

THE SELECTION AND INSTRUCTION OF  
PUBLIC SCHOOL CUSTODIANS IN  
SELECTED SCHOOL SYSTEMS

Thesis for the Degree of Ed. D.  
MICHIGAN STATE COLLEGE

Julius E. Barbour

1954



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This is to certify that the

thesis entitled

**Selection and Instruction of School  
Custodians in Selective School Systems**

presented by

**Julius E. Barbour**

has been accepted towards fulfillment  
of the requirements for

Doctoral degree in Education

*Clyde M. Campbell*

Major professor

Date July 30, 1954

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THE SELECTION AND INSTRUCTION OF PUBLIC  
SCHOOL CUSTODIANS IN SELECTED SCHOOL SYSTEMS

by

Julius E. <sup>ERVIN</sup> Barbour

A THESIS

Submitted to the School of Graduate Studies at Michigan  
State College of Agriculture and Applied Science  
in partial fulfillment of the requirements  
for the degree of

DOCTOR OF EDUCATION

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## ACKNOWLEDGEMENTS

The writer is deeply indebted to those individuals who by their inspiration, assistance, cooperation, and guidance, made this study possible. He is especially indebted to Professor Clyde M. Campbell, Head of the Department of Educational Administration and Supervision, School of Education, Michigan State College, for constant encouragement and helpful criticism so generously given.

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J. E. B.

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Julius E. Earbour  
candidate for the degree of  
Doctor of Education

Final examinations: July 30, 1954, 10:00 A.M.  
117 Morrill Hall

Dissertation: Selection and Instruction of School  
Custodians in Selected Michigan Schools

#### Outline of Studies

Major Subject: School Administration (Education)  
Minor Subjects: Vocational Education (Education)  
Curriculum and Supervision (Education)  
Sociology

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ployees; and Adult Education Association of America.



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THE SELECTION AND INSTRUCTION OF PUBLIC  
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by

Julius E. Barbour

AN ABSTRACT

Submitted to the School of Graduate Studies at Michigan  
State College of Agriculture and Applied Science  
in partial fulfillment of the requirements  
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DOCTOR OF EDUCATION

School of Education

Year 1954

Approved Clyde M. Campbell \_\_\_\_\_

The Problem

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SELECTION AND INSTRUCTION OF  
PUBLIC SCHOOL CUSTODIANS IN  
SELECTED SCHOOL DISTRICTS

An Abstract

The Problem. This study was concerned with the discovery of methods and criteria used in the selection of school custodians and of the methods and curricula used in the instruction of school custodians by selected Michigan school systems. Recommendations were formulated for the improvement of such selection and instruction on the basis of analysis of experience in other states.

Methods, Techniques, and Data. The questionnaire-interview method was employed as the technique most appropriate for the problem. Questionnaires were discussed with school administrators and custodians during the first quarter of 1954. Data were collected relative to characteristics desired in custodians; information received prior to employment of custodians; methods used in employing and instructing custodians; and work experiences concerning which instruction was given to custodians.

James E. Barbour

Conclusions

These major findings

1. The school system's ability for the property as well as grounds.

2. Criteria custodians have been of the United States Michigan school custodians.

3. The information following action for the action use in the procedure been a procedure school systems.

4. The agreement was the school system

5. Employment period of workately one half

Conclusions. Results of the survey revealed these major findings:

1. The school custodianship includes responsibility for the maintenance and upkeep of school property as well as for the cleaning of buildings and grounds.

2. Criteria of characteristics of desirable custodians have been established in many communities of the United States and these have been followed in some Michigan school systems in the selection of custodians.

3. The interview with the prospective custodian following his submission of a written application for the accumulation of additional information to use in the process of selection of custodians has been a procedure which has been used in most Michigan school systems.

4. The employment of custodians by verbal agreement was the method used in seventy per cent of the school systems of Michigan.

5. Employment of custodians began with a 30-60 day period of work on a probationary status in approximately one half of the school systems of Michigan.



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6. Employment of custodians was recorded in the minutes of the meetings of the boards of education of most Michigan school systems.

7. Federal state and local agencies were asked by few Michigan school systems to refer to schools applicants for custodial work.

8. No one of the Michigan school systems included in the survey employed custodians from a list of candidates compiled by a civil service commission.

9. Less than one fourth of the school systems studied attempted to discover whether those applying for custodial work possessed licenses for boiler operation.

10. Nearly all of the Michigan school administrators had individual conferences with custodians for the instruction of these workers but many school systems needed to revise their methods of using printed material for instruction of custodians.

11. Manuals of custodial work practices were compiled by committees of custodians as a learning experience in few Michigan school systems.

12. Very few Michigan school systems were found to have any custodians enrolled in correspondence course work concerning building maintenance or operation.

James E. Barbour

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Recommendations

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13. School systems of Michigan gave custodians instruction in seven phases of their work: public building cleaning, heating and ventilating, safety, public relations, floor care, building repair, and care of grounds.

Recommendations. Based upon the findings of this study, the following recommendations were made:

1. Investigation should be made of the effectiveness of various methods of instruction of custodians.

2. The application blanks now used by Michigan public schools ask for unused information.

3. A study is needed of the relationship between physical condition of and work accomplished by custodians.

4. The effect of possession by custodians of a written contract should be investigated.

5. The relationship of method of selection to efficiency of work done by school custodians should be studied.

6. Further study of methods of teaching custodians to utilize new products, new equipment and new methods of work should be made.

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TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS . . . . .	ii
LIST OF TABLES . . . . .	vi
CHAPTER	
I. INTRODUCTION . . . . .	1
Statement of the Problem . . . . .	1
Pertinency of the Problem . . . . .	1
Scope of the Problem . . . . .	4
Procedures . . . . .	4
The Questionnaire . . . . .	5
The Sample . . . . .	6
Data Secured . . . . .	8
Treatment of Data . . . . .	10
II. HISTORICAL DEVELOPMENT OF THE SCHOOL	
CUSTODIANSHIP . . . . .	13
The Public School Custodian's Responsibility for Educational Facilitation . . . . .	16
Responsibilities of Custodians in Public Relations . . . . .	20
The Custodian's Responsibility for Safety	27
III. THE SELECTION OF SCHOOL CUSTODIANS	32
Qualifications of Capable Custodians . . . . .	32
Procurement of Applicants for Custodial Work . . . . .	41
The Application Blank for Custodianship	44
Employment Practices Used in Hiring Custodians . . . . .	48

IV. SECTION 4  
S. 101-102  
AND 103-104

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CHAPTER	PAGE
IV. SELECTION AND EMPLOYMENT PRACTICES USED BY SELECTED MICHIGAN SCHOOL SYSTEMS IN EMPLOYING CUSTODIANS . . . . .	52
Qualifications Based upon Which Custodians were Chosen . . . . .	52
Employment Practices Utilized by Selected Schools in Michigan in Employing Custodians . . . . .	59
Items of Information Obtained about Applicants for Custodial Work by Selected Michigan School Systems . . . . .	69
Items of Information Concerning the Health of Applicants for Custodial Work Obtained by Selected Michigan Schools . . . . .	77
V. THE INSTRUCTION OF CUSTODIANS	82
The Beginnings of Custodial Instruction	82
Values to be Gained by Custodial Instruction . . . . .	90
Qualifications of Instructors of Custodians	95
Methods of Instruction . . . . .	96
The Course of Study for Custodians . . . . .	100
Instruction in Safety Precautions . . . . .	106
Instruction in Public Relations . . . . .	113
Instruction in Heating and Ventilating	115
Instruction in Floor Care . . . . .	125
Instruction in Care of Grounds . . . . .	129
Instruction in General Building Repairs	132



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INDEX

CHAPTER	PAGE
VI. INSTRUCTION OF SCHOOL CUSTODIANS IN 616 SCHOOL SYSTEMS IN MICHIGAN . . . . .	135
Methods of Instruction . . . . .	135
Items of Instruction for Custodial Work	144
Instruction of Custodians in Public Relation Duties . . . . .	144
Instruction of Custodians in General Building Cleaning . . . . .	149
Instruction of Custodians in Floor Care	155
Instruction of Custodians Concerning Heating and Ventilating School Buildings	161
Instruction of Custodians Concerning Safety	165
Instruction of Custodians in Care of Grounds . . . . .	179
Instruction of Custodians in General Building Repairs . . . . .	183
VII. CONCLUSIONS AND RECOMMENDATIONS	189
Conclusions . . . . .	189
Recommendations . . . . .	197
BIBLIOGRAPHY . . . . .	203
APPENDIX . . . . .	210

- I. Michigan S  
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Classifi  
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LIST OF TABLES

TABLE	PAGE
I. Michigan School Systems Included in Study of Selection and Instruction of Custodians Classified According to Number of Teaching Positions in 1953-4 School Year . . .	8
II. Selected Schools in Michigan Using Certain Characteristics as Criteria in Selection of Custodians . . . . .	53
III. Employment Practices Utilized by Selected School Systems of Michigan in Employing Custodians . . . . .	60
IV. Items of Information Concerning Applicants for Custodial Work Obtained by Selected Michigan Schools . . . . .	71
V. Items of Information Concerning the Health of Applicants for Custodial Work Obtained by Selected Michigan Schools . . .	78
VI. Seventeen Lectures Given All Custodians of Oakland (California) During the 1917-18 School Year . . . . .	85
VII. Type, Number, and Years of Experience of Custodial Training Programs in Which State Vocational Education Departments Partici- pated . . . . .	91

111

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TABLE	PAGE
VIII. Time Required to Clean Windows at Michigan State College . . . . .	126
IX. Time Required to Clean Chalkboards at Michigan State College . . . . .	127
X. Number of Selected Schools in Michigan Which Used Certain Methods of Instruction of Custodians . . . . .	136
XI. Number of Selected Schools in Michigan Which Instructed Custodians Concerning Selected Aspects of Public Relations . . . . .	146
XII. Number of Selected Schools in Michigan in Which Instruction Was Given Custodians Concerning General Building Cleaning . . . . .	150
XIII. Number of Selected Schools in Michigan Which Instructed Custodians in Care of Floors . . . . .	156
XIV. Number of Selected Schools in Michigan Which Instructed Custodians Concerning Heating and Ventilating . . . . .	162
XV. Number of Selected Michigan Schools Which Gave Custodians Instruction in Safety . . . . .	167
XVI. Number of Selected Schools of Michigan Which Gave Custodians Instruction in Care of Grounds.	

TABLE	PAGE
XVII. Number of Selected Michigan Schools Which Gave Custodians Instruction Concerning General Building Repairs . . . .	185

Statement of the

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CHAPTER I  
INTRODUCTION

Statement of the Problem

The problem studied has been how to select and instruct public school custodians.

Pertinency of the Problem

A need existed for study of this problem. School administrators and/or their delegated representatives recommended for employment about five hundred school custodians per year in Michigan. Due to increased school building construction, this number had increased to more than eight hundred during the past year. More than three hundred new school buildings or building additions were opened for occupancy in Michigan during 1953. Some of the larger of these buildings necessitated the employment of as many as six full-time custodial workers.

The problem of selection and instruction of custodians was as country-wide a problem as public education of which it was a part. New school buildings or additions to buildings have been erected throughout the nation. Custodial work had to be performed in these buildings. Custodians have resigned and/or been dismissed from school service in all sections of the nation. Decisions have had to be made concerning the qualifications

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of custodians, information to be obtained from applicants, procedures to be used in employment, and instruction to be given custodial workers.

School maintenance involved large scale cleaning and heating operations which had not been experienced previously by most custodial applicants.

Authentic information was available for the formulation of proposals for solution of the problem. Experimental research by authorities in the field of building maintenance and operation has led to the formulation of standards for use in the selection and instruction of custodians.

The writer had a contribution to make toward the solution of the problem. The writer has been in a unique position with regard to his opportunity for study of the problem. He has been a school custodian, church custodian, plant maintenance employee, public school teacher and public school administrator. Since 1946 he has spent some time with custodians and/or administrative officials in each school system in Michigan having a designated "Superintendent of Schools". He has assisted in the formulation and evaluation of plans for selection and instruction of public school custodians in more than three hundred school districts. He has served on state and national committees for the study



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of the problem.

Michigan State College has exercised leadership in the study of the problem. For the past twenty years Michigan State College has operated conferences for school custodians. Records of the proceedings have been mimeographed and used in school systems of the nation. Custodians from more than three hundred school systems enrolled in the 1955 conference at which more than seventy lectures on and demonstrations of building maintenance techniques were given.

Since 1946, a course of study of ten units of instruction in building maintenance and operation has been offered by the college in each of the eighty-three counties of the state. More than eight hundred of these classes have been conducted with about two thousand enrollees.

The findings of this study should prove to be of value to all public school administrators of the United States. School custodians have resigned or been dismissed in all states of the nation. Their successors have had to be selected and instructed in their duties. Michigan State College has exercised leadership in this field. The writer has had experience in assisting school systems with the solution of the problems of selection and in-



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### Scope of the Problem

In Michigan more than 5,000 custodians work more than 225,000 man-hours per week cleaning, operating, and maintaining public school educational plants. The selection of these custodians has been studied to discover the information obtained from applicants for custodial work, the characteristics sought in applicants, the methods of recruitment of candidates used, and the employment practices utilized.

The instruction of custodians was studied by tabulation of the methods of instruction used, a discussion with school administrators of their judgements of the effectiveness of the various methods, and a tabulation of the work operations done by custodians in which instruction was given.

A survey of the literature was completed to discover the recommendations of leaders in the field of building maintenance and operation concerning the selection and instruction of school custodians.

### Procedures

A survey of the literature as well as interviews with leaders in the field of building maintenance and operation in the United States and Canada was summarized in a series of recommendations for selection and instruc-



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tion of school custodians. Administrators and/or their designated assistants in one hundred Michigan school systems were interviewed and the proposals for employment and instruction of custodians discussed. The questionnaire was completed by the school administrator indicating the ones of the recommended practices which each administrator's school system utilized. Additional suggested practices were noted at the bottom of the page of each questionnaire.

#### The Questionnaire

Investigation was made by interview of school administrative staff of the current practices in selection and instruction of custodians. The questionnaire was formulated to find out the following:

1. The information solicited from candidates for custodial work.
2. The lists of characteristics based upon which custodians were hired.
3. The employment practices utilized in employing custodians.
4. Methods used in instruction of custodians.
5. Items of instruction given school custodians.
6. The value of the questionnaire to school administrators as an aid in planning for the selection and

instruction of custodians.

### The Sample

One hundred school systems of the six hundred three having a designated superintendent of schools were included in the study.

School systems having more than one hundred ninety teachers were known to employ both an assistant superintendent of schools and a superintendent of buildings and grounds, each of whom had some responsibilities in the selection of custodians. The names of these twenty-eight large school systems were printed on cards and placed in a box. Then twenty names of schools were drawn to be included in the sample.

School systems having more than ninety teachers but less than one hundred ninety-one teachers were known to employ an assistant superintendent of schools or a superintendent of buildings and grounds who had some responsibilities for the selection of and planning the instruction of custodians. The names of the forty-three school systems of that size were printed on cards and placed in a box. Twenty names of schools of this size were drawn to be included in the sample.

School systems having more than twenty-four but less than ninety-one teachers were known to employ a superin-

tendent of buildings and grounds who had some responsibility for the selection of and planning the instruction of custodians. The names of these two hundred forty-five school districts were printed on similar cards, the cards placed in a box, and the names of thirty school systems were drawn to be included in the sample.

School systems employing less than twenty-five but more than seven teachers were known to employ no assistant superintendent of schools nor superintendent of buildings and grounds. The responsibility for selection and planning for instruction of the custodians of these small school districts was that of the superintendent of schools. The names of those two hundred ninety school systems were written on cards, the cards placed in a box and thirty **names** of school systems drawn to complete the sample.

Four types of school systems were included in the study. Two of the five special act school districts were included. Forty-seven of the school systems included were rural agricultural schools. Forty-two school systems were graded school districts and five were township unit schools.

One hundred school systems<sup>1</sup> in the following fifty-

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<sup>1</sup>See Table 1

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TABLE I

MICHIGAN SCHOOL SYSTEMS INCLUDED IN STUDY OF SELECTION  
AND INSTRUCTION OF CUSTODIANS CLASSIFIED ACCORDING  
TO NUMBER OF TEACHING POSITIONS  
IN 1953-4 SCHOOL YEAR

NUMBER OF TEACHERS EMPLOYED			
7 - 24	25 - 90	91 - 190	191 +
Akron	Alma	Albion	Ann Arbor
Alpena Twp.	Bad Axe	Allen Park	Battle Creek
Anasa	Beaverton	Battle Creek-	Bay City
Au Gres	Belding	Lakeview	Berkley
Bellaire	Bellevue	Cadillac	Birmingham
Benzonia	Berrien	Escanaba	Dearborn
Bergland	Springs	Holland	Ferndale
Brimley	Bridgeport	Ironwood	Flint
Essexville	Brighton	Marquette	Grosse Pointe
Farwell	Fremont	Mt. Clemens	Hazel Park
Fennville	Grand Blanc	Nuskegon	Highland Park
Fowlerville	Grand Ledge	Heights	Jackson
Gobles	Grandville	Owosso	Kalamazoo
Grayling	Hancock	Plymouth	Pontiac
Hanover-	Kingsford	Redford	Port Huron
Horton	Lake Orion	Union	Royal Oak
Harrisville	Marshall	Rochester	Waterford Twp.
Hesperia	Marysville	Roseville	Wayne
Lake City	Munising	St. Ste. Marie	Wyandotte
Lake Linden	Petoskey	Taylor Center	N = 20
Martin	Pittsford	Traverse City	
Mesick	Reed City	Van Dyke	
Nuskegon-	St. Ignace	Willow Run	
Johlman	South Lyons	N = 20	
Niles-	Sparta		
Howard	Standish		
Onsted	Stanton		
Onaway	Stephenson		
Powers-	Three Oaks		
Spaulding	Vicksburg		
Ravenna	Wakefield		
Rose City	N = 30		
Williamston			
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eight of the eighty-three counties of Michigan were included in the sample: Alcona, Alger, Allegan, Antrim, Arenac, Barry, Bay, Benzie, Berrien, Calhoun, Cass, Charlevoix, Clare, Chippewa, Crawford, Delta, Dickenson, Eaton, Emmett, Genesee, Gladwin, Gogebic, Grand Traverse, Gratiot, Hillsdale, Houghton, Huron, Ingham, Ionia, Iron, Jackson, Kalamazoo, Kent, Lenawee, Livingston, Mackinaw, Macomb, Marquette, Menominee, Missaukee, Montcalm, Muskegon, Newago, Oakland, Ogemaw, Ontonagon, Osceola, Ottawa, Presque Isle, Saginaw, Shiawassee, St. Clair, Tuscola, Van Buren, Washtenaw, Wayne, and Wexford.

The sample included school systems located in the four geographic regions of Michigan distributed as follows: fourteen of the schools were in the upper peninsula of Michigan; twenty of the schools were located in the northern half of the lower peninsula; and the remaining sixty-six school systems were located in the more populous southern half of the lower peninsula.

#### Data Secured

1. The information obtained by each school system from applicants for custodial work.
2. The characteristics of custodians used as employment criteria.
3. The practices and policies utilized in employing custodians.

4. The methods of instruction used with custodians.

5. The work operations in which custodians were given instruction.

6. The value of the questionnaire to the administrator in planning for selection and instruction of custodians.

#### Treatment of Data

Questionnaires were placed in four groups: those from schools employing seven to twenty-four teachers; those from schools employing from twenty-five to ninety teachers; those from schools employing from ninety-one to one hundred ninety teachers; and those from schools employing more than one hundred ninety teachers.

The first groups contained thirty questionnaires each and the second two groups (cited above) contained twenty questionnaires. Ten questionnaires were selected at random, three each from the two piles of thirty questionnaires and two each from the piles of twenty questionnaires. A brief note was attached to a blank questionnaire and one was mailed to the administrator of each of the ten school systems selected at random, asking if he would fill out and return the copy of the questionnaire at his earliest convenience.

All ten questionnaires were returned within two weeks. The responses given in the interview were com-





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pared with those given in the questionnaire returned by mail. Comparison of the total of responses given by administrators in the interview with those obtained in the mailed questionnaire revealed an average variation of 2.6 per cent for the ten questionnaires. The mailed copies were laid aside and all tabulations made from the questionnaires filled out in the interviews.

Frequency tables indicating the number of school systems of varying size, i. e., those employing seven to twenty-four teachers, twenty-five to ninety teachers, and more than one hundred ninety teachers, using certain characteristics as a criteria in selection of custodians; the number of school systems utilizing certain employment practices in dealing with custodians; the number of school systems obtaining selected items of information concerning applicants for custodial work; the number of schools obtaining selected items of information concerning the health of applicants for custodial work; number of schools using certain methods of instruction of custodians; and number of schools giving instruction to custodians in these aspects of custodial work: public relations, general building cleaning, care of floors, heating and ventilating, safety, care of grounds, and general building repairs.

Comparisons were made and reported concerning the frequency distribution tables.

HISTORICAL DEVELOPMENT

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<sup>2</sup> Letter of  
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## CHAPTER II

### HISTORICAL DEVELOPMENT OF THE SCHOOL CUSTODIANSHIP

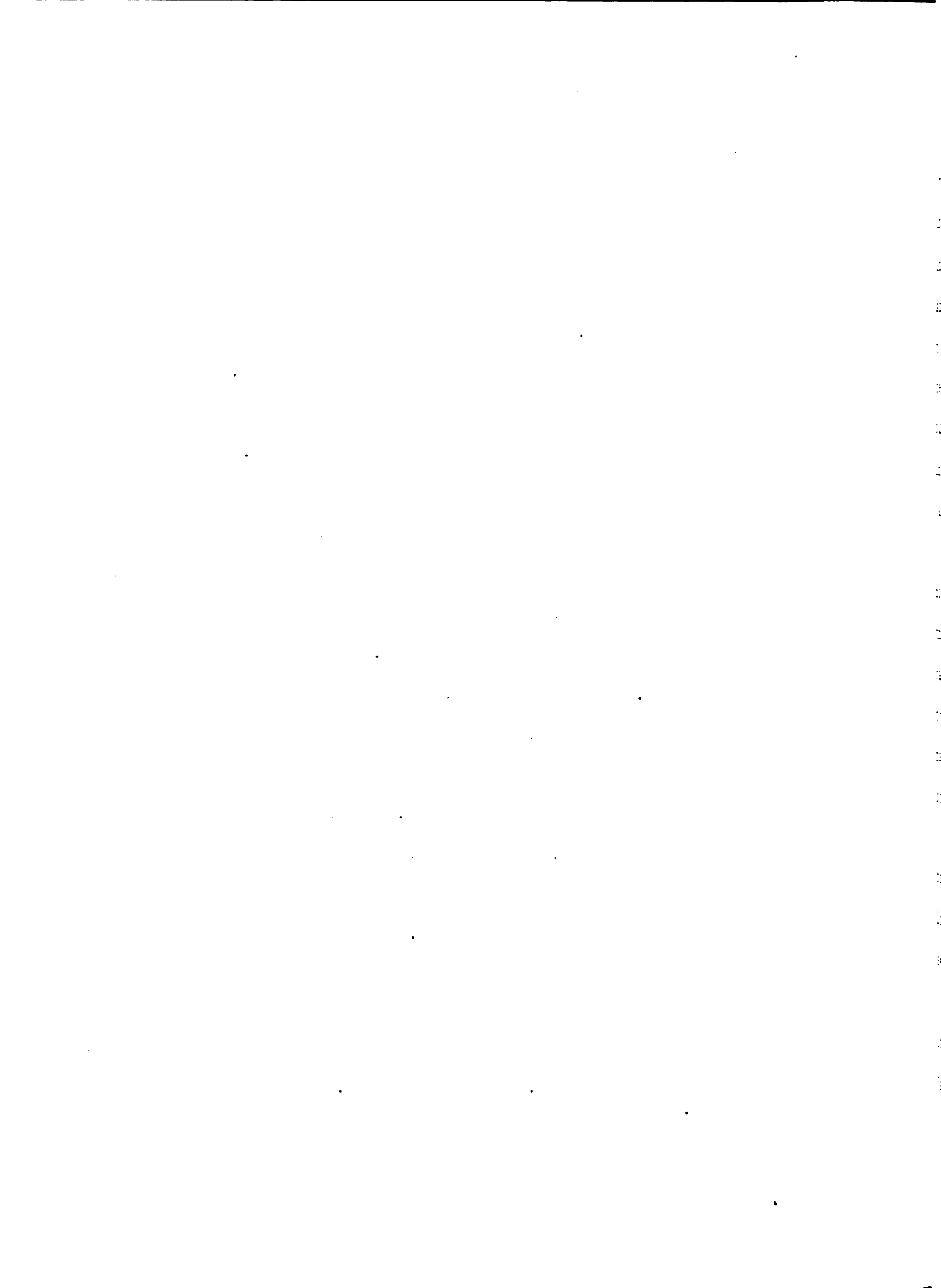
Janitors in churches and schools during the early nineteenth century in United States kept the buildings warm through tending stoves. They were assisted in cleaning the building by townspeople in a "building cleaning bee." In schools they were employed to visit the school a few times each day to see that the building was being heated.

By the beginning of the twentieth century, school systems employing "superintendents of schools" were beginning to employ janitors who would open the building in the morning, keep the building heated, and do some sweeping and dusting during the months school was in session.

In 1903 Dr. Julius Barbour, trustee of the Washington Township School at Bristol, Indiana, wrote<sup>2</sup> his sister-in-law stating that he had been designated by the board of trustees to hire a janitor for the coming year. This man was to be employed "to sweep, dust, keep fires, and be available each hour school was in session to help by general painting and repair of the building and furniture." Barbour had a scar on his arm which he received when at 14 years of age he had

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<sup>2</sup>Letter of Julius E. Barbour to Mrs. Fannie Revell, July 10, 1903.



been the janitor of the school which his mother conducted in the basement of the Baptist church in Romeo, Michigan, in 1860. In his letter he stated that he "questioned the advisability of employment of older school children around the hot stoves of one room school buildings." He stated he was "convinced that the building of these new school buildings with their furnaces in the basement for heating an entire building calls for the services of an adult janitor."

Barbour hired the janitor and made out the written contract in his office which was then signed by the janitor and the other board members. By 1906 this board of education had agreed that its functions in the hiring of teachers and the school janitor should be a consideration of the applicants' names and credentials submitted by the superintendent of schools.

In 1915 Harry A. Barbour had left a joint medical practice with his father at Bristol, Indiana and was practicing medicine at Beaverton, Michigan and was serving his second term as board of education member.

In this Gladwin (Michigan) county school system he observed high school boys working part time to do the janitorial work. In the next board of education meeting

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following his re-election<sup>3</sup> he moved that the superintendent be requested to submit the name of an adult to be employed as a "full time janitor to tend the furnace and clean the building during the months school is in session".

By 1920 Garber<sup>4</sup> had completed a dissertation in which he investigated all the duties commonly required of school janitors. He recommended that custodians be employed to work for a calendar year rather than a school year. He contended that the school grounds should be cared for during the summer months rather than be allowed to grow up "knee high in weeds which are cut by the mowing machine the day or week before school opens".

By 1925 Charles E. Reeves<sup>5</sup> had completed a dissertation, An Analysis of Janitorial Services in Elementary Schools, in which he cited the work operations done by school janitors and suggested practices he had observed which lead to more economic operation of the school plant.

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<sup>3</sup>Board of Education, Beaverton, Michigan. Minutes of meeting on August 10, 1915.

<sup>4</sup>J. A. Garber, The School Janitor, (unpublished Doctoral dissertation, George Washington University, Washington, 1920), p. 205.

<sup>5</sup>Charles E. Reeves, An Analysis of Janitorial Services in Elementary Schools (unpublished Doctoral dissertation, Teachers College, Columbia University, New York, 1925), p. 60.

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During the next four years educators began to refer to the workers performing janitorial duties as school custodians. In 1929 a suggested instructional program<sup>6</sup> was formulated on the campus of Michigan State College by a committee of custodians from fifteen school systems of Michigan.

H. M. Schwartz<sup>7</sup> had completed in 1926 a study stressing the need for development of effective techniques in maintenance of schools.

Rogers<sup>8</sup> followed the trend of referring to building maintenance workers as custodians when he wrote:

The public school custodianship may be defined in terms of areas of responsibility; for educational facilitation, for public relations, and for health and safety.

