade, and/or college institutions where they will be subjected to extensive laboratory, field experience, and business courses while gaining maturity and responsibility for the area of specialization.

Statement of the Problem

The problem is that, due to the ever increasing sophistication, cost and complexities of modern agricultural equipment, a void has developed between local school systems and the agricultural equipment dealerships. This void has led to inadequate training programs and the needed supply of qualified personnel to fill the needs of agriculture equipment customer sales and services. The problem is further compounded by the lack of information on occupations, educational requirements, and employment opportunities so regional vocational-technical schools or colleges can provide appropriate training and produce the type of agricultural equipment technician graduates needed.

Statement of the Purpose

The primary purpose of the study was to determine with employment patterns and educational needs of agricultural equipment dealerships in North Central Oklahoma and South Central Kansas. It was expected that findings of the study could provide administrators, counselors, and instructors of area vocational-technical schools and colleges with information about existing needs and guidelines for implementation and curriculum development of agricultural equipment employee training programs. The study could also provide information pertaining to the area for use in vocational and technical guidance, college program planning, and employment counseling on agricultural equipment occupations.

Objectives

Specific objectives of the study were:

1. To identify and list occupational titles that exist at selected agricultural equipment dealerships within the study area for which high school, vocational-technical, and college graduates would qualify.
2. To identify present and estimated numbers of employees in each of the individual dealerships according to the occupational titles defined.
3. To determine present and estimated average salaries plus fringe benefits for the occupational titles defined.
4. To determine the basic educational level required of each occupational title identified for job-entry employment.
5. To determine the individual academic courses and backgrounds required of the specific occupational titles identified for job-entry employment.
6. To identify areas of cooperation for a work/study program between dealers and a potential high school, vocational-technical, or college training program.
7. To list the specific comments and opinions of agricultural equipment dealers concerning the need and implementation of cooperative work/study training programs within their service areas.
8. To determine the magnitude of the individual dealerships by their gross value of sales, service, and service areas.

Assumptions of the Study

It was assumed by the investigator at the beginning of the study

that:

1. Dealers selected from the Oklahoma and Kansas Retail Hardware and Implement Association list would reflect an accurate picture of employment potentials for agricultural equipment technicians in the service area.
2. Dealers would be cooperative in providing survey and potential work/study training program information.
3. Dealers would reveal educational characteristics of employees in the occupations.
4. The dealerships in existence at the time of the study were representative of the types likely to exist in the future.
5. The executive director of the Oklahoma Hardware and Implement Association and Western Retail Implement and Hardware Association could provide a complete listing of agricultural dealerships in the North Central Oklahoma and South Central Kansas area from which a sample could be drawn.

Scope and Limitations of the Study

The following items set up the limits and boundary conditions of the study:

1. Dealers selected for the study were not chosen for specific brands of equipment, types, or sizes of the North Central Oklahoma and South Central Kansas dealerships.
2. Only dealerships contained within the survey area would be chosen for the sample.
3. Dealership personnel interviewed would only include owners, managers, or assistant managers.

4. Dealerships would be typical of agricultural equipment needs and services related to farming and ranching practices within the survey area.

5. The sample selected from the identified total population of state dealerships would be reduced to selected dealers within an eight county service area of North Central Oklahoma and South Central Kansas.

Definition of Terms

A clarification is needed of words and groups of words used with reference to this study. The following definitions will help explain the meanings of the terms used in this study.

Agricultural Equipment Dealership - A firm whose principle functions are sales and service of new and used agricultural equipment used in farm and ranch field operations.

Occupational Title - Classifications in the agricultural equipment dealership which designate the employee's major area of occupational responsibility (2).

Competency - Ability, knowledge, or skill (2).

Agricultural Equipment Technology - A combination of physical or biological sciences with applications to farm machines and mechanization systems (3,4).

Agricultural Equipment Technicians - An individual who has completed a vocational-technical and/or post high school agriculture equipment curriculum with courses concentrated in mathematics, technical specialty, social science, language arts, and business, or has the skills of such a person. The person has the skills and abilities to work as an integral member in management, sales (equipment and

parts), advertisement, distribution, repair and maintenance, assembly, field operation, troubleshooting, field use modification (service and sales bulletins), and clerical job duties for an agricultural implement dealer of new and used agricultural equipment.

The definition could also describe an individual who has less than a baccalaureate degree and who has had an extended period of specialized training beyond high school. The training may include, but not be limited to, courses in physical science, biological science, and social science. The person should have acquired the skill and ability to make practical applications of theoretical knowledge in performing specific job tasks (4).

Occupational Field - A group of recognized occupations having substantial similarities common to all occupations in the group. The occupations would have similarities in the work performance, in the abilities and knowledge required of the worker, and in the basic materials with which they work (5).

Area Vocational-Technical School - A public school or public institution that includes: (1) a specialized high school used exclusively or principally for the provisions of vocational education to persons who are available for full-time study in preparation for entering the labor market, (2) the department of a high school exclusively or principally used for providing vocational education in no less than five different occupational fields to persons who are available for full-time study in preparation for entering the labor, (3) the technical or vocational school used exclusively or principally for the provision of vocational education to persons who have completed or left high school and who are available for full-time study in

preparation for entering the labor market, (4) the department or division of a junior college or community college or university that, under the supervision of the State Board of Education, provides vocational education in no less than five different occupational fields leading to immediate employment but not leading to a baccalaureate degree (5, 6).

Educational Service Area - The area served by the local vocational-technical schools and community colleges located within the North Central Oklahoma and South Central Kansas area.

Dealership Service Area - An area calculated from a radius of miles encompassing individual dealerships within which the majority of their customer sales and services occur.

Study Area - An eight county area located in North Central Oklahoma including: Kay, Grant, Garfield, and Noble counties; and South Central Kansas including: Sumner, Harper, Sedgwick, and Cowley counties. Figure 1 shows the study area within North Central Oklahoma and South Central Kansas. Figure 2 shows the North Central Oklahoma and South Central Kansas counties and twenty-six dealerships contacted in the study.

Geographic Selective Sample - The region or area from which the investigator made a selection of dealership that could be serviced by possible training facilities.

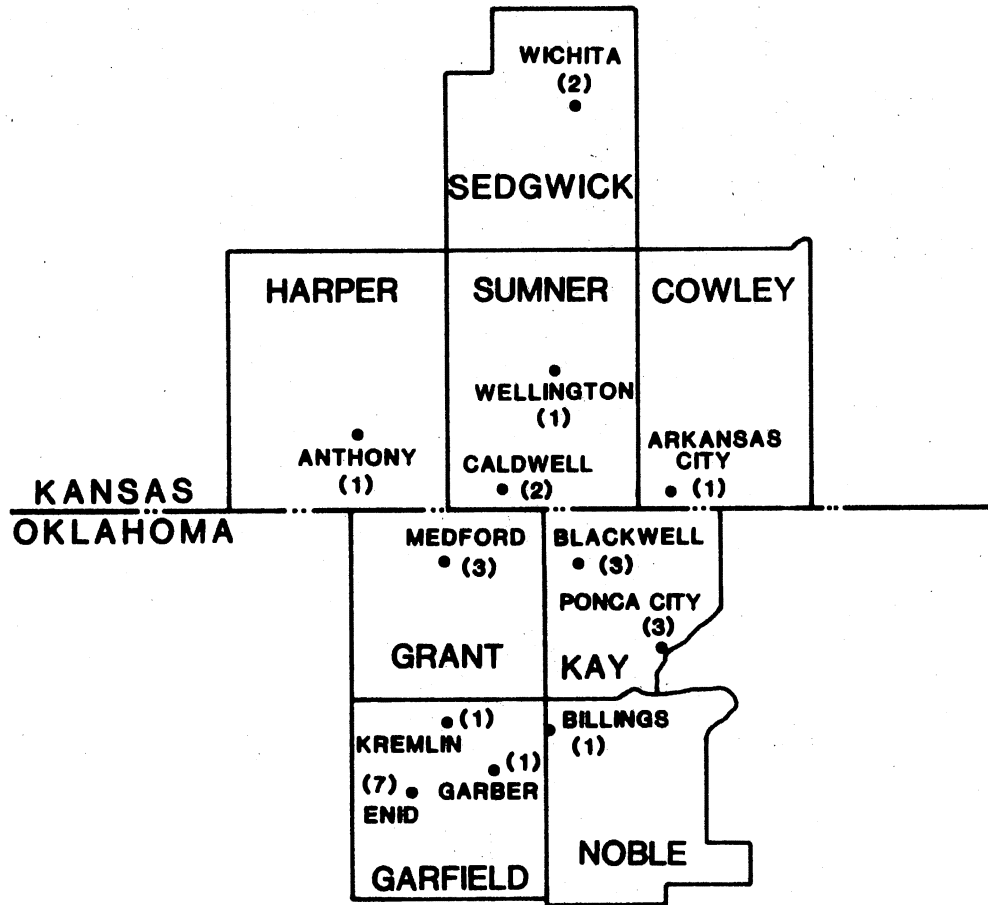


Figure 1. Study Area in North Central Oklahoma and South Central Kansas.

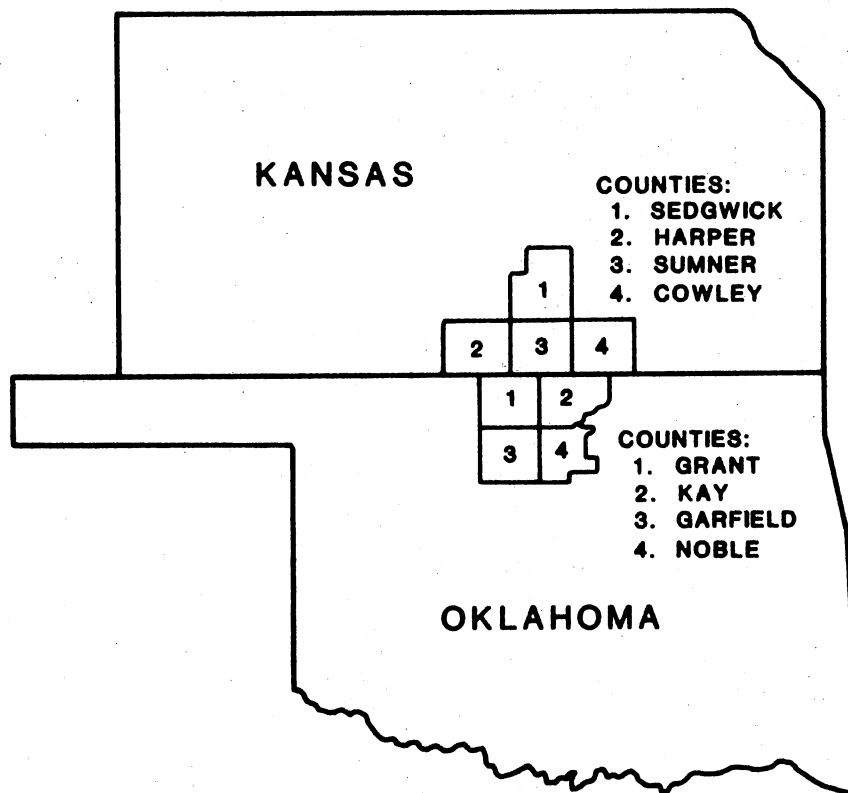


Figure 2. North Central Oklahoma and South Central Kansas Counties and Dealerships Included in the Study.

CHAPTER II

REVIEW OF RELATED LITERATURE

An overview of related topics and studies pertaining to the field of agricultural equipment technology potentials and projections has been presented in this chapter. This chapter is divided into three major sections: (1) Employment Needs and Opportunities; (2) National Studies and Research, and (3) State and Local Research in Oklahoma.

Employment Needs and Opportunities

In reviewing sources of employment outlook through 1985 for the agricultural equipment dealerships, one of the logical choices seemed to be in the Occupational Outlook Handbook (7) published by the U. S. Department of Labor Statistics. The findings and opinions concerning training opportunities available for farm production and off-farm agricultural business jobs (Occupational Outlook Handbook) stated that there will continue to be a wide range of occupations requiring technical knowledge below the four year college level. Nearly one-half of four year agricultural college graduates were presently employed in off-farm positions in agricultural business as sales and technical manager personnel. Excellent training has been provided at many two year community/junior colleges and vocational-technical schools. This reflected a step toward providing more and better qualified personnel for off-farm agricultural business jobs. Adult evening classes (or

day classes in off-season) at these colleges and schools provide intensive instruction in subjects such as land and soil management, crop and livestock production, new technology and agriculture equipment, and financial management.

New viewpoints by educators, administrators, and government officials have arisen toward our society's changing needs in education; particularly with direction toward forms of career education versus general education formats. The agricultural employment outlook, discussed in the handbook, indicated that although the job positions in production farming were decreasing, a number of new jobs in farm-related industries which supply and service products to the farming population and which handle the marketing activities of farm products will continue to offer job opportunities to young people with farm backgrounds and specialized training in agricultural business vocations and technologies. Corporate farming enterprises will provide many new job positions and opportunities in the coming decade of the '80's.

Today, agriculture encompasses many other occupations besides farm production, including food and fiber processing, marketing and distribution industries, farm implement producers and dealers, and feed and fertilizer manufacturers. Improved agricultural technology has reduced farm employment. It has created needs for workers with agricultural skills in off-farm occupations. Increasing varieties of work in the growth section of agriculture will include off-farm businesses, occupations, and professions utilizing agricultural skills. The agricultural service industry offers careers in hundreds of occupations requiring specialized skills or the ability to operate and repair farm equipment. Many with agricultural knowledge or skills

required off-farm agricultural related job experience; while other occupations require a duration from a few months to several years training in technical schools, junior colleges, or colleges and universities.

According to the Handbook, farm equipment dealerships currently employ persons in farm-related and non-farm occupations. They must know the needs of farmers in their area and stock the latest machinery to meet these demands. Dealers employed sales workers, farm equipment mechanics, parts sales workers, secretarial, and clerical employees.

Sales workers of all occupational titles will experience much faster than average growth rates for all occupations through the mid 1980's. Salary ranges for sales workers will be highly variable, dependent upon the type of employment, personal qualities, and fringe benefits included in the base salary. Farm equipment mechanics have been expected to increase about as fast as the average for all occupations through the mid 1980's. Salary ranges have been based on 1976 levels of \$3.50 to \$6.35 per hour with some earning up to \$15,000 per year due to time and a half for overtime above the 44 hour average work week. Diesel mechanics have been expected to increase faster than the average for all occupations through the mid 1980's with average hourly wages of \$6.67 and a 40 to 48 hour average work week. Industrial machinery repairers (an integral part of some farm equipment dealerships) were comparable with the diesel mechanics previously mentioned; with average salaries in the Houston, Texas area of \$6.80 per hour. Employment of clerical workers has been expected to increase faster than the average for all occupations through the mid 1980's. The best long term employment potential is in areas which have been

compatible with computer applications and jobs being developed as a result of new technologies. Salary ranges ran from \$113 per week for routine jobs to highly skilled workers obtaining \$200 or more per week. Salary variations were common in clerical work and reflect differences in educational level, work experiences, and level of responsibility. An average work week of 40 hours was indicated for clerical workers in most cities. Many of the job openings in the above mentioned categories have resulted from the need to replace experienced personnel who retire, die, or transfer to other occupations.

Although the Occupational Outlook Handbook has been a good source of occupational information on a national level, it does not provide information on occupational needs within specific regions.

An article on future employment trends indicated that the manufacturing industry, particularly the machinery industry, will experience a 13 percent gain during the 1970's for additional workers was projected to increase by 40 percent due to socio-economic progress, urban renewal, transportation, harnessing the ocean, and enhancing the beauty of the land. These professions and vocations offered good chances for advancement to supervisory positions while specialized training offered advancement to sales, teaching, technical writing, and technical jobs.

Dillon (8) emphasized in an editorial that:

(1) The teachers of agriculture should know the breadth of opportunity for agricultural jobs on and off the farm in his local community, area and state.

(2) Involve citizens consulting groups in planning and evaluation of his total program (p.219).

He commented that the secondary and post-secondary teachers should

strive to provide their students with the necessary skills, knowledges, and abilities to enable them to advance in the world of work. This would provide them with occupational principles to allow for technology transfer to changing agricultural or related job situations.

In another editorial from the same publication, Worthington (9), Associate Commissioner for the Bureau of Adult, Vocational and Technical Education, U.S. Office of Education, commented that agriculture or agricultural businesses have been the largest and most basic industry in need of job training program expansion. He commented that vocational agriculture teachers must expand their training programs of instruction for careers in the multitude of allied corporations in agricultural businesses. This must be done while maintaining existing high standards in training students for on-farm production agriculture. He called upon teachers, supervisors, state education agencies, and the Office of Education to work together in restructuring and expanding programs around the career education theme. He was quoted as saying: "The total agriculture industry must have better, more comprehensive agriculture and agriculture business programs today than ever before" (p.219).

More than 500 companies were found to exist in agriculture and allied fields requiring specialized training. This indicated that new challenges and opportunities were opened in the field of education. The development and implementation of encompassing programs would be beneficial to both students and the nation.

Huber (10), a teacher in the Spoon River College at Canton, Illinois, related that the need for a Farm Technology Program in the state of Illinois stemmed from a national study by the U. S. Department of Labor in 1963. This study found the average age of farm equipment

personnel to be approximately 55 years plus, while the findings of an additional national study indicated a need for 20,000 farm equipment mechanics. A study completed in Illinois found an immediate need for 500 farm equipment service mechanics within the state alone. In concluding the article, Huber commented that a good number of the graduates trained in the farm equipment dealerships migrate to the better paying job conditions, usually in agriculturally related occupations. However, many students go to jobs in energy, automotive, and manufacturing businesses due to the low wage comparison of farm equipment dealerships to other businesses and industries.

The article emphasized that farm equipment dealers have been caught in a service charge and wage squeeze in comparison to many other types of mechanical businesses. They also have been hampered by some unfavorable working conditions (heavy pieces of equipment, inside-outside work, special tools not available, unsafe methods of handling equipment, etc.) contrasted to modern automotive, trucking, and manufacturing businesses. It was stressed that until some of the wage and job working conditions were enhanced, it would not likely attract or hold potential students.

