1966

An evaluation of manpower training in Waterloo, Iowa

Jean Ray Roush
University of Northern Iowa

AN EVALUATION OF MANPOWER TRAINING IN WATERLOO, IOWA

An Abstract of

A Thesis

Submitted

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

STATE COLLEGE OF IOWA

by

Jean Ray Roush

January 1966

THESIS ABSTRACT

STATEMENT OF THE PROBLEM

It was the purpose of this study: (1) to ascertain the extent to which the Manpower Training curriculum, provided under the Manpower Development and Training Act of 1962 by the Independent School District of Waterloo, Iowa, met the occupational needs of its graduates in the areas of training, (2) to identify possible deficiencies in the program, and (3) to make appropriate recommendations for curriculum improvement.

DESCRIPTION OF PROCEDURE

A follow-up survey was made of the manpower graduate trainees and their employers. The criteria for use in the study was obtained from an analysis of the Manpower Training objectives. The criteria consisted of occupational information, occupational skills and related technical knowledge, and occupational attitudes. A Graduate Trainee Interview Guide-Sheet and an Employer Interview Guide-Sheet were prepared for use in collecting data. The survey was conducted by personal interview, except in instances where graduate trainees were employed outside the Waterloo area and contact was made by mailed questionnaire. From these data a summary,

conclusions, and appropriate recommendations were made.

MAJOR FINDINGS

One hundred eleven trainees were graduated in automotive tune-up, automotive body-repair, and combination welding at the time of the study. Eighty-five, or 76.6 per cent, of the graduate trainees were included in the study.

The graduate trainees' ages ranged from eighteen to fifty-five years. Forty-nine and two-tenths per cent of the trainees had completed the twelfth grade.

Manpower graduates over the nation had 75.3 per cent success, following graduation, in obtaining employment in the area for which they had been trained. The Waterloo program found 80.0 per cent of the combination welders, 58.0 per cent of the automotive tune-up men, and 56.2 per cent of the automotive body-repairmen successfully employed in their areas of training. Ninety-seven and seven-tenths per cent of the manpower graduates were gainfully employed and 90.6 per cent accredited their initial employment to Manpower Training.

Employers' rated 96.6 per cent of the manpower graduates average or above average as employees. Percentage ratings of the various occupational attitudes indicated that the manpower graduates exhibited a better than average attitude toward work and employment. Some concern was noted,

however, in attitudes toward the graduates' efficient use of time and work attendance.

Employers were concerned with the graduate trainees' performance in meeting production speed and accuracy requirements.

It was recommended that: (1) each of the training areas should be evaluated in accordance with the information contained in the study to insure the best possible occupational preparation for the manpower graduates, (2) higher standards of performance should be required in each of the training areas with respect to accuracy and production speed, (3) increased emphasis should be placed on the development of the occupational attitudes that are recommended by the industry, and (4) evaluations similar to this study should be made periodically to maintain the Manpower Development and Training Program in accordance with industrial requirements.

AN EVALUATION OF MANPOWER TRAINING IN WATERLOO, IOWA

A Thesis

Submitted

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

STATE COLLEGE OF IOWA

by

Jean Ray Roush

January 1966

This Study by: **Jean Ray Roush**

Entitled: **AN EVALUATION OF MANPOWER TRAINING IN WATERLOO, IOWA**

has been approved as meeting the thesis requirement for the Degree of Master of Arts in Education.

Howard O. Reed

Chairman, Thesis Committee

Willard J. Poppy

Member, Thesis Committee

William E. Luck

Member, Thesis Committee

William C. Lang

Chairman, Graduate Council

1/22/60

Date

ACKNOWLEDGMENTS

The writer is indebted to the Manpower Development and Training Graduates and to the Waterloo Industries which so willingly contributed information pertinent to the study.

The writer wishes to express his sincere appreciation to the members of his thesis committee, Dr. Howard O. Reed, chairman, Dr. Willard J. Poppy, and to Mr. William E. Luck, whose guidance and assistance were invaluable to the completion of this study.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	THE PROBLEM AND DEFINITIONS OF TERMS	1
	The Problem	2
	Statement of the problem	2
	Limitations of the study	2
	Need for the study	3
	Assumptions of the study	5
	Definitions of Terms	5
	Act	5
	Curriculum	6
	Employment service	6
	Flat-rate	6
	Graduate trainee	6
	Job experience	6
	Leadman	7
	School district	7
	Technical information	7
	Theory	7
	Training	7
	Training project	8
II.	RELATED LITERATURE	9
III.	MANPOWER TRAINING	20
	The Manpower Development and Training Act	20
	Manpower Training in Waterloo	23

CHAPTER PAGE

Automotive tune-up 25

Automotive body-repair 27

Combination welding 28

IV. METHOD OF PROCEDURE 30

Sources of Data 30

Selection of Criteria 31

The Graduate Trainee Questionnaire 35

The Employer Questionnaire 38

Collecting the Data 39

V. RESULTS OF THE GRADUATE TRAINEE QUESTIONNAIRE . 42

Occupational Information, Skills, and Related Technical Knowledge 42

Automotive Tune-up 42

Age of trainees 43

Formal education 43

Primary occupation 43

Hours of training 46

Occupations 48

Employment outside area of training 48

Employment mobility 48

Training and employment 52

Graduation-to-employment interval 52

Finding initial employment 55

Positions of leadership 55

CHAPTER PAGE

Post graduate training 58
Weekly salary 58
Number of hours worked overtime 59
Ability to pay for trade training 59
Instructor qualification 63
Instructor's best qualifications 63
Shop training instructor qualifications . . 63
Instructional assistance 65
Continuity of instruction and shop-work . . 65
Instructors' representation of the industry 66
Rating of shop facilities 66
Work that was not included in the tune-up training 66
Areas of training not used on the job . . . 68
Areas of training not covered to the trainees' satisfaction 69
Remedial instruction 69
Manpower training experiences 70
New tools and equipment in the industry . . 70
Adjustment to old or different kinds of tools and equipment 70
Tool and equipment maintenance in the industry 72
Unsafe conditions found in the industry . . 72

CHAPTER PAGE

Automotive Body-Repair 72
Age of trainees 73
Formal education 73
Primary occupation 73
Hours of training 76
Occupations 76
Employment outside area of training 79
Employment mobility 79
Training and employment 82
Graduation-to-employment interval 82
Finding initial employment 85
Positions of leadership 85
Post graduate training 85
Weekly salary 88
Number of hours worked overtime 88
Ability to pay for trade training 91
Instructor qualifications 91
Instructor's best qualifications 91
Shop training instructor qualifications . . 91
Instructional assistance 92
Continuity of instruction and shop work . . 92
Instructors' representation of industry . . 92
Rating of shop facilities 94
Work that was not included in the

CHAPTER PAGE

body-repair training 94
Areas of training not used on the job . . . 96
Areas of training not covered to the trainees' satisfaction 96
Remedial instruction 97
Manpower training experiences 97
New tools and equipment in the industry . . 97
Adjustment to old or different kinds of tools and equipment 99
Tool and equipment maintenance in the industry 99
Unsafe conditions found in the industry . . 99
Combination Welding 100
Age of trainees 100
Formal education 100
Primary occupation 102
Hours of training 102
Occupations 104
Employment outside area of training 104
Employment mobility 108
Training and employment 108
Graduation-to-employment interval 111
Finding initial employment 111
Positions of leadership 114

CHAPTER PAGE

Post graduate training 114
Weekly salary 114
Number of hours worked overtime 114
Ability to pay for trade training 117
Instructor qualification 117
Instructor's best qualifications 117
Shop training instructor qualifications . . 117
Instructional assistance 118
Continuity of instruction and shop-work . . 118
Instructors' representation of the industry 120
Rating of shop facilities 120
Work that was not included in the welding training 120
Areas of training not used on the job . . . 122
Areas of training not covered to the trainees' satisfaction 123
Remedial instruction 123
Manpower training experiences 124
New tools and equipment in the industry . . 124
Adjustment to old or different kinds of tools and equipment 124
Tool and equipment maintenance in the industry 126

CHAPTER PAGE

Unsafe conditions found in the industry . . 126

Occupational Attitudes 127

Occupational satisfaction 127

Manpower graduate's attitudes 128

Comments about manpower training 128

Comments about trades 131

Comments about jobs 132

Comments about employers or companies . . 135

Comments about foreman and supervisors . . 135

VI. RESULTS OF THE EMPLOYER'S QUESTIONNAIRE 140

Occupational Information, Skills, and Related

Technical Knowledge 140

Automotive Tune-up 140

Employers interviewed 141

Departmental employees 141

Job specialization 141

Occupational success 142

Production efficiency 142

Initial production quality 142

Positions of leadership 143

Wage scales and payment plans 143

Areas of improvement 143

Job processes 144

Learning on the job 144

CHAPTER PAGE

Remedial instruction 144
New equipment or processes 145
Manpower training experiences 145
Automotive Body-Repair 145
Employers interviewed 147
Departmental employees 147
Job specialization 147
Occupational success 148
Production efficiency 148
Initial production quality 148
Positions of leadership 148
Wage scales and payment plans 149
Areas of improvement 149
Job processes 149
Learning on the job 149
Remedial instruction 150
New equipment or processes 150
Manpower training experiences 150
Combination Welding 152
Employers interviewed 152
Departmental employees 153
Job specialization 153
Occupational success 154
Production efficiency 154

CHAPTER PAGE

Initial production quality 154
Positions of leadership 155
Wage scales and payment plans 155
Areas of improvement 155
Job processes 155
Learning on the job 156
Remedial instruction 156
New equipment or processes 156
Manpower training experiences 157
Occupational Attitudes 157
The population represented 159
Manpower graduates' attitudes 159
Hazards to safety 159
Response to orders and instructions . . . 159
Responsibility 161
Co-workers 161
Use of time 163
Care of tools and equipment 163
Company materials 167
Care of shop workspace 167
Personal appearance and cleanliness . . . 167
Initiative and drive 170
Work and overtime 170
Attendance 173

CHAPTER PAGE

Manpower graduates as employees 173

VII. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . 176

Summary 176

Conclusions 186

Recommendations 187

BIBLIOGRAPHY 191

APPENDIX A 196

APPENDIX B 203

APPENDIX C 206

LIST OF TABLES

TABLE		PAGE
I.	Ages of Trainees When Referred to Automotive Tune-Up Training	44
II.	Level of Formal Education Completed by Automotive Tune-Up Trainees	45
III.	Hours of Training Completed by Automotive Tune-Up Graduates (Iowa-08)	47
IV.	Hours of Training Completed by Automotive Tune-Up Graduates (Iowa-219)	49
V.	Occupations of Automotive Tune-Up Graduates at the Time of the Survey	50
VI.	Reasons Automotive Tune-Up Graduates Obtained Employment Outside Their Area of Training	51
VII.	Reasons Automotive Tune-Up Graduates Changed Jobs	53
VIII.	Number of Job Changes Following Graduation Made by Automotive Tune-Up Graduates . . .	54
IX.	Time Interval Between Automotive Tune-Up Graduation and the Graduate Trainee's Initial Employment	56
X.	Means by Which Automotive Tune-Up Graduates Obtained Initial Employment	57
XI.	Weekly Salaries Received by Automotive Tune-Up Graduates Employed in the	

TABLE PAGE

Automotive Industry 60

XII. Weekly Salaries Received by Automotive Tune-Up Graduates Employed Outside the Automotive Industry 61

XIII. Hours of Overtime Worked by Automotive Tune-Up Graduates 62

XIV. Instructor Qualification Ratings by Automotive Tune-Up Graduates 64

XV. Automotive Tune-Up Shop Facilities as Rated by the Tune-Up Graduates 67

XVI. Automotive Tune-Up Graduates' Rating of the Technical, Theoretical, and Physical Aspects of Tune-Up Training 71

XVII. Ages of Trainees When Referred to Automotive Body-Repair Training 74

XVIII. Level of Formal Education Completed by Automotive Body-Repair Trainees 75

XIX. Hours of Training Completed by Automotive Body-Repair Graduates (Iowa-23) 77

XX. Hours of Training Completed by Automotive Body-Repair Graduates (Iowa-R-5003) . . . 78

XXI. Occupations of Automotive Body-Repair Graduates at the Time of the Survey . . . 80

XXII. Reasons Automotive Body-Repair Graduates

TABLE PAGE

Obtained Employment Outside Their Area of Training 81

XXIII. Reasons Automotive Body-Repair Graduates Changed Jobs 83

XXIV. Number of Job Changes Following Graduation Made by Automotive Body-Repair Graduates 84

XXV. Time Interval Between Automotive Body-Repair Graduation and the Graduate Trainee's Initial Employment 86

XXVI. Means by Which Automotive Body-Repair Graduates Obtained Initial Employment . 87

XXVII. Weekly Salaries Received by Automotive Body-Repair Graduates Employed in the Automotive Industry 89

XXVIII. Weekly Salaries Received by Automotive Body-Repair Graduates Employed Outside the Automotive Industry 90

XXIX. Instructor Qualification Ratings by Automotive Body-Repair Graduates 93

XXX. Automotive Body-Repair Shop Facilities as Rated by the Body-Repair Graduates . . . 95

XXXI. Automotive Body-Repair Graduates' Rating of the Technical, Theoretical, and Physical

TABLE		PAGE
	Aspects of Body-Repair Training	98
XXXII.	Ages of Trainees When Referred to Combination Welding Training	101
XXXIII.	Level of Formal Education Completed by Combination Welding Trainees	103
XXXIV.	Hours of Training Completed by Combination Welding Graduates	105
XXXV.	Occupations of Combination Welding Graduates at the Time of the Survey	106
XXXVI.	Reasons Combination Welding Graduates Obtained Employment Outside Their Area of Training	107
XXXVII.	Reasons Combination Welding Graduates Changed Jobs	109
XXXVIII.	Number of Job Changes Following Graduation Made by Combination Welding Graduates . .	110
XXXIX.	Time Interval Between Combination Welding Graduation and the Graduate Trainees' Initial Employment	112
XL.	Means by Which Combination Welding Graduates Obtained Initial Employment	113
XLI.	Weekly Salaries Received by Combination Welding Graduates Employed in the Welding Industry	115

TABLE		PAGE
XLII.	Weekly Salaries Received by Combination Welding Graduates Employed Outside the Welding Industry	116
XLIII.	Instructor Qualification Ratings by Combination Welding Graduates	119
XLIV.	Combination Welding Shop Facilities as Rated by the Combination Welding Graduates . .	121
XLV.	Combination Welding Graduates' Rating of the Technical, Theoretical, and Physical Aspects of Welding Training	125
XLVI.	Manpower Graduates' Satisfaction With Their Manpower Training and Occupational Experience	129
XLVII.	Rating of Comments About Manpower Training by Eighty-Two Graduate Trainees	130
XLVIII.	Rating of Comments About Skilled Trades by Eighty-Three Graduate Trainees	133
XLIX.	Rating of Comments About Jobs by Eighty-Three Graduate Trainees	134
L.	Rating of Comments About Employers and Companies by Eighty-Three Graduate Trainees	136
LI.	Rating of Comments About Foremen and Supervisors by Eighty-One Graduate Trainees	138

TABLE		PAGE
LII.	The Technical, Theoretical, and Physical Aspects of Automotive Tune-Up Training as Rated by Employers	146
LIII.	The Employers' Rating of the Technical, Theoretical, and Physical Aspects of Body-Repair Training	151
LIV.	The Technical, Theoretical, and Physical Aspects of Combination Welding Training as Rated by Employers	158
LV.	Employers' Rating of Fifty-Nine Manpower Graduates' Responses to Taking Orders and Instructions	160
LVI.	Graduate Trainees' Attitudes Toward Accepting Responsibility as Rated by Their Employers	162
LVII.	Employers' Rating of the Acceptance of Graduate Trainees by Their Co-Workers .	164
LVIII.	Employers' Rating of the Graduate Trainees' Efficient Use of Time	165
LIX.	Employers' Rating of the Graduate Trainees' Care of Company Tools and Equipment . .	166
LX.	Graduate Trainees' Respect for Company Materials as Rated by Their Employers	168

TABLE		PAGE
LXI.	Cleanliness of the Graduate Trainees' Workspace as Reported by Their Employers . .	169
LXII.	Employers' Rating of the Graduate Trainees in Personal Appearance and Cleanliness	171
LXIII.	Employers' Rating of the Graduate Trainees in Initiative and Drive	172
LXIV.	Rating of Manpower Graduates as Employees as Reported by Their Employers	174

CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS

The Manpower Development and Training Act (MDTA) was passed by the 87th Congress and signed by President John F. Kennedy in March of 1962. Through the combined efforts of the United States Department of Labor and the Department of Health, Education, and Welfare, manpower programs were established to provide occupational training for our nation's unemployed and under-employed persons.

Nationally, these programs of specialized vocational training have been beneficial to at least a part of those who were without employment. M. D. Mobley, executive secretary of the American Vocational Association and acting member of the National Advisory Committee on Manpower, stated in February, 1963 that, "Of those who have thus far been trained under provisions of this program, approximately 90 per cent have found satisfactory employment in occupations for which they were trained."[1]

The need for some kind of occupational training for high school students, out-of-school youth, and adults has been well established. Manpower training may be one method through

---

[1]M. D. Mobley, "Manpower- A Serious National Problem," American Vocational Journal, 38:10, May, 1963.

which youth and adults may acquire the skills and knowledge they must have to obtain gainful employment.

The success of manpower training has been measured by the number of trainees who were able to acquire long term employment following graduation from training. It was the aim of the writer to establish some measure of the quality of such training.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study to evaluate the Manpower Development and Training Program conducted by the Independent School District of Waterloo, Iowa, since its inception in 1963, through a survey of the graduates and their employers.

More specifically it was the purpose of this study: (1) to ascertain the extent to which the manpower development and training curriculum met the needs of its graduates in the areas of training, (2) to identify possible deficiencies in the program, and (3) to make appropriate recommendations for curriculum improvement.

Limitations of the study. This study was contained within the following limitations: (1) the persons surveyed were graduates of the Manpower Development and Training Program provided by the Independent School District of Waterloo,

(2) the employers surveyed were those who had in their employment, graduates of the Manpower Development and Training Program provided by the Independent School District of Waterloo, and (3) the survey was conducted by personal interview with the graduates and employers whenever possible.

Need for the study. The late President John F. Kennedy extended a letter of greetings to the first meeting of the Panel of Consultants on Vocational Education, November 9, 1961. With regard to occupational opportunities and vocational education needs, the president wrote:

> Our technological progress of the future will be measured by the quality of our manpower. We must seek out the best ways to organize and direct our laboratories of learning so that we may meet not only the individual and community educational needs but also the manpower demands of our country and the world.[2]

In a summary of major needs for improvement of the national program of vocational education the panel of consultants gave consideration to the quality of education. With respect to curriculum and course-of-study research the panel reported:

> Research of an evaluative type, which is fundamental to sound development, has been . . . very limited. Little or no evidence has been gathered regarding the

---

[2] M. D. Mobley, "Latest Word From Washington," American Vocational Journal, 36:5, December, 1961.

> results or effectiveness of the instruction given, and various rationalizations and excuses have been offered over the years for inadequate program statistics. In 1938, the Advisory Committee on Education strongly censured the "inadequate reporting" of the program. Obviously, this major weakness has not yet been corrected.[3]

The Independent School District of Waterloo initiated training projects under the Manpower Development and Training Act in automotive tune-up, combination welding, and automotive body repair in March, June, and August of 1963, respectively. At the time of this study, projects in these training areas had been in operation two years and had graduated a total of 111 trainees.

The Manpower Development and Training Program was, for the most part, patterned after the existing vocational education programs within the school system. Local school officials, in consultation with a Crafts Advisory Committee made up of persons directly involved in the respective industries, determined the course objectives, course content, physical facilities, and the length of the training periods.

A study of the Manpower Development and Training Program, at this time, may provide valuable insights into the philosophy and structure of future vocational training

---

[3]Report of the Panel of Consultants on Vocational Education, Education for a Changing World of Work, Office of Education, Department of Health, Education, and Welfare (Washington: Government Printing Office, 1963), p. 213.

programs.

Assumptions of the study. The following are some of the more significant assumptions inherent in this study: (1) the graduates of the Manpower Development and Training Program are capable of providing answers to questions relating to their manpower training and occupational experiences, (2) the employers of manpower development and training graduates are capable of evaluating occupational competency, (3) the writer attempted to develop questions that were pertinent to the Manpower Development and Training Program provided by the Independent School District of Waterloo, and (4) the results of this study will assist in the determination of vocational education requirements in the present manpower program and in future industrially oriented vocational education programs.

II. DEFINITIONS OF TERMS

Act. "Act" means the Manpower Development and Training Act of 1962, Public Law 87-415, 76 Stat. 23, approved March 15, 1962.[4]

---

[4]Office of Education, Department of Health, Education, and Welfare, Training Programs Under the Manpower Development and Training Act of 1962, Regulations for the Administration of Part B of Title II, P.L. 87-415, 87th Congress (Washington: Government Printing Office, 1962), p. 1.

Curriculum. The more current educational philosophy refers to the curriculum as a summation of all the experiences in which students are engaged under the direction of the school.[5]

Employment Service. "Employment Service" means the Iowa State Employment Security Commission which is the local agency of the United States Department of Labor and which is responsible for the selection, referral, and placement of trainees.

Flat-rate. "Flat-rate" means the standard amount of time set on a particular job among various automotive service operations. This time is based on work accomplished by skilled mechanics. The employees' pay is in proportion to the time required to complete the job.

Graduate Trainee. "Graduate trainee" means a former trainee of the Independent School District of Waterloo who completed training under the Manpower Development and Training Act and received a certificate of graduation.

Job experience. "Job experience" means the accumulation of skill and knowledge obtained under actual work

---

[5]J. W. Gianchino, and Ralph Gallington, Course Construction in Industrial Arts and Vocational Education (Chicago: American Technical Society, 1961), p. 4.

conditions.

Leadman. "Leadman" means a person responsible to the shop foreman for the activities of two to six men in the welding trade.

School District. "School district" refers to the Independent School District of Waterloo, Iowa.

Technical Information. "Technical information" means information which helps the trainee make accurate judgments and proper decisions in the performance of a job or operation.[6]

Theory. "Theory" means the explanation of the scientific principles suggested by the laws of nature.[7]

Training. "Training" means planned and systematic sequence of instruction under competent supervision designed to impart predetermined skills, knowledge, or abilities with respect to a specific occupation and may include, to the extent necessary, instruction in basic subjects which is given specially in relation to such occupation.[8]

---

[6]Ibid., p. 129.

[7]John A. Timm, General Chemistry (New York: McGraw-Hill Book Company, 1950), p. 3.

[8]Office of Education, loc. cit.

Training Project. "Training project" means a specified course of instruction for the training of referred individuals in one occupational training area.[9]

---

[9] Ibid.

CHAPTER II

RELATED LITERATURE

The evaluation of vocational education programs has been considered to be of utmost importance in nearly all of the literature. The selection of criteria, the methods used in gathering data, and the procedures utilized in the final evaluation have varied according to the scope of the evaluation and the characteristics of the program under study.

An outstanding contribution to the formal evaluation of educational programs was Evaluative Criteria published in 1940. This extensive and valuable work was prepared by the Cooperative Study of Secondary School Standards organized in 1933 by representatives of the six regional accrediting associations.[1]

The maintenance of minimum standards of accreditation have, under the influence of the Cooperative Study of Secondary School Standards, given way to a general striving for excellence in all of the aspects of a school's work. The committee sought to discover the characteristics of good secondary schools and to develop methods of evaluation that

---

[1] Percy E. Burrup, Modern High School Administration (New York: Harper and Brothers, Publishers, 1962), p. 350.

were superior to those used for accreditation procedures.

Evaluative Criteria is governed by the philosophy and objectives of the individual school under study. The instruction manual points out that:

> This involves the basic principle that a school should be evaluated in terms of what it is striving to accomplish (its philosophy and objectives) and in terms of the extent to which it is meeting the needs of the students who are enrolled or for whom it is responsible.[2]

The criteria provides for a statement of the school's philosophy and objectives and the characteristics of the youth and community served by the school. Other sections provide checklist items and evaluations for use as guides in presenting an accurate description of the school and its work. The purpose of the criteria was to obtain a valid appraisal of the quality of the school and to encourage the school staff to use the evaluation to improve the educational program.

The committee recommended, after six years of extensive research and analysis, that a secondary school could best be evaluated by making a self-evaluation using Evaluative Criteria and having the evaluation checked by a visiting committee of professional educators.

---

[2]National Study of Secondary School Evaluation, Evaluative Criteria (Washington: National Study of Secondary School Evaluation, 1960), p. 3.

The acceptance of Evaluative Criteria was shown by its revision in 1950, and again in 1960, to keep it up to date. The value of the criteria as a source of the most objective standards for secondary-school evaluation was supported by authors Douglass,[3] Burrup,[4] and Boardman.[5]

The Industrial Arts Policy and Planning Committee, organized within the American Vocational Association, prepared Evaluative Criteria for Industrial Arts Education. This criterion was published in 1961, and consists of the evaluation of three segments of the industrial arts program. Check-sheets were provided for evaluating the physical facilities, the teacher, and the instructional program.

