REPORT ON SPECIAL
RELAY ASSEMBLY TEST GROUP STUDY

October, 1931

UNIVERSITY OF WISCONSIN - MILWAUKEE

October 15, 1931.

[redacted] - 6088-1:

Subject: Report on Special Relay Assembly Test Group Study.

The following report is a resume of the development and findings of the special relay assembly test group study undertaken by Department 6088-1 in May 1931.

I. Method

At the beginning of the study the problems involved were conceived only in general terms. It was felt at that time that there was considerable information about the test room that had not been brought to light because the older more formal procedures are incapable of detecting those subtle relationships and motivations which are so important in understanding any group. Since the interviewing method is especially adapted to locating these more elusive factors it was decided to supplement the regular relay test room study methods with the interviewing method.

After some contemplation and discussion it was decided to make the study a combination of sociological and psychological method. On the psychological side it would involve a thorough case study of each individual in the test room to get at the motivating factors in his behavior; on the sociological side, insight into the relationships between all members of the group to determine the effect of individual on individual.

This method was experimented with to test its efficiency and soon proved to be too inclusive. After a short time it seemed quite likely that the introduction of the interviewer into the test room situation would bring about changes in attitudes on the part of the personnel. In this case it would be wise to have some objective measure of change. Since the only objective measure we have in the test room is the production records, we would have to use it as the standard of measurement - insofar as it is possible to use one in this type of study. Such an index would also be of great assistance in judging and interpreting the effect of personal or social changes in the employees life aside from the influence of interviewing.

It was then followed that if we were to use the production record as a barometer of change we ought to concentrate on the

five producers - the bench operators; that is, that we should narrow the scope of the study. This change would mean that on the sociological side instead of being equally interested in the three types of relationships involved, i.e.:

a. Supervisor-supervisor relationships
b. Supervisor-employee relationships
c. Employee-employee relationships,

we should be concerned only with those involving the bench operators. That is, our interest in supervisor-supervisor relationships would be withdrawn except as they affected supervisor-employee relationships and employee-employee relationships. This exclusion would apply not only to supervisors but to lay-out operator, inspector and office boy as well. On the psychological side the change would mean that we should be interested in understanding the motivations of the operators alone, since reasons for behavior of the remaining personnel no longer concern us.

This would not mean that we should be interested only in the operators but that we should not find other members of the group significant except as their behavior reflected on the operators. Furthermore this change would make production records as an index of change the central relating factor of the study.

The plan as outlined above, was adopted shortly after the vacation period and has been found to be much more satisfactory. It not only clarifies the approach by limiting the field of inquiry; it also, by centering the data around the production record, gives an objective measure of change. This procedure will undoubtedly yield more practical results for the company than would the previous plan. A detailed study of all the elements in the test group situation, while it would be of considerable academic interest, would not have the immediate bearing that insite into causes of fluctuating production would have on company policies. So, for the present at any rate, we are proceeding on the assumption that it is best to confine our interests to a study of causes of fluctuating production.

II. Findings

It would not be possible, as yet, to make any definite statements regarding the test group situation but I will attempt here to set down my impressions so far. They will need to be verified:

1. Test Group Conditions not Constructive

At present I would say that the motivating factors behind increased production in the test room seem to be largely negative rather than positive, that is, the change is apparently due to the absence of objectional administrative and supervisory practices that are to be found in the shop, rather than to the presence of constructive reforms. The reasons so far given by the operators for preferring the test room to the department from which they came, substantiate this statement:

a. There is no interruption in the flow of work.
b. There is no bogey to reach.
c. There is no boss to "slave drive".
d. There is no "stalling".
e. There is no emphasis put upon neatness, (picking up dropped parts) to interfere with production.

Everyone of these reasons is simply a condemnation of ordinary shop practices. They reflect nothing original that has been added to test room but rather the absence of objectionable elements. One exception to this statement is the introduction of rest periods; this however has beencome a general enough practice to omit from this discussion for the operators would have the same advantage in the shop.

The above statement should not be construed to mean that there is nothing unusual about the relay test group experiment. On the contrary the results should seem all the more remarkable if they are due to the simple process of removing obstacles. The above argument is only presented to indicate that explanations of test group behavior may not lie in as obscure causes as is generally supposed.

2. Increased Earnings as Incentive

The possibility of increasing earnings in the test room, as has been pointed out in previous test room reports, is no doubt a very important stimulus to production. The following facts are interesting reflections on this factor. During this study there has apparently been considerable apprehension when it has seemed that the operators were losing money by being interviewed. For example, the operators were at first indignant at losing time for an interview; when the supervisor explained to them that they would lose nothing as long as their lay-out operator was interviewed as frequently as the bench operators, they seemed satisfied. But when the plan was changed so that the lay-out operator was to be interviewed only occasionally their indignation again arose and was not dissipated until it

was arranged that the same amount of time should be allowed for the lay-out operator as if she were interviewed. Furthermore each operator knows almost to the cent how large her pay-check is to be and this is carefully checked. The pay incentive may seem more important at this time because unemployment has affected each operator's family and created a need for a larger income in some cases more than others.

