

Dhananjayrao Gadgil Library



GIPE-PUNE-011235

**THE
TURNOVER OF FACTORY
LABOR**

X:991

E9

COPYRIGHT, 1919, BY
D. APPLETON AND COMPANY

11235

PRINTED IN THE UNITED STATES OF AMERICA

DEDICATED
TO
MY FATHER AND MOTHER

PREFACE

This work is called the *Turnover of Factory Labor* to distinguish it from studies of the turnover among seasonal out-of-door laborers. The turnover among the roving out-of-door workers who wander from one seasonal occupation to another is a distinct problem, requiring separate study. The title to the work, therefore, is only approximate. The study is intended to cover the turnover among manual laborers generally, with the exception of the peculiar class of out-of-door seasonal laborers.

The study was commenced in 1913, and most of the data had been collected previous to the acute labor situation created by the war in 1916, and especially in 1917, and resulting in the unprecedented instability of labor which first focused public attention on the problem. Because the situation since 1916 has been distinctly abnormal, and because it is desired to treat the turnover as a normal rather than as an abnormal problem of industry, as a peace, rather than a war, problem, the illustrative material has been confined largely to years previous to 1916 and the causes of the turnover have been discussed from the standpoint of the situation in peace times.

- Although nominally a study of the labor turnover, the work is fundamentally a study of methods of handling men. The subject of handling men has been strangely neglected in works on management. These works deal fully with the organization for and methods of handling materials and controlling manufacturing processes, such matters as purchasing, storing materials, planning, routing and scheduling

work, the numerous devices for establishing simple and reliable central control over operations, but among the processes to be controlled the handling of labor is not included. The idea that a definite and well planned labor policy is as necessary as standardized methods of manufacturing, and that means are necessary to provide for the formulation and execution of such a policy, is lacking. The fundamental thesis of this work is the neglected truism that a definite plan and specific responsibility for creating and executing the plan are as necessary in dealing with labor as in controlling manufacturing operations.

The turnover due to seasonal fluctuations in the volume of employment has been somewhat cursorily treated. The proportion of the turnover due to this cause has been analyzed and the principal methods of regularizing employment briefly discussed. The subject of seasonal fluctuations in employment is a complicated one, however, and can be more advantageously discussed in connection with studies of unemployment.

This work has been made possible only by the extensive and generous coöperation of a large number of persons. I am deeply indebted to numerous executives and employment managers who have granted generous interviews, opened their records for the compilation of statistics, and in many instances have themselves compiled statistics. Not only are these persons too numerous to mention, but to do so would disclose the identity of many establishments which prefer to be unknown. I am especially indebted to Professor J. R. Commons, in whose seminars the preliminary work was done, and who furnishes an introduction; to Mr. C. W. Price, Field Secretary of the National Safety Council, who thoroughly appreciated the problem long before it came to public attention, who had much to do with the study's being undertaken, and who greatly facilitated the study by his encouragement and by providing numerous contacts with in-

PREFACE

ix

terested executives; and to Professor H. A. Millis, of the University of Chicago, under whose direction the study was completed as a doctor's dissertation. Professor Wm. M. Leiserson, of the University of Toledo, under whose direction data were collected for the United States Commission on Industrial Relations, made important suggestions concerning methods of obtaining data. Professor Field, of the University of Chicago, has read Part I, and offered helpful suggestions relating particularly to the tables, but I am responsible for the methods of statistical presentation. Most of all I am indebted to my father and to my wife for encouragement and advice. They have read the manuscript at various stages and suggested important improvements. My wife has read a large part of the proof and prepared the index.

SUMNER H. SLICHTER.

TABLE OF CONTENTS

PART I

GENERAL ANALYSIS OF THE TURNOVER

CHAPTER	PAGE
I. What is the Labor Turnover?	3
II. The Size of the Turnover	16
III. The Effect of Different Factors upon the Size of the Turnover — The Variation of the Turnover According to Time and Locality	29
IV. The Effect of Different Factors upon the Turnover Rate (Continued). The Variation of the Turnover among Different Classes of Workers	43
V. The Numerical Importance of Resignations, Lay-offs, Discharges, and Miscellaneous Causes of the Turnover	85

PART II

THE COST OF THE TURNOVER

VI. The Cost of the Turnover to the Employer	107
VII. The Cost of the Turnover to the Workmen	142

PART III

THE CAUSES OF THE TURNOVER

VIII. Survey of the Causes of the Turnover	163
IX. Causes of the Turnover Pertaining to the Job	185

CHAPTER	PAGE
X. Causes of the Turnover Arising from Relations between the Men and the Management . .	197
XI. Causes of the Turnover Pertaining to the Men, and the Turnover Due to More Attractive Opportunities Elsewhere	206