In Terry's (11, p.13) study, the adopted opinion was that post-high school programs of instruction for agricultural machinery occupations seemed to be among the most promising sources for staffing machinery dealerships with competent trained personnel. This opinion was reinforced by the following quotes from current important publications in which the National Advisory Council on Vocational Education (12) stated:

Some formal post-secondary vocational occupational preparation for all should be a goal of the near future. Before many years have passed, the labor entrant without advanced skills gained through post-secondary education will be at a serious disadvantage. Universal advanced training will bring increased productivity, higher standard of living, and greater adaptability, to the profit of the economy, as well as the individual (p. 50).

Also in the same publication a panel of consultants on vocational education were quoted as saying:

The desirability of keeping young people out of the work force until they are older and better prepared, the critical need for technicians, the importance of more extensive shops and laboratories; these all indicate the vital importance of education for employment of youth in the years beyond the high school (12, p. 50).

A research study conducted by Warmbrod and Phipps (13) found that the agricultural equipment service occupations listed were in need of the largest number of agriculturally trained workers in the future.

The authors concluded:

Evidence indicates that majority of the employees in the non-farm agricultural occupations are working in jobs for which post-high school education in both agriculture and certain other subjects is appropriate. Particularly is the finding true for those jobs in which the greatest number of employees will be needed in the future (p. 17).

Stevenson (14, p. 45) further observed that: "Those businesses which indicate that greatest percentage of workers, with beyond high school education, are Dairy Processing, Grain Storage, and Agricultural Machinery".

All the studies and surveys previously mentioned, express employment opportunities for trained, competent personnel to fill the projected vacancies in agricultural equipment dealerships with post-high school vocational and technical training.

National Studies and Research

Since the enactment of the Vocational Education Act of 1963, a great deal of research has been conducted by national, state, and local agencies to predict employment trends and opportunities for many vocational and technical occupations. Prior to that time, the educational format in the country stayed with a general approach. However, with the passage of governmental acts, the public's demand for employable, practical education, and the impending emphasis on career education, researchers have diverted attention and energies toward specific needs by enumerating facts and defining problems concerning educational demands.

A research study has been conducted over a twenty-six state area by the Ohio Center for Vocational and Technical Education in 1965 (15). The purpose was to determine urgent needs and give definite information on requirements for occupational education involving competencies in agricultural fields. It was designed to produce a feasibility summary publication from a cooperative project. The study utilized a random sampling technique ranging from 10 percent to 50 percent and used both paid and unpaid volunteers to execute data collection. The study implemented a prepared and pretested interview schedule to agricultural businesses, industries, agencies, and services in need of occupational agricultural competencies and future employees.

Some findings the study disclosed were: (1) Persons employed in off-farm agricultural businesses needed education in agriculture; (2) machinery sales and service was the area in greatest need of employees; (3) salesmanship, human relations, and business management were competencies needed by employees; (4) beginning salaries and

wages for service workers were low and unattractive; (5) vocational-technical education programs of post-high nature were appropriate for many employees; and (6) trainees with farm backgrounds or experiences would have definite advantage in seeking employment in off-farm agricultural businesses.

The greatest number of employees were needed in agricultural equipment, agricultural supplies, and ornamental horticulture in the next five years. The study also showed an expected effect on programs in the future; however, it lacked good cooperation in obtaining data. Many of the state's reports depended upon the respondents to obtain the information collected for the study; therefore, the findings were of questionable reliability and validity.

In 1965, Louisiana State University conducted a survey through the Department of Vocational Agricultural Education (16). The purpose of this survey was to determine numbers, identify job titles, determine competencies, and define special characteristics plus job description available to the non-farm youth in agriculture within the Alexandria-Pineville area of Louisiana. The survey utilized an interview schedule for 139 businesses in the respective area which was connected with agriculture. The survey disclosed that of the 3,048 employees employed within the sample population, 913 were required to have knowledge and skill in agriculture subjects. Among the 913 workers, 224 different job titles were identified with an expected five year increase to be 975 workers and 252 job titles. Employees at management, skilled, and professional levels were in the greatest demand for future employment. The minimum age of 15 and a maximum age of 45 was disclosed by employers as a fixed trend to desired qualifications of

employment and length of service from the employee. Salaries were paid according to levels of employment. Higher salaries were earned by professional, managerial, supervisory, skilled, and sales personnel with provisions made for tenure increments. Unskilled labor employees were excluded from any fringe benefit conditions. Employee vacancy replacement was almost entirely limited to high school graduates or persons with all or some college experience. Employees, in 40 percent of the cases, with an agricultural skill and knowledge would be replaced by persons having a farm residential background. Little or no limitations; (i.e. Civil Service regulations, labor law restrictions, etc) effected entering various jobs identified within the occupational titles in the area. Job titles were expected to increase and agricultural competencies would advance to create a need for more comprehensive vocational education immediately prior to employment or in the early stages of employment. Employers indicated that continuing education of employees was available through company or firm schools plus training while on-the-job. Adult education programs, post-secondary schools, and colleges were reported to be infrequently used for training personnel within the area because (in many cases) they lacked the ability or facilities to provide the highly specialized and current upgrade training needed by their present employees. Major conclusions drawn from the study revealed that the establishments included in the survey represented practically all aspects of non-farm agricultural job titles ranging from semi-skilled to specialized and professional services.

The study indicated that there would be less need for semi-skilled and unskilled workers in the future, yet some businesses providing

agricultural services signified a willingness to hire these people in service and operative jobs. The study disclosed that the non-farm agricultural occupational opportunities within the area offered youth a wide range of job choices at fair pay. The employers of the surveyed firms expressed a strong desire for well trained young men who were knowledgeable in performing agricultural services. The study indicated that although census figures showed a decline in the total number of farmers throughout the nation, the agricultural businesses outstripped any other industry in job numbers and varieties by employing one out of every three persons in the current labor market. No other business was seen to propose a brighter prospect for the youth of the country than agriculture. Educators within the state of Louisiana were advised in the future to consult employers in non-farm agriculture on a regular basis before making final determinations to define pre-employment training qualifications for satisfactory job entry.

The Louisiana survey represented a well designed study that could be used by researchers as a model study in obtaining occupational information within a defined area. It utilized a concise questionnaire instrument to obtain factual employment opportunities and need from agricultural businesses in the Central Louisiana area. Information was revealed in terms of employee qualifications and characteristics found in later surveys throughout the country.

A 1969 Texas study concentrated on the single occupational title of Agricultural Machinery Mechanic (17). Fifty-one managers of farm equipment dealerships over the state of Texas were surveyed to acquire information concerning occupational and trade training content necessary. The administrative aspects for obtaining data involved

contributions from persons ranging from the Texas State Director of Agricultural Education to managers in farm machinery service and repair shops. The State Director requested each of the ten state area supervisors to select and recruit four vocational agriculture teachers within their area to serve as investigators for the state project. After selection of the investigators, the area supervisor met with the investigators to provide forms and instructions for collecting data. Data for the "knowledge and skills" part of the study was obtained from the managers of the service and repair shops, and data for the "occupational information" phase of the project was secured from the manager of the business. Managers interviewed were responsible for the entire operation of the business and were either the owner or hired manager of the business.

Data received indicated that all the businesses employed mechanics. Each business employed an average of 3.79 agricultural machinery mechanics per business composing slightly more than 35 percent of their total labor force. "Other" job classifications included bookkeepers, secretaries, and machinery set-up men. Eighty-eight percent of the firms employed salesmen, 70.59 percent employed mechanic helpers, and 75 percent employed service managers. Ninety-four percent of the employers expressed a shortage of well-qualified mechanics with an estimated need for 7,000 more mechanics in the next five years. Sixty-two percent of the respondents listed a critical shortage of qualified parts personnel with an estimated need for 3,600 well-qualified partsmen in the next five years. Managers expressed a need for trained personnel and were willing to assist in providing experienced and trained individuals for employment. One manager was

quoted as saying:

. . . In these times when mechanics are getting more expensive and more technical all the time and so few young men are pursuing this field of training, we desperately need a source of young men who are intelligent and who have . . . a basic knowledge of mechanics so that we have replacements for older men who are retiring or who cannot keep up with technical advances which are being made on farm equipment (17, p. 17).

Employers indicated a 47.98 hour average work week with an approximate wage of \$2.50 per hour of \$119.65 weekly wage for mechanics. Fringe benefits listed included: paid vacations for full-time employees, sick leave arrangements, and insurance programs. Ninety-four percent of the 51 dealerships approved for implementation of a mechanic training program in local Texas high schools. Eighty-nine percent of the dealerships provided local opportunities for on-the job training of mechanics. Seventy percent favored employees with farm backgrounds. The minimum hiring age was 18 years with a maximum age of 60 years, however, the prime employee hiring age was 19.22 years, indicating that younger men were highly desirable. The research disclosed the following major conclusions, a critical shortage of farm machinery service and repair mechanics existed within the firms, and employers were concerned more with employee personal attributes for beginning mechanics than their level of knowledge and skill development.

It should be remembered that the above survey only included a narrow study of one occupational title (agricultural machinery mechanic) as related to the total agricultural machinery occupational spectrum, yet it indicated urgent designations within each of the occupational titles. Employee qualifications appeared to deviate from other studies, indicating a lack of common objectives for recommendations and needs of trained personnel by employers between other states and

localized areas.

A staff study was conducted in the state of South Dakota by the Department of Agriculture Education (18). The purpose was to ascertain agricultural business competencies needed by employees in the field of agriculture, numbers presently employed, off-farm occupational opportunities, qualifications of new workers, services performed by the most needed job titles, and the in-service education desired by present and prospective employers of agricultural firms within the state. The population was limited to 1,878 off-farm agricultural businesses in South Dakota. These were identified through the use of a commercial credit directory as doing an annual gross volume of business in excess of \$20,000. Data was collected by means of mailed questionnaires. They were sent to employers who indicated a need for workers required to possess knowledge in the field of agriculture, however, only a 25 percent response rate was listed. This seemed to indicate lack of interest by the respondents toward the questionnaire. The low response rate affected the validity of worker needs.

Findings of the study revealed that: (1) opportunities far exceeded the supply of workers trained in agricultural competencies; (2) 2,485 or more off-farm agricultural workers would be needed in the state within the next five years; (3) 46 percent of the firms would employ one to four employees each and 20.5 percent would employ from five to 14 employees each; and (4) more than 22 new job opportunities would be added by agricultural businesses in the next five years. Employers predicted that more than one third of all new workers would be needed in the field of agricultural mechanization, exclusive of sales and management personnel. Processing, grain-feed-seed, farm

implements, agriculture chemicals-fertilizers, and general farm supplies would employ 80.3 percent of the off-farm workers. Most employers considered farm background as either essential or desirable to employment.

The foregoing study reflected a common need and recommendation for trained, competent agricultural personnel, particularly in the agricultural machinery section. The low response rate on the questionnaires resulted from a weak method of research utilized in obtaining occupational information.

Wood (19) completed a study in Spokane County, Washington, to determine the kind of education needed by high school graduates for entry into the farm machinery business. An interview method was used with employers of 14 firms using a modified version of a previous instrument developed by teacher educators and state supervisors at the Center for Vocational and Technical Education of Ohio State University. The employers interviewed expressed qualifications of new employees as being 18 years of age or over, from farm backgrounds, at least a high school education, and preferable work experience before being hired. It was inferred by the employers that they would prefer that prospective employees have something more than high school education.

Farm machinery dealers in six towns in northeast Kansas were interviewed by Eck (20) in an attempt to determine the competencies needed for employment in these dealerships. Dealers were asked to rate a list of competencies as to whether each was essential, very important, important, of little importance, or of no importance for employment in a farm machinery dealership. The investigator contended that vocational-technical schools and junior colleges had a particular

responsibility to provide farm machinery dealers with trained workers.

Another study conducted by Terry (11) in the state of Ohio in 1969 and aided by the John Deere Equipment Company proposed to identify and describe the service occupations in agricultural machinery dealerships. These would likely continue operating in the future and were described in the study as "pacesetter" dealerships. Sources of data were the employers and service department employers in 10 John Deere and Company dealerships in Ohio, selected by the Columbus branch management personnel as typical of the operations desired of "pacesetter" dealerships. The investigator used an interview schedule instrument, developed and administered by the investigator, to collect the data for the study. The findings of the study resulted in identifying twenty-two job titles within the dealership firms. Adequate similarities between the jobs resulted in condensing them to a list of eight titles; (1) parts manager, (2) parts man, (3) shop foreman, (4) service manager, (5) set-up man, (6) field mechanic, (7) truck driver, and (8) delivery man. Several new service occupations were expected by the dealers to emerge within their businesses in the next five years. These included technical service positions not presently used including; (1) lawn and garden serviceman, (2) field service mechanic, (3) used machinery repair man, (4) used machinery foreman, (5) diesel engine specialist, (6) hydraulic system specialist, and (7) electrical system specialist. Employee fringe benefit characteristics of a similar nature were (1) type of promotion, (2) paid holidays, (3) education qualifications, (4) health insurance coverage, (5) tools furnished, and (6) occupational experience required for employment. Variable characteristics and fringe benefits of the occupations were found to be;

(1) weekly work hours, (2) hourly wages, (3) life insurance coverage, (4) paid sick leave, (5) vacation, and (6) paid training leave. The study concluded that the employment outlook for the dealership service occupations were favorable. Employers indicated a preference of post-high school training programs to meet their existing and anticipated manpower needs. The study recommended the establishment of four combination programs, selected from the eight occupational categories in the study, to be implemented in post-high school programs. Additional research was recommended to determine comparisons of service occupations in other types of "pacesetter" dealerships from other areas. Added study was indicated to determine the nature of specialized occupations as they emerged within the field.

Although only one type of farm equipment company was surveyed, Terry's findings revealed many similarities to other studies in the field, and other areas. The responses strongly indicated that employers of farm machinery and/or agricultural equipment dealerships have started to place an increasing emphasis on the need for better qualified personnel through post-high school vocational and technical training programs.

The Agricultural Education staff at the Virginia Polytechnic Institute assisted vocational agriculture teachers of high school students in the state of Virginia (21). They determined which of the off-farm occupational experience programs would best serve the needs of students and agricultural businesses in their communities. The teachers were requested to survey their respective school community areas by soliciting names of businesses, numbers of people employed, numbers of current additional employees needed, and the prediction by

the businesses of additional employees needed within the next three to five years. The questions presented included the kinds of products handled and the types of work that additional employees would be expected to do. Summary of the data from the 79 school community areas composed of 739 agricultural businesses surveyed listed a total employment within the firms of 13,338 persons. Managers of the businesses indicated a total present and future need for 3,135 additional persons in the next five year period. The data summarized a considerably greater need for persons in the agricultural business and agricultural machinery service (1,162) than any other agricultural area. All the jobs listed by employers required an essential entry level of knowledge and skill. A number of the jobs listed were; foreman, salesman, service and maintenance, skilled mechanics, and others requiring responsible characteristics. The study expanded its occupational outlook from the data findings of the 39 percent of the community areas surveyed to the remaining 61 percent. It was determined that an appropriate need of 8,000 present and additional trained agriculture workers during the next three to five years would be required. The problem became apparent since the state of Virginia had only about 2,000 high school students with four years of vocational agricultural training to fill community needs, provided all of them went into the agricultural field. This conclusion and projection indicated that the state would fall far short of meeting the required number of trained personnel to enhance the economic situation of agricultural businesses with the state. The recommendation followed that similar studies be made in and around the larger cities in the state to reinforce the findings and projections, and that vocational agriculture teachers

throughout the state make complete surveys within their school service areas at least every two years to keep abreast of employment opportunities and needs.

A journal article was published by Steakley and Webb (22) of the Department of Agricultural Education of Texas A & M University, stating the major findings which identified opportunities and requirements to enter into the farm machinery mechanics trade. The statewide study resulted from a demand by implement dealers in Texas to establish a two-year course of study in vocational agriculture to train high school students to become farm machinery mechanics. A number of the major findings were; (1) an acute shortage of farm mechanics existed in Texas, (2) mechanics were in great demand by implement dealers, (3) an estimated 7,000 mechanics would be needed immediately and within the next five years, (4) an estimated 3,600 parts men were the second greatest need by the dealers, (5) the minimum age for hiring mechanics was 18, (6) managers preferred, but did not require, mechanics to be high school graduates, (7) an estimated minimum of 2.5 years on-the-job training would be required for a person to become a mechanic, (8) a majority of managers preferred that employees have farm or ranch backgrounds, and (9) 95 percent of the participating managers stated they would assist local high school develop programs for training mechanics. The study recommended concerted efforts to encourage young men to select a career in the mechanics trade. Efforts should be made jointly by educators, industry, and other groups to expand programs for training mechanics.

A report was completed by Baker (23) in 1972 and sponsored by the Bureau of Elementary and Secondary Education (DHEW/OE), Washington, DC.

This report was one of five summary reports conducted as part of a Pre-technical Curriculum Planning Project for secondary students who aspired to technical employment or post-secondary technical education. The report represented the results of an assessment of the Northeast Florida area technical occupations in agriculture and related businesses. Agriculture mechanic employment statistics were included in the report. Projected demands were made for the increase of service technicians (mechanics) by 29.3 percent, parts managers by 13.3 percent, salesmen by 9.5 percent, field service technicians by 100 percent, and truck drivers by 50 percent over the statewide area in the next twelve months. The conclusion reached was that a stimulated demand for technical workers with skills in areas related to "agri/business", recreational vehicles, and organic farming methods which would bolster the market for agricultural workers in all parts of the country was needed. Further conclusions that a high priority of further design and development of concepts and educational materials supported the projected needs assessment.

