

UNIVERSITY OF WISCONSIN - MILWAUKEE

DON'T DISCLOSE IDENTITIES

From the beginning of these studies, the identities of the persons under study have been kept confidential. We look to you to carry on this trust. Please guard the release of the persons involved by substituting fictitious names or code symbols for real names.

April 13, 1931.

MR. C. W. BERGQUIST - 6070:

Attached is a report giving "An Account of the Work of the Industrial Research Division." It describes this work up to the first of this year giving conclusions reached to date and plans for the work in prospect.

G. E. PENNOCK.

INDEX

INTRODUCTION

Section I	REVIEW OF TEST ROOM STUDIES
Section II	DEVELOPMENT AND USE OF THE EMPLOYEE INTERVIEW AS A RESEARCH TOOL
Section III	DEVELOPMENT OF THE SUPERVISORS' CONFERENCE PROGRAM

Appendix 1	Sample Employee Interview
2	Analysis Charts
3)	
4)	Sample Supervisory
5)	Conference material
6)	
7)	
8	Letter from Prof. Elton Mayo
9	Tabulation and Summary of Mr. Beal's Questionnaire

INTRODUCTION

The Industrial Research Division was established in January, 1929, to centralize three activities which were beginning to show considerable promise. These activities were: (a) the Test Room Study of the factors in employee effectiveness which had been developing since May, 1927; (b) the Employee Interviewing Program which began in September, 1928, in the effort to learn the reaction of employees to working conditions and supervisory practices and; (c) the Supervisory Training Program which was being revised because of certain findings from the test room and employee interviews.

Although these three activities seem functionally distinct they are really component parts of a research study centering about the problem of employee effectiveness. The original test room operators showed a degree of increased production (now ranging from 40% to 60%) both remarkable and unexpected. This increase could not be related adequately to any of the conditions of work imposed but was found to be closely associated with a change in mental attitude. The interviewing program was established as a logical next step to further enlightenment about mental attitude factors in work and the development of the supervisory training program permitted some of the knowledge acquired to be applied through supervision. The three activities, therefore, constitute an organization for gathering new facts concerning the human element in industry and for making some applications.

Much has been accomplished since the beginning of this work and the results to-date forecast further productive achievements. In order that the scope and findings from these studies may be more widely known, this folder has been prepared. It contains an account of each phase of activity and a statement of results.

Invaluable assistance has been given constantly by Professor Elton Mayo of the Harvard University Graduate School of Business Administration and by Professor Clair E. Turner of the Department of Biology and Public Health of the Massachusetts Institute of Technology. Both of these men have been intimately connected with this work almost from its inception.

Sect.
I

REVIEW OF TEST ROOM STUDIES

This section of the report presents a general description of the inception, growth, methods, findings and future plans of the test room studies. Detailed data and a fuller statement of findings are presented in periodic progress reports, three of which have been issued, with a fourth now in the process of formulation.

ORIGIN AND BEGINNING OF THE RELAY ASSEMBLY TEST ROOM

The origin of these studies dates back to the early part of 1927 when the Company in cooperation with the National Research Council had just finished a three year investigation of illumination and its relationship to the productivity of employees. This study revealed the fact that a multiplicity of factors influence employee effectiveness, and showed that a great deal more could be learned in this area by proper methods of study.

It seemed clear as the illumination experiment ended that by some modification of the illumination study method most of the factors affecting the employee at his work could be discovered and evaluated. Such findings would enable executives to base judgment upon factual knowledge instead of upon opinions in the management of human effort.

The Test Room - As the first step toward a more thorough study, we set aside in April, 1927, a test group for observation and

experiment. In this test group were six experienced female operators chosen at random. Their work was the assembly of telephone relays, which consists of putting together a coil, armature, contact springs, and insulators in a fixture and securing the parts in position by means of four machine screws. This operation at that time was being done at the rate of about five relays in six minutes.

Five of the girls were to do the actual assembly work, while the sixth was to stock and procure parts for each assembly operator. The girls were invited to the office of the superintendent in charge, where the entire plan and objectives of this study were explained to them. Although shy at this first meeting, the girls readily consented to take part in the study. They were expressly cautioned to work at a comfortable pace and not to make a race out of the test.

The test room equipped for the study was one of those used in the illumination tests. It is in the corner of a regular shop room and is enclosed by a temporary wooden partition about eight feet high. The work bench and assembly equipment are identical with that in the regular department, except for one item. At the right of each girl's position is a hole in the bench into which completed relays are dropped. This hole is the entrance to a chute in which there is a flapper gate actuated by the relay in its passage. The opening of the gate closes an electric circuit which controls a perforating device which in

turn records the completion of the relay by punching a hole in the moving tape. This tape moves at the rate of one-quarter of an inch a minute and has space for a separate row of holes for each operator. It thus constitutes, when punched, a complete output record for each girl for each instant of the day. In connection with this tape mechanism, a bank of five message registers gives numerical record of the total relays completed by each operator.

There are other miscellaneous items of equipment and furniture in the room such as small benches, a table, file cabinet, drafting table, two observers' desks and a typist desk.

Objectives - As we began the test our objectives were stated in the form of questions. The following six questions were the original list:

1. Do employees actually get tired out?
2. Are rest pauses desirable?
3. Is a shorter working day desirable?
4. What is the attitude of employees toward their
work and toward the Company?
5. What is the effect of changing the type of working
equipment?
6. Why does production fall off in the afternoon?

In addition to these questions, it was felt, from the experience in the illumination study, that there was much to learn from the operators themselves if we could establish the proper relationship with them. It was felt, too, that our experience would indicate our objectives

more and more clearly as we progressed in the study.

Since the beginning of the test our objective questions have been rather unstable. With the exception of question five, fairly good answers are available to all of the original questions. New questions have been asked from time to time and some of them satisfactorily answered. The general experience has been that once a question is partially answered its form and character are quite changed. Constantly the study has been one of starting on one question and ending up with another.

The general statement of objectives has changed as the study has advanced, but at the present time may be stated approximately as follows. We are endeavoring to learn more about those conditions under which people work best. Stating it another way, our purpose is to study the human energy flowing into the product so that we may deal with it more intelligently.

The Method - The test room method has undergone interesting development. It is the observational method dealing simultaneously with many variables as contrasted with the experimental method which is generally used in the physical sciences for study of factors where all except one of the variables can be controlled. In the test room one condition is changed at a time. Some factors can be controlled and made constant. Conditions not subject to experimental control are carefully watched and inter-relationship established. Many factors, of course, cannot be accurately measured quantitatively, such as physical or mental health or the attitude of the employee.

However, over a long period of time and with proper application of statistical procedures, many of the factors which are not subject to accurate measurement can be evaluated satisfactorily for our purposes.

Disregarding the problems of placement and working equipment, it has been our assumption that the effectiveness of an individual will vary with (a) his bodily status or physiological efficiency (health, skill, endurance); (b) his mental state (contentment and freedom from worry, fear, anger, hate, shame, or other morbid preoccupations); (c) his zest for work (determined by the enjoyment in performing the work, the feeling of justice in his treatment, and the desire for securing reward).

CHANGES IN CONDITIONS OF WORK IN THE TEST ROOM

Before the operators were placed in the test room, a record was kept for two weeks on each test operator in her regular department under her regular conditions but without her knowledge, in order that we might have a basic record of production ability before any changes were made in her conditions of work. Following this, the girls were moved into the test room where for a period of five weeks no alterations, other than the changed location, were made in the conditions of work.

We realized as indicated above, that although we might from time to time make a change in the conditions of work in the test room there would be many varied conditions in addition which would

have to be watched and studied. It was our task, therefore, to recognize each change in working conditions which was introduced intentionally or accidentally and to determine the relative importance of each of these changes when related to all other data.

At the end of 1930, eighteen different types of work periods had been imposed in the test room. These periods with their time of duration and particular feature are shown in the following tabulation:

LIST OF SPECIFIC CHANGES

<u>Period Number</u>	<u>Period Name</u>	<u>Dates Included</u>	<u>Duration</u>	<u>Beginning of Rest Pauses</u>	
		<u>1927</u>		<u>A.M.</u>	<u>P.M.</u>
1.	In Regular Dept.	4-25 to 5-10	Appr. 2 wks.		None
2.	Introduction to Test Room	5-10 " 6-11	5 wks.		None
3.	Special Gang Rest	6-13 " 8- 6	8 wks.		None
4.	Two 5 min. Rests	8- 8 " 9-10	5 wks.	10:00	2:00
5.	Two 10 min. Rests	9-12 "10- 8	4 wks.	10:00	2:00
6.	Six 5 min. Rests	10-10 "11- 5	4 wks.	8:45,10:00 11:20	2:00,3:15 4:20
7.	15 Min.A.M.Lunch 10 Min.P.M.Rest	11- 7 " 1-21-28	11 wks.	9:30	2:30
		<u>1928</u>			
8.	Same as No. 7, but 4:30 Stop	1-23 to 3-10	7 wks.	9:30	2:30
9.	Same as No. 7, but 4:00 Stop	3-12 " 4- 7	4 wks.	9:30	2:30
10.	Same as No. 7, (Check)	4- 9 " 6-30	12 wks.	9:30	2:30
11.	Same as No. 7, but Sat. A.M. off	7- 2 " 9- 1	9 wks.	9:30	2:30
12.	Same as No. 3, (No Lunch or Rests)	9- 3 "11-24	12 wks.		None

<u>Period Number</u>	<u>Period Name</u>	<u>Dates Included</u>	<u>Duration</u>	<u>Beginning of Rest Pauses</u>	
		<u>1929</u>		<u>A.M.</u>	<u>P.M.</u>
13.	Same as No. 7, but operators furnish own lunch. Com- pany furnishes beverage.	11-26-28 to 6-29-29	31 wks.	9:30	2:30
14.	Same as No. 11	7- 1 to 8-31	9 wks.	9:30	2:30
		<u>1930</u>			
15.	Same as No. 13	9-2-29 to 4-5-30	31 wks.	9:30	2:30
16.	Same as No. 13 Except Operators change position	4-7 to 5-3	4 wks.	9:30	2:30
17.	Same as No. 16, Except 4:15 Stop and Sat. A.M. off	5-5 to 10-25	25 wks.	9:30	2:30
18.	Same as No. 17, Except Friday P.M. off	10-27 to present		9:30	2:30

Those intentional changes or features in the test have not been by any means the only changes studied and evaluated for effect. Many minor and more subtle changes exist in the test room as compared to the regular shop department, and when an explanation is sought for the difference in the effectiveness of test room operators as compared to their record in the regular shop, every change in working conditions must be considered as having some possible share in causing the difference. The following statement attempts to show what differences there were in the test room as far as the operators were concerned.

In the test room the girls were paid upon the basis of an independent group piece work rate. This meant that each girl would receive an amount more nearly in proportion to her individual effort since she was paid with a group of six instead of a group of 100 or more. The girls in the test room assembled fewer different types of relays than they had in the regular department. In the test room the exact output could be read from the recorder by the operator at any time. The test room was not quieter; if anything, it was somewhat noisier than the regular department. The new conditions of work provided an element of novelty. The workers realized the experiment was receiving the attention of the officials of the Company, which meant that they were being noticed as individuals. At the beginning of the study high officials frequently visited the test room, and there has been a continued contact between these operators and the people who are conducting the experiment which would not occur in the life of the ordinary shop operator.

Perhaps the greatest change is that of the nature of supervision. In the test room there is no Group Chief, but instead the girls work under the general direction of a friendly "observer" of the experiment. Discipline is secured through leadership and understanding. The girls are allowed to talk. They feel free to leave their bench whenever they like. They are not compelled to pick up parts from the floor at the time they are dropped. Free individual conversation developed an understanding of what was fair and appropriate conduct; an esprit de corps grew up within the group. Physical

examinations are given these girls every six weeks. They objected to this procedure at first, but now their trip to the hospital is made a "party", and every girl now delights in assuming the self-appointed task of baking a cake or making cookies when her turn comes. The physical examinations have thereby been turned into an event carrying pleasant anticipations. Similarly it has been the practice upon the conclusion of each test room year to arrange a lunch in the Company restaurant to which the operators are "guests" and observers of the study group are present.

Numerous other developments and changes of a general nature include such things as arranging for prompt delivery of operators' credits to the Pay Roll Department; setting up a routing which would insure against lost credit tickets; the inspection of finished work before it leaves the test room; and obtaining substitutes for operators when absent.

In May, 1930, a change was made in the bench positions of the operators to determine the importance of juxtaposition. This was suggested by certain parallels in output which had been observed in girls sitting next to each other. At certain periods of the study lunches were furnished by the Company at the time of the forenoon rest period. These last mentioned changes have been made to establish experimental conditions which we desired to study.

Records and Data Kept For Study - The data recorded in the Test Room may be classified roughly into three groups:

- (a) Data with respect to the specific changes in conditions of work and other environmental changes.
- (b) Data showing changes in the productivity of the operators.
- (c) And data showing changes in the operators (Physical, Mental and Zest for Work.)

It has been our general plan, also, to check the findings in the test room by gathering data in shop and office departments which would supplement and check test room records. This has been possible in several instances, but the general experience has been that data taken from routine departmental records are not sufficiently exact and specific for studies of the type we are making, although the records are satisfactory for their own purposes. Some data, however, sufficiently reliable, have been gathered in this way and relate to the following topics:

- Attendance irregularities
- Effect of rest periods
- Output before and after vacations of different lengths
- Seasonal fluctuations in output in large departments
- Effect of overtime work
- Learning rate for inexperienced operators

Records of Changes in Conditions of Work - The record of specific changes in working conditions in the test room is, of course, a very accurate and reliable one. Many of the data which having to do primarily with other phases of the studies are kept in terms of these specific features in working conditions. The record of these specific changes forms a base for many comparisons.

Many of the other environmental changes have been indicated in a previous part of this paper. Our effort has been to record these and take them into account in the studies even though it was impossible to measure their exact significance in every instance.

Records of Changes in Production - In the test room, a record of production was obtained, as previously described, by means of the moving tape which records the instant at which each relay is completed. There were, however, frequent changes in the types of relays upon which the test room operators were working. To avoid difficulties in comparison a conversion factor was established so that we might express production on any type of relay in terms of one single type which we took as standard.

The production data taken from the punched tape, the message registers, and records kept by the layout operator are recorded in the following form for study:

1. Daily production record for each operator showing types of relays upon which each worked and number of each type completed.
2. Daily production record for each operator and for the group in terms of the standard type relay.
3. Daily production record for each operator and for the group in terms of the standard type relay by days of the week.
4. Average hourly production for each operator and for the group in terms of standard type relays shown by days and by weeks. (Since the base period for these operators in the regular department before they were moved into the test room established a production level which was called 100% efficiency, the average hourly production record is in effect their per cent of efficiency record.)

5. Average hourly production shown for each operator by whatever type of relay they are assembling and separated by forenoon and afternoon production.
6. Daily record of defective relays showing time of day made and kind of defect found for each operator.
7. Record of the amount of time spent by each operator weekly in repairing defective work.
8. Speed tests to show the difference in assembly ability for each operator between forenoon and afternoon work. (Taken from the assembly of three relays timed with a stop-watch.)
9. Daily record of the amount of scrap parts for the group.

In addition to the above records of production data, two graphic charts are kept, one of which shows total weekly output by operators and for the group, and another which shows weekly per cent of efficiency for each operator.

Records of Changes in the Individual - For the operators in the test room, we have observed and recorded the three types of individual change previously mentioned, (a) physical changes, (b) mental attitude changes, (c) changes in zest for work.

While no method has been found for measuring these changes with quantitative accuracy, we have tried to keep a record as precise as possible for use in the study. Some of these records show change only in an indirect manner but have been kept along with the others as the best available data we could get.

The records which show changes in the individual have been accumulated as follows:

1. Physical examination reports, furnished by the examining physician showing not only the results of his examination but the relative physical standing of individuals.
2. A record of the comments of the operators. Since the beginning of the test, comments which had to do with anything concerning the test were recorded by the test room observers.
3. A record of all attendance irregularities for each operator.
4. On several days blood pressure and pulse rate records have been made at hourly intervals for each operator. These have been plotted to show the pulse product (which is the product of the pulse rate and the difference in systolic and diastolic pressure).
5. For a period of several months, a record was kept of the vascular skin reaction readings for each operator taken once in the morning and once in the afternoon.
6. A record of the hours of sleep for each operator has been kept for a period of more than three years.
7. A record is now being prepared which contains the individual and social case history of each operator.
8. A record of each operator's score in intelligence and dexterity tests.
9. Three questionnaires have been given each operator, the answers to which reflected the attitude toward working conditions and home and social conditions.

Other records have been kept concerning factors which might indirectly affect health or mental attitude, and, therefore, be responsible for some changes in the individual. These include a record of diet, earnings, temperature, and relative humidity.

STUDIES OF SINGLE FACTORS IN WORKING CONDITIONS - We started out to discover those factors which determine employee effectiveness with special reference to the topics in the original list of questions. As the experiment progressed, the effectiveness of the workers in the test room consistently increased as reflected in a gradually rising output and a greater zest for work. Our procedure has been appreciably influenced, therefore, by the obvious desirability of analyzing and evaluating the factors responsible for this improvement. The following narrative statement indicates studies which have been made with reference to some of the individual factors.

Rest Periods - The first specific project in the test room study was the determination of the effect of rest periods upon employee effectiveness. Different kinds of rest periods have been tried in the test room and upon experimental groups under shop conditions. Rest-period studies with other groups involved different kinds of work, some of which was machine work. These studies show that the rest periods used decrease the variability in output and do not reduce, but rather tend to increase output in the types of work studied. They show further that a single rest period of ten to fifteen minutes in the middle of the half-day working period is to be preferred to more frequent shorter rest periods.

Records show that when the operators in the test room are working under rest period conditions their personal time out is considerably reduced (approximately one half of the rest period time) from that which is taken when no rest periods are allowed. This

indicates that in some respects the question to be considered is not alone one of rest periods but also one which asks whether or not personal time is to be organized or unorganized. Studies both inside and outside the test room indicate that personal time out, on an authorized rest period basis, is much more satisfactory to employees, and slightly better from a production standpoint, than personal time out when taken in an irregular way.

Fatigue - The question naturally arose as to whether the increased output in test room conditions was due to relief from muscular fatigue. The study of output curves, vascular skin tests and pulse product readings shows that cumulative muscular fatigue does not exist, and that the increase in output is not due to relief from muscular fatigue.

Pay Incentive - The data in the test room showed an increased output in successive and comparable periods of the study. Could increased pay incentive from working in a small group account for this increase? To check the pay incentive factor two separate studies were set up.

The first was another group of five relay assemblers who performed the same operation as that in the test group. They were kept in their regular department under regular supervision and the same working conditions. Their basis of pay only was changed, that is, they were paid on the small group basis. Before being separated into a small group, their production records were kept for four weeks

without their knowledge in order to secure a base period for further comparisons. They were then told that they would be formed into a separately paid group. During the first week on this basis their average rate of production increased 13.8%. The average output remained from 10% to 15% above that of the base period throughout the nine weeks during which it was possible to continue this study. When they were returned to the regular gang, their production fell to their previous base level.

A second group was formed with the idea of making no change in the basis of pay, but to establish all the other conditions similar to those prevailing in the original test room group. The second test room was established with a group of girls experienced in the splitting of mica. These girls had been paid on an individual piece work basis so that no change in the method of payment was necessary and any increase in output could be attributed to the effect of other test room conditions.

From the beginning of their work under test room conditions, which was in October, 1928, until March, 1930, these girls showed a steadily increasing production, reaching as high as 111% of the base period. Job conditions during March necessitated a change in the piece part to be split and production fell off. In September, 1930, the entire mica job was transferred away from Hawthorne.

Obviously being paid as a small group was one, but not the only factor in increased output in the test room. From these studies it seemed that the changed basis of pay might account for as much as

15% of the increase in production in the test room although no proof could be established because of other factors not yet satisfactorily understood.

Hours of Sleep - An analysis of the output on days following various amounts of sleep showed that sleep has a definite though not a dominant effect on output.

Conditions of Weather and Ventilation - An analysis of output data under varying conditions of temperature and humidity is being made to determine the effect of these conditions upon the individual.

Changing the Types of Work - A comparison of the output for the first hour after the operators changed the type of relay on which they were working with the average hourly output for the first full day shows the former to be equal to or greater than the latter. If there is greater difficulty in beginning the assembly of a slightly different type of relay it seems to be more than compensated for by the increased attention of the worker and less frequent change of type cannot be assigned as a factor in the increased test room output.

Hours of Work - A study has been made of data showing the effect of the short week for the operators in the test room. Analysis of these data shows that a shortening of the hours of the day increases the hourly efficiency of these employees. There is little evidence of an increase in hourly output as a result of shortening the week to

five days or less.

From the test room and from other studies as well, it is clear that employees prefer a five day week to a corresponding shortening of the week by decreasing the hours in the work day.

Health Status - A continued study of the physical condition of the test room operators has been made to determine whether a change in health status might have been responsible for the increased output. Health is not impaired from the relatively good condition in which the operators entered the test room. There has been a decrease in attendance irregularities, however, of about 65% for the assembly operators since they entered the test room.

Conditions Outside the Works - Complete individual social case records have been kept for employees of the test room group. These and similar data obtained through the interviewing program are building up a more definite knowledge concerning the importance and relationship of specific factors in home conditions.

In the case of several test room operators who are subjected to unusual outside conditions, a rather close correlation has been found between transitory changes in their production curve and the ups and downs in their personal situations. In spite of these transitory changes, however, their general production trend has been approximately the same as that of other operators whose situation outside the Works is more stable.

Novelty - It was felt that the novelty of the test room set up might be a major factor in the changes in production which have occurred. The continued increase in production over a period of three and three-quarter years with a decreasing amount of special notice given to test room operators makes it seem that the novelty of the situation could not have been a dominant factor in the increased effectiveness. Recently a ballot was given to each operator upon which she was asked to vote her choice from six desirable features in the test room. Each of these features was defined on the ballot so that each operator would be thinking about the same thing, and they were given their copy as they left for home in the evening in order that their votes would be individual. The following is a list of these factors and the results of the vote.

<u>Choice</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>	<u>5th</u>	<u>6th</u>
Small Group	6	0	0	0	0	0
Supervision	0	4	1	0	0	1
Earnings	0	1	5	0	0	0
Novelty	0	1	0	2	3	0
Interest	0	0	0	3	0	3
Attention	0	0	0	1	3	2

The results of this vote indicate that novelty and interest which come fourth and fifth and that attention (meaning attention or notice given to them) which ranks lowest in their choice, mean very little to them on a conscious level in comparison with smaller group, supervision, and earnings.

Recently, we have become aware of an interesting development among the test room operators. They are becoming socially integrated as evidenced by their increased participation as a group in social

and other outside activities. When the difference in nationalities (three Polish, one Bohemian, one Italian and one Norwegian) is considered, this increased cohesion within the group seems to be unusually significant.

Supervision - In order to test the effect which the test room observer himself might have upon the group, the one who had been in the test room since its beginning was removed and his assistant placed in charge. While the supervision in the test room remained approximately the same, there seemed to be no measurable difference which could be assigned to the change in personalities.

Change - From time to time it has been felt that the factor of change itself in the test room is of more significance than would be expected. Changes in conditions have been rather constant and have appealed to the operators. Its relative importance is not yet known, but enough data are available to show that it is a factor of some consequence.

CONCLUSION

The study and analysis of test room data has resulted in numerous findings; the major ones of which have been outlined in the previous section of this paper. While these are by no means the only results of this study, they are in themselves results of considerable significance. It is clear that as facts and findings they are not elemental; that they must be further reduced, tested, and fitted in their places with respect to the whole body of knowledge

in this field which at present is none too well charted. Until this has been done the full meaning of these findings will not be apparent, and although they now induce a vision of future management improvements, their possibility of practical application will be limited. One real use, however, and it is undoubtedly the most important present application, is that these findings constantly produce and clarify concepts of the research problem and directions for the most productive study. So much for the results that emerge from the statistical study of data and test room records.