PART IV

METHODS OF REDUCING THE TURNOVER

XII. Survey of What a Number of Establishments Have Accomplished in Reducing the Turnover	223
XIII. The Fundamental Prerequisites for the Reduction of the Turnover—Attractive Wages, Steady Work, Agreeable Work, and Short Hours	251
XIV. Hiring	281
XV. Breaking in the New Worker	326
XVI. The Handling of Men	347
XVII. The Supervisor of Labor	408
Index	443

INTRODUCTION

The several years which Mr. Slichter has devoted to the study of this important subject has now resulted in the first comprehensive treatment of labor turnover. Working as a factory employee in some of our largest industrial establishments, he himself has lived through the machine process which underlies the labor turnover. Then visiting many factories and talking with employers and workmen; then following this up with schedules and questionnaires so as to widen his basis of information, all of this preparation and collection of material for his work has given us an all-round view of the problem.

In addition to this, his remarkably keen analysis of all the contributing factors, whether they be found in the character of the worker, the kind of work, the character of the boss, or the larger social and economic relations which surround the factory, is a model for all investigators and a guide for all statistical compilations which may hereafter be undertaken in the exposition of this subject.

More than this, the work is not one of mere compilation and academic interest; it also has the highly important practical purpose of guiding the employer in his efforts to reduce the labor turnover and of showing him how far he may hope to correct it, and what he can gain thereby.

During the past twenty years the so-called science of scientific management has occupied the attention of employers and engineers and those interested in labor questions. It was felt that if the worker could be carefully analyzed in his motions and timed in his processes, and that

if the method of payment could be so devised as to offer him greater incentives and inducements, the efficiency of labor would be greatly increased and the cost of labor greatly reduced.

But suddenly it is found that one of the greatest costs of labor is not the inefficiency of the individual but the lack of goodwill of labor as a whole. Labor turnover, which is a group phenomenon and not an individual question, suddenly looms up as an intangible overhead cost, and the future scientific management must deal not alone with individuals as such but with labor as a class and as a whole.

The employer or superintendent or publicist who fully grasps all that is implied in this profound subject of labor turnover will be in a position to meet the critical problems of the future, and no greater service could have been performed for American industry than that which is now done by Mr. Slichter in his study of the turnover of factory labor.

JOHN R. COMMONS.

University of Wisconsin.

INDEX

- Absenteeism, amount of, 266-267.
reduction of, means of, 266-268.
- Accidents, cost of part of cost of turnover, 137-140.
new men, excessive frequency among, 137-140.
- Acquaintanceship, lack of, between men and management, 199-202.
- Advancement, opportunity to obtain, importance of, 189-190.
- Advertising, as a means of obtaining labor, 298.
- Advertising "drives," regularizing employment by, 269, 271.
- Akerly, H. E., 265.
- Alcoholism, reduction of, 268.
- Alexander, M. W., 17, 28, 69, 115-116, 121-122, 130-132.
- Allinson, Miss May, 127, 128, 165, 182.
- Ambition, lack of, as cause of turnover, 216-217.
- Andrews, John B., 270, 271, 272, 403.
- Applicants for employment, interviewing, 302-311.
sizing up, 298-319.
- Application blanks, data on, 303.
- Atherton, L., 77.
- Attitude of workers toward management, 194-196, 213-214.
- Attitude of workers toward work, 213-214.
- Avoidable and unavoidable causes of turnover, 14-15.
- Babcock, George B., 274, 355.
- Barba, W. P., 211.
- Barr, H. E., 256.
- Bernays, Miss Marie, 27, 28, 41-42, 51, 70, 71.
- Bonuses, payment of, for attendance, regularity in, 267.
continuous service, 241-242, 245, 400-402.
notice of intention of leaving, 324-325.
- Boston Elevated Railway, reduction of turnover on, 231-232.

