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Survey of business firms located on Route 128 to determine occupational opportunities for the graduates of the business departments of local high schools

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Thesis

SURVEY OF BUSINESS FIRMS
LOCATED ON ROUTE 128 TO DETERMINE
OCCUPATIONAL OPPORTUNITIES FOR THE GRADUATES
OF THE BUSINESS DEPARTMENTS OF LOCAL HIGH SCHOOLS

Submitted by

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degree of Master of Education

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Sincere appreciation is expressed to Professor Lester I. Sluder for his valuable assistance and guidance in this study.
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CHAPTER I

INTRODUCTION

Statement of the Problem

The purpose of this study was to survey the business firms located on Route 128 in the State of Massachusetts to determine occupational opportunities available to the graduates of business departments of local high schools.

Analysis of the Problem

In order to obtain a comprehensive understanding of the major problem, the following subordinate problems were formulated:

1. What methods were used in the various firms located on Route 128 in the recruitment of full-time personnel; such as, sources, testing procedures, interviews, speed standards, and beginning salaries?

2. What policy did the companies follow concerning promotions, fringe benefits, salary increases, and on-the-job training programs?

3. Which personality traits should be given greater emphasis in school?

4. What were the job opportunities open to a current high school graduate in the firms included in the survey?
5. Did the firms make available to schools pamphlets, monographs, and brochures that provided employment information?

6. Were the firms willing to provide a representative to address the high school students?

7. Was it permissible to bring groups of high school students to visit these firms on field trips?

8. Did the members of the office force belong to a union?

9. Would the firms prefer to hire a college graduate rather than a high school graduate?

Delimitation of the Problem

This study was limited to firms located on or in the near vicinity of Route 128 in the State of Massachusetts. It included only those firms listed by the State Department of Commerce.

The study did not include a job-activity analysis nor did it ask for the employers' opinions as to the deficiencies of new employees. Rather, it was limited to obtaining information needed by schools for the educational and vocational guidance of students; namely, what jobs are available, for which jobs should students prepare, and what steps must be taken to obtain the job and to advance in it once it has been secured?
Definition of Terms

In order that there may be a common interpretation of the terms used in this study the following definitions are set forth:

Vocational Guidance. The process of assisting an individual to choose an occupation, prepare for it, enter upon it, and progress in it. It is concerned primarily with helping an individual make decisions and choices involved in planning a future and building a career.¹

Educational Guidance. Guidance concerned with matters relating to school courses, curriculum, and school life.²

Occupational Survey. An investigation of an industry or of the occupations of an area to determine the need for and the status of labor and to gather other pertinent information.³

Seniority. An employment priority for employees based chiefly on length of service.⁴

Job-Posting. Under this method, notice of any vacancy is posted on bulletin boards and on the time clock or is announced through the company newspaper. This gives employees an opportunity to bid on good jobs before outsiders are given a chance at them.⁵

³Ibid., p. 403.
⁵Ibid., p. 257.
Fringe Benefit. A benefit supplemental to wages received by workers at a cost to employers, including paid holidays, paid vacations, pensions, etc.¹

On-the-Job Training. A special training or instruction for employed persons with a view to increasing the workers' competence.²

Justification of the Problem

A study of occupational opportunities is not only a necessity but it is of great value to the students, to the school, and to the community.

From the dawn of history man has turned to man for assistance in solving his emotional, social, and economic problems. The complexity of modern life and the ensuing difficulties therefrom makes guidance today more necessary than ever before. The twentieth century with its tremendous economic, technological, political, and social advances makes it imperative that those engaged in education be ready to assist the youth in our schools so that they may take their places in modern society as well-adjusted, competent individuals. Jane Warters³ in speaking of vocational maladjustment tells us that, "Since the majority of students seek opportunities


²Ibid., p. 431.

in their own community or in nearby towns, surveys of business firms in the area are a necessity." Information that is obtained from such studies will aid students in making a wise choice of an occupation. Hoppock\(^1\) tells us that the wise choice of an occupation is important since the choice of an occupation:

1. May determine whether one will be employed or not.
2. May determine success or failure.
3. May determine whether one will enjoy or detest his work.
4. Influences almost every other aspect of life.
5. Determines how a democratic society will utilize its manpower.

If the school is to fulfill its purpose in preparing students for participation in modern life, it must necessarily have a store of occupational information that it may use to assist students in making a wise vocational choice. In this way the school aids not only the student, but also the community in which the school is located.

During the Centennial Celebration for Business Education, a group of outstanding business educators narrowed the current vital issues in business education to four topics. Heading

\(^1\)Hoppock, \textit{op. cit.}, pp. 1-3.
the list of topics was, "Guidance and Counseling of Business Students."\(^1\) Echoing this distinguished gathering, McKee Fiske, main speaker at the Business Education Conference at Boston University in 1958, suggested that more business teachers interest themselves in the area of guidance of business students. In that same year, Sister Mary Louise Donovan\(^2\) completed a study of vocational guidance services for business education students in the Catholic Secondary Schools of the Archdiocese of Boston and recommended that, "Surveys should be made of the business firms in the employment area to determine the number and types of job opportunities available to business education graduates. It was to fulfill these recommendations that the present study was made.

**Organization into Chapters**

Chapter I contains an introduction to the study including the statement and nature of the problem. Chapter II contains a brief history of Route 128 and a review of the related literature follows in Chapter III. The procedures followed in

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\(^2\)Donovan, Sister Mary Louise, A Survey of Vocational Guidance Services for Business Education Students in the Catholic Secondary Schools of the Archdiocese of Boston, Unpublished Master's Thesis, Boston University, 1958, p. 70.
making this survey are presented in Chapter IV. Chapter V includes an analysis and interpretation of the data obtained from the various firms. The concluding chapter contains a summary of the findings, conclusions, and recommendations for further study in this area.
CHAPTER II
BACKGROUND OF THE STUDY

Ten years ago Route 128 was just another four-lane highway winding through sleepy suburban towns in old New England. Today, it is known as the "miracle highway," Boston's Golden Industrial Semicircle, "The modern expressway which spawned one of the greatest industrial booms in the history of the Bay State."¹

The revamping of Route 128 was planned by a group of experts who had been commissioned by state authorities to study the transportation problems of the Metropolitan area and suggest some method of remedying the same. This commission, after carefully studying conditions, drew up suggestions for the building of "... expressways for uninterrupted movement of motor vehicles."² This plan was entitled the Master-Highway Plan for the Boston Metropolitan Area. The purpose of the plan outlined by its originators was to build "... connecting radial expressways to important arterial highways as well as a by-pass and outer distribution route."³


³Ibid., p. 61.
The plan was accepted by the Commonwealth and since 1949, Massachusetts has spent $400 million on roads. On Route 128 the construction and land costs have amounted to $62,500,000.

As a circumferential highway, the route cut across large sectors of undeveloped land between older radial highways. Few people who watched the development of Route 128 realized its great economic potential. However, Croft¹ states one group was alert: "The value of such locations was promptly recognized by discerning appraisal of Greater Boston real estate developers, and it was these men who 'sold' the area to business."

Shortly after World War II many intown businesses wished to expand and found it impossible to do so at their locations because of lack of space and lack of parking facilities. This fact, combined with the farsightedness of firms such as Neelon Associates of Waltham, Nordbloom Company, Cabot, Cabot & Forbes, and R. M. Bradley Company, caused the mushroom growth of industry on Route 128. Killam² states that the major reasons for the route's remarkable growth were outlined for him.

²Killam, op. cit., p. 3.
in an interview with Daniel G. Wheeler, Vice President of Cabot, Cabot & Forbes. He lists these factors:

1. availability of engineers and scientists in the area
2. good transportation
3. parking space
4. a quiet, attractive atmosphere
5. nearness to research facilities at Harvard, Massachusetts Institute of Technology, Boston University, and other educational centers
6. advertising value of a Route 128 location
7. easy financing
8. an atmosphere of community cooperation and acceptance

Bone\(^1\) holds the hypothesis that "... regional access, free of traffic congestion so typical of intown streets was the factor that most influenced industries in their choice to locate on Route 128 in preference to other sites." There is yet another reason not noted by either Wheeler or Bone, but given in the Report of the Committee of New England in 1954:\(^2\)

In November 1951, hourly earnings in electronics in New England was $1.16 an hour compared to the national average of $1.36. This substantial

\(^1\) Bone, A. J., Economic Impact Study of Massachusetts Route 128, Private Printing, December 1958, p. 35.
differential helps explain why the electronics industry has been growing more rapidly in New England than elsewhere.

The move to Route 128 began almost immediately after it was opened. There were a few minor drawbacks in the relocation process. In a research report completed for the Federal Reserve Bank of Boston, Burtt\(^1\) points out the difficulties in obtaining clerical help:

Recruiting difficulties arose especially when the firms sought young female clerical workers. \(\ldots\) personnel managers felt (in that case) Route 128 location was a definite disadvantage.

In spite of this fact, growth was phenomenal. The maps prepared by the Planning Division of the Massachusetts Department of Commerce tell a fabulous story. Map I, prepared in 1955, located 39 companies in operation with 14 others under construction. In July 1957, the route was re-studied and Map II showed tremendous growth--140 companies in operation and 18 under construction. During the past year the map was again revised and Map III was distributed giving the following statistics:\(^2\)

209 companies in operation
17 companies under construction

\(^1\)Burtt, Everett J., Jr., Labor Supply Characteristics of Route 128 Firms, Research Report No. 1--1958, Federal Reserve Bank of Boston, March 1958, p. 27.