An indepth study was conducted by Bishop (24) and sponsored by the Montana State Department of Public Information providing data on curriculum development and the institution of agricultural education programs to meet manpower demands in Montana. The report was a composite of competency interviews with employers in a particular area. Entry level employment in each of 12 job classifications in the area of agricultural mechanics occupation were rated on a scale of relative importance. Results from the study were used to assist prospective employees in assessing their qualifications, to aid counselors in guidance, and provide program planners with a basis to develop

curriculum materials with performance objectives for training programs. The study recommended additional research for designing a new model of a task analysis for a detailed breakdown of all competencies into their respective tasks. This was to provide insight into changes regarding competencies that are due to changing technologies which consequently could create new jobs and training program needs. Research was needed to determine efficient and effective ways to assure articulation at all educational levels in preparation of prospective employees. A need was also seen to establish common cores of instruction and minimization of repetition between vocational-technical schools and college programs. Further recommendations suggested careful study of existing curriculum designed to prepare employees for farm machinery dealerships, careful evaluation of existing training programs for competencies needed in identified job titles, develop curriculum materials, field test all curriculum materials for new training programs, and the utilization of statewide advisory councils when planning new or expanding existing programs.

Another study in the same project to meet the state agriculture manpower needs was authored by Donahoo and Amberson (25) and conducted by the Montana State Department of Public Instruction. The purpose was to determine competencies for employees entering the agricultural supplies and services occupations. The area of supplies and services represented 40 percent of all agricultural occupations in Montana. The next four years projected a need of 329 trained people to fill the predicted vacancies. Some findings of the study were; (1) managers of agricultural businesses placed greatest importance on personal qualities such as liking people, establishing a rapport with customers,

willingness to work, and optimistic attitude, (2) technical training will not substitute for desirable personal qualities, (3) farm and ranch experience after age 16 was not considered a prerequisite for new employees, (4) and urban students should be enrolled in the agricultural service area. Evidence showed that competency training in non-agriculture courses could only be acquired from courses in business operations, safety, state and federal laws and regulations, financing, budgeting, credit, business planning, economics, and technical agriculture courses in crop and livestock production. Managers of agricultural supply and service businesses considered technical agriculture courses as important in crop and livestock production, but courses in farm management and farm mechanics were not important to new employees in their firms. This study obviously did not consider agricultural equipment dealerships within their definition of agricultural supply and service occupations. However, some of the findings parallel good characteristics and competencies required by management and clerical job titles with agricultural equipment dealerships.

A statewide survey was sponsored in 1974 by the Texas Educational Agency, Austin Division of Occupational Research and Development to provide employment estimates and vacancy rates in Texas from 1975 to 1979 requiring agricultural or related competencies (26). Special studies of the Texas farm machinery and horticulture industries were reported. The entire known population of 734 farm machinery and equipment dealers were contacted. An overall response of 42.9 percent was obtained from the mailed out instrument. Due to similarities in the dealership groupings, the responses were treated as a simple random sample for analysis purposes with a 4.5 percent expected error at the

.95 confidence level. Brief conclusions from the survey were; almost 9,000 persons were employed by Texas farm machinery and equipment dealers in 1972, 7,000 were considered full-time positions, two-thirds to four-fifths of the respondents considered high school, work experience, and /or technical training backgrounds are important for positions of general manager, salesman, shop foreman, partsman and mechanics, and additional training for farm machinery mechanics were most important in the areas of hydraulics, diesel fuel systems, and ignition systems. Occupational titles of general manager, salesman, bookkeeper, secretary, shop foreman, partsman, mechanics, mechanic helpers, assemblymen, deliverymen, and others were identified. Of the 8,488 total full-time occupational positions available in the dealerships, 6,972 positions were filled while 872 positions were vacant. This constituted a 10.3 percent vacancy rate within the 734 dealerships. An estimated 901 part-time employees and 756 seasonal employees had been employed by the Texas dealers in 1972. This provided a total of 8,629 occupational positions among the farm machinery and equipment dealerships. General conclusions drawn from the study rated vacancy rates for agricultural positions high due to; low starting wages, requirements of high agricultural position skill competencies for entry level, little opportunity for job advancement, and less favorable working conditions for jobs requiring comparable skills outside of agriculture.

Several articles were found in the research of trade and professional journals on a national level concerning the implementation and success of agricultural technician programs. Heasler (27) discussed the concepts of technical education programs as applied to one of the

coordinate campuses of the University of Minnesota-Waseca. The school was described as an agricultural technical college established in 1971. The programs were designed to prepare students in mid-management, and semi-professional positions in the broad field of agriculture. The article advocated that agriculture educators have begun to realize that no longer can any educational system tolerate ignoring the world of work, or define occupational studies as inferior to general studies, and provide for only the academically endowed. Such attitudes contributed to a vast wasteland of disadvantaged youth who were unwanted and untrained. The agricultural technician was referred to as a worker located between the skilled worker and the professional in the job classification structure, their work performance and their educational attainment. Characteristics of technical education were found to include the practice of having a student work in a chosen field. An actual employment setting through the implementation of an internship program in its curriculum was of prime importance. The conclusions drawn were: we acknowledge the variable needs of all students who seek careers or satisfaction in an agricultural occupation; the concept of agricultural technical education must be as meaningful as any other type of technical education; and future programs need to cultivate a positive approach and develop positive convictions concerning its values.

Three articles were found discussing the implementation and successful operation for agricultural technician programs at the community/junior college level.

Ewing (28) describes the farm mechanic program found at Northeastern Junior College in Sterling, Colorado. The program was launched

in 1968 on a one year program under the Manpower Development Training Act. In 1969, the administration signed it into a two year program granting an Associate of Science degree. In 1974, a one year certificate program was added for individuals who desired only one year of training for on-the-farm mechanical work. The growth of the program resulted in the hiring of a second instructor in 1973. In 1975, a larger vocational building was constructed to include increased shop space for diesel pump and injector repair, hydraulics, wash room, and reference room. The curriculum was designed to train students for every phase of an implement dealership in service, sales, and parts. Implement dealers hire second year students as part-time employees after class hours. A good recruitment program was organized through state high school vocational agriculture teachers. They advise students interested in agricultural mechanics in the Northeastern Junior College program. Recommendations stated: being completely prepared before opening doors on new programs; be sure facilities are suitable; instructors keep updated on new equipment, prices, and agricultural changes; and continue to expand good agricultural implement courses in the high schools.

Custer (29) related that the success of their two year program at Joliet Junior College, Joliet, Illinois, was the cooperation of agriculturally related businesses. The first program was begun in the state of Illinois in 1964. Joliet was the only college to offer transfer credit in agricultural courses in the state. Later in 1964, a study was conducted to determine job opportunities in off-farm agriculture and to identify the areas of the most jobs. An overall curriculum was designed, and in May, 1964, the Illinois Agricultural

Association approved the program for implementation. The program was expanded to include two options to the agricultural supply curriculum, that of agricultural business and agricultural production/management. One year certificate programs have been included due to increased pressure for rapid job readiness skills required at the community college level. Custer recognized that agriculture was a rapidly changing occupation and programs must be continually scrutinized for timeliness. Students are taught to keep themselves aware of changing methods, markets, and equipment.

A discussion of the North Carolina Community College system was written by Hudson (30). He described the technical and vocational agricultural programs in the 1974-75 academic year.

These programs were designed to provide a theoretical and practical understanding of the field of work. Emphasis was placed on abilities to be able to sell, service, and manage farm, agricultural or natural resource occupations. The twenty-four technical programs, including Agriculture, Business, Technology, and Agricultural Service and Mechanization, are for two academic years. An Associate in Applied Science degree would then be awarded. The college system has developed their own various technical and vocational agricultural curriculum programs to meet the wide diversity of manpower needs in the agricultural industry. In the 1974-75 academic year, approximately 3,4000 students were enrolled in technical and vocational agriculture programs offered in North Carolina. Graduates of the technical programs work in close cooperation and direct supervision of professional persons. Vocational programs range from one to seven quarters in length. Graduates of a four quarter or longer program are awarded a diploma.

Certificates are awarded for the successful completion of any program of one to three quarters in length.

All the articles discussing implementation of vocational and technical programs at the college level utilized the services of state-wide advisory councils. They were to direct and successfully develop the programs and curriculum.

The new approach in training students for various jobs in agricultural equipment dealerships has been advanced with the computer age. The program was described by Nechville (31) and refers back to the University of Minnesota-Waseca Technical College in Mechanized Agricultural Technology-Power Machinery. The computer is used as a teaching tool to provide entry level competencies as partsmen and parts managers in the use of a parts inventory control simulation supported by a computerized inventory system. Problem sets were developed to provide student experience in working with parts manuals from several major manufacturers of farm equipment. The purposes were to expose students to several different systems of parts numbering and identification when ordering individual parts, sub-assemble options, machine modifications, substitutions of new parts, and part number revisions or replacements. After locating the parts in selected manuals and filling out sales slips for each problem, the student inputs any transaction into the computer. The computer then provides a print-out of a sales report, plus a new inventory. This computerized simulation was found to be readily acceptable by students as a learning activity. It also provided students with basic entry level competencies required for parts sales occupations.

A complete model of an agricultural equipment technology program was found during the review of literature that could be used for the development of new or modification of existing programs in post high school institutions (32). The model is available in microfiche (ED 038527) or hard copy form from the Office of Education (DHEW) in Washington, D.C.

A review of recent trade journal articles gave insight as to agricultural equipment dealership opinions on projected training programs and employment needs.

In an evaluation (27) of seven types of service assistance from their major companies, dealers stated there was a serious need to develop a solid program to train dealers and/or service managers in 1) how to spot good potential employees in one's own community, 2) how to attract and screen applicants, 3) how to launch new workers on apprentice training programs, and 4) how to motivate individuals (33). Excellent results from such a training program could result for smaller dealerships according to those surveyed. One respondent in the study, whose annual sales were well over two million dollars, doubted that his labor recovery rate was as high as 50 percent. He was highly disturbed that his major company had nothing to offer in service management guidance.

A monthly trade magazine stated that there are fewer dealerships now than ten years ago (34). They work with larger territories, larger shop areas, larger service crews, and much larger monetary volume in the service department. The study indicated that 51 percent of responding dealers had a 30 mile radius, 49 percent had \$50,000 in service labor business per year, and 11 percent of the respondents had

more than \$150,000 in service labor sales per year. Dealers today of small or mid-sized status are most likely to farm jobs out or exchange malfunctioning units of a specialty nature. Larger dealers, with large volumes of specialty work, prefer to do the jobs themselves by investments in the necessary tools and trained manpower to monopolize on the profits from such work.

Owens (35) stated that the dealers standards for his parts personnel are not as high or well-defined as his service and sales personnel (including office staff). A good partsman is defined as: "a compound of salesman, serviceman, and accountant" (p.11). Since they must have the qualities of each, they do not have a definite job definition and stand in the shade of the men in the service and sales departments. The partsman with any dealership is considered a vital link in the company's prestige as a parts and service representative. The basic function of the partsman is to take and fill orders; however, they must do this job with a good deal of accurate and expert technical knowledge to minimize mistakes and costs to the dealer.

Thiemann (36) observed that implement dealers stated competent people are getting harder to find, especially in the shop areas. Young men with the understanding of diesel and hydraulic systems on modern equipment are scarce. Current technical and trade schools do not cover all the necessary ground for competent service personnel. Factory training was considered helpful, but often wasted because of poor selection by the dealer's decision as to who should attend such factory training seminars. An ideal shop core should consist of two or three older, experienced mechanics with several younger men working with them as apprentices. An evaluation was considered necessary from the school

or factory training programs. The results of such evaluations was to be sent to the dealer employers to identify those persons who have "successfully completed" a specific course of training.

State and Local Research in Oklahoma

State efforts to provide off-farm agricultural occupational information found that individual studies in cooperation with the State Department of Vocational and Technical Education had completed a series of related agricultural surveys. The purpose was to provide adequate past, present, and projected employment potentials in the area of agricultural businesses for Oklahoma. These studies were significantly quoted by individuals and state agencies in implementing their respective research studies and surveys. None of the state studies seemed to entice implementation of some agricultural business training programs. Particularly noticeable was the lack of these programs for agricultural equipment and/or farm machinery.

In 1966, Stevenson (14) recognized the growing awareness of an urgent need for information which would identify the employment opportunities and training needs existing in the off-farm agricultural occupations within the state. The sample for the study consisted of 128 out of 320 agricultural machinery dealerships over the state of Oklahoma. Findings indicated that 38 percent of employees in off-farm agriculture businesses needed technical agricultural competencies for successful employment. The greatest increase in employee numbers was expected in the ornamental horticulture, agricultural machinery, and agricultural supplies businesses. Salaries and wages in some agricultural service types of employment were low. Fifty percent of the

employees in the off-farm agricultural business needed education beyond the high school level and the minimum age level for employment expressed by employers was 20 years of age for skilled and 23 years of age for technical personnel. Eighty-two percent of the managers preferred employees with a farm or rural background.

The agricultural occupational titles found needing the greatest number in the next five years were; machinery salesman, machinery mechanic, machinery partsman, and machinery mechanic's helper. Occupational titles found to exist within machinery dealerships were; managers, assistant managers, shop foremen, bookkeeper, salesmen, manufacturing supervisor, mechanics, partsman, welder, delivery man, mechanic's helper, and set-up man, with the only technical job title afforded to fieldman. Aside from the conclusion that the agricultural machinery business expressed one of the greatest needs for personnel with beyond high school education, the study implied that future research should keep informed on needs and opportunities in both production agriculture and agriculture business. It must also provide detailed descriptions of the more important job titles in off-farm agricultural businesses; define what should be taught at the various levels of the state's educational system--high school, post-high school, and college, and provide periodic redefinition for agricultural and production competencies.

In another Oklahoma study at about the same time, Morton (37) sought information to be used by educators in area vocational schools to develop curriculum. The information was built around six job titles found in the farm implement business that recognized a requirement for post-high school education. A sample of 30 of the larger farm

implement business in Oklahoma was selected for the study. The investigator conducted a personal interview with managers or assistant managers to obtain opinions as to the degree of competency needed by all those employed in management and technical skills to qualify for job entry employment. The findings indicated that employees needed knowledge in human relations, job applications, interviews, communications, safety, and some competency in mathematics as well as their technical qualifications. The findings of Morton's study paralleled the conclusions of Webb's (17) research in expressing employer's concern over personal attributes of employees rather than entry levels of knowledge and skills.

Mitchell (38) in 1970, directed a research study within the state of Oklahoma to supply manpower information related to agricultural business occupations. The purpose was for use in expanding or redirecting existing training programs. Agricultural heavy machinery equipment manufacturing and distribution were vital parts of the study.

In Mitchell's rationale for his study he said:

Farm youth, largely because of their work experience at home, have a "natural" advantage for gainful employment in any segment of the agricultural complex, providing they have the interest, guidance, and the necessary education and training opportunities. How to make your employable by education and training prior to job entrance poses a vital problem to educators and administrators (p. 38).

Mitchell utilized an interview questionnaire instrument employed under the direction of county chairmen. County vocational agriculture teachers were organized into teams for the purpose of the data collection.

Of the 23, 306 employees identified within the twenty selected types of organizations, agricultural machinery and equipment

manufacturing and distribution ranked eighth with a 4.6 percent of the total state employment occupations having 1,253 employees. Agricultural heavy equipment service and operation listed a 2.2 percent employment of 519 employees over the state. In none of the five supervisory districts, did agricultural machinery and equipment manufacturing and distribution rank less than eighth by number of employees. Agricultural heavy machinery ranked less than fourteenth by number of employees in the twenty selected classifications. In the Northwest District (including Kay, Grant, Noble, and Garfield counties), the number of employees required ranked fifth with 83 employees for agricultural machinery. They ranked eighth with 40 employees for agricultural heavy machinery as compared to statewide rankings.

Of the 23,306 employees identified, the educational level desired by employers interviewed included, grade school, 1141 employees, high school, 12,056 employees, vocational agricultural training, 3,457 employees; vocational and technical training, 3,025 employees, two years of college training, 2,029 employees, and four years of college training, 1,598 employees. Employees desired on educational level for the majority of occupational titles as high school, first, vocational agricultural, second, and vocational technical, as third choice.

For agricultural machinery and equipment businesses vocational training was desired for the occupational titles of partsmen, small engine repairmen, tractor and implement salesmen, and tractor mechanics.

Mitchell concluded in his study that agricultural machinery and equipment manufacturing and distribution was one of the major areas, based on employment needs, for training program expansion and redirection. The statistics inferred that an increase of 2,599 jobs

1972, 1973, and 1974 were available for off-farm agricultural business trainees and/or graduates within the state. The study also indicated a current need in 1971 of 615 additional off-farm employees with annual replacement of 502 employees.

Recommendation of the study urged that types of organizations and occupational titles be located. Needed educational programs in off-farm agricultural business occupations should be implemented to train students for the occupational demands within the area. Similar research studies were encouraged at least every five years to validate existing data from previous studies. The annual replacement of existing and new jobs from changes in the economy affecting employment was advocated. Also, of significant importance were the opinions and outlooks of employer qualifications for trained personnel.

Mitchell's study implemented the idea of a localized area poll; however, the statistical data and its reliability depended heavily upon the apathy, motivations, and interests of the many volunteers required to collect and tabulate the desired information.

Other information developed to enumerate data on manpower supply and demand and the net manpower requirements in Oklahoma was compiled and provided in the State Occupational Information Coordinating Committee (SOICC) report for the state of Oklahoma (39). The report utilized eleven primary sources of manpower supply including the Bureau of Apprenticeship and Training, CETA Prime Sponsors, Oklahoma Board of Private Schools, Oklahoma Employment Security Commission, Oklahoma State Board of Barbers, Oklahoma State Board of Cosmetology, Oklahoma Real Estate Commission, State Department of Vocational-Technical Education, State Employment Training Council, State Regents

for Higher Education, and Systems Design Division of Oklahoma State University. The data presented in the report was stated by the project coordinator, J. E. Morton, to be the best information available on manpower supply and demand for selected occupations within the state area until June 30, 1980. The next yearly report would be scheduled for release in January-February of 1981. The study was conducted under a two-part procedure method consisting of subsection one--Manpower Supply and subsection two--Manpower Demand. The Oklahoma Employment Security Commission furnished most of the industrial employment demand projections. Also provided was supply information concerning qualified and trained persons certified by the OES who had filed a claim to receive unemployment compensation. Other supply agencies for trained, qualified persons to fill state job demands were vocational-technical schools including high schools, post-secondary schools, adult, and Comprehensive Employment and Training Act (CETA) training programs. Private schools and apprenticeship training programs were listed under separate columns.