The Public School Custodian's Responsibility for Educational Facilitation

The custodian of the public school was declared to be more than a sweeper or furnace tender. It was observed

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<sup>6</sup>Charles Bradley and others, A Suggested Training Program for Public School Custodians (Lansing: State Board of Control for Vocational Education, 1929) pp. 28.

<sup>7</sup>H. M. Schwartz, Improvement in Maintenance of Public School Buildings (New York: Teachers College, Columbia University, 1926) pp. 23-4.

<sup>8</sup>James F. Rogers, The School Custodian. Bulletin #2, United States Office of Education (Washington: United States Government Printing Office, 1936), p. 63.

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that the custodian had a part to play in providing a setting in which education takes place. His responsibility for environmental conditions was commented upon by Linn<sup>9</sup> in 1948:

Teachers and pupils are influenced by their environment. They unquestionably do better work in clean, attractive, and comfortable rooms than they can do in dirty, stuffy areas that are too cold or too warm. To the extent that he can provide more appropriate conditions, the custodian is aiding in the teaching and learning processes.

Linn was not the first to point out these responsibilities for providing a clean public school building for, following his study of school systems in Nebraska, Viles<sup>10</sup> had concluded:

New and improved school building facilities will not render the services for which they were intended if the men employed for building service fail in their duties.....He (the custodian) is the caretaker, the engineer, and the person having direct responsibility for the comfort of the occupants of the building.

Norman Wolfe<sup>11</sup> reported that school custodians were observed at work by school pupils who were in the

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<sup>9</sup>Henry H. Linn, Leslie C. Halm and K. P. Grabarkiewicz, The School Custodian's Housekeeping Handbook (New York: Bureau of Publications, Teachers College, Columbia University, 1948), p. 8.

<sup>10</sup>Nelson E. Viles, The Custodian at Work (Lincoln: The University Publishing Company, 1941), p. 9.

<sup>11</sup>Norman A. Wolfe, "Annual Report of the Assistant Superintendent of Schools at Birmingham, Michigan," December, 1948. p. 10.

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process of forming work habits of their own. He expressed concern that these custodians should use efficient, effective methods of work.

The impression these men make on the student body is very important. It is our hope that students will not acquire habits that are undesirable from custodians in the building.

Children were believed by Nodland<sup>12</sup> to learn by example as well as precept. His study of Sioux City (Iowa) custodians led him to conclude:

The school custodian also helps children in the formation of proper habits and attitudes. Children react to their environment. If their surroundings are kept clean, attractive and orderly, we have found they (children) will take greater pride in their school....The example set by a school custodian in maintaining a clean and attractive environment has been proven more effective than hours of classroom discussion of the subject.

In 1949 Clifford<sup>13</sup> pointed out that the concept of the school custodianship had grown to include a responsibility for provisions of conditions favorable to effective teaching:

All school personnel, whether teachers, custodians, supervisors or clerks justify their employment on the basis of contribution to instruction of children  
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<sup>12</sup>Arthur Nodland, "A Pat on the Back," Janitorial Training, XI (October, 1947), 30.

<sup>13</sup>Jack M. Clifford, "Must Custodians Be Old Men?" American School Board Journal, CXIX (September, 1949), 27.





the teacher cannot function alone.....Thus the efficiency with which the school operates depends upon the efficiency of the non-teaching personnel .....The best teacher is certain to be handicapped if he must work in a poorly maintained building.

Harold Hynds<sup>14</sup> reviewed twenty years of experience as head custodian of the New York City school system when he stated in 1943:

The work entrusted to you (custodians) is important. The health, as well as the comfort, of teachers and pupils depends somewhat on how well you do your work.....Your life among children is important. You, as well as the teachers, will leave your influence upon boys and girls.

The custodianship was further related to the work of the teacher by Covert<sup>15</sup> when he reported:

The custodian is an important factor in the success of the school program. He is more than a caretaker and janitor; his efficiency can make pleasant or ruin a whole day of school for the teaching staff and pupils.

Hopper<sup>16</sup> tabulated and counted more than two hundred work operations performed by a custodian in a Kansas school. His investigations also convinced him of

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<sup>14</sup>Harold D. Hynds, "The Importance of School Building Service Work," American School Board Journal, CXII (October, 1943), 38.

<sup>15</sup>James C. Covert, "Pontiac (Michigan) Schools Custodial Policy," School Management, XIX (October, 1949), 12.

<sup>16</sup>W. O. Hopper, "Custodial Efficiency." Janitorial Training, XIII (May, 1950), 34.

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the multiplicity of opportunities the custodian had to be a public relations agent for the educational program and school administration.

Responsibilities of Custodians in Public Relations

Brainard<sup>17</sup> indicated in his study of Nebraska custodians that community workers gain information concerning what is going on "at the school" from the custodian as often as they do from teachers, while Viles<sup>18</sup> added that the custodian is often asked about education at his lodge meetings, card parties, and informal gatherings. Linn<sup>19</sup> stressed that custodians (particularly those in grade schools) need to know how to meet the needs of the children enrolled in their buildings. He indicated that these needs included listening to children's statements of problems they face as well as interpreting the school to adults.

Everett Graham<sup>20</sup> stated his (a custodian's) attitude toward children when he stated:

I have found in twenty years of working in school buildings at night as a custodian that young people

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<sup>17</sup>Alanson Brainard, Handbook for School Custodians (Lincoln: University of Nebraska Press, 1948), pp. 3-7.

<sup>18</sup>Viles, op. cit., p. 21.

<sup>19</sup>Linn, op. cit., p. 6.

<sup>20</sup>Everett B. Graham, "Twenty Years of Night Work," Janitorial Training, XIV (October, 1950), 32.

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Myers<sup>21</sup> recognized that custodians must deal with children and adults with different habits, dispositions, social backgrounds, and religious points of view.

The custodian who is tolerant of others, who uses good common sense, and who understands what is expected of him as a public employee should be able to avoid many misunderstandings that might lead to unpleasantness.....He must treat school visitors with respect.....must merit confidence because of reliability, dependability, faithfulness, honesty and good conduct.

There will be times when thoughtless children -- and grownups too -- are unreasonable in their actions and requests or even rude or unkind.....At such times by controlling his temper, the custodian must learn to "keep quiet and take it" to avoid further misunderstandings.

Nichols,<sup>22</sup> in his study of Ohio custodians in 1953, found that they were usually a native of the school district in which they were employed. He found them to have a labyrinth of contacts socially and politically.

As a participant representing education, the

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<sup>21</sup>Joe M. Myers, "Public Relations for Custodians," Janitorial Training, XIV (March, 1951), 12.

<sup>22</sup>Harold LeRoy Nichols, A Custodial Training Program for the State of Ohio. (unpublished Doctoral dissertation. The Ohio State University, Columbus, 1953), p. 42.

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custodian, he concluded, needed to know the present philosophy of education to be able to interpret that which he saw going on in classrooms. Nichols stated that the custodian was one of the first persons who needed to be convinced of the need for having a bond issue approved for needed school plant expansion.

Nichols added to the concept of the school custodianship a statement of need for instruction of custodians in the public relations aspect of his (the custodian's) work.

It is not only outside the school building that the custodian comes in contact with the public. Nodland<sup>23</sup> has indicated that the community use of school buildings brings people into the school properties at times other than during school hours. He points out that the custodian makes or loses friends for education among these adults;

The school custodian is a public relations agent. Visitors to a building often judge the schools by what meets the eye. If everything is neat, orderly, and clean, a favorable impression is made before these visitors reach classrooms or offices.

If the building is dirty, unkept and unattractive, the visitor often assumes that classroom instruction is done somewhat slovenly and ineffectively.

In other words, the school custodian is in a key spot to sell educational services to the community

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<sup>23</sup>Nodland, op. cit., p. 30.

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Harold Hynds<sup>24</sup> pointed out that these custodial workers must have a sense of self-reliance. He cited many occasions in which the custodian will be the only employee of the board of education in the building when adults use the building and developed the idea that the custodianship includes the duty of "hosting" when visitors come to his building.

#### The Custodian's Responsibility for Health

A century ago, the pupil who worked part-time in keeping the fire in the stove going in the school room was not thought of as having any responsibility for the health of his fellow students.

Through the years there has been developed a concept that the custodian does cleaning for health reasons as well as for those of cleanliness. Viles<sup>25</sup> brought this point out in his study and Brainard<sup>26</sup> added the idea that children are required to attend public school; that these children are entitled to sanitary surroundings; and that the custodianship is one of the agencies responsible for

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<sup>24</sup>Hynds, op. cit., p. 28

<sup>25</sup>Viles, op. cit., pp. 4-6.

<sup>26</sup>Brainard, op. cit., p. 2.

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this sanitation. Lamb<sup>27</sup> emphasized the need for custodians to know of the germ theory of disease and Linn<sup>28</sup> stressed his (the custodian's) responsibility for maintaining clean air filters through which air is passed in school ventilating systems.

Chipman<sup>29</sup> stated in 1946 that children are entitled to use toilet facilities which have been sanitarily maintained by school custodians. His conception of the school custodianship included a building maintenance employee instructed in and practicing those sanitary procedures necessary for the prevention of the spread of disease germs.

Nichols<sup>30</sup> reported in his study of Ohio school systems that he found boards of education, school administrators, teachers and custodians themselves agreeing that the school custodianship included responsibility for knowledge of and use of sanitary procedures by the school custodian in safeguarding the health of those using public

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<sup>27</sup>Alfred Lamb, "A Training Program for School Custodians," School Business Affairs, XIV (April, 1948), 1, 6, 7.

<sup>28</sup>Linn, op. cit., p. 2.

<sup>29</sup>Gordon P. Chipman, "What True Custodianship Means," Nations Schools, XXXIX (September, 1946), 44, 46.

<sup>30</sup>Nichols, op. cit., pp. 43-6.

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He reported that the custodian who covers odors in toilets with deodorants rather than relying upon cleaning methods is teaching the children who observe him to evade those cleaning processes necessary for healthful living.

In 1938 Rogers<sup>31</sup> sought to improve custodial service in schools by pointing out some situations he had observed:

Janitors who push sweepings of the schoolroom under the radiator, who neglect dusting and fail to scrub and clean properly, who keep dogs in basements and who leave at 3:30 before their cleaning work is done are not satisfactory to principals interested in healthfulness of the children attending the school plant.....

When fresh air vents are clogged with dirt and filth and plenum chambers are used as storage rooms for mops, dustcloths, brooms, and dust mops and boxes, one wonders what excuses can be advanced for such avoidance of provisions for the health of children.....

Dirty window panes, dust laden walls and furniture, basement rooms in which worn out equipment and debris is allowed to accumulate, and toilets in filthy condition cannot contribute to it (school health) and cannot be excused in any school system.

In Birmingham (Alabama) the school administrator advanced the idea that one area of health with which the custodianship had responsibility was through provision of clean fixtures for lighting, clean walls and ceilings, and

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<sup>31</sup>Rogers, op. cit., pp. 15-16.

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periodic replacement of light bulbs. The National Engineer in reporting the study<sup>32</sup> in its Volume LI stated:

Eight buildings were checked with a light meter. On the average corrections following the taking of the meter readings showed an increase of from a reading of twelve foot candles to a reading of forty-four foot candles. Installation of new bulbs of the same wattage added fifteen foot candles, and corrections of voltage conditions added eleven foot candles.

Sight conservation by provision of adequate light through the procedures cited above constitutes another enlargement of the concept of the school custodianship.

Dr. Fishbein<sup>33</sup> of the American Medical Association summed up the health responsibilities of custodians by stating:

We must train children from earliest period of awareness to proper habits with regard to cleanliness. Cleanliness and personal hygiene should be integrated in the curriculum of schools. Cleanliness should become second nature in man, and its performance should be automatic.....

Use of clean facilities kept so by the school custodian is necessary for school pupils, as necessary as the studies in World War II showed clean facilities to be. In our experience in World War II it was proven that hand to mouth infections were the chief routes for spread of respiratory diseases such as coughs, colds and pneumonia.

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<sup>32</sup>"Dirty Fixtures Make Light More Expensive," National Engineer, LI (September, 1947), 700.

<sup>33</sup>Morris Fishbein, "Hygienic Laws of Cleanliness," Janitorial Training, XII (November, 1948), 14.

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### The Custodian's Responsibility for Safety

Another development in the concept of school custodianship has been a recognition of the need for provision by building and maintenance employees for the safety of those using school properties.

Halsey<sup>34</sup> mentioned the responsibility of school custodians for safe boiler operation to prevent explosions. After noting that a low pressure boiler (one carrying less than fifteen pounds per square inch of heating surface pressure) can blow up with as much destruction as a high pressure one, he cautioned custodians to watch the water level in heating vessels and be sure enough water is present in the boiler at all times:

During the past year there were reported to my company (The Hartford Steam Boiler Inspection and Insurance Company) twenty-eight instances of collapsed boilers in public school buildings. Of this total, one collapse was the result of scale, and the other twenty-seven were caused by low water. Nine of the low water cases endangered occupants of the building and were caused by inattention of the boiler operator. The remaining eighteen were the result of failures of the automatic controls on the boiler.

He concluded that the low water cut-off valves and automatic water feeding devices on the boiler should

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<sup>34</sup>William D. Halsey, "Inspection for Safety of Power Plant Equipment," National Engineer, LI (September, 1947), 658-660.

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be checked daily by the custodian to see that they were in operating order.

Hodges<sup>35</sup> also called attention to the boiler room as a potential threat to the safety of building occupants in 1949 when he stated;

A school boiler room can be considered safe only when (1) the equipment is in good mechanical working order - this means correctly installed, adequately maintained, regularly tested by the custodian, and correctly operated; (2) the custodian must know and observe safe standards of operation and (3) every custodian having boiler operation and maintenance duties must be so familiar with the action required in case of emergency that he will be able to act to correct the danger without conscious thought - this means he has been drilled on what to do in each type of emergency.

Yurgaites<sup>36</sup> indicated that each school system should study accident records to discover methods of eliminating safety hazards. He included in the concept of the custodianship the idea that custodians at other school buildings should follow the example set by those in his institution (University of Chicago) and be instructed in safety practices;

Safety is a part of a custodian's responsibility; safety to himself, his fellow workers, the students,

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<sup>35</sup>Kenneth V. Hodges, "Boiler Room Safety," National Engineer, LIII (November, 1949) 20-21

<sup>36</sup>Ben Yurgaites, "Custodian as Seen from the Supervisor's Office," Janitorial Training, XIII (November, 1949), 26, 28.

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and the public. We have a safety committee drawn for all specializing type of custodial workers which meets once each month at which time reports of any presumed hazard is reported and the situation checked upon by that group. Accidents are talked over and the group leaders are encouraged to keep their men safety conscious by calling attention to and all conditions which might lead to injury to people or property endangerment. Custodians are given regularly written instructions on how and where to look for fire or explosion hazards with special emphasis on attics and basements. Our record to date has been good.

Viles<sup>37</sup> agreed that another aspect of the safety precautions to be observed by custodians included alertness against fire hazards;

He (the custodian) should report to his business manager structural defects which might cause fires. There are many fire hazards he may remove. He should keep extinguishers filled as per the instructions for each type and should be instructed in which type to use on each of the six classes of fires. Inflammable materials should not be stored in school buildings unless in a fireproof vault.....He should avoid storing paper, oil, or other combustibles under stairs, stair landings, or exit steps.....He should know the hazards of careless use of electrical service.....

Before leaving the building at night, he should make a circuit of the building looking for fire hazards....."Hot spots", such as furnace rooms, home economics rooms, science rooms, waste paper baskets in toilet rooms, and shop rooms should merit his special attention.....

Should a fire occur he should know and act upon the fact that his first duty is to turn in the alarm, his second duty is to aid in getting building occupants out of the building, and his third duty is to attempt to protect property values.

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<sup>37</sup>Viles, op. cit., p. 19.

Brainard and Lamb, who conducted a round table discussion of the custodian's responsibilities for safety at the Association of School Business Officials of United States and Canada in Cleveland in 1953, listed the following school properties which should be checked by custodians for safety:

Playground equipment

Fences on school properties

Disposal facilities for glass, paper and rubbish

Entrance and parking lot lights on school grounds

Sidewalks and steps (especially in northern states during winter months)

Unchained, unlocked panic bars on exit doors

Existence of poisonous herbs, such as poison oak

Signs directing traffic where children and vehicular traffic intercross on school grounds

Exterior building conditions which might cause falling slate, spalling brick, loose stone, or snow or ice on steep roofs to fall to the ground or building roof or skylight

During the past eighty years the leaders in the field of building maintenance have changed the concept of the school custodian from that of one who tended the fires and swept the building to that of a person sharing responsibilities for educational facilitation, for public

relations, for health, and for safety.

As Eldon Sessions of Ohio State University stated to 1200 custodians at Michigan State College in 1954:

The task of the custodian has grown in its implications through the years. This year or next should see addition of some responsibilities for civil defense added to our idea of the school custodianship. Our schools will become hospitals and feeding stations when the first "A" or "H" bombs fall on our country. If such an attack comes, it behooves the custodian to know his responsibilities and to have learned beforehand how to live up to them.

## CHAPTER III

### THE SELECTION OF SCHOOL CUSTODIANS

Formulation of a questionnaire concerning the selection of school custodians was preceded by a study of the findings of authorities in the field of building maintenance and operation in the United States.

Selection of custodians was found to include the following operations: formulation of a list of characteristics deemed desirable in school custodians; formulation of a list of the methods of recruitment of custodians; study of the interviewing and collecting information about candidates for custodial positions; and compilation of a list of methods found effective procedures in employment of custodians.

#### Qualifications of Capable Custodians

In 1929 Michigan State College invited fifteen custodians from as many Michigan school systems to participate in a series of meetings to plan for selection and instruction of custodians.

This committee<sup>38</sup> agreed upon the following as their list of qualifications desirable for Michigan

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<sup>38</sup>Bradley and others, op. cit., p. 3.



custodians to possess:

- a. He must never have been convicted of a felony.
- b. He must be a citizen of the United States.
- c. He must pass a suitable examination set up by proper authorities.
- d. He should pass a physical examination given by a competent physician
- e. He should be between the ages of 21 and 50 when first employed.
- f. He should be temperate, industrious, and trustworthy.
- g. He should have satisfactory home relations and good home environment.
- h. He should have clean personal habits.
- i. He should be emotionally stable.

In an attempt to find out why these qualifications were agreed upon, several members of the original committee of fifteen were interviewed in 1955, twenty-four years after the publication of their report.

The following statements were given in explanation of the list cited above:

Extreme criticism had been leveled at school administrators in two school systems who had tried to justify the employment of men who had been previously convicted of felonies and were under arrest for a succeeding offense while being employed by school systems. Mothers and fathers of pupils in school object to having these men working in the buildings which their children attend daily.

Capable custodians should be able to support school administrative policies by voting at school elections. Citizenship being necessary to vote, it was deemed an essential for custodians.

Custodians might be instructed in their duties but such instruction could be speeded up and better service given school children and teachers if some screening were done before hiring by requiring an examination be taken on the work of custodians.

One man on the committee had seen a fellow custodian fall from a scaffold. Physical examination revealed that because of his blood pressure he should not have been working at any strenuous occupation. Another came from a city where a few years before it had been agreed by the board of education (which included three saw mill owners) that those injured at the saw mills should apply for work as school custodians. Subsequently, it became a fact that no one custodian in the school system was not crippled in some way. This committee felt that such men could not do effectively the vigorous work required of school custodians.

None could recall the reason why they had settled on twenty one as the minimum age for employment but the fifty year maximum was agreed upon because it was the oldest age at which a custodian could begin work and qualify for a school employee pension in those schools where retirement was compulsory at age sixty five. (There was no social security act in force at that time.)

Observations of committee members of the problems caused by lack of temperance, trustworthiness, and industriousness led the committee to include the necessity for possession of these traits in their list of qualifications for school custodians.

It was the observation of several of the committee that when home conditions became unstable it was difficult for their fellow custodians to do as good work as formerly. Hence they agreed that candidates for custodial work should be chosen from those having satisfactory home conditions and good home environment.

One of the committee had worked for several years in a school building with a man who chewed tobacco and spit throughout the building. Another had seen his fellow-worker appear day after day in school hallways wearing a shirt which had not been washed or ironed for weeks. The requirement for clean personal habits was approved by the committee.

One custodian reported a school system in which an emotionally unstable custodian had barricaded the school building and attempted to set it afire. The requirement for emotional stability was included to insure emotional as well as mental stability.

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Brainard<sup>39</sup> suggested these qualifications be considered in selecting custodians:

Preference is usually given if you have had previous custodial experience.....If you are a vigorous, alert, strong and healthy man.....You must possess a number of skills.....and have some mechanical ability.....schools prefer the applicant for custodian who is married.....Good character is essential for you should be the type of person with whom parents are willing to have their children associate.....You must be firm but tactful and fair.....You should be a citizen of the United States.....If you have gone through high school you are more apt to appreciate the problems of education.....You must be able to read English and.....you must be able to write.....you should be proud of your job and loyal to your school.....cleanliness and neatness begin with you.....for visitors get from you their first impression of the school.

Viles<sup>40</sup>, who also completed his doctoral dissertation in a study of the school custodianship, stated his requirements for a school custodian when he reported;

The janitor should have an eighth grade education.....He should be between the ages of 25 and 50 years when employed.....but physical ability is more important than age.....lack of vision and partial deafness are handicaps.....in addition to physical ability, the janitor must be free from communicable diseases.....The influence he exerts makes it important that he be clean of body, mind and habits.

Nine years before that time Womrath<sup>41</sup> had concluded that:

The janitor should be an economist in the use of

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<sup>39</sup>Brainard, op. cit., pp. 8-11.

<sup>40</sup>Viles, op. cit., pp. 10-12.

<sup>41</sup>George F. Womrath, Efficient Business Management of Public Schools. (Milwaukee: Bruce Publishing Company, 1932), p. 219.



supplies, a sanitarian, a moralist, a first class housekeeper, a sociologist, a diplomat, a maintenance engineer and an expert mechanical engineer.

Ruel Daniels<sup>42</sup> of Belleville, (New Jersey), summarized his thirty-five years of experience in selecting custodians when he stated the qualifications he felt necessary for school custodians:

1. He should be between the ages of 25 and 45 when first employed.
2. He should be able to read with reasonable skill and write legibly.
3. He should have the equivalent of a grade school education.
4. His appearance should be neat.
5. He should be strong, healthy, and possessed of good eye sight and hearing.
6. He should be alert and not hesitant, but not prepossessing.

H. H. Linn,<sup>43</sup> former superintendent of buildings and grounds at Minneapolis (Minnesota) and Muskegon (Michigan), summed up his qualifications for a school custodian when he stated:

The custodian must be gentlemanly in his actions, courteous, respectful, obliging, pleasant, careful about gossiping about school affairs, honest, faith-

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<sup>42</sup>Ruel Daniels, "Selection of School Custodians," Thirty-Fourth Convention Proceedings of the Association of School Business Officials (Kalamazoo: Association of School Business Officials, 1948), pp. 239-242.

<sup>43</sup>Linn, op. cit., p. 10.

ful, loyal to associates, dependable, and able to learn to speak quietly while on duty.....

He must have clean hands and face in the presence of pupils, teachers, and visitors..... shaving and bathing daily.....with clothing reasonably clean.

L. O. Thompson,<sup>44</sup> editor of Janitorial Training magazine, former director of custodians at the Los Angeles public schools, and guest lecturer at colleges in sixteen states last year on the methods of selection and instruction of custodians, stated these qualifications which he believed necessary for custodians to possess:

The custodian should be free from bad habits, neat in personal appearance, established and settled down, experienced in machinery and equipment operation and maintenance, possessed of a sense of responsibility and sufficient intelligence to search for new and better ways to do his work, and be quiet in his discussions.

Francis Scherer,<sup>45</sup> superintendent of school buildings at Rochester (New York), announced his preferences in the selection of custodians by listing the following qualifications:

1. Willing and able to do a good day's work regardless of age.

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<sup>44</sup>L. O. Thompson, "How to Pick a Good Custodian-Engineer," Janitorial Training, XIV (February, 1950), 44.

<sup>45</sup>Francis R. Scherer, "How We Select Custodians," Janitorial Training, XII (March, 1951), 36.

2. Honest and of good character.
3. Possessing an energetic attitude and willingness to work.
4. Willing to learn and take orders.
5. Of clean and neat appearance.
6. In good health.
7. Loyal to the job.
8. Possessing an ability to keep things to himself and refraining from being "bossy" or "gossipy".
9. Possessing a liking for children.
10. Able to work harmoniously with teachers.

J. M. Clifford<sup>46</sup> listed the following characteristics necessary for a satisfactory custodian to possess at time of employment:

Age: 25-40 years  
 Citizenship: American born or naturalized.  
 Physique: Good health as demonstrated by doctor's examination. Not over 15% variation from standard tables of height and weight. No serious deformities.  
 Education: High school  
 Aptitudes: Mechanical aptitude  
 Social Status: Preferably married. Satisfactory home relations.  
 Personal habits: Temperate, industrious and honest.  
 Economic Status: Home owner preferred. Must have a good record as living within financial means and paying bills.  
 Occupational Expectations: Propose to make school custodial work his life work.

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<sup>46</sup>Jack M. Clifford, "The Economic and Social Status of Non-Teaching Personnel in Michigan Public Schools," (unpublished Doctor's dissertation, University of Michigan, Ann Arbor, 1944), pp. 53-4.



Clyde Davis<sup>47</sup>, supervisor of custodians at Tacoma (Washington) public schools, summed up his required characteristics for custodians when he stated in 1948:

The most satisfactory age for initial employment (of custodians) is between 25 and 38 years .....We have found a church member to be a better risk. One who has joined a church is a better moral risk than one who hasn't.....Custodians must be chosen who can be treated as a member of the faculty and whose responses are gentlemanly enough to make teachers willing to accept them as such.....He must not be a "grouch" who responds to all teacher's requests for assistance with a curt refusal.

Alfred Lamb<sup>48</sup>, Superintendent of Buildings and Grounds of Wayne University (Detroit) pointed out that in his thirty-five years of selection of custodians he had observed that:

There have been many lists compiled by very competent people of the characteristics which applicants for custodial work should possess. I believe any one or combination of these lists offers a valuable guide in selection.

I wish to make a strong plea for the inclusion of one particular characteristic, that of dependability. We can use at our institution custodians of different ages, races, religions, and heights

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<sup>47</sup>Clyde E. Davis, "Selecting and Training the Janitor-Engineer," Janitorial Training X (April, 1948), 18-20.

<sup>48</sup>Alfred Lamb, "Qualifications for Custodians," (unpublished speech made before those attending the Sixth Annual Conference for Custodians of the Upper Peninsula (Michigan) at Marquette, June 24, 1953).

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and weights but if the man will not be there to open a building at seven o'clock which is supposed to be opened at seven o'clock, he becomes an immediate problem to us.

We must have an employee who will do what he is supposed to do, at the time he is supposed to do it, and in the manner in which he is supposed to do it. That is what I mean by dependability.

Norman Wolfe<sup>49</sup> agreed that there are many lists of characteristics of value, but asserted one item often neglected in consideration of the applicant was his (the custodian's) ability to have charge of a building during the evening as he performed assigned work in it.

Should the custodian who does the cleaning be asked to supervise the building? This is our greatest problem in evening use of buildings. If we are to maintain our buildings and protect school property, we must select those for custodians who can take charge of buildings as well as clean it .....Very often groups using our buildings make requests of our custodians that are not always reasonable. We must employ those (custodians) who can meet this problem as diplomats.....We have tried in our schools at Birmingham (Michigan) having lay leaders of groups using the buildings at night take charge of these buildings. This causes many problems.....We must attack this problem through our more careful selection of the custodians who are to work in those buildings.

Otto T. Freeman<sup>50</sup>, assistant superintendent of schools at Wichita Falls (Texas), advocated the

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<sup>49</sup>Wolfe, op. cit., p. 33.

<sup>50</sup>Otto T. Freeman, "Selection and Training of School Custodians," School Business Affairs, XIV (October, 1950), 3-4.

following qualifications for custodians:

The person of middle age is apt to develop into the best custodian. He should be neat, sober and honest. If he is married, has children, and owns his own home he is an excellent prospect. The person's education for the work in our state (Texas) is not given too much consideration but certainly an illiterate person is not desirable.