13 industrial parks with land purchased and construction under way or complete: involves 93 companies in operation and 16 under construction

3 other industrial parks with land purchased and construction pending

2 shopping centers in operation

1 shopping center under construction

In his report for the Federal Reserve Bank of Boston, Burtt states that these firms are not all directly on the highway. He found while making his study that, "On the Massachusetts Department of Commerce Map, firms are included which are up to six miles away from the highway." However, since all these firms are included by the Department of Commerce and also by the postal authorities as located on Route 128, they are included in the present study. The following Figure I shows the location of Route 128, and the areas of heavy industrial development. The statistics given on Table I show that 80 firms are located in Needham; 36 in Burlington; 23 in Newton; 21 in Waltham; 9 in Norwood; 7 in Dedham; 5 each in Canton, Danvers, and Woburn; 4 each in Reading and Beverly; 3 in Gloucester; 2 each in Peabody and Wakefield; and 1 each in Stoneham, Weston, and Westwood. The economic effect of Route 128 on these cities and those which surround them was thoroughly studied for the Massachusetts Department of Public Works and the

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1Burtt, op. cit., p. 6.
FIGURE I

- Heavy Industrial Development
- Route 128
<table>
<thead>
<tr>
<th>City</th>
<th>Number Completed</th>
<th>Under Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needham</td>
<td>80</td>
<td>--</td>
</tr>
<tr>
<td>Burlington</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>Newton</td>
<td>23</td>
<td>--</td>
</tr>
<tr>
<td>Waltham</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Norwood</td>
<td>9</td>
<td>--</td>
</tr>
<tr>
<td>Dedham</td>
<td>7</td>
<td>--</td>
</tr>
<tr>
<td>Canton</td>
<td>5</td>
<td>--</td>
</tr>
<tr>
<td>Danvers</td>
<td>5</td>
<td>--</td>
</tr>
<tr>
<td>Woburn</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Reading</td>
<td>4</td>
<td>--</td>
</tr>
<tr>
<td>Beverly</td>
<td>4</td>
<td>--</td>
</tr>
<tr>
<td>Gloucester</td>
<td>3</td>
<td>--</td>
</tr>
<tr>
<td>Peabody*</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>Wakefield</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>Stoneham*</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>Weston</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>Westwood</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>209</strong></td>
<td><strong>17</strong></td>
</tr>
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*Shopping centers
United States Bureau of Public Roads by A. J. Bone of Massachusetts Institute of Technology. This is an excellent report, complete with tables, maps, and graphs which show the effect of Route 128 on suburban development, traffic, employment, and industry. In this report Bone\textsuperscript{1} states:

The total investment in 96 plants, when surveyed in 1957, was $85,000,000, and the total employment was 17,000. New plants placed in operation or under construction since then bring the investment to about $137,000,000 and potential employment to 27,500.

So great has been the development along Route 128 that the road is again in need of revamping. Work has already begun on a $30,000,000 widening of the highway to eight lanes between Lynnfield and Route 9. It is predicted that some day Route 128 will be widened over its entire length.

The present study is concerned with the occupational opportunities that the firms located along the "electronic highway" have to offer to the graduates of high school business departments. It is hoped that it will be possible through a survey of firms located on Route 128 to ascertain where these jobs are located, and what training is needed by students to enter upon the jobs with the assurance they will experience some success in them.

\textsuperscript{1}Bone, \textit{op. cit.}, p. 188.
In order to obtain a thorough knowledge of current trends in the guidance of business education students, a careful survey was made of related literature and research studies.

The necessity for guidance has been recognized by many business educators all over the country. Dame\(^1\) stresses the necessity of providing this service in the business department in the following statement:

> The business education curriculum is essentially a job-centered program, and the business department has an obligation to make available that kind of professional counsel which will enable young people to make intelligent educational and occupational decisions.

In December 1957, Hollis Guy, at a meeting of the United Business Education Association, stated that this period of transition in education can be a critical one for business education. Guy\(^2\) expressed the belief that it is not enough to talk about business education "... we must know what others in the organized teaching profession are talking about and planning. We must know, too, what technological advances business is making."


The occupational survey is one of the finest methods by which business educators can give evidence of professional leadership and, at the same time, obtain information on the changes that have taken place in business. The survey is an excellent means of securing information of value to graduates in their search for employment and of value to the school for curriculum revision and the vocational guidance of students. It is a means, also, of improving communications between schools and business. Reynolds\(^1\) stresses the need for improved communications since he states:

There is too much stress on psychology and too little on economics in vocational guidance; too much concentration on testing individual abilities and too little concern with actual employment opportunities.

When this situation occurs employers in the community become critical of the school's educational program. This could be avoided by a periodic survey of firms in the community. Dame\(^2\) states that a lack of knowledge of occupational opportunities and requirements in inexcusable. He insists that:

\[\ldots\text{teachers of business subjects cannot intelligently perform their functions without accurate up-to-date information regarding the occupational requirements of the immediate and surrounding communities.}\]


\(^2\)Dame, op. cit., p. 61.
The majority of studies reviewed have not inquired into company policy as to promotions and fringe benefits. Yet, authorities in the field of management and labor relations recognize these as highly important factors in maintaining a competent office force. Watkins\(^1\) points out the benefit of a wise promotion policy since:

> If a firm has a reputation for giving its own workers the first opportunities to assume the more responsible and better paid jobs, a more desirable class of workers will seek employment.

For the ambitious student such information is most desirable, therefore, schools should have such information available. Fringe benefits are also an important factor in job selection. This is adequately proven by Jucius,\(^2\) who says:

> In a survey conducted by the Chamber of Commerce of the United States the cost in cents per hour worked amounted to 39.2. These data are averages, hence it is apparent that some companies must have paid out more than $800 per employee per year.

This type of income in non-taxable, and students should be instructed in the value of these "hidden wages."

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Review of Related Studies

In presenting information on occupational surveys, Dame\(^1\) points out the fact that there are apparent similarities between surveys, job analyses, and follow-up studies. The truth of this statement was evident upon examination of other research reports. In studying these surveys only those findings particularly relevant to the present study were noted.

In her survey, for the purpose of improving business education in the Natick High School, Natick, Massachusetts, Walsh\(^2\) stated that she felt that such a study was necessary since:

The chief source of revenue for school budgets is the money raised through taxes levied on individuals owning property and doing business in the community. The duty of the schools, therefore, in justice to the local business firms, is to train students for the type of work which the businessmen in the community demand and require.

Among the findings from this study were the following:

1. Only a small percentage of employers reported employment requirements which would prohibit the employment of high school graduates.

2. Speed requirements for typewriting ranged from 40 to 60 words per minute; stenography speed ranged from 80 to 100 words per minute.

\(^1\)Dame, op. cit., p. 61.

\(^2\)Walsh, Barbara, A Community Survey of Business Firms with Implications for Improving the Business Education Program of Natick High School, Natick, Massachusetts, Unpublished Master's Thesis, Boston University, 1951, p. 3.
3. The most frequently used source for obtaining new employees was the high school; newspapers ranked second; and personal application ranked third.

4. The most desirable personality trait was accuracy.\(^1\)

The businessmen of New Bedford cooperated with Roche\(^2\) in the evaluation of the training program of the business education department of the New Bedford High School. This study was undertaken to determine the deficiencies of the department and also to ascertain the activities and duties most frequently performed by office workers. Listed among the findings are the following:

1. Of the 80 businessmen responding only 28 or 35 per cent, used the New Bedford High School placement service. Forty per cent listed recommendations from employees as the most frequent source of new employees.

2. Seventy-four of the 80 respondents considered personal appearance to be the most important consideration in hiring new employees.

3. Standards of proficiency for typewriting were set at 50 words per minute, and for shorthand they were set at 100 words per minute.

4. The greatest number of job opportunities were in sales and general clerical work.

\(^1\)Ibid., pp. 73-75.

5. Honesty was the most important requirement for advancement in business.

6. Lack of initiative, lack of interest in work, and lack of willingness to do little extras were the most common deficiencies of new employees.

7. Only 23 per cent of the firms used employment tests.

8. Thirty-six per cent of the firms were willing to provide a speaker, and 51 per cent were willing to permit business students to visit.\(^1\)

A study similar to the one summarized above was made by Quill\(^2\) who in her survey of firms located in the Berlin-New Britain area stated that a survey of business firms aids the teacher in making her instruction more realistic and her teaching and counseling more effective. Some of the findings of this study were:

1. The majority of office employees obtained their positions by means of personal application.

2. Forty-seven per cent of the business firms in the Berlin-New Britain area used employment tests.

3. Forty-four per cent of the employers considered personal appearance at the interview a very important factor in securing employment; 39 per cent considered recommendations very important; and 21 per cent considered tests results very important.

\(^1\)Ibid., p. 92.

4. Wages for stenographers ranged from $30 to $50; for bookkeepers from $32 to $75; for clerical employees from $28 to $47.

5. Seventy-three per cent of employers based promotions on quality of work.

6. The ability to follow instructions was considered the most important personality trait and the one that should be given greater emphasis in the schools.

7. Average speed required to typists was 44 words per minute; average speed for dictation was 80 words per minute.

8. Fifty-two per cent of the firms provided a speaker to address high school groups, and 57 per cent were willing to have students visit the firm on field trips.

In 1955, Catherine Delaney surveyed the businessmen in Framingham to determine the effectiveness of the high school business curriculum. A visit was made to each of the 35 firms who employed past graduates and a questionnaire was completed at each interview. An analysis of the data revealed that:

1. Nineteen of the 35 business firms surveyed did not give pre-employment tests. Of the firms who did give tests, typewriting, shorthand, intelligence, and aptitude tests were the most frequently used.

\[1\] Ibid., p. 57 ff.

2. Speed requirements for typewriting ranged from 40 to 60 words per minute; stenography ranged from 80 to 100 words per minute.

3. The most frequently used source for obtaining new employees was the high school placement service, newspapers ranked second, and personal application ranked third.

4. The most desirable personality trait was accuracy. Of the 35 employers interviewed 28 stressed the importance of accuracy in all phases of office procedure.