The second type of results is in the form of empirical observations. These observations and some of the evidence which supports them are set down as a crystallization of what we consider to be the most important and significant results of this research activity to date.

1. The test room study has resulted in the acquisition of new knowledge - the importance of which was not previously understood. When we compare these facts and their significance with the basis on which our current practice, with respect to the handling of employees and the utilization of their energy, has been built, it is clear that we have been managing labor with very little real and pertinent knowledge upon which to base our practices. It is also clear, when the findings of the test room are compared with methods and practices in the Works, that many measures now in existence are not effective, are defeating their own purposes, or are actually doing more harm than good.

This observation and conclusion may be supported by referring to many specific instances, but in a general way it is based upon the following evidence in the test room.

- a. The phenomenal increase in the work of the original test room operators of from 40% to 62%, with less conscious expenditure of energy, indicates that a great deal more can be done to increase human productivity, with the lessening of the human energy cost (both physical and mental), without any change whatsoever in the set-up of the work itself. We know, from the physical examinations of the test room operators that their health status has not been impaired. We know, from our study, that muscular fatigue was, even in the beginning, an insignificant factor and has not since increased. We know, from our test room experience with these operators, that their mental tone and zest for work has increased tremendously.

This demonstration of the degree to which output can be increased with a simultaneous decrease in energy cost makes it clear to us that we know as yet very little about human effectiveness.

- b. In the test room it has been our task to identify the factors entering into the effectiveness of employees and to evaluate the relative importance of these factors. While it has always been recognized that the mental attitude of the employee was an important force, the test room experience shows that this element far transcends in importance any of the other elements in the work situation. In fact, in the test room practically all of the findings have to be interpreted in terms of the mental attitude of the operators before the real significance and meaning of these findings is apparent. It is our feeling that not only has the amazing importance of the mental attitude been underrated, but previously no reliable method has been found for assessing and dealing with this factor. Usually in industrial practice we have answered problems which involve labor in an "objective" way, whereas the test room experience shows that the answers to many of these problems are personal and objective within the employee rather than objective in the conditions under which he works.
- c.. Usually in the management of labor we have recognized that the problem was complex and have taken into account as best we could all of the factors which we recognized in each situation. The test room experiment, however, in showing not only the relative importance of the factors recognized, but also new and unthought of factors indicates that our practices with respect to the human element of business have been established with insufficient knowledge.

2. The test room method of research study is in itself a development of prime significance, for here is a method of study by which most of the complex and multiple variables which enter into the effectiveness of employees can be scientifically studied. By its use, knowledge and fact can be substituted for opinion and judgment in the management of human capacity. It is a potent source of objective facts secured in real work situations. For example it has demonstrated the effect of many specific factors, such as rest periods, changed pay incentives and shorter hours, upon the effectiveness of the worker. Such facts coupled with our knowledge of the individual's reactions to these varying situations furnish a scientific understanding of the individual and personal factors in employee effectiveness. The evidence of the value of this method is indicated by its expanding scope and its ability to reveal new and significant problems.

3. The test room studies have also demonstrated the need for more specific knowledge of employee attitudes generally throughout the Works. This result must be considered of paramount significance for it led to our use of the personal interview as a fact finding agent in this field of research; a method which has made it possible to study human situations in a much broader area than the test room method allows. These studies are reported in the next section of this folder.

To summarize, then, the industrial significance (as contrasted with specific findings) of the test room studies:

1. The test room studies show that much remains to be discovered with respect to the management of human energy.
2. The test room method is successful in the discovery of fact to supplement judgment and supplant guess work.
3. The test room experiment has directed our attention to the development of the personal interview as a research tool.

FUTURE PLANS

In the further development of the test room investigations there are two directions in which our effort will be spent in the immediate future. One is in the further development of the method itself. Our plan in this direction is to perfect measuring devices

which will give us more exact data with respect to changes in the individual which in turn will give us a better evaluation of the factors in employee effectiveness. The other general development will be the establishment of a group of men to be studied by the same method.

In considering the future of studies such as these, the question is naturally asked: "How long will they continue?" Our experience in the investigations up to date yields this answer. "They will continue as long as human capacity is employed in business concerns." Not only is it clear that exploration in this field has almost limitless possibilities for constructive results, but it is also clear that the results will be exceedingly profitable for the individual, for industry, and for society. These, we think, are the marks of a venture in science which will gain in momentum.

Sect
II

DEVELOPMENT AND USE OF THE EMPLOYEE INTERVIEW AS A RESEARCH TOOL

The purpose of this paper is to describe the work of two departments in the Industrial Research Division. The function of one department is to conduct interviews with employees and to develop methods of interviewing. The other department has for its work the study and analysis of employee comments thus secured and the distribution of this information and comment to other Company organizations where it can be utilized.

HISTORY OF THE GROWTH OF INTERVIEWING

The interviewing of employees grew out of observations made in the course of the test room studies previously described. Briefly stated, the unresolved problem in the test room which lead to the interviewing program was a continual increase in productivity irrespective of the changing conditions of work. Upon analysis, only one thing seemed to show a continuous relationship with this improving output. This was the mental attitude of the operators. From their conversations with each other and their comments to the test observers, it was not only clear that their attitudes were improving but it was evident that this area of employee reactions and feelings was a fruitful field for industrial research. In particular, the attention of observers had been attracted to a freely expressed and curious relief from "supervision." This expression was common to all the workers in the test room. While the views expressed seemed in part unreasonable, due to apprehension because of their ideas of supervision, which were

not completely justified by reality, such views nevertheless gave rise to a question as to how far heedless supervisory methods might not give color and support to such beliefs. Beyond but including this, it seemed important that reliable information should be acquired about the actual sources of likes and dislikes that employees express with respect to their jobs and working environment.

With these ideas in mind, a plan was evolved to interview a larger group of employees in order to learn more about their feelings and attitudes. It was decided to try this experiment in the Inspection organization representing about 1600 skilled and unskilled employees in both shop and office work. It was felt that a group as large as this and as varied in their types of work would give a fair picture of the things which people at Hawthorne liked and disliked. Our objectives were three in number: first, we wanted to know how employees felt about their work and the way they were treated; second, we desired to learn the manner in which Company policies were being applied and employees reactions to them; third, we were hopeful that something would come out of these employee expressions which could be used to develop and improve the training of supervisors.

Such a project as this was new and different from anything previously tried in the Company; careful plans were made in order that unfavorable consequences might not result. All of the supervisors in the Inspection organization were called together and the project described to them. Their criticism was invited and various points in the plan were discussed at this meeting. Practically all of them

felt that there was much to be gained from the arrangement; only a few of them were doubtful about its outcome. Five interviewers were selected from the supervisory group to conduct the interviews. Women were selected to interview women and men to interview men. The interviewers were not to interview employees whom they knew since their acquaintanceship might influence the comments. All expressions from employees were to be kept confidential, and their names were not to be in any way related to the interviews. In addition, any identifying statements they might make were not to be recorded. Only a few employees from any one location were to be interviewed on the same day in order that the work of the department might go forward normally and without undue confusion or curiosity. Employees were to be assured that they were invited and not ordered to express themselves, for it was felt that voluntary comments would be of greater reliability. Each interview was to be individually conducted; comments on the working situation were recorded as nearly verbatim as possible. The supervisor in each case was to assign the employee to be interviewed and the program in its entirety was to be explained to each employee so that he might know in what way his comments were to be used.

Following these general plans, the interviewing of the Inspection organization employees was begun in September, 1928, and completed early in 1929. These early interviews contained a wealth of material applicable to the objectives of the study. While the comments of employees were generally brief (the average interviewing time being thirty minutes per individual) the thoughts they expressed

corroborated in many respects the test room findings. At the same time the interviews yielded many significant ideas and suggestions about the work situation, including employee attitudes and feelings to it. These interviews, as will be described in another section of this folder, offered material superior to any previously employed for supervisory training purposes. It was obvious that supervision improved almost simultaneously with the start of interviewing. This was unexpected but was understood as implying that supervisors were stimulated to improvement by the new interest in supervisory method. This experiment furnished information and comment about working conditions which gave many new ideas for possible improvements.

It was clear very early in the interviewing program that employees enjoyed the opportunity of expressing their thoughts. Many requests for interviews were received, in many cases even from supervisors. These requests resulted in the interviewing of all section and group chiefs in the Inspection organization. In addition to being interviewed, the supervisors were asked some questions as to their opinion about the plan and its effect. They reported very favorably about the plan; felt that it had not been embarrassing to them in any way; said that in their opinion employees were in favor of it; and were practically unanimous in feeling that it should be kept up and extended to other organizations in the Works.

In view of the results from the interviewing of Inspection Branch Employees and considering also the results of the supervisory training conferences (where employee comments were used as a basis

for discussion), it was decided to extend the interviewing and supervisory training program to the Operating organization early in 1929. It was at this time that the Industrial Research Division was organized with functions then stated as follows:

1. To interview annually all employees to find out their likes and dislikes relative to their working status.
2. To study the favorable and unfavorable comments of employees.
 - a. To initiate correction or adjustment of causes of unfavorable comments.
 - b. To determine upon benefits to be gotten from favorable comments and to instigate ways and means of acquiring these benefits.
3. To conduct supervisory training conferences for all supervisors using employee interviews as a basis.
4. To conduct test studies relative to employee relations, fatigue, and efficiency.

It was our intention in 1929 to interview all employees in the Operating and Inspection organizations; this would give us a second interview with Inspection Branch employees and a great volume of material also from Operating Branch employees. While we were not able to interview as many as we had intended because of the increasing length of each interview, the values of the 1929 program indicated the desirability of extending the method to other groups of employees and supervisors. Beginning in January, 1930, we began to interview employees in all other Works organizations at Hawthorne and to offer conference training for all supervisors in these groups.

These extensions of the program, first, to the Operating Branch and then to the other Branches in the Works organization necessitated

an increasing number of interviewers and conference leaders to undertake the work. For the most part these additional employees were taken from the various branches in which the interviewing and conference training were in progress. Employees assigned to interviewing work in this way were usually supervisors; they were taken for a temporary period of about a year. It was felt not only that they could do the interviewing with proper training but that the interviewing experience was in itself a training for them as supervisors. It was felt also that this training should be participated in by as many line organization supervisors as possible. These temporary interviewers were, therefore, kept for a period and then replaced by others who could capitalize on the training value of interviewing experience. In addition to this temporary personnel, a nucleus staff of permanent people was built up to take over some of the more technical aspects of the work. In 1929 forty-three people were trained in interviewing. In 1930 twenty replacements were made, only two of which were added to the permanent staff. The analysis work has not been subject to the temporary arrangement but has been manned by permanently assigned employees. The approximate average number of employees involved in the interviewing and analyzing activity during 1929 and 1930 was thirty for interviewing and six for analyzing.

The following tabulation shows the number of employees interviewed since the plan began:

<u>Branch</u>	<u>1928</u>	<u>1929</u>	<u>1930</u>	<u>Total</u>
Public Relations	-	-	8	8
Industrial Relations	-	-	130	130
Accounting	-	-	637	637
Production	-	-	963	963
Operating	-	10,300	5,109	15,409
Inspection	1,600	-	514	2,114
Technical	-	-	1,166	1,166
Specialty Products	-	-	699	699
	<u>1,600</u>	<u>10,300</u>	<u>9,226</u>	<u>21,126</u>

The duration of each interview when the interviewing began was approximately thirty minutes, but with the development in method and resulting increased confidence of employees, the average time of an interview has grown to approximately one and one-half hours.

DEVELOPMENT OF THE INTERVIEWING METHOD

Probably no part of the work of the Industrial Research Division has been more interesting and more significant than the growth and development of the method of interviewing. To one unacquainted with our work, the term "interviewing" might have a number of interpretations which would not have any resemblance to our use of the term. To those of us who have been associated together in these studies, mention of the word immediately implies a great deal more than would be meant if we were to discuss employment or personnel interviewing. It is the development and growth of our interviewing method from a procedure resembling employment and personnel interviewing to a far different type of procedure that is a high point of interest in the research.

When we began to interview employees in the Inspection organization, our interviewers were untrained and had not developed the rudiments of the later technique. It was even then obvious to us that we were

doing a kind of interviewing new to industry, but we knew no better way to begin than to copy existing techniques, hoping as we progressed to learn from our experience. The interviewers knew something about the interviewing done by supervisors, by employment and by personnel people, but each began to experiment with various techniques which were discussed almost daily by the interviewers. It was very quickly found that a series of questions did not form a satisfactory basis for the interview. Questions produced opinions it is true, but they pertained primarily to the question in the mind of the interviewer and not necessarily to thoughts important to the employee. As a result, the original interviewers gradually came to develop a technique which retained some questions but permitted the employee to talk freely about his work situation to the interviewer. Quite often in the early interviewing the employee would start talking about some point suggested by an interviewer, but in a short time would be completely off the subject. The interviewer would adroitly lead him back to the point in question, but in a few minutes the employee would again revert to the subject of his own choosing. It became obvious to the interviewers that, whatever the question, the thoughts of some employees tended to gravitate toward a particular condition or subject; that in these cases something was uppermost in the mind of the employee which completely overshadowed everything else. Cases were found where several subjects predominated in the mind of the employee, and any attempt to lead him away from his line of thought was generally unsuccessful. In other instances the interviewers found that a particularly untalkative

person became remarkably communicative if just the right spot could be touched in conversation. The net effect of these experiences was to make us wonder whether these unexpected "outcroppings" were just mental aberrations or whether they did not indicate a latent source of information which our early interviewing technique normally failed to tap.

As a result of these various experiences, we began to concentrate our attention upon the interviewing method, and with Professor Mayo's assistance and counsel the present method has been developed. The technique now employed owes something to the methods developed by psychopathology; but it nevertheless differs in essential respects, and is an industrial adaptation for use in normal human situations. Very briefly stated, the present method may be outlined as follows. The interviewer is introduced to the employee, and the interviewer "catches on" in a conversational way at any starting point mentioned by the employee. As long as an employee talks the interviewer follows his comments, displaying a real interest in what the employee has to say and taking sufficient notes to recall the employee's various comments. While the employee continues, no attempt is made on the part of the interviewer to change the subject because it is a basic assumption of the method that, where the employee chooses his own topics, he chooses them largely in their order of importance for him. If the interviewer were to ask questions or to redirect the employee's comment to other topics or subjects, he would in a sense ask the employee to talk upon a subject important perhaps to the interviewer, but not

necessarily at all important to the employee. The interviewer takes part in the conversation only insofar as it is necessary to keep the employee talking and to stimulate confidence. This rather briefly but sufficiently describes the interviewing method as used by the interviewer assigned temporarily to us from a line organization.

Our permanent staff interviewers, however, would carry this technique one step further. They would listen very carefully for indications of stress and strain in the expressed thought of the individual. They would identify this unusual or exaggerated feeling on the part of the employee by such symptoms as expressions made with unusual emotion, exaggeration or reiteration. These more skilled interviewers would then, carefully perhaps, press these topics further by questions and suggestions after the employee seemed to be otherwise "talked out." By this subsequent probing of these "spots" in the attitude and feeling of employees, new levels of meaning and interpretation are discovered both for the interviewer and the employee. It is interesting, even if it cannot be fully explained, that such a procedure seems to lead to a change of attitude in the employee. The change is in the direction of an improved judgment of his situation. (For illustrative interview see appendix No. 1.)

Another important development has been the change of the method of recording the interviews. The original method had been to group employee comments under the heads of working conditions, job, and supervision with the sub-classification of likes and dislikes under each. This form was supplanted in 1929 because it was found, in attempting to analyze employee comments that when their expressions were removed

from their context, they read very similarly and were often meaningless. The method adopted was to reproduce the interview as nearly verbatim as possible showing both the comments made by the interviewer and those made by the employee. This change had the effect of greatly lengthening the report (from an average of $2\frac{1}{2}$ pages to an average of 10 pages). Furthermore, it somewhat reduced the number of interviews that could be taken by one interviewer thereby increasing the cost of each interview secured. This increase in cost was partly offset by the installation of ediphones and by increased values accruing from the analysis of complete expressions. The added value is that by this means all of the original values of the interviews are preserved and not merely those selected by the first form of analysis.

THE IMMEDIATE EFFECTS OF INTERVIEWING

As the interviewing of employees progressed results were observed which were not anticipated. These accrued sometimes from the mere existence of the program and sometimes from its operation.

For one thing the mere existence of the interviewing program created a change in supervision over and above that which came from the participation of supervisors in conferences. The change referred to was one resulting from the supervisor's knowledge that supervisory method was being made the subject of research and that his subordinates were to be invited to express their opinions. This led to an active interest in supervisory methods on the part of supervisors themselves and to an independent effort to improve the quality of supervision. We saw no sign of fear on the part of a supervisor that his individual

techniques would be exposed; the effort at improvement was rather similar to that which a workman makes when he learns that his product is to be inspected.

Another unexpected result of interviewing has been the personal values above mentioned which come to the employee interviewed and which in turn reflect to the benefit of the company. These values may best be explained by an analogy. It has long been known that one who writes a memorandum greatly clears his thought upon the material to be presented. Exaggerations, distortions, emotional reactions, defenses, etc., are largely dissolved when thus viewed objectively. In a similar way employees who express their thought and feeling to a critical listener discharge emotional and irrational elements from their minds. Many personal and individual problems and attitudes have been improved by the verbal expression which the interview affords. Taking account of the employee expressions recorded in twenty thousand interviews, we feel that this value in interviewing cannot be lightly overlooked.

One of the results of the interviewing which has persisted from the beginning is the "lift" felt by employees because of the elements of recognition and participation which the program implied. The fact that the management saw value in their thought was a new and stimulating mental experience for many of those interviewed. Not only was it somewhat curative for feelings of inferiority, but it reaffirmed confidence in and respect for the company.

And finally one of the results of the interviewing plan is the value which comes to the interviewer in the form of training and educa-

tion. Those who have experienced the interviewing of employees have caught glimpses of human situations and resulting human behavior not otherwise obtainable. By a process of absorption they have acquired an understanding of improved ways for dealing with their fellow men. They have felt the force of a new concept of personnel administration and have acquired a tool for fashioning a better supervisory product.

RESULTS FROM ANALYSIS OF INTERVIEWS

One of the problems that early presented itself was a need for devising a means of analyzing interviews so that the material they contained might be utilized. It was felt that some tabulation of unfavorable comments grouped by organizations, where they were large enough to conceal the identity of individuals, would furnish a base for betterment studies. It was soon discovered, however, that this simple numerical tabulation was inadequate because it shows only the number of unfavorable comments under a subject classification without giving the exact employee thought presented, and because studies made without simultaneously considering the favorable comments would present an unbalanced picture of the situation studied. The difficulties of working with this analysis emphasized the need for obtaining not only a list of complaints but also a complete description of the employee's thought on any one subject in any one group. This meant that favorable as well as unfavorable comments needed to be analyzed and that some grouping must be made as to subject.

The analyzing procedure was changed, therefore, so that those who were to make these improvement studies might have the advantage

of working with as complete information as the interviews afforded. We addressed ourselves, first, to the determination of the topics concerning the industrial situation which employees selected to talk about. This was done by studying employee comments taken from one thousand interviews and a list was devised which contained thirty-two classifications. Definitions were prepared for each subject so that all of the analyzers might make their analyses with a fair degree of uniformity. The analysis of ten thousand interviews had added only six new subjects to the original list of thirty-two. By the end of 1930 the original 1600 Inspection Branch interviews had been roughly analyzed, and the 10,300 Operating Branch interviews taken during 1929 together with the additional two thousand interviews received from employees in the various other branches taken in 1930 had been rather carefully analyzed in a manner which will be explained. Some 86,300 comments had been extracted and classified to various subjects and to the substance of the various thoughts. (See appendix No. 2.)

In analyzing the interviews for subjects discussed, the analyzer reads through the interview carefully, and then goes back and classifies the individual comments under the various subject groups, endeavoring to retain the employee's expression intact. Each comment is then typed on a separate form and copies distributed to other organizations that use them in investigation work. When a few thousand comments had been classified it seemed desirable to take the comments filed under each subject and analyze them to find out what employees say about each of the topics they discuss. This was done for 1929 Operating Branch interviews and is referred to as a substance analysis.

A tabulating card method of sorting and grouping interviews has been set up for all interviews taken in 1930. This method will allow the grouping of interviews under any combination of the following objective facts concerning the individual employees: age, sex, service, working hours, wage basis, home responsibilities, dominant posture during work, education, average earnings, nationality, nativity, and type of work. This material has been codified to protect identity of the employee, and it is anticipated that many interesting studies can be made which will compare attitudes and expressions in various age groups, service groups, occupational groups, etc.

The Value of the Analytic Work

The analysis department already has in its possession a most valuable fund of knowledge that is available for use. With conditions of work constantly changing, there is an equally constant need for reliable information in unexpected directions--in areas where pertinent facts have not been previously available. In many instances lately, the interview analysis records have proved their capacity to supply important information, important "leads", with regard to unanticipated problems. Such problems as, for example, the effect of shorter hours on the average employee (as distinguished from the special case) have been illuminated by information not procurable elsewhere--information which was not specifically sought in interviews, but was contributed spontaneously by an employee while attempting to make clear his general situation. In many such instances, the added information has probably quite definitely affected the executive judgment of an issue.

The knowledge brought to light through the analysis of employee interviews has been put to many uses since the beginning of the studies. The Technical Branch has received comments relative to plant conditions and has investigated these where the comments brought out an unsatisfactory situation. The Personnel Division in the Operating Branch and the Inspection Results Division of the Inspection Branch have received copies of all other comments except those on supervision and have made investigations with the object of improving conditions unfavorably viewed by employees. In addition to this use of comments for investigation work, the Safety and Health Division has studied all comments relative to its interests, and the Industrial Relations Development Division has studied all comments relating to functions of the Industrial Relations Branch. Conferences have been held with members of the Hospital, Employee Service, and Employment Divisions for the purpose of discussing the comments pertaining to their respective functions. Comments relative to supervision, of course, have been used in the supervisory training conferences.

The comments of employees have resulted in improvements in working conditions. A few representative changes which have been made are listed below. It should be remembered that these are based on comments taken from employees interviewed in 1929 inasmuch as the analysis of interviews taken in 1930 is not as yet completed. In some cases, of course, the conditions dealt with were known to exist, and did not come to light as a result of comments of employees. It is true, however, that the analysis of employee comments measure the importance of making certain changes that have previously been considered. It

should be said also that some conditions were discovered through the interviews which were not previously known to exist.

The following illustrations show the type of improvements made in working conditions as a result of employee expressions:

Comments in a certain group of buildings indicated that these buildings were uncomfortably cold. Upon investigation it was found that at the time the heating system was changed from steam to hot water, these buildings were utilized as store rooms and, therefore, the radiation surface was not increased. Later, the location was used by operating departments, and the fact that radiation was not up to standard was overlooked until employees' comments stimulated an investigation. Since that time the condition has been corrected.

Very soon after the interviewing of Operating Branch employees was started so many complaints about lockers had been made that investigations were started and the question taken up in supervisory conferences. Expressions of employees when viewed singly were not so convincing, but when viewed collectively it was clear that correction needed to be made and steps were taken toward improvement.

In another case, employees on a soldering operation continuously complained about smoke and fumes. Even though an efficient exhaust system was installed, complaints were still voiced. Finally from the interviews came the clue which cleared up the difficulty. The system which had been installed exhausted the air at the ceiling with the result that the smoke and fumes were drawn up past the operators' faces. At comparatively little cost the flow of air was reversed, drawing the fumes downward, thus eliminating the cause for complaint.

For a number of years, drafts near doors opening onto the bridges between buildings have been a cause of much dissatisfaction, but seemingly no easy remedy could be found. When accumulated evidence of the extent of the dissatisfaction from this cause was studied, the effort of plant people was concentrated on the problem and a very simple remedy was found; a slight vacuum was created in the bridges by means of exhaust fans, causing a slight outflow of warm air rather than an inflow of cold air when the doors are opened.