Floyd C. Hack<sup>51</sup>, business manager of Asbury Park (Maryland) Public Schools formulated these policies of selection of custodians:

In selection of a custodian as much time should be given as in the selection of a teacher.....the list of qualifications sought should be formulated before interviewing prospects.....His (the custodian's) age should be about twenty-five and it should not exceed forty-five for beginners.....It would be advisable that he be married and understand home responsibilities.....He should be physically sound and should have an understanding nature with interest in children and an ability to say "Yes" or "No" to teachers when necessary.....He should be tactful and willing to work.....Today we can expect him to be a high school graduate and a person of good moral character.....We should know of his avocations..... he should have some interest in the world outside the domain of custodial work.

Based upon the recommendations of the authorities cited in this chapter, the section of the questionnaire concerning recommended qualifications to be possessed by custodians was formulated for use in the study.

#### Procurement of Applicants for Custodial Work

Following the formulation of a list of characteristics based upon which school custodians are to be

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<sup>51</sup>Floyd C. Hack, "Personnel Work for Custodial Staff," School Business Affairs, XVI (October, 1950), 3-4.

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selected, it becomes necessary to have more than one applicant if the employing person is to exercise any choice other than acceptance or rejection of that candidate.

Suggestions of methods for procuring applicants for custodial work have been made by school business managers and assistant superintendents of schools. Included in these suggestions have been the following:

Request present employees to suggest names of possible candidates for custodial work.

Request the local office of the United States Unemployment Service to refer candidates.

Request employment officials of local industries to refer applicants who do not like factory work but who might make good school custodians.

Place placards advising readers that school custodians are needed at those points where large numbers of people will see them.

Insert advertisements in local newspapers, on local radio and/or television programs.

Publish news stories concerning openings at new school buildings and need for custodians.

Request board of education members to assist by referring candidates for custodial work to the school employment office.

Advertising in newspapers of other cities where an oversupply of labor is known to exist.

Request other school systems to supply names of substitute and prospect lists of school custodians.

Request book and maintenance supply salesmen to pass information about existing vacancies to other school systems.

In the formulation of the questionnaire used to survey prevailing practices of recruitment of applicants for custodial work in Michigan school systems, certain of the suggested methods were not included.

Nichols'<sup>52</sup> study of Ohio custodians, completed and reported in 1953 indicated that the assumption of responsibility for referring candidates for custodial work by boards of education had led to increasing problems for the school administrator.

His study indicated that of the five city school systems, twelve village school systems, and twenty-five local school districts the assumption of responsibility for recommending candidates for custodial work or actual hiring of them by board of education members had raised administrative problems in more than 90 per cent of those communities using this system.

Use of placards by Michigan school systems was not investigated because of three objections to the method cited by those who had used it:

Distribution of the placards was time consuming to a disconcerting degree when compared with calling the newspaper office and inserting an advertisement.

Such placards have to be collected when the

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<sup>52</sup>Nichols, op. cit., p. 42.

custodial position or positions are filled necessitating further travel and more use of time.

There was little evidence that the placards do more than to remind readers of a notice or advertisement they had previously read in the newspaper, seen on the television screen, or heard from the radio station.

Advertising for custodial workers in newspapers in other cities had been tried with disappointing results. It was not recommended by the authority mentioning it as a possible method of recruitment of workers and was not included in the questionnaire.

For the same reason, the practice of asking other schools to send names from their substitute and/or worker prospect list was excluded.

Requesting salesmen to contact workers in other school systems was excluded because of the opinion of several of those using the questionnaire in the trial period that it was best not to raise the issue in light of professional ethics of school administration.

#### The Application Blank for Custodial Work

Following the decision to investigate the methods of recruitment of applicants for custodial work in Michigan schools, it was decided to make a study of the information gained from applicants through the application blank.



Viles<sup>53</sup> contended that all those applying for a custodial position should be given opportunity to fill out an application blank as part of a good public relations program of a school system. He indicated observation of the person as he filled out the blank would give clues as to his methods and capabilities to complete the written records to be required of the applicant if he were hired.

John Stoy<sup>54</sup>, Superintendent of Buildings and Grounds at Teachers College, Columbia University, New York, has pointed out:

The application blank for employment should serve two purposes. It should contain all the information needed in forming judgement of the applicant and all the information the payroll department may need to record accurately and to pay wages.

Moore<sup>55</sup> found that application blanks should include the fewest possible items which will contribute the required information, if the information obtained is to be accurate. He reported that questionnaires containing items which were puzzling to the applicant

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<sup>53</sup> Nelson Viles, Improving School Custodial Service Bulletin 13 Federal Security Agency: United States Office of Education, 1949), p. 3.

<sup>54</sup> John Stoy, "Managerial Records and Reports," School and College Management, XX (November, 1950), 6.

<sup>55</sup> Herbert Moore, Psychology for Business and Industry (New York: McGraw-Hill Company, 1939), pp. 150-1.

because of lack of clear statement invited deception on the part of the applicant.

Bukovac's<sup>56</sup> study at Michigan State College in 1941 indicated no statistically significant relationships existed between answers on items in the application blank and ratings for competency of custodial work done by these applicants. It was her conclusion that supplemental information gained from the applicant in an interview produced enough changes in written answers on the application blank to establish statistically significant relationships between the items of information on the application blank and ratings for competency of custodial work of these applicants.

Application blanks used by public school systems were studied rather than letters of reference given candidates to present to prospective employers. It was indicated in the studies made by Laird<sup>57</sup>,

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<sup>56</sup>Marie Agnes Bukovac, An Analysis of the Application Form in the Selection of Cafeteria Workers. (unpublished Masters thesis at Michigan State College, East Lansing, 1941), pp. 1-38.

<sup>57</sup>Donald A. Laird, The Psychology of Selecting Employees (New York: McGraw-Hill Company, 1937), pp. 85-98.

Mathewson<sup>58</sup>, Moore<sup>59</sup>, Burr<sup>60</sup>, Bingham and Freyd<sup>61</sup>, and Morgan<sup>62</sup>, that little credence could be given to statements in letters of reference given candidates to carry with them.

Morgan<sup>63</sup> indicated his study showed that application blanks tended to be filled in with more accurate information by applicants if ample space (double spaced if typewritten) was given for writing answers. He also pointed out how necessary it was for the paper to be clearly captioned Application Blank so that those filling it out would not conclude the blanks meant positive employment.

Laird<sup>64</sup> reported on a study of 100 letters of

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<sup>58</sup>S. B. Mathewson, "A Survey of Personnel Management in 195 Concerns," Personnel Journal, X (January, 1932), 225-31.

<sup>59</sup>Herbert Moore, Psychology for Business and Industry (New York: McGraw-Hill Company, 1929), pp. 150-51.

<sup>60</sup>H. W. Burr, Employment Psychology (New York: Houghton Mifflin Company, 1925), pp. 409-41.

<sup>61</sup>W. V. D. Bingham and W. Freyd, Procedures in Employment Psychology (New York: McGraw-Hill Company, 1926), pp. 150-51.

<sup>62</sup>E. B. Morgan, "Interviewing for Selection," Industrial Management, LXI (February, 1921), 159.

<sup>63</sup>Morgan, op. cit., p. 155.

<sup>64</sup>Laird, op. cit., p. 98.

application and the application blanks subsequently filled out by the same 100 persons:

Employees selected primarily on their apparent merits as indicated by their letters of application were chosen scarcely more objectively than if the first five who appeared were employed.... However, the process of having the applicant fill in a blank furnishing requested information does exceed the values of random choice of candidates in their order of application for work.

#### Employment Practices Used in Hiring Custodians

Consideration of applicants for a vacant position is followed by choice of some person to be employed if the vacancy is to be filled.

Authorities in the field of building maintenance have recommended employment practices to be used in hiring custodians.

Clifford<sup>65</sup> pointed out that there should be no question about the agreement to hire a custodian. He stated that the employment of a custodian should be recorded in the minutes of the Board of Education meeting immediately preceding his (the custodian's) beginning work. As director of a state-wide retirement fund (Michigan School Employees Retirement Fund), Clifford pointed out that several cases each year are brought to his attention where it is necessary for the minutes of the Board of Education meeting to be

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<sup>65</sup>Jack M. Clifford, "Must Custodians Be Old Men?" American School Board Journal, CXIX (September, 1949), 28.

surveyed for proof of employment by the Board of Education of a custodian now claiming retirement benefits.

Clifford<sup>66</sup> also pointed out the need for having a medical examination record filled out by a competent physician for consideration before decision concerning employment of an applicant for custodial work is made. Each year claims for retirement benefits based upon disabilities incurred while employed by school boards have to be investigated. The existence of medical examination records compiled prior to employment has been found by Clifford to be helpful and in some cases very necessary to protect the rights of employer as well as employee.

Daniels<sup>67</sup> pointed out in 1948, the need for choice of employees for custodial work without regard for his political connections. He advocated that the basis of selection should be on the basis of the applicant best able to perform the work.

The question of who he (the custodial candidate) knows, or what politician is sponsoring him, or

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<sup>66</sup>Clifford, op. cit., p. 29.

<sup>67</sup>Daniels, op. cit., p. 241.

what board member is recommending him should not even be considered.....The type of names of reference given by the candidates tells something about him. If it (the reference name) is a politician, I am immediately on guard and investigate the candidate more closely.....

Covert<sup>68</sup> cited the desirability of having the applicant for custodial work visit the building in which a vacancy occurs so that he may know something of the work requirements in that building before he agrees to employment. He indicated there was value in having presently employed custodians meet candidates, particularly in those buildings where a number of custodians work. The reaction of those presently employed to candidates for work gave some clue as to how these applicants would be accepted by the present workers.

Viles<sup>69</sup> pointed out the need for employment to begin with a 30-60 day probationary period of school custodial workers, particularly in those school systems having no pre-employment tests of knowledge and skills of custodial work.

Nichols<sup>70</sup> dissertation pointed out the need

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<sup>68</sup>Covert, op. cit., p. 12.

<sup>69</sup>Nelson Viles, Improving School Custodial Service, Bulletin 13 (Washington: Federal Security Agency, United States Office for Education, 1949), p. 4.

<sup>70</sup>Nichols, op. cit., p. 45.

for having the selection of custodians under the direction of the superintendent of schools or his agent acting with authority delegated by the board of education.

## CHAPTER IV

### SELECTION AND EMPLOYMENT PRACTICES USED BY SELECTED MICHIGAN SCHOOL SYSTEMS IN EMPLOYING CUSTODIANS

Investigation was made of the current practices of selecting and employing school custodians in one hundred school districts of Michigan. Four aspects of the problem were studied and are reported upon in the following pages: qualifications based upon which the custodians were employed; methods of recruitment of applicants for custodial work; information gained from applicants by completion of an application blank; and employment practices used in hiring custodians.

#### Qualifications Based Upon Which Custodians Were Chosen

The number of school systems of four sizes, i. e., those employing 7-24, 25-90, 91-190, and more than 190 teachers, as well as the total of 606 schools using the characteristics recommended by leaders in the field of building maintenance are indicated in Table II on the following pages.

Immediately to the right of the number of schools using each characteristic has been indicated the percentage which that number constitutes of all the schools studied in the category of size.



TABLE II  
SELECTED SCHOOL SYSTEMS IN MICHIGAN USING CERTAIN CHARACTERISTICS  
AS CRITERIA IN SELECTION OF CUSTODIANS

CHARACTERISTICS	Schools employing 7 - 24 teachers		Schools employing 25 - 90 teachers		Schools employing 91 - 190 teachers		Schools employing 191 + teachers		Universe of 606 Michigan Schools	
	N1	%1	N1	%1	N2	%2	N2	%2	N3	%3
Must be temperate, industrious, and trustworthy	30	100.0	30	100.0	19	95	20	100	99	
Must have clean personal habits	28	93.3	30	100.0	20	100	20	100	97	
Must be educable in building maintenance methods	29	96.7	29	96.7	19	95	20	100	97	
Must be emotionally stable	23	76.6	28	93.3	20	100	19	85	86	
Must be twenty-one years of age or older	19	63.3	30	100.0	14	70	15	75	78	
Must be interested in youth and their problems	22	73.3	24	80.0	10	50	17	85	75	

N1= Number of thirty selected Michigan school systems using each characteristic  
 %1= Percentage of thirty selected Michigan school systems using each characteristic  
 N2= Number of twenty selected Michigan school systems using each characteristic  
 %2= Percentage of twenty selected Michigan school systems using each characteristic  
 %3= Percentage of 606 Michigan school systems using each characteristic

TABLE II (CONTINUED)  
 SELECTED SCHOOL SYSTEMS IN MICHIGAN USING CERTAIN CHARACTERISTICS  
 AS CRITERIA IN SELECTION OF CUSTODIANS

CHARACTERISTICS	Schools employing teachers		Schools employing teachers		Schools employing teachers		Universe of 606 Michigan Schools		
	N1	%1	N2	%2	N2	%2			
Must be a citizen of the United States of America	23	76.7	17	56.7	10	50	20	100	65
Must have satisfactory home relationships	20	66.7	19	63.3	4	20	15	75	62
Must pass a physical examination by a competent physician	10	33.3	14	46.7	15	75	14	70	59
Must have never been convicted of a felony	17	56.7	13	43.3	15	75	14	70	53
Must indicate by conditions of own living premises an interest in well-kept grounds	12	40.0	18	60.0	2	10	8	40	46
Must be able to pass a written examination on custodial work	1	0.0	2	6.7	1	5	1	5	5

N1= Number of thirty selected Michigan school systems using each characteristic  
 %1= Percentage of thirty selected Michigan school systems using each characteristic  
 N2= Number of twenty selected Michigan school systems using each characteristic  
 %2= Percentage of twenty selected Michigan school systems using each characteristic  
 %3= Percentage of 606 Michigan school systems using each characteristic

Ninety-seven or more per cent of the school systems having a superintendent agreed that custodial candidates should be temperate, industrious, and trustworthy, of clean personal habits, and educable in building maintenance methods.

Eighty-six per cent of these school systems studied attempted to take into consideration the emotional stability of candidates. Judgement of this emotional stability was attempted by observation of the candidate during the interview and by discussion of the candidate with his previous employers. More than half of the school administrators expressed need for use of some psychological testing of applicants.

The employment of custodians who were twenty-one years of age or older was preferred by seventy-eight per cent of these school systems. Administrators of school systems employing less than twenty-five teachers indicated they would like to have custodial work done by those over twenty-one years of age but they were committed to using high school boys because "they will work for less", "they need the work", and "in this rural community our people expect us to give the boys this part-time work".

Seventy-five per cent of these school systems of Michigan agreed that custodians should be interested

in youth and their problems. In those school systems having 91-190 teachers employed, only one half considered this characteristic in choosing custodians. Administrators pointed out the need for skilled tradesmen to work at electrical, plumbing, and carpentry trades who had little direct contact with school pupils. One of these superintendents states:

We have truck driving, firing of boiler, and general maintenance duties for custodians who would prefer to work by themselves. To insist they (these custodians) must be interested in youth need not be done.

Sixty-five per cent of these school systems considered for custodians only those applicants who were citizens of the United States of America. Among the school systems not insisting on the citizenship requirement the following statements were representative:

A church in our community sponsored the entry into this country of a displaced person who is now one of our school custodians. His services have been very satisfactory and we hesitate to approve a requirement which would deprive us of services of others like him.

We have many foreign born in our community and some of the school custodians we have employed from this group have been good workers for us for a long time. Our board is reluctant to say that they (these foreign born custodians) who have not become citizens must do so. By the same reasoning we do not insist that those we hire as custodians must be citizens.

Eighty-three per cent of these school systems would not hire as a school custodian an applicant who had previously been convicted of a felony. When thirty

per cent of the school systems surveyed indicated they would hire custodians who had previously been convicted, the matter was discussed with these administrators. No instances could be cited in any of the thirty school systems where they had had an application for work from a convicted felon or had one presently employed. Each administrator contended he would not let conviction for felony influence his decision to hire an applicant. One village school superintendent pointed out:

We see our men every day. We are in a position to know much more about them and their work than as if we were in a large city having more than ninety teachers. So we do not check on this item before employment and if news of a past conviction for felony comes to our attention, we talk to the man on a friendly basis and stress that we are giving him a second chance.

"Satisfactory" home relationships were so difficult to determine that only fifty-nine per cent of the school systems in this study tried to use these criteria in selecting custodians. One third of the schools considering this characteristic were certain their judgements of it were faulty.

More than half of the school systems in this study, fifty-nine per cent, required candidates for custodial work to pass a physical examination to be given by a competent physician. Small school systems were less selective of custodial applicants in this

regard and were less able to indicate they had protected themselves against hiring those with hernia who might claim it developed as a result of their work, to cite one example.

Forty-six per cent of the same schools attempted to check the condition of living premises for the determination of an interest in well-kept grounds. About one half of the school systems employing less than ninety-one teachers attempted to pick custodians whose living premises were well kept. As one administrator pointed out:

In communities of our size where many citizens know the occupation of their neighbors, we want our custodians to be good maintenance men at home as well as at school. We want our custodians to exemplify in the community the good maintenance practiced at school.

Approximately one fourth of the school systems surveyed which employed more than ninety teachers considered in hiring custodians the condition of their (custodian's) homes. The point of view of these employing persons was typified by the following comment of an administrative assistant to a superintendent of schools:

Our custodial workers live as far as ten miles from the city in which they work. It would call for an allotment of time we do not feel justified for us to visit the living place of each custodian before we employ him. Further, many of our people live in apartment houses. So we could not just drive by the building, but would have to go into the buildings. Those living in the neighborhood

of the same buildings are not cognizant of his place of employment as are rural and village people. So we pay little attention to this matter.

The selection of custodians on the basis of standing on an examination covering the work to be done was a practice used in only five of the one hundred schools studied. Regardless of size of the school system there was almost universal (90 per cent) interest in getting some assistance in establishing such a procedure. More time was spent on this item of the questionnaire than on any other. Pre-employment tests on custodial work were not for sale from publishers and a need for them was discovered in the study.

The five school systems using such tests had devised their own. They planned to continue the use of such tests but indicated they too would be inclined to adopt for use tests devised by a testing agency.

Employment Practices Utilized by Selected School Systems in Michigan in Employing Custodians

Employees were asked to suggest candidates for custodial work in seventy-seven of the Michigan school systems surveyed. (See Table III on the following pages).

Board of education members were found to suggest custodial candidates in eighty-four of the

TABLE III

EMPLOYMENT PRACTICES UTILIZED BY SELECTED SCHOOL SYSTEMS  
IN MICHIGAN IN EMPLOYING CUSTODIANS

EMPLOYMENT PRACTICES	Schools employing teachers		Schools employing teachers		Schools employing teachers		Universes of 606 Michigan Schools
	N1	%1	N2	%2	N2	%2	
Employment recorded in Board of Education minutes	28	93.3	28	93.3	8	40	87
Board of Education members suggest custodial candidates	26	86.7	26	86.7	15	75	84
Employees suggest custodial candidates	19	63.3	26	86.7	20	100	77
Employment arranged in verbal agreement	20	66.7	21	70.0	15	75	69
Prospective custodians visit building in which a vacancy exists	27	90.0	13	43.3	10	50	65

N1 = Number of thirty selected school systems utilizing each employment practice  
 %1 = Percentage of thirty selected school systems utilizing each employment practice  
 N2 = Number of twenty selected school systems utilizing each employment practice  
 %2 = Percentage of twenty selected school systems utilizing each employment practice  
 %3 = Percentage of 606 Michigan school systems utilizing each employment practice





TABLE III (CONTINUED)  
 EMPLOYMENT PRACTICES UTILIZED BY SELECTED SCHOOL SYSTEMS  
 IN MICHIGAN IN EMPLOYING CUSTODIANS

EMPLOYMENT PRACTICE	Schools employing teachers N <sub>1</sub>		Schools employing teachers 75-90 %1		Schools employing teachers 91-190 N <sub>2</sub>		Schools employing teachers 191+ N <sub>2</sub>		Universes of 606 Michigan Schools %3
	N <sub>1</sub>	%1	N <sub>1</sub>	%1	N <sub>2</sub>	%2	N <sub>2</sub>	%2	
School patrons suggest custodial candidates	17	56.7	20	66.7	14	70	19	95	63
Paid advertisements for custodians inserted in local newspapers	10	33.3	9	30.0	19	95	15	75	38
Employment begins with 30-60 day probationary period	10	33.3	8	26.7	15	75	18	90	36
Employment arranged by written agreement	10	33.3	9	30.0	5	25	6	30	31

N<sub>1</sub> = Number of thirty selected school systems utilizing each employment practice  
 %1 = Percentage of thirty selected school systems utilizing each employment practice  
 N<sub>2</sub> = Number of twenty selected school systems utilizing each employment practice  
 %2 = Percentage of twenty selected school systems utilizing each employment practice  
 %3 = Percentage of 606 Michigan schools utilizing each employment practice

TABLE III (CONTINUED)  
 EMPLOYMENT PRACTICES UTILIZED BY SELECTED SCHOOL SYSTEMS  
 IN MICHIGAN IN EMPLOYING CUSTODIANS

EMPLOYMENT PRACTICE	Schools employing 7 - 24 teachers		Schools employing 25 - 90 teachers		Schools employing 91 - 190 teachers		Schools employing 191 + teachers		Universer of 606 Michigan Schools
	N1	%1	N1	%1	N2	%2	N2	%2	
Prospective custodians visit other custodians and their reaction to him as a fellow worker are obtained	5	16.7	12	40.0	10	50	4	20	28
Custodial vacancies announced in news story in local papers	10	33.3	6	20.0	2	10	2	10	25
Federal, state and local agencies asked to refer candidates	2	6.7	2	6.7	8	40	10	50	8
Employment is from list of candidates compiled by civil service commission	0		0		0		0		0

N1 = Number of thirty selected school systems utilizing each employment practice  
 %1 = Percentage of thirty selected school systems utilizing each employment practice  
 N2 = Number of twenty selected school systems utilizing each employment practice  
 %2 = Percentage of twenty selected school systems utilizing each employment practice  
 %3 = Percentage of 606 Michigan school systems utilizing each employment practice

school systems surveyed. In school systems employing less than ninety-one teachers, eighty-six per cent were found to have suggestions of names of prospective custodians made by board of education members. Interviews with administrators of these school systems revealed that they had found this practice one which caused some embarrassment when the suggested candidate was not chosen.

In school systems employing more than ninety teachers, board of education members suggested custodial candidates in but two thirds of the schools of the sample selected. This was in keeping with a trend for board members to confine their activities more and more to the policy making function, it was pointed out by administrators of that size school system.

Eighty-seven per cent of the school systems included in the study recorded the employment of custodians in board of education minutes. This practice gave permanency of record to the employment of custodians. This practice of recording was used in about forty per cent of the school systems employing more than ninety teachers. A common substitute practice in schools of that size was found to be the preservation of payroll voucher sheets which could be used to obtain information concerning employment at future

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dates when needed.

Employment of custodians was concluded in a verbal agreement in sixty-nine per cent of the school systems of Michigan. Many of the school administrators using this system asked for help in locating samples of written contracts used in hiring custodians. A need for assistance in this phase of school administration was disclosed by the study.

School patrons suggest candidates for custodial work in seventy-seven per cent of these systems included in the study. This practice occurred in an increasing percentage of cases as the size of the school systems studied increased. It appeared that this situation was the result of no special inclination of citizens of larger communities to make such suggestions but was the result of having an increasing probability of its occurring due to the corresponding increase in population of the school district.

Prospective custodians visited the buildings in which vacancies in custodial work positions occurred in sixty-five per cent of the school systems studied. The ninety per cent incidence of this occurrence in school systems employing less than twenty-five teachers was explained by the fact that the office in which they appeared to apply for work was situated in the only



building in which a vacancy occurred. Furthermore, these applicants in villages of this size were already familiar with the building at time of application for work.

In school systems employing more than one hundred ninety teachers it was observed that the practice was to employ both teachers and custodians and then decide where to assign them to work. Hence, only four schools of the twenty visited of this size had custodians visit the building where a vacancy in the custodial position existed. Size of district and travel time necessary to reach buildings were cited as other causes for not using this practice. This appeared to be a mistake as some schools had found that custodians who were accepted for work from lists of applicants refused to work in certain neighborhoods. School systems had time invested in interviewing and setting up book-keeping procedures for these employees which could have been avoided if the candidates had visited the building, even though it involved inconvenient travel for the applicant.

Paid advertisements for custodians were inserted in local newspapers in thirty-eight per cent of those systems surveyed. Seventy-four per cent of the schools having more than ninety teachers used this method as



the most rapid method of contacting the largest number of applicants. Reluctance to use radio and television was noted because of costs and because trial of such methods in the past had brought applicants who were illiterate in a larger percentage of cases than had newspaper advertising.

School systems employing less than ninety-one teachers were reluctant to spend school money for this purpose, feeling that it gave critics of education an opportunity to object to spending school tax money for this purpose.

Employment of custodians began with a 30-60 day probationary period in fifty-one per cent of the Michigan public school districts included in the sample. Eighty-eight per cent of the schools employing more than ninety teachers had such a regulation because of their necessity of hiring those custodians chosen from lists of applicants whom they had not known previous to the receipt of the application. School districts employing less than ninety-one teachers had a probationary work period in less than thirty per cent of those schools.

As one administrator of a small school system commented:

In a city it is virtually impossible to know or locate those who know well the capabilities and limitations of candidates for custodial work. Lut

in a town of our size one is almost certain to hear quite a bit about these applicants before hiring them. We don't very often go wrong but admit we would have to employ some sort of probationary work period arrangement if we were an administrator in a city the size of Grand Rapids of Battle Creek.

About thirty per cent of the school systems had prospective custodians visit custodians now employed and the reaction of these employed workers to the prospective fellow workers was obtained. Those using this method were satisfied that it was of assistance in eliminating problems of employee relations in cases where custodians indicated reasons why they considered the applicant unsuitable. While the method appeared to utilize quick judgments on the part of presently employed custodians, instances were cited where information justifying hiring or rejecting applicants was given by custodians which had not been previously known or suspected by the employing agent.

The services of federal, state or local employment agencies were used in only eight per cent of the school systems studied. Nearly fifty per cent of the large school systems utilized this method of recruitment of candidates for custodial work, less than three per cent of the small schools used this method. These small district administrators cited three reasons for their practice. They had been sent unsatisfactory applicants during World War II when

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applicants were scarce or non-existent. Here it appeared they were not prepared to accept the fact that the referrals of that period might not have been representative of the referrals which could be made in peace time.

Administrators were concerned that their board might object to their use of these agencies because of experiences these board members had had with referrals for farm and village work in wartime. Here again, it appeared the agency was not getting a chance to demonstrate what type of applicants it could supply in peace time.

The employment agency was often located in a community at some distance away and these administrators were concerned that applicants for custodial work from distant cities might not prove satisfactory. This point of view was open to question and there was a reluctance to consider "outsiders" which was not justified by experimentation on the part of these small school districts.

Custodial vacancies were announced in news stories in local papers in but twenty per cent of the school systems visited. Larger cities found metropolitan papers showing little interest in this type of "school news" and warily suggesting that their want ad

column could be used for that purpose. Smaller communities indicated they had not thought of using this method of recruitment in most school systems studied.

Not one of the school systems studied employed custodians from a list of candidates compiled by a civil service commission. School administrators expressed a fear that the practice of referral of candidates from a civil service commission might lead to the transfer of employment privileges to agencies other than the board of education. This concern stemmed from the past experiences of administrators as city and town office holders sought to influence school administrative policy. The separation of elections of boards of education from those of city and county had established an independence of action which administrators sought and about which this proposal for civil service action brought additional concern.

This lack of influence of a civil service commission was accountable, in part, for the fact that a small percentage (five) of the school systems studied had a pre-employment examination for custodians in use.

Items of Information About Applicants for Custodial Work Obtained by Selected Michigan School Systems

Every one of the one hundred school systems studied obtained from each applicant for custodial work his

name and address and all but one obtained the phone number of applicants. (See Table IV on the next pages.) The school system not obtaining phone numbers had few telephones in the district.

Ninety-three per cent of the Michigan schools asked applicants for their years of residence in the community. However, in schools employing more than one hundred ninety teachers this information was obtained from applicants for custodial positions in but thirty per cent of these districts. School administrators in large cities evidenced little interest in place of residence of custodians.

While smaller school systems studied had abandoned trying to limit the hiring of teachers to a consideration of only those applicants who lived in the community, the practice still persisted of attempting to limit custodial employment to residents of the school district. However, administrators of smaller school systems could offer no proof that these community residents made better custodians than those from outside the district.