5. Seventy per cent of the employers indicated that the new employees had adequate speed and accuracy in typewriting and shorthand.¹

Studies such as those reviewed above show that business teachers are not only aware of the value of surveys, but they are taking practical steps to share the knowledge gained from such work with their students, fellow teachers, and the community they serve.

¹Ibid., pp. 59-62.
CHAPTER IV
METHODS OF PROCEDURE

Summary

The specific purpose of this study was to determine the occupational opportunities offered to the business graduates of local high schools by the business firms located on Boston's Route 128. This information was to be used in the educational and vocational guidance of business students. The following procedures were used in conducting this survey:

1. Books, magazines, and research reports in the field of business education and vocational guidance were reviewed to obtain background information.

2. A number of subordinate problems were formulated to obtain a clear understanding of the major problem.

3. A four-page questionnaire was devised for the purpose of obtaining the desired information.

4. A letter of transmittal was prepared explaining the purpose of the survey.

5. The Greater Boston Chamber of Commerce, the State Department of Commerce, and Cabot, Cabot & Forbes were contacted by telephone to obtain the names of firms located on Route 128 and other statistical data.

6. The Department of Public Works was visited to obtain information on recent research on Route 128.

7. The questionnaire and letter of transmittal were sent to 200 firms listed as located on
Route 128 by the Planning Division of the Massachusetts Department of Commerce.

8. A follow-up letter containing an additional set of forms was sent to the firms not responding.

9. The data were tabulated and analyzed.

10. The summary, conclusions, and recommendations were made based on the findings of the survey.

Explanation of Procedures

Review of Related Literature. Before attempting the study, a survey of literature was made to ascertain the opinions of leaders in the field of business education concerning the question of vocational guidance of business students. Particular attention was given to literature dealing with surveys of business firms.

Formulation of Subordinate Problems. The subordinate problems were based on information obtained from writings of leaders in the field of business education, who pointed out what business students should know before starting on a career in the world of work.

Construction of the Questionnaire. The questionnaire was drawn up to insure complete data, ease of execution, and ease of tabulation. The instrument was then presented to the Business Education Seminar of Boston University for
critical appraisal. Later, it was revised in accordance with the excellent suggestions given by this cooperative group.

Visit to the Department of Public Works. During the closing months of 1958, A. J. Bone of the Massachusetts Institute of Technology completed a two-year study entitled, "Economic Impact Study of Route 128." Since the findings of this study were not available for public circulation until late in the spring of 1959, George McKay of the Department of Public Works was interviewed to obtain information on this interesting project.

Telephone Calls. The Greater Boston Chamber of Commerce, the State of Department of Commerce, and Cabot, Cabot & Forbes were contacted by telephone to obtain mailing lists, maps, and other vital statistics concerning Route 128.

Tabulation of the Data. Questionnaires were returned by 129 firms. Only the 85 fully completed forms were considered in tabulating the returns. The remaining 44 were accompanied by the information that the firms in question did not employ an office force.

Analysis of the Data. The results of the individual questions were tabulated and set up in tables which present the rank of each item answered as well as the number and per cent of firms answering the question. For ease in interpretation, per cents were presented to the nearest whole number.
Summary, conclusions, recommendations. From the data, the findings of the study were summarized and conclusions regarding vocational guidance of business students were drawn. Recommendations were then made for improving the guidance services offered to the students of business departments.
CHAPTER V
ANALYSIS AND INTERPRETATION OF DATA

The results of this survey to ascertain the occupational opportunities found in firms located on Route 128 are tabulated and analyzed in the following pages.

TABLE II
NUMBER AND PER CENT OF REPLIES RECEIVED

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Completed</td>
<td>85</td>
<td>43</td>
</tr>
<tr>
<td>Partially Completed</td>
<td>44</td>
<td>22</td>
</tr>
<tr>
<td>Unanswered</td>
<td>71</td>
<td>35</td>
</tr>
<tr>
<td>Totals</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>

On March 10, 1959, 200 questionnaires were mailed to business firms located on Route 128. Table II shows the number and per cent of returns. Eighty-five were returned completed and were the only ones considered in the analysis.
and tabulation of data. Forty-three, or 22 per cent, were returned partially completed. The firms returning these questionnaires stated that they either had no office force or one so small in size that they did not feel qualified to complete the questionnaire. Total returns showed that 129, or 65 per cent, of the firms located on Route 128 had cooperated in the completion of the survey. A list of these firms may be found in Appendix B.

The first question on the check list requested information concerning the approximate number of new office employees hired each year. This information is summarized on Table III.

At the time of the study, 38, or 44 per cent, of the respondents hired approximately 1 to 14 new employees, and 9 hired between 15 to 29 new employees. Only 2 firms hired 30 to 44 new employees; while 9, or 11 per cent, added more than 44 to their office force each year.

In response to the inquiry as to the approximate number of current high school business graduates hired each year, the greater number of firms answered that they hired between 1 to 14 new members. Two responded that they hired between 14 and 29 new employees from the current graduating class; while 3 of the firms said they employed 30 to 44 from this age group. No firm hired more than 44 current high school graduates each year.
<table>
<thead>
<tr>
<th>Approximate Number Hired Yearly</th>
<th>Total Office Force Hired Yearly</th>
<th>Current High School Graduates Hired Yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per Cent</td>
</tr>
<tr>
<td>1 - 14</td>
<td>38</td>
<td>44</td>
</tr>
<tr>
<td>15 - 29</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>30 - 44</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>44 - Over</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Unanswered</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>100</td>
</tr>
</tbody>
</table>

By actual count there were 1155 opportunities with 326 openings for current high school graduates.

Twenty-seven firms did not answer this question because of lack of sufficient data on which to base their answers. A number of firms stated that since they had just moved to Route 128, they were still in a period of transition and that it will take at least a year or more for them to stabilize their clerical staffs to the extent that they will be able to give an accurate estimate of the number of new personnel hired on an annual basis.
### TABLE IV
**METHODS USED TO SECURE NEW EMPLOYEES**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Method Used</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Newspapers</td>
<td>62</td>
<td>73</td>
</tr>
<tr>
<td>2</td>
<td>Recommendations</td>
<td>57</td>
<td>67</td>
</tr>
<tr>
<td>3</td>
<td>Massachusetts Division of Employment</td>
<td>52</td>
<td>61</td>
</tr>
<tr>
<td>4</td>
<td>High School Placement</td>
<td>39</td>
<td>46</td>
</tr>
<tr>
<td>5</td>
<td>Letter of Application</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>6</td>
<td>Commercial Placement Agency*</td>
<td>18</td>
<td>21</td>
</tr>
</tbody>
</table>

*Not included on questionnaire*

The most frequently used method to secure new employees as shown on Table IV was newspapers with 62, or 73 per cent, of the respondents checking this method. Recommendations were the second choice with 57, or 67 per cent, signifying this procedure. The Massachusetts Division of Employment was another source with 52, or 61 per cent, showing a policy of relying on this agency for recruitment purposes. The High School Placement Service was used by 39, or 46 per cent, of the firms. Letters of application were noted by 25, or 30 per cent as a method to secure new employees; while 18, or 21 per cent, of the firms stated that they used commercial agencies.
It is interesting to note that 73 per cent of the firms responding reported that they used some type of test in the selection of new employees. Some firms designated the names of the tests used, and these are listed below. Table V shows that typewriting tests were given most frequently with 62, or 73 per cent, of the firms reporting their use. Stenographic tests followed with 44, or 52 per cent, reporting that this type of test was given. Clerical aptitude tests were administered by 23, or 27 per cent, of the firms. Next in frequency of use was the intelligent quotient with 22, or 26 per cent, of the firms stating that they used this type of test. Six firms also gave a personality test, while only
two made use of the achievement battery. Some of the tests mentioned by the various respondents were: Activity Vector Analysis, The Otis Intelligence Test, The Wonderlic Personnel Test, Kuder Preference Test, a Comptometer Test, a company-devised mathematics test, and a personality questionnaire analyzed by an industrial psychologist.

The selection of a new employee is influenced by many factors. In order to determine the importance of these factors, the employers were requested to indicate in the proper column the relative importance of appearance at the interview, general impression, high school grades, recommendations by principals and teachers, recommendations from other sources, results of employment tests, and any other requirements they considered of importance.

An examination of Table VI, on the following page, reveals that 79 per cent of the employers felt that the general impression obtained at the initial interview was of primary importance; while 17, or 20 per cent, considered it important. No respondent stated that this item was unimportant.

Appearance at the interview was rated very important by 43, or 51 per cent, of the employers. Forty-one, or 49 per cent, considered this to be important. This item was not rated unimportant by any respondent.
<table>
<thead>
<tr>
<th>Requirements</th>
<th>Very Important Number</th>
<th>Very Important Per Cent</th>
<th>Important Number</th>
<th>Important Per Cent</th>
<th>Unimportant Number</th>
<th>Unimportant Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Impression</td>
<td>67</td>
<td>79</td>
<td>17</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Appearance at Interview</td>
<td>43</td>
<td>51</td>
<td>41</td>
<td>49</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Results of Tests Given</td>
<td>21</td>
<td>25</td>
<td>31</td>
<td>36</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Recommendations of teachers and principal</td>
<td>17</td>
<td>20</td>
<td>50</td>
<td>59</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Recommendations from other sources</td>
<td>20</td>
<td>24</td>
<td>49</td>
<td>58</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>High School Grades</td>
<td>10</td>
<td>12</td>
<td>64</td>
<td>75</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

*Arranged according to the frequency of the (Very Important) replies.
The employment tests administered by the firms were considered very important by 21, or 24 per cent, of the companies responding and 31, or 36 per cent, signified the tests were important. Five employers, or 6 per cent, after having given the tests stated that the results were unimportant.

Recommendations from principals and teachers were considered very important by only 17, or 20 per cent, of those answering, although 50, or 59 per cent, checked this item as important. Among the 13 who rated school recommendations as unimportant were those who qualified the answer by stating that these recommendations were considered important in some instances; but as a general rule, they did not solicit these recommendations except in rare cases.