- Boys and young men, instruction of, 342-344. *See* under Children.
- Breaking in workers, breaking in period, why critical, 186-187, 326-327. importance of the breaking in process, 326-327. instruction of new workers, 330-344. introduction of new workers into the organization, 327-330. payment of new workers, 344-346. *See* under Instruction of Workers and New Workers.
- Breaking in workers, cost of, accident frequency among new men, 137-140. ascertainment of, difficulties in, 110-113. ascertainment of, principles governing, 110-130. borne in part by workers, 116-121. data and estimates on, 130-140. errors in estimating, 114-130. experience of workers affects, 125-130. factors in cost, 107-110. high cost not necessarily an unfavorable sign, 133.
- Breaking in workers, cost of, motormen, 114, 133. overhead charges, errors in distributing, 120-125. principles governing ascertainment of, 110-130. variables affecting, 112-113. worker's share, 116-121.
- British Health of Munition Workers Committee, report on hours of work and efficiency, 259-260.
- Bull, R. A., 262-264.
- Bullard Machine Tool Company, bonuses for continuous service, 402. classification of jobs according to skill, 360-362.
- Capital and labor, influence of supervisor of labor on industrial relations, 421-442.
- Causes of turnover, acquaintanceship, lack of between men and management, 199-202. ambition, lack of, 216-217. attitude of workers toward management, 194-196, 213-214. attitude of workers toward their work, 213-214. classification of, 163-164. discharge, 213-214.

- Causes of turnover, dissatisfaction, 194-196, 213-214.
 "drive" system of management, 202-203.
 floaters, 214-217.
 grievances, failure to adjust, 203-205.
 heat, 38, 74, 75-76.
 inaptitude for work, 206-213.
 instruction, lack of, 187.
 interest in work, lack of, 187-188.
 lack of work, 11-13, 85-89.
 opportunity to better condition, 164-176, 217-219.
 physical unadaptability, 207-213.
 relations between men and management unsatisfactory, 194-195, 197-199.
 repetitive work, 214, 216.
 work, nature of, 74-76, 188-193, 214, 216.
 workers themselves as causes of the turnover, 206-217.
 working conditions, 167-171, 185-196.
- Character analysis, systems of rating men, 366-372.
- Chicago Motor Bus Company, "credit" system of wage payment of, 353-354.
- Children, discharges, relative frequency among, 99.
 dissatisfaction prevalent among, 171.
 floating among, causes of, 215-217.
 lay-offs, frequent among, 88-89.
 size of turnover, causes of high, 215-217.
 size of turnover, high among, 76-84.
 unemployment among, 152-155.
- Clements, F. O., 201.
- Cleveland Hardware Company, eight hour day in, 262.
- Cleveland Street Railway Company, 129-130.
- Cloak, suit and skirt industry, size of turnover in, 19-20.
- Clothcraft Shops, absenteeism, reduction of, 267.
 bonuses for notice of intention of leaving, 324-325.
 legal aid to workers, 406.
 reduction of turnover by, 238-240.
 regularization of work by, 239, 270, 274.
 transfer of workers by, 274.
- Clothier, R. C., 418.
- Commons, J. R., 3.

- Commonwealth Steel Company, eight hour day in, 262-264.
- Confectionery industry, concentration of turnover among new workers, 45.
size of turnover in, 45.
- Continuous service, bonus for, 241-242, 245, 400-402.
- Conway, T., Jr., 232-233.
- Cost of turnover to employers, 107-141.
factors of cost, 107-110.
training given workmen limited by cost of turnover, 109-110.
turnover as a symptom of other costs, 140-141.
See under Breaking in Workers, cost of.
- Cost of turnover to workmen, 142-159.
data on lacking, 142-143.
demoralizing influence of turnover, 157-158.
difficulty of obtaining satisfactory jobs, 156-157.
factors of cost to workmen, unemployment, 142-144.
need for data on, 142-143.
- Crompton-Knowles Loom Works, absence rate in, 266.
- Curtis Publishing Company, absenteeism in, 266.
employment department, organization of, 417-418.
- Definition of turnover, 3-9.
- Demand for labor, seasonal variations in, affect turnover, 37-38.
size of turnover, affected by, 33-35, 247.
- Demoralization, turnover as a demoralizing influence, 157-158.
- Dennison Manufacturing Company, absenteeism in, 266.
foreman, instruction of, 382-383.
job analysis, 286-287.
reduction of turnover by, 240-241.
regularization of work by, 241.
transfer of workers by, 274.
- Depressions, industrial, turnover lower in times of, 29-33.
- Discharge, foreman's authority should be limited, 376-378.
meaning of term, 12-13.
- Discharge rate, among children, 99.
calculation of, on basis of size of force or on basis of number hired, 94-96, 97.
class of workers affects, 96-100.
depression affects, 100-103.