In order to obtain an objective rating of the school's industrial arts program the following procedure was suggested:

> 1. The industrial arts teacher (and/or teachers) or departmental chairman invites an administrative officer (principal, superintendent, school board member) to assist him in completing SECTION I /physical facilities/ of the questionnaire. The shop teacher may complete the remaining sections at his leisure.
>
> 2. A committee of industrial arts teachers from another school rates SECTION I only with another copy

---

[3]Harl R. Douglass, Modern Administration of Secondary Schools (Boston: Ginn and Company, 1963), p. 614.

[4]Burrup, op. cit., p. 352.

[5]Charles Boardman, Harl Douglass, and Rudyard Bent, Democratic Supervision in Secondary Schools (Boston: Houghton Mifflin Company, 1953), p. 111.

of the evaluating instrument. This should be done with the teachers concerned participating.

3. A third copy could be filled out completely (sections I, II, & III) /physical facilities, the teacher, and the instructional program/ by a state or local supervisor of industrial arts with the assistance of the industrial arts instructor.

The evaluation of each program will be found by taking the average of these three ratings. Joint participation in the program by the teacher and the administrator should develop better mutual understanding of the quality of industrial arts in a particular school.[6]

It was further suggested that if the preceding procedure was impractical a "conscientious" self-evaluation by the instructor or instructors, involved in the program, would be of considerable value.

A plan for studying vocational-industrial and vocational-technical education was undertaken by Seidel.[7] The study was similar in structure to Evaluative Criteria and provided a method for the evaluation of vocational programs in large metropolitan school systems.

Individual research has been limited to the study of

---

[6]Industrial Arts Policy and Planning Committee, Evaluative Criteria for Industrial Arts Education (Washington: American Vocational Association, Inc., 1961), (Instructions).

[7]John J. Seidel, "A Plan for Studying Vocational-Industrial and Vocational-Technical Education" (unpublished Doctor's thesis, University of Maryland, College Park, Maryland, 1951).

an area within a program or specific characteristics of a program. A number of evaluative studies have been completed in industrial arts, trade and industrial education, vocational agriculture, homemaking, and distributive education.

Generally, criteria are formulated from course objectives or established student needs and data are gathered from former students. In the evaluation of vocational programs additional data are obtained from the employers of former students.

Some of the available research similar to this study and pertinent to vocational training was examined to obtain information concerning the procedures followed and evaluation results.

In 1950, Nicholson conducted a follow-up survey of the graduates of the Henry Ford Trade School. The school carried a nation-wide reputation for quality vocational training and its graduates were highly recommended. It was Nicholson's purpose to determine the reasons for this apparent success.[8]

After an investigation of the historical background of the trade school and an analysis of the curriculum,

---

[8]Fred S. Nicholson, "An Evaluation of the Training Program of the Henry Ford Trade School, Dearborn, Michigan" (unpublished Master's thesis, Wayne University, Detroit, Michigan, 1950), p. 2.

Nicholson sent 1,150 questionnaires to the graduates of the school. Three hundred eighty-six questionnaires were returned. The returns represented each graduating class from the initial enrollment on October 25, 1916 through the class of 1943.[9]

The Henry Ford Trade School was established initially to provide education and trade training for underprivileged youth. In later years it was accepted as a four year high school.

One marked similarity between the Henry Ford Trade School and manpower training was the financial capabilities of their trainees to attend. Nicholson found that 43 per cent of the graduates would have had to obtain gainful employment rather than attend school, had it not been for the monthly cash scholarship provided by the school.[10]

Seventy-eight per cent of the graduates indicated that they had gained self-confidence by having attended the trade school. Nicholson attributed this to shop activities that provided satisfaction and a sense of achievement.[11]

At the time of Nicholson's study the Henry Ford Trade School had received accreditation by the University of

---

[9] Ibid., p. 40.

[10] Ibid., p. 68.

[11] Ibid., p. 69.

Michigan on a par with other public high schools in the State.

An evaluation of a vocational machine shop course in Lansing, Michigan was undertaken by Barnes, in 1950.[12] The study sought to determine to what extent the Lansing Technical High School, Vocational Machine Shop Course had met the occupational needs of its graduates.

Two check-sheets were formulated for use in gathering data. A graduate check-sheet listed the machine shop operations and related information that was included in the machine shop course. Space was provided for the graduate to indicate whether he had used that operation or information much, a little, or not at all. The check-sheet was approved by the machine shop instructor, Colorado Agricultural and Mechanical College and the Director of Vocational Education, Lansing, Michigan.[13]

The employer check-sheet consisted of characteristics, attitudes, knowledge, and skills that were considered desirable in an employee. Space was provided for a shop foreman or supervisor to rate each graduate on what was expected of him when he entered employment and the degree to which he

---

[12]Kenneth W. Barnes, "Evaluation of Vocational Machine Shop Course at Lansing, Michigan" (unpublished Master's thesis, Colorado Agricultural and Mechanical College, Fort Collins, Colorado, 1950).

[13]Ibid., p. 26.

possessed these qualities. The check-sheet was approved by the supervisors of training programs conducted by two Lansing industries.[14]

Sixty-eight check-sheets were mailed to the graduates of the machine shop course. Thirty-five were returned. Nine graduates who had not responded to the mailed check-sheet were contacted by personal interview which provided a total return of forty-four graduate check-sheets. Of the fifty industries who were mailed check-sheets, eighteen responded. An additional ten were visited by personal interview which provided a total of twenty-eight employer check-sheets.[15]

Barnes found that, of the graduates, 22.1 per cent thought they lacked sufficient practical experience, 10.6 per cent thought they were not accustomed to factory speed, and 4.3 per cent thought they were not accustomed to factory accuracy. Employer ratings respectively were 11.0 per cent, 3.0 per cent, and 3.8 per cent on the same items. This would indicate that trainees tend to underestimate themselves with respect to industrial requirements.[16]

---

[14] Ibid.

[15] Ibid., p. 54.

[16] Ibid., p. 47.

Consideration was given to attitudes and habits that were considered desirable by employers. Graduates were rated good in such attitudes as industriousness and dependability (43 per cent), cooperativeness (80 per cent), following orders and directions (68 per cent), and seeing a job to its completion (37 per cent). Planning was also included in this area of evaluation and it was interesting to note that only 8 per cent of the graduates were rated as good.[17]

In the evaluation of the vocational machine shop course at Lansing Technical High School, Barnes concluded that:

> (1) Sixty-five per cent of (the) machine shop graduates were following the occupations for which they were trained.
>
> (2) Twenty-two per cent of the graduates have entered the various machine shop apprenticeships.
>
> (3) Thirty-eight per cent of the graduates were at highly skilled or skilled machine shop work.
>
> (4) The students that were employed had gained (the) respect of their employers and their fellow workers on the job.
>
> (5) The basic machine shop training they received in school had helped them to get and hold their jobs.[18]

A follow-up survey was made by Wallis, in 1960, of

---

[17] Ibid., p. 48.

[18] Ibid., p. 55.

the industrial arts graduates and drop-outs of the Belle Plaine High School. The study was made by personal interview to determine to what extent the high school industrial arts program had met the personal and occupational needs of former students after they had terminated their formal education.[19]

Information was obtained from 109 of the 156 former industrial arts students. The criteria consisted of personal information, employment experience, and military experience where applicable. An interview-guide was prepared for each of the criterion to assist in recording information.[20]

After an analysis of the data, Wallis concluded that:

> (1) The industrial arts program had made its greatest contribution to its students by providing a working knowledge of tools.
>
> (2) Instruction in developing safe working habits was considered important by former students.
>
> (3) Woodworking instruction provided the greatest number of helpful experiences for former students.
>
> (4) The industrial arts program should be expanded to provide more drafting, electricity, electronics,

---

[19] Donald E. Wallis, "A Follow-Up Study of Former Senior High School Industrial Arts Students at Belle Plaine, Iowa" (unpublished Master's thesis, State College of Iowa, 1960), p. 1.

[20] Ibid., p. 4.

metalworking and general mechanics.[21]

It was apparent in the literature that program evaluation may be accomplished through a variety of methods and procedures. The two principal methods were evaluations by professional educators outside the school system or evaluations made by persons who had participated in the program as students.

The available research in the evaluation of vocational industrial programs, similar to manpower training, favored the opinions of former students. This characteristic was considered important in the selection of the method and procedure for this study.

---

[21] Ibid., pp. 51-52.

CHAPTER III

MANPOWER TRAINING

Scientific and technological developments within the last decade have imposed significant changes in the national economy. Changes due to automation, relocation of industry, shifts in market demands, and other changes in the structure of the economy have rendered the skills of many persons obsolete. The Federal Government, in its responsibility for the strength of the national economy and security, has provided, in the Manpower Development and Training Act a means for helping those unemployed or under-employed persons who are not financially or educationally equipped to obtain further education in technical or college institutions.[1]

I. THE MANPOWER DEVELOPMENT AND TRAINING ACT

The act consists of two parts. One is a broad program of research to assist in projecting future manpower requirements. Research studies include evaluations of the impact, benefits, and problems created by automation; investigations of market trends and information; seeking new

---

[1]United States Congress, "Manpower Development and Training Act of 1962," An Act, P.L. 87-415, 87th Congress S. 1991, March 15, 1962 (Washington: Government Printing Office, 1962), p. 1.

services that will likely be needed; and the appraisal of manpower efforts to insure the best possible training opportunities and work experience programs for our nation's youth and adults.[2]

The second part of the act makes available federal funds to help pay the cost of training programs, in occupational areas where manpower shortages are known to exist, for unemployed and under-employed persons throughout the United States.[3]

The administration of the act is the responsibility of two government departments. The United States Department of Health, Education, and Welfare, through the Office of Education, provides for the training programs. The United States Department of Labor conducts surveys of employment opportunities and is responsible for the referral of trainees, payment of training and subsistence allowances, and the placement of trainees after they have completed training.

Training is conducted by local departments of vocational education with the approval of the State Directors of Vocational Education and the State Employment Security Commission.

---

[2]Ibid., p. 2.

[3]Ibid.

Proposals for training projects under MDTA are made when a school district is notified, by the Employment Service, that occupational opportunities exist. The employment service indicates the occupational area, a description of the occupation, and the number of persons required to fill the vacancies.

The employment information is submitted to a local Area Advisory Committee, composed of community professional, business, and educational leaders to study the problem and make recommendations for developing a training program.

The planning of the project is under the direction of local school officials in cooperation with a Crafts Advisory Committee composed of administrative and supervisory representatives of the industry involved.

Proposals for training projects include: (1) employment information, (2) training period starting and ending dates, (3) course length in clock hours, (4) administrative organization, (5) qualifications of instructional staff, (6) training objectives, (7) course content, (8) instructional supplies, (9) buildings, (10) tools and equipment, and (11) the total cost of the training project.

The project proposal is submitted to the school district's Board of Education, the State Department of Public Instruction, and the Regional Office of the United States Department of Health, Education, and Welfare for final

approval.

When federal funds are allocated for the operation of a training project, referrals are made by the Employment Service and training commences.

II. MANPOWER TRAINING IN WATERLOO

Much of the information regarding the manpower development and training program was accumulated through conversation with Mr. Donald Lippold, Director of Industrial and Adult Education, and Mr. William LeMasters, who was Coordinator of the Manpower Training Program during its first year of operation.

The administration of manpower training in Waterloo was under the direction of the school district's Director of Industrial and Adult Education. A Coordinator of Manpower Development and Training was appointed by the school district to supervise the operation of the school.

The instructional staff was composed of men with considerable successful trade experience, and who were certified by the Iowa State Department of Vocational Education in the area they were teaching. The instructors were assisted in lesson planning, evaluation, and teaching techniques by the program coordinator.

The course objectives specified by the Department of Labor stated that trainees should be provided with the

skills, knowledge, and attitudes that would prepare them to enter and hold employment in the occupation for which they were trained. Referrals to training included a wide range of educational levels and environmental backgrounds. As training progressed the individual needs of the trainees became more apparent and a formal list of objectives was adopted.[4]

Record folders were kept on each trainee to show his achievement in each of the units of training. Periodic evaluation of the trainee's personal development was recorded as it applied to the occupational area.

An apparently unique characteristic of the Waterloo program was the relationship between the Automotive School and the automotive dealers in the area. Dealerships provided the school with automobiles for use in tune-up and body-repair. These units were usually used cars and no time limit was set as to how long they were to remain at the school. From the instructional point of view, it appeared that this kind of shop activity was valuable.

At the conclusion of the first project in each area an informal evaluation was made of the course of instruction

---

[4] Automobile Manufacturers Association, et al., Standards for Automotive Instruction in Secondary Schools (Detroit: Automobile Manufacturers Association, Inc., 1965), p. 17.

and appropriate changes were made in the formulation of subsequent project proposals.

Automotive tune-up. The first automotive tune-up project (Iowa-08) commenced on March 4, 1963. The project provided fifty weeks of training for one section of twenty-two trainees. Classes met six hours each day, five days each week for approximately 1,500 hours. Trainees with sufficient background who exhibited satisfactory progress were allowed to complete the course in approximately 1,000 hours.

Training consisted of classroom instruction followed by shop-work on "live" automobiles using the latest automotive tools and diagnostic test equipment. The following is a unit outline of the course content:

A. Automotive fundamentals
B. Battery and starter circuit
C. Ignition circuit
D. Charging circuit
E. Lighting and accessory circuits
F. Carburetor and fuel system
G. Speedometer and instruments
H. General lubrication
I. Customer service
J. Wheels and tires
K. Shop safety
L. Special projects
M. Job opportunities
N. Brakes-minor repair
O. Chassis-minor service
P. Brakes
Q. Steering and suspension systems
R. Linkage
S. Springs
T. Wheel alignment

On February 14, 1964, after fifty weeks of training,

seventeen trainees had been graduated.

The employment service conducted an occupational survey of the local automotive industry near the close of the project. The survey indicated that there was a continued demand for automotive tune-up men and an additional need for automotive mechanics.

The second project (Iowa-219) included training for automotive tune-up men and for automotive mechanics. Training was to be provided over a period of eighteen months, in three six-month segments.

The first segment commenced June 8, 1964, and consisted of automotive tune-up instruction for twenty trainees. Ten trainees were to be graduated at the end of the first segment as automotive tune-up men. The remaining ten trainees, along with ten new referrals, were to be enrolled in the second segment which consisted of training in engine overhaul and heavy repair.

The trainees who had received instruction in both tune-up and heavy repair were to be graduated at the end of the second segment as automotive mechanics. The remaining ten trainees, along with ten new referrals were to be enrolled in the third segment which consisted of a second session of training in automotive tune-up.

This method of scheduling was to provide twenty graduate trainees in automotive tune-up and twenty trainees in automotive mechanics.

The length of training time for automotive tune-up trainees was approximately 780 hours under this project which was considerably less than the minimum 1,000 hours under project Iowa-08. Trainees were not allowed to complete training before graduation in this project. Except for the time factor the two projects were essentially the same.

On December 4, 1964, six of the trainees from the first segment of automotive tune-up training were graduated. The six trainees were included in this study.

Automotive body-repair. The first automotive body-repair project (Iowa-23) commenced August 12, 1963. The project provided fifty weeks of training for one section of fourteen trainees. Classes met six hours each day, five days each week for approximately 1,500 hours. Trainees with sufficient background who exhibited satisfactory progress were allowed to complete the course in approximately 1,000 hours.

Training consisted of classroom instruction followed by shop-work on "live" automobiles using the latest automotive body repair tools and refinishing equipment. The following is an outline of the course content:

A. Introduction to automotive body and fender repair
B. Fundamentals of metalworking
C. Oxy-acetylene and arc welding
D. Body soldering
E. Frame straightening and repair
F. Major body repair
G. Automotive glass service

H. Hardware repair and service
I. Station wagon body service and repair
J. Hydro-electric system service
K. Painting and refinishing
L. Shop management

On July 24, 1964, after fifty weeks of training, nine trainees had been graduated.

The second automotive body-repair project (Iowa-R-5003) commenced September 21, 1964. The project provided forty-six weeks of training for two sections of twelve trainees each. Each section met eight hours each day, five days each week for twenty-three weeks or approximately 920 hours. Trainees were not allowed to complete training prior to graduation. Except for the time factor, the automotive body-repair projects were essentially the same.

On February 26, 1965, after twenty-three weeks of training, twelve trainees were graduated.

Combination welding. The first combination welding project (Iowa-16) commenced June 6, 1963. The project provided forty-eight weeks of training for three sections of sixteen trainees each. Each section met six hours each day, five days each week for sixteen weeks or approximately 480 hours. Trainees were not allowed to complete training prior to graduation.

Training consisted of classroom instruction followed by shop-work experience in the latest welding processes using

modern electric and gas welding equipment. The following is an outline of the course content:

A. Arc welding (4 positions)
B. Metal inert gas welding
C. Oxy-acetylene flame cutting
D. Oxy-acetylene gas welding
E. Blueprint reading and technical information
F. Inspection and weld testing
G. Shop mathematics
H. Metallurgy

On May 8, 1964, forty-one trainees had been graduated from three sections of combination welding.

The second combination welding project (Iowa-233) commenced July 24, 1964. The project was essentially the same as the previous welding project except it made allowance for an additional four weeks of training for trainees who required extra welding experience beyond the sixteen week's training period.

On February 26, 1965, twenty-six trainees had been graduated from the first two sections of combination welding.

CHAPTER IV

METHOD OF PROCEDURE

This study was undertaken with the approval of the State Department of Vocational Education, the Independent School District of Waterloo, and the Waterloo State Employment Service.

It was determined that no formal evaluation had been made of the manpower training program in Waterloo, Iowa. This was confirmed by Mr. Donald Lippold, Director of Industrial and Adult Education, Waterloo School District, and the writer, who at the time of the study, was coordinator of the manpower program. It was assumed from a letter received from Mr. Boyd Graeber, Director of the Division of Vocational Education for the State of Iowa, that no similar research had been done in the state of Iowa. (see Appendix A).

This study began with a review of related literature and research to identify and define the problem and to select a satisfactory procedure. Background was provided by a review of the act and an analysis of the manpower training curriculum.

Sources of data. A letter, to encourage cooperation in the study, was sent to each of the 111 graduate trainees.

An enclosed form provided space for the graduate to list the industries with which he had been employed following his graduation from the training facility. Enclosed with the letter and form was a stamped self-addressed envelope for the convenience of the graduate in mailing the form. The returned forms provided a list of industries which had or have had manpower graduates in their employment.

Data regarding the graduate's personal characteristics, level of education, and employment record prior to his referral to manpower training was obtained from the Characteristics of Trainee form provided by the Employment Service. (see Appendix B).

Data concerning the graduate's attendance, progress, and training experience during the training period was obtained from the Individual Trainee Termination of Training form which included the Instructors Training Record. (see Appendix B).

Selection of criteria. The selection of criteria to be used in the study was based largely on the regulations set forth by the United States Department of Health, Education, and Welfare regarding training programs under the act.

With respect to the services and facilities for those providing training, the regulations indicate the training facility:

Will provide a course of instruction based on

> the recognized needs [italics not in the original] of the individuals who are to receive training and which will provide the skills and related information (including appropriate instruction in health and safety practices) requisite for employment in the occupation or occupations for which training is to be provided.[1]

Douglass was aware of the educational needs of youth in his writings on the administration of secondary schools. Douglass wrote as follows:

> A considerable number of high-school principals and others concerned professionally with secondary education have in recent years attached great significance to the consideration of pupil needs as a means of setting up the objectives of the secondary-school program and of providing standards by which the quality of the program may be judged.[2]

It was decided that an analysis of the manpower development and training objectives would be made to determine the criteria for use in the study.

From the following analysis evolved three criteria, under which is listed the purpose of the criterion or the training objective or objectives it represents:

I. Occupational information.
To obtain data that was not specifically pertinent to a training objective.

---

[1]Office of Education, Department of Health, Education, and Welfare, Training Programs Under the Manpower Development and Training Act of 1962, Regulations for the Administration of Part B of Title II, P.L. 87-415, 87th Congress (Washington: Government Printing Office, 1962), p. 1.

[2]Harl R. Douglass, Modern Administration of Secondary Schools (Boston: Ginn and Company, 1963), p. 614.

II. Occupational skills and related technical knowledge.
   A. To develop in each trainee a basic understanding of the physical and mechanical principles involved in the occupation.
   B. To develop the ability to use and care for the basic tools and equipment used in the occupation.
   C. To develop sufficient skills and related technical knowledge of the trade to meet the minimum entry requirements of the occupation.
   D. To develop an understanding of logical, step-by-step diagnostic, repair, or construction procedures.
   E. To develop safe work habits and to promote safety consciousness.

III. Occupational attitudes.
   A. To develop the ability to work and live harmoniously together with mutual respect for the rights of others.
   B. To encourage good work habits of orderliness, cleanliness, and care of property.

Claude H. Ewing, Director of the Chicago Vocational School, Chicago, Illinois, suggested several methods of evaluation that may be used for evaluating instruction. The methods were as follows:

> (1) Formal evaluation of shop, laboratory, or classroom teaching methods and management; (2) check on opinions and attitudes of trainees or students while enrolled and during employment; (3) survey of the employment and achievements of those who have attended; (4) advice from advisory committees after inspection of instruction in school and experience with employed persons who have received instruction; (5) the approval of local industry as evidenced by the general support of persons who have completed instruction.[3]

---

[3]Claude H. Ewing, "Instruction," The Operation of a

Ewing considered the most valuable and objective evidence was, "obtained through those who have attended or are attending, and through employment and work records of former students, and advice from the advisory committee."[4]

From the selected criteria there were formulated two interview guide-sheets. One to be utilized as a guide during the personal interview with the graduate trainees and the second for interviews with representatives of industry.

Both guide-sheets were designed to provide structure and uniformity to the personal interview and to the mailed questionnaire in instances where graduate trainees and employers were located outside the Waterloo area.

Each interview guide sheet consisted of: (1) instructions, to introduce the purpose of the interview and to encourage the completion of the questionnaire, (2) the definitions of terms used in the questionnaire, (3) a list of units of instruction provided in the particular manpower training course, to assist the graduate trainee in recalling his course of study and to provide the employer with a knowledge of course offerings, and (4) the questionnaire. The

---

Local Program of Trade and Industrial Education, William P. Loomis, editor, Office of Education, Department of Health, Education, and Welfare (Washington: Government Printing Office, 1953), pp. 51-52.

[4] Ibid.

Employer Guide-Sheet contained an additional section which listed the names of the graduate trainees who were in their employment.

Not all of the items used in the questionnaire were original with the writer, but were "borrowed" in part from similar studies and from the literature.

The graduate trainee questionnaire. Of major concern in the formulation of the Graduate Trainee Questionnaire was the graduate's level of education. The content and wording of each question was made as clear and simple as possible.

The formulation of the questionnaire required several revisions. A list of forty-eight questions was made from an analysis of the manpower program objectives. From this list forty questions were selected and submitted to Mr. Gerald Bisbey of the State College of Iowa Bureau of Research. Twelve questions pertained to occupational information, seventeen questions pertained to occupational skills and related technical knowledge, and eleven questions pertained to occupational attitudes.

Minor revisions were made in the occupational information and occupational-skills-and-knowledge section of the questionnaire and the occupational-attitudes section was completely revised.

The original occupational-attitudes section contained

questions with regard to how satisfied the graduate trainee was with his choice of trade and whether he thought his manpower experience had helped him to develop confidence in his own abilities and skills. These questions were followed by three or five likely responses to the question.

It was observed that the interviewee could make a safe choice in the middle of either extreme and, in doing so, would provide the researcher with no clear indication of the interviewee's thinking, therefore, this method of questioning was discarded.

At the time of this study, the Survey Research Center of the University of Michigan was conducting a study of the attitudes, aspirations, and motivations of people being trained in manpower projects. The questionnaire used in the University of Michigan survey was administered, by a representative of the Survey Research Center, before the trainee had been exposed to manpower training. Usually on the first day of class.

The occupational-attitudes questions used in this study were a modification of the University of Michigan's questions.[5] Each question was composed of four comments

---

[5]University of Michigan Institute for Social Research, "Manpower Training Study Trainee Entrance Questionnaire," Form 2-Men (Ann Arbor, Michigan: University of Michigan Institute for Social Research, Summer, 1964), p. 28. (Mimeographed.)

which had been made about the item in question. The graduate trainee was asked to read each comment and if it was not accurately made for his situation, to write, in the space provided, what he thought about the comment. He was then asked to rank the comments in the order in which they were the most important to him. Number one indicated the most important comment.

The final questionnaire contained a total of thirty-eight questions. Questions one through nine, thirty-seven, and thirty-eight were with regard to occupational information; questions ten through twenty-two, twenty-four, and twenty-eight were with regard to occupational skills and related technical information; and questions twenty-three, and twenty-nine through thirty-six were with regard to occupational attitudes.

A pilot survey was made of one graduate tune-up man, two graduate body-men, and two graduate welders. The graduate tune-up man and one each of the body-men and welders was administered the personal interview. The remaining body-man and welder were asked to complete the questionnaire as though it had been mailed to them. Notation was made in each instance when the interviewee did not clearly understand the meaning of the question.

After the pilot survey and minor revisions in the questionnaire, it was submitted to Mr. Bisbey for approval.

The employer questionnaire. It was decided that the employer interviews would be conducted during company working hours. For this reason, the total number of questions was held to a minimum and each question was as short and direct as possible.