When the recommendation was obtained from a source other than the school, 20, or 24 per cent, considered the recommendation as very important; while 49, or 58 per cent, stated that this requirement was important. Twelve, or 14 per cent, rated this type of recommendation as unimportant. Several personnel managers qualified their answers by saying that their rating would vary in this case depending upon the source from which the recommendation was obtained.

Only 10, or 12 per cent, noted that high school grades were very important in obtaining initial employment; but 64, or 75 per cent, did consider grades important. Six,
or 7 per cent, signified that high school grades were considered unimportant in obtaining employment in their firms.

Other requirements noted by the respondents as very important were: past experience, with five firms adding this requirement to the original list given on the questionnaire; one firm noted that willingness to work overtime would be considered very important; security clearance was another factor of great importance particularly by firms engaged in government contracts. Clarity of resume was signified as important by one personnel manager, and another stated that the maturity of the student seeking employment would influence his decision.

In order to ascertain the degree of skill the businessman expects the high school graduate to possess, the employers were asked to indicate what they considered to an acceptable speed for typing material of average difficulty.

As shown on Table VII, 27, or 32 per cent, of the firms were satisfied with a speed range between 40 to 50 words per minute. Fifty to 59 words per minute was the satisfactory speed for employment by 28, or 33 per cent, of the respondents. These two groups constituted more than one-half of those who answered this question. Ten, or 12 per cent, required speed of 60 to 69 words per minute, and only 3 considered it necessary for the students to be able to type at the rate of 70 words per minute.
#### TABLE VII

**TYPEWRITING SPEED REQUIRED FOR EMPLOYMENT**

<table>
<thead>
<tr>
<th>Speed</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 - 49</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>50 - 59</td>
<td>28</td>
<td>33</td>
</tr>
<tr>
<td>60 - 69</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>70 - Over</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Unanswered</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>85</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Seventeen firms did not answer this question. Some among this number indicated that accuracy not speed was more important as a requirement for employment.

At the time the study was made, the United States Department of Labor stated that the average acceptable speed for beginning typists was 40 to 50 words per minute. The table above shows that the greater number of employers on Route 128 had higher standards than the average employer across the country.
Table VIII reports the speed that was considered acceptable by employers when the new employee was required to take dictation of average difficulty.

Twenty-five per cent of the firms considered 60 to 80 words per minute sufficient shorthand speed. The same number 21, or 25 per cent, noted that 80 to 100 words per minute was necessary for employment. Fourteen, or 16 per cent, stated that 100 to 120 words per minute was required for satisfactory performance.

The national average for shorthand speed quoted by the Bureau of Labor Statistics at the time the study was made, was 80 to 100 words per minute.
TABLE IX

NUMBER OF LETTERS REQUIRED TO BE TRANSCRIBED PER DAY

<table>
<thead>
<tr>
<th>Number of Letters</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 10</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>11 - 19</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>20 - 30</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Varies</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Not known</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Unanswered</td>
<td>33</td>
<td>39</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>85</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Many of the respondents stated that shorthand dictation was not given in their firms since they used a dictation machine of some type; therefore, it was impossible for them to answer this question. This accounts for the large number of 29, or 34 per cent, who failed to respond to this question.

The question concerning the number of letters required to be transcribed each day drew forth the greatest variety of answers. It was apparent that many respondents did not have sufficient information to answer this question decisively. The results of this uncertainty may be noted by a
study of Table IX on the preceding page, which records the number of letters required to be transcribed each day.

Nine firms reported that the transcription of 1 to 10 letters were required each day. Eleven respondents considered 11 to 19 letters an acceptable number, and 6 stated that 20 to 30 letters was the required number.

Ten employers stated that the number of letters transcribed varied from day to day, and 16 respondents stated flatly that they did not know. More than a third did not answer this question. The majority of those who did answer qualified their response by stating that transcription was not the sole duty of the girl so employed. This would lead one to believe that transcription pools as such did not exist in the area at the time the study was made. However, this is only supposition since they may have existed in firms which did not respond to the questionnaire.

The practical-minded person is generally concerned with the question of the salary to be paid for his services. Therefore, to make this information available to potential office workers, the employers were asked to indicate the starting salary offered by the firm to current high school graduates for various positions.

The salaries that were available at the time the study was made are shown on the following pages.
Table X shows that no firm paid the minimum wage of $40 per week to beginning stenographers. More than 50 per cent of the employers offered salaries ranging from $45 to $59, and 25 per cent paid salaries between $60 and $65 for this kind of service. It was interesting and encouraging to note that at the time the study was made the average salary for beginning stenographers on Route 128 was approximately $56.

This question, concerning beginning salaries for stenographers was not answered by 15, or 17 per cent of those
TABLE XI
BEGINNING SALARY FOR TYPISTS

<table>
<thead>
<tr>
<th>Amount</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>$40 - $44</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>$45 - $49</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>$50 - $54</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td>$55 - $59</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>$60 - $64</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>$65 - Over</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Unanswered</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>100</td>
</tr>
</tbody>
</table>

who responded to the questionnaire. Evidently from information shown on Table XX, these firms did not hire current high school graduates for stenographic positions.

Sixty-nine firms reported on beginning salaries for typists. This information is summarized on Table XI. Fifty per cent of the firms responding offered salaries ranging from $40 to $54. The total range for salaries in this job classification was from $40 to over $65. The approximate average wage for typists who obtained positions on Route 128 at the time of the study was $52 per week.
## TABLE XII
BEGINNING SALARY FOR GENERAL OFFICE CLERKS

<table>
<thead>
<tr>
<th>Amount</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>$40 - $44</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>$45 - $49</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>$50 - $54</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>$55 - $59</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>$60 - $64</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>$65 - Over</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Unanswered</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>100</td>
</tr>
</tbody>
</table>

Eighty-three per cent of the firms responding quoted beginning salaries for general office clerks. Sixty-three per cent paid salaries ranging from $40 to $54 per week. The remaining 20 per cent who answered this question offered from $55 to $65 and over for this type of service.

The approximate average wage for general office clerks hired by firms located on Route 128 was $51 per week.
Seventy per cent of the firms responding quoted beginning salaries for file clerks. It is interesting to note that at the time of the study, 65 per cent of the firms paid salaries of $40 to $54 per week, and only 5 per cent paid salaries between $55 and $65 or over weekly. Thirty per cent of the respondents did not answer this question.

The average beginning wage for file clerks on Route 128 was $49. This was the lowest average wage paid on Route 128 to a clerical worker.
Table XIV shows that 56 of the firms responding indicated beginning salaries for bookkeepers. The salary range for this job classification was $40 to over $65. Forty-nine per cent of the respondents offered salaries between $40 to $59. Seventeen per cent of the firms were willing to pay between $60 and $65 or over for this type of service.

The approximate average wage for beginning bookkeepers on Route 128 was $54 per week.

### TABLE XIV

BEGINNING SALARY FOR BOOKKEEPING CLERKS

<table>
<thead>
<tr>
<th>Amount</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>$40 - $44</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>$45 - $49</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>$50 - $54</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>$55 - $59</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>$60 - $64</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>$65 - Over</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Unanswered</td>
<td>29</td>
<td>34</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>85</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Authorities in the field of management and labor relations state that if a firm has a reputation for giving its own workers the first right to apply for advancement, a more desirable class of employees will seek employment with the firm. Since vocational advancement is the ambition of every normal person, one section of the questionnaire was devoted to obtaining information concerning the company policy on promotions. Table XV shows that in 73, or 86 per cent, of the firms there was an opportunity for an employee to advance from a lower to a higher job level.

Seventy-four, or 87 per cent, of the respondents, promoted from within their office force.

Only one firm based promotions on seniority. Significantly, this was the only firm which reported the existence of a union for office employees.

Fifty-five, or 65 per cent, of the respondents reported that promotions were based on the merits of the employee, while 30, or 35 per cent, responded that sometimes they promoted on the basis of merit. Several firms stated that when two candidates sought the higher position and performance on the job was of the same calibre, then seniority was the basis for the decision.

Job-posting was used by only 15, or 18 per cent, of the respondents as a method of informing employees of higher positions available to the office force.
### TABLE XV

**COMPANY POLICY ON PROMOTIONS**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Sometimes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per Cent</td>
<td>Number</td>
</tr>
<tr>
<td>Is there an opportunity to advance from a lower to a higher job level?</td>
<td>73</td>
<td>86</td>
<td>9</td>
</tr>
<tr>
<td>Does the firm promote from within the office force?</td>
<td>74</td>
<td>87</td>
<td>6</td>
</tr>
<tr>
<td>Is seniority the basis for promotion?</td>
<td>1</td>
<td>1</td>
<td>84</td>
</tr>
<tr>
<td>Is merit the basis for promotion?</td>
<td>55</td>
<td>65</td>
<td>0</td>
</tr>
<tr>
<td>Does your firm use a job-posting system?</td>
<td>15</td>
<td>18</td>
<td>70</td>
</tr>
</tbody>
</table>
Fringe benefits are an important factor in job selection from the viewpoint of the employee. For this reason, the firms were asked to indicate the benefits they offered to employees. The information obtained is summarized on Table XVI.

Paid vacations were granted by 82, or 96 per cent, of the firms reporting. The length of time given for vacation was determined in the majority of the firms by length of service.

Seventy-three, or 86 per cent, of the respondents offered insurance coverage to employees. Some of the types of insurance offered were: Traveler's Basic Hospital Insurance, Surgical and Medical Coverage, Aetna Insurance Plan, Comprehensive Medical Plan, and others.

Sick leave was permitted by 68, or 80 per cent, of the firms responding to the questionnaire.

Pension Plans were offered by 49, or 58 per cent of the companies. In some cases, the employee and the employer paid into this plan. However, the greater contribution was made by the employer.