Future Plans in Analysis Work

Our plan for future analysis work has two phases. First, we shall make some studies by using the tabulating cards previously described for the grouping of interviews into age groups, service groups, occupational groups, etc., thereby learning more about the reactions and feelings of employees who come under these various classifications. This will enable us to learn the extent to which their thoughts are characteristic of these various classifications and also we shall learn something about the alterations in attitudes with increasing age, service, levels of pay, etc.

The second type of study will embrace the question, "Why do employees say what they do say, and of what significance is the form of their comment?"

CONCLUSIONS

When we consider the program and the results obtained thus far, there are three things that need statement as conclusions.

First, as with the Test Room studies, the interviewing experience has shown us that we have never been in possession of sufficient information (or sufficiently precise information) to enable us to face squarely the distinctively human problems involved in personnel administration. Without this knowledge the tendency has been to institute various measures which have been attempts to correct a symptom and not to cure a disease. In other words, we have developed methods of dealing with the results of a problem instead of inquiring into the nature of the problem itself. At this stage of industrial development, and in view of the widespread and accelerating change in industrial methods, it is most necessary that this hiatus or gap in our knowledge should be filled. We must learn to proceed by precise knowledge rather than guess work in human affairs as in engineering. We must base personnel practices upon rightly ordered inquiry.

Second, our experience makes it clear that the personal interview as developed and used in these studies is a tool by the use of which facts can be secured in this important and controlling area previously obscure.

And third, this research is not one that will be soon finished. It has to do with a human organization which is constantly changing and adapting itself. Therefore, facts and findings will change as man changes and as the conditions to which he is adapting himself are altered. This research, then, is one which is becoming increasingly necessary and must be continued as long as man works, if his capacity and the management of it are to be most effective.

Insufficient continuity of inquiry has in many places diminished the value of this type of work. The great value for us of the continuity of our work has been the discovery of unsuspected problems, the discovery of unsuspected importance in problems already known.

Future Interviewing Plans

Our experience in interviewing to date points to the need for a more thorough understanding of a few individuals as well as a continuing program of single interviews. Since all of this cannot be carried on in 1931, it has been felt desirable to curtail the program of single interviews and to give more time to the intensive study of a few smaller groups of employees. This plan provides for a rather continuous interviewing of several hundred employees divided into groups with diversified conditions. In these groups other things as well as interviewing will be taken into account in the study. Items such as turnover, production, health and accidents, will be simultaneously observed and related to the expressions of employees. Some attempt will be made to evaluate further the personal values in the interview and to develop further the interviewing method.

022530-88-5-100

Sect.
III

DEVELOPMENT OF THE SUPERVISORS CONFERENCE PROGRAM

A conference training of supervisors was made a part of the work of the Industrial Research Division largely because, under the new plan of training, the material which was to be used as a basis for conference discussion was to be drawn from the test room studies and from the interviewing program.

At the time this kind of supervisory training was started there were two sources of experience upon which to base the development of the program. One of these sources was the test room and interviewing work which has been described in previous sections of this folder, and the other was the experience which had come from other supervisory training programs previously conducted in the Manufacturing Department at Hawthorne. A brief review of this previous training experience is given here in order that the reader may visualize the training work in which supervisors had participated prior to the beginning of their discussions of employee comments and test room findings.

PREVIOUS SUPERVISORY TRAINING PROGRAM.

Supervisory training is not a new thing at Hawthorne. There have been intermittent efforts in this direction for a number of years. Up to 1927 these efforts took the general shape of class room meetings in which certain informative material was presented followed by a discussion. Specific job subjects such as K-order cost, waste elimination, budgetary control, etc. were the ones usually chosen. These programs in most cases were conducted by the

various branch personnel organizations. The present era of supervisory development, however, opened up during 1927 at the suggestion of Operating Branch supervisors who were then finishing a series of job problem conferences. Their suggestion was that a series of discussion meetings could be formulated and profitably held for a discussion of the supervisor's personnel problems. This suggestion was carried out and the results soon demonstrated that much could be gained in improving supervisory employee relationships. Consequently a plan was devised for presenting this material to supervisors in other branches of the Manufacturing Department. In order to centralize this work a Supervisor's Training Department was set up in the Works Training Division. This department prepared discussion outlines for a series of seventeen subjects. The general plan for the supervisory discussion of these subjects was to have the Supervisor's Training Department carry the discussion to the staff group in each branch where, in turn, each division chief acted as a conference leader for other supervisors in his organization. (See Appendix 1. for a sample of preparatory outline of subject as used in these conferences.) The seventeen subjects used at that time are as follows:

1. The Supervisor and His Job.
2. Hiring - Placing the Right Employee on the Right Job.
3. The New Employee.
4. Sizing up and Rating Employees.
5. Production - Efficiency of the Individual.
6. Training and Upgrading.
7. Wages and Rate Revision.
8. Transfer - Terminations.
9. Turnover.

10. Giving orders to Subordinates.
11. Leadership.
12. Cooperation.
13. Keeping Up the Morale.
14. Safety
15. Health
16. Thrift
17. Outside Activities.

THE START OF CONFERENCE TRAINING BASED ON EMPLOYEE INTERVIEWS

One day during the progress of this seventeen subject course, while the subject of morale was being discussed with the staff group in the Inspection Branch, the question came up as to the importance of morale as shown by the findings in the test room studies. The staff group felt that supervisors did not give enough attention to this question, and suggested that several meetings be given over to a more thorough analysis of morale and its actual and potential effect on production. A course of five meetings was prepared for the purpose. Only two of these meetings were held with the Inspection staff group when it became clear that we had no real facts as a basis for conferences. This thought helped to crystallize the need for the interviewing program which was at that time being considered. It was felt that such expressions as the interviewing program might secure would be exceedingly helpful in supplying facts not only about the question of morale, but also about many other questions which were being discussed by supervisors.

Soon the interviewing program was started, and only a few interviews had been taken when it became evident that the interviews

themselves were excellent material upon which to base training conferences. Since the interviewing was started in the Inspection Branch, it was decided to experiment with a few of the interviews in their conference discussions. Several interviews were selected, carefully reviewed to insure the anonymity of the employees and supervisors, and then tried out in conferences. This material immediately "took"; so it was decided to continue the Inspection Branch conferences on this basis. Being familiar with the various phases of the interviewing work, two interviewers were elected and trained to act as conference leaders.

During the discussion of the seventeen subject course, conference groups had been made up from several levels of supervision. After two or three rounds of conferences with the interviewing material, however, it became evident that junior supervisors were reluctant to express their real opinions in the presence of their superior supervisors. The supervisors were therefore rescheduled so that supervisors of equal rank but from several divisions were mixed together. An interesting thing to note here is that while it was an absence of something to say about "Morale" which gave the start to this new development, two years of conference discussion has now taken place without exhausting in any way the many angles of this subject that are continually being brought to light.

GROWTH, SCOPE, AND ORGANIZATION OF THIS TRAINING.

When the Industrial Research Division was organized in January, 1929, provision was made for a Supervisory Training Department where this training which used employee comments as conference material could be centralized. There were at this time approximately three hundred Inspection Branch supervisors in this

type of training, and the handling of their conferences was taken over by the Supervisory Training Department.

At the beginning of 1929, the interviewing program was extended to Operating Branch employees, and a conference program similar to that for Inspection Branch supervisors was set up for supervisors in the Operating Branch. By March of the same year 1,112 Operating Branch Supervisors began to meet for conference discussion of the material found in the interviews of their own employees. Once every two weeks for a two hour period these supervisors meet to think and talk about the unfolding revelations of employee's thoughts, their attitudes about their work, the company and even the supervisors themselves. Their zest in examining this "human interest stuff" was not unlike that of the group of boys making a surreptitious observation of a league baseball game through the cracks of a high board fence.

To meet this new influx of conference members, some adjustment of the Supervisory Training Department was necessary. Additional conference space was provided and the staff of conference leaders was increased from 2 to 6 including the Department Chief. These men in each case came from their line organizations, where they had supervisory experience, to the Industrial Research Division on a temporary assignment. Each was given intensive interviewing experience before assignment to conference leading. Although not especially trained or skilled in the technique of

conference leading, these men by virtue of their supervisory experience, their line organization experience, and their knowledge of the interviewing program were enabled in the early stages of this work to perform very creditably in the conference room.

Nine months later, January, 1930, this whole research development had gained such impetus and seemed to be of such value that the interviewing program was extended to the other branches of the Works Organization. After three months' interviewing, sufficient material had been gathered to start supervisors conferences; consequently supervisors from these organizations were included in the conference program.

At this time the second major change in the organization of the Supervisory Training Department took place. Two sections were created, one to take charge of and continue the training started by the Operating and Inspection Branches with an enrollment of 1412 supervisors, the other to conduct the conference work for the remaining six branches with their enrollment of 1075 supervisors. Four new conference leaders, three men and one woman, were added to form the new section. All but one were borrowed on temporary assignment from their own branch.

At this point it might be well to indicate briefly the nature of the training given these people preparatory to their work as conference leaders, for we know that to a great extent the value of a conference depends upon the quality of leadership applied.

They were selected first of all on a basis of their common sense, intelligence, supervisory and company experience, and their natural ability to get along with and understand groups of people working together. They were then trained to take interviews and interpret their contents. Their experience and knowledge was then enlarged by a study of the entire Bell System organization, by a study of personnel methods and industrial relations policies, by a study of the history and development of supervisory training, by a study of books and articles on the technique and psychology of conference work, and finally by a period of observing the more experienced conference leaders at work.

Since the inception of the Supervisory Training Department two years ago, a total of eighteen people have done full-time conference leading. The rotational nature of the assignment is responsible for this apparently large number. Of these eighteen, fifteen have come from other branches within the Works, where they have, of course, had supervisory training and experience; three were employed from outside because of special abilities and experiences which fitted them for conference leading. Of those who came from within the Works, one was a Department Chief, twelve were Section Chiefs or the equivalent, and two were Group Chiefs. Their average rate of pay was approximately \$52.00 per week.

These items concerning the personnel of the training organization have been included in this report for two reasons;

(1) because it is felt that one important factor in the success of any conference program is a high quality of leadership, and
(2) because it is believed that the training which these men received while on the conference job will make itself constructively felt when they return to their line organizations.

The third major change in the Supervisory Training Organization has just occurred. It was initiated by the Operating Branch which felt the need of spending some conference time in a discussion of purely job subjects. By August, 1930, the plan was developed to the point where it seemed advisable for the Operating Branch personnel organization to conduct this phase of their supervisory development leaving to us the field of research in supervision and training in supervisory-employee relationships. Since it did not seem desirable to increase the conference time of supervisors, it was decided that the Supervisory Training Department would alternate with the Operating Branch Personnel in conducting the meetings with Operating Branch supervisors. Consequently, in September, 1930, the Operating Branch took over alternate meetings with its supervisors presenting to them prepared text material for questions and discussions on such functional subjects as "Scrap Tickets," "Budget," "Duties of the Shop Clerk," etc. The merit of such a plan has been recognized and the other branches encouraged to do likewise; hence, by the end of 1930 we find all the branches rapidly shaping their plans to do some training work

with their own supervisors, the exact nature of the plans differing with each branch. To meet these new conditions, the Supervisory Training Department has, beginning January 1931, relinquished every other meeting to the respective branches for such supplementary training work as they see fit. This change has been so worked out that we could effect a 40% reduction in personnel with its consequent economy.

DEVELOPMENT OF CONFERENCE DISCUSSION MATERIAL.

When employee comments were first used as a basis for conference discussion in the Inspection Branch in 1928, they were used in the form of complete interviews. (See Appendix 2.) The method followed was to select several interviews containing appropriate comments and read them in the conference of supervisors. Our usual experience was that supervisors immediately began the discussion of some phase of the employee's thought and that very little directing was necessary on the part of the conference leader. The comments of the employee kept the supervisors fairly well on the subject and it was felt that they gained a great deal from discussing as well as from simply hearing the expressions of each individual employee. The discussion usually took the shape of trying to determine why the employee said what he did, and what could be done about it by the supervisor.

At the end of about ten meetings most of the subjects about which employees talk had been discussed in rather general terms and in a rather hasty manner by the Inspection Branch supervisors. Con-

ferences began to have a note of confusion in them because of the wide variety of topic discussion and the cursory manner in which it was handled. We began to see that while the conferences were exceedingly interesting and allowed the supervisor to gain an insight into the individuality of employees, and a better appreciation of their attitudes, there was a need for more complete discussion and understanding of individual subjects. Our procedure in the selection of conference material, therefore, was changed and we began to take into the conference discussions one subject at a time, such as: "health," "benefit fund plan," "vacations," and "A. T. & T. Stock Plan."

As a basis for discussion in these subject conferences, we carried to the conference on mimeographed sheets ten or twelve comments of employees about the subject which presented as many different points of view as there were comments. (See Appendix 5.) In addition to the comments from employees, reference material obtained from other sources was taken into those subject conferences by the conference leaders. This subject material was used in conference programs until the middle of 1930, and while we are not at present using it, we still feel that it is excellent material for conference use. Meanwhile, as the technique of interviewing improved, and as the contents of the interview became more interesting and varied, single interviews were frequently taken into the conference. (See Appendix 6.)

While the problem of selecting interesting, helpful, prac-

tical, and varied material was over before us, we now became more consciously aware of two new problems. As employee comments pertaining to their supervision were taken into conference, there was a slight tendency on the part of some supervisors to put themselves on the defense and take refuge by simply saying that the employee was a "sore-head," "a failure," or just "Didn't know what he was talking about." This attitude, of course, while not general, was inimical to good conference thinking. How was it to be met?

A second disadvantage obtruded itself in a feeling among some of the supervisors, although rarely expressed that they were continually attending conferences but never getting anything finished, and that the employee's side of controversial items was emphasized to the neglect of supervisory opinion. While these disadvantages had no foundation in fact, it seemed desirable to us to take some steps to remedy them. We were anxious that nothing should arise to stop the rapidly growing appreciation of supervisors that supervisory-employee relations were a never-ending problem, and that it was far more important to find a technique and art of dealing with individuals than it was to determine once and for all the exact manner to a present problem or any similar ones that might arise.

After four months of extensive study and research in the best modern methods of conference work and executive training in industry, and after going over our plans quite carefully with Professor R. S. Meriam of the Harvard Graduate School of Business Ad-

ministration, we decided to introduce two changes in our conference material.

The first was to arrange this material in a series of related unit subjects, i. e., we would select one major subject and then break it up in four or five related parts, each part to be the subject for one conference discussion. The big advantage of this was that it linked all of our conferences together and developed a feeling of interest, suspense, progress, and conclusion on the part of the supervisors.

The second change was to accompany each group of employee comments about a given subject used as a conference topic with a related supervisory problem drawn from some supervisor's experience and incorporating the attitude, opinions, or questions of the supervisor involved. This injection of the case problem method met with the immediate approval of the supervisors who felt that they now had a better chance than ever before to submit their own problems for conference discussion and to match the employee's criticism with a statement of the problem from their own viewpoint. Samples of this type of conference material are appended. (See Appendix 7.)

The subject for each one of these meetings has been chosen in accordance with our guiding policy, namely, that the selection of material for conference use should be governed by the relative importance of that subject in the minds of employees as determined by the frequency of its mention in their interviews. For some

time the analysis of employee interviews has been sufficiently completed that we could do this.

Of equal importance, too, is the fact that all of the material which has been used as a basis for conference discussion up-to-date has first been discussed by the Superintendent and the staff of each branch. This arrangement has insured that a good interpretation of company policies would be available in the discussion with all other supervisors. It has also given the staff members an opportunity to share the training and has thus helped in securing their active interest as well as that of their subordinates. Each development in subject material we feel has been a definite constructive and forward step. This policy must continue if supervisory development is to become permanent.

THEORY AND OBJECTIVES OF THIS TRAINING

Obviously, one will say, the objective of this training is to make better supervisors; and, in theory, the more they talk about good supervision, the better supervisors they will become. True enough as far as it goes, but there's more to it than that. Unfortunately, you cannot inject good supervision hypodermically and expect the patient to recover instantaneously from lack of understanding and appreciation of the many human elements involved in a supervisory relationship. And while good supervision or bad supervision are highly contagious, we have not yet discovered a serum or antidote for either. This leads us to a restatement of a thought

previously expressed, that supervisory development is a continuous process.

Our earlier experiences with these conferences showed us that most supervisors were inclined to think that any problem presented in conference for an hour or two should be answered definitely and that all that remained to be done in handling future problems of similar nature was to apply the formula already prepared. Gradually this thought has given way to the larger objective, not of finding definite answers to specific problems, but of developing a supervisory technique in analyzing and finding the best solution to such individual situations as might arise. As a corollary to this our own thought has changed to a point where we now feel that the best conference is one in which prevails the greatest freedom of expression, the clearest thinking, the best analyzing and weighing of elemental factors involved in the problem, and the best understanding of the technique observed in arriving at a solution.

Another phase of our objectives and theory finds expression in the modern educational ideal, namely, that if we are to teach a child well, we must emphasize not the teaching of the subject, but the teaching of the child as an individual. As we experience the discussion of supervisors in conference and the comments of employees in their interviews, it seems to us that by some means the supervision must be caused to form a concept of supervision in which the major emphasis shall be placed on supervising the individual rather

then supervising the job.

Again we feel that our theory of training is not well founded unless it recognizes the necessity for training not alone for individual skill, but also for wholesome group membership and activity. The emphasis must not be in training for narrow job efficiency alone, but rather training for total personality development in relationship to human effectiveness and influence on other people. Employees are fired nowadays not so much for lack of skill as for lack of ability to get along with other people. This statement has been verified by the Bureau of Vocational Guidance at Harvard University which recently made a study of why men lose their jobs. According to Dr. J. M. Brewer, Director of the Bureau, only one third of the workers in various occupations lost their jobs because they lacked skill or technical knowledge. The balance, two-thirds, were discharged because they lacked social understanding, or the knowledge of how to get along with other people.

In our training program then, we must choose the larger aim of making supervisors alive to the possibilities of self-growth and self-achievement, not alone through skill on the mechanical job, but through new points of view, new attitudes, new methods of dealing with people, new feelings toward work, and the sharing of life's experiences with others.

And, finally, we feel that our training objective must

include a reconciliation or bringing together of our corporate objectives (Company Policies) with employees wants and needs. No matter how wise and beneficent our managerial policies may appear in print, they are worthless until they have sifted down through the ranks and found a resting place in the satisfying of hidden desires and unexpressed longings of the people who work for a corporation they cannot see. To our supervisory force is delegated the responsibility of interpreting and transmitting both the spirit and the letter of these corporate objectives to the working force. If this responsibility is to be discharged effectively, it can be done only through the explicit understanding, allegiance and vitalized activity of the supervisory and executive ranks. And if this activity is to be permanently satisfactory it must be conceived in or reconciled with the natural desires, impulses, and satisfactions which our employees normally seek to express. The present interviewing program is the best known means of verbalizing these desires, attitudes, and reactions. To the extent then with which we can bring this new degree of understanding before a conference of supervisors; to the extent with which we can integrate it with the spirit and letter of Company Policies, and to the extent with which we can seek a harmonizing of minds, a banishing of cross purposes, on the application of those policies, then to that extent will those policies be assured of most careful inactment. This, we feel is a large enough objective to keep us busy for the

next fifty years.

STATEMENT OF RESULTS

There is very little to offer in the form of a direct measure of results from the conference program. The question we should like to answer is, "How much better is supervision because of these conferences?" This, obviously, cannot be answered accurately or to our own satisfaction. There are, however, many indications and considerable direct evidence which points to a steady and perceptible improvement in supervision. If supervision is changing, it would seem to the observer that employees in their interview would reflect this change, although such reflection should not be construed as an index to any quantitative or qualitative measure.

Let us examine a few of these comments from this angle.

1. "Speaking of these supervisory conferences, I think they do a lot of good all right. I know it's helping this Gang Boss. It's not so long ago he attended a Supervisor's conference and when he came back he stood and talked with the Section Chief about what he had learned up there. I was standing near them doing my work and I overheard him say, 'Well, I have learned a lot at conference today. There's one thing they told us that I'll try not to forget and that is, 'You can ask a man to do something, but you can't make a man do it.' I'm going to see if I can't keep that in mind.'"
2. "Well, one thing; those conferences are doing the supervisors some good all right."
3. "I don't think much of these supervisory training conferences because when the gang bosses come back from those conferences they'll blah-blah about them for an hour or two."

To us this seems like a good sign. It's worth something to have the conference thought extend beyond the regular time and place of meeting. However, we could hardly expect it to work immediate reform in cases like this:

4. "As far as improving supervision is concerned, I know it doesn't work out in all cases. We had a man supervising in the other department and he went to those conferences too, but it didn't do him any good, none in the least. The trouble was he came in tipsy from the night before and those were the times he was unreasonable."

5. "Well, what I want to say was that I think your program is certainly doing a lot of good things around here in the last couple of years. The reason why I mentioned that, is because when Mr. Z, our Foremen now, came into the department, he tried to show how tough he was. He was always trying to bulldoze every one in the department. Any time an employee done anything wrong, he always wanted to have something to say. It seems as though no one ever could get along with him. At times it was impossible to go up and ask him something. If you did, he would say to you: 'Is that all you got to do is to bring something up to me that don't mean anything?' He would then say that if you stayed on the job and done more work instead of trying to find something to talk about all the time, we would be better."

"It seemed as though every one in the department at that time was scared of him. Any time any one seen him coming up the aisle, or probably somewhere else, they would always duck from him. But now he is one of the best foremen that you can find anywhere. That fellow sure has changed. The way it is now, it seems as though he is always willing to help every one out. You can go up to him now and ask him a question, and he is always willing to answer you. I think you will interview other men that will almost tell you the same as I am saying."

6. "For my part I think those conferences are the bunk because the foremen just let what they hear into one ear and out the other."

7. "I tell you, I think they treat the girls mighty fine around here, especially since those meetings. The Gang Boss treats everybody right. He is willing

to listen to reason, and if there is anything he can do to help them, I know he'll do it."

And so in these and many similar ways we find employee interviews reflecting a change in supervision. This is particularly true of second interviews taken in 1930 which frequently voice the thought, "Supervision is different now than it was last year. I can't say the same things about my boss now that I said then. He's improved a lot."

Along with these evidences from employees, we are able to collect from supervisors other comments relative to the conference program. Most of these comments are favorable and express such ideas as the following:

"I got more information about how to supervise from one conference than from a year of experience."

"I believe all the supervision around the plant is getting better. These conferences have been very effective and have had quite a bit to do with changing the unapproachable attitude of some of these fellows."

While these favorable comments far outweigh the unfavorable comments, some unfavorable expressions are received from time to time, of which the following is a sample:

"These conferences are pretty much a waste of time. I get tired of hearing fellows say a lot of stuff that you and I both know they don't believe, but they say it just because they think the company wants them to say it."

Another more intangible but none the less valuable by-product of the conference program seems to be accruing in the acquisition of new self-confidence and freedom in expression on

the part of the lower levels of supervision in particular. We are all quick to concede that no super-structure of generous employee responses or supervisory confidence in managerial wisdom and justice can be built on a foundation of jealousy, suspicion, exclusion, or repression. Yet those forces are at work. We have found and still do find some supervisors who have become so accustomed to silence that they cannot conceive of an open forum in which they are at liberty to "speak their mind" freely without fear of consequences should their thoughts seem "out of line". The theory of "think what you do" instead of "do what you are told" is a strange phenomenon to some of these men. But as they are gradually acquiring new ability to sit down and think out loud with other men, and mold those forces of thought into a common ideal which they in turn express; new ability in freely speaking their mind, participating openly in discussing management problems, and modifying willingly their own prejudice, the effect is truly astonishing. The men speak of this effect in comments similar to the following:

1. "You see, the practice I get in the conferences gives me nerve that I didn't have before. I put out my ideas now and the boss likes that, too." Who can measure the value to this man of his new-found self-confidence?
2. "I've noticed that the fellows around here who can step right up and say what's on their minds are the lads that get ahead. We supervisors get a wonderful chance to learn that by practicing in our conferences. We all profit from that, and it is a cinch that we can use some of what we hear from the other fellows."
3. "Do you know that up to the present time I was rather skeptical as to the purposes of these conferences; that is, I felt they were being held only for

the Company's good and that the conference leaders were actually instructed on the points which the Company wanted to put across. After this morning's meeting I felt that every man in there was actually contributing to the program, and I sure got many good pointers from this conference."