The supply and demand tables utilized the combining of related occupations which are matched with programs that train workers for those occupations. The groups contained one or more occupations and one or more programs that were similar. Each occupation was identified by codes from the Dictionary of Occupational Titles (DOT) and the programs were identified by U. S. Office of Occupational Codes. The SOICC report took both of these numbering systems and applied its own combinations to the groupings of occupational titles and programs. This facilitated the use of a computer program to collect and summarize data for regional and statewide occupational manpower supply and demand.

Only the Northwest region of the report was reviewed by the investigator, because it contained the four counties of the study. This represented a good sample for possible agricultural equipment dealership employment needs.

Employment findings by occupational areas for the Northwest region, as closely applied to agricultural equipment dealerships, indicated demands for truck drivers, supervisors (non-working service), technical occupations, farm machinery repair, general office clerk, bookkeeping related (accounting), supervisor-administrative management occupations, and finance/credit. An oversupply of trained personnel was shown for the occupational groups of agricultural mechanics, auto mechanics, diesel mechanics, small engine repair, and auto body (repairers and painters). Although some of the programs show an oversupply, the state report projected a need in the next five years for all the occupational titles listed under the oversupply programs.

It was emphasized in the limitations of the SOICC report that manpower supply and demand tables should be viewed as changeable and not regarded as absolute values. This was especially true with certain industries where changes in the plans of a single firm could significantly influence the manpower demand in the given occupation. Much of the information on manpower needs was subject to error due to shifts in the economy, unexpected new industry starts, and other intervening variables. It would be interesting to contact and investigate the validity of the oversupply conditions shown within the agricultural mechanics, diesel mechanic, small engine repair, auto mechanic, and auto body (repairers and painters) programs as applied to the employment needs of agricultural equipment dealerships within the

Northwest planning region.

A study selected by Williams (2), a graduate student at Oklahoma State University, represented the latest research within the State. The purpose was to identify and describe occupational titles that existed at agricultural machinery dealerships for which high school graduates may qualify. Williams' study was concerned mainly with the existing job titles, basic skills for successful employment, characteristics and qualities desired for employment, present and anticipated numbers needed, and fringe benefits of the titles identified. Under the guidance of the Agricultural Education Department at Oklahoma State University, Williams requested a listing from the Executive Director of the Oklahoma Hardware and Implement Association, as to the 20 most progressive dealers likely to exist in the future within the state. The dealers were selected from the opinions of the Executive Director in conjunction with the objectives and limitations of the study. Seventeen dealerships were chosen from over the state representing most of the major manufacturers of agricultural machinery.

Twelve occupational titles were identified among the dealerships including; set-up man, assistant parts man, mechanic's helper, parts man, salesman, truck driver, janitor, mechanic, secretary, service manager, reconditioning man, and general helper. Of the 72 positions available in the dealerships, 54 were listed as full-time positions, 11 part-time positions, and six were summer and/or student worker positions with a total salary range from a low of \$251.00 per month to over \$600 per month. The majority of jobs held starting salaries in the \$351.00 to \$451.00 per month brackets for steady employment.

The salary ranges did not seem an adequate inducement for full

time employment, recruitment, and training of potential employees at the time of the study.

Dealers with the various implement agencies expected an increase in employment for the majority of the occupational titles for graduates with a farm background. Fringe benefits offered by employers for the identified job titles were; vacations, holidays off, life insurance, paid sick leave, special tools furnished, uniforms, paid training leave, and hospitalization coverage. Employers identified a wide variety of jobs for high-school graduates on a full-time employment basis. These were available if the person had a sufficient overlap in skills and competencies, identified by the investigator, to make them flexible to the equipment dealer.

In drawing personal insights from Williams' study, it seemed that equipment dealers expressed a reluctance to define other responsible job title definitions and numbers available. This stemmed from the expressed need for more experience on the part of the individual plus necessary post-high school vocational and technical training. It was expressed by two of the seventeen dealers who refused to hire high school graduates. These factors coupled with low wages, limited chance for occupational advancement in terms of tenure or money, and "much" physical exertion involved in a major portion of all occupational job titles pose as common detriments to fulfill the needs for agricultural equipment dealerships.

The national and state studies reviewed for this chapter represented a typical cross-section in content and similarity to the many studies which have been completed throughout the country. They absolve the fragmentary information gaps in classifying employment

opportunities for persons with competencies in the emerging fields of agricultural business. However, many studies and surveys are needed in specific local areas. These must be available to existing or prospective training sites to explore the implementation potentials of the needed training programs. As well stated by Hunsicker (40), National Advisor to the Department of Health, Education, and Welfare, for the Office of Education, in a recent publication:

. . . void of information, vocational education will have great difficulty in meeting the mandatory requirements of the new Federal legislation providing training for jobs in agri-business in which the national manpower needs have not been identified. . . . to date no one has such valid national projections on the manpower needs in the rapidly expanding off-farm agri-business segment of the industry. It is imperative that leaders in agri-business, farm and agricultural trade associations join forces in the 1970's to see that this information is obtained.

. . . as professional educators in these fields, ours is the opportunity and challenge to provide leadership in this important segment of American education (p. 93).

Summary of Review of Literature

In the brief summation of the Review of Literature it appears there is a wide range of opinions on employment needs, job competencies, salary levels, and educational backgrounds, for personnel in the agriculture equipment or machinery occupations within the state and nation. The studies and articles reviewed reflect the dilemma posed to the educational profession throughout the nation. In defining common grounds for training competencies and new training programs needs are identified, especially in localized areas. Many educators and program planners with state agencies conduct elaborate studies on manpower and training program requirements. Conclusion have been reached that dire needs exist for such trained personnel and programs

without substantial results to show that actual needs truly exist or existed. The resulting data showed low response rates, poor methods of data collection, and bias or political methods of interview technique, etc. This led many of the studies reviewed into doubtful validity of their conclusions, results, and recommendations.

Manager and employer respondents to several of the studies had unrealistic views and opinions about their employment qualifications and educational levels required of many jobs. This particularly was apparent in the agriculture machinery spectrum. While employers stated they required or preferred employees with post-high school training, they were not willing to pay the higher base salary levels to acquire persons who had received such training. Apprenticeship programs and willingness to assist in work-study or occupational education experience programs with local school systems indicated that employers desired younger people without work experience so they could hire them at cheaper base salaries.

Low pay, long work weeks (44 hours or more), hard working conditions (heavy lifting, cramped working quarters, poor safety equipment, etc), poor job advancement within the firm were negative conditions reflected with others indicated. In a few of the studies, these were more valid reasons for employee concerns by managers or employers in the agricultural equipment industry than competencies and training programs. Competencies in the public relations area rather than skill or technical knowledge for service employees did not indicate good common sense judgement for highly qualified and trained personnel by the employers.

In the opinion of the investigator, the review of literature did indicate needs in employment and training for the agricultural equipment industry, but not in the large proportions indicated in the findings and results of several of the studies reviewed.

CHAPTER III

METHOD AND PROCEDURE OF THE STUDY

The purpose of this chapter is to state how the population sample was selected, study instrument developed, and the data was analyzed. Specific objectives and limitations of the study provided direction in the formulation of the data instrument and size of the study's population.

The primary purpose of the study was to determine the employment patterns and educational needs of agricultural equipment dealerships in North Central Oklahoma and South Central Kansas from which the objectives of the study were:

1. To identify and list occupational titles that exist at selected agricultural equipment dealerships within the the study area for which high school, vocational-technical, and college graduates would qualify.
2. To identify present and estimated numbers of employees in each of the individual dealerships according to the occupational titles defined.
3. To determine present and estimated average salaries plus fringe benefits for the occupational titles defined.
4. To determine the basic educational level required of each occupational title identified for job-entry employment.
5. To determine the individual academic courses and backgrounds required of all the specific occupational titles identified for job-

entry employment.

6. To identify areas of cooperation for a work-study program between dealers and a potential high school, vocational-technical, or college training program.

7. To list specific comments and opinions of agricultural equipment dealers concerning the need and implementation of cooperative work-study training programs within their service areas.

8. To determine the magnitude of the individual dealerships by their gross value of sales, services and service areas.

In order to collect and analyze data needed for the study it was necessary to:

1. Determine the study population and select the sample.
2. Develop instruments for data collection.
3. Select methods of analyzing data.

Study Population and Sample

To determine the study population the investigator contacted the Executive Director of the Oklahoma Hardware and Implement Association and the Western Retail Implement and Hardware Association for a listing of all the registered association member agricultural equipment dealerships in the North Central Oklahoma and South Central Kansas area. Dealers were selected from the listing who were within the eight county survey area and geographically distributed to supply present and future needs for trained personnel within the North Central Oklahoma and South Central Kansas area.

The investigator divided the dealerships into three categories of small (1-7 employees), medium (8-15 employees), and large (16 plus

employees), businesses by the number of full-time employees.

From the total population, the investigator obtained a geographic selective sample. A selection of twenty-six dealers was approved by the head of the Technical Education Department at Oklahoma State University and who was chairman of the writer's graduate study (Appendix D).

The Williams (2) study was selected as a model for the survey procedure and instrument in data collection for this study. This study similar in the problem statement, purposes, objectives and geographical location to the study and followed on the recommendation to determine more job titles and needs for high school graduates in the areas of non-farm agriculture employment potentials.

Development of the Instrument

A data gathering instrument was designed to obtain the information needed for the study. A draft of the instrument was submitted to the staff of the Technical Education Department at Oklahoma State University and the Research and Coordinating Unit for the State Department of Vocational-Technical Education in Oklahoma for revisions and refinements in the development of the final draft of the instrument. A copy of the instrument is included in Appendix C. The instrument was administered in person by the investigator to the managers and/or owners of the dealerships.

The interviews designed to identify the present and future job opportunities available to graduates from high school, vocational-technical, and/or college training programs within the study area. The interviews were designed to describe job opportunities and characterizations identified by the implement dealers. On a trial mail-out,

five managers and/or owners of the various dealerships were contacted previous to the actual interview by letter. Permission was to be obtained for the interview and an appropriate time, at the dealer's convenience, for the appointment. A copy of the interview schedule letter is included in Appendix B of this study.

Interview Technique

Twenty six implement dealers were selected to represent the eight county educational service area. The study instrument was personally taken to each of the dealers by the investigator whereby both parties went through the instrument and the investigator could clarify any questions by the dealer as to terminology and nature of the questions in the survey. This proved to be a good method of encouraging response and comments concerning some of the instrument questions.

Dealers were not selected according to size by gross inventory, numbers of employees, service area, personal property, etc., as a previous study had done; nor were the dealers selected by an certain brand or type of agricultural equipment. The dealers were selected to represent the typical agricultural implement sales and service vendors found in the North Central Oklahoma and South Central Kansas farm and ranch area. Dealers were also selected to be geographically located within a reasonable commuting distance (20 miles) from a possible training facility (college or vocational-technical school) to facilitate potential work/study trainee programs.

The investigator developed an advance appointment schedule since dealer managers had hectic and unpredictable schedules during their working day. However, due to the negative response of the initial trial

mail-out of the five appointment schedules, the investigator chose to follow an alternate method of data collection. Problems developed because dealers served as temporary salesman, partsman, etc. to service customers, or attend management seminars or sales meetings on rather short notice. They failed to keep the appointments with the investigator. It was decided to interview the dealers assuming they would be available on a drop-in basis, and have time to answer the survey questions within their busy schedules. The interviewer selected the fall and spring semesters of 1979-80 to conduct the interviews with the dealer managers, because of the slackness in the agricultural season at that time of year. The dealer had more time to entertain an interview. The investigator did not have to return or reschedule any of the interviews with the dealers utilizing this approach, and the investigator did receive substantial comments and ipinions relating to survey questions.

In all cases, the person interviewed was the owner, manager, or assistant manager of the dealership who was responsible for the employment and salary decisions in the dealership.

The original sample of the survey included twenty six dealers who were personally contacted by the investigator. The investigator completed the survey instruments during the interviews (except three instruments which were completed and mailed back). Of the selected twenty-six, one absolutely refused to supply the requested data stating he felt it was not a good policy for his business to share salary and personnel information. Another dealer did not care to fill out an instrument because he did not expect any personnel expansion in his

business in the next five year. Two dealers asked to take the instrument home to analyze and write comments on their views. They did not return the survey instruments.

Data Collection

The investigator reasoned that the interview instrument administered in person to the managers and/or owners of selected dealerships in the defined study area would be the most efficient, factual, and reliable way to accomplish the objectives of the study. This conclusion was drawn by the investigator after reviewing similar studies, and conferring with experienced researchers. Personal acquaintances of several managers and/or owners and knowledge of dealership operations by the investigator was helpful in obtaining personal interviews and data.

Data Analysis

Upon completion of the interviews, the data was tabulated and analyzed. The research effort was primarily of a descriptive nature, consequently, statistics consisting of totals, frequencies, percentages, and averages were selected to present the data. Chapter IV provides the specific information relative to the analysis and presentation of these findings. The Appendix A includes the opinions and personal comments of dealers under various headings taken from the survey instrument.

CHAPTER IV

ANALYSIS AND RESULTS OF THE STUDY AREA

The purpose of the study was to determine the employment patterns and educational needs of agricultural equipment dealerships in North Central Oklahoma and South Central Kansas.

Identification of Agricultural Equipment

Occupational Titles

During the first part of the interview, dealers were asked to identify and list occupational titles for which agricultural equipment graduates would qualify. It was found that dealers had a difficult time defining technical occupations by title due to the dealer's lack of knowledge and experience of technical education. Many of the dealers related the occupational titles with vocational-technical high school and post high school technical-trade school training. In some cases, dealers related the term with company in-service training programs for present employees. Since the dealers had a difficult time identifying and listing occupational titles by technical definition, the investigator arranged the following tables into categories of management, technical, and clerical job areas to simplify the tables in terms of the definitions of the study.

Data presented in Table I indicates the dealers selected the higher percentages of technology titles from existing job positions

TABLE I
OCCUPATIONAL TITLES IN AGRICULTURAL
EQUIPMENT DEALERSHIPS

Occupational Titles	N=22	Percent of sample
<u>MANAGEMENT</u>		
Manager	15	68.2 (3)
Assistant Manager	7	31.8
Sales Manager	8	36.4
Parts Manager	16	72.7 (3)
Shop and Service Foreman (1)	18	81.8 (3)
<u>TECHNICIAN</u>		
Salesman	17	77.3 (3)
Partsman	18	81.8 (3)
Mechanics	21	95.5 (3)
Del. & Equip. Supervisor	18	81.8 (3)
Set Up & Reconditioning	1	4.5
Field Troubleshooter	7	31.8
Service Parts Coordinator	1	4.5
<u>CLERICAL</u>		
Accountant	3	13.6
Bookkeeper	13	59.1 (4)
Asst. Bookkeeper	1	4.5
Credit Manager	3	13.6
Office Clerk (2)	3	13.6
Receptionist	1	4.5

- (1) Includes title of service manager, also considered as both management and technical.
- (2) Includes title of clerk and office manager.
- (3) Agreement by at least two-thirds of the sample (66.6%).
- (4) High agreement, but not considered technical occupation.

within their dealerships. A high percentage (over 66.7 per cent) of technology titles existed within the sales and service area of the dealership. These were considered by the dealers to require technical skills and knowledge concerning the products sold and serviced by their dealerships. Technology titles chosen by lesser percentages were non-existent in most dealerships and were speculative choices by the study respondents. The title of bookkeeper was rated highly, but the dealers indicated a preference not to consider the job duties with a technical definition. The respondents again indicated confusion in identifying technical job titles.

After selecting from the given list of employee occupations, the dealers were given the opportunity to add any occupational titles they believed would be of agricultural equipment employee qualification. In some cases, the dealers took advantage of this opportunity and extended the list. The additional titles given were; Service Manager, Service Parts Coordinator, Machinery Set-Up and Delivery, Set Up and Reconditioning, Office Manager, Credit Manager, Office Clerk, Assistant Bookkeeper, and Receptionist.

Verification of Present Employment Numbers

The dealers were requested to identify the existing job titles within their respective businesses. Data with regard to their responses is assembled in Table II. A distinct comparison between Table I and Table II choices is evident, indicating that existing job titles stimulated several choices on Table I. The highest number of employee positions were found in the mechanics and partsman job categories. The titles of manager, salesman, delivery and equipment

TABLE II
EMPLOYMENT BY OCCUPATIONAL TITLE (1)

Occupational Titles	No. of Employees N=22	Percent of Sample
<u>MANAGEMENT</u>		
Manager (3) (4)	28	100.0 (2)
Asst. Manager (3)	4	18.1
Sales Manager	3	13.6
Parts Manager (5)	19	86.4 (2)
Shop & Service Foreman (6)	19	85.4 (2)
Service Manager	1	4.5
<u>TECHNICIAN</u>		
Salesman	23	100.0 (2)
Partsman (5)	34	100.0 (2)
Mechanics	81	100.0 (2)
Delivery & Equipment Supervisor	24	100.0 (2)
Set Up & Reconditioning	6	27.3
Field Troubleshooter (6)	8	36.4
Service Parts Coordinator	3	13.6
<u>CLERICAL</u>		
Accountant	5	22.7
Bookkeeper (7)	25	100.0 (2)
Office Manager (7)	1	4.5
Credit Manager	1	4.5
Office Clerk (7)	1	4.5
Receptionist	1	4.5

- (1) Indicates both full time and part time personnel.
(2) Agreement by at least two-thirds of the sample (66.6%).
(3) Some dealerships indicated more than one full time manager in the business.
(4) Some dealerships function with the manager and assistant manager serving in the same capacity.
(5) Some small dealerships have one job title for the parts manager and partsman.
(6) Shop foreman and field troubleshooter are usually the same job title with the same occupational duties.
(7) Small dealerships usually combine one, two, or three individual titles into one occupational title for office duties.

supervisor, and bookkeeper were found in all dealerships surveyed. Several were combined in most of the dealership's connotation of employment duties; i.e. manager and assistant manager, shop foreman and field troubleshooter. When job titles were combined, each job was checked separately on the survey instrument to indicate that it existed within the business. Information included in Table II revealed both full time and part time personnel data. The percentages were calculated on the job titles selected; not on the number of employees per dealership. As noted, twenty-two dealers checked a manager job title which equalled 100 per cent of the sample; twenty-eight managers were included in the twenty-two dealerships which would have equalled a greater than 100 per cent sample. Other job titles of 100 per cent sample rating were computed in a similar manner.