Blue Cross and Blue Shield was obtainable in 33, or 39 per cent, of the firms reporting.

Education plans were sustained by 30, or 35 per cent, of the firms. In the majority of cases, the education sought by the employee had to be of immediate benefit to
### TABLE XVI
**FRINGE BENEFITS OFFERED TO EMPLOYEES**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Benefit Offered</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paid Vacation</td>
<td>82</td>
<td>96</td>
</tr>
<tr>
<td>2</td>
<td>Insurance</td>
<td>73</td>
<td>86</td>
</tr>
<tr>
<td>3</td>
<td>Sick Leave</td>
<td>68</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>Pension Plan</td>
<td>49</td>
<td>58</td>
</tr>
<tr>
<td>5</td>
<td>Blue Cross</td>
<td>33</td>
<td>39</td>
</tr>
<tr>
<td>5</td>
<td>Blue Shield</td>
<td>33</td>
<td>39</td>
</tr>
<tr>
<td>6</td>
<td>Education Plan</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>7</td>
<td>Recreation Plan</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>8</td>
<td>Profit Sharing</td>
<td>21</td>
<td>25</td>
</tr>
</tbody>
</table>

The firm which offered this type of benefit. The amount of expense borne by the firm was determined in many cases by the success the employee experienced in the course.

Twenty-five, or 29 per cent, of the companies offered recreation plans; while 21, or 25 per cent, had some type of profit-sharing plan.

Other benefits not listed on the questionnaire but reported by the respondents included: automatic cost of living adjustments, low-cost meals at company cafeteria,
credit union, discount on purchases of company products, and 8 paid holidays.

Table XVII summarizes information concerning on-the-job training programs for typists and stenographers.

On-the-job training programs were evidently not very popular with firms located on Route 128 since only 12, or 14 per cent, of the respondents noted that they maintained such a program for typists, and only 13, or 15 per cent, offered such training to stenographers.

It was not known at the time of the study whether this policy was due to the fact that employees located in these firms were giving very satisfactory service in these occupations, or if it had not been possible to set up such a program at that time.

TABLE XVII
ON-THE-JOB TRAINING PROGRAMS

<table>
<thead>
<tr>
<th>Reply</th>
<th>Typists</th>
<th></th>
<th></th>
<th></th>
<th>Stenographers</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number Reporting</td>
<td>Per Cent Reporting</td>
<td>Number Reporting</td>
<td>Per Cent Reporting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12</td>
<td>14</td>
<td>13</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>73</td>
<td>86</td>
<td>72</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>100</td>
<td>85</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE XVIII
METHOD FOLLOWED IN MAKING SALARY INCREASES

<table>
<thead>
<tr>
<th>Method Followed</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic increases</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Merit increases</td>
<td>39</td>
<td>46</td>
</tr>
<tr>
<td>Combination of merit and automatic</td>
<td>42</td>
<td>49</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>85</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The method of granting salary increases in the firms surveyed is shown on Table XIX. Four, or 5 per cent, of the firms responding granted increases in salary automatically, while 39, or 46 per cent, based their increases in salary on the merit of the employee. The greatest number, 42, or 49 per cent, of the respondents used a combination of merit and automatic increases.

Several firms stated that automatic increases were given until the employee reached a certain maximum and from that point on increases were based on the merit on the individual employee.

During the past decade several studies have been made on the importance of personality traits in business. The
TABLE XIX

PERSONALITY TRAITS WHICH EMPLOYERS FEEL SHOULD BE GIVEN GREATER EMPHASIS IN SCHOOL

<table>
<thead>
<tr>
<th>Rank</th>
<th>Personality Trait</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initiative</td>
<td>59</td>
<td>69</td>
</tr>
<tr>
<td>2</td>
<td>Dependability</td>
<td>58</td>
<td>68</td>
</tr>
<tr>
<td>2</td>
<td>Responsibility</td>
<td>58</td>
<td>68</td>
</tr>
<tr>
<td>3</td>
<td>Accuracy</td>
<td>55</td>
<td>65</td>
</tr>
<tr>
<td>4</td>
<td>Neatness</td>
<td>48</td>
<td>56</td>
</tr>
<tr>
<td>5</td>
<td>Ability to get along with others</td>
<td>47</td>
<td>55</td>
</tr>
<tr>
<td>6</td>
<td>Cooperation</td>
<td>43</td>
<td>52</td>
</tr>
<tr>
<td>7</td>
<td>Industry</td>
<td>40</td>
<td>47</td>
</tr>
<tr>
<td>8</td>
<td>Courtesy</td>
<td>37</td>
<td>44</td>
</tr>
<tr>
<td>9</td>
<td>Loyalty</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>10</td>
<td>Good Grooming</td>
<td>29</td>
<td>34</td>
</tr>
<tr>
<td>11</td>
<td>Emotional Stability</td>
<td>28</td>
<td>33</td>
</tr>
<tr>
<td>12</td>
<td>Honesty</td>
<td>23</td>
<td>27</td>
</tr>
</tbody>
</table>
findings from these studies show that in almost 90 per cent of the cases reviewed personality deficiencies were the cause of loss of employment. In order to assist students to develop desirable personality traits, employers were asked to signify which personality traits they felt were in need of greater emphasis in school. This information is summarized on Table 19.

Initiative was considered in need of special attention by 59, or 69 per cent, of the respondents, and dependability, responsibility, and accuracy were considered in need of greater emphasis by more than 65 per cent of the employers.

More than one-half of the firms responding stated that neatness, the ability to get along with others, and cooperation needed special emphasis.

Industry, courtesy, loyalty, good grooming, and emotional stability were traits which more than one-third of the firms answering the questionnaire felt should be given greater emphasis.

Honesty was noted as in need of greater emphasis by 23, or 27 per cent, of the firms responding.

In order to determine what kind of positions were available on Route 128 at the time of the study, employers were asked to indicate jobs in which they were willing to
place recent graduates. This information is summarized on Table XX.

Fifty-six, or 66 per cent, of the firms responding stated they would hire a current high school graduate for the position of general office clerk. Typists could find employment at 51, or 60 per cent, of the firms responding, and jobs were available for file clerks at 42, or 49 per cent, of the firms.

One-third of the respondents stated they would be willing to hire recent graduates as mail clerks, billing clerks, and beginning stenographers.

Current graduates could obtain positions as order clerks, messengers, stock clerks, receptionists, bookkeeping clerks, comptometer operators, and bookkeeping machine operators in 25 per cent of the firms answering the survey.

Ten to 22 per cent of the firms reported they would be willing to hire current high school graduates for the position of key punch machine operator, duplicating machine operator, payroll clerk, switchboard operator, cost clerk, transcribing machine operator, and secretary. Although only 11 firms stated they would hire a current graduate for the latter position, the percentage is relatively high. Several firms noted that they would hire only the top student in a class for this position.
<table>
<thead>
<tr>
<th>Rank</th>
<th>Position</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Office Clerk</td>
<td>56</td>
<td>66</td>
</tr>
<tr>
<td>2</td>
<td>Typist</td>
<td>51</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>File Clerk</td>
<td>42</td>
<td>49</td>
</tr>
<tr>
<td>4</td>
<td>Mail Clerk</td>
<td>33</td>
<td>39</td>
</tr>
<tr>
<td>5</td>
<td>Beginning Stenographer</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>6</td>
<td>Billing Clerk</td>
<td>29</td>
<td>34</td>
</tr>
<tr>
<td>7</td>
<td>Order Clerk</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>Messenger</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>8</td>
<td>Stock Clerk</td>
<td>23</td>
<td>27</td>
</tr>
<tr>
<td>9</td>
<td>Receptionist</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td>9</td>
<td>Bookkeeping Clerk</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td>9</td>
<td>Comptometer Operator</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td>10</td>
<td>Bookkeeping Machine Operator</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>Key Punch Machine Operator</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>12</td>
<td>Duplicating Machine Operator</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>13</td>
<td>Payroll Clerk</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>14</td>
<td>Switchboard Operator</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>15</td>
<td>Cost Clerk</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>16</td>
<td>Transcribing Machine Operator</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>17</td>
<td>Secretary</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>18</td>
<td>Cashier</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>19</td>
<td>General Bookkeeper</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>20</td>
<td>Timekeeper</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
### TABLE XXI

**FIRMS PREFERING TO HIRE A COLLEGE GRADUATE RATHER THAN A HIGH SCHOOL GRADUATE**

<table>
<thead>
<tr>
<th>Reply</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer High School Graduate</td>
<td>59</td>
<td>70</td>
</tr>
<tr>
<td>Prefer College Graduate</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>Sometimes College Graduate Is Preferred</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>100</td>
</tr>
</tbody>
</table>

A few firms stated they would hire current high school graduates as cashiers, general bookkeepers, and timekeepers.

Table XXI shows that at the time of the study, 59, or 70 per cent, of the firms reporting preferred to hire a high school graduate. Nineteen firms stated they preferred a college graduate, but some qualified the answer by stating the college graduate was preferred only when they were hiring engineers.

Seven firms answered that sometimes they preferred a college graduate because of the special nature of the position open at the time.
TABLE XXII
FIRMS WHICH WILL PROVIDE OCCUPATIONAL LITERATURE TO SCHOOLS

<table>
<thead>
<tr>
<th>Reply</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>No</td>
<td>69</td>
<td>81</td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>100</td>
</tr>
</tbody>
</table>

Many students would benefit if they had more adequate knowledge of the firm in which they hope to work. This knowledge would help them to experience greater success and more rapid advancement on the job. For this reason, employers were asked to signify whether they provided literature which gave information concerning their firms.

Table XXII shows that only 16, or 19 per cent, of the firms responding provided this type of service to schools. Two firms noted that plans for the development of literature of this nature were pending at the time of the study.