But the best and most impressive evidence of what is happening in this training program has to be felt rather than seen. It lies in the "tone" of the conferences themselves. To those who have the opportunity to observe the day by day work of the conferences, it is clear that supervisors are going much further in their discussions toward seeing the real depth of problems presented, in analyzing these problems and in applying company policies to their solution. They have become less dogmatic about supervisory practices and less sure about many habitual techniques which previously they had applied without any analysis or question. It is noticed, too, in the conferences that supervisors are becoming more keen to interpret the spirit as well as the letter of company policies. To us, this seems to be a point of major significance.

Again there is observed a growing spirit of openmindedness on the part of many supervisors who in the earlier stages of the program were inclined to believe that good supervisors were born, not trained, that supervision was a matter of individual qualities anyway, and that no subordinate could tell them anything. This type of supervisor is becoming more and more willing to seek the advice and discussion of others and to take into account the thoughts of his own subordinate supervisors. Generally, the supervisors in conference are beginning to tell each other that these supervisory problems must be considered in terms of the individual involved and

that the answer they find must be an individualized answer. Many of these same supervisors a year ago were boasting that they treated everyone exactly alike, and were, therefore, absolutely fair and impartial. There is a growing realization on the part of conference members that good supervision is that supervision which most nearly relates the needs of the individual employee to the demands of the job, which most clearly identifies the circumstances surrounding each situation and tries to find an answer by analysis and thought rather than by rule or formula.

And, finally, there is noted among the supervisors a growing appreciation of the effect which their supervision may have on the attitude of mind, on the morale, and on the job effectiveness of the employee. History tells the story of a tyrant Roman emperor, Caligula, who posted his edicts so high that his subjects couldn't read them and then flogged the poor devils for disobedience. In but a slightly different sense our supervisors are seeing that supervisory orders, actions, and thinking must be on the same plane as the day by day wants and human desires of their people, and that if a foundation of loyal and effective employee responses is to be laid it must be molded in mutual confidence, cooperation, understanding, and helpfulness.

App.
1

SAMPLE INTERVIEW

The following interview has been selected as an interesting illustration of how the interviewing method may help us to understand the behavior of an employee.

It happens to be an interview with a so-called "problem case"; a girl who is reported as a "chronic kicker." Of particular interest is the new insight one gains of her present attitude when viewed in the light of her reflections on her home environment. Especially is this noticeable in her contacts with a supervisor who "reminds her of her step-father." Although scarcely anything escapes her condemnation, it is obvious that our problem would not be eliminated were we to consider her remarks at face value and attempt to "correct" those things she complains about.

Supervisor asks interviewer what girl she wants to see. When told, he remarked, "Oh, say! You ought to get a good story out of her."

I: "Is that so?"

Supervisor: "Yes. I don't know what it is that is the matter with that girl, but she's what you call, a chronic kicker. You ought to get a lot out of her. We regard her as a problem case."

Employee is introduced to interviewer. On the way to the conference room they talk about the weather.

E: "I don't know what's the matter with me, I've always got a cold." (She speaks in a very calm and uncomplaining manner throughout the interview with occasional exceptions). "You know, it seems like I didn't get colds that way, but the last couple of years I can't turn around without getting a cold. You know, I get just a little bit of a draft on me, and I've got a cold. It's almost gone now though."

"You know, when 'X', (Group Chief) called me, I was scared I was going to get laid off. I saw the chief stand down at the other end of the department talking with him just before you came in and I didn't see you, see? You were standing way ahead there, and I couldn't see you from where I was sitting, and I thought sure I was going to get laid off. I says to myself when he says, 'Come here,' I says, 'Well, here's where I get it,' and I really thought I was going to get laid off, but then when I saw you out there I knew different." (Laughing)

I: "Oh, you knew who I was."

E: "Yes. I've seen you around. Didn't you talk to 'A' yesterday?"

I: "Yes, I did."

E: "Well, she's a friend of mine. I saw you with her. I knew you were the interviewer. Say, you know, that 'X' is not so good. You know, he never goes around smiling. He gives you the awfulest looks. I don't think he's such a good boss. You know, 'Y' is so different. (Former Group Chief) You know, he comes around you all the time and says little jokes and makes you feel good, but 'X' is kind of mean like. He's so mean looking."

EG

I: "You mean it's just his looks?"

E: "Well, he talks that way too. If it happens that just one coil is bad - by God, that happens once in a while - he comes over and wants to know why it happened. Gee, he just has to tell you all about it. Well, it's not like that in other gangs. You know, like yesterday, after you got through talking to "A", he came over to her and wanted to know what she was talking so long about, and she said it was on business. (snippily) She wasn't going to tell him; it was none of his business. You know, with "Y" when things would go wrong, you'd just feel like telling him, but not with "X". You'd sooner suffer than tell him. You know, he just came off nights, and all the night girls say the same thing about him. They are all the same; they haven't much use for him. It seems like he just likes to hurt people. He just wants you to know that he's the boss, I guess."

"You know, this is the third time I've been interviewed. I was interviewed once about a year ago and then before that. I don't remember their names; they were awfully nice ladies."

"Gee, it's a good thing I didn't get laid off. I don't know what I would have done if I had been laid off, because, you know, it's only a year since I've been married. It will be a year next week, and my husband's been out of work most of the time. He got laid off just two weeks before the wedding and he couldn't find anything for a long time, and after a couple months he found something that lasted just a few weeks, and he's had a few short jobs like that just off and on. He's been working the last couple months. Then he got a job sawing in a box factory. They have a circular saw and it broke on him. It's not very big, you know, but when they break, they break hard, and the saw broke on him and cut his hand right here. (Employee points to thumb and forefinger). He cut the vein in here in both these fingers. He had to go to the hospital for four or five days, and they put him on piece work. He can't earn much that way, because they don't have many orders. Maybe he'll go and work two hours and then come home, and maybe he won't work for two or three days. Then he'll go down and work four hours or something like that, and you know what that means. Why, I don't know what I would do if I was called to the office and laid off. I sure got trouble when I got married."

"I've always had a lot of trouble. You know, I've had to help my mother a lot, because things aren't so good at home."

"You know, I have a stepfather, and he's mean man."

EG

E: "Gosh, he's the meanest man I ever heard of. Geo, and my mother is the sweetest woman. She's got to take so much dirt from him; I feel so sorry for her. That's why I stayed home as long as I did. I wanted to help her."

I: "How do you mean stayed home?"

E: "Well, I mean before I was married, see? I would have left home long before if it hadn't been for her, but you know, she is the kindest person. She would take a thing into her heart and cry over it before she would say anything. I never could stand my stepfather. I think that's the reason he was so mean to me, because I used to stick up for my mother, see? I used to argue for her and fight, and that would make him mad, of course. You know, the trouble with him, I think, was prohibition. You see, he's a drunkard. He always has to drink and then it makes him so mean, and if he hasn't anything, it makes him mean afterward. You know, I don't know just how it is. It seems like he just can't be mean enough when he hasn't any, because he wasn't that way before prohibition. I can remember in the days of the saloons that he wasn't that way. We had a lot of trouble with him, because he used to get it from a friend of his who made it, and this fellow lived right next door, so it was kind of hard. Then when that fellow moved away, he'd get it somehow. He'd go out and buy and sometimes he'd go to some friend of his that was making it. He'd get it some way. Gosh, he's mean to my little brothers and sisters too. You know, my mother's got a big family. There are seven children. When I was home there were eight, and I still try to help my mother. My own father died when I was about six and a half. My mother had three children then besides me. There were three little boys; one of them was three, and one was two and one was only about six weeks old, just a little fellow, when my father died, and then it wasn't long after he died, a couple years, that my mother lost one. She lost the one that was two, and then five years ago the other one died, the older one."

I: "Oh, the one that was three when your father died?"

E: "Yes. He was so young. He was only seventeen, and gee, he was the nicest kid. He was the only one that my stepfather was scared of and you know, he wasn't mean at all. He never argued. He just couldn't stand to argue. He was always singing and whistling, and the minute he would come into the room it just seemed like my stepfather would stop being mean. I don't think it was because he liked him; I figured it was because he was scared my brother might beat up on him. You see, he was awfully well built for his age. He was tall. He was a lot bigger than my stepfather, and I think the only reason that my stepfather stopped when he was around was that he was

EG

afraid he might beat up on him. Of course, there was never no thought in any of us to beat up on each other. My stepdad has never beat my mother. If he would, I think we would have all beat him up so that he'd never have done it again, but he used to be mean in other ways, you know, saying things to her mean that would make her cry. Well, finally I decided I couldn't stand it any longer, so I told her that she had to tell him that he had to cut that out or I was going to leave home. Well, of course, she couldn't stand to have me leave home, so she went and told him, and you see, after that he was always mean to me, because he was mad that my mother would listen to me and not to him. Gosh, it makes me feel so sorry for my mother when I think what she has to suffer. You see, she was real young when my father died. She was only twenty-three and she married my stepfather to have some one to take care of our family. She's real young now; she's only forty-one. Her baby is six years old now, and the oldest one will be seventeen in a couple of months, in December. My own brother is nineteen, but he's not working now; he can't find a job. He has been working, but he got laid off. He goes every day, but you know you can't find anything nowadays. The other one is still going to school, so he can't earn anything. Maybe he couldn't get work if he wasn't going to school, so he might as well get an education."

I: "He must be going to high school."

E: "Yes, he is. He's studying something."

I: "He's taking up something special?"

E: "Yes. He's studying some course there. You know, the one that's nineteen and the one that died both started to work with Western Union."

I: "I suppose the oldest one got the younger one started there?"

E: (Enthusiastically) "Why, that's exactly what happened. Well, it wasn't exactly that way. The older one had worked there, but he wasn't working there when my younger brother started but he told him to go there and he went over there and talked up to them, and I think that's what got him the job. It seems a shame he had to die so young. You know, he was a great fellow for sports. Gee, he was crazy about baseball. He would rather play baseball than eat, and that's a fact, and he would like to go out with the fellows and play basketball or anything like that. He was great for sports. Well, one Saturday night he went out with the fellows and the next morning he kind of had a stomachache. He was going out to play ball that morning because he's so crazy about it. He was going out to play ball in the afternoon, too, but he kind

EG

of laid around across the bed and he didn't go out to play ball in the morning. By the afternoon the pains got so bad that he was yelling right out loud. Well, when he started to holler like that my mother called a doctor, of course. She always does all she can for us and then when she can't do any more, she calls the doctor, because you know times are so hard right now and lots of times they are, and you know how doctors are. On Sundays they're at home and they take their time about coming, and he didn't get there until 3:30 and by the time he had come over my brother's appendix had busted, and you know, there isn't much you can do after that. So the doctor told my mother that there was one chance in a hundred that you can save somebody when that happens, and if she wanted to take a chance, he could take him to the hospital and operate on him. So my mother said, of course, she would take any chance there was to take even if it was one in a hundred. So they took him right to the hospital and the doctor operated on him, but he only lived five days after the operation. He was getting along pretty well until the second day after. They were giving him a physic all the time, but it didn't do any good. It seems like his bowels were just stopped up, and you know, the poison got into his system. It wasn't the operation that killed, I don't think, it was just the poison. It was too bad he had to be taken so young. He was such a nice fellow. Everybody liked him."

"My other brothers have that way about them too. They get along real well with people. One of them is working down at Sears. He started work there when he was only fourteen. I did too. All of us started working at fourteen in our family. You know, when you can't go on to school, you have to start working at that age. You know how it is in a big family. The older ones don't get much chance for education."

I: "But the younger ones, like your brother that's seventeen, are going?"

E: "Yes. You know, it's usually that way. I think he should get an education while he can."

I: "I suppose he'll graduate."

E: "Well, it's kind of hard to tell. he's in his second year now. This brother that started at fourteen is making real good there. You know, Sears likes to get them at that age, because they get them to counting things and then packing and putting things on the shelf and things like that, and they get them used to the store, and then when they're twenty-one they're ready for better places, see? Instead of hiring people from the outside, they can put these boys into the places where they need them. My brother was in the office for a

EG

while. He had to sort of go around and do errands, but he figured there was more chance to get ahead in the other place, so he asked them to change him. When he's twenty-one he wants to be a clerk. He figures that when he's twenty-one they'll change him to be a sales clerk. I think they will, too, because they do a lot like that. He told them that he figured there was a better chance to get ahead, so they changed him over, and he's a real good worker. He has to go around on all sorts of errands. Do you remember that girl you talked to yesterday? Well, her brother is down there too. He's got a job almost like my brother's."
.....

"You know, I think the reason that I can't stand "X" is because every time I look at him he reminds me of my stepfather. (Laughing)

I: "Is that so?"

E: "Yes, I can't look at him without thinking of my stepfather."

I: "So he looks like him, does he?"

E: "No, he doesn't look just like him, but it's the way he acts; you know, going around with a grouchy face all the time; you know, "S" is the nicest fellow to work for. He's the nicest fellow to tell your troubles to, but with this guy, you haven't got the heart to tell him anything."

I: "I wonder what makes people that way."

E: "I don't know what it is. They say that my gang boss used to be a lot better. I remember when I was working on days before. He used to kind of smile once in a while, but gee, you just can't get him to smile now."

I: "Did you ever try smiling at him to see if he would?"

E: "Yes, a lot of the girls try that, and he doesn't like it."

I: "Have you ever tried yourself?"

E: "Yes, I did try it at first. When he come back on days I thought well I'll just try to see if it works. So the first time he looked at me I kind of grinned at him, and you know he kind of grinned back, but most of the time he won't do that."

I: "So you think he used to be better?"

EG

E: "Well, I remember I wasn't with him long. I was only with him two weeks before and then he went on nights. The girls who have been with him for years say that he has always been that way, and they should have been with him long enough to know. Gee, that's all you ever hear around there. (Gee, I hate that guy. He's the meanest guy in two seas.) "They say he is good to his wife. The girls say he is. They say his wife is the boss at home. You know, I figure that he wants to be the boss somewhere and that's why he acts down here like he does."

"Say, do you write the bosses name?"

I: "No, we don't. You see, since this is all confidential, it wouldn't be any more fair to say his name than it would to say yours."

E: "No, that's right. I just wondered if you put their names in so they'd know."

Interviewer explained the supervisory training courses.

E: "Yes. Well, I think that's a good idea. I've often wondered if they put it in. I've been here a long time now, eight years. You know, I figure this is a lot better place to work than other places. I didn't like it so well the first two years, but I figured when I had been here two years that I might as well stick. When they pay your wages during sickness and all other benefits, I figured I might as well stay, so I stayed. I really made more here. Of course, I was younger then, so I didn't get much other places."

"Gee, I certainly got things worse when I was married, though. I thought things would be real good when I got married, but you know, I don't like to complain at home. My husband often says that if he had it to do over again, he wouldn't put all this on my shoulders. It makes him feel real bad. It would be different if I thought he didn't want to work, but he's always been a good worker. He always worked until he was laid off two weeks before we were married, and you know how things were a year ago, you did not figure on things getting so bad. When he lost that job we thought he could get another one right away. If we thought things would come like this, we never would have done it. Of course, he is a good man. I haven't anything to complain about that. He's never cross or anything; he's real good to me, but you know, a time like that was no time to get married. . . . But we could not put it off because we had things all planned. We had our clothes and everything, so we just went ahead and did it. But you couldn't tell a year ago how things were going to turn out. Gee, if we could have seen ahead, we would never have done it."

EG

"About the bosses the only thing I have to say is my Gang Boss, "X", and all the others are all right. They say that "X," who has had interviewing experience and attended conferences, was not as nice as he is, years ago. They say he's gotten that way lately. He was more strict-like a long time ago. It's just the last two or three years maybe that he's been better. Maybe it was because I didn't know him. The longer he's here, the nicer he seems to be. I don't know, maybe they're all that way. I never had anything against "A," the assistant chief. He used to be kind of mean, but of course, I don't talk as much to him and the others as "X". Say, I think the chief (foreman) is a darb. I think he's a good fellow. He treats everybody alike. He never does things for one that he won't do for another. You know that fellow that sits next to "B"? Well, he's kind of nice, too. I haven't talked to him very much, but he smiles kind of nice. That's one thing you can't get the assistant chief to do. You never see him smile."

"Say, I hate to think when it gets busy again and the lockers get jammed. Of course, now it's all right because it's so slack. Now there is only one or two to a locker, but otherwise, gosh, it's jammed. Lots of times there are four to a locker. You know how small they are, too. They wouldn't be so small really if there wasn't so many of them in the locker room. The trouble is that the room is too small. If we had another room and took some of the lockers out and put them in there, it wouldn't be so bad."

"Say, this is a drowsy day, isn't it?"

I: "It is kind of that way, isn't it?" "Maybe you don't feel like being interviewed today?"

E: "Oh, I don't know. I guess every one feels like going to sleep today."

I: "Well, maybe you'd rather stop now and have me come back tomorrow and see you?"

E: "Well, do you want to do that?"

I: "It's all right with me. If you feel sleepy, you can do that."

E: "Oh, I don't know. I'd just as soon sit here and talk."

"Say, do you know if the matrons have more than one washroom to take care of? It seems as if they're not as clean as they should be. I don't know, maybe it's the girls. You know, she's an older woman and she's always working around there, but, my God! it seems

that she's always busy. She's always sweeping, scrubbing or something whenever you go up there. I was just wondering if she had other things to do, because if she has nothing else to do, I don't see why she can't scrub and sweep before the crowd gets there. You know, when anyone comes, she has to keep moving away. It would be nicer for her if no one was in her road. She seems to be up there cleaning when there is a big jam."

(seriously) "I wonder if it will pick up."

I: "It's hard to tell, isn't it? Why? Are there any signs in your department?"

E: "Well, it doesn't look that way. They're laying off the married women, but I think that's all right. You know, there are lot of married women that don't need to work there. They are just working there so that they can buy clothes and pretty things for themselves, and you know they don't need to do that when times are so hard. They ought to give the single girls their job. Of course, some married women have to work, because their husbands haven't got steady work, but I'm glad they're laying off the married women. I think they ought to do that. I don't think married women should work, do you?"

I: "Do you mean whether business is good or bad?"

E: "Yes, I think so. I don't know about when times are good. I think women should work then if they want to. I think it's their own business if they want to work then, but I think at times like this it isn't fair for them to take some girl's job that needs it. There is a lot of them that don't need to work and they can just as well give up their jobs as not, but as far as saying they shouldn't work when there is plenty of work, I would not go so far as to say that."

"Some of the bogeys are terrible."

I: "Is that so?"

E: "On some of the jobs it's awfully hard."

I: "What do you mean by terrible?"

E: "Oh, the amount of work. The rate is too high. You see, they time the girls and set a rate on the job. Now it's not so bad. Of course, if you make too much, you're likely to have to turn in more and you'll raise the bogey."

EG

I: "Is that so?"

E: "Sure."

I: "So the rates are not so bad now?"

E: "Not on our job. You know, we're all old timers. We know the job."

"We have the same bogey as on the old machines across the aisle. We have the same bogey but they have a lot more. They've got to work to the last minute over there to make their rates. They have to work real hard. Those machines I'm on are different. They're real nice, especially now that there is no night gang. When you run your machine yourself it's a lot different. Oh, it was terrible with a night gang. You know, each girl was running her machine differently, especially on nights. When they get new girls and they monkey, it's terrible, but now it's not that way; it's nice."

"Those old ones are terrible. There is always something wrong with them."

I: "So they have the same bogey as you?"

E: "Yes, they have to work so hard or they can't make their rate. The wire always breaks on them. As far as that goes, none of the jobs are easy. You got to work on all of them, but I guess that's what you're paid for."

I: "But yours are nicer?"

E: "Of course, they're nice when they're new. (Emphatically) They are always a lot nicer then."

I: "So you would rather be on yours than on their machines?"

E: "Oh yes, any day."

I: "I'll bet you're glad you don't have to change machines with them."

E: "They're not so nice to run. Of course, ours weren't either when the night gangs were there. It loosens up the tension or something and they run different. Before you'd get started in the morning it takes a lot of time and you lose so much. You know the big automatics? They're terrible to run. I worked on them two different times and I had to be taken off. I couldn't stand it. Of

EG

course, you push the pedal down you know. You had to use your strength to push it down."

I: "So they were real hard?"

E: "They were a lot harder than the new machines they have. The girls don't have to swing their body around now as much as they used to. All we have to do is press down a little pedal and the machine is going, but on the automatic you have to shove it down all day."

"We've got a First Aid Station in our department now. It's real nice. I wonder why they've got it there. There is so much noise there, I should think they would want it in a quieter place. Maybe they think there are too many of them taken to the hospital. In the summer time the girls faint, you know. An awful lot of them faint in there. This summer when it was hot a lot of the girls fainted. A summer ago on the big automatic there was always a girl fainting; every week there was one or two. There was so many, you know, and they sat so close together, it was bad for them. There was a great big bunch when the place was busy.

"What they ought to have is another time clock. (Indignantly) By gosh! You go upstairs to get your hat and when you come down they're still punching, and it's slack now. So you can imagine what it's like when they're busy. They sure ought to have another time clock. We often holler (Laughing) - you know, pass remarks in line, but nobody seems to pay any attention. We always say so they can hear. We certainly ought to have another time clock around here."

"About bogey. It's pretty hard in our place. Half the girls don't turn it in. You're supposed to. It goes against you, if you're not a hundred per cent. If you are not, they come around and ask you why. If you have no trouble, you can do it, but if you have some, you can't. I don't think the rates around there are right. Some are too high and some are too low. My God! As far as making out the bogey. If you happen to make out a hundred, "X", group chief, comes running around and says, 'What's the matter?' That's not much of a drop for coils. If you don't feel good, or the wire breaks, right away he comes around and asks you."

I: "Is that so? So if the wire breaks you can't make it?"

E: "No. It's the same as across the aisle, only, of course, theirs are a lot worse. I think theirs are loose or something. I don't think they're going to keep them. I think they intend to drop them soon. Now, you take Mr. "A". When he was our gang boss, if you would drop two or three on account of the breaks, he would realize it and not bawl

EG

you out. He would say that you can't expect to do it every day. He wouldn't bother you.

"I like this job. The bogey is not so low, and you have to work hard, but if you don't have much trouble I like it."

I: "You mean if you don't have any breaks in the wire?"

E: "Yea. But over there across the aisle the parts are old and they're always breaking down, but not ours."

I: "I suppose if 'Y', (a girl across the aisle) - you know her, don't you? I suppose if she could change with you, she'd think yours was easy."

E: "If she'd get used to it, she's like it. They run about the same except on ours you pull it on the left and on theirs it's on the right."

I: "I meant on account of the speed and the breaks that she's like it."

E: "Sure, she'd like it."

I: "When you said that some of the rates are too high and some too low, did you mean like 'X's' rate is too high but yours is all right?"

E: "Yes.. They ought to fix their rate."

I: "But yours is all right."

E: "It's pretty fair. They're nosing around quite a bit. They think if they can get more out of you, they ought to. They want the girls to raise the rates. We've been rerated three or four times. Some days you can't make more than a hundred. The rate used to be a lot lower. I remember when they first set it across the aisle it was $9\frac{1}{2}$ an hour, and then they rerated it. Before that it was even lower.. It was seven, and then it was eleven and then thirteen, and it stayed that way since. I suppose they figure that if the girls work real hard, if they simply kill themselves, one or two of them can do better, if they have a better machine or something, and then they can turn in the rate.