- Discharge rate, men as compared with women, 97-99.
 new men, high among, 91-92.
 prosperity affects, 100-103.
 size of, 90-100.
- Discharges, causes of, 213-214.
 causes of classified, 176.
 causes of, difficulty in ascertaining real causes, 176-177.
 causes of, relative importance of, 177-179, 184, insert opposite 185.
 industrial depression affects causes of, 178-179.
 numerical importance of, 90-100.
- Discrimination against workers by foremen and gang bosses, prevention of, 390-391.
- Dissatisfaction, cause of turnover, 164-176.
 cause of turnover among children, 171.
- Dissatisfaction with job, causes of, 185-196.
- Dissatisfaction with management, causes of, 197-205.
- "Dovetailing," regularization of employment by, 271-273.
- "Drive" system of management, 202-203.
- Dumbleton, H. F., 337.
- Du Pont Powder Co., bonuses for continuous service, 401.
 physical examination of employees, 211.
- Duration of employment, accident frequency affected by, 137-140.
 earnings affected by, 116-121, 135-136.
 statistics on, in certain plants, 44-46, 49, 249-250.
- Earnings, duration of employment affects, 116-121, 135-136.
- Eastman Kodak Company, emergency squadron, 265.
- Eaton Crane and Pike Company, physical examination of employees, 212.
- Education of foreman, 380-385.
- Education of workers. *See* under Instruction of Workers.
- Efficiency, eight hour day, effect on efficiency, 261-263.
 heat, effect on efficiency, 253-255.
 records of individual efficiency, 362-372.
 records, value of, 362-363.

- Eight hour day, efficiency, effect on, 261-263.
- Emergency squadrons, 264-265.
- Emmet, Boris, 34, 45, 249.
- Employment bureaus, need for central public employment bureaus, 155-156.
- Employment department, functions of, 281.
need for, 282-284.
See under Hiring.
- Europe, size of turnover in, 27-28.
- Everett, George B., 340-341.
- Exchange of employees, regularization of work by, 275-276.
- Factory work, characteristics of, 188-193.
tendencies of change in requirements made on worker, 300-301, 305-306.
- Fatigue, mitigation of, 254-257.
- Feiss, Richard A., 4, 14, 238-240, 267, 270, 274, 299, 308-309, 310, 324-325, 406.
- Filene Sons Company, grievance adjustment plan of, 398-400.
- Fisher, Boyd, 35, 122, 124.
- Fitness of applicants for employment, 298-319.
- Fleming, R. D., 119, 130.
- Floater, classification of, 214-215.
hiring of, how avoided, 319.
- Floating, among children, 215-217.
causes of, 214-217.
- Ford Motor Company, absenteeism in, 266.
jobs, classification of, according to skill, 360.
legal aid to employees, 407.
reduction of turnover by, 243-244.
transfer system, 212.
- Foremen and gang bosses, authority to discharge, limitation of, 376-378.
discrimination against workmen by, 390-391.
future type of, 385.
handling of men by, improvement of, 372-386.
hiring of men by, disadvantages of, 282-284.
instruction of, 380-385.
instruction of workers by, inadequacy of, 332-334.
selection of, 379-380.
training of, 242, 380-385.
turnover rate, influence on, 373.
- Foundries, size of turnover in, 74-76.

- Franklin Manufacturing Company, wage payment system of, 355.
- Freeland, A. E., 402.
- Gang bosses, instruction of new workers by, 332-334, 338-339.
- See under Foreman and Gang Bosses.
- Gardner, H. L., 210.
- Gehris, Milton D., 211, 241, 401.
- Germania Life Insurance Company, 254.
- Germany, turnover in, 27-28, 41-42, 51, 70-72.
- Gilbreth, F. G., 266.
- Gilson, Miss Mary Barnet, 239.
- Goldmark, Miss Josephine, 261.
- Grievances, adjustment of, committees for, 389-390, 392-400.
- descriptions of plans for, 392-400.
- Filene Sons Company, plan for, 398-400.
- foremen, arbitrary actions of, checked by, 378-379.
- joint grievance committees, 389-390.
- management, improved " by, 378-379.
- need for, 203-205.
- organization for, 391-400.
- Grievances, adjustment of, remedy for turnover, 227, 230, 231, 233-234, 386-400.
- supervisor of labor, as adjuster of grievances, 391-392.
- workers' representatives, rôle of, 389-390.
- Grieves, W. A., 18, 115-116, 132.
- Handling men, "drive" system of management, 202-203.
- foremen and gang bosses, checks upon, 375-379.
- foremen and gang bosses, improvement of methods of handling men, 372-386.
- labor policy, need of a definite, 408-409.
- turnover, reduction of, by improvement in methods of handling men, 242.
- Hard, William, 305, 437-438.
- Heat, efficiency, effect upon, 253-255.
- turnover rate affected by, 38, 74, 75-76.
- Henderson, C. R., 270.
- Hiring, floaters, how to avoid, 319.
- foremen, disadvantages of hiring by, 282-284.
- interviewing, principles and practice, 302-311.