A list of the firms located on Route 128 which provide occupational literature to schools may be found in Appendix C.
TABLE XXIII
FIRMS WILLING TO PERMIT
STUDENTS TO VISIT ON FIELD TRIPS

<table>
<thead>
<tr>
<th>Reply</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>No</td>
<td>55</td>
<td>65</td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>100</td>
</tr>
</tbody>
</table>

A visit by a student to an industrial or business establishment has long been recognized as one of the best methods to motivate a student to greater effort in school. The firms located on Route 128, therefore, were asked to indicate if they were willing to have students visit their plants on field trips.

Thirty, or 35 per cent, of the firms expressed their willingness to have students visit their plants. Some qualified their response by noting that they should be notified in advance. Others stated the necessity of limiting the number of students who would visit at one time.

Several firms who answered in the negative expressed their regret that such a permission was not possible due to security reasons. Others noted that the size of the plant prohibited such an activity.
### TABLE XXIV

**FIRMS WILLING TO PROVIDE SPEAKERS**

<table>
<thead>
<tr>
<th>Reply</th>
<th>Number Reporting</th>
<th>Per Cent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>No</td>
<td>68</td>
<td>80</td>
</tr>
<tr>
<td>Totals</td>
<td>85</td>
<td>100</td>
</tr>
</tbody>
</table>

A list of firms granting the privilege of visiting their plants to students is given in Appendix C.

Table XXIV shows that only 17, or 20 per cent, of the firms were willing to provide a speaker to address high school students.

A list of firms who provide such a service to the high schools is given in Appendix C.

A general summary of the findings of this study and recommendations based on these findings may be found in Chapter VI.
CHAPTER VI

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The main purpose of this study was to ascertain occupational opportunities offered to the business graduates of local high schools by the business firms located on Boston's Route 128. The major findings of this study are presented in the following pages.

The findings relative to the recruitment of new personnel at the time of the study were as follows:

1. Thirty-eight firms hired approximately 1-14 new employees each year; nine hired between 15-29; and two hired between 30-44. Nine firms hired more than 44 new employees each year.

2. Newspapers were used most frequently as a means to secure new employees by 62, or 73 per cent, of the firms who answered the questionnaire. The Massachusetts Division of Employment and recommendations were used by more than half the companies. High school placement services were used by more than half the companies, and 25 firms hired people on the letter of application written. Commercial agencies as a method of securing employees was added to the questionnaire by 18 employers.

3. Employments tests were used by 73 per cent of the firms responding. A typewriting test was administered by
73 per cent of the respondents. Stenography tests were used by 52 per cent of the firms, and clerical aptitude tests were given by 27 per cent of the employers. More than one-quarter of the firms also used intelligence tests.

4. The three requirements of greatest importance in obtaining employment in the firms located on Route 128 were: general impression at the time of the interview which was considered very important by 79 per cent of the employers. Appearance ranked second with 49 per cent considering this factor to be very important. The results of employment tests administered ranked third with 25 per cent stating that these tests were considered very important when new employees were to be hired.

5. One-third of the 85 respondents considered 40 to 49 words per minute a satisfactory speed for typing material of average difficulty, while another third required a speed of 50 to 59 words per minute from new employees.

6. Shorthand speed required by the firms was from 60 to 80 words per minute by 25 per cent of the respondents and 80 to 100 words per minute by another 25 per cent. Speed over 100 words per minute was required by only 14, or 16 per cent of the firms.

7. Salaries for beginning stenographers ranged from $45 to $65 with an average of $56 per week. Beginning
salaries for typists ranged from $40 to $65 with an average of $52 per week. General office clerks' salaries ranged from $40 to $65 weekly with an average of $51. The beginning salary for file clerks ranged from $40 to $65 with an average of $49. Salaries for bookkeepers ranged from $40 to $65 and over with an approximate average of $56.

The findings relative to company policy in regard to promotions, fringe benefits, salary increases, and on-the-job training programs were as follows:

1. In 86 per cent of the firms there was an opportunity to advance from a lower to a higher job level, and 87 per cent promoted from within the office force.

2. Seniority was the basis for promotion in only one firm while 66 reported that merit of the employee determined their promotion policy.

3. Job-posting as a method of informing employees of available openings was used by only 18 per cent of the firms reporting.

4. The fringe benefit offered most frequently was paid vacation. Insurance plans of various types were offered by 86 per cent of the respondents, while sick leave with pay was granted by 68, or 80 per cent, of the firms. Blue Cross and Blue Shield were offered by more than one-half of the firms.
5. A policy of combining automatic and merit increases was followed by 49 per cent of the firms, while 46 per cent based their decisions for raising salaries entirely on the merit of the employee.

6. Only 13 firms had an on-the-job training program for typists and stenographers.

The findings relative to personality traits that employers felt should be given greater emphasis in high school are given below:

1. Initiative was the trait that 69 per cent of the respondents felt should be given greater emphasis in school, while 68 per cent considered dependability and responsibility in need of special attention.

2. More than one-half of the respondents also stated that accuracy, neatness, ability to get along with others, and cooperation needed greater emphasis.

The positions in which firms would employ a current high school graduate were:

1. General office clerk ranked first with 66 per cent stating they would hire a recent graduate for this position.

2. Positions for typists could be obtained in 60 per cent of the firms, while 49 per cent would consider hiring a current graduate as a file clerk.
3. Twenty-five per cent of the firms stated that they would hire recent graduates for the positions of: mail clerk, beginning stenographer, billing clerk, order clerk, messenger, and stock clerk.

The last section of the questionnaire was devoted to a series of miscellaneous questions the findings from which are stated below:

1. Sixteen, or 19 per cent, of the firms located on Route 128 provided occupational literature to schools upon request.

2. Thirty, or 35 per cent, of the firms responding were willing to permit students to visit their plants on field trips.

3. Speakers could be obtained upon request from 17, or 20 per cent, of the firms responding to the questionnaire.

4. Only one firm reported the existence of a union for office employees.

5. Nineteen, or 22 per cent, of the firms preferred to hire a college graduate rather than a high school graduate.
Recommendations

1. Since newspapers are the most frequently used source of obtain new employees, students should be instructed in the intelligent reading of "want ads" in the daily newspapers.

2. Students should be given sample employment tests before going to an interview so that they will be more adequately prepared when tests are administered by the employer.

3. Since the general impression and appearance at the interview are considered very important by many employers, some provision should be made for role playing whereby each student may experience a practice interview. This should be followed by constructive criticisms and suggestions for improvement of techniques.

4. Information regarding fringe benefits and promotion policies of firms should be made available to students who will be seeking employment after graduation.

5. Personality development, particularly the development of initiative, responsibility, and dependability, should be stressed in every course by every teacher.

6. Since positions of a clerical nature are most prevalent, some provision should be made in the business department for a general clerical curriculum.
7. Schools should obtain the occupational literature offered by the firms located on Route 128. They should also take advantage of the willingness of these firms to provide speakers and to permit students to visit their plants.

Suggestions for Further Study

A job-activity analysis should be made of the firms located on Route 128 to determine the duties performed in the various job classifications; this study should also obtain information concerning the deficiencies of new employees. The findings of such a study would be of value in a revision of the business department curriculum.
BIBLIOGRAPHY


Walsh, Barbara, A Community Survey of Business Firms with Implications for Improving the Business Education Program of Natick High School, Natick Massachusetts, Unpublished Master's Thesis, Boston University, 1951.


March 10, 1959

Dear Sir:

During the current month I am making a survey of business firms located on Route 128 to determine occupational opportunities for the graduates of the business departments of local high schools.

The purpose of this survey is to obtain information valuable for education and vocational guidance and for placement purposes. The information will also aid business teachers to prepare students more adequately for positions found in firms located in the area. Thus, the completion of the enclosed questionnaire will be of benefit to you, to students, and to the community you serve.

The information will appear only in tabulated form with the exception of replies concerning field trips, speakers and occupational literature.

Will you please fill out the enclosed questionnaire and return it as soon as possible in the enclosed envelope.

Thank you for your co-operation.

Sincerely yours,

Sister Winifred, S.N.D.
A. General Information

1. Name of Firm _____________________________

2. Address of Firm __________________________

3. Type of Business __________________________

4. Name of Person Completing the Questionnaire

5. Title of Person Completing the Questionnaire

B. Recruitment of Full-Time Personnel

1. What is the approximate number of new office employees you hire each year? ______

2. What is the approximate number of current high school business graduates you hire each year? ______

2. What sources are used to secure these employees? Please check the following.

   a. Newspaper advertisements
   b. High School placement service
   c. Massachusetts Division of Employment Security
   d. Letters of application received from students
   e. Recommendations made by other employees
   f. Other (Please state) _____________________________

3. Please check any of the following that your firm uses as employment tests.

   a. Clerical Aptitude test
   b. Intelligence test
   c. Stenographic test
   d. Typewriting test
   e. Achievement battery
   f. Other (Please state) _____________________________
4. Please check the importance of each of the following items as a requirement for employment by your firm.

<table>
<thead>
<tr>
<th>Item</th>
<th>Very Important</th>
<th>Important</th>
<th>Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance at interview</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General impression at interview</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School grades</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommendations of teachers and/or principal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommendations from other sources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Results of employment test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other: _____________________________________________</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. What does your firm consider an acceptable speed for employment in each of the following areas?

a. Typewriting material of average difficulty ______ words per minute

b. Taking dictation of average difficulty ______ words per minute

c. Average number of letters transcribed per day ______ letters

6. Please check the starting salary your firm offers to current high school business graduates for each of the following positions.