From the analysis of the program objectives a list of thirty-three questions was formulated. From this list, twenty-nine questions were selected to represent the three criteria. Nearly all of the questions could be answered by marking a "yes" or "no" in the appropriate space or by marking from three to five prepared responses following the questions.

This list of twenty-nine questions was submitted to Mr. Bisbey of the State College of Iowa Bureau of Research and, after minor revisions, was approved. (see Appendix C).

The mobility of graduate trainees from one company to another, within the Waterloo area, presented a problem of duplication of information if each company were asked to evaluate all of the graduates they had employed. For this reason each employer was asked to evaluate only those manpower graduates that were currently employed with his company.

It was recognized that this approach would restrict the measurement, to some degree, of the occupational inadequacies of some of the graduates. However, evaluation by

the employer of all of the graduate employees, could possibly weight the measurement in the other extreme.

The decision to evaluate only the graduate trainees who were holding jobs was based on the following: (1) to avoid the duplication of an evaluation of one individual who had been employed at two or more companies to be interviewed, (2) trainees were not considered to be "finished" tradesmen upon completion of training so that some mobility may be expected, and (3) approximately 72 per cent of the graduate trainee interviews were complete at the time the employer interviews commenced and the graduate trainees had been most helpful in revealing why they had changed jobs and where they thought they needed to improve their skill and knowledge.

Collecting the data. Data were gathered by personal interview with graduates and employers whenever possible or by mailing the interview guide-sheet in instances where graduate trainees or employers were outside the Waterloo area.

The Individual Termination of Training form provided the names and addresses of 111 graduate trainees. Response to the letter of encouragement and the Post Graduate Employment Information form confirmed the location of forty-three graduate trainees. Further search through the Trainees Emergency Data records, the Waterloo Telephone Directory, and the State Employment Service, provided sixty-three additional

names and addresses. Four trainees could not be located.

Personal interviews were conducted in the graduate trainees' homes. Interviews lasted about thirty minutes and discussions with regard to the program were detained until after the questionnaire had been completed.

Sixty-six personal interviews were made and nineteen mailed questionnaires were returned for a total of eighty-five contacts for 76.6 per cent of the total population.

The interviews with the employers were made, in most cases, with the graduate trainee's service manager or foreman. In situations where the immediate supervisor could not be contacted, the interview was held with the plant supervisor or personnel manager. In each case the interviewee was knowledgeable of the trainee's activities and performance.

All of the graduate trainees were given individual ratings by their foreman or supervisor. In instances where four or more trainees were employed under one supervisor the interviewee was asked to observe his list of graduate employees and indicate the numbers of employees that fell under each of the responses provided under a question.

Twenty-six employers were interviewed to represent fifty-nine of the graduate trainees. Six graduate trainees were in their own business's and could not be interviewed as employers, but were included in the computation of the total trainees represented. This accounted for sixty-five trainees

or 76.5 per cent of the graduate trainees interviewed.

Analyzing and presenting the data. Tabulation of the data was made in graphic form so that the results could be partially observed during the recording. From this form tables were made and, when feasible, percentages were computed. All of the percentages were rounded to the nearest one-tenth of one per cent.

Because the manpower training program consisted of three separate areas of training, the data pertinent to each area were presented separately.

Observation of the occupational-attitudes section of the data showed no significant differences between the different areas of training, therefore, data pertaining to occupational attitudes was combined and presented in one section.

From these data a summary, conclusions, and appropriate recommendations were made.

CHAPTER V

RESULTS OF THE GRADUATE TRAINEE QUESTIONNAIRE

The results of this study will be presented in two chapters. This chapter will present the characteristics of all of the trainees who graduated from training, and the opinions of those graduate trainees who were interviewed about their training and the program. Chapter VI will present the results of the Employer's Questionnaire.

I. OCCUPATIONAL INFORMATION, SKILLS, AND RELATED TECHNICAL KNOWLEDGE

Data will be presented in the same sequence as it appears on the questionnaire, except, for those questions with regard to wages, overtime, and payment plans. These questions will be included under the occupational information. Questions twenty-two and twenty-three, on the Graduate Trainee Questionnaire pertain to attitudes and will be presented under occupational attitudes.

Automotive Tune-up

The automotive tune-up training included in this study consisted of two sections. One section of seventeen trainees and one section of six trainees accounted for a total of twenty-three graduate trainees.

Sixteen graduate tune-up men were contacted by personal interview and three additional trainees responded to the mailed questionnaire for a total of nineteen trainees. This accounted for 82.6 per cent of the total population.

Age of trainees. The ages of the trainees, at the time they were referred to training, ranged from eighteen to fifty-five years. Sixty-five per cent of the trainees was age twenty-five or under. (65.1) The mean age for the population was 27.2 years with the median at 23.0 years. The age distribution of tune-up trainees at the time they were referred to training, may be observed in Table I.

Formal education. The level of formal education completed by the tune-up trainees ranged from grade eight to one year of college. Seventy-four per cent of the trainees had completed the twelfth grade. The median grade level was grade 11.9, with the mean at 11.4. In Table II the level of formal education completed by the twenty-three tune-up trainees is presented.

Primary occupation. The trainees' primary occupations as reported to the employment service prior to referral to training were as follows:

Spray painter
Stock boy
Gunsmith
Repairman (mechanical)

TABLE I

AGES OF TRAINEES WHEN REFERRED TO AUTOMOTIVE TUNE-UP TRAINING

Trainees' age	Frequency	Per cent
55	1	4.3
50	1	4.3
49	1	4.3
41	1	4.3
31	2	8.7
30	2	8.7
25	1	4.3
24	2	8.7
23	1	4.3
21	2	8.7
20	3	13.2
19	4	17.5
18	2	8.7
Totals	23	100.0

Range 18-55 years

Mean age 27.2 years

Median age 23.0 years

TABLE II

LEVEL OF FORMAL EDUCATION COMPLETED BY AUTOMOTIVE TUNE-UP TRAINEES

Grade level	Frequency	Per cent
13	1	4.3
12	16	69.7
11	2	8.7
10	1	4.3
9	2	8.7
8	1	4.3
Totals	23	100.0

Range 8-13

Mean grade level 11.4

Median grade level 11.9

Meat cutter
Stationary diesel engine operator
Order clerk
Laborer (meat packing)
Greenhouse worker
Electric truck operator
Farm hand (general)
Electronics technician (U.S. Navy)
Automechanic helper
Equipment and material checker
Bookkeeper
Laborer (construction)
Combustion engine repairman
Drill press operator
Cement finisher

It may be observed from the preceding list that the occupations are, for the most part, in the non-skilled or semi-skilled classification.

Hours of training. Project Iowa-08 provided a maximum of 1,500 hours of tune-up training for seventeen trainees. Project Iowa-219 provided training for a maximum of 780 hours for six trainees. The two sections are presented separately to provide a more realistic representation of the hours of training received by the tune-up graduates.

Trainees in project Iowa - 08 received an average of 1,056.7 hours of tune-up training. Seventeen and six-tenths per cent of the trainees were in the median range of 1,024.5 hours. Presented in Table III are the hours of training received by graduates in Project Iowa - 08.

Trainees in Project Iowa - 219 received an average of 726.7 hours of tune-up training. The number of hours of training received by the graduates of Project Iowa - 219 are

TABLE III

HOURS OF TRAINING COMPLETED BY AUTOMOTIVE TUNE-UP GRADUATES (IOWA-08)

Hours of training	Frequency	Per cent
1400 - 1449	1	5.8
1350 - 1399	1	5.8
1300 - 1349		
1250 - 1299	2	12.0
1200 - 1249	1	5.8
1150 - 1199	1	5.8
1100 - 1149	1	5.8
1050 - 1099		
1000 - 1049	3	17.6
950 - 999	2	12.0
900 - 949	1	5.8
850 - 899		
800 - 849	2	12.0
750 - 799	1	5.8
700 - 749	1	5.8
Totals	17	100.0

Range 709 - 1414 hours

Mean hours of training 1,056.7

Median 1,024.5 hours

presented in Table IV.

Occupations. Of the nineteen trainees interviewed, eleven were considered to be in automotive tune-up or allied fields. This accounted for 58.0 per cent of the graduate trainees interviewed. Two graduate trainees were in the farm implement industry. One was involved in the inspection of rebuilt engine parts and the other worked as a mechanic in a dealership. Seven graduate trainees indicated that their occupations were outside the area of training and one graduate, though he had previously worked in the trade, was unemployed at the time of the survey. Recorded in Table V are the occupations held by graduate tune-up men at the time of the survey.

Employment outside area of training. The reasons graduate trainees obtained employment in areas outside their area of training are presented in Table VI. A total of eight trainees obtained employment outside their area of training. Fifty per cent of these trainees found wages higher in other jobs. Another 37.5 per cent could not find jobs in the training area and one trainee obtained employment outside his area of training because of personal health.

Employment mobility. Fourteen of the graduate trainees were asked why they had changed jobs. Thirty-eight and eight-tenths per cent indicated they had moved because of

TABLE IV

HOURS OF TRAINING COMPLETED BY AUTOMOTIVE TUNE-UP GRADUATES (IOWA-219)

Hours of training	Frequency	Per cent
776	1	16.6
732	1	16.6
731	1	16.6
727	1	16.6
724	1	16.6
670	1	16.6
Totals	6	99.6

Range 670 - 776 hours

Mean 726.7 hours

Median 729 hours

TABLE V

OCCUPATIONS OF AUTOMOTIVE TUNE-UP GRADUATES AT THE TIME OF THE SURVEY

Occupation	Frequency	Per cent
Automotive Industry		
Tune-up man	4	20.8
Mechanic	1	5.3
Service station manager	1	5.3
Service station attendent	3	15.6
Automotive parts manager	1	5.3
Inspector (engine manufacturing)	1	5.3
Other		
Shipping clerk	1	5.3
Electric truck operator	1	5.3
Sanitation (meat packing)	1	5.3
Mattress maker	1	5.3
Construction worker (building trade)	1	5.3
Taxi driver	1	5.3
Farm hand	1	5.3
Unemployed	1	5.3
Totals	19	100.0

TABLE VI

REASONS AUTOMOTIVE TUNE-UP GRADUATES OBTAINED EMPLOYMENT OUTSIDE THEIR AREA OF TRAINING

Reason	Frequency	Per cent
Salary	4	50.0
Intraining job not available	3	37.5
Health reasons	1	12.5
Totals	8	100.0

better salaries, 33.3 per cent had been laid off from their work, 11.2 per cent moved to improve their working conditions, 11.2 per cent did not have sufficient job experience, and one trainee enrolled in a technical school to further his education. The reasons why graduate tune-up men moved to different jobs is presented in Table VII.

The number of job changes reported on the Post Graduate Employment Form showed thirty-one job changes for fourteen of the graduate trainees. Five trainees, or 26.3 per cent, remained on the job they obtained following their graduation from training. The number of job changes ranged from none to four. One job change was made by 31.3 per cent of the nineteen trainees, two changes were made by 10.6 per cent, three changes were made by 15.9 per cent, and 15.8 per cent of the trainees made a fourth job change. The number of job changes made by graduate tune-up men is reported in Table VIII.

Training and employment. In response to whether the manpower tune-up training had helped the graduate trainees in procuring their initial employment, 89.5 per cent indicated that it had. The two trainees that account for the remaining 10.5 per cent obtained employment outside their area of training.

Graduation-to-employment interval. Employment was

TABLE VII

REASONS AUTOMOTIVE TUNE-UP GRADUATES CHANGED JOBS

Reasons	Frequency	Per cent
Better salary	7	38.8
Lay off	6	33.6
Working conditions	2	11.2
Lacked job experience	2	11.2
Further education	1	5.5
Totals	18	100.0

TABLE VIII

NUMBER OF JOB CHANGES FOLLOWING GRADUATION MADE BY AUTOMOTIVE TUNE-UP GRADUATES

Job changes (X)	Frequency (f)	fX	Per cent
4	3	12	15.9
3	3	9	15.9
2	2	4	10.6
1	6	6	31.3
0	5		26.3
Totals	19 f	31 ΣfX	100.0

Range 0-4 Job changes

Mean Job changes 1.6

Median Job changes 1.3

obtained by 47.4 per cent of the graduate trainees immediately following their graduation. One trainee, or 3.4 per cent, obtained employment within one week. Fifteen and nine-tenths per cent obtained employment within two weeks and 31.3 per cent of the tune-up graduates required more than two weeks to obtain their initial employment. Presented in Table IX are the time intervals between tune-up graduation and initial employment.

Finding initial employment. Tune-up trainees reported that employment possibilities were brought to their attention in a number of ways. In response to how they had obtained their initial employment, 36.8 per cent indicated the training facility, 36.8 per cent indicated they had obtained employment on their own, 10.5 per cent found employment through friends, and 5.7 per cent indicated the local newspaper. Ten and five-tenths per cent actually utilized the employment service in obtaining their initial employment. The means by which automotive tune-up trainees obtained their initial employment is presented in Table X.

Positions of leadership. Three graduate tune-up men, or 15.8 per cent of the population interviewed, held positions of leadership. One was a parts manager in a local dealership, one was a service station manager, and one had been the manager of an automotive exhaust system service

TABLE IX

TIME INTERVAL BETWEEN AUTOMOTIVE TUNE-UP GRADUATION AND THE GRADUATE TRAINEE'S INITIAL EMPLOYMENT

Response	Frequency	Per cent
Immediately	9	47.4
1 week	1	5.4
2 weeks	3	15.9
More than 2 weeks	6	31.3
Totals	19	100.0

TABLE X

MEANS BY WHICH AUTOMOTIVE TUNE-UP GRADUATES OBTAINED INITIAL EMPLOYMENT

Response	Frequency	Per cent
Yourself	7	36.8
Training facility	7	36.8
State employment service	2	10.5
Friend	2	10.5
Newspaper	1	5.4
Totals	19	100.0

agency.

Post graduate training. Additional training was obtained by 26.3 per cent of the graduate trainees. The following training facilities, courses, and training hours were reported by five graduate trainees:

General Motors, Delco Remy School, Alternators, thirty hours.

Standard Oil Company, Atlas Oscilloscope training, four hours.

John Deere Tractor Works, Intraining program, Quality Control, forty hours.

. . . Service School, Rings-Bearings-Tune-up-Brakes, forty hours.

Independent School District of Waterloo, Technical School, Electronics, one year.

Weekly salary. The weekly salary of those graduates working in the trade was somewhat lower than those with jobs outside their area of training. Weekly salaries of occupations within the area of training ranged from $54.00 to $140.00, with the average weekly salary at $81.08. Graduate trainees working in other occupations ranged from $70.00 to $140.00, with the average weekly salary being $100.28.

The difference may be attributed to the apprenticeship nature of jobs in the area of training. Most other jobs of a routine, mass production, or seasonal nature pay a higher weekly rate. The weekly salaries presented in

Tables XI and XII were obtained by the automotive tune-up graduates.

Number of hours worked overtime. The average number of hours worked overtime by graduate tune-up men is presented in Table XIII. Service station attendants averaged fifty hours each week or ten hours over the normal forty hour week. This was considered a normal work week and station attendants did not receive additional compensation for hours worked over forty hours. Automotive dealership service shops worked an average of 6.2 hours over the normal forty hours. Overtime was not subject to additional compensation. Graduate trainees who were employed in the engine manufacturing industry worked an average of two hours overtime per week and received time and one-half for overtime. Graduate trainees employed outside their area of training averaged six hours overtime per week and received time and one-half.

Ability to pay for trade training. Because the Manpower Development and Training Act provided financial assistance for many of the trainees, during training, the graduates were asked if they would have been able to pay for trade training without that help. Ninety-four and seven-tenths per cent of the graduate trainees reported they could not.

TABLE XI

WEEKLY SALARIES RECEIVED BY AUTOMOTIVE TUNE-UP GRADUATES EMPLOYED IN THE AUTOMOTIVE INDUSTRY

Weekly salary	Frequency	Per cent
$140.00 - $149.00	1	8.3
130.00 - 139.00		
120.00 - 129.00	1	8.3
110.00 - 119.00		
100.00 - 109.00	1	8.3
90.00 - 99.00	1	8.3
80.00 - 89.00	1	8.3
70.00 - 79.00	1	8.3
60.00 - 69.00	3	25.1
50.00 - 59.00	3	25.1
Totals	12*	100.0

Range $54.00 to $140.00

Mean weekly salary $81.08

Median $69.50

*The unemployed trainees' last employment was in the area of training and is included in this count.

TABLE XII

WEEKLY SALARIES RECEIVED BY AUTOMOTIVE TUNE-UP GRADUATES EMPLOYED OUTSIDE THE AUTOMOTIVE INDUSTRY

Weekly salary	Frequency	Per cent
$140.00 - $149.00	1	14.2
130.00 - 139.00		
120.00 - 129.00	1	14.2
110.00 - 119.00		
100.00 - 109.00	2	29.2
90.00 - 99.00		
80.00 - 89.00	2	29.2
70.00 - 79.00	1	14.2
Totals	7*	100.0

Range $70.00 to $140.00

Mean weekly salary $100.28

Median $99.50

*The unemployed trainees' last employment was in the area of training and is included in Table XII.

TABLE XIII

HOURS OF OVERTIME WORKED BY AUTOMOTIVE TUNE-UP GRADUATES

Occupation	Number in occupation	Average hours**
Outside area of training	7	6.0
Service stations	5*	10.0
Dealerships service shops	5	6.2
Engine manufacturing	2	2.0
Totals	19	

*The unemployed trainees' last employment was in the area of training and is included in this count.

**Average hours above the normal 40 hour week.

Instructor qualification. The shop training instructor was thought to be "well qualified" by 73.2 per cent of the graduate trainees and "fairly well qualified" by 15.8 per cent of the graduate trainees.

Instructor's best qualifications. The shop training instructor was thought to be best qualified in "classroom instruction" by 36.8 per cent of the graduate trainees, "shop instruction" by 36.8 per cent of the trainees, "technical information" by 20.6 per cent of the trainees, and "job experience" by 5.3 per cent of the graduate trainees.

Shop training instructor qualifications. The graduate trainees were asked to rate instructor qualifications as "fairly important," "important," or "very important." The four highest percentages were: (1) technical information, "very important" (89.4); (2) shop instruction, "very important" (73.2); (3) job experience, "very important" (68.4); and (4) classroom instruction, "important" (52.7). Presented in Table XIV are the frequency distributions and percentages of the graduate trainees' rating of instructor qualifications.

The graduate trainees, as a whole, considered their shop training instructor as being "well qualified." They equally considered him as being best qualified in "shop instruction" and "classroom instruction." It is interesting

TABLE XIV

INSTRUCTOR QUALIFICATION RATINGS BY AUTOMOTIVE TUNE-UP GRADUATES

Instructor qualification	Fairly important	Important	Very important
Classroom instruction	1 (5.4)	10 (52.7)	8 (41.9)
Shop instruction		5 (26.3)	14 (73.2)
Technical information	1 (5.3)	1 (5.3)	17 (89.4)
Job experience		6 (31.6)	13 (68.4)

NOTE: This table should be read as follows: One graduate trainee, or 5.4 per cent, thought classroom instruction was "fairly important."

to note that "shop instruction" and "classroom instruction" rank second and fourth in what the graduate trainees consider to be the most important qualifications for a shop training instructor.

Instructional assistance. Graduate trainees were asked if they had received sufficient individual help from their instructor during training. Fourteen graduates, or 73.2 per cent, of the trainees indicated they had received sufficient individual help. Five, or 26.3 per cent, thought additional individual help would have been beneficial to them.

Two graduate trainees indicated the initiation of the new program handicapped the instructor; two trainees thought too many trainees and discipline presented problems, and two other trainees thought the instructor was not well qualified.

Continuity of instruction and shop-work. Seventy-three and two-tenths per cent of the graduate trainees thought the classroom instruction was generally followed by a similar shop activity. Those who thought the shop-work was not always related to classroom instruction, accounted for the remaining 26.3 per cent. These trainees indicated that approximately the first three months of the training was spent in the classroom, because tool and equipment orders had not been completely filled for the new program.

Instructors' representation of the industry. Eleven or 57.9 per cent, of the trainees indicated that the shop training instructors and supervisors had not presented an accurate account of what the industry would be like. Over-estimation of the demand for tune-up men was pointed out by five of the trainees, and six trainees found wages to be less than they had anticipated. A common comment among all of the trainees was, "The industry needed mechanics, not tune-up men."

Rating of shop facilities. The graduates were asked to rate each of their tune-up shop facilities. Shop work space was rated from, "good" (42.1) to "average" (26.3); work areas from, "good" (42.1) to "very good" (31.6); storage from, "average" (42.1) to "poor" (26.3); tools and equipment from, "very good" (73.7) to "good" (21.1); classroom facilities were rated, "good" (57.8); and ventilation was rated, "good" (31.6) to "average" (31.6). The data presented in Table XV indicate the graduate trainees' thinking toward the tune-up shop training facilities.

Work that was not included in the tune-up training. Jobs in the "field" which were not covered in the training were reported by 84.2 per cent of the graduate trainees. Many of the items fall within the units of instruction provided in the training, the question of whether the items

TABLE XV

AUTOMOTIVE TUNE-UP SHOP FACILITIES AS RATED BY THE TUNE-UP GRADUATES

Shop facilities	Very poor	Poor	Average	Good	Very good
Shop space		2 (10.5)	5 (26.3)	8 (42.1)	4 (21.1)
Work areas		2 (10.5)	3 (15.8)	8 (42.1)	6 (31.6)
Storage	1 (5.3)	5 (26.3)	8 (42.1)	3 (15.8)	2 (10.5)
Tools and equipment			1 (5.3)	4 (21.0)	14 (73.7)
Classroom	1 (5.3)	1 (5.3)	3 (15.8)	11 (57.8)	3 (15.8)
Ventilation	2 (10.5)	2 (10.5)	6 (31.6)	6 (31.6)	3 (15.8)

NOTE: This table should be read as follows: Two graduate trainees, or 10.5 per cent, considered shop space to be rated "poor."

were actually covered or whether they were inadequately covered in the classroom and shop presented some problem. Therefore, those items, in the judgment of the writer, which may not have been covered have been marked with an asterisk.

The following were reported not covered in the tune-up training course:

Power windows and seats*
Positive crankcase ventilation
General lubrication
Generator test bench*
Parts Manager training*
Mechanical job experience
Customer relations
Speedometer and instruments
Steering and suspension systems
Steering linkage
Springs
Wheel alignment
Transmission overhaul*
Engine overhaul*
Differentials*
New car set up*
Door handles and window units*
Alternators
Tire repair
Power steering
Power brakes
Making change* (money handling)
Heating and ventilating units
Valve guide seals*

Areas of training not used on the job. The areas of training not used on the job were reported by 50.0 per cent of the graduate trainees. One trainee did not respond to the question. The following were listed as not having been used on the job:

Valve grinding
Carburetion

Front end alignment
Test equipment
Lighting and accessory circuits
Speedometer and instruments
Chassis - minor service
Steering and suspension system
Steering linkage
Springs

Areas of training not covered to the trainees' satisfaction. The areas of training that were not covered to the graduate trainees' satisfaction were reported by 73.7 per cent of the trainees. The following are the areas reported:

Automotive fundamentals
Battery and starter circuit
Ignition circuit
Charging circuit
Lighting and accessory circuits
Carburetor and fuel systems
Speedometer and instruments
General lubrication
Engine analysis and diagnosis
Brakes - minor repair
Brakes
Steering and suspension systems
Wheel alignment
Tire repair
Depth in test equipment operation
Work speed

Remedial instruction. Some of the referrals to training had shown weaknesses in the ability to read, write, and work problems in mathematics. Eleven of the graduate trainees, or 57.6 per cent, indicated that work in these three areas, above what they had during their training, would not have been required. The eight remaining graduates would liked to have had additional instruction in mathematics (87.8),

reading (37.8), and writing (2.8) during their training.

Manpower training experiences. Graduate trainees were asked to rate the technical, theoretical, and physical aspects of their training. The trainees rated job experience as being "very important" (78.9). Technical information was considered "very important" (68.4) to "important" (26.3). On the physical and mechanical aspects of the training the graduates were almost evenly divided between "very important" (52.5) and "important" (47.5). In Table XVI is presented the tune-up trainees' rating of the technical, theoretical, and physical aspects of training.

New tools and equipment in the industry. Graduate trainees were asked if they had found new tools in their work that they had not used in the manpower training shop. Sixteen trainees, or 84.2 per cent, found no new tools in the industry that were not included in the manpower tune-up shop. Three trainees found a need for special tune-up tools and tools for automatic transmission work.

Adjustment to old or different kinds of tools and equipment. Six, or 31.6 per cent, of the graduate trainees indicated they had experienced difficulty with old and different kinds of tune-up test equipment. One trainee did not respond to the question and 63.1 per cent of the trainees experienced no difficulty making the adjustment.

TABLE XVI

AUTOMOTIVE TUNE-UP GRADUATES' RATING OF THE TECHNICAL, THEORETICAL, AND PHYSICAL ASPECTS OF TUNE-UP TRAINING

Training activity	Fairly important	Important	Very important
Technical information	1 (5.3)	5 (26.3)	13 (68.4)
Physical and Mechanical theory		9 (47.5)	10 (52.5)
Shop experience		4 (21.1)	15 (78.9)

NOTE: This table should be read as follows: One graduate trainee, or 5.3 per cent, considered technical information as being "fairly important" in automotive tune-up training.