Seventy-nine per cent of the school systems obtained the marital status of candidates for custodial work. Prospective employees were classified under the headings of "married", "single", "separated", "divorced", or "widowed".

TABLE IV  
ITEMS OF INFORMATION CONCERNING APPLICANTS FOR CUSTODIAL  
WORK OBTAINED IN SELECTED MICHIGAN SCHOOL SYSTEMS

ITEMS OF INFORMATION	Schools employing 7 - 24 teachers			Schools employing 25 - 90 teachers			Schools employing 91 - 190 teachers			Schools employing 191 + teachers			Universe of 606 Michigan Schools
	N1	%1	N2	%1	N2	%2	N2	%2	N2	%2	N3	%3	
Name	30	100.0	30	100.0	20	100.0	20	100.0	20	100	20	100	100
Address	30	100.0	30	100.0	20	100.0	20	100.0	20	100	20	100	100
Phone Number	30	100.0	29	96.7	20	100.0	20	100	20	100	20	100	99
Years residence in the community	20	66.7	24	80.0	9	45.0	7	35	7	35	7	35	93 - P
Marital status	25	83.3	22	73.3	15	75.0	17	85	17	85	17	85	79
Name of two or more references	22	73.3	23	76.7	19	95.0	20	100	20	100	20	100	77
Willingness to take training for work	24	80.0	18	60.0	10	50.0	3	15	3	15	3	15	67

N1 = Number of thirty selected schools obtaining the item of information  
 %1 = Percentage of thirty selected schools obtaining the item of information  
 N2 = Number of twenty selected schools obtaining the item of information  
 %2 = Percentage of twenty selected schools obtaining the item of information  
 %3 = Percentage of 606 Michigan school systems obtaining the item of information

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support informed decision-making.

3. The third part of the document focuses on the role of technology in modern data management. It discusses how advanced software solutions can streamline data collection, storage, and analysis, leading to more efficient and accurate results.

4. The fourth part of the document addresses the challenges associated with data security and privacy. It provides guidance on implementing robust security measures to protect sensitive information from unauthorized access and breaches.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of ongoing monitoring and evaluation to ensure that data management practices remain effective and up-to-date.



TABLE IV (CONTINUED)  
 ITEMS OF INFORMATION CONCERNING APPLICANTS FOR CUSTODIAL  
 WORK OBTAINED IN SELECTED MICHIGAN SCHOOL SYSTEMS

ITEMS OF INFORMATION	Schools employing 7 - 24 teachers			Schools employing 25 - 90 teachers			Schools employing 91 - 190 teachers			Schools employing 191 + teachers			Inverse of 606 Michigan Schools
	N <sub>1</sub>	% <sub>1</sub>	N <sub>1</sub>	% <sub>1</sub>	N <sub>2</sub>	% <sub>2</sub>	N <sub>2</sub>	% <sub>2</sub>	N <sub>2</sub>	% <sub>2</sub>	N <sub>3</sub>	% <sub>3</sub>	
Length of time employed at each of last three jobs	17	56.7	19	63.3	16	80.0	19	95	63				
Educational grade completed	19	63.3	17	56.7	20	100.0	14	70	63				
Work operation performed at last three jobs	15	50.0	19	63.3	17	85.0	12	60	63				
Reasons for wanting custodian work	19	63.3	18	60.0	15	75.0	7	35	62				
List of last three places of employment	15	50.0	20	66.7	17	85.0	20	100	60				
Reasons for leaving last three places of employment	14	46.7	19	63.3	15	75.0	11	55	56				

N<sub>1</sub> = Number of thirty selected schools obtaining the item of information  
 %<sub>1</sub> = Percentage of thirty selected schools obtaining the item of information  
 N<sub>2</sub> = Number of twenty selected schools obtaining the item of information  
 %<sub>2</sub> = Percentage of twenty selected schools obtaining the item of information  
 %<sub>3</sub> = Percentage of 606 Michigan school systems obtaining the item of information

TABLE IV (CONTINUED)

ITEM OF INFORMATION CONCERNING APPLICANTS FOR CUSTODIAL

WORK OBTAINED IN SELECTED MICHIGAN SCHOOL SYSTEMS

ITEMS OF INFORMATION	Schools employing teachers 7 - 24			Schools employing teachers 25 - 90			Schools employing teachers 91-190			Schools employing teachers 191 +			Universe of 606 Michigan Schools
	N1	%1	N1	%1	N2	%2	N2	%2	N2	%2	N3	%3	
Birthplace	17	56.7	15	50.0	10	50	16	80	55				
Hours instruction in custodial work	10	33.3	23	76.7	8	40	4	20	55				
Home owner or renter	12	40.0	23	43.3	6	30	8	40	47				
Nationality	9	30.0	14	46.7	8	40	14	70	39				
Religious preference	6	20.0	6	20.0	4	20	6	30	20				
Licenses possessed	3	10.0	10	33.3	4	20	2	10	20				

N1 = Number of thirty selected schools obtaining the item of information  
 %1 = Percentage of thirty selected schools obtaining the item of information  
 N2 = Number of twenty selected schools obtaining the item of information  
 %2 = Percentage of twenty selected schools obtaining the item of information  
 %3 = Percentage of 606 Michigan school systems obtaining the item of information

Seventy-seven per cent of the school systems included in the study asked the candidate for custodial work to supply the names of two or more references. In the schools employing less than twenty-five teachers the fact that forty-seven per cent of the school systems did not require submission of references was due to the fact that administrators of schools of this size had little difficulty finding someone in the community who knew the candidate.

Fifty-seven per cent of the school districts asked candidates for custodianship whether they were willing to take training for the work. Larger schools asked this information in fewer instances because many had a statement of policy under which custodians were hired that new employees were required to enroll in instruction given in preparation for their work.

Sixty-three per cent of the Michigan school systems obtained from applicants for custodial work a statement of educational grade completed. Several reasons for disinterest in this item were most frequently given by administrators of the other thirty school systems. Some expressed no hope for employment of high school graduates in their community for "that kind of work". Three school superintendents went as far as to say they hoped most of their graduates would



go into business or the professions. Some indicated their pay scale for custodial workers was not high enough to be attractive to high school graduates. Some stated they believed high school graduates would soon become bored with the monotony of the work.

Sixty-three per cent of these systems asked the candidates to indicate the nature of his work at his last three positions. This item, of all on the application blank, was most frequently left blank. Many applicants when interviewed did not know the technical name for the work operations they had performed and skipped filling in that information.

Sixty per cent and sixty-three per cent of the 606 public school systems in Michigan obtained a list of the last three places of employment and the length of time employed at each of the last three jobs, respectively. All schools employing more than one hundred ninety teachers asked custodial candidates for a list of the last three places of employment while all but one asked for a statement of the length of time employed at each of the last three jobs. In communities employing less than twenty-five teachers, approximately one half of the school administrators indicated that they did not obtain this information. They pointed out their ability to obtain such information on the spur of the moment from community sources.

Fifty-nine per cent of the school administrators obtained from candidates their reasons for wanting custodial work and fifty-six per cent the reason why those applicants left their last three places of employment. School administrators opening their interview with prospective custodians with the question, Why do you wish to be a school custodian?, were unanimously enthusiastic about this lead question. Their contention was that the answer to this question gave them meaningful statements based upon which to judge the candidate.

Reasons for leaving the last three jobs proved to be the item which school administrators indicated they intended to delete from their next printing of application blanks because of the lack of similarity of reasons stated by applicants and by their former employers.

The fifty-five per cent of the schools studied which asked custodial applicants to state their birthplace were unable to indicate uses they made of this item of information and were considering dropping it.

Nationality, home ownership or renter status, religious preference and licenses possessed were items of information solicited from candidates for custodial work by less than one half of the school systems included in the study.

State law that high pressure boiler operators of Michigan must possess a license caused only twenty per cent of the school systems to ascertain prior to employment if custodians possessed such licenses. School administrators employing unlicensed operators expressed little concern about the matter due to lack of enforcement of the legislation. Many had not thought through the implications if such an unlicensed operator were to neglect a boiler, thus causing an explosion. Several during the interview prepared a memo concerning the matter for presentation at the next meeting of the board of education.

Items of Information Concerning the Health of Applicants for Custodial Work Obtained by Selected Michigan Schools

Height and weight were the most commonly obtained items of information concerning the health of applicants for custodial work, with fifty per cent of the Michigan school systems soliciting that information.

Fifty per cent of the school systems of the sample obtained from candidates for custodial work a statement concerning the nature of the last illness causing loss of work time. Ninety per cent of the school systems employing more than ninety teachers obtained this information. More of these larger school systems had sick leave policies for custodial workers

TABLE V

ITEMS OF INFORMATION CONCERNING THE HEALTH OF APPLICANTS FOR

C STODIAL WORK OBTAINED IN SELECTED MICHIGAN SCHOOLS

ITEMS OF INFORMATION CONCERNING HEALTH	Schools employing 7 - 24 teachers			Schools employing 25-90 teachers			Schools employing 91-190 teachers			Schools employing 191 + teachers			Universe of 606 Michigan Schools
	N1	%1	N1	%1	N2	%2	N2	%2	N2	%2	N3	%3	
Height	14	46.7	13	43.3	16	90	16	80	16	80	50	50	
Weight	13	43.3	14	46.7	18	90	16	80	16	80	50	50	
Vision	16	53.3	10	33.3	12	60	12	60	12	60	46	46	
Rupture or Hernia	15	50.0	9	30.0	11	55	13	65	13	65	42	42	
Last illness causing loss of time	7	23.3	14	46.7	16	80	20	100	20	100	40	40	
Blood pressure	11	36.7	11	36.7	10	50	12	60	12	60	39	39	
Deformities	13	43.3	7	23.3	12	60	16	80	16	80	37	37	
Vaccination	5	16.7	5	16.7	10	50	8	40	8	40	30	30	
TE X-ray	9	30.0	4	13.3	6	30	7	35	7	35	22	22	
Masserman or Kahn Tests	4	13.3	2	6.7	9	45	11	55	11	55	12	12	

N1 = Number of thirty selected schools obtaining each item of information  
 %1 = Percentage of thirty selected schools obtaining each item of information  
 N2 = Number of twenty selected schools obtaining each item of information  
 %2 = Percentage of twenty selected schools obtaining each item of information  
 N3 = Percentage of 606 selected Michigan schools obtaining each item of information



in print and needed accurate information about prior illness than the smaller schools, where only thirty-five per cent of the schools obtained this information and few had policies in print pertaining to sick leave for custodians.

Information about the vision of candidates was secured by forty-six per cent of the school systems of Michigan. Only forty-eight per cent of the school systems secured information about deformities. Forty-six per cent of school systems checked applicants for custodial work for hernia or rupture. This indicated a failure on the part of the other fifty-four per cent of the school systems to keep records which might be used to indicate that a worker had some injury when applying for a position rather than having developed it while on the school payroll.

Blood pressure of custodial applicants was obtained by only thirty-nine per cent of school systems studied. Non-possession of such records in more than one half of the school systems indicated the possibility that custodians in the majority of schools studied might be assigned types of work which workers with some type of heart condition should avoid for their own as well as pupils' and teachers' welfare.

Vaccination of those applying for custodial work was checked upon by only twenty per cent of the



school systems. School systems employing less than ninety-one teachers checked upon this condition in but six of the sixty districts visited. Thus, in fifty-four districts it was found a needless chance was taken that at some time a custodian might contract and expose many to small-pox.

Only twenty-two per cent of the school systems studied obtained reports on Wasserman or Kahn tests or X-ray examinations for tuberculosis of candidates applying for custodial work.

Feelings of chagrin were expressed by school administrators of every size school district investigated concerning the lack of evidence of physical condition obtained by school districts about candidates for custodial positions. As one superintendent of schools stated:

If there has been one area in which we (the school administrative officials) have been negligent, it has been in this area of getting health information about candidates for custodial work. The need for such information is clear to me and could have saved me some administrative headaches twice in the last twenty years.

I have taken course work in four colleges and have not had anyone discuss this topic (the need for health examinations of applicants for custodial workers) in any one of my courses in educational administration. From experience I know we need some help in this matter.

This lack of accumulation of information concerning the health of applicants for custodial work will be considerable less in the future if all these

administrators indicating an interest in having their boards of education adopt such policies have the success they (the administrators) thought would be experienced.

## CHAPTER V

### THE INSTRUCTION OF SCHOOL CUSTODIANS

Formulation of the questionnaire concerning the instruction of school custodians was preceded by a study of the findings of authorities in the field of building maintenance and operation in the United States.

This investigation of instruction of school custodians has been reported in this chapter under the following headings: the beginnings of custodial instruction; the values of custodial instruction; qualifications of instructors of custodians; methods of instruction of custodians; and the content of the course of study for custodians.

#### The Beginnings of Custodial Instruction

Possibly the first study concerning instruction of custodians was Garber's dissertation.<sup>71</sup> He found that prior to 1920 only sixty-one references contained information of any importance on school custodial work. Further, he discovered only one reference in educational literature written prior to 1910.

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<sup>71</sup> James A. Garber, The School Janitor (unpublished Doctoral dissertation, George Washington University, Washington, 1920), p. 205.

At San Francisco in 1911 the National Education Association heard a report from a previously appointed "Committee on Efficiency of Janitor Service". W. D. Frost of the University of Wisconsin, in giving this report<sup>72</sup>, described an instructional program for the "janitors" working in one of the buildings of the university. This "short course" for janitors of one building of the university was expanded to include custodians of all the university buildings and its findings and recommendations were added to a non-credit course offered by extension.

In 1912, at the National Education Association meeting in Chicago, G. M. Wilson<sup>73</sup> told how to select and use a "head janitor" who could instruct other janitors. Impetus was given custodial instruction by the passage of the Smith-Hughes Bill by Congress in 1917. Under the direction of H. H. Linn of that city, a custodial training program was established which took advantage of allocation of federal funds for this type of instruc-

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<sup>72</sup>W. D. Frost, "Our Short Course for Janitors," National Education Association: Addresses and Proceedings. San Francisco: 1911. pp. 462-7.

<sup>73</sup>G. M. Wilson, "The Standardization of Janitor Service," National Education Association: Addresses and Proceedings. Chicago: 1912. pp. 487-9.



tion.

In 1917 the Oakland (California) Board of Education changed the designation of "school janitor" to that of "school custodian". A series of seventeen lectures<sup>74</sup> were given at meetings of all custodians of the city. (See Table VI.)

About the same time Iowa State College at Ames established a short course for custodians. Lectures and demonstrations were given at various locations throughout the state in the evening and school systems in the area were invited to send their custodians.

By 1924 Colorado State College of Education had established a "custodial training program" at Greeley under the direction of H. S. Ganders<sup>75</sup> in which custodians were given directed work experience in residence at the college. Experts gave class lectures and conducted discussions, demonstrations and experimental work on custodial tasks.

The Kansas State Board of Vocational Education began custodial instruction in 1927 when its first

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<sup>74</sup>J. A. Garber, op. cit., p. 19.

<sup>75</sup>C. C. Reeves and H. S. Ganders, School Building Management (New York: Bureau of Publications, Teachers College, Columbia University, 1928), pp. 28-9.





TABLE VI SEVENTEEN LECTURES GIVEN TO ALL CUSTODIANS OF  
OAKLAND (CALIFORNIA) DURING THE 1917-18 SCHOOL YEAR

NUMBER	LECTURE TOPIC	SPEAKER
1.	What the Board of Education Expects of a Custodian	President of Board of Education - Oakland
2.	What the Superintendent Expects of a Custodian	Acting Superintendent of Schools - Oakland
3.	What the Business Manager Expects of a Custodian	School Business Manager Oakland
4.	Cooperation Between the Principal and Custodian	President of Principal's Club - Oakland
5.	Custodian's Relationship to the Pupil	Secretary of Principal's Club - Oakland
6.	The Custodian's Relationship to Recreation and Social Center Activities	Superintendent of Recreation Department of (City of San Francisco)
7.	The Custodian's Part in the wider Use of the School Plant	High School Principal, Alameda
8.	Some conditions in the School Environment which may Affect the Child's Health	Assistant Professor of Epidemiology, University of California
9.	The Care and Use of the Drinking Fountain	Designated Oakland Custodians
10.	How to Handle Emergencies at the School	Professor of Hygiene, University of California
11.	Fire Prevention and Control	Chief, Oakland Fire Department
12.	Heating and Ventilation	Assistant Professor of Agriculture, Mechanics, University of California
13.	The Operation of Oil Burners	A company Service man
14.	The Use and Care of Steam Apparatus	Licensed Engineer from City of Oakland
15.	Automatic Temperature Regulation	A company Service man
16.	The Operation and Care of Electrical Equipment	Supervising Inspector, Electrical Department, City of Oakland
17.	The Oiling of Floors	A custodian Trained in the work

custodial training class<sup>76</sup> was attended by thirty-three men. In 1927 a school custodian wrote President W. A. Brandenburg stating he had attended a "janitor's school" in Colorado and asked him to have Kansas State Teachers College give a similar course. This course took place on December 12 through 16 of that same year.

By 1929, E. Dale Kennedy, Superintendent of Schools at Clare, Michigan, discussed with President E. C. Wariner of Central Michigan College of Education, the problem of custodial instruction. Dr. Wariner, who had been superintendent of schools at Saginaw (Michigan) saw the need for this instruction and invited schools of central Michigan to send custodians to a two day "institute" at Mt. Pleasant (Michigan). E. Dale Kennedy was director of this "institute" and the meetings continued yearly until its sessions were consolidated with a series begun at Michigan State College in 1934.

By 1932 Womrath had reported<sup>77</sup> that the instruc-

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<sup>76</sup>Kansas Janitor-Engineer Schools 1927 to 1938 (Topeka: Kansas State Board for Vocational Education, 1938), p. 7.

<sup>77</sup>George F. Womrath, Efficient Business Administration of Schools (Milwaukee: Bruce Publishing Company, 1932), pp. 39-43.

tion of custodians was recognized as part-time vocational education and costs of this instruction were being reimbursed by federal aid and state aid under provisions of the Smith-Hughes, Smith-Sears, and Smith-Towner Acts.

In 1933, Ralph Tenny, Director of Short Courses at Michigan State College, was asked by the board of education of his district, (Okemos, Michigan) why a short course could not be organized for custodians.

In 1934 a group of custodians met at Michigan State College with the cooperation of the State (Michigan) Board of Control for Vocational Education, formulated a long range plan for custodial training. During the summer of that year, the first "short course for school custodians" took place with 150 enrollees attending lectures and demonstrations at Morrill Hall. By 1953, the meeting of this group had enrolled 870 persons in the "Twentieth Annual Conference of Custodians and Engineers".

The enactment of the George-Dean act by Congress in 1936 gave additional financial means which enabled state departments of education to be reimbursed from the national treasury for part of the funds spent in providing for custodial instruction programs. This bill designated "service" occupations in addition to agriculture, home economics, and trades and industries as



being eligible for reimbursement of state and local funds spent.

Rogers' study,<sup>78</sup> published in 1938 showed that in 1935 there were seven colleges giving instruction to school custodians, i.e., Colorado State College of Education, Purdue University, Iowa State College, Kansas State Teachers College, Michigan State College, University of Minnesota, and University of Nebraska.

Studying the same problem in 1941, Shuter<sup>79</sup> added Columbia University and Texas Agricultural and Mechanical College to the list of those found by Rogers to be giving instruction to school custodians.

In 1941 a committee of fifteen custodians, from as many cities in Michigan, petitioned Michigan State College and the State Department of Public Instruction to consider a plan whereby instruction in custodial work could be given in various cities in the state. The curtailment of travel during World War

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<sup>78</sup>

J. F. Rogers, The School Custodian, Bulletin Number 2. United States Office of Education (Washington: United States Government Printing Office, 1938), p. 12.

<sup>79</sup>L. B. Shuter, "A Training Program for Columbus, Ohio," (unpublished Master's thesis, The Ohio State University, Columbus, 1941), 50-51.

II led to postponement of consideration of this plan but in 1946 it was put into effect.

An advisory committee composed of Cecil Willard and Clyde Campbell of the School of Education, Michigan State College; Dean Lorin G. Miller, School of Engineering, Michigan State College; Director Ralph Tenny, Institute of Short Courses, Michigan State College; E. E. Kinney, Superintendent of Buildings and Utilities, Michigan State College; Malcolm V. Whale and Harold Van Westrienen, Office for Vocational Education (Michigan) and Charles Bradley, president of Michigan Association of School Employees, met quarterly in 1946 and 1947 at Michigan State College to plan and direct this instructional program.

In 1948 Rice<sup>80</sup> found nine colleges operating such instructional programs for custodians. In 1949 at the suggestion of Dr. Eldon Sessions, an instructional program for custodians began at Utah State Agricultural College.

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<sup>80</sup>J. D. Rice, "An Analytical Survey of Training Facilities for Public School Custodians," (unpublished Doctoral dissertation, Colorado State College of Education, Greeley, 1949), p. 21.

Harold Nichols in 1953 surveyed cities of the United States and tabulated the types, number and years of existence of their custodial instructional schools. His table XXXII is reported (with his permission) as Table VII on the following page.

Dr. Dressler<sup>81</sup> summarized the broadest viewpoint on instruction of custodians when he suggested possibilities of having training for those who wished to be employed outside school systems. In 1939 he recommended:

In a city as large as St. Louis (Missouri), there should be a definite training school for custodial-engineering employees, making it possible for the men and women engaged in these services to learn the "what", "when", "how", and "why" of these various jobs and responsibilities. This school should not only train new recruits, but give in-service training to persons who might wish to secure employment in this field in private industrial plants.

#### The Values to be Gained by Custodial Instruction

The most comprehensive study of the values to be gained through instruction of school custodians was completed by Nichols<sup>82</sup> in his statewide study of custodial instruction in Ohio in 1953. He noted the

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<sup>81</sup>F. C. Dressler, Portland Oregon School Survey (Yonkers: World Book Company, 1915), p. 13.

<sup>82</sup>Nichols, op. cit., pp. 118-120.



TABLE VII TYPE, NUMBER, AND YEARS OF EXISTENCE OF CUSTODIAL TRAINING PROGRAMS  
 IN WHICH STATE VOCATIONAL EDUCATION DEPARTMENTS PARTICIPATE

STATE	Schools Conducted Under Direction of Vocational Education Department		Schools Conducted through Co-operation of Local Schools		Schools Conducted through Co-operation of Colleges	
	Number	Years in Existence	Number	Years in Existence	Number	Years in Existence
Arizona	1	14				
Arkansas	6	15	*	15		
California			26	19		
Colorado			51	7	1	15
Connecticut	3	7				Discontinued
Delaware	3	3				
Kansas	8	23	30			
Iowa			10	25	1	30
Maine			6	3		
Michigan			31	13	2	5
Minnesota			4	10		
Missouri			5	15		
Nebraska			2	12		
New York	2	2	26	2		
North Dakota			8	3	1	
Oregon	8	7	2	2		
Pennsylvania	12	11				
Tennessee			20			
Texas				Discontinued		
Utah	6	7	4		1	1
Vermont				Plan to in 1952		
Virginia				Discontinued		
Washington			3	10		
Wisconsin			2			
Wyoming	1	20	1	20	1	5
Total	50		231		7	

\* None operated during the current year

following results accruing to local school districts:

Housekeeping standards, custodial-administrative relationships, safety factors in school plant operation, custodial-teacher relationships, custodial-pupil relationships, school morale and safety practices showed improvement.....

.....Economies in savings of fuel, electricity, water, consumable supplies, equipment and machinery maintenance, and general carpentry repairs were noted.

.....Better use was made of cleaning time as custodians learned work scheduling and planning.

Linn found<sup>83</sup> through operation and evaluation of a custodians' training school in Minneapolis, that approximately the same values accrued where his training operated on a city-wide basis:

Improved morale among custodians, higher standards of housekeeping, better use of cleaning materials, interest by custodians in the total school program, better public relations, and economies of plant operation were shown by our studies to be attainable through instruction of custodians.

At Milwaukee careful records were kept on their city-wide school for custodians operated during the school years of 1942-43, 1943-44, and 1944-45.

Halubowicz<sup>84</sup> kept careful records on three aspects of

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<sup>83</sup>Linn, op. cit., p. 20.

<sup>84</sup>William Halubowicz, "Milwaukee's Successful Engineers' School," American School Board Journal, LXIII (August, 1946), 26.

custodian work in the city schools.

He checked fuel consumption before and following the instructional period. He included consideration of the degree-day in his computations, thus compensating for weather changes.

A degree-day is a term used to represent weather conditions which determine heating load. It (a degree-day) represents the number of degrees that the mean temperature for any given day is below 65° F. Thus, a mean temperature of 62° for three days would represent nine degree-days.

His second series of records involved the amounts of floor seal used by custodians. He also attempted to find out whether such courses of instruction built resentment against the school system on the part of Milwaukee school custodians. His study of this aspect was conducted in unique fashion.

Halubowicz<sup>85</sup> found that every custodian of the Milwaukee schools who entered service returned to take up his former custodial position. Interview with each of these brought out the fact that the instructional sessions had built a loyalty to the school system that

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<sup>85</sup>Halubowicz, op. cit., p. 26.



offers of other positions with better salaries could not disrupt. While his judgement considered only one aspect of the problem, it did point out a trend toward building sentiments which caused former employees to return to their jobs.

His records of the amount of floor seal used showed that each year less seal was used as the lessons on how to conserve it were given.

His records of coal consumption in the City of Milwaukee schools show less fuel used each year:

In 1941-42 (the year before our training classes for custodians), 33,568 tons of coal were used during 6680 degree-days. In 1942-43 (the first year of our instruction for custodians), only 28,753 tons were burned in 7551 degree-days. In 1943-44, just 27,836 tons of coal were used in 7202 degree-days. In 1944-45 there were 25,474 tons of coal used. In other words, our school system (Milwaukee, Wisconsin) used 8,094 less tons of coal in the 1944-45 school year than we used the year before we began our custodial training (1941-42) even though the degree-days increased considerably.

No mention was made in Halubowicz's statement of the comparative number of hours that school buildings were kept open during the war years, nor were his records complete with regard to the mean wind velocity which affects fuel consumption in buildings oriented to have large glass areas facing west.

Records compiled at Santa Monica (California), Denver (Colorado), Topeka (Kansas), Miami (Florida), Dearborn (Michigan), Cedar Rapids (Iowa), Omaha

(Nebraska), East Orange (New Jersey), Austin (Texas), and Seattle (Washington), showed savings in cleaning supplies and fuel following instruction of custodians.

At Ohio State University, at Michigan State College, and at Northern Michigan College of Education, enrollment in custodial instruction has risen each year for ten years. Boards of education pay 95 per cent of all fees for room, board, registration and travel for these enrollees. The increasing size of these enrollments, costing thousands of dollars, would indicate that boards of education can see evidence of benefit in better practices of custodial work on the part of these employees.

#### Qualifications of Instructors of Custodians

Experienced custodians who have had satisfactory records of accomplishment, make the most capable instructors of other custodians if given effective teaching techniques. While methods and materials have their importance, experience has shown that the "teacher" is the deciding factor in whether or not class instruction of custodians continues. Virginia, Texas and Minneapolis had excellent courses of study and employed proven methods resulting in better custodial services in public schools; however, when personnel operating

these programs left those positions, the value decreased to the point where efforts toward such instruction ceased.

Only the largest of school systems have sufficient "depth" of personnel to instruct in all phases of custodial work.

The efficient operation and servicing of the modern school plant requires that the one instructing custodians have a broad background of engineering, construction, educational and public relations experience.

Instructors should have proved their efficiency by having performed the various operations and procedures of a capable school custodian.

Prosser<sup>86</sup> summarized the qualifications of custodian work instruction by saying:

Those who teach in evening industrial school must possess three indispensable assets: (1) they must be workmen of recognized skill or success in the thing they teach; (2) they must be masters of the technical knowledge with which they deal in their teaching; (3) they must be able to teach others what they know.

#### Methods of Instruction

In teaching the duties of a custodian to men be-

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<sup>86</sup>C. A. Prosser and T. H. Quigley, Vocational Education in a Democracy (Chicago: American Technical Society, 1949), p. 59.





ginning that work, the instruction has been organized in the following ways to assist these new men to gain competence.

In Seattle, (Washington), an old school building has been utilized for this purpose. Here a series of "laboratory situations" have been established. In one part of the building, called the "mechanical section", are to be found in operating condition, boilers, steam engines, plumbing systems and fixtures, thermostats, and air conditioning units. Special controls on each make it possible to create problems of operation which beginning custodians are taught to track down and correct.