"They've been rating us two different times. I suppose they figure that if they can turn it in on that job across the aisle, that we ought to on our machine. We just about make it by not killing ourselves. They should lower theirs."

EG

I: "You mean that instead of keeping theirs the same and raising yours that you think theirs should be lowered and yours kept the same?"

E: "Yes. You see, they figure that the girls on the old machines can make it and we should make more, but it's no snap. You have to work hard all the time. There is no stalling at no time. You have to work hard. See, that's the way it is, but of course, it's different than "X's" (girl across aisle). Ours are much easier than theirs. I guess they want to change ours. They've rated us two times but they have not changed it."

I: "Just what do you mean when you say that your job is easier than theirs? I want to be sure that I understand just what you mean?"

E: "Well, the wire don't bother us so much, and the machines go fast, and it gives us a better chance to make the rate. Over there the wire breaks all the time and the machines are not so fast. There are much more breaks over there."

I: "Is that so?"

E: "Oh, yes."

I: "So it's quite a few, is it?"

E: "Yes. Here where I am it's only two or three, but there it is always breaking. We used to have more breaks when the night gang was working. We just couldn't do anything then. We were always having trouble, but theirs is worse. They are always having trouble and their speed isn't so fast. (4:15 whistle blew) Oh, it can't be that late already."

I: "I wonder if you wouldn't like to come back for a while in the morning. I'm sure you must have more things you want to say."

E: "Why, yes. I'd like to come back. Will you call for me there?"

I: "Yes, I'll be there in the morning."

(Later) Next morning interviewer calls for employee. On the way to the conference room they discussed the weather.

E: "I've been having trouble with my machine this morning. The wire's breaking. You know, they used to send the wire back to the Cable Plant if it was no good. They used to test it. They would stretch it three inches, and if it wouldn't stretch that far, it was no good, and they

EG

would send it back to the Cable Plant, but sometimes of course, when you have trouble, the tension is too high, or it needs oil or something. For a while they did have the wire tested in the Cable Plant and it was not sent over if it was not good. Gee, that was swell. We never had any wire trouble, but it took so long, us girls had no wire. We would always be without wire, so now they send over everything. They don't test it first."

I: "Was that very long ago?"

E: "Oh, it was warm yet then. It was in August I guess. They tried to get it for us that way. It was good every time then. It would run real nice, but too many times there was no wire. Lots of times we would have to wait a half an hour, so now that's all over. So now it's up to us girls to put it on our machines and test it. If it's no good, we put it in a box and send it back."

I: "So that didn't last very long."

E: "No. They quit after a while. Maybe about three weeks they stopped."

I: "And before that it was just the same as it is now".

E: (Nodded) "If they would test it, it would be much nicer. Then we'd always have decent wire to run. Before it was even worse. We had to use bum wire unless it was real, real bad we had to use it, and then sometimes they would just put it aside and make us use it later. Maybe sometime they would be out and then they would make us use the scrap wire, but now we have to have the gang boss do it. The girls are not allowed to take it off. The gang boss has to test it, but you know, the girls used to get there early and they'd sneak their bad wire on someone else. You know what they used to do? You know like "Y" showed us. (Employee and interviewer had stopped at a bench across the aisle to watch one of the girls work.) You know how she showed us that on some coils we have to put on 466 and some, 411. Well, the girls used to get there before the whistle blew in the morning. They'd get there early and they'd pick out the best for themselves so they would have it a lot easier. You have to do a lot of work in that department. The rate is so high that you can't do everything at once. You can't do a lot of things that you're supposed to do. You're supposed to put the washers on and skin the wires, but you can't do it while you're working, so you have to do it before. When you don't do it before you have to work through the lunch hours, so you lose out there. (Stamping the tags) Skinning the wire and putting the washers on and things like that, I don't think that's fair."

EG

I: "I wonder why the girls do that."

E: "They can't make their bogey if they don't. They do it at noon. If you pass by yourself any noon or early in the morning, you'll see for yourself. If they wouldn't be able to do that, they couldn't turn in the bogey. I tell the gang boss but he says, 'Well, he can't stop them' and lets them go ahead and do it."

I: "So they figure they have to do that to make the bogey?"

E: "Yes. Some of them need to do that to make the bogey. There is a lot of girls on my job that need to, but I figure that the lunch hour is for rest. Why, a lot of them don't even go upstairs. It happens sometimes that I don't get to go up, but after working all morning regular, I don't do that. They pay you for working eight hours, and you know I don't think you ought to stay down there when you need to go upstairs."

I: "So some of the girls to that?"

E: "Some do. Yea."

I: "You mean some of the girls in your gang?"

E: "They don't do it very often, but if they're behind, they do. But instead of tolling them, you know what they do? - they work and work during the noon hour. They don't let you run the machine at noon hour, you know, but they do a lot of things like skinning wire and putting on washers and that stuff."

I: "So you think it would be better if they told the boss?"

E: "Well, you know, sometimes I think they should. You know, sometimes they call you in the office and ask you why you aren't making your rate, and if you say, 'Well, I don't stay at noon hour and come early and work' they'll say, 'Well, she does that, why don't you?' That makes us mad. When you have forty-five minutes for lunch, I think you should rest. That's not a very long time. I think it's plenty when you work eight hours. I know that's all they expect you to work".

I: "Did you mean that the chief asks you why you don't do like the other girls?"

E: "Oh, he hasn't said it to me. I don't suppose he would believe if they come early in the morning and work that way. It's the gang bosses. They say they can't stop it if they want to work, but I think they could. I should think they'd let them work eight hours and rest the

EG

rest, but they haven't said nothing to me about it. They never troubles me about that."

I: "Not about that?"

E: "No, not about that. Once in a while the gang boss will come around and say, 'What's the trouble?' You know, lots of times I think they would do better if they would put a girl on the bench instead of keeping her on the machine. If she is just a clumsy girl or something she might be better on the bench, or if she's on the bench maybe she'd sooner run a machine. I don't think they pick the girls out right. I often think they should try out the girls on the bench and the machine to test them, and if they can't do either one, they're no good, but they didn't do that. All they do is keep hollering at you, 'Why don't you put out your bogey? Why don't you put out your bogey?'"

I: "So you think they should have a way to fit the girls on a job?"

E: "Yea. Lots of girls never can run a machine. They'd do a lot better on the bench. Some of them are not strong enough to be on the machine, and I imagine they're just ruining their health by staying there."

I: "You notice a lot of things, don't you?"

E: "I guess I've been here so long, that's why. Lots of girls are afraid to speak up. They think they have to run a machine whether they want to or not. They think they got to take it. Like me, they put me down on a big automatic, but I saw I couldn't stand it and I told them. It made me sick right away, so they took me off. Your health is better than the job. That's the way I look at it."

I: "So when your'e not satisfied you talk it over with the boss."

E: "Well, it just happened two times. I think I had been on the automatic two days when I broke down and I was sick a long time. I think it was from that. Then they put me on one time after that and I was sick again. Mr. "W", one of the gang bosses who was here a long time ago, said I was not strong enough, so he said they should put me back on this and I've been there ever since, but you have to get along. They don't pay you for nothing. You have to work for what you earn. This work is lighter, it's not as heavy. A lot of girls are built different and they need different kinds of work."

I: "So you were on the big automatic only two days when you got sick?"

EG

E: "Yes, the first time. The second time I guess it was about a week. No, I guess the first time it was a week and the second time two days, but right away I spoke up. They tried to put me on it when it made me sick, so I put up an awful fuss. I said I'd just as soon quit. I just spoke up for my rights. You know, a lot of girls on the small machines could run the big ones. They have never done it though."

I: "How do you mean?"

E: "Oh, you know. They never try you out to see if you're good. It just seems that they don't do it. You know a lot of girls on those machines get appendix trouble, I mean, on the big automatic. You should see some of the girls that have been on that job for a couple years. Why, when they walk they're so awfully bent. It's not good for them. I should think they would put them on something lighter. I always said men should run them; women are not fit for it. They used to have men, but they were different then. You used to have to stand. So they fixed them so that you could sit down. They change the machines quite often."

I: "I wonder why the automatic hurts people."

E: "It takes strength to put it down and it hurts your back and you feel it in your right thigh. You have to be awfully strong. You got to tell by trying, not just by watching. When you watch, it doesn't seem so hard. You got to tell by trying."

"When they talk about the interviews at the meeting don't they even mention the department?"

I: "When they use anything at the meeting they put it in wrong if it would show who a certain person was, so it wouldn't be fair to mention the department either."

E: "Oh, I see. It has to be confidential for every one, doesn't it? I think the interviewing is nice. I think the bosses are more human since the interviewing began. Going to those conferences gives the bosses a chance to know about what the people under them think of them. There are a lot of girls in our department that haven't been interviewed yet. When you came to me this morning the girl next to me asked me when she was going to have her turn. She's never been interviewed. Last year when they said that we could talk about our troubles and things we were kind of leery. I was myself."

I: "I can see why you would be."

EG

E: "Well, you know, we thought maybe they would tell the boss and we would lose our jobs, but I think that if you are coming around the third time it was all right, and it never did no harm, but it did good. I think it's kind of nice to come back the second day. That girl next to me is kind of bashful, but she isn't when you get acquainted with her."

I: "You tell her I'm coming to interview her one of these days."

E: "All right, I'll do that."

I: "So you think the interviewing has been doing some good."

E: "I think so. The bosses are more human. They treat the girls better. They smile, you know. You know what I mean - you just feel like working then. Some of them just didn't get the drift at all."
.

I: "So you really think the change is due to the interviewing?"

E: (Reflectively) "That's the only thing I can think of. Nothing else has been done but that. Don't they interview the men?"

I: "Yes, they do."

E: "There is a boy that runs a truck through that room we passed and once when I was talking to him he said, 'By God! Why don't they interview the boys?' He said he has trouble with their boss. I asked him how long he was here. He said two years. He said, 'I have seen a lot of funny things going on around here. Why don't they interview the fellows?' I didn't know anything about it. There is another girl in our gang that asked me why she hadn't been interviewed. She hasn't been here very long and she's never been interviewed. Her name is [REDACTED]. She's S's sister."

I: "Maybe she hasn't been here long enough. I'll probably get to see her soon too."

E: "Yes, she'd like to be interviewed."

"If you don't make your rate, you're called to the office. Well, now you're laid off, of course. I know they have to get after you; lots of times they won't work. They got to do that. Sometimes the girls can't do that, and they call her at a certain time at the office. You know Mr. "A. F." He's over all the gang bosses. He usually talks to us. You know the gang boss comes around and you're below and asks you why. If you're only below one or two days a week, they have the

EG

gang boss talk to you. You put down on your slip how many breaks you have, and "X" sees the slip. He never bothers you because he sees that you had too many breaks to make your rate, but some of them might not like that. I guess they don't look at the slips."

I: "Is that so?"

E: "Yes, I guess so, or they can see why they didn't make it, or else they just want to show that they're boss. All they're interested in is production. The job is just as easy for me as for the others but it isn't easy for any one. You have to work hard if you take fifteen minutes off in the morning and afternoon. You have to work awfully hard to make up for it. Sometimes you can't do it; lots of times you can't. You get cheated out."

I: "How do you mean?"

E: "Well, you see, the wire breaks and you can't. Some days you just haven't speed and the right spirit. You just feel bum, and on other days you feel like working like a horse.".....

I: "So some days you get to take fifteen minutes off in the morning and afternoon and others you don't?"

E: "You just take it yourself."

I: "How do you mean?"

E: "Well, this is how it works. You take it when you think you can go, but other times when you think you've just got to go it doesn't make any difference.".....

I: "You're supposed to be able to take time off, aren't you?"

E: "I guess so. They always say that; fifteen minutes both morning and afternoon, but some don't take it ever. They never take it. They work from 7:30 in the morning until 12:00. Then they go to the wash-room and wash up then and work all afternoon. How they stand it, I don't know. Lots of times I go. It doesn't happen so often with me."
.....

I: "So you think some don't mind."

E: "(Indignantly) "If they had a chance they would. They only don't go because they haven't a chance. That's why I don't go sometimes, if I can't make it. That's the only time, except noon, to wash up."

EG

I: "Isn't there anything else you want to say before you go?"

E: "No, I think I've said all I have to say.

I: "It's been interesting to talk to you, [REDACTED]. I hope I'll see you again sometime in the department."

E: "Maybe you'll stop and talk to me sometime in the department."

I: "I'll do that."

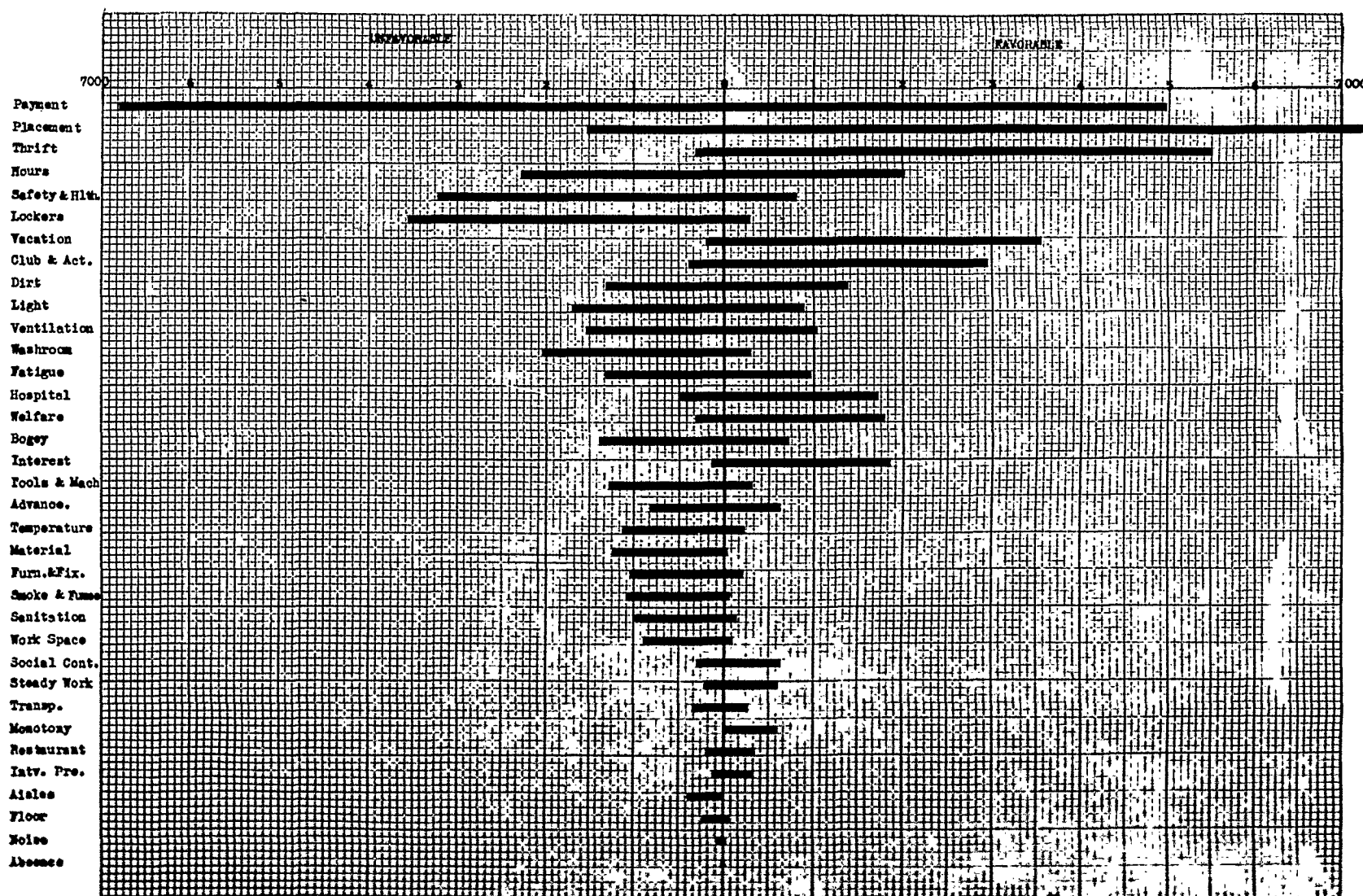
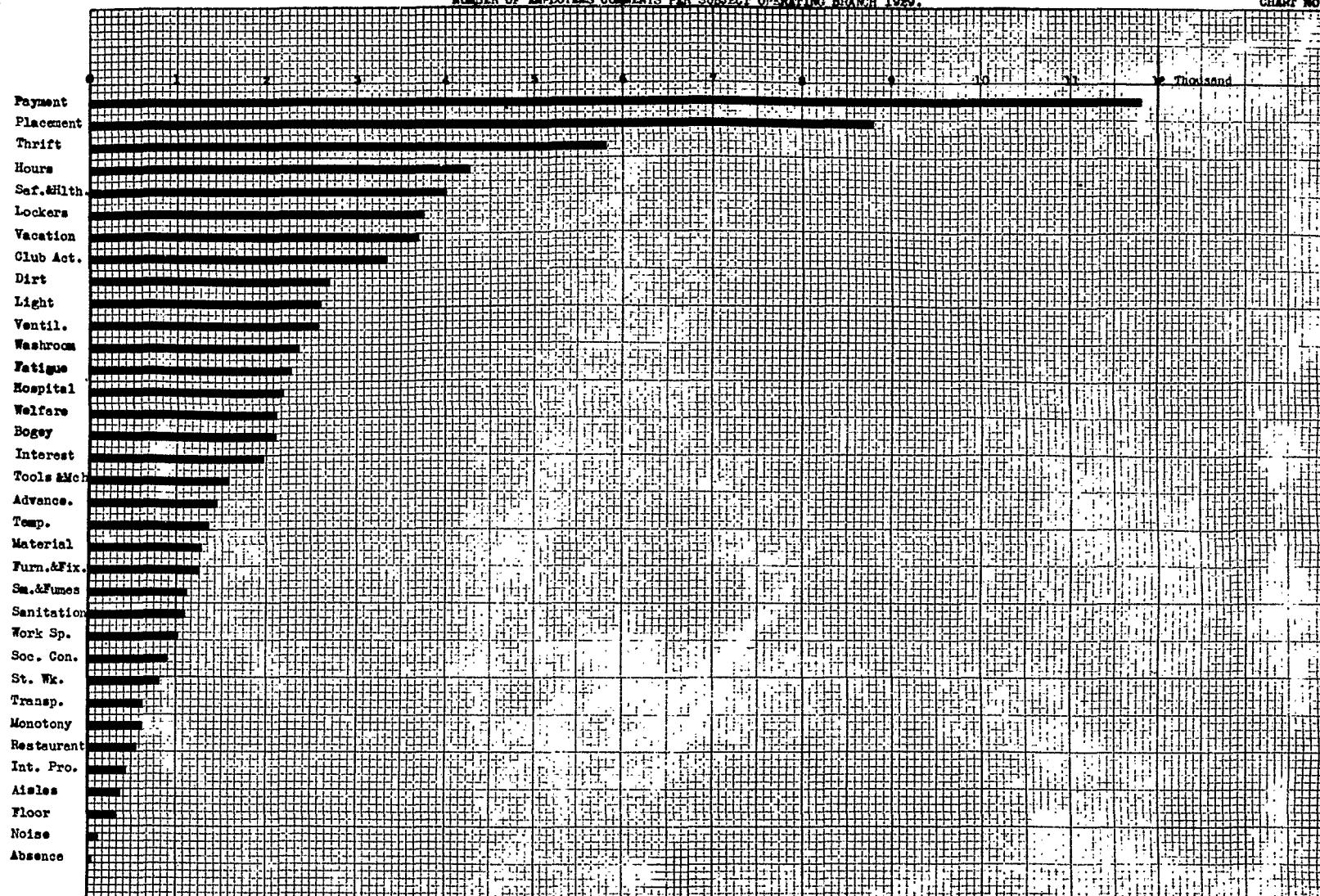
E: "I hope you will."

EG

App.
2

NUMBER OF EMPLOYEES COMMENTS FOR SUBJECT OPERATING BRANCH 1929.