Tool and equipment maintenance in the industry. Tool and equipment maintenance on the job was confined to the care and maintenance of hand tools and portable electrical equipment. Eight trainees, or 41.7 per cent, reported having to do their own tool and equipment maintenance.

Unsafe conditions found in the industry. Unsafe conditions found in the industry that were not considered in the training shop were reported as hoist and hoist cable hazards, shop ventilation, using the oxy-acetylene torch, the strict use of jack stands to support automobiles, and gasoline.

When asked to rate the training shop for providing a place to develop good safety habits and safety consciousness, 57.6 per cent of the graduates rated it "very good," 26.3 per cent rated it "good," 10.5 per cent rated it "average," and 5.3 per cent rated it "poor."

Automotive Body Repair

The automotive body repair training included in this study consisted of two sections. One section of nine trainees and one section of twelve trainees accounted for a total of twenty-one graduate trainees.

Nine graduate body-repairmen were contacted by personal interview and seven additional trainees responded to

the mailed questionnaire for a total of sixteen trainees. This accounts for 76.2 per cent of the total population.

Age of trainees. The ages of the trainees, at the time they were referred to training, ranged from eighteen to forty-three years. Sixty-two and four-tenths per cent of the trainees were age twenty-five or under. The mean age for the population was 26.1 years with the median at 23.8 years. The age distribution of tune-up trainees at the time they were referred to training is presented in Table XVII.

Formal education. The level of formal education completed by the body-repair trainees ranged from grade eight to twelve. Sixty-six and seven-tenths per cent of the trainees had completed the twelfth grade. The median grade level was grade 11.8, with the mean at 11.1. Presented in Table XVIII is the level of formal education completed by the twenty-one body-repair trainees.

Primary occupation. The trainees' primary occupations as reported to the employment service prior to referral to training were as follows:

Machine moulder
Laborer (construction)
Military service (US Air Force)
Form setter (metal)
Car cleaner
Automotive service station attendant
Yardman

TABLE XVII

AGES OF TRAINEES WHEN REFERRED TO AUTOMOTIVE BODY-REPAIR TRAINING

Trainees' age	Frequency	Per cent
43	1	4.7
41	1	4.7
37	1	4.7
35	1	4.7
32	1	4.7
31	1	4.7
29	1	4.7
27	1	4.7
25	3	14.6
22	1	4.7
21	4	19.1
20	1	4.7
19	1	4.7
18	3	14.6
Totals	21	100.0

Range 18-43 years

Mean age 26.1 years

Median 23.8 years

TABLE XVIII

LEVEL OF FORMAL EDUCATION COMPLETED BY AUTOMOTIVE BODY-REPAIR TRAINEES

Grade level	Frequency	Per cent
12	14	66.7
11	1	4.7
10	3	14.3
9		
8	3	14.3
Totals	21	100.0

Range 8-12

Mean grade level 11.1

Median grade level 11.8

Farmer
Cut-off saw operator
Mechanic (repair)
Counterman (lunchroom)
Structural worker (metal)
Musician
Spray painter

It may be observed from the preceding list that the occupations are, for the most part, in the non-skilled or semi-skilled classification.

Hours of training. Project Iowa-23 provided a maximum of 1,500 hours of body-repair training for nine trainees. Project Iowa-R-5003 provided training for a maximum of 920 hours for twelve trainees. The two sections are presented separately to provide a more realistic representation of the hours of training received by the body-repair graduates.

The hours of training in Project Iowa-23 ranged from 907-1,374 hours. The mean hours of training for the trainees was 1,223.7 hours. The median for the group was 1,363.5. The hours of training recorded in Table XIX were completed by the graduates in Project Iowa-23.

Trainees in Project Iowa-R-5003 received an average of 842.3 hours of body-repair training. The hours of training completed by graduates in Project Iowa-R-5003 are presented in Table XX.

Occupations. Of the sixteen trainees interviewed, nine were considered to be in automotive body-repair or

TABLE XIX

HOURS OF TRAINING COMPLETED BY AUTOMOTIVE BODY-REPAIR GRADUATES (IOWA-23)

Hours of training	Frequency	Per cent
1,374	5	55.6
1,363	1	11.1
961	1	11.1
913	1	11.1
907	1	11.1
Totals	9	100.0

Range 907 - 1,374 hours

Mean hours of training 1,223.7

Median 1,363.5 hours

TABLE XX

HOURS OF TRAINING COMPLETED BY AUTOMOTIVE BODY-REPAIR GRADUATES (IOWA-R-5003)

Hours of training	Frequency	Per cent
936	1	8.3
928	1	8.3
920	1	8.3
872	1	8.3
868	1	8.3
854	1	8.3
848	1	8.3
816	1	8.3
784	2	17.0
760	1	8.3
738	1	8.3
Totals	12	100.0

Range 738 - 936 hours

Mean 842.3 hours

Median 851.0 hours

allied fields. This accounts for 56.2 per cent of the graduate trainees interviewed. Two of the graduate trainees were fulfilling their military obligation, and of these, one was in the area of training prior to his enlistment. Seven graduate trainees indicated that their occupations were outside the area of training and one graduate, was unemployed at the time of the survey. Presented in Table XXI are the occupations that were held by the graduate body-repairmen at the time of the survey.

Employment outside area of training. The reasons graduate trainees obtained employment in areas outside their area of training are presented in Table XXII. A total of seven trainees obtained employment outside their area of training. Two could not find jobs available in their area of training. One trainee indicated that employers did not consider him qualified because he lacked job experience and was only eighteen years old. Two trainees joined the United States Air Force to fulfill their military obligation.

Employment mobility. Ten of the graduate trainees were asked why they had changed jobs. Thirty per cent indicated they had been laid off from their work, 20.0 per cent moved to higher paying jobs, 20.0 per cent joined the military service, 10.0 per cent moved because of a lack of job experience, and 20.0 per cent went into businesses of their own.

TABLE XXI

OCCUPATIONS OF AUTOMOTIVE BODY-REPAIR GRADUATES AT THE TIME OF THE SURVEY

Occupation	Frequency	Per cent
Automotive Industry		
In Training		
Body man	4	25.1
Painter	1	6.2
Body shop assistant foreman	1	6.2
Body shop owner	3	18.9
Other		
Foundryman	1	6.2
Punch press operator	1	6.2
Welder	1	6.2
Hauling fertilizer	1	6.2
Military service	2	12.6
Unemployed	1	6.2
Totals	16	100.0

TABLE XXII

REASONS AUTOMOTIVE BODY-REPAIR GRADUATES OBTAINED EMPLOYMENT OUTSIDE THEIR AREA OF TRAINING

Reason	Frequency	Per cent
In-training job not available	2	28.5
Salary	2	28.5
Military obligation	2	28.5
Lacked job experience	1	14.5
Totals	7	100.0

The reasons why graduate body-repairmen moved to different jobs are reported in Table XXIII.

The number of job changes reported on the Post Graduate Employment Form showed eleven job changes for ten of the graduate trainees. Six trainees, or 37.5 per cent, remained on the job they obtained following their graduation from training. The number of job changes ranged from none to two. One job change was made by 56.2 per cent of the sixteen trainees and two job changes were made by one trainee, or 6.3 per cent. The number of job changes, following graduation, made by the graduate body-repair trainees is reported in Table XXIV.

Training and employment. In response to whether the manpower body-repair training had helped the graduate trainees in procuring their initial employment, 74.9 per cent indicated that it had. The four trainees that account for the remaining 25.1 per cent obtained employment outside their area of training.

Graduation-to-employment interval. Employment was obtained by 62.5 per cent of the graduate trainees immediately following their graduation. One trainee, or 6.2 per cent, obtained employment within one week. Twelve and five-tenths per cent obtained employment within two weeks and 18.8 per cent of the body-repair graduates required more than

TABLE XXIII

REASONS AUTOMOTIVE BODY-REPAIR GRADUATES CHANGED JOBS

Reasons	Frequency	Per cent
Lay off	3	30.0
Better salary	2	20.0
Opened own business	2	20.0
Military obligation	2	20.0
Lacked job experience	1	10.0
Totals	10	100.0

TABLE XXIV

NUMBER OF JOB CHANGES FOLLOWING GRADUATION MADE BY AUTOMOTIVE BODY-REPAIR GRADUATES

Job changes (X)	Frequency (f)	fX	Per cent
2	1	2	6.3
1	9	9	56.2
0	6		37.5
Totals	16 f	11 ΣfX	100.0

Range 0-2 Job changes

Mean Job changes 1.0

Median Job changes 1.0

two weeks to obtain their initial employment. The time interval between body-repair graduation and initial employment reported by the body-repair graduates is presented in Table XXV.

Finding initial employment. Body-repair trainees reported that employment possibilities were brought to their attention in a number of ways. In response to how they had obtained their initial employment, 56.2 per cent indicated they had obtained their jobs themselves. Three trainees, or 18.8 per cent, indicated the training facility had provided the first job. One trainee responded to an opening advertised in the newspaper. Eighteen and eight-tenths per cent utilized the employment service in obtaining their initial employment. The means by which graduate body-repair trainees obtained initial employment is reported in Table XXVI.

Positions of leadership. Six graduate body-repairmen, or 37.5 per cent, of the population interviewed, held positions of leadership. Two were assistant foremen, one in a body shop and one with a fertilizer firm. Three of the graduate trainees opened body shops of their own and one reported himself as self-employed.

Post graduate training. Additional training was obtained by 2.0 per cent of the graduate trainees. The

TABLE XXV

TIME INTERVAL BETWEEN AUTOMOTIVE BODY-REPAIR GRADUATION AND THE GRADUATE TRAINEE'S INITIAL EMPLOYMENT

Response	Frequency	Per cent
Immediately	10	62.5
1 week	1	6.2
2 weeks	2	12.5
More than 2 weeks	3	18.8
Totals	16	100.0

TABLE XXVI

MEANS BY WHICH AUTOMOTIVE BODY-REPAIR GRADUATES OBTAINED INITIAL EMPLOYMENT

Response	Frequency	Per cent
Yourself	9	56.2
State employment service	3	18.8
Training facility	3	18.8
Newspaper	1	6.2
Totals	16	100.0

following training facilities, courses, and training hours were reported:

Bear Company, Bear Alignment School, Front-end suspension and alignment, two weeks.

Advanced Trade School, Chicago, Mobile Engine Service Correspondence School, Prime Movers, two years.

Weekly salary. The weekly salary of those graduates working in the trade was considerably more than those with jobs outside their area of training. Weekly salaries of occupations within the area of training ranged from $78.00 to $350.00 with the average weekly salary at $134.80. Graduate trainees working in other occupations ranged from $40.00 to $107.00, with the average weekly salary being $66.80. In Tables XXVII and XXVIII are reported the weekly salaries obtained by the graduate body-repair trainees.

The graduate trainee who enlisted in the Air Force was last employed in the trade and was included when computing the trade salaries. The unemployed trainee was not included in either of the salary computations.

Number of hours worked overtime. The average number of hours worked above the normal forty hour week, by automotive body-repairmen was seven hours. Graduate trainees working in other occupations worked an average of 9.8 hours over the forty hour week, with compensation for overtime work. Body repairmen received no compensation for overtime

TABLE XXVII

WEEKLY SALARIES RECEIVED BY AUTOMOTIVE BODY-REPAIR GRADUATES EMPLOYED IN THE AUTOMOTIVE INDUSTRY

Weekly salary	Frequency	Per cent
$350.00	1	10.0
200.00	2	20.0
130.00	1	10.0
110.00	1	10.0
100.00	2	20.0
90.00	2	20.0
78.00	1	10.0
Totals	10*	100.0

Range $78.00 to $350.00

Mean weekly salary $134.80

Median $105.00

*The graduate trainee who enlisted in the Air Force was last employed in the trade and is included in this count.

TABLE XXVIII

WEEKLY SALARIES RECEIVED BY AUTOMOTIVE BODY-REPAIR GRADUATES EMPLOYED OUTSIDE THE AUTOMOTIVE INDUSTRY

Weekly salary	Frequency	Per cent
$107.00	1	20.0
74.00	1	20.0
63.00	1	20.0
50.00	1	20.0
40.00	1	20.0
Totals	5* **	100.0

Range $40.00 to $107.00

Mean weekly salary $66.80

Median $68.50

*The unemployed trainee is not included in this count.

**The trainee who enlisted in the Air Force was last employed in the trade and is included in Table XXVII.

except the incentive of the flat rate schedule.

Automotive body-repair graduates who were in their own business or self-employed could not estimate hours of overtime, and were not included.

Ability to pay for trade training. Because the Manpower Development and Training Act provided financial assistance for many of the trainees, during training, the graduates were asked if they would have been able to pay for trade training without that help. Ninety-three and eight-tenths per cent of the graduate trainees reported they could not.

Instructor qualification. The shop training instructor was thought to be "well qualified" by 93.8 per cent of the graduate trainees and "fairly well qualified" by 6.2 per cent of the graduate trainees.

Instructor's Best Qualifications. The shop training instructor was thought to be best qualified in "shop instruction" by 56.2 per cent of the trainees, "job experience" by 37.5 per cent of the graduate trainees, and "technical information" by 6.3 per cent of the trainees.

Shop training instructor qualifications. The graduate trainees were asked to rate instructor qualifications

as "fairly important," "important," or "very important." The four highest percentages were: (1) job experience, "very important" (93.8); (2) shop instruction, "very important" (87.5); (3) technical information, "very important" (75.0); and (4) classroom instruction, "important" (50.0). Presented in Table XXIX are the frequency distribution and percentages of the graduate trainees' rating of instructor qualifications.

Instructional assistance. Graduate trainees were asked if they had received sufficient individual help from their instructor during training. Fifteen graduates, or 93.8 per cent of the trainees, indicated they had received sufficient individual help. One trainee suggested that fewer trainees in the classes would free the instructor for more individual instruction.

Continuity of instruction and shop work. Ninety-three per cent of the graduate trainees thought the classroom instruction was generally followed by a similar shop activity. One trainee thought the shop work was not always related to classroom instruction. His thinking was that the textbook was outdated and, therefore, the classwork could not readily apply to the shop activity.

Instructors' representation of the industry. Fourteen, or 87.5 per cent, of the trainees indicated that the shop

TABLE XXIX

INSTRUCTOR QUALIFICATION RATINGS BY AUTOMOTIVE BODY-REPAIR GRADUATES

Instructor qualifications	Fairly important	Important	Very important
Classroom instruction	4 (25.0)	8 (50.0)	4 (25.0)
Shop instruction		2 (12.5)	14 (87.5)
Technical information	3 (18.8)	1 (6.3)	12 (75.0)
Job experience		1 (6.3)	15 (93.7)

NOTE: This table should be read as follows: Four graduate trainees, or 25.0 per cent, considered classroom instruction as "fairly important."

training instructors and supervisors had presented an accurate account of what the industry would be like. One trainee indicated that metal straightening should be emphasized and a second pointed out that he had experienced more welding than was brought out in the training.

Rating of shop facilities. The graduates were asked to rate each of their body-repair shop facilities. Shop work space was rated from, "good" (56.1) to "very good" (37.6); work areas from, "very good" (50.0) to "good" (43.7); storage from, "average" (37.6) to "good" (31.1); tools and equipment from, "very good" (74.9) to "good" (12.5); classroom facilities were rated, "good" (56.1); and ventilation was rated, "good" (43.7). The automotive body-repair graduates' rating of the body-repair shop training facilities is reported in Table XXX.

Work that was not included in the body-repair training. Jobs in the "field" which were not covered in the training were reported by 50.0 per cent of the graduate trainees. Many of the items fall within the units of instruction provided in the training, the question of whether the items were actually covered, whether the trainee was present and took part in the activity, or whether the information was inadequately covered in the classroom and shop was not made clear. Therefore, those items, in the judgment of the

TABLE XXX

AUTOMOTIVE BODY-REPAIR SHOP FACILITIES AS RATED BY THE BODY-REPAIR GRADUATES

Shop facilities	Very poor	Poor	Average	Good	Very good
Shop space			1 (6.3)	9 (56.1)	6 (37.6)
Work areas			1 (6.3)	7 (43.7)	8 (50.0)
Storage	2 (12.5)	1 (6.3)	6 (37.6)	5 (31.1)	2 (12.5)
Tools and equipment	1 (6.3)		1 (6.3)	2 (12.5)	12 (74.9)
Classroom		1 (6.3)	3 (18.8)	9 (56.1)	3 (18.8)
Ventilation	1 (6.3)	2 (12.5)	2 (12.5)	7 (43.7)	4 (25.0)

NOTE: This table should be read as follows: One graduate trainee, or 6.3 per cent, considered shop space to be rated "average."

writer, which may not have been covered have been marked with an asterisk.

The following were reported not covered in the body-repair training course:

Major body-repair*
Glass replacement
Arc welding
Painting enamel
Personal customer relations
Interior trim and upholstering*
Panel replacement
Frame straightening
New cars and collision*

Areas of training not used on the job. The areas of training not used on the job were reported by 37.5 per cent of the graduate trainees. The following were listed as not having been used on the job:

Oxy-acetylene and arc welding
Body soldering
Frame straightening
Automotive glass service
Station wagon body service and repair
Hydro electric system service
Painting
Shop management

Areas of training not covered to the trainees' satisfaction. The areas of training that were not covered to the graduate trainees' satisfaction were reported by 50.0 per cent of the trainees. The following are the areas reported:

Glass service
Panel replacement
Frame straightening

Painting
Body straightening (late model)
Hood alignment
Body soldering
Major body repair

Remedial instruction. Some of the referrals to training had shown weaknesses in the ability to read, write, and work problems in mathematics. Fifteen of the graduate trainees or 93.8 per cent, indicated that work in the three areas, above what they had during their training, would not have been required. The one remaining graduate would liked to have had additional instruction in mathematics.

Manpower training experiences. Graduate trainees were asked to rate the technical, theoretical, and physical aspects of their training. The trainees rated job experience as being "very important" (56.2) to "important" (43.8). On the physical and mechanical aspects of the training the graduates were evenly divided between "very important" (50.0) and "important" (50.0). In Table XXXI are presented the body-repair trainees' rating of the technical, theoretical, and physical aspects of training.

New tools and equipment in the industry. Graduate trainees were asked if they had found new tools in their work that they had not used in the manpower training shop.

TABLE XXXI

AUTOMOTIVE BODY-REPAIR GRADUATES' RATING OF THE TECHNICAL, THEORETICAL, AND PHYSICAL ASPECTS OF BODY-REPAIR TRAINING

Training activity	Fairly important	Important	Very important
Technical information		7 (43.8)	9 (56.2)
Physical and Mechanical theory		8 (50.0)	8 (50.0)
Shop experience		2 (12.5)	14 (87.5)

NOTE: This table should be read as follows: Seven graduate trainees, or 43.8 per cent, considered technical information as being "important" in automotive body-repair training.

Twelve trainees, or 75.0 per cent, found no new tools in the industry that were not included in the body-repair shop. Four trainees found a need for a "Kansas Jack," pneumatic grinders, and special body hardware tools. The "Kansas Jack" was purchased for use in Project Iowa-R-5003.

Adjustment to old or different kinds of tools and equipment. Fifteen, or 93.8 per cent, of the graduate trainees indicated they had experienced no difficulty with old and different kinds of body-repair tools and equipment. One trainee had difficulty adjusting to a small "Porto-Power."

Tool and equipment maintenance in the industry. Tool and equipment maintenance on the job was confined to the care and maintenance of hand tools and portable electrical equipment. Six trainees, or 37.6 per cent, reported having to do their own tool and equipment maintenance.

Unsafe conditions found in the industry. One unsafe condition that was found in the industry that was not considered in the training shop was the electrical grounding of flammables in the paint department.

When asked to rate the training shop for providing a place to develop good safety habits and safety consciousness, 68.8 per cent of the graduates rated it "very good,"

and 31.2 per cent rated it "good."

Combination Welding

The training in combination welding included in this study consisted of two projects. One project of forty-one trainees and one project of twenty-six trainees for a total of sixty-seven graduate trainees.

Thirty-seven graduate welders were contacted by personal interview and thirteen additional trainees responded to the mailed questionnaire for a total of fifty trainees. This accounted for 74.6 per cent of the total population.

Age of trainees. The ages of the trainees at the time they were referred to training, ranged from eighteen to forty-four years. Sixty-eight and six-tenths per cent of the trainees were age twenty-five or under. The mean age for the population was 24.2 years with the median at twenty-two years. The age distribution of welding trainees at the time they were referred to training is presented in Table XXXII.

Formal education. The level of formal education completed by the welding trainees ranged from grade eight to two years of college. Forty-nine and two-tenths per cent of the trainees had completed the twelfth grade. The median grade level was grade 11.3, with the mean at 10.6. The level of formal education completed by the sixty-seven

TABLE XXXII

AGES OF TRAINEES WHEN REFERRED TO COMBINATION WELDING TRAINING

Trainees' age	Frequency	Per cent
44	1	1.5
42	1	1.5
37	1	1.5
36	1	1.5
35	1	1.5
34	2	3.0
32	1	1.5
31	1	1.5
30	2	3.0
29	2	3.0
28	4	5.9
27	1	1.5
26	3	4.5
25	4	5.9
24	4	5.9
23	3	4.5
22	4	5.9
21	10	15.0
20	9	13.4
19	6	9.0
18	6	9.0
Totals	67	100.0

Range 18-44 years

Mean age 24.2 years

Median 22.0 years

combination welding trainees is presented in Table XXXIII.

Primary occupation. The trainees' primary occupations as reported to the employment service prior to referral to training were as follows:

Electric truck operator
Punch press operator
Core maker
Laborer (meat packing)
Farmer
Farm hand
Plumber
Sales clerk
Laborer (construction)
Furnace repairman's helper
Laborer (manufacturing)
Cook
Bus boy
Automotive service station attendant
Stock boy
Warehouseman
Laborer (paint shop)
Florist helper
Lineman (electrical)
Fireman (locomotive)
Driver
TV service repairman
Heavy equipment operator
Drill press operator

It may be observed from the preceding list that the occupations are, for the most part, in the non-skilled or semi-skilled classification.

Hours of training. Project Iowa-16 provided a maximum of 480 hours of welding training for forty-one trainees. Project Iowa-233 provided training for a maximum of 600 hours for twenty-six trainees. Three trainees in Iowa-233 took

TABLE XXXIII

LEVEL OF FORMAL EDUCATION COMPLETED BY COMBINATION WELDING TRAINEES

Grade level	Frequency	Per cent
14	1	1.5
13	2	3.0
12	30	44.8
11	6	9.0
10	8	11.9
9	9	13.4
8	10	14.9
7	1	1.5
Totals	67	100.0

Range 7-14

Mean grade level 10.6

Median grade level 11.3

advantage of the additional time above 480 hours. The three trainees were not considered to effect the statistics appreciably and were included with the total population.

Combination welding trainees received an average of 431.6 hours of welding training. The range was from 321 to 483 hours. The hours of training completed by the combination welding graduates may be observed in Table XXXIV.

Occupations. Of the fifty trainees interviewed, forty were working in the welding trade. This represents 80.0 per cent of the welding trainees interviewed. The remaining 20.0 per cent were employed in a variety of occupations. Six of the trainees were in manufacturing industries, two returned to the meat packing industry, one returned to his previous print shop employment, and one was tending bar. Presented in Table XXXV are the occupations that were held by the graduate welders at the time of the survey.

Employment outside area of training. The reasons graduate trainees obtained employment in areas outside their area of training are presented in Table XXXVI. A total of ten trainees obtained employment outside their area of training. Thirty per cent obtained employment outside the trade because salaries were more attractive in other work, twenty per cent could not find work in the trade, one because of the location of the work, one because of personal health, and

TABLE XXXIV

HOURS OF TRAINING COMPLETED BY COMBINATION WELDING GRADUATES

Hours of training	Frequency	Per cent
475 - 499	4	6.0
450 - 474	23	34.2
425 - 449	19	28.3
400 - 424	11	16.5
375 - 399	4	6.0
350 - 374	4	6.0
325 - 349	1	1.5
300 - 324	1	1.5
Totals	67	100.0

Range 321 - 483 hours

Mean hours of training 431.6

Median 440 hours

TABLE XXXV

OCCUPATIONS OF COMBINATION WELDING GRADUATES AT THE TIME OF THE SURVEY

Occupation	Number	Per cent
Welding Industry		
Welder	40	80.0
Other		
Mechanic	1	2.0
Punch press operator	1	2.0
Shipping clerk	1	2.0
Material handling	1	2.0
Chipper and grinder	1	2.0
Galvanizer	1	2.0
Stereotyper	1	2.0
Meat packing, scaler	1	2.0
Meat packing, hog kill	1	2.0
Bar tender	1	2.0
Totals	50	100.0

TABLE XXXVI

REASONS COMBINATION WELDING GRADUATES OBTAINED EMPLOYMENT OUTSIDE THEIR AREA OF TRAINING

Reason	Frequency	Per cent
Salary	3	30.0
In-training job not available	2	20.0
Lacked skill qualifications	1	10.0
Health reasons	1	10.0
Location	1	10.0
Poor recommendation	1	10.0
Strike	1	10.0
Totals	10	100.0

one because he did not receive a satisfactory recommendation.