In another room of the building is a variety of door closers, locks, panic bars, traps, valves, pumps, and motors. Each can be disassembled and assembled. The beginning custodian "learns by doing" how to re-seat a valve, adjust a door closer, and put graphite instead of oil in a door lock to ease its opening and closing.

Another section of the building is equipped with a great variety of floors. Each type can be discussed and worked upon by mopping, sealing, waxing, polishing and dusting.

Still another room has a display of all the

tools, equipment and supplies used in the Seattle school system. Each is handled, used and discussed in this introductory course for custodians.

In Denver, (Colorado), the instruction of beginning custodians has been individualized, whereas, in Seattle instruction is given in groups. In Denver only certain phases are covered by a demonstration to the group. A series of "work assignment" sheets have been devised. When one has been completed and approved by the custodial instructor, the beginning custodian starts the next work assignment. Each assignment covers a number of operations. The replacement of a window pane in a sash is taught as nineteen operations, some of which include softening up the old putty for removal; removing the faulty glass; cleaning frame for the new glass; measuring for size of the pane; sizes of glass so that the ready-cut proper size pane can be selected or if it is necessary to cut one, a determination of the most economical practice in selection of larger glass to be used, etc.

Denver sends out its beginning custodians as workers in its school buildings with a record of having satisfactorily completed a 233 unit course, each working at his own speed.

In Pontiac (Michigan), custodians are hired and placed in the senior high school to work under the instruction of the head custodian of that building. In a modified apprentice type of teaching, he instructs each beginner in the work operation of his job. Concurrently, the beginning custodian enrolls twice a year in a ten-week course in custodial work along with other more experienced men. These classes meet in the evening for three hours once a week. Instructors are provided by Michigan State College.

In the area of public relations and understanding and interpreting school rules and regulations, school systems are instructing custodians in small or large group conferences with the school administrator or supervisor custodian present. Critics of this method are quick to point out that such instruction is not as effective when the same person who must "discipline" the men calls them together for "instruction".

Some phases of custodial work need constant re-emphasis to the men. For variety, the articles in periodicals which pertain to their work may be circulated among the custodians.

A wide variety of slides and motion pictures and other visual aids are available for the instruction of custodians. Sales representatives, if briefed upon



the specific needs of a school system or building, may conduct demonstrations of proper firing of an oil burner, methods of getting accumulated wax from baseboards, or efficient uses of a newly purchased vacuum cleaner.

Nichols concluded in his study<sup>87</sup> of ninety-one school systems in 1953 that there is no one standardized practice in the instruction of custodians that has been proved superior.

#### The Course of Study for Custodians

Examination of the following recommended courses of study for custodians indicates there exists general agreement on the subject matter to be covered among those who have been operating such instructional programs for a period of years.

At the Emily Griffin School at Denver (where all Denver custodians and some from other cities of the Rocky Mountain area are trained), the eleven units of instruction are as follows:

1. Sweeping and Dusting
2. Floor Maintenance
3. Washing
4. Classroom Mechanics

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<sup>87</sup>Harold Nichols, op. cit., p. 113.

5. Plumbing Repair and Maintenance
6. Carpentry
7. Electric Motors, Fixtures and Controls
8. Painting
9. Firemanship
10. Heat and Air Control
11. Hardware Repair

East Orange, (New Jersey) has organized its instruction of custodians into the following six units:

1. School Housekeeping and Sanitation I
2. School Housekeeping and Sanitation II
3. School Housekeeping and Sanitation III
4. Heating
5. Ventilation
6. Miscellaneous Activities including Fire and Accident Prevention, Care of School Grounds and Job Assignments and Human Relations.

The Omaha, (Nebraska), Public School Custodial School included the following area of work in its instructional program for the 1947 summer session:

1. Scheduling Work Assignments
2. Steam Plant Operation
  - a. Emergency Heating Plant Operation
  - b. Operation of Down-Draft and Up-Draft Boilers

3. Steam Plant Operation
  - a. High Pressure Plant Operation
4. Care of Fluorescent Fixtures
5. Care of Asphalt and Rubber Tile Floors
6. Electrical Plant Maintenance
7. Sanitation, Dusting and Polishing
8. Emergency First Aid
9. Glass Installation
10. Maintenance of Old Wood Floors
11. Maintenance of Linoleum
12. Maintenance of Concrete Floors, Walls, Wood Trim, Furniture and Glass.
13. Care of Renovated Buildings

Brown and Kee<sup>83</sup> operated the Los Angeles Custodial Training School by teaching the following units of work:

1. Boiler Operation
2. Fuels and Fuel Burning Equipment
3. Boiler Types and Care
4. Boiler Operation Records
5. Heating and Ventilating Systems

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<sup>83</sup>William F. Brown and Irvin B. Kee, Building Operation and Maintenance Series (Los Angeles: Research Publishing Company, 1948), p. 3.





6. Fittings and Equipment of Steam Heating  
Systems

7. Cleaning
8. Minor Repairs
9. Duties of Maintenance Personnel
10. Safety
11. Care of Floors

Dr. Alanson Brainard<sup>89</sup> has experienced success in Lincoln (Nebraska), Muskegon and Dearborn (Michigan) in organizing instruction of custodians into the following units:

1. Relation of the Custodian with Others
2. Planning an Effective work Schedule
3. Equipment Used by the Custodian
4. Supplies Used by the Custodian
5. Treatment and Care of School Floors
6. Cleaning and Dusting the School Building
7. Heating the Building
8. Ventilation of the Building
9. Fire Prevention
10. Accident Prevention
11. Care of Electric Service Units

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<sup>89</sup>Brainard, op. cit., p. 5-7.

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12. Conservation of Equipment and Supplies
13. Maintenance of Buildings and Equipment
14. Care of the School Grounds

Dr. Nelson E. Viles,<sup>90</sup> School Building Specialist of United States Office of Education, recommended the following units in light of his instructional experience:

1. An Analysis of the Custodians' Job
2. Housekeeping
3. Daily Floor Cleaning
4. Other Cleaning Duties
5. General Care of the School Plant
6. Safety in Schools
7. Developing a Work Program
8. Types of School Floors
9. School Floor Maintenance
10. Heating and Ventilating Systems
11. Fuels and their Combustion
12. Firing the Furnace
13. Care of School Heating Systems
14. Miscellaneous Duties
  - a. Care of Furniture

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<sup>90</sup>

Viles, op. cit., pp. 5-7.

b. Lawn and Ground Care

c. Termite, Insect and Rodent Control

15. School Building Repairs

The course of study for school custodians developed and used by Michigan State College is included in Appendix A. This course of study of 300 clock hours of training classes has been completed by 200 custodians and revised every other year to meet existing instructional needs formulated by custodians, administrators and instructors.

The Connecticut State Department of Education began a series of instructional classes<sup>91</sup> in 1944 which are still in operation. Their broad areas of emphasis have been (1) cleaning, (2) heating and ventilating, (3) maintenance, (4) school grounds and (5) safety, health, and sanitation.

Francis R. Scherer<sup>92</sup>, Superintendent of School Buildings, Rochester (New York), reported a need for organization of training for building maintenance and operation and study of costs in fifty

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<sup>91</sup>A. M. McCullough, "Connecticut Custodial Training Program," School Business Affairs, XI (November, 1944), 1.

<sup>92</sup>Francis R. Scherer, "Maintenance of School Buildings," School Business Affairs, XIV (November, 1948), 1.

cities in which he found approximately one third of the money spent for public school purposes in those cities in the ten-year period (1936-45) was budgeted for construction, operation and maintenance of buildings.

Needs for instruction of custodians were cited by him when he stated:

The day of the earlier type of janitor is rapidly passing. The newer school plants need a custodian who can give more expert attention to these plants because of the intricacies of equipment and controls. The increasing use of boilers, hot water storage and compressed air, introduces potential hazard that requires instruction for intelligent supervision.....We need better trained custodians than in the era of stove and furnace heat.

It is the kind of job for which training should be of the in-service type.

Viles<sup>93</sup> suggested:

The instructional program for custodians should be set up in a series of attainable steps so that the learner may measure progress.

#### Instruction in Safety Precautions

Custodians need instruction in safety practices. They need to learn how to inspect a ladder for safety as well as how to erect and use a ladder safely. It is imperative that they be taught how to determine the safety in the use of belts for outside window washing

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<sup>93</sup>viles, op. cit., pp. 5-7.

as well as the hooks in the casing to which the snaps on the belt are fastened. If a window basket is used, practice should be given in using the basket while on the floor before trying to adjust weight shifting and foot work while suspended outside a school building.

He needs to know that:

Lighting is important at the strategically vital spots -- around gages and indicators, on stairs and ladders, entrances, doors and exits. Boiler operation demands that one see quickly and easily and be able to go immediately where needed without being handicapped by poor light or none at all. Extension cords need inspection frequently to eliminate sources of electric shock.....Stairs must be kept clear and free of obstructions to prevent stumbling and falling accidents.<sup>94</sup>

The cleaning and waxing of floors should result in safe, slip-proof surfaces. As Marion Telford,<sup>95</sup> of the School and College Division of the National Safety Council pointed out:

One third of all the accidents reported to us (National Safety Council) as occurring on school property take place in the school gymnasium. We need to teach how to avoid slippery floors in these school gyms.....

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<sup>94</sup>Kenneth August, "Boiler Room Safety," National Engineer, LIII (January, 1949), 23-4.

<sup>95</sup>Marion Telford, "Safety Methods and Practices Applied to Schools," Proceedings, The Association of School Business Officials, (Palamazoo: Association of School Business Officials, 1948), 245.

We find the second most dangerous place in the schools is the corridor and steps. Part of these accidents are due to poor lighting, part to poor scheduling which leads children to go down corridors in a hurry, and a part is due to the need for training in floor care.

Steps must be kept in good repair and custodians taught how to inspect and repair faulty treads and risers.

I would like to suggest a training of custodians so they recognize a hazard and correct or report it when they see it is of very real importance in safe maintenance of a school building.<sup>96</sup>

The sizes and types of electrical fuses used for replacement should not be selected by guess work by custodians but these men should be trained to know the proper fuse for the circuit.

As August<sup>97</sup> has pointed out, they must not proceed on the basis of too little knowledge.

Lack of a little knowledge - the particular knowledge which makes the difference between efficiency and waste or safety and disaster, is what makes the difference between the competent and incompetent custodian. The successful custodian is one who recognizes the necessity for obtaining thorough training in the knowledge required to handle his daily tasks more effectively....

The hazard of overloading lighting circuits on stages should be taught custodians.

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<sup>96</sup>Ibid, p. 246.

<sup>97</sup>Kenneth August, "Is a Little Knowledge Dangerous?" National Engineer, LIII (November, 1949), 11.

We always have a problem of the quantity and distribution of light on a stage. It is your (the custodian's) responsibility to be trained to know how much load we can put on the circuit.<sup>98</sup>

Custodians should be instructed about the proper time to turn on exit and yard lights in time to prevent falls by persons arriving for night meetings.

Possession and knowledge in use of the first aid kit is essential, especially for those times when he works alone in his building.

He should also be taught to have to lift in such a way as to avoid injury to himself.

His instructions should ensure the safety of the building and its occupants by building the habit of checking the safety devices of his heating system.

He should learn to turn valves slowly on steam lines as he opens them under pressure. In entering the boiler for summer inspection and cleaning, whether he be alone or working with some one, he needs other safety precautions taught to him. Hot water tanks can explode as well as boilers and the custodians' instructions should include safe operation of those heating units.

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<sup>98</sup> Cecil H. Nickle, "Stage Setting and Lighting," Proceedings of Sixth Annual Conference for School Custodians (East Lansing: Michigan State College, 1939), p. 48.



The erection of safe, temporary bleachers is an exercise in which he should be practiced under supervision. Use of guards on machinery used in his (the custodian's) shop should be stressed to the point of becoming "second nature" to him.

School playgrounds, their fences, and their equipment should become his concern as he is trained in detecting and correcting, or suggesting correction of unsafe conditions.

If acids are to be used, he must learn of their safe handling and storage. In burning paper and refuse, he needs to know how to operate an outdoor and indoor incinerator. The use of power equipment for lawn care, hauling or snow removal should be taught the custodian.

He (the custodian) should be taught to guard the safety of those entering his building by mastery of the removal of snow, gravel and ice from sidewalks on the school property.

Inspection of the exterior of the building for loose slate, mortar, brick or sills should be taught custodians. The use of a pair of binoculars to check the brickwork and caps of tall chimneys should be illustrated.

Schools have glass, chemicals, paint, paper and other refuse which needs to be disposed of and the

custodian needs to be taught safety practices in this process.

Penfrace<sup>99</sup> pointed out that alertness to possible causes of contamination of the school water supply must be emphasized.

At Rockford, Illinois the bursting of a water main caused 400 deaths through water pollution in 1938. An auxiliary water tank placed high above an industrial plant was filled with water for cooling industrial plant equipment. When certain valves were turned, this polluted water from a germ-laden pond rushed through the city mains.

A cross connection can occur when back syphonage is produced by opening wrong valves or by repairs by "handy men" who have no knowledge of hydrostatic pressures or hydraulics. Custodians should be taught to be on the look-out for possible faulty plumbing and report needs for plumbing repairs to water supply to those who can summon a licensed plumber.

Maintenance of hygienic operation of septic tank installation is another task for a specialized technician, with the custodian needing instruction on situations to look for which might indicate further trouble in septic tank operation.

The operation of pumps in flooded or usually damp areas without having the danger of electric shorts occurring is another situation in which custodians should

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<sup>99</sup>E. L. Penfrace, "Cross Connections and Back Syphonage," Proceedings of 6th Annual Conference For School Custodians (East Lansing: Michigan State College, 1939), p. 38.

be taught to be alert for unsafe practices.

The uses of the six kinds of fire extinguishers needs to be a basic part of the instructional program for all school custodians. Arnold C. Renner<sup>100</sup>, Michigan State Fire Marshal, has pointed out;

A 2½ gallon soda acid extinguisher should be the most satisfactory for school use, except for electrical fires where a carbon tetrachloride one should be available. The custodian's first duty in case of fire is to summon the fire department. He may then return to try the small extinguisher if the fire is a minor one.

Prevention of panic due to faulty means of exits is also a measure in which the custodian should have instruction. Panic bars are placed on exit doors for emergency use and should not be chained. Exit lights should be maintained with bulbs burning during building occupancy, especially at night.

In setting up chairs in a school meeting place, custodians should be taught to have the aisles three feet wide. In classrooms no aisle should be less than seventeen inches wide; in high schools they should be at least twenty inches. A side aisle should be at least thirty-seven inches. We recommend no more than fourteen chairs in any one aisle across.

Custodians handle many extension cords and work around electrical outlets a great deal. They should be instructed in emergency first aid measures to use in case one of their fellow workers suffers electrical shock.

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<sup>100</sup> Arnold C. Renner, "Safety and Fire Hazards in Schools," Proceedings of 7th Annual Conference for School Custodians (East Lansing: Michigan State College, 1940), p. 16.

In planning their work, all the custodians should be taught to make a complete circuit of the building before locking up at night, taking particular care to check toilet rooms for smoldering paper in baskets, shops for glue pots left plugged in and home economics rooms for stoves left on.

The safe methods of storage of inflammable materials should be stressed. In school garages the bus mechanic-custodian needs to be taught to use extension exhausts when running gasoline motors indoors.

Some custodians will need instruction in the methods of assisting children to cross traffic-laden streets.

#### Instruction in Public Relations

The school custodian's instruction should include discussion with him of his role in public relations. We are using school buildings more and more in late afternoon and at night. He needs to be taught how to be the host to the public in his building.

The handling of civic center and other public meetings is definitely in the lap of the custodian on duty. If the night meeting runs on longer than arrangements were made for, the custodian should report their late leaving in his daily report. He should let the central office discipline the organization....

It is very important that the custodian use tact and diplomacy in answering questions and adjusting

to situations as they arise.... Some of these questions and suggestions may require a negative answer, requiring firmness. In our school (Glendale, California), our system has an ironclad rule that pianos may not be moved from buildings or over footlights in auditoriums without written permission from the Assistant Superintendent. If they suggest their group do the moving, this request must be denied by the custodian, as he tactfully explains previous experience of injury to personnel and damage to property....

Outside telephone calls after hours when the custodian is the only one in the buildings should be handled with courtesy....<sup>101</sup>

He (the custodian) should be taught how to compile the facts which could be used in a report to the public.

The facts concerning a bond issue should be given by the school administration to custodians as well as teachers. Any other special programs such as school-wide clean up days should be gone over with custodians in advance. Equally important is to ask custodians to share in post event evaluation.

In school systems where the names of teachers in each building are published in special editions of the local papers, custodians should also be included as a part of the school team of personnel all working for education of children and adults.

Custodians need to know the objectives and methods of education today if they are to interpret today's

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<sup>101</sup> John T. Cate, "Custodian' Relations with the Staff and the Public," School Business Affairs, XIV (January, 1948), 1-2.

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schools to those with whom they (the custodians) come in contact. Such knowledge is not absorbed merely because men work in today's buildings but they (custodians) need instruction on present day education, which in so many cases is so different from the schools of the custodian's youth.

Custodians need instruction in relationships with children, pupils, teachers, principals and supervisory personnel. They need thorough and periodic briefing on current school system rules and regulations.

The public relations aspect of giving custodians training so that they might conserve the school tax dollar should be stressed in the instructional meetings for those custodians.

#### Instruction in Heating and Ventilating

After having been taught the types of boilers, furnaces, water heaters and fuels used for combustion, the custodian should be instructed in safe and economical operation of the school heating and ventilating system. Custodians need to know that they are taught to fire boilers to prevent scale formation, as tests of boilers have shown that scale acts as an insulator against transfer of heat from fire box to water in tubes in the following ratio:

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Scale Thickness	Fuel Loss
1/32 of an inch	12%
1/16 of an inch	15%
1/8 of an inch	20%
3/8 of an inch	25%

The instruction in boiler operation efficiency should be related to boiler roof safety. As Hodges<sup>102</sup> has pointed out:

We need to train them (custodians) in safety. They need to be taught as they enter the boiler room to listen to determine if the plant sounds right. No one can describe this reaction, but effective boiler operators know the noises that should be present and miss a noise that should be present. They sense some of these things. Custodians need to be taught to look at the water column, the pressure gauges and the instruments as their next move in entering the boiler room.

The custodian then checks with the man on duty the previous shift to ask how the equipment has been running and to ask if anything unusual has been noticed. Next he blows down the water column and checks the water levels, the fire, drafts, pumps and injectors.

He does not guess the plant is running correctly. His instruction has drilled him in methodical checking of the heating and ventilating plant....

But emergencies do occur and the instructions custodians receive enable them to cope with these emergencies. For example, if the water is below the danger point in the boiler, as an outcome of his instructions, the custodian should know how to kill the fire, open the fire doors, and cool off the boiler....

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<sup>102</sup> Kenneth V. Hodges, "Boiler Room Safety," National Engineer, LIII (November, 1949), 21-2

As a result of training, the custodian should know every valve in the plant, why the valve is there and for what each is used. They have been taught what moves to make in a heating plant which ensures the safety of others in the building as well as themselves.

Effective combustion and smoke abatement are directly affected by stoker operation and maintenance practices, and custodians should be instructed in these practices.

As oil burners become more generally used in school buildings, instruction in their operation and servicing should be given custodians having to fire these units. Richard Lemkuhl<sup>103</sup> drew on his experience as smoke inspector in Cincinnati when he stated:

Custodians need to know how to fire without violation of smoke ordinances which violations are judged on the density as determined on a Ringelman chart or Umbroscope. Oil, can, if improperly fired, create blacker smoke than coal. In all instruction of custodians on oil burner operation, they (the custodians) should learn how to correct the following most common causes of oil smoke: (1) clogged nozzles, (2) water in oil storage tank, (3) no oil pre-heaters to heat heavy fuel oil when starting. Some burners will burn #5 oil without pre-heating but in all cases #6 oil will require heating. (4) clogged strainers, (5) improper air adjustment to burner and (6) poor design of combustion chamber.

The return of condensate is speeded if a vacuum

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<sup>103</sup>Richard Lemkuhl, "Smoke Causitive Factors and Corrective Measures," National Engineer, LIII (November, 1949), 18.

pump is installed in school buildings. The custodian needs to be taught the ordinary practices, such as bleeding the pump, which constitute vacuum pump maintenance.

Installation of unit heaters in classrooms has necessitated the inclusion in the instruction of custodians training in cleaning, operating and maintaining these heating devices. The Industrial Unit Heater Association has discovered:

Regular, scheduled maintenance of unit heaters is not expensive. Custodians should be instructed in how to clean heating elements at least yearly as dirt seriously reduces the heating capacity of the unit. Fans need to be cleaned more often as a dirty fan will get out of balance and cause excessive noise and vibration. He (the custodian) should be instructed how to check to see that the fan is in proper position and that set screws are tight.<sup>104</sup>

During World War II the problem of securing fuel and trained custodians to operate heating plants in school buildings led the American Petroleum Institute to issue a handbook on heating and ventilating. The study<sup>105</sup> indicated that instruction of custodians

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<sup>104</sup>The Care and Maintenance of Steam and Hot Water Heaters, Bulletin 12 (Detroit: Industrial Unit Heater Association, 1952), p. 2.

<sup>105</sup>How to Save Money on Oil Heating (Washington: American Petroleum Institute, 1943), p. 7.



should include practice in the observation of the following suggestions:

1. Adjust door closers to close outside doors promptly.
2. Keep temperatures low enough so teachers won't be tempted to open windows.
3. Prevent heat loss due to boiler soot.
4. Inspect the insulation of boilers and pipes.
5. Stop up air leaks around the boilers.
6. Keep boiler water clean for faster heating.
7. Get more heat from less fuel by installing baffles.
8. Insure clean, better burning fuel by use of oil filters.
9. Complete insulation for exposed pipes.
10. Check pitch of steam pipes.
11. Clean the filters in warm air ducts.
12. Use a shield behind the radiator to reflect heat into classrooms.
13. Check radiator valves.
14. Check draft control to keep too much heat from escaping up the chimney.
15. Check size and angle of the nozzle.
16. Save fuel by means of a quick-acting ignition.
17. Clean oil lines, filters and tanks.
18. Stop "oil drip".
19. Insulate hot water tanks.
20. Repair leaky water faucets.
21. Reduce room temperature to 60° at night.

The use of temporary school building structures, heated by small domestic type oil heaters necessitates instruction of custodians in the maintenance of this equipment. Eight important steps in this service routine follow:<sup>106</sup>

1. Clean control strainer

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<sup>106</sup> Facts Every Service Man Should Know About Space Heater Service, Form DS TS-6 (Lansing: Duo Therm Division of Motor Wheel Corporation, 1950), p. 27.

2. Flush line from tank to control
3. Clean oil control
4. Remove hex plug and clean oil inlet to burner
5. Check high and low oil flows
6. Adjust oil flow if necessary
7. Take draft gauge reading and correct down or low draft
8. Clean burner if necessary

School custodians need instruction in the repair and installation of seven types of separating traps. As Gould<sup>107</sup> pointed out:

They (custodians) must know of these types of traps; thermostatic, ball float, float and thermostatic, upright bucket, inverted bucket, thermodynamic, and tilting.

The control of boiler feed water to prevent costly repairs to boiler tubes is another activity in which custodians need instruction. As Edward Emerson<sup>108</sup> of The New York Association of Power Engineers stated:

Times have changed since 1882 when any type of water was used in boilers. Now we need to train custodians to take water samples, analyze them, and treat the boiler water accordingly.

Some school buildings are in operation which were constructed prior to 1910 in each state. Custodians of

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<sup>107</sup>Marvin Gould, Notes on Operation of Steam Heating Boilers and Auxiliaries (Ames: Engineering Extension Service, Iowa State College, 1952), p. 38.

<sup>108</sup>Edward Emerson, "Self Education from Advertising," National Engineer LCIII (February, 1949), p. 22.

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these buildings need instruction in hot air furnace operation and maintenance. In 1939 Professor C. H. Pesterfield of Michigan State College summarized this situation<sup>109</sup> as follows:

You (the custodians) need to learn how to operate efficiently hand fired furnaces. This is the purpose of your instruction. You will need to allow considerable ash to accumulate on grates in mild weather and carry a fuel bed of some five to eight inches in thickness. In cold weather, shake down the ash more often and carry a ten to twelve inch fuel bed for best results providing ample time and temperature is allowed for burning the volatile gases.

No part of the plant is more important from an operating standpoint than the boiler operator. He needs instruction.

Custodians should be instructed in proper care of ventilating fans, in cleaning and preventing storage in plenum chambers, and in maintaining humidifiers.

The maintenance of three types of thermostats was stressed by Harmon<sup>110</sup> as an area in which custodians need instruction:

The human body is constantly engaged in the production of heat from metabolic processes within the cells. Body temperature represents the balance struck

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<sup>109</sup>C. H. Pesterfield, "Considerations to be Understood in the Firing of Coal," Proceedings of Sixth Annual Conference for School Custodians (East Lansing: Michigan State College, 1939), p. 46.

<sup>110</sup>Darrell Boyd Harmon, Controlling the Thermal Environment of the Coordinated Classroom (Minneapolis: Honeywell Company, 1955), pp. 1 and 6.



by the heat produced in the tissues and the heat loss to the environment. When environmental temperature factors place demands on the mechanisms for maintaining body temperature, the altered physiology alters the effective functioning of those body systems used in cultural and learning tasks....

Though his attention is not focused upon his sensation of discomfort, we will find the cold child moving about, squirming, wiggling, flexing his muscles, activating against heat loss. The overheated child gradually drifts into a state of comparative lethargy and passivity long before he is aware that he is uncomfortable.

So we see the need for instruction in maintenance of the mechanical apparatus (thermostats) which control the thermal environment in which children learn.

Custodians need instruction in how to estimate the amount of supplies and equipment needed for a coming school year. They need to know how to order and stock parts and supplies for emergency repairs. As the Crane Company pointed out:<sup>111</sup>

Custodians cannot order by nickname or by word. Like other craftsmen they need to understand the language of piping. Certain terms have special meanings quite different from their usual meaning in everyday conversation.

Miller and Form<sup>112</sup> stressed the matter of use of technical terminology when they observed:

Jargon is developed more extensively among highly skilled workers because "everyday language" does not

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<sup>111</sup>Piping Pointers for Maintenance Men (Chicago: Crane Company, 1944), p. 4.

<sup>112</sup>Delbert Miller and William H. Form, Industrial Sociology (New York: Harper and Brothers, 1952), p. 290.

contain the words that refer to objects and occurrences at work.

The training in judgement concerning the completeness of combustion should be based upon measurement by instruments. Flue gas analysis and stack temperature reading and recording should be part of the instructional program for school custodians.

In 1949 Davis stated;

A medium cost CO<sub>2</sub> Indicator Draft Gauge may be purchased which will pay for itself in the first year of usage and does not require an expert to operate it. Custodians should have in their training program instructions in its use and practice in altering combustion operations based upon its readings.

The preparation of a school boiler for the summer lay-up period is another set of operational skills in which school custodians need instruction.

As Brainard<sup>144</sup> has commented;

If the boiler is to be out of service for a month or more, it should be emptied, opened and cleaned internally and externally by the school custodian. This is an important area of instruction as the boiler and breeching include steel parts which deteriorate more rapidly when the boiler is not in operation than when it is.

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<sup>113</sup>Clyde E. Davis, "Selection and Training the School Custodian," *Janitorial Training XI* (April, 1948) 18.

<sup>114</sup>Alanson Brainard, *op. cit.*, p. 173.

Viles<sup>115</sup> advocated training custodians in the skills of beginning the heating plant operation in the fall:

When the custodian puts his heating plant into operation in the fall, he needs to be instructed to treat it as he would a new one. If filled with water for summer storage, this water should be drained off and newly treated water added. If it (the boiler) has been laid up dry, he will replace all plugs and hand hole or man hole covers and fill with treated water. He should warm the boiler up slowly to permit even expansion. As he warms the boiler up he needs to learn to test all valves, gauges, and pumps. Fans and motors should be run for about two hours and then stopped for inspection. All this warming up should be done at a time when the building is not in use.

Many other items of instruction will comprise the complete instruction given to custodians on heating and ventilating but one factor needing particular stress is the cleanliness of the boiler room. Good housekeeping in the boiler room is an activity in which the custodian should be made to see the relationship between orderliness of boiler room and safe operation of the plant.