The agricultural equipment dealers continued with the estimation of their potential employment increases, decreases, additions, or deletions of job positions within their dealerships for the next five year period. Data presented in Table III provides employment estimates. The estimated employment figures were based upon the past five years of economic growth and sales volume within their dealerships. They looked toward a better way to sell and service their products. More competent personnel with good public relations qualities would accomplish this objective. These estimates were also made on the strength that the economic growth and demand throughout the agricultural equipment industry would remain strong in the coming years. Dealers noted that new, special, and sophisticated agricultural equipment would create areas of technical and specialty training. This was particularly true within the sales, parts, and mechanical occupations.

TABLE III
ESTIMATED EMPLOYMENT NEEDS FROM 1980-85 BY
OCCUPATIONAL TITLE

Occupational Title	Increase		Additional (1)	
	N*	%**	N*	%**
<u>MANAGEMENT</u>				
Manager	2	9.1	-	-
Assistant Manager	8	36.4	2	9.1
Sales Manager	6	27.3	5	23.7
Parts Manager	6	27.3	5	23.7
Shop and Service Foreman	5	23.7	2	9.1
Service Manager	-	-	-	-
<u>TECHNICAL</u>				
Salesman	22	100.0	10	45.5
Partsman	17	77.3	3	13.5
Mechanics	42	190.9	9	40.9
Delivery and Equipment Supervisor	9	40.9	6	27.3
Set Up and Reconditioning	3	13.6	-	-
Field Troubleshooter	4	18.2	3	13.6
Service Parts Coordinator	1	4.5	1	4.5
<u>CLERICAL</u>				
Accountant (2)	-	-	-	-
Bookkeeper	5	23.7	-	-
Assistant Bookkeeper	1	4.5	1	4.5
Office Manager	-	-	-	-
Credit Manager	2	9.1	2	9.1
Office Clerk (3)	1	4.5	1	4.5
Receptionist	-	-	-	-

- (1) Addition indicates an occupational title not presently in effect with the dealership.
- (2) Accountant duties are usually sent to a qualified Certified Public Accountant separate from the dealership.
- (3) Denotes a combination of clerk and office clerk.
- * Indicate that (N) is not number of dealers, but potential employees.
- ** Percentages indicate the number of potential employees needed to service the survey sample.

Information presented in Table III shows at least an increase of one salesman with each dealership in the survey. Another 45.5 per cent increase would come from additional job openings in the sales field. An increase of almost two mechanics per dealership was indicated. An additional 40 per cent of the job openings for mechanics would come from new job opportunities within the businesses. Parts men were shown to be needed by a 77.3 per cent increase over present employment rates. An additional 13.5 per cent of the positions would be the result of new job positions. A sizeable 40.9 per cent increase with an additional 27.3 per cent employment rate was shown for delivery and equipment supervisor employees. Smaller increases and additions were shown for management positions of assistant manager, sales manager, and parts manager. Dealers were beginning to think in terms of larger, more complex businesses and the impending management problems connected with these expansions. Only one dealer indicated a decrease of one manager due to retirement and more of the dealers expressed any deletion to their existing job rosters in the coming five years. The decrease and delete columns were considered insignificant and not included in Table III.

Employment Needs and Opportunities

Numerical data in Table III show the actual numbers of potential employees needed by the total dealership sample. The percentages were computed by dividing the number of potential employees by the survey sample of twenty-two dealerships. These percentages illustrate an average given for each of the twenty-two. Some dealerships indicated no employment increases in certain job titles while others

chose to select several employees within one job category, particularly with the larger businesses.

Salary and Employee Benefits

Current salaries were requested to the dealers for those job titles they selected and presented in Tables IV and V. They were also asked to estimate these salaries into the next five year employment period (up to 1985). Most of the salary quotations recorded in both Tables IV and V were formulated on present pay scales for new employees. Most dealers based their pay quotations on base salaries without regard to commissions, bonuses, profit sharing programs, or overtime wages. Therefore, many of the salary quotations do not reflect their true potential, in particular, those titles of manager, assistant manager, sales manager, salesman, parts manager, and partsman. Several of the dealers stated they presently use commission and bonus incentives with the previously stated job titles. Twenty-two of the twenty six dealers were willing to furnish salary information. Information in the total response columns in Tables IV and V reflect this reduced percentage.

The table ranges from a high response of 90 per cent for mechanics to a low of 4 per cent for the title of set up and reconditioning, service parts coordinator, assistant bookkeeper, office clerk, and receptionist. Data in both Tables IV and V would be questionable for valid salary rates on low percentage responses. This is due to the lack of sufficient job title choices and salary values to compute an accurate average salary.

TABLE IV
MONTHLY SALARY OF EMPLOYEES BY
OCCUPATIONAL TITLE

Occupational Title	\$0-499		\$500-999		\$1,000-1,499		\$1,500-1,999		\$2,000-2,499		\$2,500-3,000		Total	Total	Percent	
	N	%	N	%	N	%	N	%	N	%	N	%	N-22 (2)	Response (100%) (3)	Av. Sal. (4)	
<u>MANAGEMENT</u>																
Manager	-	-	2	9.1	6	27.3	3	13.6	2	9.1	-	-	13	59%	\$1,469.00	
Asst. Manager	-	-	4	18.2	6	27.3	1	4.5	-	-	-	-	11	50	1,054.00	
Sales Manager	-	-	1	4.5	7	31.8	-	-	-	-	-	-	8	36	994.00	
Parts Manager	-	-	5	22.7	11	50.0	1	4.5	-	-	-	-	17	77	1,046.00	
Shop and Service Foreman	-	-	2	9.1	11	50.0	2	9.1	-	-	-	-	15	68	1,163.00	
<u>TECHNICAL</u>																
Salesman	-	-	15	68.2	3	13.6	-	-	-	-	-	-	18	81	752.00	
Partsman	-	-	16	72.7	2	9.1	-	-	-	-	-	-	18	81	773.00	
Mechanics	-	-	13	59.1	7	31.8	-	-	-	-	-	-	20	90	875.00	
Delivery and Equip. Supervisor	1	4.5	13	59.1	2	9.1	-	-	-	-	-	-	16	72	713.00	
Set Up and Reconditioning	-	-	1	4.5	-	-	-	-	-	-	-	-	1	4	800.00	
Field Troubleshooter	-	-	1	4.5	4	18.2	-	-	-	-	-	-	5	22	970.00	
Service Parts Coordinator	-	-	1	4.5	-	-	-	-	-	-	-	-	1	4	750.00	
<u>CLERICAL</u>																
Accountant	-	-	3	13.6	2	9.1	-	-	-	-	-	-	5	22	1,066.00	
Bookkeeper	2	9.1	11	50.0	1	4.5	-	-	-	-	-	-	14	63	633.00	
Asst. Bookkeeper	-	-	1	4.5	-	-	-	-	-	-	-	-	1	4	550.00	
Credit Manager	-	-	1	4.5	2	9.1	-	-	-	-	-	-	3	13	943.00	
Office Clerk	-	-	1	4.5	-	-	-	-	-	-	-	-	1	4	500.00	
Receptionist	1	4.5	-	-	-	-	-	-	-	-	-	-	1	4	400.00	

(1) Figures do not include commission potential, bonus salaries, or overtime wages.

(2) (3) Columns do not indicate the full survey sample because some dealerships were not willing to furnish this information.

(4) Average salaries only represent the number responding to the survey sample.

TABLE V

ESTIMATED MONTHLY SALARY OF 1985 EMPLOYEES
BY OCCUPATIONAL TITLE

Occupational Title	\$0-499		\$500-999		\$1,000-1,499		\$1,500-1,999		\$2,000-2,499		\$2,500-3,000		Total N=22	Total Response (100%)	Predicted Average Salary
	N	%	N	%	N	%	N	%	N	%	N	%			
<u>MANAGEMENT</u>															
Manager	-	-	-	-	2	9.1	3	13.6	2	9.1	6	27.3	13	59%	\$2,090.00
Asst. Manager	-	-	-	-	6	27.3	2	9.1	3	13.6	-	-	11	50	1,482.00
Sales Manager	-	-	1	4.5	4	18.2	3	13.6	-	-	-	-	8	36	1,294.00
Parts Manager	-	-	1	4.5	7	31.8	7	31.8	2	9.1	-	-	17	77	1,449.00
Shop and Service Foreman	-	-	-	-	4	18.2	10	45.5	-	-	1	4.5	15	68	1,591.00
<u>TECHNICAL</u>															
Salesman	-	-	6	27.3	7	31.8	3	13.6	2	9.1	-	-	18	81	1,171.00
Partman	-	-	7	31.8	8	36.4	3	13.6	-	-	-	-	18	81	1,092.00
Mechanics	-	-	3	13.6	10	45.5	6	27.3	1	4.5	-	-	20	90	1,334.00
Delivery & Equip. Supervisor	-	-	7	31.8	9	40.9	-	-	-	-	-	-	16	72	999.00
Set Up and Reconditioning	-	-	-	-	1	4.5	-	-	-	-	-	-	1	4	1,000.00
Field Troubleshooter	-	-	-	-	3	13.6	2	9.1	-	-	-	-	5	22	1,360.00
Service Parts Coordinator	-	-	1	4.5	-	-	-	-	-	-	-	-	1	4	900.00
<u>CLERICAL</u>															
Accountant	-	-	-	-	3	13.6	1	4.5	1	4.5	-	-	5	22	1,490.00
Bookkeeper	-	-	8	36.4	6	27.3	-	-	-	-	-	-	14	63	897.00
Asst. Bookkeeper	-	-	1	4.5	-	-	-	-	-	-	-	-	1	4	700.00
Credit Manager	-	-	-	-	3	13.6	-	-	-	-	-	-	3	13	1,217.00
Office Clerk	-	-	1	4.5	-	-	-	-	-	-	-	-	1	4	700.00
Receptionist	-	-	1	4.5	-	-	-	-	-	-	-	-	1	4	600.00

(1) Figures do not include commission, bonus, salaries, or overtime wages.

Information in Tables IV and V indicate that the occupational titles of parts manager, and shop and service foreman rate base salaries as high as the manager and assistant manager. The employment of an accountant with the dealership was normally considered an outside paid position. Dealers considered this job to require an equivalent of a CPA (Certified Public Accountant) or better qualification. A few of the larger volume businesses stated they were presently using company and/or independent central computer record systems in conjunction with accountants and local office employees.

Most of the base salary estimates given in Table V show good salary increases from data presented in Table IV. Dealers estimated (with difficulty) these salaries based on a 4 to 5 per cent per year inflation rate over the next five year (1980-1985) period. Some indicated an even higher percentage of increase due to employment needs and profit opportunities. Many of the salaries shown in Table V show an excess of \$1,000 per month base salaries predicted from current economic trends. Several dealers commented that their present prime competitor for qualified, trained mechanics and service personnel was the energy industry, primarily the oil producing companies. Dealers realized they will have to meet competitive salaries in the future. Adequate personnel and costs will eventually be passed on to the equipment consumer through increased overhead. The higher salaries coupled with bonuses and commission potentials were expectations of the agricultural equipment dealers. In turn, this would increase employment interest and offset a reduction in obtaining qualified, trained personnel to serve future requirements.

Benefits were tabulated and presented in Table VI and relate to current and future employee fringe benefits. As shown by the dealers, vacations, holidays, life insurance, health and liability insurance (including hospitalization and accident provisions), uniforms furnished, and paid training leave were above the 80 per cent levels. Paid sick leave due to natural illness or accidents rated slightly lower because some dealers said their individual health and liability policies would cover the time lost by the employee. Bonus benefits rated the highest at 48.5 per cent, toward employee incentives to improve their salaries during employment. Pension plans qualified at a low 8.9 per cent. Dealers in most cases lacked confidence in holding dependable and qualified personnel over a long employment period with one dealership. In the column relating to tools furnished, the dealers qualified that only special tools needed for certain maintenance and repair operations on individual brand name equipment were supplied by the company. Common hand tools, measuring instruments, and tool boxes were expected to be supplied as personal property of the employee at their time of employment.

If a new employee does not have any tools at the time of employment, the dealers had discount purchase plans through company or independent tool vendors to supply the required tools for the job. These tools were paid for by a payroll deduction plan arranged with individual dealers and their respective companies.

Data in each column in Table VI shows an average percentage for the fringe benefits selected from dealer opinions for various job titles. Numbers in parenthesis indicate the number of dealers identifying benefits by occupational titles. One dealer in the survey

TABLE VI

EMPLOYMENT BENEFITS BY OCCUPATIONAL TITLE

Occupational Title	N=22	Vacations		Holidays		Life Insurance		Health & Liability Insurance		Paid Sick Leave		Bonus		Commissions	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
<u>MANAGEMENT</u>															
Manager (18)		18	100.0	18	100.0	13	72.2	17	94.4	13	72.2	8	44.4	2	11.1
Asst. Manager (10)		10	100.0	10	100.0	8	80.0	9	90.0	7	70.0	5	50.0	1	10.0
Sales Manager (10)		10	100.0	10	100.0	10	100.0	10	100.0	6	60.0	3	30.0	10	100.0
Parts Manager (17)		17	100.0	16	94.1	14	82.4	17	100.0	13	76.5	10	58.8	6	35.3
Shop and Service Foreman (19)		19	100.0	19	100.0	14	73.7	18	94.7	14	73.7	9	47.4	5	26.3
<u>TECHNICAL</u>															
Salesman (17)		17	100.0	17	100.0	13	76.5	17	100.0	13	76.5	8	47.1	13	76.5
Partsman (18)		18	100.0	18	100.0	13	72.2	17	94.4	15	83.3	8	44.4	6	33.3
Mechanics (21)		21	100.0	20	95.2	15	71.4	20	95.2	15	71.4	8	38.1	7	33.3
Delivery and Equip. Supervisor (21)		21	100.0	20	95.2	16	76.2	20	95.2	14	66.7	7	33.3	1	4.8
Set Up & Reconditioning (1)		1	100.0	1	100.0	1	100.0	1	100.0	1	100.0	1	100.0	-	-
Field Troubleshooter (6)		5	83.3	4	66.7	2	33.3	4	66.7	3	50.0	2	33.3	2	33.3
Service Parts Coordinator (1)		1	100.0	1	100.0	1	100.0	1	100.0	1	100.0	1	100.0	-	-
<u>CLERICAL</u>															
Accountant (5)		5	100.0	5	100.0	5	100.0	5	100.0	3	60.0	1	20.0	-	-
Bookkeeper (15)		15	100.0	15	100.0	11	73.3	14	93.3	13	86.7	7	46.7	1	6.7
Credit Manager (3)		3	100.0	3	100.0	3	100.0	3	100.0	2	66.7	1	33.3	-	-
Office Clerk (3)		3	100.0	3	100.0	3	100.0	3	100.0	2	66.7	-	-	-	-
Receptionist (1)		1	100.0	1	100.0	1	100.0	1	100.0	-	-	-	-	-	-
Percentage Average			99.0		97.1		83.0		95.5		73.8		48.5		33.7

(*) Indicates number of dealers identifying occupational titles.

TABLE VI (Continued)

Occupational Title	N = 22	Profit Sharing		Tools Furnished		Uniforms Furnished		Paid Training Leave		Vehicle Furnished		Paid Retirement		Pension Plan	
			%		%		%		%		%		%		%
<u>MANAGEMENT</u>															
Manager (18)	5	27.8	-	-	14	77.8	16	88.9	2	11.1	6	33.3	1	5.6	
Asst. Manager (10)	2	20.0	-	-	8	80.0	9	90.0	2	20.0	3	30.0	1	10.0	
Sales Manager (10)	2	20.0	-	-	10	100.0	10	100.0	-	-	5	50.0	1	10.0	
Parts Manager (17)	3	17.6	-	-	14	82.2	17	100.0	1	5.9	6	35.3	1	5.9	
Shop and Service Foreman (19)	5	26.3	10	52.6	19	100.0	16	84.2	1	5.3	7	36.8	1	5.3	
<u>TECHNICAL</u>															
Salesman (17)	3	17.6	-	-	14	82.4	16	94.1	2	11.8	6	35.3	1	5.9	
Partsman (18)	4	22.2	-	-	14	77.8	16	88.9	1	5.9	6	33.3	1	5.9	
Mechanics (21)	5	23.8	13	61.9	18	85.7	20	95.2	1	4.8	6	28.6	1	4.8	
Delivery and Equip. Supervisor (21)	5	23.8	12	57.1	16	76.2	14	66.7	21	100.0	6	28.6	1	4.8	
Set Up and Reconditioning (1)	-	-	1	100.0	1	100.0	1	100.0	1	100.0	1	100.0	-	-	
Field Troubleshooter (6)	-	-	2	33.3	3	50.0	4	66.7	1	16.7	1	16.7	-	-	
Service Parts Coordinator (1)	1	100.0	-	-	1	100.0	1	100.0	-	-	-	-	-	-	
<u>CLERICAL</u>															
Accountant (5)	1	20.0	-	-	-	-	2	40.0	-	-	2	40.0	-	-	
Bookkeeper (15)	3	20.0	-	-	-	-	-	-	5	33.3	6	40.0	1	6.7	
Credit Manager (3)	1	33.3	-	-	-	-	1	33.3	-	-	2	66.7	-	-	
Office Clerk (3)	-	-	-	-	-	-	-	-	-	-	2	66.7	-	-	
Receptionist (1)	-	-	-	-	-	-	-	-	-	-	1	100.0	1	-	
Percentage Average		28.7		61.0		84.4		82.0		30.5		46.3		8.9	

(*) Indicates number of dealers identifying occupational titles.

refrained from completing the information, and one dealer stated that part-time employees did not qualify for fringe benefits with their dealership.