CHART NO. 1



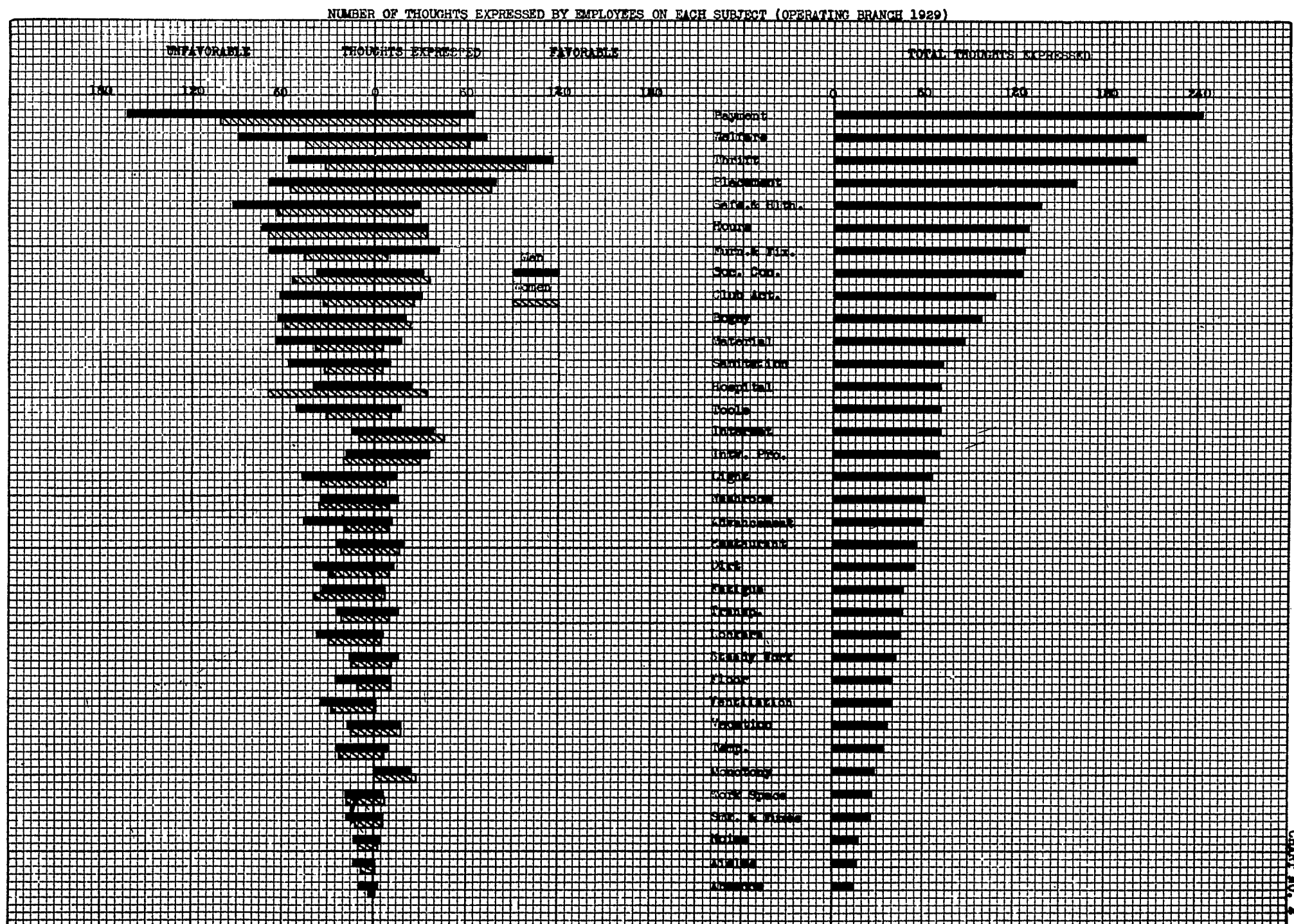
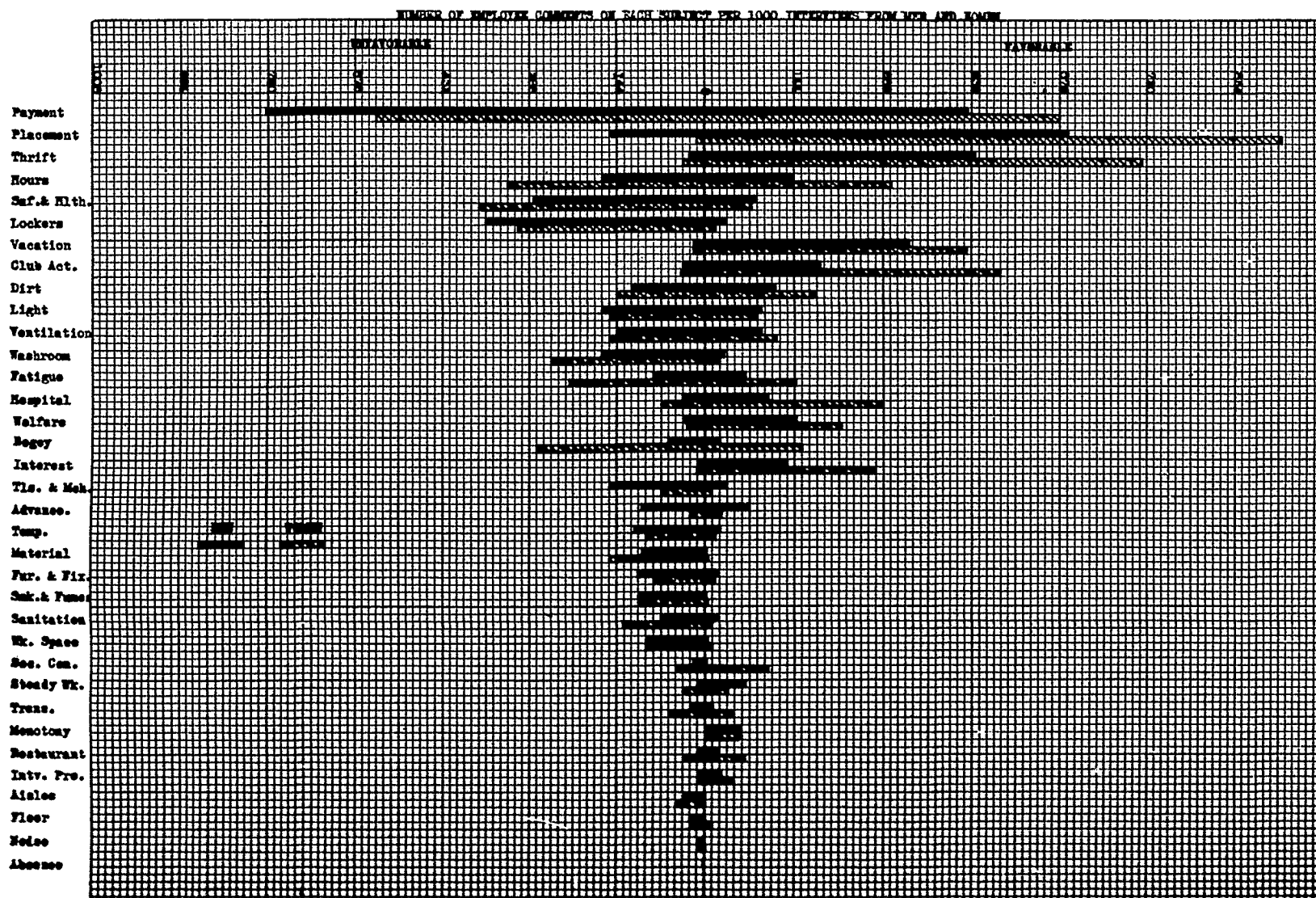
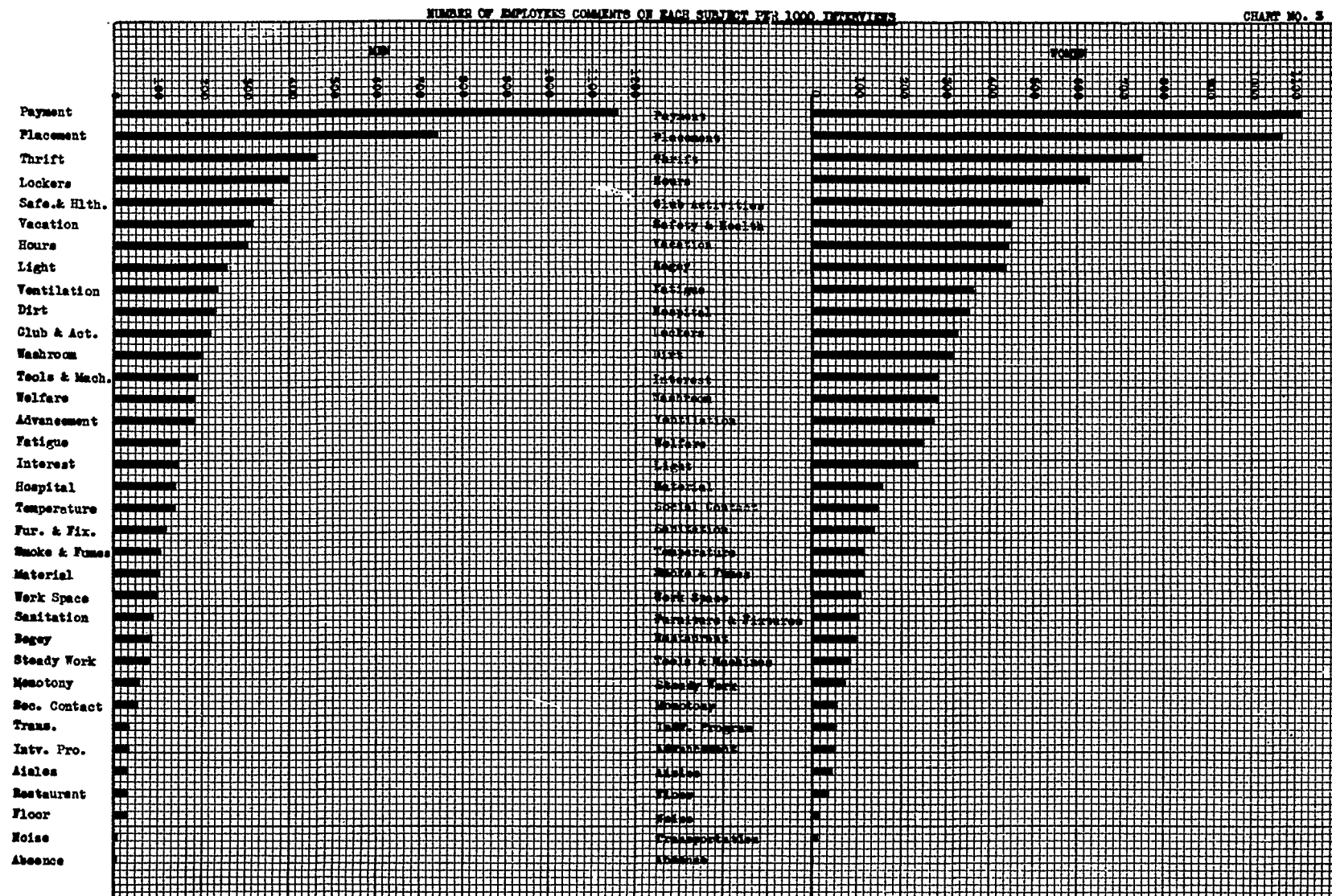
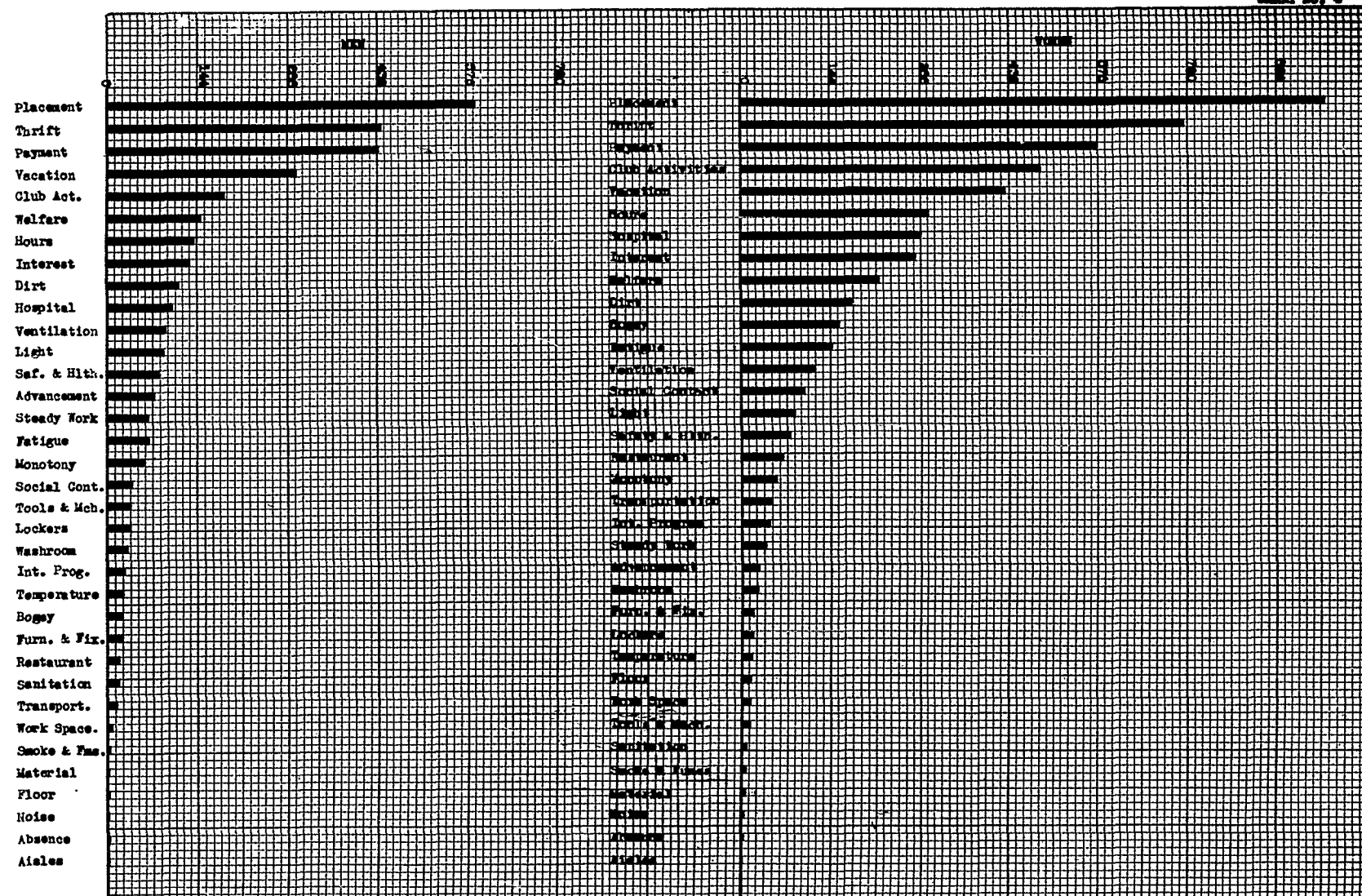


CHART NO. 3

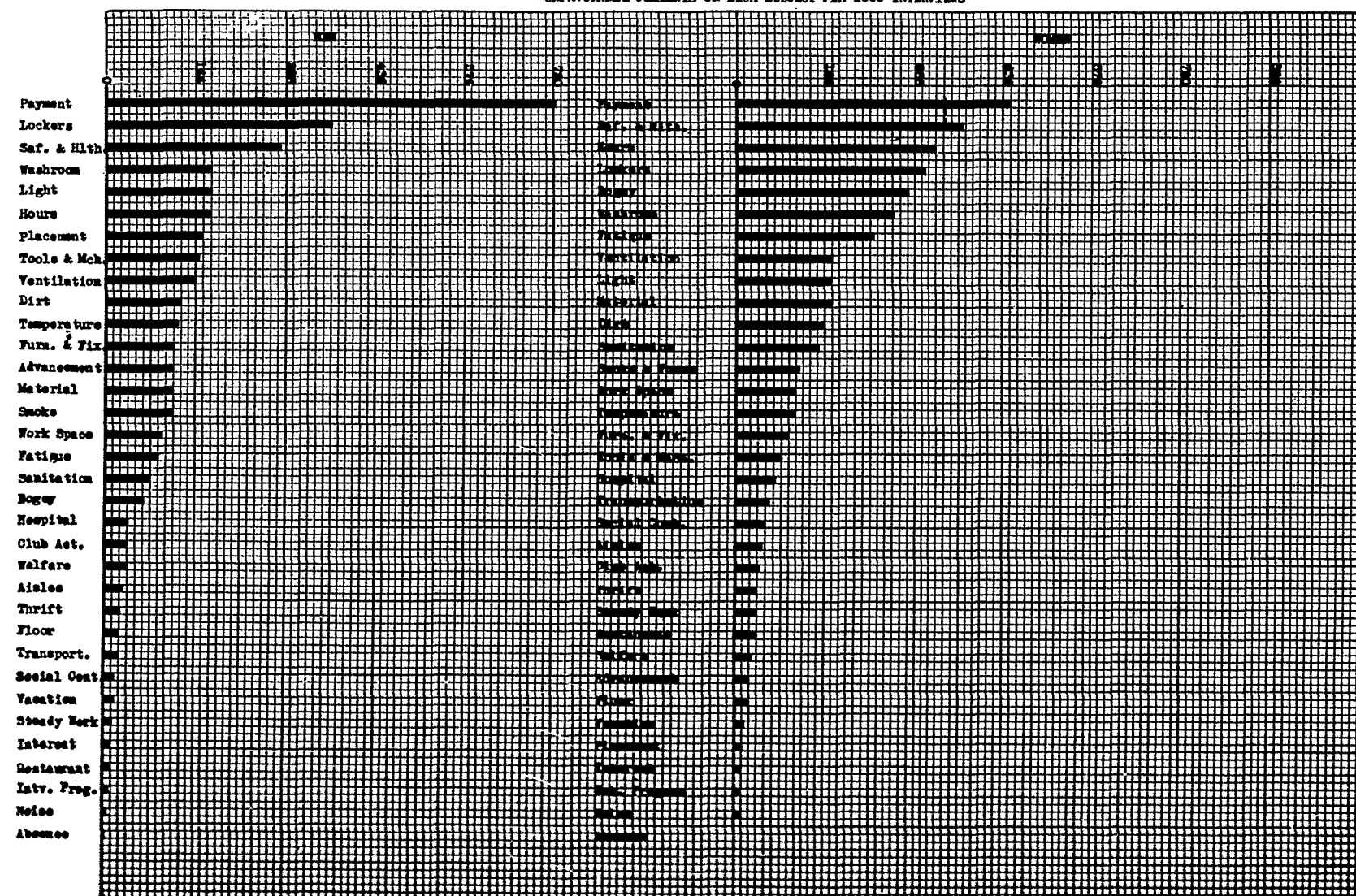


OPERATING BRANCH 1929
FAVORABLE COMMENTS ON EACH SUBJECT PER 1000 INTERVIEWS

CHART NO. 4



UNFAVORABLE COMMENTS ON EACH SUBJECT PER 1000 INTERVIEWS



App.
3

(Sample of 17 subject course
preparatory outline referred
to on Page 2. of Section 3).

Supervisory
Training
Program

OUTSIDE ACTIVITIES

Preparatory Outline

Outline of discussion

1. What results may be expected from employee participation in outside activities?
2. What outside activities do you classify as desirable? What ones as undesirable?
3. How far should the supervisor go in encouraging or discouraging outside activities of employees?

For preparatory consideration

1. "It has been our policy to discourage outside activities of employees. Our experience indicates that a man cannot serve two masters and we have found that employees who have other interests do not get on well with us."
2. "It is well for a man to take his work seriously and perform his tasks industriously and conscientiously. But, there is such a thing as getting his mind into the job-groove. In the long run he will do his work more effectively if he will let his mind change the subject after the whistle blows at the end of the day. In our plant we encourage employees to participate in some outside activity in the time off the job."
3. "It should be the aim of every supervisor to do his part in relieving the worker's mind of job anxiety and aggravation so that he can go out at the end of the day's work without carrying with him a mind full of worries and bitterness. He has then done his part in keeping the job from spoiling his worker's recreation hours. How far a boss should go in checking into and attempting to regulate the details of a man's life outside the plant is very questionable. It can probably be agreed that when a worker's outside excesses result in his inability to deliver a fair day's work for which he is paid, his boss has a right, and a duty to take a hand. The boss has another responsibility--he must set a good example himself."

Outside Activities

- 2 -

Outline of Subject

Results of employee participation in outside activities

1. Benefits which may be derived by the employee.
 - Pleasure and recreation
 - Improved health
 - Financial gain
 - Education
 - Valuable experience
2. Benefits to be obtained by the Company
 - Increased morale and satisfaction
 - Reduction of lost time from poor health
 - Good will and loyalty from activities sponsored by the Company
 - Increased efficiency on the job
3. Undesirable results
 - Over-participation may result in poor health
 - Loss of interest in work
 - Lost time and divided attention
 - Financial loss to employee
 - Increased accidents

Activities which may generally be considered desirable

Educational (Study or experience)
Recreational (Athletics, hobbies, pastimes)
Civic or Political (Boy Scout, community welfare, etc.)
Social (Organization parties, individual social activities)
Or any activity which promotes Company's as well as employees welfare.

Activities generally considered undesirable

Outside business
Outside work for others (in most cases)
Excess in any outside activities
Or any activity which reduces, job efficiency or employee's future growth or health

Supervisors' position in encouraging or discouraging outside activities

In general it is agreed that the supervisor should encourage activities considered desirable and discourage activities considered undesirable.

Outside Activities

- 3 -

The supervisor should remember that there is a difference between his own personal interest in employee activities and the interest he expresses for the Company.

Almost all cases where employees have outside interests and activities must be considered and handled as individual cases. General principles should be kept in mind but are not infallible.

AB

APP.
4

(Sample of complete interview referred to on page 9, section 2. Used in Operating and Inspection Branches in earlier stages of conference training based on employee interviews.)

Meeting No. 2.
Department 6088-2.

"I like the vacation plan. It does away with favoritism they used to show in giving vacations.

"I like the A. T. & T. Stock plan. It is the best way I have of saving money.

"There are very few places that keep their toilets as clean as they do here. The men could even help more if they would try."

- - - - -

"We are standing on a metal floor and you will find about fifty per cent of the men are bothered with their feet. The floor is dangerous for it is very easy for one to slip and get hurt.

"There are some guards on the machines that should be taken off or else designed differently, as they often cause a man to get a scratch or cut while fixing the machine.

"We have material that we lift here that is too heavy. There is a great danger of getting a rupture and if we should, we would have a hard time explaining it to the bosses, as they caution us against doing any heavy lifting. If they would install a system to take care of this material, it would improve the conditions considerably.

"The light in the department is not very good, but I feel as though I had better not say anything about it, as it surely took a long time to get light as good as we have now.

"It is a bad place to work in the summer time for the sun shines directly into the department and it gets pretty hot. We have no shades. They have them in the offices, but not for the operators. We used to have a plan of opening and closing the windows at regular intervals. This was a very good plan, but it has been discontinued. We need better ventilation all the way round.

"We are working the limit on overtime now. I feel unfit sometimes to do my work right. We get no recreation. There should be a limit as to the number of hours a man should work every week. The money part of it is all right, but it is not always best for our health to work as much overtime."

- - - - -

"I cannot say I dislike my job. I have been doing it so

long that I never stop to think whether I like it or do not like it."

"Say, there is one thing I would like to ask you and that is what can I do to advance myself at the Western Electric Company. You see I have been here over five years and I am not learning anything at all. If I could get some good advice from someone here as to what line I should study, I would go to night school. Some fellows have said, 'Stick around; you may become a gang boss,' but I believe many a gang boss's job isn't a bed of roses by no means."

- - - - -

"Personally, I can't say a great deal about my bosses. If I get bawled out I generally deserve it. The gang boss is friendly. Of course, they are crabby on certain days of the week, but that is human nature, you know. Most of us get that way at times.

"I can't say much about my foreman as I never come in contact with him. He doesn't talk much to the boys and is very busy at times, but he always finds time to say, 'Good morning' to us. He isn't stuck up like many of the foreman are. You know, when a foreman comes around and speaks to you, you feel better all that day.

My old assistant foreman wasn't that way. He very seldom spoke to us. Of course, it was just his way and not that he had anything against us, but he had a very poor personality. For instance, if you were walking by the boss's desk and he was looking right at you, well, if he wouldn't speak to you, you begin to wonder if the boss is mad at you, and you have that on your mind all day long until he comes down feeling good enough to recognize you."

SV

APP.
5

(Sample of subject conferences referred to on page 10 of Section 3. Employee comments representing varied opinions on the same subject, both right and wrong, were presented for conference discussion.)

Operating Branch,
Meeting No. 10,
Department 6088-2.

I. General Comments Regarding A. T. & T. Stock

1. "I think the Company savings plan is wonderful. It certainly helps a lot of people that I know wouldn't save a penny if it wasn't deducted from their pay. I wish I had known about A. T. & T. when I first started here, but no one ever told me about them. Of course, I had heard of them, but I thought it was just for the bosses."
2. "I am buying seven shares of A. T. & T. Stock. I worked for the Company some time ago and saved up several thousand dollars. I thought I would get rich quick, so I went into business. I only lasted three months. The next time I accumulate several thousand dollars, I won't be so foolish."
3. "I have purchased A. T. & T. Stock, but I was always of the opinion that I could save my own money as well as the Company could do it for me. When it seems to be compulsory to buy A. T. & T. Stock, that is the time you resent it."

II. How the Buying of Stock Affects Your Earnings

1. "I have six shares of A. T. & T. Stock. That is something good about the Western. I figure that if I hold it until the World's Fair, it ought to be around \$350. It was \$190 when I started here."
2. "Say, what do you think of that A. T. & T. Stock? It sure is going up. It is more than double the price we pay."

III. Selling your A. T. & T. Stock to Meet Emergencies

1. "In regard to the savings plans, I think the A. T. & T. Stock is very good. One thing I like about it, should a case arise where it would be absolutely necessary for me to dispose of my stock I can do so and I get six per cent interest. Now, if I would have placed that money in the bank, I could have only drawn three per cent interest."
2. "I think the Company should give a separate stock certificate for each share of A. T. & T. Stock. Last winter I needed two hundred dollars and had to sell six shares of stock because it was on one certificate. If I had separate certificates, I could have sold one and kept the other five. Now that money has slipped away from me."

IV. A Few of the Thankful Ones

1. "Since I have bought A. T. & T. Stock I am more interested in everything."
2. "If it was not for the chance to buy A. T. & T. Stock on the installment plan, I would never have learned to save. I will sure thank my bosses for suggesting this to me."

V. The "Sorry" Club

1. "I think the Company thrift plan is a wonderful thing. I am sorry I didn't take A. T. & T. when I first started here, but I had no one to explain it to me and did not know the value of them."
2. "What is this dope about the price of A. T. & T. Stock going up to four figures? I was buying seven shares and I would have had it paid up by this time, but last fall I got stuck on the new Ford and canceled my stock subscription. If I had waited until now I would have the price of three Fords."
3. "I never realized at first what this stock would amount to in a few years. If I had know what it meant, I would have bought more at the time."



(Sample of newer interviews, shortened from 8 to 2 pages, referred to on page 10 of section 3, frequently introduced in conferences for variety and interest.)

Technical Branch-M.
Meeting #6.
Department 6088-2.

COMMENTS FROM AN EMPLOYEE'S INTERVIEW

I: "Perhaps you might like to give me an idea as to what you think a good supervisor should be like."