- Hiring, notice of help needed, importance of adequate notice, 320-325.
 references from previous employers, value of, 311-319.
 sizing up applicants, 298-319.
 sources of help, 290-298.
- Hirings, as basis for calculating turnover rate, 10.
- Hours of labor, adjustment of, 258-263.
 efficiency, affected by reduction of, 258-263.
 reduction of, effect on efficiency, 258-263.
 reduction of, reduces turnover, 226, 234, 239, 243.
- Hoxie, R. F., 344.
- Huntington, Elsworth, 253-254.
- Illinois Steel Company, regularization of employment by, 270.
- Imperial Wall Paper Company, physical examination of employees, 212.
- Industrial experience, length of, affects turnover rate, 81-83.
 unemployment affected by, 154-155.
- Industrial relations, supervisor of labor, effect on relations between capital and labor, 421-442.
- See* under Relations between Men and Management, 442.
- Instruction of workers, attitude of workers toward work affected by, 187.
 boys and young men, importance of, 342-344.
 importance of, 330-332.
 improved methods of, 334-344.
 lack of, cause of turnover, 187.
 learning period, why critical, 186-187, 326-327.
 limited by turnover, 109-110.
 need for, 187.
 present methods, inadequacy of, 332-334.
 training departments, 339-342.
- Interest in work, extent of, on part of workers, 195.
 importance of, 187-188.
 lack of, cause of turnover, 187-188.
 need for, 187.
 piece rate cutting system, effect on, 192.
 prerequisites of, 187-196.
 relations of men with management affects, 194-196.
 repetitive nature of work affects, 187-189.
 standardization of work affects, 190-191.

- Interviewing, importance of, 302.
 principles and practice of, 302-311.
- Investment in plant and equipment, excess caused by the turnover, errors in calculating, 122-125.
- Job analyses, description of, 285-289.
 value of, 289.
- Jobs, classification of, in accordance with skill, 358-362.
 difficulty of unemployed workers in obtaining satisfactory jobs, 156-157.
- Keck, 26, 72.
- Keir, J. S., 266-267.
- Labor policy, need for a definite, 408-409.
- Labor, sources of, 290-298.
- Lamson, H. G., 211.
- Lay-off, meaning of, confused, 12-13.
- Lay-offs, boys as compared with girls, 89-90.
 children, frequent among, 88-89.
 depression affects number of, 100-102.
 numerical importance of, 85-89.
- Lay-offs, part of turnover or not, 13-14.
 prosperity affects number of, 100-102.
 reasons for large number among children, 88-89.
 seasonal industries, numerical importance in, 85-89.
 should they be included in turnover? 3-6, 13-14.
- Lawson, George, 138-139.
- Learning period, why critical, 186-187, 326-327.
- Legal aid to employees, 406-407.
 loan sharks, protection of workers from, 406.
- Leiserson, W. M., 213.
- Lemon, Chas. H., 133.
- Levenstein, 195.
- Locality, size of turnover affected by, 29-33, 35-36, 247.
- McCabe, J. J., 212.
- Management. *See* under "Drive" System of Management and Handling Men.
- Medical aid to workers, 231, 234, 239, 245, 403-406.
- Mental tests, need for, 300-302.
- Merit systems of wage payment, 347-353.

- Midvale Steel Company, physical examination of employees, 211.
- Mobile Light and Railway Company, relative accident cost attributable to new and old men, 139.
- Motormen, cost of breaking in, 114, 133.
- Münsterberg, Hugo, 301-302.
- National Association of Corporation Schools, physical adaptability of workers, report on, 209.
- National Cloak and Suit Company, training department of, 340-341.
- New communities, turnover high in, 35-36.
- New workers, accidents among, excessive frequency of, 137-140.
breaking in, importance of the breaking in process, 326-327.
dissatisfied easily, 186-187.
instruction of, 330-344.
introducing into the organization, 327-330.
payment of, 344-346.
size of turnover among, 44-57, 114.
- New York State Railways, relative accident frequency among new and old men, 138.
- Notice of workmen's intention to quit, extent to which given, 321-323.
how obtained, 323-325.
- Ohio Industrial Commission, physical adaptability of workers, investigation by, 208, 211.
- Old age, unemployment affected by, 155.
- Opportunity to advance within the plant, importance of, 189-190.
- Opportunity to better condition, cause of turnover, 164-176, 217-219.
- Out-of-door work, size of turnover affected by, 37-38
- Overhead charges, error in treatment of, in estimating cost of turnover, 120-125.
- Overtime, reduction of, 262-268.
- Packard Motor Car Company, instruction of foremen by, 383-385.
instruction of workmen by, 337.
- Paper box industry, concentration of turnover among new employees, 45.
size of turnover in, 45.