Employment mobility. Twenty-seven trainees were asked why they had changed jobs. Forty per cent of the trainees moved because of better salaries, 25.7 per cent wanted better working conditions, and 17.1 had been laid off from the previous job. Four graduate trainees, or 11.4 per cent, were "let go" from their jobs at the request of the employer. One trainee was displaced by a strike and one trainee moved to be closer to home. The reasons why graduate welders relocated in the industry are presented in Table XXXVII.

The number of job changes reported on the Post Graduate Employment Form showed thirty-nine job changes for twenty-seven of the graduate trainees. Twenty-three trainees, or 46.0 per cent, remained on the job they obtained following their graduation from training. The number of job changes ranged from none to four. One job change was made by 38.0 per cent of the fifty trainees, two changes were made by 10.0 per cent, three changes were made by 4.0 per cent and 2.0 per cent of the trainees made a fourth job change. The number of job changes, following graduation, made by the graduate welders is reported in Table XXXVIII.

Training and employment. In response to whether the manpower combination welding training had helped the graduate trainees in procuring their initial employment, 96.0

TABLE XXXVII

REASONS COMBINATION WELDING GRADUATES CHANGED JOBS

Reasons	Frequency	Per cent
Better salary	14	40.0
Working conditions	9	25.7
Lay off	6	17.1
"Let go"	4	11.4
Strike	1	2.9
Location	1	2.9
Totals	35	100.0

TABLE XXXVIII

NUMBER OF JOB CHANGES FOLLOWING GRADUATION MADE BY COMBINATION WELDING GRADUATES

Job changes (X)	Frequency (f)	fX	Per cent
4	1	4	2
3	2	6	4
2	5	10	10
1	19	19	38
0	23		46
Totals	50	39 ΣfX	100

Range 0-4 Job changes

Mean Job changes 1.0

Median Job changes 1.0

per cent indicated that it had. The two trainees that account for the remaining 4.0 per cent obtained employment outside their area of training.

Graduation-to-employment interval. Employment was obtained by 48.0 per cent of the graduate trainees immediately following their graduation. Eight trainees, or 16.0 per cent, obtained employment within one week. Eighteen per cent obtained employment within two weeks and 18.0 of the welder graduates required more than two weeks to obtain their initial employment. The time interval between welding graduation and initial employment reported by the welding trainees is presented in Table XXXIX.

Finding initial employment. Combination welding trainees reported that employment possibilities were brought to their attention in a number of ways. In response to how they had obtained their initial employment, 52.0 per cent indicated they had used the employment service, 38.0 per cent obtained their employment on their own, 8.0 per cent obtained their job through the training facility, and one trainee obtained his first employment through a friend. The means by which graduate welding trainees obtained their initial employment is reported in Table XL.

TABLE XXXIX

TIME INTERVAL BETWEEN COMBINATION WELDING GRADUATION AND THE GRADUATE TRAINEES' INITIAL EMPLOYMENT

Response	Frequency	Per cent
Immediately	24	48.0
1 week	8	16.0
2 weeks	9	18.0
More than 2 weeks	9	18.0
Totals	50	100.0

TABLE XL

MEANS BY WHICH COMBINATION WELDING GRADUATES OBTAINED INITIAL EMPLOYMENT

Response	Frequency	Per cent
State employment service	26	52.0
Yourself	19	38.0
Training facility	4	8.0
Friend	1	2.0
Totals	50	100.0

Positions of leadership. Four graduate welders, or 8.0 per cent of the population interviewed, held positions of leadership. Three of the trainees were leadmen and one was an assistant foreman.

Post graduate training. Additional training was obtained by four of the graduate trainees. The following training facilities, courses, and training hours were reported:

Steam Fitters Union - Apprenticeship training, five years.

Independent School District of Waterloo, Adult Education, Advanced welding, thirty-two hours.

Advanced Trade School, Chicago, Mobile Engine Service, Correspondence School, Prime Movers, two years.

Weekly salary. The weekly salary of those graduates working in the trade was somewhat higher than those with jobs outside their area of training. Weekly salaries of occupations within the area of training ranged from $68.00 to $180.00 with the average weekly salary at $103.28. Graduate trainees working in other occupations ranged from $50.00 to $130.00, with the average weekly salary being $95.20. In Tables XLI and XLII are reported the weekly salaries of welding graduates.

Number of hours worked overtime. Graduate welders

TABLE XLI

WEEKLY SALARIES RECEIVED BY COMBINATION WELDING GRADUATES EMPLOYED IN THE WELDING INDUSTRY

Weekly salary	Frequency	Per cent
$180.00 - $189.00	1	2.5
170.00 - 179.00		
160.00 - 169.00	2	5.0
150.00 - 159.00		
140.00 - 149.00		
130.00 - 139.00	4	10.0
120.00 - 129.00	3	7.5
110.00 - 119.00	3	7.5
100.00 - 109.00	4	10.0
90.00 - 99.00	10	25.0
80.00 - 89.00	7	17.5
70.00 - 79.00	5	12.5
60.00 - 69.00	1	2.5
Totals	40	100.0

Range $68.00 to $180.00

Mean weekly salary $103.28

Median $96.50

TABLE XLII

WEEKLY SALARIES RECEIVED BY COMBINATION WELDING GRADUATES EMPLOYED OUTSIDE THE WELDING INDUSTRY

Weekly salary	Frequency	Per cent
$130.00	1	10.0
116.00	1	10.0
112.00	1	10.0
107.00	1	10.0
95.00	1	10.0
94.00	1	10.0
93.00	1	10.0
85.00	1	10.0
70.00	1	10.0
50.00	1	10.0
Totals	10	100.0

Range $50.00 to $130.00

Mean weekly salary $95.20

Median $94.50

working in the trade averaged six hours of work over the normal forty hour week. Trainees working in occupations outside the area of training average 2.5 hours overtime each week. Compensation for overtime was paid at the rate of time and one-half.

Ability to pay for trade training. Because the Manpower Development and Training Act provided financial assistance for many of the trainees, during training, the graduates were asked if they would have been able to pay for trade training without that help. Ninety-six per cent of the graduate trainees reported they could not.

Instructor qualification. The shop training instructor was thought to be "well qualified" by 96.0 per cent of the graduate trainees and "fairly well qualified" by 4.0 per cent of the graduate trainees.

Instructor's best qualifications. The shop training instructor was thought to be best qualified in "shop instruction" by 42.0 per cent of the graduate trainees, "job experience" by 36.0 per cent of the graduate trainees, "technical information" by 18.0 per cent of the trainees, and "classroom experience" by 4.0 per cent of the graduate trainees.

Shop training instructor qualifications. The

graduate trainees were asked to rate instructor qualifications as "fairly important," "important," or "very important." The four highest percentages were: (1) job experience, "very important" (86.0); (2) technical information, "very important" (80.0); (3) shop instruction, "very important" (78.0); and (4) classroom instruction, "very important" (48.0). Presented in Table XLIII are the frequency distribution and percentages of the graduate trainees' rating of instructor qualifications.

Instructional assistance. Graduate trainees were asked if they had received sufficient individual help from their instructor during training. Forty-eight graduates, or 96.0 per cent of the trainees, indicated they had received sufficient individual help. Two trainees suggested that fewer trainees in the classes would free the instructor for more individual instruction.

Continuity of instruction and shop-work. Eighty-six per cent of the graduate trainees thought the classroom instruction was generally followed by a similar shop activity. Seven trainees thought the shop-work was not always related to classroom instruction. Three trainees thought there were not enough welding machines, two experienced no shop-work the first two weeks, one indicated blueprint reading was not used much in the shop-work, and one trainee didn't think the

TABLE XLIII

INSTRUCTOR QUALIFICATION RATINGS BY COMBINATION WELDING GRADUATES

Instructor qualification	Fairly important	Important	Very important
Classroom instruction	6 (12.0)	20 (40.0)	24 (48.0)
Shop instruction	1 (2.0)	10 (20.0)	39 (78.0)
Technical information	5 (10.0)	5 (10.0)	40 (80.0)
Job experience	1 (2.0)	6 (12.0)	43 (86.0)

NOTE: This table should be read as follows: Six graduate trainees, or 12.0 per cent, thought classroom instruction was "fairly important."

instruction in metallurgy was used in the shop-work.

Instructors' representation of the industry. Forty-four, or 88.0 per cent, of the trainees indicated that the shop training instructors and supervisors had presented an accurate account of what the industry would be like. Six trainees were in disagreement. Three thought the instructors had overestimated working conditions in the industry, two thought the school experience would get them a welding job, but found that job experience was necessary, and one trainee thought the faculty had overestimated jobs and wages.

Rating of shop facilities. The graduates were asked to rate each of their welding shop facilities. Shop-work space was rated from, "good" (38.0) to "average" (22.0); work areas from, "good" (42.0) to "average" (24.0); storage from, "good" (38.0) to "average" (26.0); tools and equipment, "very good" (70.0); classroom facilities were rated from, "very good" (48.0) to "good" (32.0); and ventilation was rated from, "very good" (42.0) to "good" (36.0). The manpower graduates' rating of the welding shop training facilities is presented in Table XLIV.

Work that was not included in the welding training. Jobs in the "field" which were not covered in the training were reported by 44.0 per cent of the graduate trainees.

TABLE XLIV

COMBINATION WELDING SHOP FACILITIES AS RATED BY THE COMBINATION WELDING GRADUATES

Shop facilities	Very poor	Poor	Average	Good	Very good
Shop space	3 (6.0)	10 (20.0)	11 (22.0)	19 (38.0)	7 (14.0)
Work areas	1 (2.0)	6 (12.0)	12 (24.0)	21 (42.0)	10 (20.0)
Storage	4 (8.0)	6 (12.0)	13 (26.0)	19 (38.0)	8 (16.0)
Tools and equipment		1 (2.0)	2 (4.0)	12 (24.0)	35 (70.0)
Classroom		4 (8.0)	6 (12.0)	16 (32.0)	24 (48.0)
Ventilation	1 (2.0)	2 (4.0)	8 (16.0)	18 (36.0)	21 (42.0)

NOTE: This table should be read as follows: Three graduate trainees, or 6.0 per cent, considered shop space to be "very poor."

Many of the items fall within the units of instruction provided in the training, the question of whether the items were actually covered, whether the trainee was present and took part in the activity, or whether they were inadequately covered in the classroom and shop was not made clear. Therefore, those items, in the judgment of the writer, which may not have been covered have been marked with an asterisk.

The following were reported not covered in the combination welding course:

Submerged welding*
Cast iron welding
Automatic aluminum welding
Stud welder*
Non-ferrous metal welding
Low alloy steel welding
Pipe welding
Arc brazing
Hard facing
Set up*
Metal working
Punch press*
Shears
Break
Overhead crane*
Hoist*
Air hammer*
Porto power*
Pull plate with turnbuckles*
Welding in awkward positions
Production speed*
What to expect from co-workers

Areas of training not used on the job. The areas of training not used on the job were reported by 60.0 per cent of the graduate trainees. The following were listed as not

having been used on the job:

Arc welding
Metal inert gas welding
Oxy-acetylene flame cutting
Oxy-acetylene gas welding
Blueprint reading
Inspection and weld testing
Shop mathematics
Metallurgy
Tungsten inert gas welding
Vertical up

Areas of training not covered to the trainees' satisfaction. The areas of training that were not covered to the graduate trainees' satisfaction were reported by 40.0 per cent of the trainees. The following are the areas reported:

Metal inert gas welding
Tungsten inert gas welding
Non-ferrous metal welding
Pipe welding
Jigs and fixtures
Vertical welding
Overhead welding
Blueprint reading and technical information
Shop mathematics
Metallurgy

Remedial instruction. Some of the referrals to training had shown weaknesses in the ability to read, write, and work problems in mathematics. Thirty of the graduate trainees, or 60.0 per cent, indicated that work in the three areas, above what they had during their training, would not have been required. The remaining 40.0 per cent would liked to have had additional instruction in mathematics (40.0), reading (12.0), and writing (6.0) during their training.

Manpower training experiences. Graduate trainees were asked to rate the technical, theoretical, and physical aspects of their training. The trainees rated job experience as being "very important" (92.0). Technical information was considered "very important" (68.0) to "important" (24.0). On the physical and mechanical aspects of the training the graduates were almost evenly divided between "very important" (52.0) and "important" (46.0). In Table XLV is presented the welding trainees' rating of the technical, theoretical, and physical aspects of training.

New tools and equipment in the industry. Graduate trainees were asked if they had found new tools in their work that they had not used in the manpower training shop. Forty-three trainees, or 86.0 per cent, found no new tools in the industry that were not included in the manpower welding shop. Seven trainees reported the following new tools and equipment in the industry:

Submerge welder
Low hydrogen welding
Lincoln squirt welding
1/16" wire welder
3/32" contact tube
Automatic aluminum welding
Portable arc welders

Adjustment to old or different kinds of tools and equipment. Thirty-four, or 68.0 per cent, of the graduate welders indicated they had experienced no difficulty with

TABLE XLV

COMBINATION WELDING GRADUATES' RATING OF THE TECHNICAL, THEORETICAL, AND PHYSICAL ASPECTS OF WELDING TRAINING

Training activity	Fairly important	Important	Very important
Technical information	4 (8.0)	12 (24.0)	34 (68.0)
Physical and Mechanical theory	1 (2.0)	23 (46.0)	26 (52.0)
Shop experience		4 (8.0)	46 (92.0)

NOTE: This table should be read as follows: Four, or 8.0 per cent, of the welding graduates considered technical information as being "fairly important" in combination welding training.

old or different kinds of welding tools and equipment. Sixteen trainees reported having difficulty with the following:

Age of welding machines
Industrial camograph
Shears
Jigs and fixtures
Fork lift truck
Westinghouse welders
Airco metal inert gas gun
Portable arc welders

Tool and equipment maintenance in the industry. Tool and equipment maintenance on the job for welding trainees was confined to hand tools and minor welding machine, cable, holder, and gun maintenance.

Unsafe conditions found in the industry. Unsafe conditions found in the industry that were not considered in the Manpower training program were reported as:

Grounding welders
Loading equipment
Overhead lifting equipment
Safety glasses
Noise protection
Co-worker carelessness
Lifting
Steel-toed shoes
Slipping on floor
Lift trucks

When asked to rate the training shop for providing a place to develop good safety consciousness, 72.0 per cent of the graduates rated it "very good," 18.0 per cent rated it "good," 8.0 per cent rated it "average," and 2.0 per cent rated it "poor."

II. OCCUPATIONAL ATTITUDES

Wholesome attitudes contribute much to occupational success. The possession of a high degree of skill and knowledge, in nearly every trade, is of doubtful value without a sincere desire to cooperate with co-workers, to show a willingness to accept responsibility, and to strive continually to do one's best work.

Occupational Satisfaction

The questionnaire included five questions with regard to graduate trainee's satisfaction with the various aspects of his training and trade. Response to the questions were a simple "yes" or "no." During the interviews there was seldom a difficult decision with regard to degree of satisfaction or dissatisfaction. Trainees were prompt and direct in their answers.

Trainees were asked to indicate whether they were satisfied with their manpower training, trade, present job, present employer, and present foreman or supervisor. A total of 85 graduates responded to the questions.

Ninety-two and nine-tenths per cent of the manpower graduates were satisfied with their manpower training, 88.2 per cent with their trade, 76.5 per cent with their present job, 83.5 per cent with their present employer, and 77.7

per cent with their present foreman or immediate supervisor. Reported in Table XLVI are the frequency distributions and percentages of the manpower graduates' satisfaction with the training and trade.

Manpower Graduate's Attitudes

All of the manpower graduates were asked to rank, in order of importance, four comments that had been made about manpower training, trades, jobs, employers, and foremen or supervisors.

To determine the rank order of a comment with respect to the other three, each comment was ranked within itself. Reference to Table XLVII will show that "abilities and skills" were ranked first in fifty-two cases out of a possible eighty-two cases. "Abilities and skills" were ranked second in seventeen cases, third in twelve cases, and fourth in one case. The highest frequency, in this instance fifty-two, fell under the first rank and the comment reference, "abilities and skills," was assigned a rank of one, or most important.

After each comment had been assigned an individual rank, the four comments were brought together to determine the rank order.

Comments about manpower training. The manpower

TABLE XLVI

MANPOWER GRADUATES' SATISFACTION WITH THEIR MANPOWER TRAINING AND OCCUPATIONAL EXPERIENCE

Occupational training and trade	Frequency No	Yes
Manpower training	6 (7.1)	79 (92.9)
Trade	10 (11.8)	75 (88.2)
Present job	20 (23.5)	65 (76.5)
Present employer	14 (16.5)	71 (83.5)
Present supervisor	19 (22.3)	66 (77.7)

NOTE: This table should be read as follows: Six, or 7.1 per cent, of the manpower graduates were not satisfied with their manpower training.

TABLE XLVII

RATING OF COMMENTS ABOUT MANPOWER TRAINING BY EIGHTY-TWO GRADUATE TRAINEES

Comment reference	Rank and Frequency (1)	(2)	(3)	(4)	Total
Abilities and skills	52 (63.4)	17 (20.7)	12 (14.6)	1 (1.3)	82*
Self confidence	10 (12.2)	33 (40.2)	26 (31.6)	13 (15.9)	82
Respect	4 (4.9)	11 (13.4)	15 (18.3)	52 (63.4)	82
Responsibility	16 (19.5)	21 (25.6)	29 (35.4)	16 (19.5)	82

*Three Graduate Trainees marked the question incorrectly and were not included.

NOTE: This Table should be read as follows: Fifty-two, or 63.4 per cent, of the Manpower graduates ranked "abilities and skills" first in importance.

graduates were asked to rank four comments that had been made about manpower training. The comments, with their reference, were as follows:

(1) "Manpower training helped me develop my own abilities and skills." (abilities and skills)

(2) "Manpower training gave me more confidence in my own work." (self-confidence)

(3) "Manpower training helped me to gain the respect of the people I work with." (respect)

(4) "Manpower training showed me what would be expected of me on the job." (responsibility)

How the manpower graduates ranked the comments made about manpower training is presented in Table XLVII. Fifty-two, or 63.4 per cent, of those interviewed, ranked "abilities and skills" first in importance. "Self-confidence" was ranked second by 40.2 per cent of the graduates, "responsibility" was ranked third by 35.4 per cent, and "respect" was ranked fourth by 63.4 per cent of the graduate trainees. Three graduate trainees marked the question incorrectly and were not included.

Comments about trades. The manpower graduates were asked to rank four comments that had been made about their trade. The comments, with their reference, were as follows:

(1) "This trade gives me a chance to do something well." (accomplishment)

(2) "There is a good future in this trade." (future)

(3) "I really like to work in this trade." (work

satisfaction)

(4) "This trade will help me make a living for myself/and my family." (earning power)

How the manpower graduates ranked the comments about their trade is presented in Table XLVIII. "Earning power" was ranked first by 39.8 per cent of the graduate trainees. "Future" (30.2) was ranked second and "work satisfaction" (27.8) was ranked third, although there was only a slight percentage difference between the two. A sense of "accomplishment" was ranked fourth by 55.4 per cent of the manpower graduates. Two graduate trainees marked the question incorrectly and were not included.

Comments about jobs. The manpower graduates were asked to rank four comments made about jobs. The comments, with their reference, were as follows:

(1) "This job gives me a chance to develop my abilities and skills." (abilities and skills)

(2) "This job gives me a chance to compare my work with the work of experienced men in the trade." (production standards)

(3) "This job gives me a chance to learn from experienced men in the trade." (learning)

(4) "This job is only a step on the way to a better job." (future)

How manpower graduates ranked the comments made about jobs is presented in Table XLIX. "Abilities and skills" were ranked first by 41.0 per cent of the manpower graduates,

TABLE XLVIII

RATING OF COMMENTS ABOUT SKILLED TRADES BY EIGHTY-THREE GRADUATE TRAINEES

Comment reference	Rank and frequency (1)	(2)	(3)	(4)	Total
Accomplishment	7 (8.4)	8 (9.6)	22 (26.6)	46 (55.4)	83*
Future	21 (25.2)	25 (30.2)	23 (27.8)	14 (16.8)	83
Work satisfaction	22 (26.6)	23 (27.8)	22 (26.6)	16 (19.0)	83
Earning power	33 (39.8)	27 (32.6)	14 (16.8)	9 (10.8)	83

*Two graduate trainees marked the question incorrectly and were not included.

NOTE: This table should be read as follows: Seven, or 8.4 per cent, of the manpower graduates ranked "accomplishment" first in importance.

TABLE XLIX

RATING OF COMMENTS ABOUT JOBS BY EIGHTY-THREE GRADUATE TRAINEES

Comment reference	Rank and frequency (1)	(2)	(3)	(4)	Total
Abilities and skills	34 (41.0)	16 (19.2)	25 (30.2)	8 (9.6)	83*
Production standards	7 (8.3)	21 (25.3)	29 (35.0)	26 (31.4)	83
Learning	25 (30.2)	35 (42.2)	19 (22.9)	4 (4.7)	83
Future	17 (20.5)	11 (13.2)	10 (12.0)	45 (54.3)	83

*Two graduate trainees marked the question incorrectly and were not included.

NOTE: This table should be read as follows: Thirty-four, or 41.0 per cent, of the manpower graduates ranked "Abilities and skills" first in importance.

"learning" was ranked second by 42.2 per cent, "production standards" third by 35.0 per cent, and "future" was ranked fourth by 54.3 per cent of the graduate trainees. Two graduate trainees marked the question incorrectly and were not included.

Comments about employers or companies. The manpower graduates were asked to rank four comments made about employers or companies. The comments, with their reference, were as follows:

(1) "This company is a fairly safe place to work." (safety)

(2) "There is a good chance for advancing in this company." (advancement)

(3) "This company has friendly people to work with." (co-workers)

(4) "This company pays a good wage." (earning power)

How the manpower graduates ranked the comments made about employers or companies is presented in Table L. "Co-workers" was ranked first by 35.0 per cent of the graduate trainees. "Safety" was ranked second by 29.0 per cent, "earning power" third by 27.8 per cent, and "advancement" was ranked fourth by 38.6 per cent of the graduate trainees. Two trainees marked the question incorrectly and were not included.

Comments about foremen and supervisors. The manpower graduates were asked to rank four comments that had been

TABLE L

RATING OF COMMENTS ABOUT EMPLOYERS AND COMPANIES BY EIGHTY-THREE GRADUATE TRAINEES

Comment reference	Rank and frequency (1)	(2)	(3)	(4)	Total
Safety	19 (22.8)	24 (29.0)	23 (27.8)	17 (20.4)	83*
Advancement	17 (20.4)	14 (16.9)	20 (24.1)	32 (38.6)	83
Co-workers	29 (35.0)	25 (30.2)	17 (20.4)	12 (14.4)	83
Earning power	18 (21.6)	20 (24.0)	23 (27.8)	22 (26.6)	83

*Two graduate trainees marked the question incorrectly and were not included.

NOTE: This table should be read as follows: Nineteen, or 22.8 per cent, of the graduate trainees ranked "safety" first in importance.

made about foremen and supervisors. The comments, with their reference, were as follows:

(1) "My boss treats all of the men the same." (impartiality)

(2) "My boss knows that I am not experienced and helps me learn on the job." (consideration)

(3) "My boss knows his job and gives orders and instructions well." (efficiency)

(4) "My boss seems to show an interest in me and in my work. (appreciation)

How the manpower graduates ranked the comments made about foremen and supervisors is presented in Table LI. None of the comments was ranked first within itself. "Efficiency" was ranked second by 43.2 per cent of the graduate trainees and was assigned the final rank of one. "Appreciation" (37.0) and "consideration" (25.9) both received an individual rank of three. "Appreciation" had the greatest observable difference in individual ranking, amounting to approximately 10 per cent between rank three and four. The "consideration" frequency was almost evenly divided between the four ranks. "Appreciation" was given a final rank of two and "consideration" a final rank of three. "Impartiality" was ranked fourth by 35.8 per cent of the graduate trainees. Four trainees marked the question incorrectly and were not included.

The information contained in this chapter has presented: (1) the characteristics of all of the graduate

TABLE LI

RATING OF COMMENTS ABOUT FOREMEN AND SUPERVISORS BY EIGHTY-ONE GRADUATE TRAINEES

Comment reference	Rank and frequency (1)	(2)	(3)	(4)	Total
Impartiality	27 (33.3)	15 (18.6)	10 (12.3)	29 (35.8)	81*
Consideration	20 (24.7)	20 (24.7)	21 (25.9)	20 (24.7)	81
Efficiency	16 (19.8)	35 (43.2)	21 (25.9)	9 (11.1)	81
Appreciation	18 (22.2)	11 (13.6)	30 (37.0)	22 (27.2)	81

*Four graduate trainees marked the question incorrectly and were not included.

NOTE: This table should be read as follows: Twenty-seven, or 33.3 per cent, of the graduate trainees ranked "impartiality" first in importance.

trainees who were referred to manpower training, (2) the opinions of the graduate trainees with respect to the quality of their occupational preparation provided by the manpower training program, (3) the opinions of the graduate trainees toward their present occupations, and (4) the graduate trainees' attitudes toward certain occupational factors.

CHAPTER VI

RESULTS OF THE EMPLOYER'S QUESTIONNAIRE

The results of this study are presented in two chapters. The previous chapter reported selected characteristics of all of the trainees who graduated from training, and the opinions of those graduate trainees who were contacted about their training and the program. This chapter will present the results of the Employer's Questionnaire.