<table>
<thead>
<tr>
<th>Position</th>
<th>$40-$44</th>
<th>$45-$49</th>
<th>$50-$54</th>
<th>$55-$59</th>
<th>$60-$64</th>
<th>$65-Over</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Typist</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Stenographer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. General Office Clerk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. File Clerk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Bookkeeping Clerk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Company Policy on Promotions, Fringe Benefits, Salary Increases, and On-the-Job Training Programs

8. Please check the following:

a. Is there an opportunity for advancement from a lower job level to a higher job level? Yes__; No__
b. Does your firm promote from within your own office force? Yes __; No __

c. Does your firm use a job-posting system? Yes __; No __

d. Are promotions based on seniority or merit? Seniority __; Merit __

2. Please check any of the following fringe benefits which are offered by your company to office employees.

   a. Blue Cross  
   b. Blue Shield  
   c. Pension Plan  
   d. Profit Sharing  
   e. Insurance  
   f. Paid Vacations  
   g. Sick Leave  
   h. Education Plans  
   i. Recreation Activities  
   j. Other ____________________

3. Indicate by check if your firm maintains an on-the-job training program for:
   a. Typists Yes __; No __
      b. Stenographers Yes __; No __

4. Please indicate the basis used for making salary increases in your firm
   a. Automatic increases
   b. Merit increases
   c. Combination of automatic and merit

D. Personality Traits

Please check the following items you feel should be given greater emphasis in school.

   a. Courtesy  
   b. Co-operation  
   c. Neatness  
   d. Responsibility  
   e. Emotional Stability  
   f. Accuracy  
   g. Loyalty  
   h. Honesty  
   i. Industry  
   j. Initiative  
   k. Dependability  
   l. Good Grooming  
   m. Ability to get along with others
E. Job Opportunities

Please check the positions in which your firm would employ a current high school graduate.

- a. Billing Clerk
- b. Mail Clerk
- c. File Clerk
- d. General Office Clerk
- e. Order Clerk
- f. Cost Clerk
- g. Bookkeeping Clerk
- h. Payroll Clerk
- i. Stock Clerk
- j. Calculating Machine Operator
- k. Bookkeeping Machine Operator
- l. Key Punch Machine Operator
- m. Duplicating Machine Operator
- n. Transcribing Machine Operator
- o. Switchboard Operator
- p. Messenger
- q. Receptionist
- r. Timekeeper
- s. Typist
- t. General Bookkeeper
- u. Cashier
- v. Stenographer
- w. Secretary (with considerable responsibility)

F. Miscellaneous

Please check the following:

1. Does your firm make available to schools pamphlets, brochures, etc., that provide employment information about your company? Yes ; No

2. Is your firm willing to have groups of high school students visit your office on field trips? Yes ; No

3. Does your firm provide a representative to address high school students? Yes ; No

4. Do the members of your office belong to a union? Yes ; No

5. As a general rule, does your firm prefer to hire college graduates rather than high school graduates? Yes ; No
Dear Sir:

On March 10, I sent you a copy of the enclosed checklist requesting information on occupational opportunities in your firm for the business graduates of local high schools. This information is desired for the purpose of assisting students in educational and vocational guidance, for placements, and also to enable the schools of the area in which you are located to serve you more efficiently.

After tabulating the returns, I find that I have not yet received a reply from your firm.

Several personnel managers have informed me that they do not employ an office force. If this is true of your company, will you please fill out Part A and return the questionnaire to me since such information will be of value in my study.

Your co-operation will be most sincerely appreciated.

Sincerely yours,

Sister Winifred, S.N.D.
APPENDIX B

A LIST OF THE FIRMS
THAT RESPONDED TO THE QUESTIONNAIRE

The following list gives the name and address of each firm responding to the questionnaire, the type of business, and the name and title of the person answering the questionnaire.

BEVERLY

Bomac Laboratories Inc.
8 Salem Road
Manufacturers of Electronic Tubes
Mr. Gene B. Pellegrini--Personnel Director

*Nelson Engineering Company
123 Brimbal Avenue
Manufacturer of electronic components
Graham J. Nelson--Manager

BURLINGTON

A. J. Felz Company
Middlesex Turnpike
Wholesale Plumbing and Heating Supplies
Harry W. Felz--President

*Allied Equipment Sales Corporation
Cambridge Street
Manufacturer of Tractor Cabs
G. Clark--Bookkeeper

AviDyne Research Inc.
76 Cambridge St.
Engineering Research
Guido J. Frassinelli--Treasurer
*Bertini Motor Lines Inc.
84 Mountain Road
Trucking--Motor Transportation
Lillian Bertini--Part Owner

Dynametrics Corporation
Northwest Industrial Park
Aircraft Instrumentation
Margaret Robinson, Executive Secretary

Gilbirt Lumber
Cambridge Street
Prefabricaters of Wooden Buildings
Barbara Ferson--Office Manager

*Grove Street Motors
84 Mountain Road
Repair Shop
Lillian Bertini--Bookkeeper

High Voltage Engineering Corporation
South Bedford Street
Manufacturer of Particle Accelerators
Raymond E. Bean, Sr.--Personnel Manager

John A. Carrier Corporation
Middlesex Turnpike
Design and Manufacture of Special Machinery
Robert F. Munro, Treasurer

Houghton Mifflin Company
Wayside Road
Publishers
P. J. Fritts, Personnel Manager

Jerguson Gage & Valve Company
Adams Street
Manufacturer of Liquid Gages & Valves
H. Rixon--Office Manager

L & R Truck Leasing Inc.
84 Mountain Road
Truck Leasing
Lillian Bertini--Part Owner

*No opportunities for high school graduates
*Marvin Foundry Inc.
86 Mountain Road
Aluminum Foundry
L. Marvin--Owner

Microwave Associates Inc.
South Avenue
Electronics
Jerome S. Kornreich--Personnel Director

Raytheon Manufacturing Company
Spencer Laboratory
Research and Development Laboratory
Elizabeth Dolan--Executive Secretary

*Sawyer Construction Company, Inc.
Blanchard Road
General Contractors
William A. Mochi--Office Clerk

Specialty Automatic Machine Corporation
80 Cambridge Street
Engineering & Automatic Machinery
G. L. Sidebotham--Vice President

Spray Engineering Company
100 Cambridge Street
Manufacturers of Industrial Spraying Equipment
Robert P. Outerbridge, Secretary-Treasurer

*Tech Weld Corporation
Blanchard Road
Steel Fabrication
Ernest R. Oldford--Plant Superintendent

Trans-Soncis Inc.
Middlesex Turnpike
Manufacturer of Pressure & Temperature Instruments
E. Guilmartin--Personnel Manager

Welders Supply Company, Inc.
Wheeler Road
Welding Supplies
A. J. Iutincielli--Office Manager

* No opportunities for high school graduates
*Yewell Associates, Inc.
Middlesex Turnpike
Electronic Sales Representative
Ann Hartigan--Secretary

DANVERS

CBS Hytron
100 Endicott Street
Electronics
N. H. Bradley--Placement Administrator

Devlen Corporation
Endicott Street
Plastic Steel, Plastic Aluminum
Albert J. Bell--Controller

Metal Hydrides Incorporated
Congress Street
Manufacturers of Chemicals and Metals
Marjorie M. Norton--Personnel Administrator

*Sylvania
75 Sylvan Street
Electronics--Lighting Division
Mrs. Rena U. Fossa--Personnel Supervisor

DEDHAM

Fabric Research Laboratories, Inc.
100 Providence Highway
Research
Ernest R. Kaswell, President

*General Motors Training Center
990 Providence Pike
Training School for Retail Automobile Dealers
A. C. Hazen--Director

Hersey Manufacturing Company
250 Elm Street
Manufacturer of Water Meters
Harry K. Jackson--Personnel Director

Rust Craft Publishers, Inc.
Rust Craft Road
Manufacturer of Greeting Cards
Constance Boody--Personnel Counselor

*No opportunities for high school graduates
Westwood Furniture Company, Inc.
960 Washington Street
Retail Furniture
M. G. Kelliher, President

NEEDHAM

A. Sandler Co.
B. Street
Shoe Warehouse & Distribution
Joseph Bloom--Treasurer

Abbott Laboratories
110 A Street
Pharmaceutical Warehouse & Sales Office
C. C. McGoldrick--Branch District Manager

A. C. E. Transportation Co., Inc.
160 Gould Street
Trucking
Thomas W. Denman--Executive Vice President

American Can Company
9 B Street
Containers
J. C. Boothe, Superintendent of Personnel

American Motor Sales Corporation
U. S. Industrial Centre
Automobile Distributors
John Coakes--Comptroller

Anderson Machine Shop, Inc.
50 Brook Road
Machine Shop
Mrs. Averyl M. Burgess--Secretary

B. F. Goodrich Tire Company
100 Second Avenue
Industrial Products
G. L. Marchang--Zone Manager

Barber Greene Company
57 Crawford Street
Road Machinery
Edward J. Curtin--Branch Manager
*Bleakneys' Inc.
83 Wexford Street
Trucking
L. M. Bleakney--Owner

*Charles Walton & Son, Inc.
661 Highland Ave.
Knitted Elastic
Mrs. Margaret Norton--Bookkeeper

*The Chemstrand Corporation
197 First Avenue
Chemical Textile Fibers
Margaret M. McDonald--Secretary

*Clarence B. Petty & Company
50 Kearney Road
Manufacturers' Representatives
Margaret V. Doherty--Secretary

*Control Equipment Corporation
19 Kearney Road
Unknown
Joyce Shayne--Secretary

*Daniel Marr & Son Co.
25-27 D Street
Steel Erectors--Warehouse
John C. McDonald--Office Manager

Data Systems Operations
Sylvania Electric Products
189 B. Street
Electronics
Arlene Kline--Employment Interviewer

*Dudley, Garoland & Jensen, Inc.
126 Gould Street
Manufacturers' Representatives
M. T. Porter--Secretary

E. J. Bleiler Equipment Company, Inc.
Crawford Street
Distributor of Contractors' & Municipal Equipment
Marion K. Bleiler--Treasurer

*No opportunities for high school graduates
Ewen Knight Corporation
206 A Street
Electronic Research & Development
Paul H. Coyne--Personnel Director