E: "I think first of all he should be able to handle his men right, and should know how to show them courtesy. They should never bark at a man or talk in such a way that a man doesn't feel like taking it. You know, some men, there's no getting away from it, are very quick tempered, and they must be approached in the right way and if they are they will do anything for a supervisor, but if someone barks at them - well, then it is time to look out."

"You hear employees say that this place is a jail, but it isn't, it's the supervisors every time Another thing: Supposing a man gets hurt. Maybe he lifts up something and slightly bruises his hand or makes a scratch or something like that. Well, you have to tell your boss about it or go to the hospital. You tell the boss about it and he growls, 'Why are you so clumsy?'

"You understand, of course, that he fills out a big report for some small scratch. You know how easy it is for blood poison to set in, and all you have to do is to have them bandage it up or put some antiseptic on it or something. The supervisor, as perhaps you know, has to make out a report of time lost through accident besides filling out a number of other blanks.

"When you get bawled out and you don't like it, they tell you to go down to the Pay Roll and get your time. Lots of fellows tell me that the boss says if they come in late again, that they shouldn't come down at all, and I know a lot of fellows who are sick and are afraid to go to the hospital because they are afraid they will get sent home. You know we aren't given any pay for the first week out.

"What these men try and do is to stick it out instead of losing that week's pay and then many times they get worried, and in the end it costs them more. I really think that if a nurse is sent around to a man's house and she finds out that he is actually seriously sick, that they should pay him for the first week he is off beginning with the very first day.

"A man has to be pretty sick, I believe, to be off more than a week, but nevertheless he loses a whole week's pay no matter how he

Technical Branch-M.
Meeting #6.
Department 6088-2.

feels. For a married man that is an awful lot of money. I know a lot of employees who have been afraid to go to the cold treatment room for the mere reason because they are afraid they will be sent home.

"Here is something else: In regards to this Personnel Department. I don't know whether that department is a bluff or a disgrace to the company. A man goes for a transfer and the first day that he goes up there they tell him that they will line something up for him, and then the next day they will say, "No, we are sorry that we haven't got anything." I don't know whether they have conversation with the bosses over the telephones or not; but if they do, I think that is all wrong.

"If you follow the rules, why you get bawled out for it because the rules aren't right; and if you don't follow them you get bawled out. So.....it makes a fellow wonder just what he should do. Why not have one rule which everyone abides to."

SV

App.
7

(Sample of material now presented - see page 12 of section 3, in which a supervisory case problem and employee comments on the same subject are used.)

SUPERVISORS' CONFERENCES
FALL - 1930

SERIES NO. I

Conference No. 3

Principles of Successful
Supervision

Orders? Directions?
Suggestions? Teamwork.

(The following remarks are based upon conversations with two supervisors. The comments of each told about the same story so it is written up as though one supervisor did all the talking.)

"Since our new supervisor, [REDACTED], has been in our department things have sure changed! I guess the whole problem is that he doesn't know how to get teamwork from us or from our employees.

"When our former supervisor, [REDACTED], was with us, there was a wonderful spirit among all of us. Our work was always 'Up to snuff' and everything was done good enough that they promoted Dee to a better job. We sure hated to see him go.

"Since [REDACTED] took his place, things have gone down fast. In the first place, he came in here from a different kind of work, and thus knows practically nothing about our work. We sure got 'sat on' when we old timers who had been on the job for some time tried to help Jones over the 'rough spots' by pointing out to him those items in our work on which we had to keep an eye if things were to keep running smoothly. The same thing happened when we told him what policies we had been following in dealing with our people. He let us know mighty quick that no subordinate could tell him anything about his job, and that he felt himself perfectly able to run the job, and that our job was to take orders and say nothing.

"If he sees some one laughing or talking during working hours or if he sees someone take a minute after the starting whistle to finish reading a newspaper article, he rushes over to the employee's supervisor and sarcastically asks, 'What's the matter with that loafer over there, don't you have any work for him, or are you afraid to tell him that we start to work here as soon as the whistle blows?'

"Perhaps I shouldn't be too severe. When he wants to be, [REDACTED] really can be a fine fellow, and some of his ideas are great, but some of them are all 'wet' and he won't discuss them with us or in any way take advantage of our experience. On top of that he seems to take a delight in continually making us realize that he is the BOSS.

"Since he came here the old spirit of our bunch is pretty much gone. We all seem to have developed the habit of doing exactly

as we are told and no more. He never tells us what he is trying to do, and our real interest in the job is dead. If we try to make suggestions, he simply says, 'I'm not interested; I'm doing things in a better way.'

"Sometimes I'm ashamed to pass his orders along to my employees. I suppose they think I have lost any knowledge I used to have about how the jobs ought to be done. All I can say is, 'That's the way the boss says to do it, so that's the way we'll do it.' I try not to say even that, but sometimes my own self-respect makes me 'alibi.'

"I'd like to know what my real responsibility is in this affair. I know this condition is bad for the department. I've tried to tell [REDACTED], and it doesn't work. I have my family to support and can't take too much into my own hands. The big boss surely thinks Jones is O.K. for the job or he wouldn't be there.

"I'd like to see this discussed in the conferences. I know of some other supervisors who have about the same problem, and I think it could be discussed so that we could all profit by the experiences of the other fellows."

SV

Employees' Comments on "Orders? Directions?
Suggestions? Teamwork."

1. "When our boss wants a certain job done, he don't tell us how to get it out. He can't - He don't know himself. He just tells you to have it done by four or five o'clock and then walks away, when sometimes it is utterly impossible to do this. It don't pay to reason with him. When he comes back, he wants to know why you didn't get it ready. He has no reasoning."

2. "I don't know just why I like my boss. I guess we get along well together because he has a way of asking me to do a job that makes me feel good. Sometimes I don't like the work he asks me to do, but I do it willingly because he asked me to do it in a nice way."

3. "The main thing I have in mind is the fact that our supervisors think we should know more than we do. They expect too much from us. They say we should work on our own hook and then if we do that and make a mistake, they say that we should have asked them for advice. The trouble is, we don't get any credit for doing good work, but they sure let us know when our work is bad."

4. "That's the way the boss gets back at you. He gives you a rotten job or gives you just enough of an idea to make you wonder what the work is all about. You have to take a great deal of time to figure out how to go about the job."

5. "This just burns me up - it isn't so easy to avoid accidents when you're not familiar with a job. They can't explain all about the job to you in one lump. Then, when you have an accident they say, 'What's the matter?' About the only way we can learn anything about the hazards is through experience."

6. "On this job, our supervisors actually baby you too much. I get so disgusted with it, but I suppose they think they have to because of the importance of this work."

7. "One thing I have noticed more than anything else around here is the lack of cooperation between the supervisors and the fellows. I feel that the supervisors should talk more to the employee and try to understand the human side of this work. Of course, I realize that their time is limited and they have to get the job out, but I think they should get in and mix a little more and they will be better able to handle all situations."

8. "When our supervisor has any occasion to correct or reprimand any of us, he does so in a decent way. He seems to have confidence in his people. He tells us what he wants us to do, and then he lets us alone."

9. "Our supervisor is very funny sometimes. We are afraid to ask him anything twice because he gets so mad. He doesn't treat the girls so bad but he is terribly fresh to the men and he calls them mean names. I would report him, wouldn't you? One of the men in our organization is supporting a widowed mother, and he never answers the boss back because everything depends on his job and he don't want to lose it. One time this man made a lot of work bad because he did not want to ask the boss the second time how to work on it and then the boss bawled him out."

SV

App.
8

H A R V A R D U N I V E R S I T Y

Soldiers Field
Boston, Massachusetts

February 9, 1931.

G. A. Pennock, Esq.
Western Electric Company
Hawthorne Station
Chicago, Illinois

Dear Mr. Pennock:

I am delighted to have an opportunity of setting down for your consideration some of my reflections upon the experimental work of the past four years at Hawthorne. There are of course limits to what one can say in a single concise statement; the investigations have developed so many possibilities for industry of immediate benefit, and of further inquiry, that one cannot cover the whole field. In selecting certain of the apparently important issues for consideration, I shall, however, try to choose problems that are characteristic of the various major aspects of the research.

I. The Status of the Western Electric Inquiry.

The first question I propose to consider is that as to the comparative standing of the Western Electric experiments. There has been, in recent years and especially since the war, much inquiry into the work situation (including questions of fatigue) throughout the world. How does the Western Electric research compare with other investigations?

The most systematic attempt at research in this field is that presided over by a sub-committee of the General Medical Council in England, known for some years as the Industrial Fatigue Research Board. Inquiries fostered by this group have been continuously in process for more than ten years; the results of the inquiries have been published from time to time in the form of official monographs on this or that aspect of industrial situations. The general character of the work, and much of its unquestioned achievement, is presented in summary fashion in a book entitled "Industrial Fatigue and Efficiency" by H. M. Vernon (E. P. Dutton and Co., 1921). Dr. Vernon was one of the original Fatigue Board investigators; he still carries on such research. He was formerly a Fellow of Magdalen College, Oxford; he holds a degree in Arts and is also a doctor of medicine.

His book is regarded as a standard work on the subject of educational authorities in the United States and in Europe.

On inspection one finds that the book presents a great mass of industrial observation and experimental work. The topics discussed range from fatigue to the effect of "monotony"; "limitation of output", hours of work, wages, "safety" work for the prevention of accidents are also discussed. The experimental work is, for the most part, Vernon's own work; there is difficulty in relating it immediately to American situations since his observations were largely made in munition factories during the war. The difficulty of comparison may be illustrated by reference to a discussion, in the early part of the book, of differences of output and probable fatigue in a week of 74 hours and a week of 55. It is obvious that one might easily find a factor of "fatigue" in a 70 hour week where such complication - for the same job and working conditions - would not be discovered in a week of 48 hours. Another difficulty is that Vernon's work was undertaken in a situation of grave national emergency and desperate need. His inquiries are therefore more urgently practical than scientific. He enters a factory where improvement of working conditions is needed, he experiments with rest periods or length of working hours, taking output as his measurement - also the amount of "spoilt" work, number of accidents and so on. When more satisfactory conditions of work have been obviously established, he is moved on to experiment and re-order industrial methods elsewhere. In sum, therefore, he makes numerous observations of high value, but he does not succeed in establishing a continuous research anywhere. This does not in the least diminish the high value of his observations or his book. But it means that in the end he rather defines the questions industry must face than begin the difficult business of restating and answering such questions.

Since the war a National Institute of Industrial Psychology has been established in London under the leadership of Dr. C. S. Myers. I am a member of the Institute and a personal friend of Dr. Myers. I have the greatest admiration for his accomplishment in a difficult situation, but I feel again that, owing to the general position of affairs in England, Myers and his chief assistant Dr. Miles have not succeeded in establishing anything in the nature of a continuous research at a given point in industry.

The work of the International Institute of Management at Geneva under Major Urwick has not as yet become experimental. Major Urwick is immensely interested in the Western Electric researches, so much so that he has recently published an abstract of the papers by yourself and Mr. Putnam as a special number of the journal of the Institute - in three languages. But his own work for the time being is of necessity mainly propagandist.

Speaking with direct knowledge of these three agencies and of the men working in them, I think I can say that they feel, as I do, that the Western Electric experiment is unique. This for the following reasons:

1. The investigation has been developed by the Company itself, or by certain of its officers, in order to discover something more definite than is known with respect to the effect of modern industrial methods upon workers. It is distinctively an inquiry or research and not a "plan" or system.
2. The experiments have been better planned and controlled than has been possible elsewhere. This is obviously a consequence of the first reason stated above. There has been no "external" irruption into the plant to set up the experiments.
3. The experiments have been more continuous than those undertaken elsewhere. This has meant much more adequate "long time" records of the effects of experimental variations of conditions: it has also meant the development of subsidiary inquiries where such inquiries seemed to be demanded by the original experiment.

Neither of these characters - the continuity or the subsidiary researches - is to be found in other industrial experimentation. There is no criticism of other investigators, in England or elsewhere, implied in this statement.

II. The Experimental "Test-Room".

The test room at Hawthorne really demands description in book form; it represents an entirely new departure in industrial research. It is this which makes it so difficult to present effectively to an ordinary audience. Such an audience inevitably occupies itself with the endeavor to classify the serial experimentation under this or that existent category of so-called research, or they may try to understand it as a "plan". In either event they fail because of the novel character of the procedure - which makes many of them restless and inclined to repudiate the effort of understanding demanded.

For over three years at Hawthorne, the output of the five girl workers in the experimental room rose steadily with only minor variations. This was accompanied by unquestionable improvement in the general health and morale of the workers. Minor changes in the output curve can be related to the itemised experimental changes imposed. Two rest periods, for example, of fifteen and ten minutes respectively

in the mid-morning and mid-afternoon, are much more effective than six five minute rests in the working day. But the major change in output, the increased production which is the most startling feature of the experiment, is quite obviously not accounted for, in any considerable degree, by any itemized change, nor by all of them taken together. During three months when the original conditions of work - no rest periods, refreshments or shorter working hours - were reinstated, the major increment in production ignored the experimental change and rose steadily as before.

The broad significance of this fact, which could not have been discovered, if the experimentation had not been continuous, has, perhaps fortunately, not been generally realized as yet. Nor is the notable increase of output a passing phenomenon of the experiment. At the present moment when workers generally are "anxious", and are certainly indisposed to general increases of output, the five girls are producing in a thirty-seven hour week rather more than they originally produced, as skilled workers, in a forty-eight hour week.

This feature of the experiment was for some time a puzzle to the officers in charge of the inquiry. But the advantage of continuity of research, when intelligently directed, again revealed itself. Three observations gradually emerged from the multiplicity and established their claim to be considered as important. These were:

- a) The freely expressed relief of the workers at their freedom from ordinary supervision.
- b) Observation in several instances of the effect of personal preoccupation or misfortune upon the production curve, and recovery of production when the pre-occupation disappeared.
- c) Finally a "case in point" emerged - that of [REDACTED] in the Mica room. This worker's production during forty-six weeks showed just such an improvement, irrespective of experimental conditions, as the general production curve in the original test room.

In the last instance it was possible to trace the effect, in steadier and higher production, of changes in the worker's general, and especially domestic situation. In this instance, as in the others noted (Section b) the difficulty bore no relation to anything in the work situation. Nor could it be related to supervision, for these instances occurred in the test rooms where there were observers but no supervisors.

The Western Electric use of the interview.

It was obviously necessary to broaden the area of inquiry to discover whether any sort of preoccupation, domestic or otherwise, was generally affecting the morale and production of workers. The small number of workers under observation in the experimental rooms made generalization on such a basis impossible - even though the experiments had served to formulate the questions that demanded answer.

At this distance in time, however, from the institution of the interview method it is difficult to say exactly what form the question took in the thinking of the experimenters. We know from the records, of course, what was said and the original form of the questionnaire. But the speed with which this was discarded when the work had once begun shows, I think, that a question and answer type of investigation (of, for example, supervision) was never regarded as relevant or important. The experimental work had shown that misconceptions of an actual situation (supervision or what you will) operated to produce results that should only be expected if the situation were really bad. The misconception often originated in circumstances outside the industrial situation, yet nevertheless came into operation in industry as if industry were responsible. Putting domestic and private preoccupations on one side, the experimenters asked, in effect, whether widespread misconceptions of "work" and "supervision" were affecting adversely the morale and output of the Works personnel. Two leading questions present themselves:

- a) To what extent do misconceptions or falsifications of the work situation give rise to diminished morale and output, or to cheating, deliberate restriction of work and so on?
- b) If this is generally the situation, is it possible for supervision to develop an entirely novel industrial method that will go far towards disposing of such falsification?

At no time, as I see it, did the research imply a direct criticism of existing methods, except perhaps in a few isolated and negligible instances. The interviews increasingly have shown that an attitude of hostility towards a "boss" includes always something of falsification, and has small value as a critique, in the ordinary sense, of supervision. The interview quoted in the report provides an excellent instance. The worker interviewed remarks quite early that she dislikes X, her group chief. She then goes off into a long history of the incredible "meanesses" of her step-father. The story finished,

she remarks casually that X reminds her of her step-father. The story would be amusing if it were not tragic; the unfortunate group chief is caught up into a muddled resentment of a "mean" step-father, of whom he knows nothing. He has to suffer as if he were the other man; no wonder he finds the girl a problem case.

The falsification is not, however, confined to supervision and personal interrelation. Interviewing has discovered that a whole department, from the supervisor down, regards itself as "side-tracked" and neglected. It is "in a backwater"; its morale and performance, under the influence of this misconception, are as poor as if the falsification were the actual truth.

Let me attempt, at this point, to express myself with complete clarity. The test room had shown a remarkable increase in production, easily developed and maintained, and obviously not directly related to the itemized changes imposed. This change was, and is, associated with improved health, there is no symptom of "fatigue"; "absences" have also diminished and the workers have developed what Mr. Putnam calls a "zest for work", a positive preference for the duties and the surroundings of the test room. So much for the first stage of observation.

The second stage of observation is concerned with mental attitudes and preoccupations; here also there are minor and major changes to be observed:

- a) The minor changes are those mentioned which show a direct relation to obtain between preoccupation with private misfortune and a diminished production for the duration of the preoccupation.
- b) The major change is that to be observed in the girls' change of mental attitude toward the Company officers, the Company itself, supervision generally, and their work. They have lost all shyness and fear; they enjoy their increased earnings without any apprehension of "rate-revision"; they talk freely on any subject to the official observers. It is this major change of mental attitude which is associated with the major improvement in production.

These two changes, the minor and the major, are of a kind. The minor are more readily observable, because the comparative difference (compared with the other workers and with the individual's former achievement) draws attention to itself and to the private situation which is cause. The major change is more important because it implies an

attitude to industry generally, no matter what working conditions are, which makes for poor performance and low morale - and for which industry has developed no corrective device. Indeed, industry, though uneasily conscious of the general is not at all aware of the specific problem.

A Major Industrial Problem.

It has become exceedingly necessary to discover how far the general industrial situation, especially at the Hawthorne plant, is cramped and hindered by prevalent mental attitudes of this type. And it is to this problem that the interview method is essentially addressed. Interviewers from the first have been alert to observe the irrationalities and falsifications that make personal interrelation unsatisfactory and high morale difficult of achievement. These - the minor problems - find illustration in the interview attached to the report which I have already quoted.

But in the last twelve months, the interview method has begun to sketch, in preliminary fashion the major and exceedingly critical problem. Industry hopes, not without justification, that the smaller personal difficulties will come and go; time and the better supervisors aid the process. In this area the research programme has already demonstrated its use and necessity. But the major difficulty (the end result observed by certain economists, notably Professor Leiserson of Antioch) persists and is not yet dealt with by industry - since no one has yet devised a way. The interviews reveal a general situation which may be stated, subject to correction, somewhat as follows. Workers generally (that is, all of them) suffer, perhaps for no good reason, an apprehension of authority, of supervision, of the Company they work for. This is found even in the most reputable plants and in the best working conditions. At worst, it takes form as a tendency to try to "get the best of" the Company; at best, it takes form as a fear of developing that zest in work of which Mr. Putname speaks. The apprehension of preoccupation is sometimes clearly conscious, in which case there is deliberate restriction of output. Elsewhere it is unexpressed except as a production lower than need be - a "defensive" reaction. I think it may be claimed that recently the interviewers have found evidence of the existence of one or other of these situations everywhere - even at Hawthorne where the conditions of work are superior.

Two conclusions would seem to follow. In presenting these, I realize that they are tentative and I would not wish to commit any other person to them. I present them because, even if not wholly true, they at least indicate directions for further inquiry. The conclusions are:

- a) The major improvement in the test room seems to relate itself to the dissipation of these more general and industrial "falsifications" of situation.
- b) Since these preoccupations (and therefore restriction either of the conscious or unconscious type) prevail widely in the Plant, one must tentatively conclude that the accepted production is 30% or 40% below what it would be if means were found to deal effectively with the situation. This is not a condition that can be lightly accepted by industry.

I do not wish to labor the point further. I only wish to point out that

1. No means of dealing effectively with such situations exist elsewhere in industry.
2. The Western Electric inquiry is gradually defining industrial situations with far greater precision than any other investigation. It therefore is to be regarded as the best hope for a future solution of the problem.

I hope I have said enough to show the absurdity of certain accusations against the whole inquiry made in my hearing by men who have never visited Hawthorne. These accusations are that "it is a spy system" or "it is unfair to supervisors". Both these statements seem to be absurd. Another claim is that "the work could be done by the supervisors themselves". Here I must confess that at one time I had a somewhat similar idea. But as the inquiry developed in the directions indicated above, I came to see that this claim cannot, at least at present, be sustained.

I make no comment on the analysis of interviews since I have already been somewhat prolix. It is a necessary part of the interview program and may at any time develop a previously unsuspected importance. This has been the general history of each contributing activity.

Another Major Problem.

I should like, in conclusion, to point out that the Western Electric inquiry is making another important contribution to the economic understanding of our time, and in a direction at present unsuspected. Seventeen years ago Brooks Adams (Theory of Social Revolutions. p. 217) pointed out that under industrialism the development of science and specialist research has been greatly fostered and encouraged, but there has been no parallel or equivalent development of administrative or executive capacity. He concludes that "the relative overstimulation of the scientific mind has now become an actual menace to order because

of the inferiority of the administrative intelligence." In spite of the years that have passed since Adams pointed out this relative and increasing inferiority, little attention has been given by business men or educational authorities to this important problem. And there is small doubt that lack of interest in the broader administrative problems of our time has contributed, perhaps more than any other single factor, to bring out the unnecessarily grave economic depression in the United States. Industry has tended to give all its interest to the problems of production, finance and management; it has paid small heed to the problems of consumption and the ordering of markets. Both business men and economists have implicitly sanctioned the development of economic studies as a group of unrelated specialisms. Theories of finance, of production and of management are commonly elaborated as if it were possible permanently to segregate these problems from each other. There has been a tendency, for example, to attribute the present depression to gold insufficiency or to "overproduction" or to the Stock Exchange collapse of October 1929 or to some other specific cause. In Europe also one notices that "rationalization" is frequently discussed as if improved management would of itself suffice to remedy industrial ills without any attention given to the other problems of finance, production and market organization. This is what Brooks Adams means by the ultimate insufficiency of any merely specialist logic, the relative "inferiority of the administrative intelligence." The four directions of inquiry are abstract; finance, production, management, market organization represent four aspects of a single total fact - partial aspects which an existent situation holds in some sort of equilibrium.

It is clear that in such a balanced system an external stress which affects any factor singly will be resisted by the system as a whole; such a stress will therefore lead to an inner change of equilibrium affecting all factors. Insufficient credit or an oversupply of workers or the loss of a market will effect a change in the general balance. The changes termed "cyclical" are always of this nature - a fact which shows that the concept of "cycles" adds nothing of value to, and indeed actually obscures, our thinking. The situation described as "overproduction" cannot be taken to mean merely too many machines and factories that are too large. Nor is it enough to observe, with Mr. John A. Hobson, that overproduction is due to "underconsumption." What overproduction means, and especially in a developing community, is unbalanced growth. In any such situation it is probable that the need to provide for the ordered development of consumption and of markets has escaped the attention of the specialists. Overproduction is unbalanced production and is not merely or mainly the production of too much.