I. OCCUPATIONAL INFORMATION, SKILLS, AND RELATED TECHNICAL KNOWLEDGE

Data will be presented in the same sequence as it appears on the questionnaire, except, for those questions with regard to wages, and payment plans. These questions will be included with occupational information.

Automotive Tune-up

Twelve employers were interviewed who employed fourteen of the graduate tune-up trainees. Seven of the employers were interviewed who employed eight of the graduate tune-up trainees who were employed in their area of training. One graduate trainee was in his own business and could not be interviewed as an employer, but was included as being represented. These trainees represented 78.9 per cent of the

graduate trainees interviewed and 81.8 per cent of the graduate tune-up men employed in the area of training.

Employers interviewed. The seven employers whose interviews were considered to apply to the evaluation of the tune-up program were as follows:

Bancroft Motor Company, Pontiac Dealership, Cedar Falls, Iowa.

Century Service Station, Phillips' 66 Service, Waterloo, Iowa.

Del Williams Lincoln Mercury, Inc., Dealership, Waterloo, Iowa.

Feldman-Evans Pontiac, Inc., Dealership, Waterloo, Iowa.

John Deere Waterloo Tractor Works, Manufacturing, Waterloo, Iowa.

Schukei Chevrolet Company, Dealership, Waterloo, Iowa.

Sun-Ray DX Service Station, DX Service, Cedar Falls, Iowa.

Departmental employees. The number of employees working in the manufacturing and service departments ranged from seven to twenty-two. The mean number of men in each department was 13.2 men, with the median at 10.5.

Job specialization. Jobs were specialized in the five automotive dealerships and in the manufacturing departments. In the dealerships, specialization consisted of tune-up, transmission and drive-line, electrical systems, exhaust

systems, and wheels and suspension. The manufacturing specialization consisted of the inspection of rebuilt engine parts. The two service stations were not specialized, in that employees were responsible for a variety of work activities.

Occupational success. Of the eight trainees represented, 75 per cent, or six graduate trainees, were able to do the work for which they were hired. Two trainees, or 25 per cent, were unable to produce, although one was still employed with the agency. The other was laid off and is included in the survey as the one unemployed graduate tune-up man.

Production efficiency. Employers were asked, "how soon after hiring did the manpower graduate begin to pay his way with the company?" The response showed that three, or 37.5 per cent, began to pay their way within three weeks. Three, or 37.5 per cent, did not begin to pay their way with the company until about two months. Two graduate trainees, or 25 per cent, required more than two months to reach the production standards required by the employers.

Initial production quality. Seventy-five per cent of the tune-up graduates were rated as being "fairly accurate" in the performance of their work during the breaking-in-period. One graduate was considered to be "careful" in

the performance of his work and one graduate was thought to be "very accurate" in production quality.

Positions of leadership. One of the positions of leadership, indicated on the Graduate Trainee Questionnaire, was confirmed by an employer as being the responsibility and managership of the parts department in a new car and service dealership.

Wage scales and payment plans. The hourly rate paid by companies in the automotive or related fields were reported to range from $1.25-$3.28 per hour. The wage range reported by industries outside the area of training was reported to range from $1.50 to $3.00 per hour.

The automotive companies offer a straight hourly rate or the option to work on an hourly rate plus a commission on automotive parts. An additional incentive is the flat-rate, plus commission, which in the Waterloo area is $5.00 per hour. Fifty per cent of the flat-rate is paid to the employee.

The industries outside the area of training pay the straight hourly rate or use the production incentive plans.

Areas of improvement. Four companies, or 50.0 per cent, suggested areas of training in which graduate trainees needed

to improve. The areas which, in the opinion of the employers, need special emphasis were:

Lighting and accessory circuits
Carburetor and fuel systems
Speedometer and instruments
Engine analysis and diagnosis
Making change (money handling)

These items were also indicated by graduate trainees as areas of training that were not covered to their satisfaction.

Job processes. Employers were asked how well manpower graduates understood the processes involved in their work. Fifty per cent of the graduates were reported as being "average," 25 per cent "good," and 25 per cent "very good" in the understanding of the processes involved in their job.

Learning on the job. Employers thought that the manpower graduates were average, or above, in ability to learn on the job. Four graduate trainees or 50.0 per cent were considered "average." One trainee was considered "good," (12.5) and three trainees, or 37.5 per cent, were considered to be "very good" with regard to learning on the job.

Remedial instruction. The employers were asked if graduate trainees had experienced difficulty with reading, writing, or working problems in mathematics. Seventy-five per cent of the trainees were noted to have had no difficulty.

Two trainees experienced difficulty with mathematics.

New equipment or processes. Five companies indicated they had recently installed new tools and equipment. Two companies had incorporated the "Sun 820" oscilloscope, another company had purchased new electrical test equipment, and a service station had purchased a new car washer. A fourth company reported the purchase of new car special tools.

Manpower training experiences. The employers were asked to rate, with regard to the employee's occupational needs, the "technical," "theoretical," and "physical" aspects of tune-up training.

Table LII indicates the employers' rating of the "technical," "theoretical," and "physical" aspects of tune-up training. One hundred per cent of the employers thought that physical and mechanical theory were "very important" in the training of tune-up men. Technical information was considered "very important" (87.5), and shop experience was considered from "important" (62.5) to "very important" (37.5) in tune-up training.

Automotive Body-Repair

Five employers were interviewed who represented eight of the graduate body-repair trainees. Four trainees were

TABLE LII

THE TECHNICAL, THEORETICAL, AND PHYSICAL ASPECTS OF AUTOMOTIVE TUNE-UP TRAINING AS RATED BY EMPLOYERS

Training activity	Fairly important	Important	Very important
Technical information	1 (12.5)		7 (87.5)
Physical and Mechanical theory			8 (100)
Shop experience		5 (62.5)	3 (37.5)

NOTE: This table should be read as follows: One employer, or 12.5 per cent, considered technical information as being "fairly important."

in their own businesses and could not be interviewed as employers, but were included as being represented. Three employer interviews represented five of the graduate trainees who were employed in their area of training, although, one trainee included had recently entered the military service and one quit to go to work with an unidentified fertilizer firm. These trainees represented 75 per cent of the graduate trainees interviewed and 55.5 per cent of the trainees employed in their area of training.

Employers interviewed. The three employers whose interviews were considered to apply to the evaluation of the body-repair program were as follows:

Frank Collard Company, Dodge Sales and Service, Waterloo, Iowa.

Jim Cordes Ford, Inc., Ford Sales and Service, Waterloo, Iowa.

Rasmusson Chevrolet Company, Inc., Chevrolet Sales and Service, Cedar Falls, Iowa.

Departmental employees. The number of employees working in the body-shops ranged from one to twelve. The mean number of men in each department was 5.3 with the median at 3.5.

Job specialization. Jobs were specialized in only one of the three body shops interviewed. Specialization consisted of body and fender straightening, assembly, and

painting. One body-repairman was the only man in his department. The remaining two were involved in all of the areas of body-work.

Occupational success. All of the body-men represented in the employer interviews were reported as being able to do the work for which they were hired.

Production efficiency. Employers were asked, "how soon after hiring did the manpower graduate begin to pay his way with the company?" Two graduate trainees, or 50 per cent, were paying their way within five weeks after they were hired. Two trainees were able to pay their way with the company after two months. One trainee was not fast enough to meet production and was financially unable to remain in the body-trade.

Initial production quality. During the breaking-in-period, 80.0 per cent of the body-repairmen were rated as being "fairly accurate" in the performance of their work. One graduate was considered to be "very accurate" in the performance of his job during the breaking-in-period.

Positions of leadership. One of the positions of leadership, indicated on the Graduate Trainee Questionnaire was confirmed by an employer as being the assistant foreman of a twelve man body-shop.

Wage scales and payment plans. The hourly rate paid by the companies in the automotive body-repair industry were reported to range from $1.60 to $2.50 per hour. The wage range reported by industries outside the area of training was reported to range from $1.96 to $2.55.

One body-repair shop operated on a straight hourly rate. The remaining two operated on the flat-rate, plus commission, which in the Waterloo area is $5.00 per hour. Fifty per cent of the flat-rate is paid to the employee.

The industries outside the areas of training operated on the straight hourly rate or the production incentive plans.

Areas of improvement. Two of the companies suggested areas of training in which graduate trainees needed to improve. The areas which, in the opinion of the employers, need special emphasis were:

Roof damage
Damage estimates
Matching new paint to old

Job processes. Employers were asked how well manpower graduates understood the processes involved in their work. Sixty per cent of the graduates were reported as being "average," 20.0 per cent as being "good," and 20.0 per cent as being "very good" in the understanding of the processes involved in their job.

Learning on the job. Employers thought that manpower

graduates were average or above in ability to learn on the job. Three graduate trainees, or 60.0 per cent, were considered "average." One trainee was considered "good" (20.0), and one trainee was considered "very good" with regard to learning on the job.

Remedial instruction. The employers indicated that, in their opinion, the trainees represented had experienced no difficulty with reading, writing, or working problems in mathematics.

New equipment or processes. One company interviewed indicated they had recently purchased a new tool. The one item was a portable spot-welder.

Manpower training experiences. The employers were asked to rate, with regard to the employees' occupational needs, the "technical," "theoretical," and "physical" aspects of automotive body-repair training.

Table LIII indicates the employers' ratings of the "technical," "theoretical," and "physical" aspects of body-repair training. Both technical information and shop experience were rated from "very important" (66.6) to "important" (33.3) in training body-repairmen. Physical and mechanical theory were rated from "important" (66.6) to "very important" (33.3) in body-repair training.

TABLE LIII

THE EMPLOYERS' RATING OF THE TECHNICAL, THEORETICAL, AND PHYSICAL ASPECTS OF BODY-REPAIR TRAINING

Training activity	Fairly important	Important	Very important
Technical information		1 (33.3)	2 (66.6)
Physical and Mechanical theory		2 (66.6)	1 (33.3)
Shop experience		1 (33.3)	2 (66.6)

NOTE: This table should be read as follows: One employer, or 33.3 per cent, considered technical information as being "fairly important" in body-repair training.

This judgment was similar to that of the graduate trainees. Eighty-seven and five tenths per cent of the graduate trainees rated shop experience as "very important" and 12.5 per cent rated it "important." The graduate's percentage difference in the rating of technical information was nearer to that of the employers with "very important" rated in 56.2 per cent of the cases and "important" rated 43.8 per cent. Graduate trainees were evenly divided in rating the importance of "physical and mechanical theory," where the employers rated it "important" (66.6).

Combination Welding

Fourteen employers were interviewed who employed thirty-seven of the graduate welders. Eleven of the employers were interviewed who employed thirty-three of the combination welders who were employed in their area of training. One graduate trainee was in his own business and could not be interviewed as an employer, but was included as being represented. These thirty-four trainees represented 76.0 per cent of the graduate trainees interviewed and 85.0 per cent of the graduate trainees employed in their area of training.

Employers interviewed. The eleven employers whose interviews were considered to apply to the valuation of the combination welding program were as follows:

Clay Equipment Corporation, Farm equipment

manufacturing, Cedar Falls, Iowa.

Construction Machinery Company, Concrete making equipment, Waterloo, Iowa.

Curbmaster of America, Inc., Paving equipment, Cedar Falls, Iowa.

Engineered Equipment, Inc., Ready-mix concrete plants, Waterloo, Iowa.

John Deere Waterloo Tractor Works, Manufacturing, Waterloo, Iowa.

L. H. Schultz Manufacturing Company, Farm equipment, Waterloo, Iowa.

Universal Incorporated, Front-end loader manufacturing, Hudson, Iowa.

Waterloo Unloader, Division of the Greater Iowa Corporation, Heavy material handling equipment, Waterloo, Iowa.

Wayne Engineering Corporation, Material loading equipment, Cedar Falls, Iowa.

Young Plumbing and Heating Company, Commercial installations, Waterloo, Iowa.

Zeidlers, Incorporated, Concrete pipe manufacturing machinery, Waterloo, Iowa.

Departmental employees. The number of employees working in welding departments ranged from four to seventy-four. The mean number of men in each department was 28.3, with the median at 20.5.

Job specialization. Two companies indicated that jobs in their plants were specialized. In both instances MIG welders were specialized and in one case oxy-acetylene

flame cutting was an area of specialization. The remaining eight companies, or 81.8 per cent, used combination welders in nearly all of their work areas.

Occupational success. Employers were asked if manpower graduates were able to do the work for which they were hired. Four companies indicated that five of the graduate trainees, or 15.2 per cent, were unable to meet the standards set by the company. These people were usually transferred within the company or laid off. Eighty-four and eight-tenths per cent of the graduate welders were successful in their assigned work.

Production efficiency. Employers were asked, "how soon after hiring did the manpower graduate begin to pay his way with the company?" The response showed that six, or 18.2 per cent, began to pay their way within three weeks. Four, or 12.1 per cent, did not begin to pay their way until about two months. Twenty-three, or 69.7 per cent, of the graduate welders required more than two months to reach the production standards set by the employers.

Initial production quality. During the breaking-in-period, 60.6 per cent of the graduate welders were rated as being "fairly accurate" in the performance of their work. The remaining 39.4 per cent were rated as being "very

careful" in production quality.

Positions of leadership. Two of the positions of leadership indicated on the Graduate Trainee Questionnaire were confirmed by two employers as welder leadmen.

Wage scales and payment plans. The hourly rate paid by companies who employed welders was reported to range from $1.70 to $4.25 per hour. The wage range reported by industries outside of the area of training was reported as $1.87 to $3.00 per hour.

Ten of the companies hiring welders paid a straight hourly rate. One company paid on the incentive plan.

Two industries outside the area of training paid on the straight hourly rate and one used the incentive plan.

Areas of improvement. Ten of the companies, representing thirty-two employees, reported areas of training in which graduate trainees needed to improve. The areas which, in the opinion of the employers, need special emphasis were:

Metal Inert Gas welding
Oxy-acetylene flame cutting
Blueprint reading
Production speed
Accuracy
Experience on older welding machines
Practical welding experience
Development of self-confidence

Job processes. Employers were asked how well

manpower graduates understood the processes involved in their work. Sixty-three and six-tenths per cent of the graduate trainees were reported as being average or above in the understanding of the processes involved in their work. Three per cent were considered "very good," 36.3 per cent were considered "good," 54.4 per cent were considered "average," 3.0 per cent were considered "poor," and one trainee, or 3.0 per cent, was considered "very poor."

Learning on the job. When asked how well manpower graduates learned on the job, employers indicated that 18.2 per cent of the graduates learned "very well." Forty-five and five-tenths per cent of the graduates were rated "good," 33.3 per cent were rated "average," and 3.0 per cent were rated poor. It may be noted that 97.0 per cent of the graduate trainees were rated average or above in ability to learn on the job.

Remedial instruction. The employers were asked if welding graduates had experienced difficulty reading, writing, or working problems in mathematics. Three companies, representing 51.5 per cent of the graduates, indicated that mathematics had been noted to have caused some difficulty.

New equipment or processes. Seven companies indicated they had installed new tools and equipment. Six companies had, within the last two years, adopted metal

inert gas welders. One company had incorporated a new stud welder, used to attach a specially designed stud to the flat surface of metal plate.

Manpower training experiences. The employers were asked to rate, with regard to the employee's occupational needs, the "technical," "theoretical," and "physical" aspects of welding training.

Table LIV indicates the employer's rating of the "technical," "theoretical," and "physical" aspects of welding training. Six employers, or 54.5 per cent, considered shop experience as being "very important" in welding training. The rating of physical and mechanical theory was equally divided between "important" and "very important" with 45.4 per cent each. Technical information was rated from "very important" (45.4) to "important" (36.4).

II. OCCUPATIONAL ATTITUDES

Questions fourteen to twenty-seven on the Employer's Questionnaire were designed to determine the status of the graduate trainees' occupational attitudes. The occupational attitudes were essentially the same in the three areas of training, therefore, all of the data secured from the employers, with regard to occupational attitudes, will be presented together.

TABLE LIV

THE TECHNICAL, THEORETICAL, AND PHYSICAL ASPECTS OF COMBINATION WELDING TRAINING AS RATED BY EMPLOYERS

Training activity	Fairly important	Important	Very important
Technical information	2 (18.2)	4 (36.4)	5 (45.4)
Physical and Mechanical theory	1 (9.1)	5 (45.4)	5 (45.4)
Shop experience	2 (18.2)	3 (27.3)	6 (54.5)

NOTE: This table should be read as follows: Two employers, or 18.2 per cent, considered technical information as being "fairly important" in welding training.

The Population Represented

Six companies were visited to represent thirteen trainees who were employed outside the areas of training. These trainees with the forty-six graduates employed in the areas of training make a total of fifty-nine trainees represented in occupational attitudes.

The additional companies interviewed were:

John Gardner, Masonry contractor, Waterloo, Iowa.

Rath Packing Company, Meat packing, Waterloo, Iowa.

Schrein Bedding, Inc., Mattress manufacturing, Waterloo, Iowa.

Titus Metals Corporation, Metal products manufacturing, Waterloo, Iowa.

Waterloo Valve Spring Compressor Company, Metal products manufacturing, Waterloo, Iowa.

Yellow Cab Company, Taxi service, Waterloo, Iowa.

Manpower Graduates' Attitudes

Hazards to safety. Employers were asked if manpower graduates were conscious of hazards to safety. The response showed that 91.5 per cent of the graduate trainees were conscious of hazards to safety. Five trainees, or 8.5 per cent, lacked safety consciousness.

Response to orders and instructions. How manpower graduates respond to taking orders and instructions sented in Table LV. The manpower graduate's respons

TABLE LV

EMPLOYERS' RATING OF FIFTY-NINE MANPOWER GRADUATES' RESPONSES TO TAKING ORDERS AND INSTRUCTIONS

Response	Frequency	Per cent
Very good	12	20.3
Good	18	30.5
Average	27	45.8
Poor	1	1.7
Very Poor	1	1.7
Totals	59	100.0

orders and instructions, was rated average or above in 96.6 per cent of the cases. Twelve of the graduates, or 20.3 per cent were rated "very good," 30.5 per cent were rated "good," 45.8 per cent were rated "average," 1.7 per cent were rated "poor," and 1.7 per cent were rated "very poor" in response to orders and instructions.

Responsibility. The employers were asked how manpower graduates regarded responsibility. Of the fifty-nine graduates represented, 81.3 per cent were rated "passable" or better. In Table LVI is presented the manpower graduates' regard for responsibility. Ten graduates, or 16.9 per cent, were rated "seek it and handle it well," 30.5 per cent were rated "like it," 33.9 per cent were rated "passable," 15.2 per cent were thought to "evade responsibility," and two graduates, or 3.4 per cent, were considered "buck passers" and did not readily respond to accepting responsibility.

Co-workers. The manpower graduates were rated on how readily they were accepted by their co-workers. Fifty-six of the 59 graduates, or 94.9 per cent were favorably accepted by their co-workers. Employers rated 25.4 per cent of the graduates to be "well liked" in their department. Forty-one, or 69.5 per cent of the graduates were rated as getting along "good" with co-workers, 1.7 per cent as "neutral," 1.7 per cent were "tolerated," and one graduate trainee, or

TABLE LVI

GRADUATE TRAINEES' ATTITUDES TOWARD ACCEPTING RESPONSIBILITY AS RATED BY THEIR EMPLOYERS

Response	Frequency	Per cent
Seek it and handle it well	10	16.9
Like it	18	30.5
Passable	20	33.9
Evade responsibility	9	15.2
Buck passers	2	3.5
Totals	59	100.0

1.7 per cent, "did not get along" with his co-workers. The employers' rating of the acceptance of graduate trainees by their co-workers is presented in Table LVII.

Use of time. The employers were asked to rate how efficiently manpower graduates utilized their time. Forty-seven of the graduates, or 79.7 per cent, were considered to be "passable" or above in the efficient use of time. Four graduate trainees, or 6.8 per cent were rated as "very busy" throughout their work day. Forty-two and four-tenths per cent were rated as "busy," 30.5 per cent were rated as "passable," 13.6 per cent were noted to "loaf with others" during the work period, and four trainees, or 6.8 per cent, "wasted time." The employers' rating of the graduate trainees' efficient use of time is presented in Table LVIII.

Care of tools and equipment. In response to how well manpower graduates cared for company tools and equipment, employers' rated 67.8 per cent as being considerate of company property. Eleven graduates, or 18.6 per cent, were rated as being "very careful" with company tools and equipment. Twenty-nine graduates, or 49.2 per cent, were rated "careful," 23.7 per cent were rated "indifferent," 6.8 per cent were rated "careless," and one trainee, or 1.7 per cent was rated "rough" in the handling of company tools and equipment. Reported in Table LIX is the employers' rating of

TABLE LVII

EMPLOYERS' RATING OF THE ACCEPTANCE OF GRADUATE TRAINEES BY THEIR CO-WORKERS

Response	Frequency	Per cent
Well liked	15	25.4
Good	41	69.5
Neutral	1	1.7
They are tolerated	1	1.7
Do not get along	1	1.7
Totals	59	100.0

TABLE LVIII

EMPLOYERS' RATING OF THE GRADUATE TRAINEES' EFFICIENT USE OF TIME

Response	Frequency	Per cent
Very busy	4	6.8
Busy	25	42.4
Passable	18	30.4
Loafs with others	8	13.6
Wastes time	4	6.8
Totals	59	100.0

TABLE LIX

EMPLOYERS' RATING OF THE GRADUATE TRAINEES' CARE OF COMPANY TOOLS AND EQUIPMENT

Response	Frequency	Per cent
Very careful	11	18.6
Careful	29	49.2
Indifferent	14	23.7
Careless	4	6.8
Rough	1	1.7
Totals	59	100.0

the graduates' respect for company tools and equipment.

Company materials. The employers were asked if manpower graduates were considerate of the cost of company materials. Fifty-nine and three-tenths per cent were rated as being satisfactorily considerate of the cost of materials. Four graduates, or 6.8 per cent, were rated "very careful," 52.5 per cent were rated "good," 16.9 per cent were rated "fair," and 23.8 per cent were rated "careless." The manpower graduates' respect for company materials, as rated by their employers is presented in Table LX.

Care of shop workspace. The manpower graduates were rated on how well they kept their workspace. Employers indicated that 45.8 per cent of the graduate trainees kept a "neat and clean" or "very clean" workspace. Reference to Table LXI reports the employers' rating of the manpower graduates with respect to workspace cleanliness. Two graduates, or 3.3 per cent, were considered to keep their workspace "very clean and orderly," 42.4 per cent were rated "keeps space clean," 42.4 per cent were "just passable," 10.2 per cent were "careless," and one trainee, or 1.7 per cent consistently had a "very untidy" workspace.

Personal appearance and cleanliness. The employers were asked to rate manpower graduates in personal appearance

TABLE LX

GRADUATE TRAINEES' RESPECT FOR COMPANY MATERIALS AS RATED BY THEIR EMPLOYERS

Response	Frequency	Per cent
Very careful	4	6.8
Good	31	52.5
Fair	10	16.9
Careless	14	23.8
Totals	59	100.0

TABLE LXI

CLEANLINESS OF THE GRADUATE TRAINEES' WORKSPACE AS REPORTED BY THEIR EMPLOYERS

Response	Frequency	Per cent
Space very clean and orderly	2	3.3
Neat and clean	25	42.4
Just passable	25	42.4
Careless	6	10.2
Very untidy	1	1.7
Totals	59	100.0

and cleanliness. Fifty-nine and three-tenths per cent of the manpower graduates were found to be "neat and clean." In Table LXII are the ratings received by manpower graduates in personal appearance and cleanliness. Three graduates, or 5.1 per cent, were considered "exceptionally pleasing," 54.2 per cent were rated "neat and clean," 37.3 per cent were rated "fair," and two trainees, or 3.4 per cent, were rated "untidy."

Initiative and drive. The employers rated 93.2 per cent of the graduate trainees average or above average in initiative and drive. Ten trainees, or 16.9 per cent, were rated "yes" for initiative and drive, 30.5 per cent had "some," 45.8 per cent were rated "average," 1.7 per cent had a "little," and 5.1 per cent were thought to have "no" initiative and drive. The employers' rating of how manpower graduates exhibit initiative and drive is presented in Table LXIII.

Work and overtime. Employers were asked if manpower graduates had shown a willingness to work in areas other than in their trade. The employers reported that 94.9 per cent of the graduates were willing to work outside their trade.

The employers indicated that 78.0 per cent of the graduates had shown a willingness to work overtime, while 22.0 per

TABLE LXII

EMPLOYERS' RATING OF THE GRADUATE TRAINEES IN PERSONAL APPEARANCE AND CLEANLINESS

Response	Frequency	Per cent
Exceptionally pleasing	3	5.1
Neat and clean	32	54.2
Fair	22	37.3
Untidy	2	3.4
Totals	59	100.0

TABLE LXIII

EMPLOYERS' RATING OF THE GRADUATE TRAINEES IN INITIATIVE AND DRIVE

Response	Frequency	Per cent
Yes	10	16.9
Some	18	30.5
Average	27	45.8
Little	1	1.7
No	3	5.1
Totals	59	100.0

cent were unwilling or reluctant to work overtime. With regard to working on Saturdays, 71.2 per cent of the graduate trainees were willing to work. The remaining 28.8 per cent were unwilling or reluctant to work the extra hours on the weekend.