Farrington Manufacturing Company
Industrial Center
Manufacturing
Gertrude Danforth--Personnel Manager

Goodyear Tire & Rubber Company
66 B Street
Wholesale Distributor of Rubber Products
R. D. Boarî, District Manager

*Jacuzzi Bros., Inc.
19 Kearney Road
Factory Branch Office
W. J. McSherry--Office Manager

*Jefferson Electric Company
Brook Road
Manufacturers of Ballasts and Transformers
W. D. Hamel, Manager

Kraft Foods
37 A Street
Food Distributor--Packaging
W. B. Swanson--Office Manager

Ludlow Manufacturing & Sales Company
145 Rosemary Street
Manufacturing
Marjorie A. Cody--Employment Manager

MacIntyre Fay & Thayer
Northeast Industrial Center
General Insurance Agency
C. B. Scott--Office Manager

*Maintenance Specialties Company
126 Gould Street
Manufacturers' Representatives
Mt. T. Porter--Secretary

*No opportunities for high school graduates
*Merck Sharp & Dohme
Division of Merck & Co., Inc.
40 A Street
Pharmaceutical
J. L. Scroggs, Jr.--Boston Branch Manager

*Motorola Communication & Electronics Inc.
126 Gould Street
126 Gould Street

*The Moxie Company
290 Reservoir Street
Soft Drink Concentrates & Extracts
Alta B. Lunan--Assistant Treasurer

Needham Dairy Inc.
72 River Park Street
Milk & Milk Products
Ralph Grasso--Owner

*Parkway Refinishing Shops
32 Kearney Road
Furniture Refinishing
Peter Priore--Partner

Perkins Machinery Company, Inc.
Box 47
Dealer in Heavy Construction Equipment
J. Achmatjian--Personnel Manager

*Permutit Company
50 Kearney Road
Sales Office
D. H. Hess--Sales Representative

Pickard & Burns Inc.
240 Highland Avenue
R & D Electronics
John A. Clarke--Personnel Director

Pilgrim Infants Wear Company, Inc.
124 Second Avenue
Wholesale
Treasurer

Polaroid Corporation
Film Division
Film Manufacturing Plant
L. Robinson,--Personnel Assistant

* No opportunities for high school graduates
*Precision Coating Company, Inc.
37 Franklin Street
Industrial Protective Coatings
H. Potter--Clerk

Radio Corporation of America
64 A Street
Advance Development Laboratory
A. B. Walker--Administration Personnel

*Roddis Plywood Corporation
178 A Street
Distributors of Plywood
Robert J. Keplin--Office Manager

Seven Up Bottling Company of Boston, Inc.
32 Fremont Street
Bottling Carbonated Beverage
Gloria A. Faga--Office Manager

Shield Chemical Company
50 Brook Road
Aerosol packaging
George Bates--President

*Smith & Purdy Associates
21 Kearney Road
Unknown
Howard Smith

*Thatcher Glass Manufacturing Company
207 Reservoir Street
Manufacturing Company
Marguerite M. Butler--Secretary

Union Carbide Corporation
300 First Avenue
Sales Offices
E. W. Dolan--Administration Assistant

Sylvania Electric Company
189 B Street
Electronics

The William Carter Company
Needham Heights
Underwear Manufacturers
Eliot J. Olsen Jr.--Personnel Department

*No opportunities for high school graduates
*Williamson Electrical Company, Inc.
43 Fremont Street
Electric Motor Shop
E. A. Williamson--President

*WHDH
Radio & Television
Miss Mary L. Newton--Secretary

NEWTON

*Algonquin Gas Transmission Company
25 Faneuil Hall Square
Gas Transmission Company
Howard L. Ford--Personnel Directory

Chevrolet Motor Division
General Motors Corporation
300 Needham Street
Automobile Manufacturer
S. E. Nelson--Zone Organization Manager

Geigy Chemical Corporation
33 Industrial Place
Chemical Dyestuffs
W. D. Sickert--Office Supervisor

Jordan Marsh Company
275 Grove Street
Retail Department Store
S. A. Babcock--Employment Manager

John Sexton & Company
143 Needham Street
Wholesale Foods
J. McGarry--Office Manager

NRC Equipment Corporation
160 Charlemont Street
Manufacturing
A. F. Cullen--Personnel Manager

S. S. Pierce Company
831 Beacon Street
Retail Food Stores
Gerald Faherty--Employment Manager

*No opportunities for high school graduates
Tornabene Brothers Company
170 Needham Street
General Construction
John R. Rea, Jr.--Office Manager

Raytheon Company--Semiconductor Division
150 California Street
Electronics--Semiconductors
Mrs. Joanne Mahn--Office Personnel

NORWOOD

Bardahl Lubricant Inc.
One Bardahl Way
Oil Additive
F. A. Hurney

Factory Mutual Engineering Division
1151 Boston-Providence Turnpike
Fire Protection Engineering
Mrs. Mildred C. Mayo--Clerical Personnel Recruiter

*Fulham Bros., Inc.
20 Industrial Way
Convenience Foods Manufacturer
F. C. Collings--Plant Manager

Mason Neilan Division of Worthington Corp.
63 Nahatan Street
Manufacturing
C. J. McCreery--Assistant Personnel Manager

Military Products Division of American-Standard
100 Morse Street
Electronics
H. S. Alcorn--Personnel Manager

PEABODY

The Huse Liberty Mica Company
Peabody Industrial Park
Electrical Insulation
Edward L. Kelley--Vice President

*No opportunities for high school graduates
WAKEFIELD

American Mutual Liability Insurance
Casualty Insurance
Mary A. Carney--Assistant Personnel Director

*U. S. Gear Corporation
81 Bay St., Road,
Fine Pitch Precision Gearing
Robert A. Sayce--President

WALTHAM

Baldwin-Lima-Hamilton Corporation
42 Fourth Avenue
Electronics
Phyllis A. Fox--Secretary-Manager of Industrial Relation

Boston Mfg. Mutual Fire Insurance Company
225 Wyman Street
Insurance
Doris W. Crabiel--Assistant Personnel Manager

*Central Machine & Stamping Company
40 Jones Road
Manufacturers

Compo Shoe Machinery Company
125 Roberts Road
Manufacturers of Shoe Machinery & Adhesive
F. C. Snyder--Office Personnel Manager

Crucible Steel Company of America
45 First Avenue
Steel Sales
M. D. Clifford, Office Manager

Donnelly Manufacturing Company
58 Winter Street
Sheet Metal Fabricators
James F. Sullivan--Personnel Manager

*Eastern Engravers, Inc.
1250 Main Street
Photoengravers
Pearl R. McMurray--Assistant Treasurer

*No opportunities for high school graduates
*The Ed-Lund Manufacturing Company, Inc.
43 Jones Road
Machine Shop
Adelaide T. Edgar--Clerk of Corporation

*Fruehauf Trailer Company
550 Winter Street
Factory Branch--Sales, Repair, & Service
S. B. White--Assistant Office Manager

Graphic Microfilm of New England, Inc.
1570 Trapelo Road
Microfilm Sales and Service
Eleanor M. Conroy--Assistant Treasurer

Itek Corporation
1605 Trapelo Road
Electro Mechanical Optical Systems
W. H. Newton, Sr.--Technical Recruitment Manager

*Lehigh Engineering Associates
1398 Main Street
Consulting Engineers
Ann Haggerty--Secretary

Mutual Boiler & Machinery Corporation
225 Wyman Street
Insurance
Doris W. Crabiel--Assistant Personnel Manager

Raytheon Manufacturing Company
520 Winter Street
Electronics--Missile Systems Division
Agnes Collins--Secretary to Vice President

Raytheon Manufacturing Company
Foundry Avenue
Power Tube Division
R. E. Mudgett--Division Employment Administrator

*Research Technology Associates, Inc.
19 Jones Road
Physical Electronics, Research and Development
Albert Tatarian--Treasurer

*No opportunities for high school graduates
Sanborn Company
175 Wyman Street
Electronic Manufacturer--
osillographic recorders
Mary E. Harrington--Employment Manager

Sylvania Electric Products, Inc.
100 First Avenue
Research & Development Laboratories--Missile
Systems, Avionics, and Applied Research
Miss Lois Caldwell--Profession Placement
Supervisor

WESTON
*Taylor Medical Building
101 River Road
Individual Physicians practicing medicine
Miss Mary Leon Sullivan--Secretary

WOBURN
Brodie Industrial Trucks Inc.
299 Mishawum Road
Sales & Service Industrial Fork Lift Equipment
A. Williamson--Controller

*Hogan Tire--Thomas E. Hogan, Inc.
396 Washington Street
Wholesale & Retail Tires
Edward Hogan--Treasurer

*Porter & Deamond
2 Garden Street
Building Movers & Well Drillers
Norman Porter--Owner

Sylvania Electric Products Inc.
100 Sylvan Road
Semiconductor Manufacture
Fred E. Brown--Superintendent of Personnel

READING
Addison-Wesley Publishing Company, Inc.
South Street
Publishers
Ruth Foustoukos--Personnel Director
Transcoa Chemical Corporation
Ash Street
W. L. Teisnier--Assistant Controller
Chemical Products
APPENDIX C

LIST OF FIRMS WHICH PROVIDE
OCCUPATIONAL LITERATURE, FIELD TRIPS, AND SPEAKERS*

<table>
<thead>
<tr>
<th>Name of Firm</th>
<th>Occupational Literature</th>
<th>Field Trip</th>
<th>Speaker</th>
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<tbody>
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<td>Addison-Wesley Publishing Co., Inc.--Reading</td>
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*Address and Person to Contact may be found in Appendix B
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*Address and Person to Contact may be found in Appendix B*
# APPENDIX C

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<th>Speaker</th>
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<td>Sylvania--Data Systems Operations--Needham</td>
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*Address and Person to Contact may be found in Appendix B*
APPENDIX C
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