"A problem that has escaped the attention of the specialists" - the phrase should give industry pause. It is as important to ensure that all the necessary problems are being considered as to provide for the development of established specialisms. The fact to which Brooks Adams really calls our attention is that in every effort towards human advancement two types of problem are involved - and if attention is not given equally to the two problems the adequacy of the work will suffer, whether it be work in a university or in industry. The two problems are, first the development of specialized and abstract knowledge, and, second, the adaptation of specialist knowledge of the handling of situations in fact at the experiential level. It is possible for a scientist in his laboratory to concentrate his attention upon a particular group of problems and upon the development of a logic appropriate to such a particular group - chemistry, physiology or what not. The enormous advantages of this selective and specialized method have been demonstrated by a century's achievement in the development of knowledge. But the apparent success of specialized and logical research in the universities has tended to conceal an essential condition of such success which is not included in the mere specialization. Any selection of facts for inquiry - "the scientific method" - tends to result in a logic, an increment of systematic knowledge. But any such logic tends to exhaust itself, to work itself out, unless there is a constant reformulation of the question that is being studied. And the man or men responsible for such reformulation are distinguished by the fact that they are capable of working with their mental vision set equally upon the special logic they develop and upon the original mass of empirical data from which their problem has been selected. There are therefore, and it is important that there should be, two types of scientists; the one is mainly logician, eminently systematic and rational, the other is logician but also scientific adventurer. The scientific adventurer uses every gain in his knowledge to define more clearly the "gaps" in it. That is, he capitalizes his ignorance in such fashion that finally the obvious "gap" in his logic actually shows him the exact point at which to renew his inspection of the empirical field, the point at which a new adventure and experimental departure must begin. This is essentially true of all our leaders from Faraday to Einstein. And if our universities did not include, often by sheer inadvertence, a proportion of such men in their ranks, our alleged scientific progress would speedily peter out and come to an end.

And what holds true of the scientific field holds also of executive administration. It is fair to say that industry has copied the specialized method of scientific inquiry fairly well; but it has failed to notice, and to provide for an attack upon the other type of problem. And in matters of economic administration, such inadvertence is far more disastrous in its consequences than it is in a university. An administrator of human affairs cannot afford to neglect or to forget his original and complex human situation. A specialist he must be,

perhaps originally a contributor to scientific development; but if he is to be an effective administrator, he must work with an ever present sense of the inadequacy of his knowledge and his logics. He must not only study the relation of his special work to the work of his colleagues, he must be alert to symptoms in the situation of the need for new inquiries not yet undertaken. He must indeed endeavor to anticipate the emergence of such symptoms; more than any scientist, he must use everything he knows to define with increasing precision the gaps in his knowledge. He also must capitalize his ignorance.

It seems to me that the Western Electric research program - and especially perhaps in its supervisory conference activities - is admirably adapted to

1. Permanently raise the level of all supervision.
2. Discover and develop men of exceptional (and rare) capacity for executive administration.

This letter, sir, is mere comment. It is remarkable rather for the important things it has failed to say than for what it has said. But one cannot cover even one-half of the interesting questions raised by the admirable report I have read. I have merely selected one or two problems which seem to me to possess considerable importance now - and I fear that even these few have led me to write at unconscionable length.

Yours very sincerely,

ELTON MAYO.

App.
9

March 12, 1931.

MR. G. A. PENNOCK: .

Some time ago in discussing plans for a review of our employee interviewing and supervisory conference programs, it was agreed that it would be highly desirable to have an expression of opinion from our supervisory staff on both of these programs. I have, therefore, sent to each supervisor in the Operating Branch a questionnaire designed to obtain this data. I am attaching a copy of the questionnaire together with a copy of the letter of transmittal.

We are now making a detailed analysis of the replies. This work will require some time and I do not expect to be in a position to give you a complete report until the middle of April. I can, however, at this time give you a statistical analysis showing the affirmative and negative opinions received on each question. This analysis is given below:

<u>QUESTION</u>	<u>DISTRIBUTION OF 563 REPLIES</u>	
	<u>% Yes</u>	<u>% No</u>
1. Do you think the employee interviewing program has been worthwhile?	95.6	4.4
2. Based upon your observations, do you think the employees under your direction consider it worthwhile?	89.	11.

QUESTION	DISTRIBUTION OF 563 REPLIES	
	% Yes	% No
3. Have you noticed any change in the employees' attitude after being interviewed?	80.7	19.3
If so, was it an improvement or were they more difficult to supervise?		
Improvement	80.2%	
More Difficult	19.8%	
4. Do you think we should continue to interview employees?	93.8	6.2
If so, how often should each be interviewed:		
Replies - Monthly	.7%	
Quarterly	3.5%	
Semi-Annually	29.2%	
Annually	50. %	
Two years	12.6%	
Three years	2.1%	
Five years	1.9%	
5. Do you think the supervisors should also be interviewed on the same basis?	71.	29.
6. Have the Supervisors' Conferences using employees' interviews as material for discussion been more valuable than conference using theoretical cases or principles for discussion purposes?	77.5	10.5
	Favor Combination	
	12.	
7. Have you noticed any changes in attitude among the supervisors with whom you are acquainted since the beginning of the conference discussions?	91.7	8.3
8. Do you think that the present series of conferences based on employees' interviews has resulted in a better and more clearly defined understanding of the supervisor's duties?	96.5	3.5

<u>QUESTION</u>	<u>DISTRIBUTION OF 563 REPLIES</u>	
	<u>% Yes</u>	<u>% No</u>
9. Have the conference helped in showing how the supervisor's duties may best be performed?	97.5	2.5
10. Do you think you are a better supervisor than you would have been without attending these conferences?	92.2	7.8

It is obvious from the foregoing figures that a very great majority of our supervisors in the Operating Branch feel that both programs have been of great value. Based upon a very rapid scanning of the questionnaires that have been returned, I have been particularly impressed by two things:

1. While practically all of the questions lend themselves to a one word answer, in a great number of cases the answer has been amplified to include reasons in support of their opinion.
2. There have been many more suggestions of a concrete nature than I anticipated and it is particularly gratifying to me that practically every suggestion has been of a constructive nature.

As I see it now, in addition to obtaining an expression of opinion from the supervisors, this questionnaire will return rather large dividends as a source of material which can be used in developing especially our supervisory program.

As stated above I expect to be able to give you a rather complete analysis of the returns by April 15.

H. C. BEAL - 6300.

Western Electric Company

INCORPORATED

HAWTHORNE WORKS

HAWTHORNE STATION

CHICAGO

H. C. BEAL

OPERATING SUPERINTENDENT

February 9, 1931.

IN REPLY REFER TO

It has been approximately two years since the employee interviewing program was initiated in the Operating Branch. You are very familiar with the nature of the comments which the interviewers have received and the use which has been made of them.

It seems advisable at this time to take an inventory of this activity in order that the plans for the future may be based upon our experience to date. In view of the intimate part that you and the other members of the supervisory staff have taken in this work, this inventory must include your comments and criticisms if it is to be complete. One of the original conditions of the interviewing program was that the employee's comments were to be confidential for reasons fully understood by everyone. That pledge has been kept. In asking for your comments, suggestions and criticisms at this time, it seems desirable to do it on the same confidential basis.

I have listed on a separate page attached to this memorandum, a number of questions which are intended to serve as an outline for your use in submitting any suggestions or criticisms which you may wish to offer. I hope you will assist in making this survey worthwhile by frankly stating your opinion, deviating from the outline or adding to it as you see fit. I am particularly interested in your own personal opinions and would prefer that you do not allow your reply to be influenced by the opinions of your associates regardless of their rank in the organization. You will note that many of the questions can be answered in one word, either "yes" or "no." If you wish to give a more detailed answer or reasons in support of your answer in any case, I shall be glad to have you do so. You may use the reverse side of the page for that purpose.

Your reply should be sent to me unsigned in the enclosed addressed envelope if possible not later than February 14, 1931.

Yours truly,

HCB-MCR

Operating Superintendent.

1. Do you think the employee interviewing program has been worth while?
2. Based upon your observations, do you think the employees under your direction consider it worth while?
3. Have you noticed any change in the employee' attitude after being interviewed?
If so, was it an improvement or were they more difficult to supervise?
4. Do you think we should continue to interview employees?
If so, how often should each be interviewed?
5. Do you think the supervisors should also be interviewed on the same basis?
6. Have the supervisory conferences using employees' interviews as material for discussion been more valuable than conferences using theoretical cases or principles for discussion purposes?
7. Have you noticed any changes in attitude among the supervisors with whom you are acquainted since the beginning of the conference discussions?
8. Do you think that the present series of conferences based on employees' interviews has resulted in a better and more clearly defined understanding of the supervisor's duties?
9. Have the conferences helped in showing how the supervisor's duties may best be performed?
10. Do you think you are a better supervisor than you would have been without attending these conferences?
11. What suggestions, comments, or criticisms have you to offer in connection with either the interviewing or supervisory conference programs? (Write below or on reverse side.)

HCB-MCR

COMMENTS ON QUESTIONNAIRE
SENT OUT BY MR. BEAL

Supervisor (to former interviewer): "Your old interviewing organization surely is being backed up by Mr. Beal. Did you see the questionnaire he is sending out to all supervisors of the branch?"

Foremen (in conference): "You say that all the questionnaires are not in? I imagine the Gang Bosses can't appreciate that it is their opinions that are being solicited, and because they can't write a good letter they won't send in anything at all."

Another foreman: "I believe that anyone with a decided opinion either one way or the other will get that opinion back to Mr. Beal regardless of his ability to write a letter."

Employee: "My boss got a letter from Mr. Beal the other day about the interviewing work. You know, my boss and I are close friends, and in this letter they asked what the employees thought about the interviewing program. The boss didn't want to go around and ask the fellows themselves so he had me do it on the sly so that the fellows wouldn't get suspicious or be afraid to talk."

Interviewer: "Were you able to find out much?"

Employee: "Oh, I guess most of them like it all right; in fact, they all said they did. There are some that didn't like it 100%. I guess everybody in my father's department likes it."

Supervisor: "You know this letter Beal sent to all the supervisors has the fellows I've talked to stumped."

Another supervisor: "How is that?"

Supervisor: "Some of them figure that Beal isn't so hot on this work and others say it's sure fire that he is sold on it. You know, some of these fellows don't know how to answer the questions until they know how the big boss feels."

"One thing I got from this questionnaire was a better idea of what this interviewing is all about. The questions Mr. Beal asked us to answer cleared up some of this stuff for me and I know some of the other fellows saw things that they never thought about before."

First Foreman (at close of conference last Saturday, when he saw one of the other foremen pick up a copy of Mr. Beal's questionnaire):
"You'd have laughed 'till you were weak if you'd been down in my place when the questionnaires from Mr. Beal came. All around the department you could see supervisors holding their copy up to the light and turning it over and over to see if there were any marks on it. As far as I was concerned, I didn't have any doubt as to the confidential nature of the questionnaire, but for convenience sake, I wrote my comments out in longhand and had a typist type them on plain paper. I didn't even send in the questionnaire itself."

Second Foreman (examining the questionnaire): "There doesn't seem to be any place on it for us to sign."

First Foreman (joking): "Well, you don't need to worry about that and if you do, why you can have it typewritten like I did."

Ex-Conference Leader: "Some of the supervisors I know are puzzled about question number six on the questionnaire. They don't know whether that means to compare the conferences on employee interview material with the job subjects being conducted by the Personnel Organization or with the old conferences we used to have several years ago on "morale," "turnover," and stuff like that."

Conference Lead: "As I understand it, that question was not at all concerned with the job subjects now being conducted by the Personnel Organization and had to do with the earlier type conferences. The meetings being conducted by the Operating Personnel have hardly been going long enough to give a fair basis of judgment in comparing them with conferences on employee interview material which have been going on for almost two years."

Ex-Conference Leader: "Well, I know that some of the fellows who sent in their questionnaires had the other idea about it and compared the two types of conferences now being conducted."

A woman interviewer was talking to a woman who had formerly been an interviewer and is now a supervisor.

Supervisor: "I sent my questionnaire in to Mr. Beal today."

Interviewer: "You didn't lose any time, did you?"

S: "No, I knew what I wanted to say, so I thought I'd do it right away before I forgot to send it in or before something happened to the paper. You know how it is. A paper like that is always the one that

gets in the wastebasket or falls into the dirt on the bench. I had to laugh at my boss though."

I: "Why?"

S: "Well, he looked at his questionnaire upside down and inside out. He really needed a microscope. He tried so hard to find out if there wasn't any mark of identification on it."

I: "What sort of a mark of identification was he looking for?"

S: "Well, he says that they never ask questions around here when they want a written answer; that they don't expect to use the information for or against the person who turns it in. He told me he was sure they had some way of checking up who answered the questionnaire and who didn't and what those said that did answer. He even asked me what I said about the conferences.

"I told him that he went to one kind of conference and I went to another, so that I couldn't see how they could be compared between us. I don't believe he ever will send that questionnaire in. He's so afraid that he will be identified by it."

I: "Well, what is he afraid of?"

S: "Well, that's more than I can tell you, but he's so skeptical about anything that the supervisor asks him; he's so afraid he's going to get in 'dutch' and lose his job or be demoted, that he is very careful about everything."

A woman interviewer was talking to two men group chiefs in the same department.

Supervisor No. 1: "Do you have to answer one of those questionnaires for Mr. Beal?"

Interviewer: "No, he did not send me one. I'm not in the Operating Branch. I suppose that's the reason."

Sup. No. 1: "Well, I haven't answered mine yet. That is, I have answered it, but I haven't sent it in."

I: "When are you going to send it in?"

Sup. No. 1: "I'm going to send it in today before I go to the conference. They may ask us there whether or not we have sent them, and I want to be sure to have mine in."

Sup. No. 2: "I wish I had mine here. I took it home to think it over on Sunday when I had lots of time and I answered it all right, but I forgot to bring it back with me today."

Sup. No. 1: "Well, you can send it in tomorrow; that will be time enough. (To interviewer) Well, when I send my questionnaire in today it won't spoil your job."

I: "What do you mean - 'it won't spoil your job?'"

Sup. No. 1: "Well, in the questionnaire it asked me what I thought of interviewing and I told them I thought interviewing was all right. I didn't want to have you lose your job."

I: "Well, that was nice of you, but at the same time I wouldn't want to have you lie on my account."

Sup. No. 2: "Oh, he didn't mean that. He thinks interviewing is all right and so do I."

Sup. No. 1: "Yes, I think it is a good thing - no joking. I think it helps some of these operators when they have something on their minds to get it off their chests. I know that they don't talk to you about work all the time. Lots of things that they have on their minds they can't be bothered telling us about. It's only stuff that girls are interested in. It helps anybody to have someone listen to his troubles. You know, sitting there at the bench all day without anybody much to talk to, they have too much time to think about themselves. I think interviewing is a good thing and I said so on the questionnaire too."

Sup. No. 2: "I answered my questionnaire the best way I could. I wanted to be sure that I got things right in it. You know, they have so many handwriting experts around here that one can't be sure that it's confidential. Not that I said anything in it that I would be ashamed to face Mr. Beal with, but at the same time, a fellow has to play safe around here. It would be very easy to have the handwriting on these questionnaires checked up, even if they do send out a lot of them."

An interviewer met a supervisor outside of the Works.

Supervisor: "All the fellows (meaning section chiefs and group chiefs) got a questionnaire to fill out."

Interviewer: "Didn't you get one?"

S: "No, only the fellows attending the conference meetings; but XX, section chief, let me read his after he had it filled out. He said it was just like interviewing them, and I noticed one of the questions was about the supervisors being interviewed the same as the employees."

I: "What do you think about that?"

S: "I think it's a darn good idea. We'd all like to get a chance to explode once in a while. I'll tell you the truth, the girls don't mind being interviewed now. They look at it altogether different than when they first started the interviewing. We have [REDACTED] interviewing girls in our section and they like her real well, but when they had that other girl up there, who used to write the interviews down in shorthand, why, the girls didn't like her at all. They called her all kinds of names, and some of them didn't want to go in there, and then when she would get anybody in there like that, she would notice that they didn't talk and she'd try to take notes holding her hands down at her side. The girls were on to her, though."

I: "You did attend the conference meetings at one time, didn't you?"

S: "Yes, but since we have [REDACTED] for our General Foreman, he doesn't believe in that. I guess he hates the women."

Ex-Conference Leader: "Did you fellows have anything to do with this questionnaire that Mr. Beal sent out to all the Operating Branch supervisors?"

Conference Leader: "We didn't have anything to do with it directly. The idea came from Mr. Beal, but we knew that it was going to be sent out. What reactions have you noticed among the other supervisors?"

Ex-Conference Leader: "Oh, I think most of them will answer it all right, but I think a lot of them will answer it the way the Company wants them to answer it and not the way that they really think."

Conference Leader: "But how can they tell what he wants? The copy of the questions that I saw and the letter they sent with it didn't give any indications as to what kind of answers were expected."

Ex-Conference Leader: "No, that's true enough, but you know that when the Company spends as much time and expense as they have on the interviewing and conference business, they think it is all right, and I think most of the supervisors are going to be smart enough to see that."

Conference Leader: "Well, if they do that it will defeat the very purpose of the whole business, because I'm sure Mr. Beal wants to get a frank and free statement about the whole business."

Ex-Conference Leader: "Well, from what I know of the whole program, I think that's true, but I don't know whether the other supervisors will take it that way or not. I've put quite a little time in on answering mine because I've got some ideas that I think ought to be incorporated in the whole plan, and I want to be sure that at least somebody mentions them. They are ideas that I've heard other supervisors talk about so I know that what I write expresses more than my own opinion."

Conference Leader: "Well, it surely will be interesting to see just what kind of answers come back from it."

Last Monday we met with fourteen Operating Branch conference groups, totalling approximately four hundred supervisors, and in several groups as many as three or four supervisors said they had not received the questionnaire sent out by Mr. Beal.

A few supervisors said that in answering the question, "From your observations, how do your people feel about the Interviewing Program?", they had picked out an employee whom they knew rated pretty well in the group and asked this employee to feel out the other members in the gang and find out what their real attitude was toward the Interviewing Program.

Supervisor: "I see they sent a questionnaire around to all the supervisors in the Operating Branch. They want to find out how the interviewing program is going. As far as I know, all the supervisors said it was O.K. That is going to give you fellows a job for quite a while in the future. They had one question on there about 'Should supervisors be interviewed?' I certainly think they ought to be interviewed. What's good for the employees ought to be good for the supervisors. I know if they ever put that through, I'm going to talk right out just like any individual. I've got a lot of stuff on my mind that I'd like to get rid of about our Assistant Foreman."

"C. was telling me the other day that he was getting more hard luck stories from the men than he ever got in his life before. He said he thought it was on account of this day off business. I turned to him and said, 'Now you're just beginning to realize what good supervision is, when you get the men to confiding in you like

that, then you're beginning to do a good job as a supervisor.' Some of these fellows might carry a grudge for ten or twelve years. When they're interviewed they get all that off of their mind. Believe me, I am going to have some story when they start interviewing supervisors. I've been working four days a week and that hits me pretty hard, too."

In one of the conferences of the Operating Group Supervisors, when the conference leader raised the question as to whether everybody had received their questionnaire from Mr. Beal and returned it, one of the group members raised the question about the interpretation of Questions No. 6 and No. 10.

He said, "I don't believe that some of the fellows are interpreting those questions correctly. I think they are taking the wrong slant on it and consequently are not answering the questions the way Mr. Beal wants them to." He went on to explain the possible differences in meaning which might be attached to the questions, but the interesting thing was the idea that he himself, and perhaps some of the other Supervisors, might be trying to answer the questions according to what they thought Mr. Beal might want them to answer.

The conference leader asked him if he thought that was what Mr. Beal wanted. This member said, "No, perhaps not. Nevertheless, some of the fellows are trying to figure out what he wants before they answer the questions."

March 24, 1931.

MR. G. A. PENNOCK:

Since the questionnaire, soliciting Operating Branch supervisors' opinions upon the conference training and employee interviewing programs, was sent out by Mr. Beal, conference leaders and interviewers have received a number of comments from supervisors, similar to those attached, which give some indication of supervisors' attitudes toward it. These expressions of attitude, in addition to being a valuable aid in interpreting and understanding their responses to the questionnaire, have served to stimulate our thoughts with reference to the field of supervisory training and further research possibilities. I am taking this opportunity to set down some of these thoughts for your consideration.

Considering these comments from the standpoint of aiding us in interpreting responses to the questionnaire, it is significant that two general types of reaction stand out. One type is essentially a fear reaction. The individual is suspicious of the Company's motives in sending out the questionnaire. He is afraid that through some sort of trickery, his replies can be identified; consequently, either he does not answer the questionnaire at all or his answers are in accordance with what he conceives the attitude of the Company and Mr. Beal to be. It may be well to point out that while these comments do not indicate that this reaction is widespread among supervisors, they nevertheless tend to substantiate Professor Mayo's observations concerning the existence and significance of a rather vague apprehensiveness among employees. It seems that this tends to crystallize or come to a head whenever an event similar to the questionnaire is instigated by management.

Our feeling that some replies to the questionnaire were falsified as described corresponds to the impressions obtained by Mr. Howarth and the conference leaders. In their judgment, the general reaction of the supervisors is more nearly in the ratio of 75% favorable and 25% unfavorable than in that suggested by the responses to the questionnaire.

The other type of reaction is quite the opposite of that discussed. Instead of personalizing the questions, the individual tends to look at them objectively and puts forth a sincere effort to answer them constructively. It is significant that both of

these reactions - the fearful, covering-up type and the open-minded, straightforward type - are encountered regularly in supervisory training conferences. Some supervisors look upon problems and employee comments from a personalized point of view, while others definitely attempt to prevent their own preoccupations and prejudices from distorting their observations. This leads directly to the second subject upon which I wished to comment - supervisory training.

Judging from the direct and indirect information resulting from the questionnaire, it seems that further work remains to be done in the development and training of supervisors and that no small part of it must aim to give the supervisor more knowledge and insight into his own personality in addition to a better understanding of the subjective elements in the employee with whom he deals. We have constantly felt that the supervisor who allows his own private prejudices to distort his outlook is greatly handicapped even though he is otherwise fully qualified, while the supervisor who views his work objectively not only has a better chance to succeed, but is also more easily trained and developed.

The further research possibilities which seem more and more necessary lie in the field of supervision. The problem of giving a person insight, a better self-understanding, in itself raises a question as to how far the conference training method can go in that direction. That it cannot proceed far without facts is certain - facts not only of people at the individual level but of supervisors themselves. One of the major claims of our interviewing work is that in addition to obtaining data pertaining to the individual's situation it performs precisely this function of providing a certain amount of self-knowledge to the person interviewed. This suggests that the logical approach to an understanding of supervisory problems is by interviewing supervisors and using this material in conferences or as seen fit.

The need for research along these lines is given added stress when we consider the implications in the responses to the questionnaire. These demonstrate that the hindering attitudes of suspicion and apprehension, the dissipation of which was accompanied by a progressive increase in production in the test room, exist at the supervisory level as well as at the individual levels. From this we might conclude that a corresponding increase in supervisory effectiveness would result if the attitudes of supervisors could be made as healthy and helpful as those of the test room operators. For the sake of clarity I wish to elaborate the logic of this conclusion even though there be some repetition.

The test room operators were lifted out of the normal work situation when they were selected for experiment. They were told that they could express themselves freely about their situation but they were reluctant about doing so even though they were guaranteed protection from anything they might say. It took some time to break down the protective barriers they had built up but when good treatment and the absence of traditional supervision accomplished this, they began to talk freely about their former jobs, associates, and supervisors. Of these factors, supervision seemed to play the dominant role in shaping their attitudes; consequently, the importance of good supervision was stressed. Through the interviewing program we have found that the conditions of which the test room operators spoke are quite widespread at the individual level.

We now find in the expressions of supervisors relative to the questionnaire indications of the same general conditions on supervisory levels. They themselves are apprehensive and have hindering attitudes. This suggests that some general conditions exist which affect supervisors and individuals alike and that if these can be identified and dissipated as they were in the test room there will be a general and corresponding "lift" throughout the plant.

The conclusion that one of the greatest "lifts" which we could get in the industrial situation would come from the elimination of mental attitudes in the supervisor which impede his effectiveness, together with the thoughts previously expressed in this communication indicate (1) that interviewing research work is desirable at the supervisory as well as at the individual level and (2) that a conference program might thereby be better shaped to produce a better understanding by the supervisor of the subjective elements which he projects upon almost every work situation that enters into his thinking.

In the group studies started this year we expect to study supervisory problems and attitudes as closely as possible and from this we will no doubt obtain additional leads bearing upon these problems.

M. L. PUTNAM - 6088.