As Alfred Lamb<sup>116</sup>, Superintendent of Buildings and Grounds at Wayne University (Detroit), has concluded:

A dirty boiler room is a dangerous one. Laxity in cleanliness, I have found, goes hand in hand with unsafe operational practices. We can get a pretty good idea of the safety of children and teachers in

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<sup>115</sup>Nelson Viles, op. cit., p. 32.

<sup>116</sup>Alfred C. Lamb, "Boiler Room Safety", Proceedings of the 19th Annual Conference for School Custodians (East Lansing: Michigan State College, 1952), p. 21.



a building as far as heating operation is concerned by inspection of a boiler room for orderliness and cleanliness.

### Instruction in Building Cleaning

In the instruction of school custodians in building cleaning, it is imperative that they (the custodians) be given authentic information about uses of cleaning equipment and supplies. In 1942 W. A. Davenport kept careful records at Michigan State College and concluded;

Cleaning in any branch in any building at Michigan State College is divided into costs of 95% for labor and 5% material. Any material which will do the job easiest and that will save as much labor as possible and still not ruin walls or floors, is the material or supply you (the custodians) should use.<sup>117</sup>

Linn's studies<sup>118</sup> at Columbia showed that custodians need instruction in cleaning classrooms with fixed seats, individual chairs, and tables and chairs as well as dusting furniture, equipment, and woodwork with dust cloths which they have been instructed to prepare for use. Storage of dust mops and cloths in fire proof containers was also stressed as an instructional need.

Measurable loss occurs when lighting fixtures are

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<sup>117</sup>W. A. Davenport, "Maintenance of Walls and Floors," Proceedings of the 9th Annual Conference for School Custodians (East Lansing: Michigan State College, 1942), p. 25.

<sup>118</sup>H. H. Linn, op. cit., pp. 151-60.

TABLE VIII<sup>119</sup>

TIME REQUIRED TO CLEAN WINDOWS  
AT MICHIGAN STATE COLLEGE

WINDOW PANE SIZE	CLEANING SOLUTION USED		
	Amonia and water	Alcohol and water	T.S. P. Compound and water
2 sq. ft.	35.4 sec.	66.0 sec.	59.2 sec.
3 sq. ft.	30.5 sec.	55.6 sec.	50.0 sec.
4 sq. ft.	38.8 sec.	70.0 sec.	64.2 sec.
6 sq. ft.	45.0 sec.	86.7 sec.	75.0 sec.

<sup>119</sup>C. N. Rix, "Collected Data on Use of Time by  
Custodians, "Proceedings of 8th Annual Conference for  
Custodians (East Lansing: Michigan State College, 1941)  
P. 9.

TABLE IX<sup>120</sup>

TIME REQUIRED TO CLEAN CHALKBOARDS  
AT MICHIGAN STATE COLLEGE

AVERAGE TIME TO CLEAN 10 SQ. FT. OF BOARD SPACE	EQUIPMENT USED
17.6 seconds	Misto treated cloth
33.2 seconds	Kerosene and rags
14.5 seconds	Water and sponge
33.8 seconds	Sponge, squeegee and water





not kept clean. Table VIII shows the effect on cleaning time needed for the use of three solutions for washing windows. Table IX shows the results of time studies on cleaning blackboards. Findings in studies such as these should be used in the instruction of custodians.

Cleaning toilet fixtures and partitions, urinals, wash bowls, mop sinks, supply rooms, as well as compilation and posting of work schedules, has been the subject of extensive time and motion study in the Los Angeles, (California), area and these results<sup>121</sup> should be utilized in instruction of custodians.

#### Instruction in Floor Care

The school custodian's instruction in the care of floors should include the following items, it is agreed by Linn<sup>122</sup>, Erainard<sup>123</sup>, and Viles<sup>124</sup>.

Kinds of floors and floor coverings used in school buildings:

Preparation of sub-floors

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<sup>121</sup>Herbert Chellis, William T. Brown, Harvey Cooper, Edgar Elder and Glen McDorman, Instruction Sheets for Custodians (Los Angeles: Frank Wiggins Trade School, 1937), pp. 1-158.

<sup>122</sup>H. H. Linn, op. cit., pp. 72-98.

<sup>123</sup>Alanson Erainard, op. cit., pp. 78-96.

<sup>124</sup>Nelson Viles, op. cit., pp. 74-84 and 202-246.

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Laying of floors  
 Sanding floors  
 Etching and sealing concrete floors  
 Waxing floors  
 Sealing asphalt tile floors  
 Polishing floors  
 Vacuum cleaning floors  
 Push broom sweeping  
 Dust mop sweeping  
 Sweeping with dust cloth over push broom  
 Refinishing floors  
 Floor stain removal  
 Damp mopping entrance hall floors  
 Gymnasium floors

Instruction of Custodians in Care of Grounds

The grounds about a school building should be cared for in summer as well as in winter. Pupils and citizens should be able to take pride in pointing out the community's educational plant.

Custodians need instruction in how to care for school grounds. As C. P. Halligan<sup>125</sup>, Professor of

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<sup>125</sup> C. P. Halligan, "How to Maintain Attractive Grounds," Proceedings of 7th Annual Conference for School Custodians (East Lansing: Michigan State College, 1941), p. 48.



Landscape Architecture at Michigan State College has stated:

You folks (the custodians) create public good will toward education as you care for school grounds. But these tasks cannot be done by guess work. You will need instruction in correct ways to do this work.

Halligan<sup>126</sup> has pointed out that custodians need instruction to avoid the three most common difficulties in maintaining lawns which are - that lawns are not fed enough (fertilizer), are not watered enough, and are cut too close.

Professor James Tyson<sup>127</sup> of Michigan State College divided the information custodians must learn about lawn care into two activities:

#### Making a New Lawn

1. Grading
2. Draining
3. Lawn Soil
  - Texture, organic matter, soil improvement, thickness of surface soil needed, clay layers, damage to lawns
4. Grasses for Lawns
  - Common lawn grasses recommended
  - Seed mixtures for difficult locations

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<sup>126</sup>C. P. Halligan, Ibid. p. 49.

<sup>127</sup>James Tyson, Growing Beautiful Lawns, Bulletin 224 (East Lansing: Extension Service, Michigan State College, 1947), p. 1.

5. Preparation for seeding
  - To lime or not to lime a new lawn area
  - Use of fertilizer for different seed mixtures
  - Special fertilizers for different seed mixtures
  - Fitting the soil
6. Seeding the lawn
7. Care of the new seeding during early stages of growth

#### Care of Established Lawns

1. Lime on established lawns
2. Lawns need fertilizer
  - Fertilizing the open sunny lawns
  - Fertilizing shady lawns
  - Soluble fertilizers
3. watering the lawn
4. Mowing the lawn
5. Spring cleaning of the lawn
6. winter protection for the lawn
7. Reseeding to thicken turf
8. Controlling weeds
  - Dandelions and plantains
  - Crabgrass
  - White clover
  - Amount and times to apply "2,4-D"
  - Chickweed
  - Removal of weed killers from spray equipment
  - Reseeding and fertilizing bare spots left by killing weeds

The care of trees, shrubs and flowers is another area of duties in which authorities agree that the custodian should be instructed in the methods proven by research to be effective.

Patching and repair of surface play areas is a work operation in which custodians need to be trained as well as the construction and maintenance of signs denoting parking areas and bicycle parking racks.

Football stadiums, baseball fields and stands, cinder

and clay tracks, jumping pits, school forests and school camps confront the school custodian with maintenance problems for which he should have training.

Structural, sidewalks, curb, and flag pole maintenance is another area of work in which the custodian should be taught.

#### Instruction in General Building Repairs

Custodians who engage in general building repairs should be taught how to erect a safe scaffold and work safely thereon.

The following list includes many other operations for which instruction should be given custodians:

Caulking; point tucking brickwork; painting and varnishing; water repellent treating of walls; window glazing; window shade, sash cord, and venetian blind repairs; locks, panic hardware, and door check maintenance and repair; plumbing maintenance; eave trough and down spout maintenance; roof and chimney and flashing repair and maintenance; plastering; carpentry repairs to woodwork, walls and partitions; and minor electrical repairs such as replacement of switch plates.

Use of custodian's time on these types of work has been justified by studies such as the one reported

by R. W. Shafer,<sup>128</sup> Business Manager of the Cleveland Public Schools, in 1952:

An accurate record was kept by the Cleveland Public Schools this year for the application of "Formica" tops and sanding and refinishing furniture by our custodians.

The cost per table arm chair for covering and refinishing 90 table arm chairs was as follows:

Labor - 3/4 hour @ \$2.25 per hr.	\$1.69
1 and 3/4 sq. ft. of "Formica" @ 45¢	
per sq. ft. plus glue @ 5¢ per sq. ft.	.88
Total	\$2.57

The cost per 2' x 6' primary table for covering and refinishing 70 tables was as follows:

Labor - 1 and 1/2 hrs. @ \$2.25 per hr.	\$3.38
12 sq. ft. "Formica" @ 45¢ per sq. ft.	
plus glue @ 5¢ per sq. ft.	6.00
Total	\$9.38

The cost per pupil desk of the same operation on 40 desks was as follows:

Labor - 1 hour @ \$2.25 per hr.	\$2.25
3 sq. ft. of "Formica" @ 45¢ per sq. ft.	
plus glue @ 5¢ per sq. ft.	1.50
Total	\$3.75

The whole project was justified for the following reasons:

1. It produced a better top at less cost than bids by outside contractors.
2. A surface resistant to wear and tear and sanitary in all respects was installed in a short time.

<sup>128</sup> Robert W. Shafer, "Repairs and Maintenance of School Furniture at the Cleveland Schools," (unpublished report given at School for Custodians, The Ohio State University, Columbus, 1952), p. 3.



3. A marked improvement in raising the illumination and removing light contrasts in classrooms was achieved.
4. The custodians were happy with their work because of the ease in cleaning.
5. An appreciative group of teachers and pupils resulted from the work.

The instruction of custodians in general building repairs can be justified by comparison of costs of the tasks they are taught to do with the bids of non-school employed workmen.

## CHAPTER VI

### INSTRUCTION OF SCHOOL CUSTODIANS IN SIX HUNDRED SIX PUBLIC SCHOOL SYSTEMS IN MICHIGAN

Investigation was made of the current instruction given school custodians in six hundred six school systems of Michigan. The methods of instruction and the items of custodial work in which instruction was given were studied.

#### Methods of Instruction

The method of instruction most commonly used in Michigan public school systems was found to be that of having an individual conference between the school administrator and the custodian. (See Table X on the following pages.) The two schools not using this method contended that their large number of employees justified group meetings only. However, other school administrators having equally large numbers of employees pointed out that there was some loss of freedom of expression in the group conferences for which they compensated by having one short (five to fifteen minute) private discussion with each custodian.

Degree of formalization of individual conferences varied as it was found that more than eighty per cent of the school administrators had these instructional



TABLE X

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH USED CERTAIN

METHODS OF INSTRUCTION OF CUSTODIANS

METHOD OF INSTRUCTION	Schools employing teachers			Schools employing teachers			Schools employing teachers			Universes of Michigan Schools
	N <sub>1</sub>	% <sub>1</sub>	N <sub>1</sub>	N <sub>2</sub>	% <sub>2</sub>	N <sub>2</sub>	% <sub>2</sub>	N <sub>2</sub>	% <sub>2</sub>	
Individual conferences arranged	30	100.0	30	100.0	20	100	18	90	18	99
Small group conferences arranged	28	93.3	30	100.0	17	85	11	55	11	92
Custodians enrolled in state-wide institutes	23	76.7	26	86.7	16	80	20	100	20	82
Demonstrations were given by sales personnel of supply houses	26	86.7	23	76.6	10	50	13	65	13	79
Meetings of all custodians in school system took place	11	36.7	30	100.0	15	75	9	45	9	66

N<sub>1</sub> = Number of thirty selected school systems using method of instruction  
 %<sub>1</sub> = Percentage of thirty selected school systems using method of instruction  
 N<sub>2</sub> = Number of twenty selected school systems using method of instruction  
 %<sub>2</sub> = Percentage of twenty selected school systems using method of instruction  
 %<sub>3</sub> = Percentage of 606 selected Michigan school systems using method of instruction

sessions on a school bus, in a boiler room, or in a vacant classroom.

Small group conferences between custodians and school administrators took place in fifty-five per cent of the school systems having more than one hundred ninety teachers employed, although this method of instruction was the second most commonly used one among the 606 Michigan public schools.

Custodians were enrolled in state-wide institutes in eighty-two per cent of the Michigan school systems studied.

The use of sales personnel to give demonstrations to custodians of the correct use of supplies or equipment was a method utilized by seventy-nine per cent of the districts. Only three school systems had experienced enough dissatisfaction with this method that they were considering altering this instructional practice.

The apprenticing of all beginning custodial employees to work under the direction and instruction of experienced workers was a practice found to be in use in sixty-four percent of the school systems. Ninety-five per cent of the large school systems (those having ten or more buildings) used the method. School systems employing less than twenty-six teachers had one, two or three custodians. Administrators did not set up one custodian as



an authority on the work. Furthermore, these small school systems were discovered to have one, two or three of their custodial workers employed on different time shifts.

Sixty-six per cent of the 606 Michigan school systems had periodic meetings of all custodians employed for the purpose of instruction. It was pointed out that such matters as the retirement law, school rules and regulations, employment practices, and explanation of need for additional revenues from tax millage or bond issues voted were handled with more convenience when there was one instructional session for all custodial employees. Of the school systems which had utilized this method none could be found which were considering abandoning the practice as long as the same administrator remained in the school system as the superintendent.

Slightly more than one half of the school systems mimeographed and distributed information for their custodians. Circulation of magazine articles on custodial work among those employees, and the use of the services of the school nurse, county health units workers, and/or fire department staff as instructors were methods utilized by less than one half of these schools. Forty-five per cent of the Michigan systems were found to be following the practice of the mimeographing of material or

of circulating magazine articles. However, they were considering the abandonment of the practice because of the reluctance of custodians to read, discuss, criticize, and act upon these written suggestions. During the interviews many school administrators decided to continue the practices and to augment the reading material with meetings of custodians at which the main points in the articles were to be summarized and illustrated.

While less than one half of the 606 school systems had employed a consultant to work with custodians and to direct their instruction, another forty-one per cent had heard of this method of instruction from other school administrators, were convinced of its worth, and were planning to try it within the next three years.

The school administrators not using the services of school nurse, county health unit workers and/or fire department staff members to instruct custodians indicated the idea had not occurred to them and twenty-six of the administrators visited formulated plans to try the method during the coming school year.

Slightly more than one fourth of the school districts conducted a series of city-wide meetings for the instruction of all employees, such as custodians, teachers, etc.. Each administrator claimed values of cooperation,



staff spirit of unity, and loyalty to board of education policies resulted but none had attempted to measure these values which they stated had accrued.

The most frequently voiced objection to instruction of all employees at one time were: the variety of shift time at which employees worked; the distance and inconvenience of travel involved in getting all employees together; the variety of interests of the group which made it difficult to select topics for instruction in which there would be mutual interest; and the informal picnics, parties, and other social events which brought these workers together in an atmosphere which superintendents characterized as superior for building esprit d' corps.

Once a week classes for the instruction of custodians took place in thirteen per cent of these 606 school systems. Nearly one half of the school districts employing more than one hundred ninety teachers had these weekly classes for custodians and each had evaluated the method as worthwhile enough to plan for continuation of the method. Seven additional school systems of the same size indicated an interest in initiating such an instructional series.

Five per cent of the school systems visited had their custodians compile a manual of suggested custodial

practices as an instructional experience. Each administrator stated he experienced unexpected benefits as a result of this procedure among which were: a better spirit of cooperation among custodians, the discovery of unsuspected short-cuts in methods of cleaning which had been used effectively in some buildings but the advantages and benefits of which had not accrued to other school buildings, a stimulus to keep better records to discover effectiveness of methods of custodial work, and a decrease in the requests for different brands of supplies for various buildings, which gave opportunity for standardization.

Study by custodians to complete a correspondence course or pass a licensing examination was a method of instruction used by five per cent of the Michigan school systems having superintendents.

The most frequently voiced objection to study for passing a licensing examination was that the employment situation for custodians might change into one in which it would become as difficult to employ "certified" custodians as it has been in the past years to obtain "certificated" teachers.

It appeared that few raising this objection would claim that "certificated" teachers were less competent. The reason most commonly given for objection to a

requirement that custodians must pass a licensing examination appeared to be a weak one. On the other hand, the proponents of studying for licensing could furnish little evidence that licensed custodians did superior work compared with unlicensed ones.

The lack of use of correspondence course work as a method of instructing custodians was shown to be caused in part by the fact that seventy per cent of the school administrators interviewed did not know such courses were offered.

#### Items of Instruction for Custodial Work

The curriculum for instruction of custodians was investigated in one hundred selected Michigan school systems under seven divisions of building maintenance responsibilities: public relations, general building cleaning, floor care, heating and ventilating, safety, grounds care, and general building repairs.

Check lists of specified duties in each division of building maintenance responsibilities were compiled from the recommendations of authorities cited in Chapter V. Each duty of building maintenance listed was noted in each school system surveyed which offered instruction to its custodians concerning the item.

#### Instruction of Custodians in Public Relations

Instruction of custodians in their duties in the

Operational procedures necessary when public schools were used at night was found to be the most frequently used item of instruction. (See Table XI on the next page.) Schools employing more than ninety teachers were found to begin custodians on the night shift.

School districts employing less than twenty-five teachers gave instruction in operation of building services at night in only fifty-three per cent of the schools visited. Administrators stated that because their custodians knew most of the duties required of a night shift worker in a public school that these custodians needed little instruction in this regard.

Instruction concerning school rules and regulations were given custodians of sixty per cent of the 606 Michigan school systems. However, thirty-seven of the forty schools surveyed employing more than ninety teachers gave such instruction. School districts of that size were found to have such school rules and regulations in writing. In smaller schools, school administrators stated their rules and regulations were generally understood by their custodians, when these workers were employed due to previous contacts with the school.

Sixty-nine per cent of the school systems were found to instruct custodians in the wise use of the

TABLE XI  
 NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED CUSTODIANS  
 CONCERNING SELECTED ASPECTS OF PUBLIC RELATIONS

ITEMS OF INSTRUCTION CONCERNING PUBLIC RELATIONS	Schools employing 7 - 24 teachers			Schools employing 25-90 teachers			Schools employing 91-190 teachers			Schools employing 191 + teachers			Universe of 606 Michigan Schools
	N1	%1	N2	%1	N2	%2	N2	%2	N2	%2	N3	%3	
Operation of building services at night when the public uses school property	16	53.3	28	93.3	17	85	20	100	74				
Wise use of school dollar spent for building maintenance	16	43.3	26	86.7	15	75	14	70	69				
Relationships with teachers, principals, and supervisory personnel	17	56.7	22	73.3	14	70	18	90	66				
Relationships with children and pupils	16	53.3	21	70.0	16	80	18	90	64				
School rules and regulations	14	46.7	20	66.7	18	80	19	95	60				
Relationships with the public	15	50.0	20	66.7	14	70	18	90	60				

N1 = Number of thirty selected schools offering item of information  
 %1 = Percentage of thirty selected schools offering item of information  
 N2 = Number of twenty selected schools offering item of information  
 %2 = Percentage of twenty selected schools offering item of information  
 %3 = Percentage of 606 selected Michigan schools offering item of information

TABLE XI (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED CUSTODIANS  
CONCERNING SELECTED ASPECTS OF PUBLIC RELATIONS

ITEMS OF INSTRUCTION CONCERNING PUBLIC RELATIONS	Schools employing teachers			Schools employing teachers			Schools employing teachers			University of Michigan Schools			
	N1	%1	N2	%2	N1	%1	N2	%2	N1	%1	N2	%2	N3
Operation of school buildings, locker and grounds clean-up day or week	7	23.3	16	53.3	8	40	13	65	39				
Compilation for publication of facts concerning summer cleaning and building renovation completed	7	23.3	11	36.7	10	50	6	70	32				
Briefing custodians on facts concerning proposed bond issues	1	3.3	14	46.7	7	35	11	55	26				
Compilation for publication of names and building in which custodians work	1	3.3	7	23.3	3	15	8	40	14				
Knowledge of objectives and methods of education today	2	6.7	5	16.7	2	10	5	25	12				

N1 = Number of thirty selected schools offering item of instruction  
 %1 = Percentage of thirty selected schools offering item of instruction  
 N2 = Number of twenty selected schools offering item of instruction  
 %2 = Percentage of twenty selected schools offering item of instruction  
 N3 = Percentage of 606 selected Michigan schools offering item of instruction



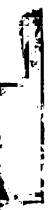
school dollar while about the same percentage of school systems gave custodians instruction in relationships with teachers, principals, pupils and supervisory personnel.

Sixty per cent of the districts offered some instruction to custodians on relationships with the public. They recognized the situation in which large numbers of adults used the school building as a community gathering place for meetings of various adult education activities.

Less than one half of the school systems operated a school locker clean-out or grounds clean-up day. Those public schools giving such instruction to school custodians in this area of activity constituted all but one of the schools having such an event.

About one third of the school systems surveyed offered instruction to custodians on compilation of facts for publication concerning the summer building and grounds cleaning completed and concerning the facts about proposed bond issues. Thus, only one school system in three made sure their custodians were well informed for community contacts by instructing these custodians about the facts concerning those bond issues. Conversation with custodians revealed that in three instances the vote of the custodian canceled that of a





citizen voting for school plant enlargement through bonding.

Only fourteen per cent of the 606 Michigan public school systems gave any instruction to custodians in the objectives and methods of education. The eighty-six per cent left to the custodians the task of analyzing objectives and methods of educational processes he observed in his daily work as he was able or inclined.

Instruction of Custodians in General Building Cleaning

Instruction of school custodians in toilet room care was the item of public building cleaning in which the largest percentage (91 per cent) of the school systems surveyed participated. (See Table XII on the following pages.)

Seventy-eight per cent of the school systems studied gave custodians instruction in use of cleaning supplies. Every school system employing more than ninety teachers had such an instructional activity in progress. The same percentage (78 per cent) of 606 school systems also gave instruction in correct use of cleaning equipment. School systems employing less than twenty-five teachers gave instruction to custodians concerning correct use of supplies and equipment in sixty-two per cent of the thirty schools surveyed. Lack of authentic information about cleaning supplies and equipment appeared to be



TABLE XII

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED

CUSTODIANS CONCERNING GENERAL BUILDING CLEANING

ITEMS OF INSTRUCTION CONCERNING GENERAL BUILDING CLEANING	Schools employing 25-90 teachers			Schools employing 91-190 teachers			Schools employing 191+ teachers			Universe of 606 Michigan Schools
	N1	%1	N2	%2	N1	%1	N2	%2	N3	
Cleaning toilet fixtures, partitions, urinals and wash bowls	26	86.7	28	93.3	19	95	20	100	91	
Correct use of cleaning supplies	18	60.0	28	93.3	20	100	20	100	78	
Correct use of cleaning equipment	19	63.3	27	90.0	18	90	20	100	78	
Cleaning and maintaining lighting fixtures	19	63.3	28	93.3	17	85	19	95	78	
Cleaning classrooms	19	63.3	26	86.7	16	80	20	100	76	
Window, door, plate glass and showcase cleaning	18	60.0	25	83.3	20	100	19	95	73	
Dusting	15	50.0	27	90.0	17	85	18	90	71	

N1 = Number of thirty selected schools offering item of instruction  
 %1 = Percentage of thirty selected schools offering item of instruction  
 N2 = Number of twenty selected schools offering item of instruction  
 %2 = Percentage of twenty selected schools offering item of instruction  
 %3 = Percentage of 606 selected Michigan schools offering item of instruction

1

TABLE XII (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED  
CUSTODIANS CONCERNING GENERAL BUILDING CLEANING

ITEMS OF INSTRUCTION CONCERNING GENERAL BUILDING CLEANING	Schools employing teachers		Schools employing teachers		Schools employing teachers		Universes of 606 Michigan Schools		
	'71	'71	'71	'72	'71	'72			
Cleaning mop sinks and maintaining orderly supply rooms	14	46.7	27	90.0	16	80	17	95	68
Experimental application to designated areas of waxes, seals and polishes	16	53.3	23	76.7	13	65	14	70	64
Requisitioning, handling, storing and packing supplies into smaller lots	9	30.0	18	60.0	13	65	16	80	47
Compiling and posting work schedules	5	16.7	14	46.7	10	50	15	80	34
Compiling and presenting required records for administrative officials	5	16.7	8	26.7	5	25	16	80	23

N1 = Number of thirty selected schools offering item of instruction  
 N1 = Percentage of thirty selected schools offering item of instruction  
 N2 = Number of twenty selected schools offering item of instruction  
 N2 = Percentage of twenty selected schools offering item of instruction  
 N3 = Number of 606 Michigan schools offering item of instruction  
 N3 = Percentage of 606 Michigan schools offering item of instruction

1

TABLE XII (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED  
CUSTODIANS CONCERNING GENERAL BUILDING CLEANING

ITEMS OF INSTRUCTION CONCERNING GENERAL BUILDING CLEANING	Schools employing teachers		Schools employing teachers		Schools employing teachers		Universes		
	N1	%1	N2	%2	N3	%3	of 606 Michigan Schools		
Swimming Pool care	1	3.3	3	10.0	7	35	16	80	12

N1 = Number of thirty selected schools offering item of instruction  
 %1 = Percentage of thirty selected schools offering item of instruction  
 N2 = Number of twenty selected schools offering item of instruction  
 %2 = Percentage of twenty selected schools offering item of instruction  
 N3 = Percentage of 606 Michigan schools offering item of instruction



the principal reason why these small school systems had a lower percentage of instruction in every operation of building cleaning than did those school systems employing more than twenty-four teachers. The larger school systems compensated for the lack of knowledge in this field by hiring outside consultants, going to local businesses and industrial establishments for capable instructors, or accepting the offers of maintenance supply company salesmen to give special instructions to custodians following receipt of a large order from these schools.

Slightly more than seventy-five per cent of the 606 Michigan public schools having superintendents were found to be offering custodians instruction concerning cleaning windows, door plate and showcase glass; lighting fixtures and classroom furniture.

Instruction on preparation, use and safe storage of dust cloths was given to custodians by seventy-one per cent of the school districts studied. The possible effects of accumulation of dust upon those subject to respiratory diseases as well as the public relations value of well dusted rooms, corridors, lockers and offices was stressed.

Instruction was given in sixty-four per cent of the schools visited in care of the places which the

public and pupils did not usually see, such as a custodian's supply, storage and office rooms.

Sixty-four per cent of the school systems enlisted the help of the custodians by instructing them in the experimental application to designated areas of waxes, seals, and polishes. The Michigan State Highway Department has experimented with yellow and white paint by placing lines parallel across highways using a different paint manufacturer's product in each line which is spaced one foot from each other. A sign (Paint Test Area) was posted beside the highway at that point indicating that manufacturer's grades and brands of paints were being tested prior to ordering.

More than one half of the schools testing products by applying to adjacent areas received the idea from observing the state highway testing program.

Only a few less than one half (forty-seven per cent) of the school districts visited gave instruction to custodians in requisitioning, handling, storing and packaging supplies into smaller lots.

About one third of the schools gave instruction to custodians in the important duty of compiling and posting their schedules of work. No written record of duties to be done by custodians or their substitutes employed on a temporary basis arranged according to a

1

time schedule was compiled and posted in thirty-eight of the one hundred school systems surveyed.

Less than one fourth of these same school systems gave custodians instruction in compilation of required records for administrative officials of the school systems. It was assumed that the blanks to be filled in (or in some instances oral or written requests for information) could be interpreted by custodians.

While only twelve per cent of the school systems instructed custodians in swimming pool care, this figure included ninety per cent of the school systems of Michigan having such facilities.

#### Instruction of Custodians Concerning Floor Care

The waxing of floors was the work operation of floor care in which the largest percentage (95 per cent) of the school systems gave instruction. (See Table XIII on the following pages.)

Large numbers of citizens entered the school gymnasium to see basket ball games who did not enter classrooms and it was found that three fourths of the schools visited gave their custodians instruction in gymnasium floor care.