- Permanency of employment.
See Duration of Employment.
- Philadelphia Rapid Transit Company, reduction of turnover by, 232-234.
- Physical defects, cause of turnover, 207-213.
 prevalency of, 208-213.
 rejections for, 208-212.
 transfer of defective employees, 212.
- Pickering, Miss Ruth, 261-262.
- Piece rate cutting, effect on interest of workmen in work, 192.
- Planning and routing work, effect on treatment of men by foremen, 385-386.
- Plumb, Fayette R. Inc., 134.
- Poole, Ernest, 305.
- Price, C. W., 200-201, 305.
- Pride in work, causes of lack of, 190-193.
 interest of workmen in work affected by lack of, 190.
- Profit sharing, reduction of turnover by, 248-249.
- Promotion in accordance with merit, advantages of, 290-292, 356-357.
 classification of jobs for purpose of promotion, 358-362.
 prerequisites of success, 356-362.
- Promotion in accordance with merit, reduction of turnover by, 244, 245, 355, 356.
 should promotions be included in turnover, 8.
- Prosperity, turnover greater in times of, 29-33.
- Psychological tests, need for, 300-302.
- Public Service Railway of New Jersey, accident cost among new and old men, 137.
- Railway employees, size of turnover among, 23-25.
- Rating systems, systems of rating workers, 362-372.
- Reasons for leaving previous job, significance of, 307-308.
- Recommendations of employees, as a means of obtaining help, 293-297.
- Records of individual efficiency and character, 362-372.
- Reduction of turnover, prerequisites of, 251-280.
- Reduction of turnover, methods of, breaking in new workers, 330-346.
 central employment bureaus, 155-156.
 centralized management of labor, 408-413.

- Reduction of turnover, methods of, checks upon foremen, 375-379.
 classification of methods of reducing turnover, 222-224.
 Clothcraft Shops, 238-240.
 Dennison Manufacturing Company, 240-241.
 exchange of employees, 275-276.
 fatigue, mitigation of, 254-257.
 floaters, how to avoid hiring, 319.
 Ford Motor Company, 243-244.
 foremen, checks upon methods in handling men, 375-379.
 foremen, methods of handling men, improvement of, 372-386.
 foremen, training of, 242.
 grievances, adjustment of, 227, 230, 231, 233-234, 386-400.
 handling of men, improvement of, 242, 372-386.
 hiring, more careful selection of men, 239, 241, 242, 245.
 hours of labor, adjustment of, 226, 239, 259-268.
 instruction of new workers, 239, 241, 332-344.
- Reduction of turnover, methods of, investigation of reasons for resignations, 375-76.
 legal aid to employees, 406-407.
 management of labor, centralization of, in hands of experts, 408-413.
 merit system of wage payment, 347-349.
 overtime, reduction of, 262-268.
 payment of new workers, 344-346.
 profit sharing, 248-249.
 promotion in accordance with merit, 241, 245, 355-356.
 regularization of employment, 226, 228, 230, 236-238, 239, 241, 245, 269-275.
 relations between men and management, improvement of, 227-28, 230.
 reports on size of turnover, 378.
 resignations, investigation of reasons for, 375-376.
 sick benefits, 239, 245, 403-405.
 speed of work, adjustment of, 255.
 Stetson, John B., Company, 241-242.
 supervisor of labor, 408-413.