Academic Backgrounds

Individual opinions on educational backgrounds preferred of entry level employees to the dealership and the results were compiled to form Table VII. In the past, many of the dealers have depended upon non-graduates and graduates from high school with farm backgrounds to fill their employment needs. The implementation of the vocational-technical schools in the geographical area over the past few years have given dealers an opportunity for the employment of some of these graduates. Two of the dealers surveyed stated they would not hire any more vocational-technical school products because of the lack of maturity and job proficiency. These dealers alleged that it took the employee too long to complete the required job (mechanic) and usually the work had to be redone by a more experienced, qualified mechanic. Overall, the majority of dealers responding to the educational choices relied on their education and business experiences and would be pleased with a high school and/or a vocational-technical graduate. The lesser selections at the college level again reflected the lack of knowledge about various college programs and course contents by the dealers. Higher base pay scales for college graduates contributed to the reduction of college selections.

The data from Table VII shows the lowest educational levels were for partsman by 52.4 per cent of the respondents. Delivery and equipment supervisor at 75 per cent required a high school diploma.

TABLE VII
EDUCATIONAL BACKGROUNDS PREFERRED BY
EMPLOYERS BY OCCUPATIONAL TITLE

Occupational Title	N=22	Distribution of Educational Levels												
		H.S.	%	Voc. Tec.	%	College or University (Years)								Grad.
						1	2	3	4	5	6	7	8	
<u>MANAGEMENT</u>														
Manager (19)*		2	10.5	5	26.3	-	-	9	47.4	-	-	3	15.8	-
Asst. Manager (13)*		-	-	4	30.8	-	-	8	61.5	-	-	1	7.7	-
Sales Manager (12)*		4	33.3	3	25.0	1	8.3	3	25.0	-	-	1	8.3	-
Parts Manager (19)*		8	42.1	7	36.8	-	-	2	10.5	-	-	1	5.3	-
Shop and Service Foreman (18)*		2	11.1	13	72.2	-	-	3	16.7	-	-	-	-	-
<u>TECHNICAL</u>														
Salesman (19)*		7	36.8	8	42.1	-	-	3	15.8	-	-	1	5.3	-
Partsman (21)*		11	52.4	9	42.9	-	-	-	-	-	-	1	4.8	-
Mechanics (22)*		1	4.5	20	90.9	1	4.5	-	-	-	-	-	-	-
Delivery and Equip. Supervisor (20)*		15	75.0	4	20.0	-	-	1	5.0	-	-	-	-	-
Set Up and Reconditioning (1)*		-	-	1	100.0	-	-	-	-	-	-	-	-	-
Field Troubleshooter (7)*		1	14.3	4	57.1	-	-	1	14.3	-	-	1	14.2	-
Service Parts Coordinator (1)*		-	-	1	100.0	-	-	-	-	-	-	-	-	-
<u>CLERICAL</u>														
Accountant (5)*		1	20.0	1	20.0	-	-	2	40.0	-	-	1	20.0	-
Bookkeeper (17)*		6	35.3	4	23.5	2	11.8	5	29.4	-	-	-	-	-
Asst. Bookkeeper (1)*		1	100.0	-	-	-	-	-	-	-	-	-	-	-
Credit Manager (3)*		-	-	-	-	-	-	3	100.0	-	-	-	-	-
Office Clerk (3)*		1	33.3	-	-	-	-	1	33.3	-	-	1	33.3	-
Receptionist (1)*		-	-	-	-	-	-	1	100.0	-	-	-	-	-

(*) Indicates number of dealers responding out of the total sample, Percent computed on the number responding rather than the total sample.

Salesmen and parts managers interchanged percentage choices between a high school and/or vocational-technical graduate. Vocational-technical graduates were highly favored for mechanics by 90.9 per cent and shop and service foreman by 72.2 per cent of the respondents. College level backgrounds at the two year level were emphasized for managers by 47.4 per cent and assistant managers by 61.5 per cent of those identifying these occupational titles. The few dealers who identified office personnel jobs; i.e., credit manager, office clerk, and receptionist, emphasized that two year college graduates would best fill these positions. This was primarily due to the increased use of computer bookkeeping systems presently being utilized. A very small percentage in Table VII show any four year college graduate requirements within the occupational titles.

Percentages were computed for Table VII by dividing the total number identifying that particular occupational title with the total selections on each educational level. In only one case (mechanics) was the entire survey number of twenty two respondents utilized for percentage denominator computation.

In Table VIII, the dealers were asked to select individual academic courses which they felt would be beneficial background knowledge in the overall spectrum of occupational titles they had previously selected in Tables I and II. The interviewer asked the dealers to make their selection of courses from a general viewpoint of academic standards they would like to have in prospective employees. They were also advised that many of these courses could be offered to at least the two-year college graduate level. The dealers were aware that many of the course titles were selected from existing college course titles

and descriptions offered at the local community college (Northern Oklahoma College) in Kay County. Adaptation to implement an Agricultural Equipment Employee Training program to service the geographical area of the survey could be possible.

An allowance to write in courses by the dealers was provided in each section of the survey instrument by the interviewer. This allowed each one to express choices and opinions of his own convictions or bias to produce a better employee of occupational competence.

In the section of general academics, subjects of English and Speech rated a 68.2 per cent selection. Dealers felt these subjects to be important to all employees. A general Survey of Basic Mathematics course including addition, subtraction, multiplication, division, percentages, fractions, and introduction to the metric system rated a 72.7 per cent selection rate. It was considered adequate mathematical background for most employee job duties. Higher mathematic and science courses met with a low approval rate from the dealers. Almost all the courses in the technical section were selected with at least a 66.6 per cent approval. The courses of Hydraulics and Pneumatics rated high with 95.5 per cent. Courses in Basic Electronics, Mechanical Drives and Linkages, Basic Welding, and Basic Machine Shop training were next with a 86.4 per cent rate. Courses in Auto Mechanics and Advanced Welding were given substantial approval. Dealers commented that technical knowledge of solid state electronic circuits and troubleshooting techniques would become an increasing valid requirement of mechanical and service personnel working with future designs of agricultural equipment.

The business grouping of academic choices yielded a high selection of Business Mathematics with 90.9 per cent. This was followed closely by Business Communications with 81.8 per cent. Dealers maintained that these two courses were needed by both the management and clerical personnel. It was understood that Business Mathematics would be required in conjunction with Survey of Basic Mathematics for certain job qualification. Most of the other course titles in the business classification met with substantial majority approval.

The agricultural courses received firm endorsement from all the dealers. They observed that an overall knowledge of farming and ranching enterprises would be extremely helpful to the management, mechanical, and service personnel. This would allow for better selection of agricultural equipment, understanding agricultural practices, and improvement of customer relationships with the dealerships. The courses of Agriculture Sales, Farm Machinery-Planting, and Farm Machinery-Harvesting received a 90.9 per cent approval. Knowledge of Agricultural Engineering, especially for sales personnel, was valued by an 81.8 per cent second majority choice. All other course listings were above a 66.6 per cent level. Table VIII clearly indicates the academic areas of Technical, Business, and Agricultural courses aspired by dealer respondents for successful overall employment qualifications.

The write-in courses recommended by dealers in Table IX are listed by categories and percentages of those responding from the total sample. Recommendations of additional courses came only in the technical and business academic groups. Dealers listing courses in the technical section were in agreement that Air Conditioning,

Diesel Systems, and Engine Overhaul (Diesel) training as being essential to their mechanical and service staff. A training course in Safety only received recommendation from one dealer in the study. The idea was expressed that the business group should be expanded with a course in Public Relations for all potential employees, particularly, dealers who served in management positions of the larger businesses. The other write-in courses in both sections received mention, but no substantial agreement by the total sample.

TABLE IX
 ADDITIONAL COURSES RECOMMENDED
 BY DEALERS

(N=22)

Courses	N	%	Courses	N	%
<u>Technical</u>			<u>Business</u>		
Air Conditioning	10	45.5	Public Relations	11	50.0
Diesel Systems	11	50.0	Time Management	2	9.1
Engine Overhaul (Diesel)	11	50.0	Business Management	2	9.1
General Farm					
Machinery Repair	1	4.5			
Tractor Mechanics	1	4.5			
Safety	1	4.5			

Possibilities for Potential Training Programs

Dealers were asked to evaluate the need for an employee training program within their service area. The results are shown in Table X through Table XVI of the study.

As shown in Table X, when asked if they felt a program was needed, the dealers responded "yes." The results of the study shows a unanimous 100 percent of the sample indicated an employee training program would be beneficial.

TABLE X
NEED FOR AN AGRICULTURAL EQUIPMENT TECHNICIAN
PROGRAM AS PERCEIVED BY DEALERS

(N=22)	Yes	No
Number	22	0
Percent	100%	0%

The next six questions on the survey instrument inquired if the dealers were willing to cooperate on a work/study program to be implemented between the school training program and actual job experience with the dealership. This would allow the student/employee to work at the job level of their interest and also help them to select the best courses in school for job proficiency. The potential was viewed by most dealers as a step toward holding the student as a future permanent employee, provided they met with the dealer's

expectations of job performance. Data in Table XI shows that 90.9 percent of the dealers would cooperate to provide student employment within their dealerships.

TABLE XI
EMPLOYMENT POTENTIAL FOR APPRENTICE WORK/STUDY
PROGRAM AS PERCEIVED BY DEALERS

(N=22)	Yes	No	Undecided
Number	20	2	0
Percent	90.9%	9.1%	0%

Opinion of dealers on minimum work training hours per week for the student employees is shown in Table XII. Dealers rated a 70 percent level for a minimum 20 hour work week in conjunction with school training. This high time rating remained consistent with dealer opinions for both a one-year and a two-year training program.

Many dealers were inclined to agree that a two-year training program of work/study would be best for either vocational-technical or college level curriculum. The traditional non-school time during the summer months could be utilized as a full-time work schedule for the prospective employee. This would provide them with an incentive to pay toward their academic education.

TABLE XII
 MINIMUM JOB TRAINING HOURS RECOMMENDED BY
 DEALERS FOR A WORK/STUDY PROGRAM

One Year Program	Hours Per Week					
	3	5	10	15	20	Over 20
Number (n=22)	0	0	3	0	17	0
Percent	0%	0%	13.6%	0%	77.3%	0%

Two Year Program (64 weeks)	Hours Per Week					
	3	5	10	15	20	Over 20
Number (n=22)	0	1	2	0	16	0
Percent*	0%	4.5%	9.1%	0%	72.7%	0%

Percent* indicates some dealers chose only one program and some selected two programs.

Data in Table XIII shows the percentage of dealers willing to provide prospective student/employees with company in-service training program benefits along with other permanent employees. Since these costs of training are financed by the dealer, they were hopeful this would encourage permanent employment with the dealership providing the benefit.

Information in Table XIV shows the response of dealers when asked if they would be willing to help school training programs. Their influence could obtain a free or low cost company training aids in

TABLE XIII

COMPANY IN-SERVICE TRAINING BENEFITS
FOR WORK/STUDY TRAINEES

(N=22)	Yes	No	Undecided
Number	20	2	0
Percent	90.9%	9.1%	0%

TABLE XIV

AVAILABILITY OF COMPANY TRAINING
AIDS AND EQUIPMENT

(N=22)	Yes	Possible	No
Number	18	3	0
Percent	81.8%	13.6%	0%

terms of software materials such as operator's manuals, service manuals, parts manuals, charts, slide sets, film loops and films from company sources. Other training aids could include the loan of simulator systems for electrical, electronic, hydraulic, lubrication, fuel, cooling, and pneumatic systems found on modern agricultural equipment.

Hardware equipment loans specified in Table XV, implied the short term use of new or used agricultural equipment donated by the dealer to the school program for training purposes. In some cases, this

would be the actual assembly of all or part of a complete agricultural implement. Otherwise the equipment could only be used for show and tell training objectives. In most cases, the dealer agreed to furnish the transportation expenses both ways for such equipment from the dealership in the school. The high positive responses (81.8% and 77.3%) in both Tables XIV and XV indicated a substantial approval of the sample toward the training program concepts.

TABLE XV
HARDWARE EQUIPMENT LOANS BY DEALERS
FOR A TRAINING PROGRAM

(N=22)	Yes	No
Number	17	5
Percent	77.3%	22.7%

The study question in Table XVI was directed toward support of such a training program at the college level through scholarship donations. The table data shows that 59.1 percent of the sample indicated a possible adoption of such a donation fund. This was clarified by most of the dealers in this category. They were to be given time to evaluate the program's success and contribute to the personal selection of individual participants. By being so involved, they would definitely be in favor of a scholarship fund on behalf of their business. Between the "yes and "possible" answer selections,

the sample approved the scholarship fund donation idea by a 77.3 per cent margin.

TABLE XVI
SCHOLARSHIP FUND DONATIONS BY
DEALERS FOR STUDENTS

(N=22)	Yes	Possible	No
Number	4	13	5
Percent	18.2%	59.1%	22.7%

Employment Preferences

In terms of potential employment applicants, the respondents were asked their preferences of new employees in relation to their age and marital status. The figures in Table XVII indicated the preferred age group was distributed between the age groups of 18 to 26 years old. A majority of 85.2 per cent selected these age brackets for new employees. A total number of 27 respondents versus 22 in Table XVII was utilized in the computation. Some dealers expressed the opinions of the dealers by age preference for graduates of vocational-technical and college level for employee training programs.

Marital status provisions met with an approval for married personnel in Table XVIII by 59.1 per cent of the sample. The general opinion prevailed that married employees tend to exhibit more dependability and maturity toward job responsibilities. Job experiences,

farm backgrounds, and marital status were prime considerations when selecting between two or more applicants for a job position. A larger than expected 40.9 per cent of the sample selected a "no preference" marital status. None of the respondents selected the single category provided in the instrument.

TABLE XVII
APPLICATION AGE GROUP PREFERENCE

(N=22)	15-17	18-20	21-23	24-26	30 or Over	Total
Number	1	8	8	7	3	27
Percent	3.7%	29.6%	29.6%	26.0%	11.1%	100%

TABLE XVIII
MARITAL STATUS PREFERRED (*)

(N=22)	Married	Single	No Preference
Number	13	0	9
Percent	59.1%	0%	40.9%

(*) Dealers preferred married and experienced personnel.

Physical Criteria of Dealerships

The questions were incorporated into the survey instrument to indicate the gross value of sales and service and the expanse of trade and service areas provided to customers by the various dealerships. The results of these questions are shown in Tables XIX and XX.

The gross value of sales and services in Table XIX includes the total receipts from agricultural implements and equipment, repairs, service personnel charges, and parts. The largest percentage was 59.1 per cent of the respondents in the \$1,000,000 or more category. A large portion of the sample, 90.9 per cent, was above the gross values of at least \$500,000 in sales and services. This was contributed to the high inflation costs to customers in equipment, labor and parts. The dealers indicated they could not foresee any reduction in their businesses in terms of gross sales and service, regardless of the size of the business.

TABLE XIX

GROSS VALUE RANGE OF SALES AND SERVICES

(N=22)	100,000 or less	250,000 100,000	500,000 250,000	750,000 500,000	1,000,000 or more	2,000,000 or more
Number	0	1	1	3	13	4
Percent	0%	4.5%	4.5%	13.6%	59.1%	18.2%

The service distances in Table XX shows a substantial total of 86.4 per cent of the respondents indicated a range of 20 to 60 mile service radius to their customers. The largest singular percentage, 31.8 per cent, indicated the 60 mile radius as their trade area, while smaller dealers estimated more conservative 20 to 40 mile radius figures.

TABLE XX
SERVICE DISTANCES OF DEALERSHIPS

(N=22)	Miles Radius					
	20	40	60	80	100	175
Number	6	6	7	1	1	1
Percent	27.3%	27.3%	31.8%	4.5%	4.5%	4.5%

The final table was Table XXI. It was organized to show the number and percentages of dealerships rated according to the number of full and part-time personnel presently employed within each business. By the definition of the investigator, small size businesses were the ones employing seven or less persons, medium size businesses employed eight to 15 persons, and the large size employed 16 or more persons. This table shows the largest percentage of the total sample to be in the large dealership definitions. It is believed by the investigator that the medium and large dealerships would better support their claims of employment needs and training program assistance than the smaller

ones. However, it was not the intent of the investigator, nor objective of the study, to overlook small dealership needs and opinions at the start of the study.

Dealers reported that several businesses were located in competitive trade areas, and an estimated decline of agricultural farm operators is predicted within the study area. They were very optimistic, in spite of farm operator decline, that their employment needs and services would increase during the 1980-1985 period.

TABLE XXI
DEALERSHIP SIZES RATED BY FULL
AND PART-TIME EMPLOYEES

	Number of employees per dealership			
	Small (0-7)	Medium (8-15)	Large (16-23)	Total
(N=22)				
Number of dealerships	5	8	9	22
Percent of Sample	22.7%	36.4%	40.9%	100.0%

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this chapter is to present a summary of the objectives, findings, conclusions, and recommendations regarding ways and means of implementing the findings of this study.

Summary

The purpose of the study was to determine the employment patterns and educational needs of agricultural equipment dealerships in North Central Oklahoma and South Central Kansas. The objectives and findings of the study were:

Objective:

1. To identify and list occupational titles that exist at selected agricultural equipment dealerships within the study area for which high school, vocational-technical, and college graduates would qualify.

Findings:

- a. A total of eighteen occupational titles were identified in the agricultural equipment dealerships (See Table I, Chapter IV).

- b. Over fifty percent of the sample selected the following occupational titles for college level academic backgrounds; manager, assistant manager, accountant, credit manager, office clerk, and receptionist.

c. Over fifty percent of the sample selected the following occupational titles for high school, vocational-technical, academic backgrounds; sales manager, salesman, parts manager, partsman, shop and service foreman, mechanics, delivery and equipment supervisor, set up and delivery, reconditioning, field troubleshooter, service parts coordinator, and assistant bookkeeper.

Objective:

2. To identify present and estimated numbers of employees in each of the individual dealerships according to the occupational titles defined.