The polishing of floors by using hand buffers or machines was a work operation in which seventy-nine

TABLE XIII

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED  
CUSTODIANS CONCERNING CARE OF FLOORS

ITEMS OF INSTRUCTION IN FLOOR CARE	Schools employing teachers		Schools employing teachers		Schools employing teachers		Schoo l universe of 606 Michigan Schools		
	N1	%1	N2	%2	N3	%3			
Waxing floors	27	90.0	29	96.7	19	95	20	100	93
Polishing floors	21	70.0	26	86.7	16	80	19	95	79
Dust mop sweeping	18	60.0	28	93.3	17	95	18	90	77
Gymnasium floor care	15	50.0	30	100.0	17	85	18	90	75
Refinishing floors	16	53.3	26	86.7	14	70	14	70	69
Push broom sweeping	18	60.0	21	70.0	19	95	20	100	68
Finds of flooring used in school buildings	16	53.3	25	83.3	16	80	19	95	65

N1 = Number of thirty selected schools giving instruction in each item

%1 = Percentage of thirty selected schools giving instruction in each item

N2 = Number of twenty selected schools giving instruction in each item

%2 = Percentage of twenty selected schools giving instruction in each item

%3 = Percentage of 606 selected Michigan school systems giving instruction in each item



TABLE XIII (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED  
CUSTODIANS CONCERNING CARE OF FLOORS

ITEMS OF INSTRUCTION IN FLOOR CARE	Schools employing teachers			Schools employing teachers			Schools employing teachers			Universe of 606 Michigan Schools
	N1	%1	N1	N2	%2	N2	N3	%3	N3	
Damp mopping entrance hall floors	12	40.0	23	76.7	12	60	17	85	61	
Sealing asphalt tile floors	13	43.3	18	60.0	7	35	16	80	51	
Vacuum Cleaning floors	14	46.7	15	50.0	9	45	16	80	49	
Etching and sealing floors	10	33.3	15	50.0	5	25	12	60	41	
Floor stain removal	12	40.0	13	43.3	5	25	11	55	39	
Sanding floors	10	33.3	14	56.7	4	20	10	50	38	
Sweeping with dust cloth over push broom	3	10.0	7	23.3	4	20	11	55	18	

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item

TABLE XIII (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED

CUSTODIANS CONCERNING CARE OF FLOORS

ITEMS OF INSTRUCTION IN FLOOR CARE	Schools employing teachers		Schools employing teachers		Schools employing teachers		Universe of 606 Michigan Schools		
	%1	%1	%2	%2	%2	%2			
Maintenance of floors over radiant heating pipes	1	3.3	4	13.3	2	10	14	70	18
Preparation of sub-floors	2	6.7	7	23.3	2	10	4	20	12
Laying floors	0		6	20.0	3	15	3	15	10

%1 = Number of thirty selected schools giving instruction in each item  
 %2 = Percentage of thirty selected schools giving instruction in each item  
 %3 = Number of twenty selected schools giving instruction in each item  
 %4 = Percentage of twenty selected schools giving instruction in each item  
 %5 = Percentage of 606 selected Michigan schools giving instruction in each item



per cent of the school systems gave instruction while the work operation of push broom sweeping was taught custodial workers in more than three fourths of the school districts. In only twenty-eight of the one hundred school districts included in the study was the custodian assigned a work area and given a push broom with which to sweep without being given instruction on how to use and care for the broom.

The method of cleaning and selection of materials and equipment to be used in sweeping, mopping and/or waxing was dependent on the kind of flooring used in the school building. This fact which was recognized by seventy-six per cent of the schools studied, for they offered instruction to custodians in the recognition of types of floors.

Instruction in dust mop sweeping was found to be given by seventy-seven per cent of the schools, while about the same number (69 per cent) offered instruction concerning materials and methods for refinishing floors.

The damp mopping of foyers following entrance of large numbers of children into the building to prevent transfer of snow, water, sand and calcium chloride (used in Michigan to thaw snow and ice on entrance steps and sidewalks) was a topic in which sixty-one per cent of the school



systems offered instruction to custodians.

The process of sealing asphalt tile floors, a practice recommended by tile manufacturers since World War II, was found to be used by nearly all of the school systems surveyed. However, only one half of them offered school custodians instruction in the methods of using this newly developed product. Vacuum cleaning of floors, another method of cleaning which has gained wide acceptance since World War II, was a process in which one half (49 per cent) of the school systems gave instruction to custodians.

Slightly more than forty per cent of the school systems studied gave custodians instruction in etching and sealing floors or removing stains from floors.

The sanding of wood floors was taught custodians by only thirty-eight per cent of the schools due to the increase in use of rubber, asphalt, mastic and ceramic tile floors in schools.

The method of use of a treated dust cloth over a push broom for sweeping floors was familiar to less than half of the administrators of the districts studied but eighteen per cent of the school systems were giving their custodial workers instruction in the method.

Instruction concerning maintenance of floors installed over radiant heating pipes was given by eighteen

per cent of the school systems, but this number included more than half of the school systems having such installations. Most of the school systems having such heating which did not give instruction had found that lowering the temperature of the water circulating in the pipes was more satisfactory than trying special maintenance methods with floors in those rooms or buildings.

The preparation of subfloors and laying of flooring were found to be activities usually done by contractors or sub-contractors rather than by custodians and small percentages of the school systems included in the study (12 per cent and 10 per cent) gave instruction to custodians in these work operations.

#### Instruction of Custodians Concerning Heating and Ventilating School Buildings

Safe boiler operation was the aspect of heating and ventilating in which the largest per cent of the Michigan school systems offered instruction to their custodians.

Less than three fourths of the school systems included in this study gave their custodians instruction in: special care necessary to preserve boiler heating surfaces; preparation of boilers for inspection; and

TABLE XIV

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED  
CUSTODIANS CONCERNING FLAMING AND VENTILATING

ITEMS OF INSTRUCTION CONCERNING HEATING AND VENTILATING	Schools employing 7 - 24 teachers		Schools employing 25-90 teachers		Schools employing 91-190 teachers		Schools employing 191 + teachers		Universe of 606 Michigan Schools
	%1	%2	%1	%2	%2	%2	%2	%2	
Safe boiler operation	20	66.7	25	83.3	16	80	19	95	76
Preparation of boilers for summer lay-up and inspection	14	46.7	27	90.0	17	85	20	100	70
Maintenance and operation of vacuum pumps	5	16.7	22	73.3	16	80	19	95	64
Boiler cleaning and/or repair	14	56.7	22	73.3	18	90	19	95	63
Stoker operation and maintenance	10	33.3	24	80.0	16	80	17	85	61
Control of boiler and/or feed water treatment	12	40.0	23	76.7	13	65	20	100	59
Types of boilers, fuel and water heaters	12	40.0	18	60.0	13	65	17	85	52

%1 = Number of thirty selected schools giving instruction in each item  
 %2 = Percentage of thirty selected schools giving instruction in each item  
 %1 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item

TABLE XIV (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH INSTRUCTED  
CUSTODIANS CONCERNING HEATING AND VENTILATING

ITEMS OF INFORMATION CONCERNING HEATING AND VENTILATING	Schools employing 7-24 teachers		Schools employing 25-90 teachers		Schools employing 91-190 teachers		Schools employing 191+ teachers		Universe of 606 Michigan Schools
	N1	%1	N2	%1	N2	%2	N2	%2	
Valve and trap maintenance	11	36.7	16	53.3	15	75	18	90	49
Ash handling equipment	8	26.7	19	63.3	10	50	13	65	45
Operation and maintenance of oil burners	9	30.0	13	43.3	15	75	18	90	41
Ordering and stocking parts and supplies for emergency repairs	9	30.0	14	46.7	10	50	12	60	40
Maintenance of electric, electronic and pneumatic thermostats	6	20.0	5	16.7	12	60	17	85	24
Hot air furnace maintenance and operation	1	3.3	11	36.7	5	25	4	20	19
Determination and use of flue gas analysis and stack temperatures	3	10.0	2	6.7	0	0	5	25	4

N1 = Number of thirty selected schools giving instruction in each item  
 N2 = Percentage of thirty selected schools giving instruction in each item  
 N3 = Number of twenty selected schools giving instruction in each item  
 N4 = Percentage of twenty selected schools giving instruction in each item  
 N5 = Percentage of 606 selected Michigan schools giving instruction in each item

the lay up of boilers until the next heating season.

While only fifty-nine per cent of the school systems gave custodians instruction in treatment of boiler feed water, it was noted that another twenty-five per cent used water from the Great Lakes which required little informational instruction for treatment. Another ten per cent using water which deposited considerable scale or caused caustic embrittlement of tubes, relied upon private firms who contracted to treat the boiler feed water.

Seventy-four school systems included in the study had stoker fed fuel burning boilers. Sixty-seven of them were found to be offering instruction in the operation of the stoker as well as maintenance procedures to use with stokers. Considerably fewer of the schools of Michigan (41 per cent) offered instruction in the care and operation of oil burners. Private contractors were often relied upon to serve these heating devices.

Instruction in maintenance and operation of vacuum pumps, valves, traps, water heaters, ventilating fans, ash handling equipment, plenum chambers, and humidifiers was given by about one half of the school systems surveyed. Of these installations the danger of explosion was much greater with water heaters.

However, the percentage of school systems giving instruction concerning water heaters to custodians was no greater than for some of the equipment with which there has been a smaller incidence of explosions.

The fact that but one fourth of Michigan schools offered instruction to custodians in maintenance of electric, electronic, and pneumatic thermostats, was found to be due to their reliance upon manufacturers' service men to do these repairs.

The small percentage of school systems offering instruction in hot air furnace maintenance and operation was found to be the result of the replacement of these heating media by oil burning heating equipment.

Perhaps the most disturbing finding concerning instruction of custodians in this area of work was the fact that only four per cent of the schools taught methods of determining flue gas analysis and stack temperatures. Utilization of these two measurements would have made possible the adjustments in air flow, stoker worm speed, or oil flow regulation which result in more economical operation of school building heating equipment.

#### Instruction of Custodians Concerning Safety

More school systems gave custodians instruction in care of toilets to conform with safety standards



than in any safety practice. (See Table XV on the following pages.)

The size and type of fuses for safe usage was recognized as a needed item of safety instruction by eighty-one per cent of the one hundred Michigan school systems studied. The danger of overloading circuits through improper fusing was a recognized hazard by school administrators who had experienced similar problems in their residences. Fire inspectors also assisted in building alertness to this problem by including a check of panel box fusing in their inspections.

The danger of costly damage to boilers, as well as possible explosion endangering building occupants, was given recognition by instructing custodians in checking safe water levels in boilers by seventy-nine per cent of the Michigan school systems. Danger to property as well as personnel was also recognized by provision for instruction in use of fire extinguishers by eighty-one per cent of the school systems studied.

Following the death of a custodian in a Michigan school due to opening a valve too rapidly ("cracking the valve too fast"), state-wide attention was centered on the accident and seventy-seven per cent of the school systems gave instruction concerning

TABLE XV

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE

CUSTODIANS INSTRUCTION IN SAFETY

ITEMS OF INSTRUCTION CONCERNING SAFETY PRECAUTIONS	Schools employing teachers 7 - 24			Schools employing teachers 25-90			Schools employing teachers 91-190			Schools employing teachers 191 + Michigan Schools			Universe of 606 Michigan Schools		
	N1	%1	N2	N1	%1	N2	N1	%1	N2	N1	%1	N2	%2	N3	%3
Care of toilet and wash rooms to conform with safety standards	22	73.3	30	100.0	18	90	19	95	19	95	19	95	19	95	66
Size and type of fuses for safe usage	19	63.3	30	100.0	18	90	18	90	18	90	18	90	18	90	81
Ability to check safe water level in boilers	21	70.0	25	83.3	18	90	19	95	19	95	19	95	19	95	79
Opening boiler blow down valves	22	73.3	22	73.3	18	90	19	95	19	95	19	95	19	95	77
Emergency use of fire extinguishers of all types	21	70.0	29	96.7	12	60	19	95	19	95	19	95	19	95	76
Location of light switches, panel boxes, fire boxes and extinguishers, and gas and water shut off valves	20	66.7	24	80.0	18	90	18	90	18	90	18	90	18	90	75

TABLE XV (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE  
CUSTODIANS INSTRUCTION IN SAFETY

ITEMS OF INSTRUCTION CONCERNING SAFETY PRECAUTIONS	Schools employing teachers 7 - 24			Schools employing teachers 25 - 90			Schools employing teachers 91-190			Schools employing teachers 191 +			Universe of 606 Michigan Schools
	N1	%1	N1	N1	%1	N2	N2	%2	N2	%2	N2	%2	
Safe, slip-proof floors following waxing and cleaning	15	50.0	20	66.7	18	90	14	70	61				
Snow, ice and small stone removal from walks	9	30.0	27	90.0	19	95	10	50	60				
Care to avoid leaving mops, and brooms where they might be tripped on	12	40.0	20	66.7	20	100	17	85	57				
Maintaining obstruction-free exits with unlocked, unchained doors	10	33.3	22	73.3	16	80	19	95	56				
Operation of hot water supply tanks	11	36.7	22	73.3	13	65	18	90	56				

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item

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TABLE XV (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE  
CUSTODIANS INSTRUCTION IN SAFETY

ITEMS OF INSTRUCTION CONCERNING SAFETY PRECAUTIONS	Schools employing teachers		Schools employing teachers		Schools employing teachers		Universe of 606 Michigan Schools
	N1	%1	N2	%2	N3	%3	
Inspection and repair of playground equipment	9	30.0	23	76.7	15	75	54
Maintaining light in dark stair steps and wells	9	30.0	22	73.3	14	70	54
Safe disposal of glass, chemicals and other refuse	10	33.3	18	60.0	17	85	50
Detection and repair of faulty risers, steps and treads	11	36.7	19	63.3	11	55	50
Duties in case of fire, air raid, or cyclone	8	26.7	20	66.7	12	60	48
Checking condition of equipment for outside window washing	7	23.3	17	56.7	11	55	47

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 N3 = Percentage of 606 selected Michigan schools giving instruction in each item



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TABLE XV ( CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE  
CUSTODIANS INSTRUCTION IN SAFETY

ITEMS OF INSTRUCTION CONCERNING SAFETY PRECAUTIONS	Schools employing teachers		Schools employing teachers		Schools employing teachers	inverse of 606 Michigan Schools			
	7 - 24	25-50	51-90	91-150	151 +				
	%1	%1	%2	%2	%2	%3			
Inspection of lamp and extension cords	10	33.3	17	56.7	13	65	12	60	46
Use of power mower equipment	8	26.7	19	63.3	15	75	9	45	46
Use of flame resistant material on party decorations	7	23.3	17	56.7	11	55	12	60	41
Care in use and storage of strong acids and detergents	6	20.0	16	53.3	14	70	14	70	40
Care of fences on school properties	4	13.3	16	60.0	17	85	6	30	38
Inspection of building exterior for loose slate, mortar, brick or overhanging sills	7	23.3	14	46.7	8	40	10	50	35

%1 = Number of thirty selected schools giving instruction in each item  
 %2 = Percentage of thirty selected schools giving instruction in each item  
 %3 = Number of twenty selected schools giving instruction in each item  
 %4 = Percentage of twenty selected schools giving instruction in each item  
 %5 = Percentage of 606 selected Michigan schools giving instruction in each item

TABLE XV (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE

CUSTODIANS INSTRUCTION IN SAFETY

ITEMS OF INSTRUCTION CONCERNING SAFETY PRECAUTIONS	Schools employing 7 - 24 teachers		Schools employing 25-90 teachers		Schools employing 91-190 teachers		Schools employing 191 + teachers		Universe of 606 Michigan Schools
	N1	%1	N1	%1	N2	%2	N2	%2	
Safe use of step and extension ladders	5	16.7	12	40.0	15	75	16	80	33
Prevention of electric circuit overloading	9	30.0	11	36.7	9	45	14	70	32
Condition of plaster on ceilings	6	20.0	9	30.0	12	60	14	70	32
Erection of safe temporary bleachers	8	26.7	9	30.0	14	70	7	35	31
Enforcement of smoking regulations	5	16.7	11	36.7	7	35	15	75	29
Prevention of "back syphonage" in plumbing systems	5	16.7	9	30.0	4	20	13	65	25
Placement and use of guards on moving machinery and saw blades	5	16.7	10	33.3	7	35	5	25	23

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item



TABLE XV (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE  
CUSTODIANS INSTRUCTION IN SAFETY

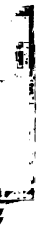
ITEMS OF INSTRUCTION CONCERNING SAFETY PRECAUTIONS	Schools employing teachers 7 - 24			Schools employing teachers 25-90			Schools employing teachers 91-190			Schools employing teachers 191 +			Universe of 606 Michigan Schools
	N1	%1	N1	N1	%1	N1	%1	N2	%2	N2	%2	N3	
Possession of and knowledge in use of first aid kits	7	23.3	7	23.3	4	20	5	25	5	25	23		
Operation of incinerators	2	6.7	10	33.3	7	35	10	50	10	50	21		
Operation of pumps in flooded areas without electric short occurring	3	10.0	8	26.7	3	15	4	20	4	20	18		
Extension exhaust use in running gasoline motors indoors	2	6.7	8	26.7	3	15	4	20	4	20	16		
Maintenance of vehicular traffic across pupil traffic areas	2	6.7	7	33.3	5	25	3	15	3	15	15		
Flame-proofing stage curtains and scenery	3	10.0	6	20.0	5	25	2	10	2	10	15		

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 N3 = Percentage of 606 selected Michigan schools giving instruction in each item

TABLE XV (CONTINUED)  
 NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE  
 CUSTODIANS INSTRUCTION IN SAFETY

ITEMS OF INSTRUCTION CONCERNING SAFETY PRECAUTIONS	Schools employing 7 - 24 teachers		Schools employing 25-90 teachers		Schools employing 91-190 teachers		Schools employing 191 + teachers		Universe of 606 Michigan Schools	
	N1	%1	N1	%1	N2	%2	N2	%2	N3	%3
Assistance of children across streets near school buildings	2	6.7	6	20.0	2	10	2	10	12	12
Emergency first aid treatment for electric shock, etc.	4	13.3	2	6.7	2	10	2	10	10	10
Inspection with binoculars of chimney and brickwork	2	6.7	1	3.3	2	10	3	15	6	6

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item



opening such valves correctly.

The recent tornado at the Beecher School district of Flint, Michigan, had also dramatized the need for having custodians know the location of all light switches, panel boxes, fire extinguishers, and gas and water shut-off valves. Three fourths of the Michigan school systems surveyed offered instruction in these items to custodians.

Stimulated by one major explosion of a water heater in the Faroda (Michigan) schools which caused injury to many school children and by minor explosions of boilers in other schools causing property damage, seventy-four per cent of the school systems of Michigan studied offered instruction to custodians concerning safe operating conditions for safety valves, pop-off valves, and low water cut-off controls on water heaters and boilers.

The prevention of falls by persons arriving for night meetings was facilitated by giving custodians instruction concerning turning on exit and yard lights prior to arrival of school users by sixty-five per cent of the schools surveyed.

The importance of fire prevention by having the custodian make a complete circuit of the building before locking up for the night was stressed by but seventy

per cent of the schools. The dangerous practices involved in cleaning boilers, (entering through small openings into the boiler, the use of improper extension cords, light bulbs without guards, ordinary light bulbs instead of explosive-proof ones, and scaling boiler interiors without the protection of goggles) was covered by instruction of custodians in sixty-six per cent of the school districts surveyed.

Storage of inflammable materials was a topic concerning which sixty-one per cent of the school systems gave custodians instruction. Local fire inspectors pointed out this need to school administrators and were utilized as instructors by thirty schools.

Safe pedestrian traffic into, through, and out of schools was recognized as a problem and instruction given in about two thirds of the districts in these work practices: waxing floors in a manner to make them slip-proof; maintaining obstruction-free exits during building occupancy; checking all doors to make certain panic hardware is in working order and unchained; and removing snow, ice, sleet, and small stones from entrance walks and steps.

Fifty-four per cent of the schools gave instruction on inspection and repairs of playground equipment. Prevention of falls was emphasized by the same

number of school systems by instruction concerning maintaining lighting facilities on stair steps and stair wells. The safe disposal of glass, chemicals, and other refuse was a topic also covered in the instruction of custodians in one half of the schools.

A national, state or local emergency such as bombing, flood, or riot, which might involve use of school buildings, would find forty-eight per cent of the school systems facing the emergency without having given their custodians any prior instruction in the nature of duties to be performed in such an emergency. However, since the survey was made, 1108 custodians of more than three hundred school systems of Michigan were given an account of the special duties faced by school custodians when a tornado destroyed school properties at Beecher School in Flint, Michigan.

Inspection of lamp and extension cords for their safety was taught custodians of fifty-two per cent of the school systems visited, while the storage and precautions to be used in use of strong acids and detergents was covered by instruction of custodians in one half of the same school systems.

Considerable use of ladders was involved in the duties of school custodians but only about one third of the districts offered custodians instruction concerning

safe practices in using them. In one third of the schools these workers were taught how to check equipment before using it for outside window washing.

One third of the schools studied also taught custodians how to test room ceilings to see if there was any danger from loose plaster, while thirty-five per cent taught these workers how to inspect building exteriors for loose sills, brick, mortar, slate or stone.

About one third of the districts instructed custodians in the erection of safe temporary bleachers for use at athletic events. However, nearly twenty per cent of the 606 Michigan public schools had discontinued use of temporary bleachers and had installed the permanent type.

The safe operation of incinerators was an activity in which only twenty-one per cent of the schools gave instruction, although seventy per cent of the systems had such installations around which children were observed playing.

Less than one fourth of the school districts gave custodians instruction in the use of first aid kits, with which about the same number of schools equipped the offices of custodial workers. Emergency first aid treatment for electrical shock was taught custodians in only ten per cent of the schools surveyed, even though these

workers handle electrical extension cords and work around motors at frequent intervals.

#### Instruction of Custodians in Care of Grounds

School systems employing more than ninety teachers were found to have one or more employees who specialized on care of school grounds, while one half of the schools studied had custodians work into their schedule the care of grounds "when time permitted them to do so considering their other maintenance duties". Only three work operations were found in which more than one half of the systems surveyed gave instruction to school custodians, i. e., cutting grass, maintenance of flag poles, and watering and seeding lawns. Several of the operations in which less than one half of the school systems gave instruction to custodians were those in which they had had experience and instruction other than that offered by the school: scheduling grounds work; sidewalk repair; planting, protecting and trimming trees, flowers and shrubs; fertilizer selection and application; and uses of insecticides and chemical weed killers.

Although care of football fields, stadia, baseball diamonds, and cinder tracks involved problems different from those usually encountered in care of grounds at home, less than one fourth of the schools gave instruction to custodians in these phases of custodial work.



TABLE XVI

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE  
CUSTODIANS INSTRUCTION IN CARE OF GROUNDS

ITEMS OF INSTRUCTION CONCERNING CARE OF GROUNDS	Schools employing 7 - 24 teachers		Schools employing 25-90 teachers		Schools employing 91-190 teachers		Schools employing 191 + teachers		Universe of 606 Michigan Schools
	N1	%1	N1	%1	N2	%2	N2	%2	
Cutting grass	15	50.0	28	86.7	17	85	16	80	71
Flag pole maintenance	8	26.7	23	76.7	15	75	13	65	52
Watering and seeding lawns	7	23.3	23	76.7	14	70	15	75	51
Scheduling grounds work	7	23.3	15	50.0	13	65	11	55	39
Planting, protecting, trimming trees, flowers and shrubs	7	23.3	16	53.3	8	40	11	55	38
Sidewalk repair	2	6.7	21	70.0	9	45	11	55	37
Use of insecticide and chemical weed killers	6	20.0	15	50.0	10	50	13	65	37

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item.

TABLE XVI (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE  
CUSTODIANS INSTRUCTION IN CARE OF GROUNDS

ITEMS OF INSTRUCTION CONCERNING CARE OF GROUNDS	Schools employing teachers		Schools employing teachers		Schools employing teachers		Universes of 606 Michigan Schools			
	%1	%2	%1	%2	%1	%2				
Fertilizer selection and application	4	13.3	12	40.0	11	55	13	65	29	
Leveling and draining yard surfaces	4	13.3	9	30.0	0	0	10	11	55	24
Football stadiums and fields	2	6.7	13	43.3	12	60	13	65	21	
Construction and repair of bicycle racks	2	6.7	11	36.7	4	20	5	25	21	
Posting and maintaining signs designating parking areas, etc.	2	6.7	7	23.3	6	30	9	45	17	
Baseball stands and fields	2	6.7	7	23.3	7	35	6	30	16	
Cinder and clay tracks, jumping pits, etc.	1	3.3	1	3.3	11	55	4	20	8	

%1 = Number of thirty selected schools giving instruction in each item  
 %2 = Percentage of thirty selected schools giving instruction in each item  
 %1 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item

TABLE XVI (CONTINUED)

NUMBER OF SELECTED SCHOOLS IN MICHIGAN WHICH GAVE  
CUSTODIANS INSTRUCTION IN CARE OF GROUNDS

ITEMS OF INSTRUCTION CONCERNING CARE OF GROUNDS	Schools employing teachers			Schools employing teachers			Schools employing teachers			Schools employing teachers		
	7-24	25-90	91-190	191+	7-24	25-90	91-190	191+	7-24	25-90	91-190	191+
Care of bituminous and asphalt resurfaced areas	1	3.3	1	3.3	3	15	4	20	5			
School forestry areas	1	3.3	0		1	5	1	5	2			
School camps	0	0	0	0	0	0	0	0	0			

M1 = Number of thirty selected schools giving instruction in each item  
 M1 = Percentage of thirty selected schools giving instruction in each item  
 M2 = Number of twenty selected schools giving instruction in each item  
 M2 = Percentage of twenty selected schools giving instruction in each item  
 M3 = Percentage of 606 selected Michigan schools giving instruction in each item



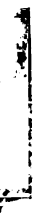
Few schools included in the survey had bituminous or asphalt surfaced areas of school grounds, school-owned forestry areas, or school camps; hence, less than ten per cent gave custodians any instruction in maintenance of these areas.

#### Instruction of Custodians in General Building Repairs

Successful maintenance of school properties involves a miscellany of general repairs not mentioned under the previous captions of instruction in this chapter.

Eighty-nine per cent of the school systems employing more than twenty-four teachers gave instruction to custodians on care of window shades, venetian blinds, and sash cords. In the small schools only forty-three per cent of the schools gave such instruction. Several administrators of schools where no instruction was given pointed out that the item for replacement and repair of shade and sash cords was one which had been eliminated from their budget by pressure of what the board of education considered more pressing needs, such as salary increases for teachers, need for additional textbooks for increased enrollments, or provision of additional equipment or supplies for floor care.

Almost the same percentage existed for instruction in window glazing. (See Table XVII on the following



pages.) The reason given by the smaller school systems for lack of instruction of this item was the reliance placed on the custodian to utilize what previous experience he had had in glazing.

Instruction in painting and varnishing was given in about seventy per cent of the districts surveyed with largest schools showing the lowest percentage which gave instruction to custodians. Special painting crews not classified as custodians were required to possess membership cards in craft unions for them to paint public buildings in many of those cities.

Maintenance of panic hardware, locks and door checks were work operations in which sixty per cent of the schools gave custodians instruction. Slightly less than one half of the school systems gave custodians instruction in minor plumbing and carpentry repairs. Larger school systems relied on licensed tradesmen to do major repairs. (Use of a plumber's friend to free drains in washbowls of collection in the trap was considered a minor repair while disconnecting the pipe to clean the drain more thoroughly was considered a major repair.)