- Reduction of turnover, methods of, survey of methods used in specific instances, 223-250.
 wage payment based on merit, 347-349.
 wages, adjustment of, 226, 232-233, 236, 239, 276-280.
 work, mitigation of disagreeable features of, 253-257.
 working conditions, improvement of, 226, 253-257.
- Reduction of turnover, statistics on, 226, 228, 229, 230, 232, 233, 235, 239, 240, 242, 244, 246, 247, 249.
 statistics on, criticism of, 225.
- References from previous employers, accuracy of, 315-317.
- Regularizing employment, 226, 228, 230, 236-238, 239, 241, 245, 264-265, 269-275.
- Rehirings, numerical importance of, 125-130.
- Reilly, P. J., 132-133, 240-241, 286.
- Reilly, P. T., 139.
- Relations between men and management, acquaintanceship, lack of, 199-202.
- Relations between men and management, attitude of workers toward management, 194-196, 213-214.
 character of, 199-205.
 "drive" system of management, 202-203.
 grievances, adjustment of, 203-205, 386-400.
 interest of workers in their jobs affected by, 187-189.
 Safety First campaign, effect on, 200-201.
 size of turnover affected by, 194-195, 197-199.
- Remington Arms and Ammunition Company, eight hour day in, 262.
- Repetitive work, cause of turnover, 214, 216.
 interest of workers in their jobs affected by, 187-189.
 prevalency of, 188-189.
- Reports on size and causes of turnover, 11, 378.
- Resignations, better opportunity elsewhere as a cause of, 167-176.
 causes of, 164-176.
 causes of, difficulty in ascertaining, 165-166.
 causes of, statistics on, 172-175, 180-183.
 depressions affect causes of, 174-176.

- Resignations, investigations of
 reasons for, as a means
 of reducing turnover,
 375-376.
 numerical importance of,
 85-89.
 prosperity affects, 100-
 102.
 reasons for, should be as-
 certained by employ-
 ment department, 375-
 376.
 skill of workers affects
 reasons for resigning,
 172-175.
 statistics on causes of res-
 ignations, 172-175, 180-
 183.
 working conditions affect
 causes of, 167-171.
- Rest periods, 227, 257.
- Richey, A. S., 129, 139.
- Rike, Frederick H., 210.
- Rike-Kumler Company, phys-
 ical examination of em-
 ployees, 210.
- Ross, E. A., 431.
- Safety First campaign, rela-
 tions between men and
 management, effect on,
 200-201.
- Satisfactory jobs, difficulty in
 obtaining, 156-157.
- Schools, source of labor sup-
 ply, 298.
- Schumann, 71.
- Scranton Railway Company,
 relative accident cost
 * attributable to new and
 old men, 139.
- Seasonal and short-time fluc-
 tuations in size of turn-
 over, 37-42.
- Seasonal and short-time fluc-
 tuations in business,
 counteracting the effect
 of, on the working
 force, 236-238, 239, 241,
 245, 264-265, 269-270.
- Selection of new employees,
 298-319.
- Semi-skilled men, size of turn-
 over among, 57-74.
- Shaw, C. E., 382-383.
- Sherwood, W. J., 139.
- Sick relief of workers, 231,
 234, 245, 403-406.
- Sickness rate in certain estab-
 lishments and indus-
 tries, 404-406.
 ventilation affects sickness
 rate, 254-255.
- Size of turnover, in general,
 16-28.
 boys, young men, girls,
 76-84.
 bookbinding trade, size in,
 20.
 calculation of, 9-11.
 children, size among, 76-
 84.
 class of work affects, 43-84.
 cloak, suit and skirt in-
 dustry, size in, 19-20.

- Size of turnover, demand for labor affects, 29-35, 247.
- depressions affect, 29-33.
- discharges, numerical importance of, 90-100.
- duration of employment affects, 47-54.
- earnings of workers affect, 226, 232-233, 236, 239, 276-280.
- Europe, size of turnover in, 27-28.
- factors affecting, 29-84.
- foundries, size in, 74-76.
- heat affects, 38, 74, 75-76.
- industrial depression affects, 29-33.
- industrial experience of workmen affects, 81-83.
- lay-offs, numerical importance of, 85-89.
- locality affects, 33-37, 247.
- localized among certain classes of workers, 43-44.
- metal working establishments, size in, 20-22.
- miscellaneous industries, size in, 20-22, 25-26.
- new communities, high in, 35-36.
- new workers, high among, 44-57.
- opportunity to obtain other employment affects, 33-35, 247.
- prosperity, effect on, 29-33.
- Size of turnover, railway employees, size among, 23-25.
- resignations, numerical importance of, 85-89.
- seasonal variations in demand for labor affect, 37-42.
- seasonal variations in size of turnover, causes of, 37-38.
- semi-skilled workers, size among, 57-74.
- skill of workmen affects, 57-74.
- skilled workmen, low among, 57-74.
- steel mill, size in, 18.
- stores, size in, 22.
- typical rate about 100 per cent, 16-17.
- typical rate difficult to ascertain, 16-17.
- unskilled workmen, size among, 57-74.
- variables affecting, 16.
- wages of workmen affect, 226, 232-233, 236, 239, 276-280.
- women as compared with men, 84.
- woolen mills, size in, 18.
- work, nature of, affects, 74-76.
- yard laborers, size among, 76.
- Sizing up applicants for employment, 298-319.