Findings:

a. The highest percentages of employees by occupational titles presently employed in the dealerships were; managers (100%), salesmen (100%), parts managers (86.4%), partsmen (100%), shop and service foremen (85.4%), mechanics (100%), delivery and equipment supervisors (100%), and bookkeepers (100%).

b. Highest potential employment increase percentages by occupational titles within the next five years were; salesmen (100%), partsmen (77.3%), and mechanics (190%).

c. A total of 287 full and part time employees were employed in the twenty-two dealerships.

d. An increase of 132 full-time positions were estimated in the next five years by the dealers. This represented a fifty percent increase in total employment needs over the twenty-two dealerships.

e. Fifty-six employment positions indicated in the study instrument would be new occupational titles within the twenty-two dealerships.

Objective:

3. To determine present and estimated average salaries plus fringe benefits for the occupational titles defined.

Findings:

a. Salary bases for current full-time occupational titles, depending upon their individual titles, were found to be from \$1,469 to \$400 per month.

b. Salary bases for estimated (1985) full-time occupational titles, were from \$2,090 to \$600 per month.

c. Salary bases did not include bonuses, commissions, profit sharing, or overtime wage potentials at either the present or future levels.

d. Fringe benefits to employment most often cited were; vacations, holidays off, life insurance programs, health and liability insurance, paid sick leave, uniforms furnished, and paid training leave.

e. Fringe benefits were not usually given to part time employees.

f. From general comments by the respondents, high machinery costs, repair-parts-service costs, and overhead costs have contributed to the problems of the various implement dealerships in competing with other high paying industries in acquiring personnel. This has been coupled with the reluctance of farm and ranch operators/owners to pay for these increased costs and services.

Objective:

4. To determine the basic educational level required of each occupational titled identified for job-entry employment.

Findings:

- a. Potential employees with farm and ranch experience and/or background were prime considerations by the dealers for full time employment.
- b. Previous related employment and/or job experiences were also considerations by the dealers for full time employment.
- c. Dealers were divided on a 50-50 basis toward married or no preference of marital status for full time employees.

Objective:

5. To determine the individual academic courses and backgrounds required of the specific occupational titles identified for job-entry employment.

Findings:

- a. From the comments of the dealers/managers positive interest and attitude toward job duties were important to new employees for successful job performance and advancement.
- b. From the comments of the respondents, vocational-technical schools, both high school and post high school programs, were favored as the best choice to implement training programs for most of the high employee needs of the dealers.
- c. Air conditioning, diesel systems, and engine overhaul (diesel) were considered mandatory courses for mechanics and shop foremen.
- d. An academic course or courses in public relations was considered important to occupational employment within the dealerships.

Objective:

6. To identify areas of cooperation for a work/study program between dealers and a potential high school, vocational-technical, or college training program.

Findings:

a. A majority of 90.0 percent of the dealers were agreeable to a work/study program for apprentice trainees enrolled in the program.

b. An agreement of opinions (77.3% and 72.2% respectively, for one-year and two-year study programs) was that twenty hours per week on-the-job training would be required of work/study apprentice trainees.

c. From the comments of the respondents, full-time summer employment could be offered to qualified apprentice trainees to encourage permanent employment of the individual with the dealership.

d. A majority of dealers offered to cooperate with all school training programs by donation of in-service company training, for work/study trainees, software materials, demonstration models, and loans of hardware equipment for classroom and laboratory experiences.

e. Dealers indicated possible donations toward scholarship funds for needy students in an agricultural equipment technology program, provided they were included in the selection of the student.

f. The preferred age requirement by the majority of the respondents (59.2%) for full time employment was found in a range between eighteen and twenty-three years old.

Objective:

7. To list specific comments and opinions of agricultural equipment dealers concerning the need and implementation of cooperative work/study training programs within their service areas.

Findings:

a. From the comments, a strong need seemed evident for one or more agricultural equipment employee training programs in the geographical study area.

b. Refer to Appendix A for dealer opinions and comments to support this objective of the study.

Objective:

8. To determine the magnitude of the individual dealerships by their gross value of sales, services and service areas.

Findings:

a. The largest majority (31.8%) reported a gross value of sales and services in the range of \$1,000,000 or more (59.1%) and \$2,000,000 or more (18.2%).

b. The largest single percentage of dealers (31.8%) reported a service distance from their dealership of sixty miles. Other dealers in the sample (54.6%) reported distances of twenty miles (27.3%) and forty mile service distances (27.3%).

c. The largest single percentage of dealers (40.9%), as rated by full and part time employees per dealership, employed sixteen or more persons.

Findings from this study were quite similar to other studies conducted by Williams (2) in Oklahoma, Webb (19) in Texas, and Donahoo-Amberson (28) in Montana, in terms of identifying employment potentials and personal qualifications of prospective employees of agricultural equipment and agricultural supply and service occupations. These studies cited were in agreement with the occupational titles, identified start ages, fringe benefits, backgrounds, and personal qualifications for employment identified by the owners/managers surveyed in this work.

Conclusions

The following conclusions are given as a generalization to the objectives and findings of the study. These conclusions reflect the opinions of the investigator toward the purpose and need for the study. These are:

1. The fact that dealers/owners/managers defined many job titles. This could indicate that more opportunity for training programs and job opportunities exist within the dealerships. This conclusion was supported by the difference of opinions between the various dealerships on employee title definitions and qualifications for program trainees.

2. It is concluded from the salary statistics and projections, that the dealers will not be very responsive in meeting the competitive wage scales and benefits of other industries as they attempt to acquire competent, skilled personnel for their employment needs. Many good to excellent salary fringe benefit potentials are not included in the base salary levels shown in the study in terms of bonuses,

commissions, and profit sharing salary plans; however, these benefits would depend upon an individual's personality and job skills.

3. Based upon dealers' recommendations, academic backgrounds for agricultural equipment employment trainees at either the vocational-technical or college level should concentrate heavily in technical, business, and agriculture courses.

4. The comments from the respondents did reflect a general trend toward increased employment needs, salary potentials, academic training background requirements, and personal employee qualifications for agricultural equipment dealerships located within the North Central Oklahoma and South Central Kansas study region.

5. The investigator concluded that the best qualified person to supply the employment needs of dealerships within the study region would be a person who has a farm or ranch background, and is a graduate of a high school vocational-technical program, and is also a graduate of a two year junior college (work/study) degree program.

Recommendations

This study was conducted to learn about current and estimated employment needs and opportunities in agricultural equipment dealerships in North Central Oklahoma and South Central Kansas. Also, the study was designed to assess dealers/owners/managers perception of the educational skills and backgrounds needed and/or desired for employment with their individual firms. It is recognized that the results are subjective from the standpoint that no survey form or standard interview technique effectively reflects individuals and their ideals.

However, there appeared to be a high degree of consistency among the respondents in reply to the questions on the study instrument.

With these factors in mind, and recognizing that the study incorporated a small sample and geographical area, broad generalizations were not possible. In the opinion of the investigator, the following recommendations seemed feasible from the results and could prove useful to others working in the same subject area. These recommendations are:

1. There are indications by a 100 percent response rate on Table X in the study that advisory councils need to be formulated between educators, vocational-technical school and college administrators, and agricultural equipment dealers to promote development of a technician training program within the North Central Oklahoma and South Central Kansas region.

2. Existing courses in business, vocational training, technical training, and agriculture designed to prepare employees for occupations within agricultural equipment dealerships surveyed should be carefully reviewed to determine if they apply to the area's employee training needs.

3. Courses should be selected that will meet the needs of the agricultural equipment employers and be of least cost to the schools involved in the implementation of this type of program.

4. Since this study only included a small geographical area with limited number of respondents, state wide surveys in both Oklahoma and Kansas are needed to determine employment needs and potentials within each state's agricultural equipment dealerships, perform task analysis studies, develop curriculum, and develop course materials for training programs.

5. Course materials that are developed, selected, and used should be field tested before being distributed. These materials could be made available to those schools considering implementation of agricultural equipment employee training programs prior to the initiation of such programs.

6. Young people should be encouraged through concerted efforts of vocational agriculture programs, high school guidance counseling, and state and local employment agencies to select work/study training programs and employment with agricultural equipment dealerships because of the interest found within the area of the study.

7. State and local employment services should be made aware of employment needs and be utilized to encourage the development of agricultural equipment employee placement programs.

8. Two year colleges need to be more active in their contacts with agricultural implement dealers and other agricultural businesses to become aware of their educational program needs. This would be a positive step to help solicit support for proposed work/study training programs.

9. Additional studies need to be done using the job classifications and expected knowledge (courses) identified by this study to review secondary and post-secondary programs in North Central Oklahoma and South Central Kansas to determine what components of training programs exist and where.

SELECTED BIBLIOGRAPHY

1. College of Agriculture. Mechanical Agriculture. Stillwater: Oklahoma State University, 1979.
2. Williams, Michael Dale. "Occupational Titles in Oklahoma Agricultural Machinery Dealerships for which High School Graduates May Qualify." (Unpublished Master's Thesis, Oklahoma State University, 1972.)
3. U.S. Department of Health, Education, and Welfare. Criteria for Technical Education: A Suggested Guide. Washington, D.C., 1968.
4. Halterman, Jerry J. Technicians in Agriculture, A Study in the Identification of Technical Workers in California Agriculture and of their Needs in Training Programs. Modesta: Modesta Junior College, California State Department of Education, 1967, p. 50.
5. U.S. Department of Health, Education and Welfare. Administration of Vocational Education. Part 104. Washington, D.C.: Office of Education, Reprint from Federal Register, August 28, 1964.
6. Arnold, Walter M. "Education of Highly Skilled Agriculture Technicians, Assistant Commissioner for Vocational and Technical Education." Speech presented at the National Seminar on Agriculture Technical Training, Ohio State University, July 22, 1964.
7. U.S. Department of Labor Statistics. Occupational Outlook Handbook. 1976-77 Edition. Washington, D.C., Bulletin 1975, pp. 575-579.
8. Dillon, Roy D. "Your Professional Responsibility." Agricultural Education Magazine, Vol. 44, No. 9 (March, 1972), p. 219.
9. Worthington, Robert M. "Career Education for All America's Youth". Agricultural Education Magazine, Vol. 44, No. 9 (March, 1972), pp. 219-220.
10. Huber, Harold D. "A Post-Secondary Program in Farm Machine Technology." Agricultural Education Magazine, Vol. 42, No. 3 (September, 1969), p. 64.

11. Terry, Howard Robert. "Composite Profiles of Agricultural Machinery Service Occupations as Derived from Comparative Analysis Across Incumbents." (Unpublished Ph.D. dissertation, The Ohio State University, 1969.)
12. National Advisory Council on Vocational Education. Vocational Education: The Bridge Between Man and His Work. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, 1968, p 50.
13. Warmbrod, J. Robert and Phipps, Lloyd J. Review and Synthesis of Research in Agricultural Education. Columbus, Ohio: The Center for Vocational and Technical Education, 1966, p 17.
14. Stevenson, William W. "A Study of Employment Opportunities and Training Needs in Off-Farm Agricultural Occupations in Oklahoma". (Unpublished Ed.D. Dissertation, Oklahoma State University, 1966.)
15. Summary of Research Findings in Off-Farm Occupations: A Research Study, Columbus: Ohio State University, Center for Vocational and Technical Education, August, 1965.
16. Mondart, C. L., Sr. and Curtis, C. M. Occupational Opportunities and Training Needs of Youth for Non-Farm Agricultural Jobs in Alexandria-Pineville Area. Baton Rouge: Louisiana State University, Department of Vocational Agricultural Education, January, 1965, pp. 44-54.
17. Webb, Earl S. Opportunities and Requirements for Entry into the Agricultural Machinery Mechanics Trade. College Station: Texas Agricultural and Mechanics University (A Research Study by Texas Education Agency and Texas Agricultural Experiment Station), January, 1969.
18. Gadda, Hilding W. and Pellmann, James. South Dakota Agricultural Off-Farm Occupational Opportunities and Training Needs. Brookings: South Dakota University, Department of Agriculture Education (staff study), 1969.
19. Wood, Jay Milton. "The High School Education Needed for Entry into Occupations in the Farm Machinery Business in Spokane County, Washington". (Unpublished Master's thesis, Washington State University, 1966.)
20. Eck, Roy F. "Competencies Needed for Employment in Farm Machinery Dealerships". The Agricultural Education Magazine, Vol. 40, No. 2 (May, 1969), p 280.
21. Richard, Claude E. "Education for Off-Farm Agricultural Occupations in Virginia". The Agricultural Education Magazine, Vol. 44, No. 4 (October, 1971), p 89.

22. Steakley, Derrell and Webb, Earl. "Opportunities and Requirements for Farm Machinery Mechanics". The Agricultural Education Magazine, Vol. 43, No. 8 (February, 1971), pp 204-205.
23. Baker, William E. Agriculture and Related Business. Revised Summary Report: Technical Employment in Northeast Florida. Jacksonville, Florida: Duval County School Board (June, 1972), pp 135-138.
24. Bishop, Douglas D. A Study to Determine Competencies Needed by Employees Entering Agricultural Mechanics Occupations. Bozeman: Montana State University, Agricultural Experiment Station (June, 1973), pp. 95-98.
25. Donahoo, Alvin W., Amberson, Max L. A Study to Determine Competencies Needed by Employees Entering Agricultural Supplies and Service Occupations. Bozeman: Montana State University Agricultural Equipment Station (September, 1973), pp 28-30.
26. Fritsch, Conrad. Agricultural Employment and Training Needs in Texas, 1975-1979: Final Report. The Agricultural Experiment Station. College Station: Texas A&M University, Department of Agricultural Economics, 1974, pp. 69-72.
27. Hassler, Harland. "The Concepts of Technical Education in Agriculture". The Agricultural Education Magazine, Vol. 47, No. 9 (March, 1975), pp 210-211.
28. Ewing, Kent. "Junior College Farm Equipment Mechanics". The Agricultural Education Magazine, Vol. 48, No. 7 (January, 1975), pp 161-167.
29. Custer, Max. "Agriculture Programs at Joliet Junior College". The Agricultural Education Magazine, Vol. 48, No. 7 (January, 1976), pp 156-157
30. Hudson, Coy. "Ag Ed in North Carolina Community Colleges". The Agricultural Education Magazine, Vol. 48, No. 7 (January, 1976), p 152.
31. Nechville, Jerry. "Computer Assisted Instruction for Training Farm Equipment Parts Personnel". The Agricultural Education Magazine, Vol. 52, No. 3 (September, 1979), p 70.
32. Office of Education (DHEW). Agricultural Equipment Technology: A Suggested 2-Year Post High School Curriculum. Washington, D.C., 1970, p 120.
33. Fogarty, Bill. "Service Backup by Manufacturers: A Rating by Dealers". Implement and Tractor, Vol. 93, No. 13 (June 7, 1979), pp 36-37.

34. "Service Tools and Equipment: What Do Dealers Own?" Implement and Tractor, Vol. 93, No. 12 (May 21, 1978), pp. 10-12.
35. Owens, Gary. "Parity for Parts at Moore Equipment". Implement and Tractor, Vol. 93, No. 4 (May 21, 1978), pp 10-12.
36. Thiemann, Melvin E. "Dealership Operational Weakness". Implement and Tractor, Vol. 93, No. 4 (February 7, 1978), p 18.
37. Morton, J. B., Hunter, Robert and Stevenson, W.W. Otis+Cycle Four Report--Occupational Training Information System. Stillwater: Oklahoma State Department of Vocational and Technical Education, January, 1972.
38. Mitchell, Jesse B. "Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations in Oklahoma". (unpublished Ed.D. dissertation, Oklahoma State University, 1970.)
39. Morton, J. B. Oklahoma State Occupational Information Coordinating Committee (SOICC) Report of Occupational Supply and Demand. Stillwater: Oklahoma State Department of Vocational and Technical Education, February, 1980.
40. Hunsicker, H. N. "Projection and Prospects". The Agricultural Education Magazine, Vol. 44, No. 4, (October, 1971), p 93.

APPENDIXES

APPENDIX A

DEALER COMMENTS AND OPINIONS

Comments (General):

- 1) "An Agriculture Equipment Employee Training (A.E.E.T.) program needs sufficient laboratory and training equipment concurrent with modern technical farming."
- 2) "It should be emphasized in the program that you obtain a day's pay for a day's work. The graduate of an A.E.E.T. program should be conscientious, dependable, neat, and take pride in their work."
- 3) "A very dire need exists for motor mechanic and general mechanic skilled personnel."
- 4) "We are very eager to participate in any A.E.E.T. program in any way that we are able. We feel that our very future existence must be based on the availability of adequately trained and schooled personnel made possible by A.E.E.T. courses whether it be through a Junior College or Area Vocational-Technical program."
- 5) "Would only encourage students into an A.E.E.T. program who were definitely interested in agriculture mechanics."
- 6) "There is a definite lack of qualified individuals in the trade (agricultural service and equipment). As equipment becomes more complex and down time more critical the need for trained individuals is great. A comprehensive training program would make excellent technicians available to serve the industry and community."
- 7) "A college level A.E.E.T. program would be great for the local area. Business practices would be very essential in terms of practice and principles of practical application to the prospective technician. Ethics of business, punctuality, dependability, honesty, and courtesy would be valuable assets to the student's training during the program."
- 8) "I feel that an A.E.E.T. technician program would be a good thing for the community and country. There exists a sparse manpower availability in the area for these individuals."
- 9) "I believe the implementation of an A.E.E.T. program in my service area would be a worthwhile idea to pursue. I believe a college trained individual would be better suited to my demands because of past experiences of poor quality training from previous Vocational-Technical graduates in a similar program. The students could not even do menial tasks as beginning mechanics, i.e. change spark plugs, and tighten bolts and fasteners."