Instruction in carpentry repairs was given custodians in about one half of the school systems surveyed while slightly fewer gave their custodians instruction in building and using scaffolds. Fourteen school systems

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TABLE XVII

NUMBER OF SELECTED MICHIGAN SCHOOLS WHICH GAVE CUSTODIANS  
INSTRUCTION CONCERNING GENERAL BUILDING REPAIRS

ITEMS OF INSTRUCTION CONCERNING GENERAL BUILDING REPAIRS	Schools employing 7 - 24 teachers		Schools employing 25-90 teachers		Schools employing 91-190 teachers		Schools employing 191 - Michigan Schools		Universe of 606 Michigan Schools
	N1	%1	N1	%1	N2	%2	N2	%2	
Painting and varnishing	16	53.3	28	93.3	12	60	11	55	70
Window shade, venetian blind and sash cord repair	13	43.3	27	90.0	17	85	16	80	67
Window glazing	14	46.7	24	80.0	16	80	14	70	64
Locks, panic hardware and door check maintenance and repair	15	50.0	21	70.0	16	80	12	60	60
Plumbing maintenance	9	30.0	20	66.7	11	55	13	65	48
Carpentry repairs	10	33.3	19	63.3	12	60	10	50	48
Building and using scaffolds	5	16.7	19	63.3	11	55	11	55	40

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item

TABLE XVII (CONTINUED)

NUMBER OF SELECTED MICHIGAN SCHOOLS WHICH GAVE CUSTODIANS  
INSTRUCTION CONCERNING GENERAL BUILDING REPAIRS

ITEMS OF INSTRUCTION CONCERNING GENERAL BUILDING REPAIRS	Schools employing 7 - 24 teachers		Schools employing 25-90 teachers		Schools employing 91-190 teachers		Schools employing 191 - Michigan Schools		Universe of 606 Michigan Schools
	N1	%1	N1	%1	N2	%2	N2	%2	N3
Caulking	4	13.3	23	76.6	6	30	5	25	40
Electrical repairs	11	36.7	13	43.3	6	30	12	60	40
Care of roof, chimney, and flashing installations	7	23.3	13	43.3	9	45	10	50	34
Eave trough and downspout maintenance and repair	4	13.3	12	40.0	5	25	8	40	26
Well and pump maintenance	6	20.0	10	33.3	3	15	9	45	26
Plastering	4	13.3	8	26.7	3	15	2	10	19
Water repellent treatment of walls and basements	2	6.7	7	23.3	2	10	7	35	15

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 N3 = Percentage of 606 selected Michigan schools giving instruction in each item

TABLE XVII (CONTINUED)

NUMBER OF SELECTED MICHIGAN SCHOOLS WHICH GAVE CUSTODIANS  
INSTRUCTION CONCERNING GENERAL BUILDING REPAIRS

ITEMS OF INSTRUCTION CONCERNING GENERAL BUILDING REPAIRS	Schools employing teachers		Schools employing teachers		Schools employing teachers		Universe of 606 Michigan Schools		
	N1	%1	N2	%2	N2	%2			
Point tucking brickwork	1	3.0	7	23.3	3	15	9	45	14
Welding	3	10.0	3	10.0	2	10	1	5	10

N1 = Number of thirty selected schools giving instruction in each item  
 %1 = Percentage of thirty selected schools giving instruction in each item  
 N2 = Number of twenty selected schools giving instruction in each item  
 %2 = Percentage of twenty selected schools giving instruction in each item  
 %3 = Percentage of 606 selected Michigan schools giving instruction in each item

indicated ready made, portable scaffolds were used by custodians in their districts and that they had replied negatively to the question of instruction because they gave instruction in use but not in construction of scaffolds.

Instruction in roofing, chimney repair, electrical repair, eave trough and down spout maintenance, and well and pump maintenance was given custodians in about one third of the school districts studied, with another third indicating that they relied on roofers, tinsmiths, well diggers, and electricians to do the work mentioned.

Less than one fourth of the schools attempted instruction of custodians in bricklaying, plastering, or welding because licensed plumbers, plasterers or welders were employed to do this work.

It was in this area of general repairs that schools were found to be reluctant to instruct custodians in items of work which could be done by the skilled trades.

CHAPTER VII  
CONCLUSIONS AND RECOMMENDATIONS CONCERNING  
THE SELECTION AND INSTRUCTION OF SCHOOL  
CUSTODIANS IN MICHIGAN PUBLIC SCHOOLS

A. Conclusions

There exists some agreement among the authorities in the field of building maintenance as to what constitutes "custodianship" in the public schools.

The increasing complexity of the work needed to keep a public school plant in operation and repair has necessitated the employment of those men who can perform satisfactorily many other tasks than sweeping and mopping. The valuable public properties require one who will assume responsibilities for safeguarding of these investments. Workers are needed who will take some responsibility for or "custodianship" of these buildings and grounds.

Michigan school administrators seek certain characteristics in the persons they recommend for employment as school custodians. More than seventy-five per cent of the school systems indicated they attempted to pick those candidates who were temperate, industrious, trustworthy, clean in personal habits, educable in

building maintenance methods, emotionally stable and twenty-one years of age or older.

The ability of candidates to pass a written examination on custodial work was disregarded by nearly all school systems of Michigan. Five of the one hundred school systems in Michigan included in the study were discovered to be using a written examination in the process of selection of custodial workers. Ninety per cent of the administrators asked for assistance in locating tests (written) which they might use in the selection of custodians.

Certain practices in recruitment of custodians were used by Michigan school systems. The recruitment of candidates for custodial work in schools was done through utilization of the following methods: employees suggested possible candidates, board of education members suggested candidates, and the public did so. The services of the Federal, state and local employment agencies were used by less than one fourth of the school districts.

The agreement to hire custodians in Michigan schools was more apt to be verbal than written. Seventy per cent of the school systems were found to employ custodians by verbal agreement. Thirty of the seventy administrators using this method evidenced



dissatisfaction with it and asked for assistance in locating for study some samples of written agreements or contracts used by other school systems.

The employment of custodians was recorded in the minutes of boards of education meetings in most of the public school districts of Michigan. Boards of education were required by law to deduct from custodians' wages a percentage to be sent to the Retirement Fund board. In ninety-one per cent of the school districts of Michigan the boards of education also safeguarded the retirement rights of their custodians by having the date of initial employment of custodians entered in the minutes of the meeting of the board of education.

Religious preference was not considered by most Michigan school administrators in hiring custodians. Seventy-eight per cent of the school systems of Michigan were found to have no information concerning the religious preference of applicants for custodial work.

It was possible for a custodian to be employed in Michigan schools without having to state references or previous places of employment. Twenty-three per cent of the school systems were found to select custodians who gave no references. Thirty-eight per cent of the administrators of the 606 Michigan school systems included in



this study had not ascertained the previous places of employment of applicants for custodial work prior to making a decision on their employment.

Nationality was usually ignored in selecting custodians in Michigan public schools. Thirty-nine per cent of the school systems in Michigan were found to have no record or knowledge of the nationality of applicants for custodial work, other than clues to be gained for the names of applicants. Furthermore, several of the administrators who required applicants to indicate their nationality pointed out this factor was not considered in selecting those to be hired.

Instruction of custodians has increased in the United States during the last thirty years. In 1924 custodial instruction was offered through a state vocational education department in Iowa only. By 1934 five more state department of vocational education divisions (California, Kansas, Iowa, Michigan and Wyoming) were assisting in such instruction. During the next decade Arizona, Arkansas, Colorado, Minnesota, Nebraska, Pennsylvania and Washington state vocational departments began such instruction. During the last ten years state vocational departments of Connecticut, Delaware, Maine, New York, North Dakota, Oregon, Tennessee, Utah, Vermont and Wisconsin have initiated such instruction.

Many Michigan public school custodians missed opportunities for instruction in their work. Less than one half of the school systems included in this study were found to have a consultant work with their custodians, to circulate among custodians articles written by authorities in the field of building maintenance and operation, to conduct instructional classes for custodians or to utilize the services of sanitarians, fire inspectors and/or boiler inspectors in offering instruction to custodians.

Few custodians of Michigan school systems were given instruction in the objectives and methods of education. Fourteen of the one hundred school systems of Michigan included in the study indicated that they made any attempt to instruct custodians concerning the methods or objectives of educational procedures which they observed in their daily work in school buildings.

The compilation and posting of work schedules of custodians was not a general practice in Michigan school systems. The survey of Michigan school systems revealed that the work schedules of few custodians were compiled and posted. Only thirty-four per cent of the school systems revealed any planned system of instruction of custodians in this activity.



The correct and economical use of cleaning supplies and equipment is taught to most of the school custodians of Michigan. More than eighty-four per cent of the school districts indicated that instruction was given custodial employees in these topics rather than let these custodians rely upon previous experience.

The general operation of care of floors are taught to the majority of the school custodians of Michigan. Fifty-four per cent or more of the school districts included in the study gave custodians instructions in waxing, polishing, push broom sweeping and dust mop sweeping, refinishing, damp mopping, etching, sealing, and vacuum cleaning of floors.

Pupils attending Michigan schools in buildings which are heated by coal fired units were found to be more likely to have a custodian who had instruction by the school system on safe boiler operation than those attending buildings which were heated by oil fired units. Eighty per cent of the school systems surveyed gave instruction of safe boiler operation to custodians having coal fired installations while but fifty-five per cent gave similar instruction to custodians in charge of oil fired units.

There is preventable waste of fuel in the operation of Michigan school systems.

The efficiency of combustion of fuel can be measured by the CO<sub>2</sub> gas analysis test and the determination of stack temperatures. Less than ten per cent of the Michigan schools visited gave custodial employees any instruction in how to determine CO<sub>2</sub> or stack temperature, the first two steps in determination of necessary adjustments of equipment or procedure for better combustion.

Several methods of fire prevention are taught custodians in Michigan school systems. The emergency use of fire extinguishers was taught custodians by eight-one per cent of the school systems visited; the completion of a circuit of the building before locking it for the night by seventy-one per cent; the correct storage of inflammable materials by sixty-two per cent; inspection of lamp and extension cords by fifty-two per cent and use of fuses of the correct type and amperage by eighty-one per cent.

A national, state or local emergency such as bombing, flood, tornado, or riot would find many custodians without instruction from their school systems as to their duties. Fifty-two per cent of the Michigan school systems studied were offering no instruction to custodians concerning the duties and responsibilities of a school custodian in time of emergency due to national

state or local disaster.

School systems of Michigan offered their custodians instruction in care of grounds in the least frequency of all operations of custodial work. Smaller percentages of schools of all sizes offered instruction to custodians for three expressed reasons. School administrators tended to rely on the past experience of the employee in caring for his own grounds. In some school systems the grounds were assigned as the last concern of the custodian, a task to be done when all other work requiring immediate attention was done. A full time groundskeeper was hired and custodians were relieved of responsibility for instruction in care of grounds in many larger school systems.

Contribution to the improvement of the selection and instruction of custodians of public school systems of Michigan has been made by this study. The recommendations of more than one hundred national authorities in the field of building maintenance and operation concerning selection and instruction of custodians have been investigated and arranged in check lists. Ninety-seven of the one hundred school administrative staff members indicated the completion of the questionnaire had given them some suggestions for improvement of current practices. An additional one hundred school administrators

in Michigan have asked for 663 mimeographed copies of the questionnaires. School systems in each geographic region of the state submitted evidence they have altered practices to conform with suggested practices while twenty-eight school administrators have requested help in location of aids for implementing changes recommended by the national authorities. Michigan State College has utilized the findings of the study to alter its instructional work with school custodians in which more than 5,000 custodians enroll annually.

P. Recommendations.

The employment by the school of a custodian who has a record as a molester of children, sex offender, or sex deviate should be cleared with law enforcement agencies before one is hired. It is unwise that a person previously convicted as a molester of children, a sex offender, or a sex deviate should be placed in a situation of temptation by being put to work in a building used daily and in the evening by children and young people. Law enforcement agencies keep records concerning such offenders and can assist administrators in their screening of candidates.

The selection of custodians should be made with more knowledge of the physical condition of the applicant than is gained in many school systems. The custodian

works in close proximity to children, teachers, and the public and should be free of such diseases as tuberculosis and diphtheria. He should be immunized against typhoid fever, scarlet fever and small-pox. He should be free of hernia or rupture because his work includes much lifting and carrying. He should be known to have a blood pressure low enough to allow him to do the work required. The application record should include a supplemental blank to be completed by a physician of the board of education's choice.

The selection of custodians should follow administration and scoring of a test on custodial materials and methods. The candidates' knowledge of custodial work should be considered along with other factors in selection of custodians.

Agreements to hire custodians should be in writing. Future need for referral to the record of the employment of custodians is facilitated by having such arrangement in writing as a written agreement, written contract, or as an item entered in the minutes of a meeting of the board of education. Commitments can be referred to for clarity of meaning when they are in writing better than they can be when recalled and stated orally by custodians and/or administrators.



Further provision should be made for assisting those custodians who wish to become better workers. Circulation of magazines containing articles of general assistance to custodians should be encouraged. Custodians in school systems having few such employees per county should be enabled to enroll in correspondence course work.

Instruction should be given custodians concerning the methods and objectives of education. Custodians can misinterpret that which they see in their daily work in school buildings, particularly if no attempt is made to develop understanding on their part of the methods and objectives of education today compared with the time at which they attended school.

A work schedule should be compiled and posted for and/or by custodial workers. Substitutes arriving at a school building should have available the usual schedule of activities to be done. Compilation of such a work schedule requires some organization of and planning for work operations.

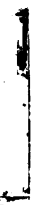
School building boiler rooms should not be locked and custodians assigned to other maintenance duties. The recommendations of authorities in the field of building maintenance and operation for further instruction of custodians in safe heating and ventilating practice include

the need for regular checking of all heating units, even those equipped with all types of "safety devices."

School systems not doing so should have available and train custodians in the use of CO<sub>2</sub> indicators and stack temperature gauges. Custodians can be instructed in a matter of hours on the uses of the instruments which are utilized to assure better combustion of fuels. Savings in fuel consumption resulting from use of readings of these inexpensive instruments will pay the cost of such instruments and instruction in a short time.

Custodians should be instructed how and when to make a complete circuit of each building prior to locking it up for the night. Seven fires in toilet rooms, wash baskets, in shops, and in storage rooms were discovered and extinguished in Michigan schools in 1953, any one of which might have caused a huge property loss. There is a public relations value in being able to assert that the school custodial employee checked each room for fire at a given time before locking the building for the night in which a fire might occur.

Custodians should be instructed in their duties in case of national, state or local emergency which would involve their school building. Such an emergency should find the custodian knowing and instructed in his duties.



Time and motion studies should be made of public school custodial work. School administrators indicated they needed assistance in determining the time necessary to do specific items of custodial work, as well as methods of use. This information should be determined for scheduling custodial work.

Methods of instruction of custodians should be used experimentally and results evaluated. The increase of incidence of instruction of custodians necessitates evaluation of the effectiveness of various methods of instruction.



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APPDEDIX

Selection and Instruction of  
Public School Custodians in  
Selected School Districts

Part One THE APPLICATION BLANK

The following items constitute a compilation of the information about prospective custodians collected by selected school systems in various parts of the United States. Please check the items of information your school system now obtains in considering applicants for custodial work.

Name \_\_\_\_\_ Address \_\_\_\_\_ Phone Number \_\_\_\_\_ Birthplace \_\_\_\_\_ Nationality \_\_\_\_\_  
 Religious preference \_\_\_\_\_ Marital status \_\_\_\_\_ Home owner or renter \_\_\_\_\_  
 Years residence in community \_\_\_\_\_ Educational grade completed \_\_\_\_\_  
 Licenses possessed \_\_\_\_\_ Hours instruction in custodial work \_\_\_\_\_  
 Willingness to take training in custodial work \_\_\_\_\_  
 Name of two or more references \_\_\_\_\_ List of last three places of  
 employment \_\_\_\_\_ Length of time employed in each \_\_\_\_\_ Reasons for  
 leaving each \_\_\_\_\_ Work operation performed at each \_\_\_\_\_ Reasons for  
 applying for custodial position \_\_\_\_\_  
 Height \_\_\_\_\_ Weight \_\_\_\_\_ Vision \_\_\_\_\_ Blood Pressure \_\_\_\_\_ Vaccination \_\_\_\_\_  
 Wasserman Test \_\_\_\_\_ Deformities \_\_\_\_\_ Rupture or hernia \_\_\_\_\_

Others:

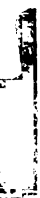
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Selection and Instruction of  
Public School Custodians in  
Selected School Districts

Part Two CHARACTERISTICS OF CUSTODIANS

The following is a list of characteristics for custodians to possess as stated by leaders in the field of school building maintenance. Will you please check those used in your school system in consideration of applicants for custodial positions.

- Must never have been convicted of a felony
- Must be a citizen of the United States of America
- Must be able to pass a written examination on custodial work
- Must pass a physical examination by a competent physician
- Must be 21 years of age or older
- Must be temperate, industrious, and trustworthy
- Must indicate by condition of own living premises an interest in well-kept home and grounds
- Must have satisfactory home relationships
- Must have clean personal habits
- Must be emotionally stable
- Must be interested in youth and their problems
- Must be educable in building maintenance methods
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**Selection and Instruction of  
Public School Custodians in  
Selected School Districts**

**Part Three EMPLOYMENT PRACTICES IN HIRING CUSTODIANS**

The following is a list of the most commonly used practices in the United States in employing custodians. Will you please check the ones used in your school system in selecting custodians.

- Paid advertisements of open custodial positions inserted in local newspapers
- Custodial positions which are open are announced in news stories in local papers
- Employees suggest candidates for custodial positions
- School patrons suggest candidates for custodial positions
- Board of Education members suggest candidates for custodial positions
- Federal, state, and local agencies asked to refer applicants for custodial positions
- The prospective custodian interviews other custodians and their reactions to him as a prospective fellow worker are obtained
- The prospective custodian visits the building in which there exists a vacancy to be filled
- Custodians are hired from a list certified by a civil service commission
- Employment concluded in verbal agreement
- Employment arranged by written contract or agreement
- Record of employment of custodians entered in the minutes of Board of Education meeting
- Employment begins with a 30-60 day probationary period
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Selection and Instruction of  
Public School Custodians in  
Selected School Districts

Part Four METHODS OF INSTRUCTING CUSTODIANS

Preparation of school custodians for their duties has been achieved in many cities and states during the past 25 years. A variety of methods used has been listed below. Will you please check those used in your school system.

- Individual conferences between administrator and custodian
- Small group or all custodians in a building confer with administrator
- Meetings of all custodians in the school system with the administrator
- Meetings of all school employees, i.e., custodians, teachers, cafeteria workers, bus drivers, etc., with the school administrator
- Apprenticing all beginning custodians to work under the direction of experienced workers
- Once a week in-service instruction classes attended by custodians
- Custodians enrolled at state-wide institutes at Marquette or East Lansing
- Enrollment by custodians in correspondence classes
- Custodians study individually or in groups to pass a licensing examination
- A consultant is employed to assist custodians to do a more effective type of work
- A manual on custodial work is compiled by committees of custodians as a learning experience
- Information for custodians is mimeographed and distributed
- Articles on custodial work appearing in periodicals are circulated among custodians
- Demonstrations are given by sales personnel of supply companies
- Instruction is given by nurses, sanitarians, fire inspector, and/or boiler inspectors, etc.

Selection and Instruction of  
Public School Custodians in  
Selected School Districts

Please mail the first four parts of this questionnaire  
along with Part Five (attached) to:

Julius Barbour  
Continuing Education Service  
Kellogg Center  
Michigan State College  
East Lansing, Michigan

Will you please indicate your reaction to the questionnaire  
by checking any of the following statements and indicating  
on the space provided the name of the custodian who represented  
your school system by filling out Part Five.

\_\_\_\_\_ Completion of the questionnaire has assisted us in planning  
for the selection and instruction of school custodians.

\_\_\_\_\_ We would like to receive a summary of the findings revealed  
by tabulation of the questionnaire.

\_\_\_\_\_ We are indebted to \_\_\_\_\_  
who represented the custodians in our school system in  
completing Part Five of the questionnaire.

Please fill out the three lines below:

Name \_\_\_\_\_

Position \_\_\_\_\_

School District \_\_\_\_\_

Selection and Instruction of  
Public School Custodians in  
Selected School Districts

Part Five INSTRUCTION OF SCHOOL CUSTODIANS IN SELECTED CATAGORIES  
OF WORK

Custodians need to know how to perform satisfactorily a variety of work operations. Authorities in the field of building maintenance agree that custodians need instruction in the items listed on the following pages.

On the line before each item will you please make a check mark if custodians in your school system receive any instruction in the item. If they rely upon past experience (before being hired by the present school system) or are given no instruction concerning the item, please do not put a check mark on the line before each item.

Section A Instruction in Safety Precautions

- Safe use of step and extension ladders
- Checking condition of equipment for outside window washing
- Care to avoid leaving mops and brooms where they might be tripped over
- Care of toilet and wash rooms to conform with safety standards
- Safe, slip-proof floors following cleaning and/or waxing
- Condition of plaster on ceilings
- Location of light switches, panel boxes, fire boxes and extinguishers, and gas and water shut-off valves
- Sizes and types of fuses for safe usage
- Inspection of lamp and extension cords
- Prevention of circuit overloading on stages, etc.
- Maintaining light in dark stair steps and wells
- Turning on exit and yard lights in time to prevent falls by persons arriving for night meetings
- Possession of and knowledge in use of first aid kit
- Operating conditions of safety valves, pop-offs, and low water cut-offs of boilers



- \_\_\_\_\_ Opening boiler blowdown valves
- \_\_\_\_\_ Entering boilers for summer cleaning
- \_\_\_\_\_ Ability to check safe water levels in boilers
- \_\_\_\_\_ Safe operation of hot water supply tanks
- \_\_\_\_\_ Inspection and repair of playground equipment
- \_\_\_\_\_ Erection of safe temporary bleachers
- \_\_\_\_\_ Placement and use of guards on moving machinery and saw blades
- \_\_\_\_\_ Care in use and storage of strong acids and detergents
- \_\_\_\_\_ Operation of incinerators
- \_\_\_\_\_ Use of power mover equipment
- \_\_\_\_\_ Care of fences on school properties
- \_\_\_\_\_ Small stone and snow/ice removal from walks
- \_\_\_\_\_ Inspection with binoculars of chimney caps and brickwork
- \_\_\_\_\_ Inspection of building exterior for loose slate, mortar, bricks, or overhanging sills
- \_\_\_\_\_ Detection and repair of faulty seats, risers and treads
- \_\_\_\_\_ Safe disposal of glass, chemicals, paint and refuse
- \_\_\_\_\_ Prevention of back syphonage in plumbing systems
- \_\_\_\_\_ Maintenance of septic tank installations
- \_\_\_\_\_ Operation of pumps in flooded areas without electric shorts occurring
- \_\_\_\_\_ Emergency use of fire extinguishers of all types
- \_\_\_\_\_ Enforcing "No Smoking" regulations
- \_\_\_\_\_ Duties in case of fire, air raid, or cyclone
- \_\_\_\_\_ Maintenance of obstruction-free exits with unlocked, unchained doors
- \_\_\_\_\_ Use of flame resistant material in party decorating
- \_\_\_\_\_ Flameproofing stage curtains and scenery

- \_\_\_\_\_ Emergency first aid treatment for electric shock, etc.
- \_\_\_\_\_ Completion of a circuit of the building before locking for the night
- \_\_\_\_\_ Storage of inflammable materials
- \_\_\_\_\_ Extension exhaust use in running gasoline motors indoors
- \_\_\_\_\_ Maintenance vehicle traffic across pupil traffic areas
- \_\_\_\_\_ Assistance of children across streets near school buildings

#### Section B The Custodian as a Public Relations Agent

- \_\_\_\_\_ Operation of building services at night when the public uses school property
- \_\_\_\_\_ Compilation for publication of facts concerning summer cleaning and building renovation completed
- \_\_\_\_\_ Briefing custodians on facts concerning proposed bond issues
- \_\_\_\_\_ Operation of school building, locker and grounds clean-up day or week
- \_\_\_\_\_ Compilation for publication of names and buildings in which custodians work
- \_\_\_\_\_ Knowledge of objectives and methods of education today
- \_\_\_\_\_ Relationships with children and pupils
- \_\_\_\_\_ Relationships with teachers, principals, and supervisory personnel
- \_\_\_\_\_ Relationships with the public
- \_\_\_\_\_ School rules and regulations
- \_\_\_\_\_ Wise use of the school dollar spent for building maintenance
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



## Section C Heating and Ventilating

- \_\_\_Types of boilers, fuel and water heaters
- \_\_\_Safe boiler operation
- \_\_\_Boiler cleaning and/or repair
- \_\_\_Stoker operation and maintenance
- \_\_\_Operating and maintaining oil burners
- \_\_\_Control of boiler water and/or feed water treatment
- \_\_\_Maintenance and operation of vacuum pumps
- \_\_\_Care of unit heaters
- \_\_\_Valve and trap maintenance
- \_\_\_Hot air furnace operation and maintenance
- \_\_\_Maintenance of ventilating fans, plenum chambers, and humidifiers
- \_\_\_Maintenance of electric, electronic, and pneumatic thermostats
- \_\_\_Ordering and stocking parts and supplies for emergency repairs
- \_\_\_Ash handling equipment
- \_\_\_Methods of determining and using flue gas analysis and stack temperatures
- \_\_\_Preparation of boilers for summer lay-up and inspection

## Section D Public Building Cleaning

- \_\_\_Correct use of cleaning supplies
- \_\_\_Correct use of cleaning equipment
- \_\_\_Cleaning classrooms with fixed seats, individual chairs, and tables and chairs
- \_\_\_Dusting furniture, equipment and trim
- \_\_\_Swimming pool care
- \_\_\_Cleaning and maintaining lighting fixtures
- \_\_\_Window, door, plate and showcase glass cleaning

- \_\_\_ Cleaning toilet fixtures, partitions, urinals, and wash bowls
- \_\_\_ Cleaning mop sinks and maintaining orderly supply rooms
- \_\_\_ Experimental application for observation of various seals and waxes to designated areas
- \_\_\_ Requisitioning, handling, storing, and packing into smaller lots cleaning supplies
- \_\_\_ Compiling and posting work schedules
- \_\_\_ Compiling and presenting required records for administrative officials

#### Section E Floor Care

- \_\_\_ Kinds of flooring and floor coverings used in school buildings
- \_\_\_ Preparation of subfloors
- \_\_\_ Laying floors
- \_\_\_ Sanding Floors
- \_\_\_ Etching and sealing concrete floors
- \_\_\_ Sealing asphalt tile floors
- \_\_\_ Waxing floors
- \_\_\_ Polishing floors
- \_\_\_ Vacuum cleaning floors
- \_\_\_ Push broom sweeping
- \_\_\_ Dust mop sweeping
- \_\_\_ Sweeping with dust cloth over push broom
- \_\_\_ Refinishing floors
- \_\_\_ Floor stain removal
- \_\_\_ Damp mopping entrance hall floors
- \_\_\_ Maintenance of floors over radiant heating pipes
- \_\_\_ Gymnasium floor care

## Section F Care of Grounds

- \_\_\_ Scheduling outside work
- \_\_\_ Leveling and draining yard surfaces
- \_\_\_ Fertilizer selection and application
- \_\_\_ Seeding and watering lawns
- \_\_\_ Cutting grass
- \_\_\_ Uses of insecticides and chemical weed killers
- \_\_\_ Planting, protecting, pruning and summer care of trees, shrubs, and flowers
- \_\_\_ Care of bituminous and asphalt resurfaced areas
- \_\_\_ Construction and repair of bicycle parking racks
- \_\_\_ Posting and maintaining signs designating parking areas, etc.
- \_\_\_ Football stadium and fields
- \_\_\_ Baseball stands and fields
- \_\_\_ Cinder and clay tracks, jumping pits, etc.
- \_\_\_ School forestry areas
- \_\_\_ School camps
- \_\_\_ Flag poles
- \_\_\_ Sidewalk repair

## Section G General Building Repairs

- \_\_\_ Building and using scaffolds
- \_\_\_ Calking
- \_\_\_ Point tucking brickwork
- \_\_\_ Painting and varnishing
- \_\_\_ Water repellent treating wells and basements
- \_\_\_ Window glazing
- \_\_\_ Window shade, venetian blind and sash cord repair

- Lock, panic hardware, and door check maintenance and repair
- Welding
- Well and pump maintenance
- Eave trough and down spout maintenance and repair
- Plumbing maintenance
- Care of roof, chimney and flashing installations
- Plastering
- Carpentry repairs
- Electrical repairs

Please mail this part of the questionnaire when it has been completed to:

Julius Barbour  
Continuing Education Service  
Kellogg Center  
East Lansing, Michigan

Please indicate your reaction to this part of the questionnaire by checking any of the following statements:

- Completing this part of the questionnaire has assisted us in planning for instruction of custodians
- We would like \_\_\_\_\_ additional copies of this part of the questionnaire
- Our school system has been represented by:

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in checking Part V of the questionnaire.

ROOM USE ONLY

May 7 '56

May 7 '56

Jun 27 '56

Aug 8 '56

Nov 23 '56

May 8 '57

May 5 '57

Nov 7 '58

Jun 26 '58

Aug 13 '58

Nov 8 '58

~~JUL 3 1959~~

~~MAR 21 1964~~

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12

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