Attendance. The employers were asked if manpower graduates presented an attendance problem. The employers indicated that 84.7 per cent of the graduates had presented no problem in attendance. Nine trainees, or 15.2 per cent, presented some problems by being late or not reporting for work.

Manpower graduates as employees. When asked how manpower graduates would rate as employees, the employers indicated that, 94.9 per cent of the graduate trainees were average or better. The information in Table LXIV indicates how manpower graduates were rated as employees. Twelve, or 20.3 per cent, of the graduate trainees were rated as "very good" employees. Forty and seven-tenths per cent were rated as "good," 33.9 per cent were rated as "average," 3.4 per cent were rated as "poor," and one trainee, or 1.7 per cent, was rated as "very poor."

The information contained in this chapter has presented the industry's concept of the graduate trainee as an employee. The opinions of the foremen and supervisors have

TABLE LXIV

RATING OF MANPOWER GRADUATES AS EMPLOYEES
AS REPORTED BY THEIR EMPLOYERS

Response	Frequency	Per cent
Very good	12	20.3
Good	24	40.7
Average	20	33.9
Poor	2	3.4
Very poor	1	1.7
Totals	59	100.0

been recorded with respect to the graduate trainees' occupational preparation and his attitudes toward work, his co-workers, and the company.

CHAPTER VII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The information contained in this study was used to draw conclusions concerning: the extent to which the manpower training curriculum met the needs of its graduates, the identification of deficiencies in the program, and the determination of appropriate recommendations for curriculum improvement.

I. SUMMARY

The need for evaluative research in areas of vocational education and training was substantiated by the literature. The review of related research provided valuable insights into several methods and procedures used in program evaluations. The follow-up survey of graduates and employers was adopted for use in this study, and for the most part, personal interviews were used in collecting data.

Criteria for use in the graduate and employer questionnaires were obtained from an analysis of the Manpower Training Program objectives. Criteria consisted of: occupational information, occupational skills and related technical knowledge, and occupational attitudes.

At the time of the study, the Manpower Training

Program had been in operation for two years and had provided training in automotive tune-up, automotive body-repair, and combination welding. The Individual Trainee Termination of Training Form provided the names and addresses of 111 trainees who held certificates of graduation.

The 111 graduate trainees were contacted by letter to establish their post graduate employment records and to make arrangements for personal interviews. Sixty-six personal interviews were conducted and nineteen mailed questionnaires were returned to make a total of eighty-five contacts or 76.6 per cent of the total population.

The ages of the graduate trainees, at the time they were referred to training, ranged from eighteen to fifty-five years. The youngest trainees were enrolled in combination welding. The welders had a mean age of 24.2 years. Body-repairmen were the next oldest with a mean age of 26.1. The oldest trainees were found in the automotive tune-up area which had a mean age of 27.2. The two oldest trainees, fifty and fifty-five were enrolled in automotive tune-up.

The highest level of formal education attained by graduate trainees was in automotive tune-up with a mean grade level of 11.9. Body-repair trainees mean grade level attained was 11.1. The mean grade level achieved by the welding trainees was 10.6. Seventy-four per cent of the graduate tune-up men,

66.7 per cent of the body-repairmen, and 49.2 per cent of the welders had completed the twelfth grade.

The national average of manpower men graduates' employment experiences was, 75.3 per cent in skilled occupations. The overall average for manpower men graduates, in all training areas, was 74.0 per cent. The text did not specifically state that "obtaining a job" was in the area of training, but it was assumed that these figures represented "in training" occupations.[1]

Ninety-seven and seven-tenths per cent of the manpower graduate trainees interviewed were employed in some kind of gainful employment. Sixty of the graduate trainees, or 70.6 per cent, had obtained employment in the area for which they were trained. This is slightly below the national average of 74.0 per cent.

Percentages of graduate trainees employed in the trade for each of the areas of training were reported as, 58.0 per cent in automotive tune-up, 56.2 per cent in automotive body-repair, and 80.0 per cent in combination welding. Combination welding employment exceeds the national average for skilled trades, while both automotive tune-up and body-repair are considerably below the 75.3 per cent.

---

[1] W. Willard Wirtz, Manpower Research and Training, Report by the Secretary of Labor, March 1965 (Washington: Government Printing Office, 1965), p. 39.

The value of the training program to the 90.6 per cent of the graduates who indicated it had helped them obtain initial employment can best be expressed in their own words. During the personal interview the interviewer copied as nearly as possible the comments made by graduate trainees.

Selected comments follow:

> Gives a guy a chance to learn something. Better than going around without a job. I can remember when I was making $50 or $60 a week. I'll never regret manpower training. I've never been out of a job more than three days since I graduated.
>
> If it wasn't for manpower training I wouldn't be where I am today. I couldn't afford to go to school . . . in this day and age you have to have a skill or trade in order to survive.
>
> It was a good program. If I hadn't got in it I'd probably still be out of work. I like the program real well.
>
> If it hadn't been for manpower training I never would have had the opportunity to learn a trade.
>
> If it hadn't been for manpower training I wouldn't have the job I have now. It gave me a better future and a better aim in life. Better wages than I ever had before. I've made a lot of friends.

The instructors, in the opinion of the graduate trainees, were considered "well qualified" in their areas of teaching. Many of the comments during the personal interviews exhibited a high degree of respect, admiration, and, above all, sincere gratitude for what the instructors were doing.

In automotive tune-up, thirteen items were mentioned with regard to areas of instruction that were not covered to the satisfaction of the graduate trainees. Electricity and electrical systems, carburetion, and depth in test equipment operation were pointed out, during the personal interviews, as being especially important.

In automotive body repair eight items were mentioned with regard to areas of training that were not covered to the satisfaction of the graduate trainees. Panel replacement, frame straightening, and late model body straightening were pointed out, during the personal interviews, as being especially important.

In combination welding ten items were mentioned with regard to areas of instruction that were not covered to the satisfaction of the graduate trainees. MIG and TIG welding, and blueprint reading were pointed out, during the personal interviews as being especially important.

Manpower graduates consider their "shop experiences" as being the greatest contribution to occupational success. Ratings were consistently higher than either "technical information" or "physical and mechanical theory."

In the opinion of the writer there is a significant contribution by physical and mechanical theory to the comprehension of technical information and to successful shop experiences. The percentage difference between "technical

information" and "physical and mechanical theory" would indicate this was somewhat recognized by the graduate trainees.

The manpower training shops were rated "very good" to "good" with regard to providing a place to develop safety habits and safety consciousness.

Graduate trainees are, for the most part, satisfied with their status in the world of work. There was a high rate of employment within the population, and those who exhibited a degree of dissatisfaction with their training and trade, it was noted, did so because of numerous individual circumstances.

The Attitudes Section of the Graduate Trainee's Questionnaire was an attempt to determine the degree of concern that graduates had about particular occupational factors that affect their lives, with respect to manpower training, the trade, their job, their employer, and their foreman or supervisor.

Of major concern, or first in importance, were well developed "abilities and skills." "Abilities and skills" were ranked first under both manpower training and jobs. Similar concern was shown for "efficiency" in supervision, "earning power" provided by the trade, and "co-workers" or friendly people to work with in the industry.

Choices of the second most important comments, to the

graduate trainees, were "learning" from experienced tradesmen, "self confidence" in their own work, the "appreciation" shown by supervisors for their labors, the "future" provided in their trade, and "safety" in their work.

The third most important choices were individual "responsibilities" required in the trade as indicated by manpower training, "production standards" required on the job, "earning power" provided by the company, "work satisfaction" in the trade, and "consideration" exhibited by supervisors.

The fourth most important choices to the graduate trainees were, "respect" by the graduate trainee's co-workers acquired through manpower training, "accomplishment" afforded in the trade, the "future" provided by the trade, "impartiality" shown by supervisors, and "advancement" possibilities within the company.

Twenty-six industries were visited in the Waterloo area to represent fifty-nine graduate trainees. Only those employers who had graduates working in their area of training were included in the Occupational Skills and Related Technical Knowledge section of the questionnaire.

Occupational specialization in automotive tune-up, automotive body-repair, and combination welding was not found to be frequent, except in automotive tune-up. Dealerships had tune-up, transmission, and drive line, electrical system, exhaust system, and wheels and suspension system

specialists working in their new car and customer service shops. During the personal interviews it was noted that these positions were filled with experienced mechanics or the better qualified manpower graduates.

Wage scales ranged from the minimum $1.25 per hour in automotive tune-up to a high of $4.25 per hour in combination welding. The straight hourly rate was used most often in welding, while the automotive industries favored the flat-rate and commission schedule.

Employers of automotive tune-up men indicated special emphasis should be provided, during training in electrical systems, carburetor and fuel systems, and engine analysis and diagnosis.

Employers of automotive body-repairmen suggested additional training in roof damage, damage estimates, and matching paint.

Employers of combination welders found graduates needed additional instruction and experience in MIG welding, oxy-acetylene flame cutting, and blue print reading. During the personal interviews, welding employers emphasized the trainees needed more practical welding experience to increase their production speed and accuracy.

New tools and equipment purchased by the industry that were not in the manpower training shops were an automatic car washer, a hand operated spot welder used in

body-repair to secure patches or replace panels, and a stud welder used in the welding area.

The rating of the manpower graduates' occupational attitudes by the employers was considered to be a most important part of the study. Their judgment with respect to all of the graduates represented was used in the evaluation.

How manpower graduates rated with regard to respect for company tools and equipment found 67.8 per cent of the graduates to be "careful" or "very careful," with 23.7 per cent rated "indifferent." Fifty-nine and three tenths per cent were rated "good" or "very careful" with respect for the cost of company materials, while 16.9 per cent were rated fair.

Employers reported that, 59.3 per cent of the graduate trainees were "neat and clean" or "exceptionally pleasing" in personal appearance and cleanliness, with 37.3 per cent rated fair. An additional cleanliness rating was made with respect to the graduate trainee's workspace. Employers indicated that 45.8 per cent of the graduates kept a "neat and clean" or "very clean" workspace, while 42.4 per cent were "just passable."

The graduate trainees efficient use of time, as reported by the employers indicated that 20.4 per cent of the graduates had a tendency to "loaf with others" or "waste time," while 79.7 per cent were considered to be "passable."

It was interesting to note the comparison between the efficient use of time and employers' rating of the graduate's initiative and drive, with 47.4 per cent rated above average. Ninety-four and nine-tenths per cent of the graduates were willing to do work outside their trade, while only 78.0 per cent were willing to work overtime and 71.2 per cent were willing to work on Saturday.

Ninety-one and five-tenths per cent of the graduate trainees were considered to be conscious of hazards to safety.

The employers indicated that 96.6 per cent of the graduates responded well to taking orders and instructions and that 81.3 per cent were passable with respect to accepting responsibility. Eighty-four and seven-tenths per cent of the graduates had presented no attendance problems for employers, however, 15.2 per cent, presented problems.

As employees, 94.9 per cent of the graduates were considered to be average or above average. Twelve, or 20.3 per cent, were rated "very good," 40.7 per cent were rated "good," and 33.9 per cent were rated average.

These percentages would seem to indicate a better than average attitude exhibited by manpower graduates, toward work and employment. However, the writer was particularly concerned with the attitudes toward the efficient use of time and attendance problems.

II. CONCLUSIONS

The Manpower Development and Training Program was in its infancy when the trainees included in this study were in training. Many of the suggestions made by the graduate trainees were initiated following their graduation and prior to this study. These improvements were with respect to the purchase of new tools and equipment, arrangement of facilities, and instructional aids and techniques.

As a result of this study the writer has arrived at the following conclusions:

(1) The Manpower Development and Training Program has improved the economic and personal well being of its graduates.

(2) Unemployed and underemployed persons from ages eighteen to fifty-five have shown a desire to participate in trade training and retraining and 70.6 per cent have proved successful in the industry.

(3) The Manpower Development and Training Program, in providing graduate trainees with basic trade skill and knowledge, was proved beneficial to the industries in the Waterloo, Iowa area.

(4) The combination welding trainees' employment experience in the area of training was shown to exceed the national average, of 75.3 per cent, in the skilled trades by 4.7 per cent.

(5) The automotive tune-up trainees' employment experience in the area of training was below the national average, of 75.3 per cent, in the skilled trades by 17.6 per cent.

(6) The automotive body-repair trainees' employment experience in the area of training was below the national average, of 75.3 per cent, in the skilled trades by 19.1 per cent.

(7) The automotive industry's flat-rate pay schedule makes it difficult for knowledgeable, but inexperienced graduate trainees to meet production standards and thereby realize a living wage.

(8) Combination welding trainees experienced difficulty in meeting production standards in accuracy and speed.

III. RECOMMENDATIONS

The following recommendations, based on the information contained in this study, are considered to be appropriate for the improvement of the Manpower Development and Training curriculum.

(1) Each of the training areas should be evaluated in accordance with the information contained in this study in an attempt to insure the best possible occupational preparation for the manpower graduates.

(2) Higher standards of performance should be required in each of the training areas with respect to accuracy and production speed.

(3) Higher standards of performance should be required in the automotive tune-up training area with respect to physical and mechanical theory and technical information.

(4) The automotive tune-up training area should provide additional training, beyond tune-up, to include at least one engine, transmission, and differential overhaul.

(5) The automotive body-repair training area should provide training in automobile frame straightening and major collision repair.

(6) The combination welding training area should be provided with actual industrial welding practice, similar to the "live" automobiles used in the automotive shops.

(7) Increased emphasis should be placed on the development of the occupational attitudes that are recommended by the industry.

(8) Instructors should present a true appraisal of industrial demands, working conditions, and salaries as they pertain to their respective industries. Periodic visits, by the instructors, with the representatives of the Employment Service, the industry, and visits to industrial facilities are recommended.

(9) Evaluations similar to this study should be made periodically to maintain the Manpower Development and Training Program in accordance with industrial requirements.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. BOOKS

Burrup, Percy E. Modern High School Administration. New York: Harper and Brothers, 1962.

Byram, H. M., and H. C. Wenrich. Vocational Education and Practical Arts in the Community School. New York: The Macmillan Company, 1956.

Conant, James B. The American High School Today. New York: McGraw-Hill Book Company, Inc., 1953.

Douglass, Harl R. Modern Administration of Secondary Schools. Boston: Ginn and Company, 1963.

Giachino, J. W., and Ralph Gallington. Course Construction in Industrial Arts and Vocational Education. Chicago: American Technical Society, 1961.

National Study of Secondary School Evaluation. Evaluative Criteria. Washington: National Study of Secondary School Evaluation, 1960.

Timm, John A. General Chemistry. New York: McGraw-Hill Book Company, 1950.

B. PUBLICATIONS OF THE GOVERNMENT, LEARNED SOCIETIES, AND OTHER ORGANIZATIONS

Automobile Manufacturers Association. Standards for Automotive Instruction in Secondary Schools. Detroit: Automobile Manufacturers Association, Inc., 1965.

The American Vocational Association, Inc. Industrial Arts Policy and Planning Committee. Evaluative Criteria for Industrial Arts Education. Washington: American Vocational Association, Inc., 1961.

Committee on Education and Labor. United States Congress, House. Vocational Education Act of 1963, Hearings. Washington: Government Printing Office, 1963.

Loomis, William F. The Operation of a Local Program of Trade and Industrial Education. United States Department of Health, Education, and Welfare, Vocational Division, Bulletin No. 250, Trade and Industrial Series No. 62. Washington: Government Printing Office, 1953.

National Association of Industrial Teacher Educators. Summaries of Studies in Industrial Education. Dearborn, Michigan: Educational Services, Ford Motor Company, 1953.

United States Congress. "Manpower Development and Training Act of 1962." An Act. Public Law 87-415, 87th Congress, S. 1991, March 15, 1962. Washington: Government Printing Office, 1962.

United States Department of Health, Education, and Welfare, Office of Education. Education For a Changing World of Work, Report of the Panel of Consultants on Vocational Education. Washington: Government Printing Office, 1963.

United States Department of Health, Education, and Welfare, Office of Education. Research in Industrial Education, 1930-1955. Washington: Government Printing Office, 1957.

United States Department of Health, Education, and Welfare, Office of Education. Training Programs Under the Manpower Development and Training Act of 1962. Regulations for the Administration of Part B of Title II, P.L. 87-415, 87th Congress. Washington: Government Printing Office, 1962.

Wirtz, W. Willard. Manpower Research and Training. Report of the Secretary of Labor, March 1965. Washington: Government Printing Office, 1965.

C. PERIODICALS

Mobley, M. D. "Latest Word From Washington," American Vocational Journal, 36:5, December, 1961.

Mobley, M. D. "Manpower: A Serious National Problem," American Vocational Journal, 38:8-10, May, 1963.

Pucel, David and Rupert Evans. "Manpower Economics and Vocational Education," American Vocational Journal, 39:18-22, April, 1964.

Walsh, John P. "Training: The Manpower Utilization Catalyst," American Vocational Journal, 38:12-14, April, 1963.

Willis, Benjamin C. "Vocational Education in the Years Ahead," School Shop, 22:15-16, February, 1963.

Worthington, Robert M. "Action Research: in Vocational Education," American Vocational Journal, 37:18-19, January, 1963.

D. UNPUBLISHED MATERIALS

Barnes, Kenneth W. "Evaluation of Vocational Machine Shop Course at Lansing, Michigan." Unpublished Master's thesis, Colorado Agricultural and Mechanical College, Fort Collin, 1950.

Hermanstorfer, Judith. "A Comparative Analysis of Surveys Taken in Iowa Public Schools in 1952 and 1962 Relative to the Status and Future of Cooperative Work-Experience Programs in Business Occupations." Unpublished Master's thesis, State College of Iowa, Cedar Falls, 1963.

Howell, Alwilda N. "A Follow-up Study of Fifty Selected Individuals Who Terminated Their Education in the Special Education Department of the Waterloo, Iowa, Public Schools." Unpublished Master's thesis, State College of Iowa, Cedar Falls, 1958.

La Foy, Larrie D. "A Follow-up Study of Business Graduates of the Perry, Iowa High School For The Years 1956-1959 as a Basis for Improving The Perry Business Curriculum." Unpublished Master's thesis, State College of Iowa, Cedar Falls, 1961.

Nicholson, Fred Samuel. "An Evaluation of the Training Program of the Henry Ford Trade School, Dearborn, Michigan." Unpublished Master's thesis, Wayne University, Detroit, 1950.

Seidel, John J. "A Plan for Studying Vocational-Industrial and Vocational Technical Education." Unpublished Doctor's thesis, University of Maryland, College Park, 1951.

University of Michigan Institute for Social Research. "Manpower Training Study Trainee Entrance Questionnaire," Form 2-Men. Ann Arbor: University of Michigan Institute for Social Research, Summer 1964. (Mimeographed.)

Wallis, Donald E. "A Follow-up Study of Former Senior High School Students at Belle Plaine, Iowa." Unpublished Master's thesis, State College of Iowa, Cedar Falls, 1960.

APPENDIX A

WATERLOO PUBLIC SCHOOLS
Administration Building · 1516 Washington Street · Waterloo, Iowa 50702

DEPARTMENT OF SPECIAL SERVICES

April 16, 1965

Mr. Boyd Graber
Director of Vocational Education
State Office Building
Des Moines, Iowa

Dear Mr. Graber:

The Independent School District of Waterloo has provided training under the Manpower Development and Training Act since March 4, 1963. During this two year period, 111 trainees have been graduated in Automotive Tune-Up, Automotive Body Repair and Combination Welding.

As Coordinator for the Manpower Development and Training Program, here in Waterloo, I am very much interested in whether the program has provided the kind of training that will best fit the trainee for occupational success. I propose, therefore, to evaluate through a survey of graduates and their employers, the Manpower Development and Training Program conducted by the Independent School District of Waterloo, Iowa. It is hoped that this study may prove valuable in the improvement of the Manpower Program.

The study will also be submitted to the State College of Iowa as a thesis, "An Evaluation of Manpower Development and Training", for partial fulfillment for the degree of Master of Arts in Education.

I have discussed the advisability of such a study with Mr. Paul Phillips, Office Manager of the Waterloo Employment Service and with Mr. William Schuermann, State Consultant in charge of Manpower Development and Training and have received their approval.

I hope that this proposal will meet your approval and that you could advise me as to whether similar studies have been done in Iowa or in other states. I would be very grateful for any recommendations you might make.

Sincerely,

Jean R. Roush

MR. JEAN R. ROUSH
Coordinator, M.D.T.A.

JRR:db

State of Iowa
Department of Public Instruction
STATE OFFICE BUILDING
Des Moines, Iowa 50319

197

PAUL F. JOHNSTON
SUPERINTENDENT

W. T. EDGREN
ASSISTANT SUPERINTENDENT
ADMINISTRATION

DAVID H. BECHTEL
ADMINISTRATIVE ASSISTANT

L. N. JENSEN
ASSISTANT SUPERINTENDENT
INSTRUCTION

April 23, 1965

Mr. Jean R. Roush
Coordinator, MDTA
Administration Building
1516 Washington Street
Waterloo, Iowa

Dear Mr. Roush:

In reply to your letter of April 16.

I am very happy to give my blessing to the study that you plan. Ever since MDTA has been in existence I have asked various people about the results of our training. In most cases they tell me that the placement is about 75%. To me when they say it in that fashion I know that is is a guess. I have also wondered whether our people, after training, really stay very long in the occupation for which they are trained.

I shall be very interested in knowing the results of your study. It should give us some concrete evidence of how well our training program works and whether people really stay in the area of their training.

Sincerely yours,

DIVISION OF VOCATIONAL EDUCATION

B. H. Graeber, Director

BHG:bb

WATERLOO PUBLIC SCHOOLS
Administration Building · 1516 Washington Street · Waterloo, Iowa 50702

DEPARTMENT OF SPECIAL SERVICES

April 16, 1965

Mr. Donald L. Lippold
Director of Industrial and Adult Education
Waterloo Public Schools
Waterloo, Iowa

Dear Mr. Lippold:

The Independent School District of Waterloo has provided training under the Manpower Development Training Act since March 4, 1963. During this two year period, 111 trainees have been graduated in Automotive Tune-Up, Automotive Body Repair and Combination Welding.

As a member of the Waterloo School faculty and Coordinator of the Manpower Development and Training Program, I am very much interested in whether the program has provided the kind of training that will best fit the trainee for occupational success. It is my purpose, therefore, to evaluate through a survey of graduates and their employers, the Manpower Development and Training Program conducted by the Independent School District of Waterloo, Iowa. It is hoped that this study may prove valuable in the improvement of the Manpower Program and provide insights into the philosophy and structure of future industrially oriented vocational training programs.

The study will also be submitted to the State College of Iowa as a thesis, "An Evaluation of Manpower Development and Training", for partial fulfillment for the degree of Master of Arts in Education.

I have discussed the advisability of such a study with Mr. Paul Phillips, Office Manager of the Waterloo Employment Service and with Mr. William Schuermann, State Consultant in charge of Manpower Development and Training and have received their approval.

I hope that this proposal will meet with your approval. I would be very grateful for any recommendations you might make.

Sincerely,

MR. JEAN R. ROUSH
Coordinator, M.D.T.A.

JRR:db

WATERLOO PUBLIC SCHOOLS
Administration Building · 1516 Washington Street · Waterloo, Iowa 50702

ERNEST W. BARKER
Director of Curriculum and Instruction

August 5, 1965

Mr. Jean R. Roush
Coordinator M.D.T.A. Program
Waterloo Public Schools
Waterloo, Iowa

Dear Mr. Roush:

Your request for a followup study to evaluate through a survey of graduates and their employees the manpower training program coordinated by the Independent School District of Waterloo, Iowa is hereby granted.

I would be interested in the evaluation following completion of your study.

I hope that you will find your project to be one of interest and challenge to you.

Sincerely,

Ernest W. Barker

Ernest W. Barker

EWB:b

WATERLOO PUBLIC SCHOOLS

Administration Building · 1516 Washington Street · Waterloo, Iowa 50702

200

DEPARTMENT OF SPECIAL SERVICES

April 12, 1965

Dear

The Independent School District of Waterloo has provided training under the Manpower Development and Training Act since March 4, 1963. In this two year period the program has graduated 111 trainees in Automotive Tune-Up, Automotive Body Repair and Combination Welding.

As Coordinator of Manpower Development and Training here in Waterloo, I am very much interested in whether the program has provided the kind of training that will bring success to the trainee in his field of work. Because you have received the training and have worked in the industry, you can best provide the answer.

Please complete the information on the enclosed page and return it to me as soon as you can. I have enclosed a stamped self-addressed envelope for your convenience.

When I receive your return letter, I will contact you to find out when we can meet to discuss the training program.

Again, I am interested in how you feel about the training you received. Your cooperation in "An Evaluation of Manpower Development and Training" will help the Waterloo Schools provide the best possible training for future Manpower Trainees.

Sincerely,

MR. JEAN R. ROUSH
Coordinator, M.D.T.A

JRR:db
Enc.

AN EVALUATION OF
MANPOWER DEVELOPMENT AND TRAINING

POST GRADUATE EMPLOYMENT INFORMATION

NAME _____

ADDRESS _____ CITY _____

TELEPHONE _____

WHERE HAVE YOU BEEN EMPLOYED SINCE YOU GRADUATED FROM MANPOWER TRAINING?