- Skilled workmen, turnover rate among low, 57-74.
 Sources of labor supply, 290-298.
 Speed of work, adjustment of, 255.
 Sperry Gyroscope Company, eight hour day in, 261.
 Standardization of work, effect on interest of workmen in work, 190-191.
 Stearns, R. B., 133.
 Steel mill, size of turnover in, 18.
 Stetson, John B., Company, bonuses for continuous service, 241-242, 401.
 physical examination of employees, 211.
 reduction of turnover by, 241-242.
 Stores, size of turnover in, 22.
 Supervisor of labor, capital and labor, influence on relations of, 421-442.
 development of position of, traced, 413-421.
 duties of, in specific plants, 417-419.
 duties to be expected of, in the future, 419-421.
 foremen instructed by, 385.
 grievances handled by, 391-392.
 handling of men, responsible for, 409-413, 419-421.
 Supervisor of labor, industrial relations, influence of supervisor of labor on, 421-442.
 labor policy determined by, 408-409.
 liberal labor policy, influence on pursuit of, 431-441.
 need for, 408-413.
 Tarbell, Miss Ida, 255.
 Taylor, Frederick W., 255, 256, 301.
 Tawney, R. H., 277-280, 337-338.
 Temporary help, whether included in turnover, 4-5.
 Temporary jobs, reduction of number of, 276.
 Temporary lay-offs, whether included in turnover, 13-14.
 Terminations due to reduction of force, whether included in the turnover, 3-6.
 Thompson, S. E., 301-302.
 Time and motion study, piece rate cutting rendered less profitable by, 425.
 Tolman, William H., 350.
 Training departments, instruction of workers by, 339-342.
 National Cloak and Suit Company, 340-341.

- * See under Instruction of
Workers.
- Transfers, causes of classified,
6-8.
of defective employees,
212.
reasons for, 6-8.
regularization of employ-
ment by, 273-274.
whether included in the
turnover, 6-8.
- Turnover, classification of,
11-15.
concentrated among cer-
tain classes of workers,
43-84.
defined, 3-9.
expression of, 9-11.
- Unemployment, caused by
turnover, 144-156.
children, high among,
152-155.
cost of turnover to work-
men, 144-156.
inability to find work,
144-156.
industrial experience af-
fects liability to, 154-
155.
old age increases liability
to and length of, 155.
- Universal Machine Company,
eight hour day in,
201.
- Unskilled work, does it exist,
333.
- Unskilled workmen, turnover
high among, 57-74.
- United States Pension Bu-
reau, effect of improved
ventilation on sickness
rate, 254-255.
- Van Kleeck, Miss Mary, 20,
165, 182.
- Ventilation, effect on health,
254-255.
- Vitaphone Company, eight
hour day in, 262.
- Vocational guidance bureaus,
influence on working
conditions, 298.
source of labor supply,
298.
- Von Binkowski, 72.
- Wage payment, automatic in-
creases of wages, 353-
354.
- * "credit" systems of pay-
ment, 353-354.
- Franklin Manufacturing
Co., method of rate cal-
culation, 355.
merit systems of wage
payment, 347-353.
- Wages, discouraging effect of
low wages, 278-280.
economy of high wages,
276-280.
efficiency, wages affect,
276-280.

- Wages, factors which determine rate most advantageous to employer, 276-278.
rise as duration of employment increases, 116-121, 135-136.
turnover rate affected by, 226, 232-233, 236, 239, 276-280.
- Weaver, H. B., 353-354.
Weller, J. H., 383-384.
Wernicke, O. H., 201.
Williams, John M., 134.
Willits, J. H., 271.
- Women, discharge rate among, as compared with among men, 97-99.
- Women, stability of, as compared with men, 84.
- Woolen industry, size of turnover, 18.
- Work, turnover rate affected by, 74-76, 253-257.
- Working conditions, cause of turnover, 185-196.
effect on resignations, 167-171.
improvement of, reduces turnover, 226, 253-257.
- Workmen-instructors, instruction of new workers by, 335-337.
- Yard laborers, size of turnover among, 76.