- 10) "Teachers in an A.E.E.T. program definitely need to have agriculture backgrounds concerning farm machinery and mechanical knowledge. The schools offering such programs need up-to-date laboratory equipment for hydraulic and electronic training. Diesel training for these students also require laboratory environments and up-to-date testing and troubleshooting equipment."
- 11) "An A.E.E.T. program needs good laboratories and equipment with emphasis on modern training systems. Brand new training equipment would not be a real necessity. I feel that equipment that is three years old or older would be adequate for the program. An agriculture background would be very beneficial for both the instructor and the student."
- 12) "I believe a Vocational-Technical program would be adequate to train these individuals. These schools need modern laboratories and equipment to accomplish successful training. The need for diesel mechanics is great in my dealership and the immediate service area."
- 13) "Technical training schools need up-to-date, real life, modern training systems. A dire need exists for courses in troubleshooting real life equipment in hydraulics, electronics, and engines. Teachers and instructors need company service school training and should have an agricultural equipment background."
- 14) "Safety training should be a necessary part of this technician training program. I also feel that teachers/instructors need company service training to keep them current with modern agriculture equipment."
- 15) "Farm background and experienced personnel would be required for many of our job positions."
- 16) "Experience or non-experience would depend upon the job position available."
- 17) "Special tools are furnished, our business allows a 50% price reduction on personal hand tools for mechanics employed with the dealership."

Hardware Equipment Loans:

- 1) "Company would have to furnish new equipment for training aids; too costly for dealership to afford."
- 2) "Would provide equipment training aids within a 15 mile radius of the host dealership."
- 3) "The donation of new equipment as training aids would be too costly and require too much time on the part of the dealer for delivery and pickup."

- 4) "International Harvester Co. would possibly assist in this program."
- 5) "Would be willing to donate new equipment as training aid subject to availability."
- 6) "I would be willing to donate equipment for set-up training with no cost of labor for delivery and pick-up."
- 7) "I would be willing to donate new equipment as training aids, provided it is within commuting distance of the training institution."
- 8) "It would be possible to loan an A.E.E.T. program new equipment provided the equipment would be cared for with certain stipulations."
- 9) "I would be willing to serve as a guest lecturer and give a company recruitment program to graduates of an A.E.E.T. course of study."
- 10) "New equipment loans as study aids to an A.E.E.T. training program must be limited to twenty miles delivery distance from the dealership to the institution."
- 11) "I would be willing to loan new equipment to a training program provided the school pays for the transportation costs to the dealership."
- 12) "I would be willing to loan simple equipment; plow, mower, etc. but not expensive items; tractor, combine, etc. for training purposes."
- 13) "I have donated used equipment in the past to other schools and training institutions for training purposes. I have furnished net prices on parts to the school for overhaul and rebuilding purposes."
- 15) "I would be willing to donate my hauling time and expenses on new equipment training aids furnished to the institution."
- 16) "I would be more than willing to loan new equipment as training aids, if available. Availability of new equipment has become very difficult and would only occur on rare occasions."

Vocational-Technical or College:

- 1) "Selection of vocational-technical or college graduates would depend upon job position available with the dealership."
- 2) "Either school (vocational-technical or college) would be acceptable to train Agricultural equipment employees."

In Service trainings:

- 1) "Would be willing to send potential graduates to a Wichita training school facility for specialized training."
- 2) "In-service training would be provided for students with high job performance evaluation and potential permanent employment with the dealership."
- 3) "It would be possible to include students in the company in-service training program to an extent depending upon an individual performance basis after a trial period with the dealership."
- 4) "I would include students in my company's in-service training depending upon individual selection, and that they be within commuting distance between the institution and the dealership."
- 5) "Students selected for company in-service training would have to be available during the afternoon hours, and would only be selected after an interview with the manager of the dealership."
- 6) "I would be willing to provide students with in-service company training potential provided the student would be selected by personal interview and a strong desire for permanent employment with the dealership."
- 7) "The only students who would be provided with in-service training would be hand picked by personal interview and job performance."
- 8) "Students would be selected by manager for in-service training. No long hair students would be considered for training."
- 9) "I would be very selective of any student to qualify for in-service training benefits."
- 10) "I would be very selective of any student/employee to be included in an in-service company training program."
- 11) "I would be willing to include students in the in-service training program of my company depending upon the individual's attitude, interest, and job performance."

School choice:

- 1) "Vocational-Technical program would give the best training per cost of the individual student."

Needs of program:

- 1) "An A.E.E.T. program is very much needed in my service area."

- 2) "An A.E.E.T. program would be particularly beneficial to dealers living very close, or within commuting distance of the training facility."
- 3) "An E.E.E.T. program would be best suited to a Vocational-Technical level training in the area of Farm Equipment and Repair and Maintenance. College level work is not necessary to fulfill this skilled area."
- 4) "I feel a Vocational-Technical student would make a better student to fulfill my employment needs."
- 5) "I feel that an A.E.E.T. program is very definitely needed in my service area."
- 6) "I think an A.E.E.T. program would be great for my service area."
- 7) "I feel that a graduate from a college level A.E.E.T. program would be a more mature person to fulfill my employment needs."
- 8) "I think an A.E.E.T. program is very much needed in my service area."
- 9) "I feel that an A.E.E.T. program is needed very much in my service area."
- 10) "I feel very strongly that an A.E.E.T. program is needed in my service area."
- 11) "I have felt that an A.E.E.T. program has been needed for a long time in my service area."
- 12) "I feel that students completing a Vocational-Technical or trade school training program in agricultural equipment would best serve my employee needs."
- 13) "Even though I would only use a few graduates from an A.E.E.T. program, I feel it is a necessity to my service area."

Part-time work/study:

- 1) "Would be willing to hire students if provided they would require supervision."
- 2) "Hiring of students on a co-op training basis would depend upon the individual's performance after a trial period with the dealership."
- 3) "I would be willing to hire certain students, depending upon the individual."

- 4) "I would not hire students on a work/study program without pay and considering them part-time employees."
- 5) "Trainees hired on a part-time or work/study basis would not receive full wages of a full time employee."
- 6) "I would conduct selective interviews to pick prospective student trainees with the dealership."
- 7) "Part-time employees do not qualify for fringe benefits with our dealership."

Software and company training materials:

- 1) "Would provide instructors with software materials, training aids, and training equipment; provided it would not be of any cost to the dealership."
- 2) "I would be willing to assist instructors in procuring software materials, training aids, and equipment dependent upon availability and cost to my dealership."
- 3) "I would be willing to serve as a guest instructor and give a company recruitment program to graduates to an A.E.E.T. course of study."
- 4) "I would be willing to furnish one copy of software materials, training and equipment manuals; if the school would be willing to duplicate these materials from one master copy."

Scholarship fund:

- 1) "Would be willing to donate subject to evaluation of the overall program."
- 2) "Would be willing to donate to scholarship fund, if the dealer or manager knows some background to the student recipient."
- 3) "I would be willing to donate to the scholarship fund in general, not to any particular student."
- 4) "I would be willing to donate to a scholarship fund designed to a particular qualified or needy student."
- 5) "I would be willing to donate to a scholarship fund depending upon individual selection rather than a general program donation."
- 6) "Donations to an A.E.E.T. program scholarship fund would be made only on personal interview with the student and an understanding of obtaining permanent employment from the individual."

- 7) "I would want to be very selective of the student before I would donate to any scholarship fund. "
- 8) "I would be selective of potential students obtaining money I would donate to a scholarship fund as an insurance hedge to obtain a permanent employee. The student would also be offered reduced tool costs through my dealership as incentives for completion of their training."
- 9) "I would be very selective of any students to qualify for donated money to an A.E.E.T. scholarship fund."
- 10) "As a dealer donating to a scholarship fund, I would be selective of any student recipient. They would be selected from personal interview, background experiences, and high school achievements."
- 11) "As a dealer/manager, I would be selective of any student acquiring money donated through my dealership. At present, I would only consider donations as a possible criteria."

Potential employment:

- 1) "Would be willing to hire potential students, if the dealership have the potential or expectation of permanent employment of the student."

Student hire:

- 1) "Would be willing to hire students on part-time basis, if dealers could select the program."

Training hours:

- 1) "Training hours on a work/study program would include Saturday workdays."
- 2) "Students placed with a dealership work/study program should expect to work Saturdays and be willing to work full time during the summer months with the dealership."
- 3) "Ten hours of work per week would be adequate for training potential trainees."
- 4) "I feel the student should be in school one-half time and at work one-half time to adequately learn the skills needed for employment; regardless of whether the program is one year long (32 weeks) or two years long (64 weeks)."

Job positions:

- 1) "We select our field troubleshooters by utilizing company trained personnel rather than the expense of hiring another employee for that particular job."

APPENDIX B

CONFIRMATION LETTER



Northern OKLAHOMA COLLEGE

TONKAWA, OKLAHOMA 74653

DIVISION OF SCIENCE AND ENGINEERING

Mr. Implement Dealer:

As a graduate student at Oklahoma State University and a full-time instructor of Technical Education at Northern Oklahoma College, Tonkawa, Oklahoma, I am planning to conduct a research study to assess the manpower needs of the area Agricultural Implement Dealers to study the feasibility of an Agricultural Equipment Technician program.

This study will be designed to provide technical educators in the junior college (Northern Oklahoma College, Tonkawa, Oklahoma) and Vocational-Technical School (Pioneer Vo-Tech, Ponca City, Oklahoma) service area with information that will assist these schools in implementing a program needed by area equipment dealers which could provide a sufficient number of job opportunities for interested students. Your dealership has been selected as one of the most prominent in the service area to provide the type of information needed.

A short interview with you will be required for this information. This interview will consist of filling out a concise questionnaire, with the interviewer to ask the questions and provide answers for possible questions from the dealer.

NOTE: Due to my present work schedule, Friday afternoons, Saturday (all day), or an evening home visit would be preferable.

Please fill out the enclosed post card indicating whether or not you would be willing to participate in this research study. Your replies will be strictly confidential and only the compiled data and comments will be considered valuable information toward future educational programs.

Thank you in advance for your consideration and cooperation.

Sincerely,

Richard W. Thomas
Graduate Student &
Technical Educator

RWT
Enclosure:1

APPENDIX C

THE SURVEY INSTRUMENT

DEALER INTERVIEW QUESTIONNAIRE

This questionnaire is designed to sample your opinions and other related data concerning which jobs would graduates of a vocational-technical school or two-year Junior College Agricultural Equipment Employee Training Program qualify for with your establishment.

1.)

Job Title and Code No.	How many of the positions listed are presently employed		How many of the positions listed qualify for future employment (next 5 years)			
	Part Time	Full Time	Increase	Decrease	Addition	Elimination
<input type="checkbox"/> Manager (1)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Assistant Manager (2)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Salesman (3)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Partsman (4)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Sales Manager (5)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Parts Manager (6)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Mechanic (7)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Shop & Service Foreman (8)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Bookkeeper (9)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Accountant (10)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Delivery & Equipment Supervisor (11)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Field Troubleshooter (12)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> New & Used Equipment (12)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> Others (13)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> _____ (14)	_____	_____	_____	_____	_____	_____
<input type="checkbox"/> _____ (15)	_____	_____	_____	_____	_____	_____

From the job titles you checked on page 1, please complete the following related data.

Job Title and Code Number	Starting Salary	Anticipated Salary (next 5 years)	Estimate education needed to meet your job qualifications				
			H.S.	Voc. Tech.	College 1 2 3 4	Grad	
<u>Manager</u> (1)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Assistant Manager</u> (2)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Salesman</u> (3)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Partsman</u> (4)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Sales Manager</u> (5)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Parts Manager</u> (6)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Mechanic</u> (7)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Shop & Service Foreman</u> (8)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Bookkeeper</u> (9)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Accountant</u> (10)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Delivery and Equipment Supervisor</u> (11)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Field Troubleshooter New & Used Equipment</u> (12)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
<u>Other</u> (13)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
____ (14)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____
____ (15)	____ mo. ____ yr.	____ mo. ____ yr.	____	____	____	____	____

Block #1
General Academics

Sociology
Psychology
English
Speech

Block #2
Mathematics
Survey of Basic Mathematics
Algebra
Trigonometry
Calculus

Block #3
Science
Science (Basic)
Science (Advanced)
Chemistry (Basic)
Engineering Physics
General Physics
Plant Science
Botany

Block #4
Technical

Drafting (Basic)
Drafting (Advanced)
Electronics (Basic)
Electronics (Advanced)
Hydraulics & Pneumatics
Auto Mechanics
Technical Writing
Mechanical Drives & Linkages
Welding (Basic)
Welding (Advanced)
Heat Treating Techniques
Machine Shop (Basic)
Machine Shop (Advanced)

Block #5
Business
Business Communications
Business Mathematics
Calculating Machines
Salesmanship
Accounting (Basic)
Accounting (Advanced)
Computer Programming
Management & Supervision
Merchandising
Marketing
Retailing

Block #6
Agriculture

Agriculture Sales
Grain Merchandising
Farm & Ranch Management
Feeds & Feeding Management
Soils & Soil Management
Horticulture
Entomology
Farm Machinery - Planting
Farm Machinery - Harvesting
Agriculture Engineering
Animal Husbandry
Livestock Management
& Feeding

Check the age group you would prefer to employ as a starting employee.

- (1) _____ 15 to 17 years old.
- (2) _____ 18 to 20 years old.
- (3) _____ 21 to 23 years old.
- (4) _____ 24 to 26 years old.
- (5) _____ Other: Please state _____

Indicate below the marital status of desired employees.

- (1) _____ Married
- (2) _____ Single
- (3) _____ No preference

What do you estimate the average gross value of sales and services (parts and repairs, etc.) to be?

- \$1,000,000 and over
- \$750,000 to \$1,000,000
- \$500,000 to \$750,000
- \$250,000 to \$500,000
- \$100,000 to \$250,000
- \$100,000 or less
- Other: _____

How large a service area do you feel you cover with your dealership?

- 20 mile radius
- 40 mile radius
- 60 mile radius
- 80 mile radius
- 100 mile radius
- Other: _____

Would you be willing to include potential students/employees in the in-service training programs (sales & maintenance) offered by your company during their tenure of work-study?

- Yes
- No

Comments: _____

Would you be willing to hire these students on a part-time basis during their training (co-op programs) period? (One or two year programs.)

- (1) Yes
- (2) No

Comments: _____

If you answered the previous question No, would you be willing to help train these students on a no-hire basis?

(1) Yes (2) No

Comments: _____

If you answered the previous question affirmative, what would you consider an adequate number of training hours in your business per week for the student to learn his job?

	One Year Program (32 Weeks)	Two Year Program (64 Weeks)
(1) 3 hours per week	_____	_____
(2) 5 hours per week	_____	_____
(3) 10 hours per week	_____	_____
(4) 15 hours per week	_____	_____
(5) 20 hours per week	_____	_____
(6) Other: _____ hours per week	_____	_____

Comments: _____

Would you be willing to donate the use of new equipment for a short period of time (i.e. one or two weeks), as training aids to supplement an Agricultural Equipment Technician program (combines, tractors, drills, etc.)?

Yes No

Comments: _____

Would you be willing to assist instructors in procuring copies of company training aids and equipment to use in an Agricultural Equipment Technology training program?

Yes Possible No

Comments: _____

APPENDIX D

DEALERS CONTACTED

1.	Buzham Implement Co.	Anthony, Kansas	**
2.	Simer Equipment Co.	Blackwell, Oklahoma	*
3.	Heinrich Bros. Equipment Co.	Billings, Oklahoma	*
4.	Downing Implement Co.	Medford, Oklahoma	*
5.	Sedgwick County Implement Co.	Wichita, Kansas	*
6.	Ernie's Implement Co.	Wellington, Kansas	*
7.	Wilkins Equipment Co.	Ponca City, Oklahoma	*
8.	Long's of Garber	Garber, Oklahoma	*
9.	Vater Implement Co.	Enid, Oklahoma	*
10.	Long's of Enid	Enid, Oklahoma	*
11.	Midwestern Implement Co.	Enid, Oklahoma	*
12.	Grant Implement Co.	Medford, Oklahoma	*
13.	Long's of Medford	Medford, Oklahoma	*
14.	Massey Implement Co.	Caldwell, Kansas	*
15.	Shoffner Implement Co.	Caldwell, Kansas	*
16.	Maupin Implement Co.	Enid, Oklahoma	**
17.	New Holland Farm Equipment	Enid, Oklahoma	*
18.	Myers Implement Co.	Enid, Oklahoma	*
19.	Motz Implement Co.	Wichita, Kansas	*
20.	Edwards Implement Co.	Ponca City, Oklahoma	*
21.	Lorton Implement Co.	Ponca City, Oklahoma	*
22.	Keffe Implement Co.	Arkansas City, Kansas	*
23.	Jennings Implement Co.	Blackwell, Oklahoma	*
24.	Long's of Blackwell	Blackwell, Oklahoma	*
25.	Zaloudek Implement Co.	Kremlin, Oklahoma	**
26.	Massey-ferguson Inc.	Enid, Oklahoma	**

* Indicates data collected

** Indicates no data collected

2
VITA

Richard William Thomas

Candidate for the Degree of
Master of Science

Thesis: A STUDY OF AGRICULTURAL EQUIPMENT DEALERSHIPS
IN NORTH CENTRAL OKLAHOMA AND SOUTH CENTRAL
KANSAS TO DETERMINE THEIR EMPLOYMENT NEEDS

Major Field: Technical Education

Biographical:

Personal Data: Born in Ponca City, Oklahoma, June 2, 1940, the son of Elmer and Pauline Thomas.

Education: Graduated from Blackwell High School, Blackwell, Oklahoma, in May 1958; received Associate of Science degree in Industrial Arts from Northern Oklahoma College, Tonkawa, Oklahoma in 1960; received Associate of Science degree in Metals Technology from Oklahoma State University, Stillwater, Oklahoma in 1963; received Bachelor of Science degree in Technical Education from Oklahoma State University, Stillwater, Oklahoma in 1972; completed requirements for the Master of Science degree at Oklahoma State University, Stillwater, Oklahoma in December, 1980.

Professional Experience: Self-employed farmer, 1955-80; Custom machine operator, 1955-65; Craftsman and machine tool operator, FLY-AWAY CORP., Blackwell, Oklahoma, 1961; Instructor, MDTA (Vocational) machine tool operations, Northern Oklahoma College, Tonkawa, Oklahoma, 1965-70; Curriculum specialist, machine shop (vocational), Oklahoma State Department of Vocational-Technical Education, Stillwater, Oklahoma, 1971-72; Instructor, General Engineering Technology, Northern Oklahoma College, Tonkawa, Oklahoma, 1972 to 1980.

Professional Organizations: Member of Oklahoma Technical Society, Higher Education Alumni Council.