EMPLOYER & ADDRESS	KIND OF WORK	DATE STARTED	DATE TERMINATED

WHERE ARE YOU EMPLOYED NOW? _____

_____

A note written here will get to your instructor:

APPENDIX B

PROGRAM: MDTA — 1, ARA — 2, Other — 4

TYPE OF ACTIVITY: Instit. — 1, OJT — 2, E&D — 4, Basic Ed. — 8, Pre-Voc. — 16, Other — 32

CHARACTERISTICS OF TRAINEES
Under the MDTA and the ARA

D/L-D/HEW MT-101 (Rev. 7-64)
Form approved.
Budget Bureau No. 44-R1202.1.

203

A. 1. State _____ (Code) 2. L.O. _____ (No.) 3. Project No. _____ Section No. _____

4. Occupation _____ D.O.T. Code _____

5. Name _____ (Last) _____ (First) _____ (Initial) 6. SSA No. _____

7. County of residence _____ _____ (Code)

8. Date of birth: _____ (Mo. and year)

9. Sex: Male — 1, Female — 2

10. Handicapped: Yes — 1, No — 2

11. Prior military status: Veteran —, Peacetime service —, Rejectee —, Other nonvet —, Not known —

12. Marital status: Single — 1, Married — 2, Other — 4

13. Primary wage earner: Yes — 1, No — 2

14. Family status: Head of family or Head of household: Yes — 1, No — 2

15. Number of dependents: — 0, — 1, — 2, — 3, — 4, — 5 and over

B. 1. Highest grade completed:

Code	0	1	2	3	4	5	6	Code	College:	7	8	9
Grade	0	1 2 3 4	5	6 7	8	9 10 11	12	Year		1 2 3	4	4+

2. Primary occupation _____ D.O.T. Code _____

How long worked in *(Months)* _____ When last worked in *(Month and year)* _____

C. 1. Did applicant express willingness to accept job out of area? Yes — 1, No — 2

2. Referral to training or services: Accepted — 1, Refused — 2

3. Enrolled: Yes — 1, No — 2

5. Was reason considered: For good cause — 1, Not for good cause — 2

4. Reason for refusal of referral or failure to enroll:
Obtained employment — 1, Moved from area — 2, Illness (include preg.) — 3, Not interested — 4, Poor location or hours of training —, Insufficient allowance for training —, Not available (in school, Armed Forces) —, No one to look after family —, Reason not known —, Other *(Specify)* _____ —

D. 1. At time training offered, applicant was:
a. Underemployed — 0
35–39 hours per week and less than full time — 1
Less than 35 hours per week — 2
Under skill level — 4
Impending technological layoff — 8
b. Reentrant to labor force — 64
c. Unemployed — 16
Weeks unemployed: Less than 5 — 1, 5–14 — 2, 15–26 — 3, 27–52 — 4, Over 52 — 5
d. Farm worker — 32

2. Years of gainful employment: Under 2 — 0, 2 — 1, 3–9 — 2, 10 or more — 3

3. Unemployment insurance status: Claimant — 1, Nonclaimant — 2

4. Public assistance status: Recipient — 1, Nonrecipient — 2

5. As defined for reimbursement of training costs, applicant is: Unemployed — 1, Other — 2

6. Last regular employment:
a. Occupation _____ D.O.T. Code _____
b. Industry _____ S.I.C. _____
c. Straight-time average hourly earnings $_____

E. Eligible for allowance *(Not applicable for ARA)*:
1. Regular training: Yes — 1, Augmented — 3, No — 2
2. Youth training: Yes — 1, No — 2
3. Subsistence-transportation: Yes — 1, No — 2

F. For youth:
1. What was the most important reason for your leaving school? *(Check only one)*
Graduated from 12th grade — 0
Illness — 1
Had to support self — 2
Had to support family — 3
Preferred work to school — 4
Because of low marks in school — 5
Had to work on family farm or in family business — 6
Trouble with teachers or school authorities — 7
Marriage or pregnancy — 8
Other — 9
(Specify) _____

2. Living with parents (either own or spouse's)? Yes — 1, No — 2

3. Highest grade of regular school father ever completed?

Code	0	1	2	3	4	5	6	Code	College:	7	8	9
Grade	0	1 2 3 4	5	6 7	8	9 10 11	12	Year		1 2 3	4	4+

(Data Processing Office Copy)

U. S. GOVERNMENT PRINTING OFFICE: 1964-0-746-371

-24(E

. ☐ 1 Instit. ☐ 1
☐ 2 OJT ☐ 2
☐ 3 Other ☐ 3

INDIVIDUAL TRAINEE TERMINATION OF TRAINING

DL/DHEW—MT-102
Bud. Bur. No. 44-R12
Expires: 9/30/63

204

. Name: _____ 3. SSA No. _____
(Last) (First) (Initial)

Date of Birth _____
(Month) (Day) (Year)

. Address _____
(Number and Street) (City) (Zone) (State)

. State _____ 5. Date section began _____ 7. No. days attended _____
(Name and Code)

!. Project No. _____ 6. Date trainee terminoted _____ 8. No. days absent _____

i. Section No. _____

. Occupation for which training conducted _____ D.O.T. Code _____
(D.O.T. Title)

Nature of Termination:

. Completed training ☐ 0

2. Did not complete training:

a. Involuntary termination
- For poor attendance ☐ 1
- For lack of progress ☐ 2
- Other (Specify) _____ ☐ 4

b. Voluntary termination
- For training—related job ☐
- For nontraining—related job ☐
- Other (Specify) _____ ☐

Background information concerning termination (*Do not complete if item C–1 is checked*): _____

or the training facility: Date _____

This is to certify that the circumstances of termination for the trainee to whom this report refers hove been determined to be:

or good cause ☐ 1. not for good cause ☐ 2.

Name (*Signature*) _____

(*Typed or printed*) _____

Title (*Instructor or supervisor*) _____

Facility Name _____

Address _____
(Number and Street) (City) (Zone) (State)

USED ONLY WHERE GOOD CAUSE IS NOT SHOWN

or agency or organization responsible for training: Date _____

I have reviewed the circumstances surrounding the termination of the trainee to which this report refers and have found them to ccurately described.

Name (*Signature*) _____

(*Typed or printed*) _____

Title (*Agency head*) _____

Agency Name _____

204a

TRAINING RECORD

ccupation for which training was given _____

structor's name _____ Dates: Began _____ Ended _____

UNITS OF TRAINING	HOURS	RATING	UNITS OF TRAINING	HOURS	RATING

ease evaluate each of personal traits listed below by checking the appropriate block.

NDUSTRY, ENERGY. Energy is application to school duties day by day.	Usually indifferent	Sometimes lazy.	Average in industriousness.	Hard worker; willing to do more than assigned.	Exceptionally diligent, ea to do more than assigned.
RELATIONS WITH OTHERS. Helpfulness and cooperativeness with associates and superiors in manner and act.	Surly, troublesome indifferent.	Sometimes difficult to work with.	Usually tactful and obliging; self-control	Always congeniol and cooperative.	Highly cooperative; inspi cooperation.
EMOTIONAL STABILITY. Ability to control emotions.	Loses his heod easily.	Apathetic; unresponsive.	Usually well controlled	Bolance of responsiveness and control.	Notable and unusual cont of emotions.
LEADERSHIP. Ability to get others to cooperate.	Unable to lead.	Not usually a leader.	Sometimes displays leadership.	Leads well under most circumstances.	Displays marked ability to m things go.
APPEARANCE. Such factors as cleanness of clothing and person including care of hair, teeth, nails, etc.	Untidy carelessly dressed.	Clean, but careless of appearance and grooming.	Average in grooming and dress.	Neat dress well groomed.	Outstanding in taste and co
ABILITY TO LEARN. Ease in learning new methods, adapting to new situations, tasks.	Unable to learn.	Learns slowly.	Average rate of adaptation.	Above average in capacity.	Outstonding in mental abi and olertness.
DEPENDABILITY. Faithfully carries out assignments. Bears full share of esponsibility.	Needs constant watching.	Sometimes unreliable.	Responsible but needs some directions.	Very dependable; needs no discipline.	Thoroughly dependable, tr worthy.
PUNCTUALITY.	Always tardy.	Seldom on time.	On time but needs some prodding.	On time most of the time.	Always on time.

STRUCTOR'S COMMENT.

GRADING [illegible]

= Superior

= Average

= Needs Improv.

APPENDIX C

AN EVALUATION OF MANPOWER TRAINING IN WATERLOO, IOWA

Graduate Trainee Interview Guide-Sheet

INSTRUCTIONS: The questions on these pages will give you a chance to tell how you feel about your Manpower Training. All of the questions are concerned with your experiences during your training and after your graduation. Your answers, along with the answers of all the other graduate trainees, will help strengthen the Manpower Program in Waterloo.
THIS FORM IS STRICTLY CONFIDENTIAL. Please answer the questions as completely as you can.

DEFINITIONS OF TERMS USED IN THIS GUIDE-SHEET:

Technical Information. "Technical information" means the kind of information you need to have to do a job. It means that you can figure out what has to be done, that you know what tools and equipment will be needed, and that you know how to go ahead and do the job.

Theory. "Theory" means the physical science principles that are involved in the explanation of why things act or operate as they do.

LIST OF UNITS OF INSTRUCTION PROVIDED IN THE MANPOWER

TRAINING COURSE IN:

AUTOMOTIVE BODY-REPAIR

A. Introduction to automotive body and fender repair
B. Fundamentals of metalworking
C. Oxy-acetylene and arc welding
D. Body soldering
E. Frame straightening and repair
F. Major body repair
G. Automotive glass service
H. Hardware and repair service
I. Station wagon body service and repair
J. Hydro-electric system service
K. Painting and refinishing
L. Shop Management

GRADUATE TRAINEE QUESTIONNAIRE

1. What is your present job? _____

2. Is your present job in your area of training?
   NO ____ YES ____ IF NO, PLEASE CHECK THE REASONS:
   INTRAINING JOB NOT AVAILABLE ____ HEALTH REASONS ____
   LACKED SKILL QUALIFICATIONS ____ SALARY . . . . ____
   LACKED JOB EXPERIENCE . . . ____ OTHER _____

3. Have you changed jobs since you graduated from Manpower Training?
   NO ____ YES ____ IF YES, PLEASE CHECK THE REASONS:
   LAY OFF . . . . . ____ BETTER SALARY ____
   WORKING CONDITIONS . ____ "LET GO" . . ____
   LACKED JOB EXPERIENCE ____ OTHER _____

4. Did the training you received in the Manpower Training Program help you get your first job?
   NO ____ YES ____

5. How soon after graduation did you get your first job? (check the time)
   IMMEDIATELY ____ 2 WEEKS . . . . . ____
   1 WEEK . . ____ MORE THAN 2 WEEKS ____

6. How did you get your first job?
   STATE EMPLOYMENT SERVICE ____ YOURSELF ____
   PRIVATE EMPLOYMENT SERVICE ____ FRIEND ____
   NEWSPAPER . . . . . ____ OTHER _____

7. Have you held a position of leadership in your department?
   NO ____ YES ____ IF YES, WHICH ONE OF THE FOLLOWING:
   LEADMAN . . . . . ____ ASSISTANT SERVICE MANAGER ____
   ASSISTANT FOREMAN ____ SERVICE MANAGER OR MANAGER____
   FOREMAN . . . . . ____ HAVE MY OWN BUSINESS . . ____
   OTHER _____

8. Have you attended any special training schools since you graduated from Manpower Training? (welding school, tune-up school, front end alignment school)
   NO ____ YES ____ IF YES, WHAT SCHOOL, WHAT AREA, AND HOW LONG? _____

9. If it had not been for the Manpower Development and Training Act would you have been able to pay for trade training?
   NO ____ YES ____

10. Did you consider your shop training instructor as being:
    WELL QUALIFIED . . . ____
    FAIRLY WELL QUALIFIED ____
    NOT WELL QUALIFIED ____

11. In what area do you think your shop training instructor was BEST qualified? (please check only one)
    CLASSROOM INSTRUCTION ____
    SHOP INSTRUCTION . . ____
    TECHNICAL INFORMATION ____
    JOB EXPERIENCE . . . ____

12. How would you rate shop training instructor qualifications? (rate each one of the qualifications)

	Fairly Important	Important	Very Important
CLASSROOM INSTRUCTION . . .			
SHOP INSTRUCTION			
TECHNICAL INFORMATION . . .			
JOB EXPERIENCE			

13. Do you think your shop training instructor gave you enough individual help during your training?
    NO ____ YES ____ IF NO, CAN YOU GIVE A REASON? _____
    _____

14. Was the information that was covered in the classroom, generally used right away in the shop work?
    NO ____ YES ____ IF NO, WHY? _____

15. Do you think the shop training instructors and supervisors gave you a true picture of what the industry would be like?
    NO ____ YES ____ IF NO, WHY? _____

16. How would you rate the following things in the Manpower Training shop?

	Very Poor	Poor	Average	Good	Very Good
SHOP SPACE					
WORK AREAS					
STORAGE					
TOOLS AND EQUIPMENT . .					
CLASSROOM.					
VENTILATION					

17. Was there some area of your work that was not included in your training? (look at the List of Units of Instruction)
NO ____ YES ____ IF YES, WHAT? _____

18. Was there some area of your training that you have not used in your work? (look at the List of Units of Instruction)
NO ____ YES ____ IF YES, WHAT? _____

19. Were there areas of your training that WERE NOT covered to your satisfaction? (look at the List of Units of Instruction)
NO ____ YES ____ IF YES, WHICH? _____

20. Do you think that more instruction in Reading, Writing, or Mathematics would have been helpful to you?
NO ____ YES ____ IF YES, WHICH ONES? _____

21. How would you rate each of the following parts of your training? (rate each part)

	Fairly Important	Important	Very Important
TECHNICAL INFORMATION			
PHYSICAL AND MECHANICAL THEORY			
SHOP EXPERIENCE			

22. Were you satisfied with the training you received in the Manpower Training Program?
NO ____ YES ____

23. Are you satisfied with the trade you have chosen?
NO ____ YES ____

24. Are there new tools and equipment in the "field" that were not in the Manpower Training shop?
NO ____ YES ____ IF YES, WHICH KINDS? _____

25. Have you found it difficult to adjust to old or to different kinds of tools and equipment from those used in the Manpower Training shop?
NO ____ YES ____ IF YES, WHICH ONES? _____

26. Have you had to do any tool or equipment maintenance in your work?
NO ____ YES ____ IF YES, WHAT KINDS? _____

27. What unsafe conditions have you found in your occupation that WERE NOT considered in the Manpower Training Shop:

_____

_____

28. How would you rate the Manpower Training shop for providing a place to develop good safety habits and safety consciousness?
VERY GOOD ____ GOOD ____ AVERAGE ____ POOR ____ VERY POOR ____

29. Are you satisfied with your present job?
NO ____ YES ____

30. Are you satisfied with the company where you are now working?
NO ____ YES ____

31. Are you satisfied with your present boss? (foreman or supervisor)
NO ____ YES ____

32. Here is a list of things that have been said about Manpower Training. Read each comment and if it does not tell how you feel about the training, write what you think about the comment in the space provided.

Number the comments 1, 2, 3, and 4 in the order that you think they were most important to you. (your choice of the most important comment should be marked number 1)

____ MANPOWER TRAINING HELPED ME DEVELOP MY OWN ABILITIES AND SKILLS. _____

_____

____ MANPOWER TRAINING GAVE ME MORE CONFIDENCE IN MY OWN WORK. _____

_____

____ MANPOWER TRAINING HELPED ME TO GAIN THE RESPECT OF THE PEOPLE I WORK WITH. _____

_____

____ MANPOWER TRAINING SHOWED ME WHAT WOULD BE EXPECTED OF ME ON THE JOB. _____

_____

33. Here is a list of things that have been said about jobs. Read each comment and if it does not tell how you

feel about your job, write what you think about the comment in the space provided.

Number the comments 1, 2, 3, and 4 in the order that you think they are most important to you. (your choice of the most important comment should be marked number 1)

____ THIS TRADE GIVES ME A CHANCE TO DO SOMETHING WELL.

____ THERE IS A GOOD FUTURE IN THIS TRADE.

____ I REALLY LIKE TO WORK IN THIS TRADE.

____ THIS TRADE WILL HELP ME MAKE A LIVING FOR MYSELF/AND MY FAMILY.

34. Here is a list of things that have been said about jobs. Read each comment and if it does not tell how you feel about your job, write what you think about the comment in the space provided.

Number the comments 1, 2, 3, and 4 in the order that you think they are most important to you. (your choice of the most important comment should be marked number 1)

____ THIS JOB GIVES ME A CHANCE TO DEVELOP MY ABILITIES AND SKILLS.

____ THIS JOB GIVES ME A CHANCE TO COMPARE MY WORK WITH THE WORK OF EXPERIENCED MEN IN THE TRADE.

____ THIS JOB GIVES ME A CHANCE TO LEARN FROM MEN WHO HAVE HAD EXPERIENCE IN THE TRADE.

____ THIS JOB IS ONLY A STEP ON THE WAY TO A BETTER JOB.

35. Here is a list of things that have been said about employers or companies. Read each comment and if it does not tell how you feel about your employer or company, write what you think about the comment in the space provided.

Number each comment 1, 2, 3, and 4 in the order that

you think they are most important to you. (your choice of the most important comment should be marked number 1)

____ THIS COMPANY IS A FAIRLY SAFE PLACE TO WORK. _____

____ THERE IS A GOOD CHANCE FOR ADVANCING IN THIS COMPANY.

____ THIS COMPANY HAS FRIENDLY PEOPLE TO WORK WITH. _____

____ THIS COMPANY PAYS A GOOD WAGE. _____

36. Here is a list of things that have been said about foreman and supervisors. Read each comment and if it does not tell how you feel about your foreman or supervisor, write what you think about the comment in the space provided.

Number the comments 1, 2, 3, and 4 in the order that you think they are most important to you. (your choice of the most important comment should be marked number 1)

____ MY BOSS TREATS ALL OF THE MEN THE SAME. _____

____ MY BOSS KNOWS I AM NOT EXPERIENCED AND HELPS ME TO LEARN ON THE JOB. _____

____ MY BOSS KNOWS HIS JOB AND GIVES ORDERS AND INSTRUCTIONS WELL. _____

____ MY BOSS SEEMS TO SHOW AN INTEREST IN ME AND IN MY WORK.

37. What is your average weekly wage? (gross) _____

38. How many hours do you work overtime each week? _____HOURS
SATURDAYS? NO ____ YES ____

PLEASE FEEL FREE TO MAKE ANY OTHER COMMENTS ON YOUR MANPOWER TRAINING PROGRAM. IF YOU NEED MORE SPACE WRITE ON THE BACK OF THIS SHEET. THANK YOU VERY MUCH FOR YOUR TIME.

AN EVALUATION OF MANPOWER TRAINING IN WATERLOO, IOWA

Employer Interview Guide-Sheet

INSTRUCTIONS: The success of any employee is measured by how well he is able to fulfill the occupational needs of his employer. With this in mind we, of the Manpower Development and Training Program in Waterloo, Iowa, are very interested in what you think of our Manpower Graduates. Your answers to the questions on these pages, along with the answers of other employers, will help strengthen the Manpower Program in Waterloo. THIS FORM IS STRICTLY CONFIDENTIAL. Please answer the questions as completely as you can.

DEFINITIONS OF TERMS USED IN THIS GUIDE-SHEET:

Technical Information. "Technical information" means the kind of information the employee should know in order to do a job. It means that he can determine what needs to be done, that he knows what equipment and materials will be needed, and that he knows how to proceed with the job.

Theory. "Theory" means the physical science principles that are involved in the explanation of why things act or operate as they do.

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

LIST OF UNITS OF INSTRUCTION PROVIDED IN THE MANPOWER TRAINING COURSE IN:

COMBINATION WELDING

A. Arc welding (4 positions)
B. Metal Inert Gas welding (MIG)

C. Oxy-acetylene flame cutting
D. Oxy-acetylene gas welding
E. Blue print reading and technical information
F. Inspection and weld testing
G. Shop mathematics
H. Metallurgy

EMPLOYER
QUESTIONNAIRE

NAME OF COMPANY _____
YOUR POSITION WITH THE COMPANY _____

1. In what line of work is your department?
   SERVICE _____ MANUFACTURING _____

2. How many employees are there in your department? _____

3. Are jobs specialized in your department? (carburetor specialist, electrical system specialist, body straightening, painter, arc weldor, MIG weldor, TIG weldor)
   NO ____ YES ____ IF YES, HOW? _____

4. Have you found Manpower Graduates able to do the work for which they were hired?
   NO ____ YES ____ HOW MANY COULD NOT? _____

5. How soon after hiring does the Manpower Graduate begin to pay his way with the company?
   3 WEEKS ____ 5 WEEKS ____ 2 MONTHS ____ MORE THAN 2 MONTHS ___

6. During the "breaking in period" how do Manpower Graduates perform in the production of their work?
   MAKE MANY ERRORS ____ ARE CAREFUL . . . ____
   ARE CARELESS . . . ____ ARE VERY ACCURATE ____
   ARE FAIRLY ACCURATE ____

7. Have Manpower Graduates held positions of leadership in your department?
   NO ____ YES ____ IF YES, PLEASE CHECK THE FOLLOWING:
   LEADMAN . . . ____ ASSISTANT SERVICE MANAGER ____
   ASSISTANT FOREMAN ____ SERVICE MANAGER . . . . . ____
   FOREMAN . . . . ____ OTHER _____

8. Are there areas in the trade where Manpower Graduates need to improve their skill or knowledge?
   NO ____ YES ____ IF YES, WHICH AREAS? _____
   _____

9. Do Manpower Graduates show an understanding of the processes involved in their job? (diagnosis, repair, layout, set-up, or construction)
   VERY GOOD ___ GOOD ___ AVERAGE ___ POOR ___ VERY POOR ___

10. How do Manpower Graduates learn on the job?
    VERY GOOD ___ GOOD ___ AVERAGE ___ POOR ___ VERY POOR ___

11. Have you found Manpower Graduates who had difficulty reading, writing, or working problems in mathematics?
NO ____ YES ____ IF YES, WHICH? _____

12. Have you installed any new types of equipment or processes within the last two years?
NO ____ YES ____ IF YES, WHAT? _____
_____

13. How important do you think each of the following are to the employee in the performance of his job?

	Fairly Important	Important	Very Important
TECHNICAL INFORMATION			
PHYSICAL AND MECHANICAL THEORY			
SHOP EXPERIENCE			

14. Are Manpower Graduates conscious of hazards to safety?
NO ____ YES ____

15. How do Manpower Graduates respond to taking orders and instructions?
VERY GOOD ___ GOOD ___ AVERAGE ___ POOR ___ VERY POOR ___

16. How do Manpower Graduates regard responsibility?
BUCK PASSERS . . . ____ LIKE IT ____
EVADE RESPONSIBILITY ____ SEEK IT AND HANDLE IT
PASSABLE . . . . . ____ WELL . . . . . ___

17. How do Manpower Graduates get along with their co-workers?
DO NOT GET ALONG ____ GOOD . . . ____
THEY ARE TOLERATED ____ WELL LIKED ____
Neutral . . . . . ____

18. How efficiently do Manpower Graduates use their time?
WASTE TIME . . . ____ BUSY . . ____
LOAFS WITH OTHERS ____ VERY BUSY ____
PASSABLE . . . . ____

19. How do Manpower Graduates use and care for company tools and equipment?
ROUGH . . . ____ CAREFUL . . ____
CARELESS ____ VERY CAREFUL ____
INDIFFERENT ____

20. How do Manpower Graduates respect company materials?
WASTEFUL ____ GOOD . . . ____
CARELESS ____ VERY CAREFUL ____
FAIR ____

21. How do Manpower Graduates keep their workspace?
    VERY UNTIDY ____ KEEPS SPACE CLEAN ____
    CARELESS . . ____ SPACE VERY CLEAN AND
    JUST PASSABLE ____ ORDERLY . . . . . ____

22. How do Manpower Graduates rate in personal appearance and cleanliness?
    MESSY AND DIRTY ____ NEAT AND CLEAN . . . . ____
    UNTIDY . . . . ____ EXCEPTIONALLY PLEASING ____
    FAIR . . . . . ____

23. Do Manpower Graduates show initiative and drive?
    YES ____ SOME ____ AVERAGE ____ LITTLE ____ NO ____

24. Have Manpower Graduates shown a willingness to work in areas other than in their trade?
    NO ____ YES ____

25. Do Manpower Graduates show a willingness to work overtime, if given the opportunity?
    NO ____ YES ____ SATURDAYS? NO ____ YES ____

26. Do Manpower Graduates present an attendance problem?
    NO ____ YES ____ IF YES, PLEASE COMMENT. _____
    _____

27. How would you rate Manpower Graduates as employees?
    VERY GOOD ____ GOOD ____ AVERAGE ____ POOR ____ VERY POOR ___

28. What is the hourly wage range in your department?
    FROM _____ TO _____

29. On what payment plan does your department operate?
    HOURLY RATE . . . . . ____
    HOURLY RATE PLUS COMMISSION ____
    INCENTIVE . . . . . ____
    INCENTIVE PLUS COMMISSION ____
    FLAT-RATE . . . . . ____

PLEASE FEEL FREE TO MAKE ANY ADDITIONAL COMMENTS THAT YOU MAY HAVE ABOUT MANPOWER GRADUATES OR THE MANPOWER TRAINING PROGRAM.

THANK YOU VERY MUCH FOR YOUR TIME.