3. Test-Room Conditions not Ideal

It is commonly believed of the test room operators that they are working under conditions which they consider to be ideal and with which they are completely satisfied. On the contrary it would seem that the "standard of working conditions" is like the standard of living - the more you get the more you want. While the operators realize that they are much better off than they would be in the shop still they believe there is room for improvement. For instance, they would like to have a radio in the test room "to see what effect it would have on their production", they would like to go on an inspection tour of the plant, they think management should stabilize the flow of work so that there will be no delays.

4. Resistance because of:

a. Demand for Privacy

One of the most interesting reactions observed is the opertors' resistance to "being studied". Aside from its supposed affect on income (discussed above) it seems to have been resentment at being regarded as "a fish in a bowl", open to observation at all times. This guarding of their private lives led to "putting on a front" toward their supervisors to such an extent that they took great delight in relating imaginary tales of their experiences to mislead the observers.

But the relation between the interviewer and the employee in a private conference is such that this "front" cannot be maintained. Therefore a conflict situation arose as to whether to tell the interviewer nothing or everything. For some time they tried passive resistance. Since they were, however, used to telling their supervisors certain facts about themselves, as soon as their resistances was worn down they became communicative. This resistance was greater in some operators than others, and was completely absent in one operator except, it seemed, as the other operators tried to arouse it in her.

b. Repetition

Another reason for resistance to the present study seems to have been the lack of continuity in previous studies conducted in the test group, and the resultant repetition necessary in relating experiences. The typical reaction was, "We haven't anything new to say. We've told them everything about ourselves. All you have to do is look at their reports - they've written us up lots of times."

c. Lack of Knowledge

Lack of knowledge of course is a factor in creating resistance. It is difficult for these operators to see the reason for a continuous study of the relation between their personal problems and their effectiveness, because they have a static concept of personality.

d. Inferiority Feelings

Some of the operators have appeared reluctant to reveal their personal experiences because they do not come up to "True Story" or Hollywood ideals. As one girl expressed it, "I was looking at the fan going round and round and thinking how our lives are just like that. We get up in the morning and go to work and then we go home at night and eat and go to bed and get up the next morning and do it all over again. That's why we haven't anything to tell you." This girl's ideal is "to live like the rich people do. They get up early and go horseback riding and then they take a bath and have breakfast and play a little golf and get dressed for dinner.....We never do anything exciting."

e. Rigidity of Habits

To my mind the most outstanding reaction of the group is the resistance to change - any kind of change introduced into the test room which interferes with established habits. It seems to indicate a desire to be "let alone" - under ideal working conditions of course, but with no interference. In all instances observed however, any resistance to a particular change gradually disappeared.

When this study was begun there was a pronounced antagonism toward the introduction of interviewing as an occasional event. This antagonism was gradually dissipated only to be again aroused when the interview became as a regular weekly procedure. Later they object for no apparent

reason to two operators being interviewed in one day, although it made no difference in weekly output.

The operators not only had fixed opinions as to the frequency of interviewing but also as to the method. They felt that they had been interviewed frequently enough by their supervisors and other persons connected with the test room to "know what it was all about". What they were really accustomed to was to answer (in a more or less satisfactory manner) direct questions put to them. Therefore they were certain that the question-and-answer method was the method and insisted on being asked questions. The idea of talking about whatever they wished was pure nonsense.

Resistance to change is no uncommon occurrence. It is probably most completely incompatible with the spirit of scientific inquiry or of fatalism. But since it is likely to go hand in hand with lack of knowledge and to be firmest where knowledge is least, it is probably most prevalent among shop employees.

III. Changes Introduced

1. In Administration

Although it was intended at first that the interviewer should keep as far removed from administrative problems as possible, it soon became evident that this objectivity could not always be maintained. Participation of the interviewer, however, must whenever possible be carried through with a view to watching the behavior of the group.

There have so far been two such occasions. The first arose when the layout operator was dropped from the central study and there was a need for preventing financial loss to the operators. Payment of the bench operators is so arranged that no one loses if they all take an equal amount of time off, but there is no test room set-up for compensating the operators for unequal loss of time. The interviewer therefore suggested that this correction be made from her department. This suggestion was not made however until there had been an opportunity to watch the group attitude towards unequal loss of time.

The second change seemed to be more of a physical than a psychological nature. The inspector, who has a delicate job, complained to the interviewer of poor lights and eye trouble. This was immediately corrected because of its possible importance. It may have been more a psychological than a physical trouble, and it's correction would at any rate have its psychological reverberations in improved attitude.

2. In Attitudes

There have been some changes in attitude observed, apparently due to the interviewing process itself. One operator who has an exaggerated reluctance to express an opinion because of fear of hurting people's feelings is becoming more assertive. Another operator who is inclined to worry excessively and who has financial difficulties and heavy family responsibilities seems to be finding relief in telling the interviewer about them and appears to be really dissipating the worries.

Another significant change, a by-product of the study, is a supervisory change from too close identification with the operators to a more experimental attitude. It is only natural to consider another person's problems personally when you are working with them day by day and are responsible for their supervision. It has been possible, however, to so far enlist supervisory cooperation as to deliberately precipitate a latent antagonism for the purpose of watching the resulting behavior.

IV. Prospectus

As for attempting to lay out plans for the development of this study all I can say at present is that to predict even it's immediate future would be unreliable since by its very nature the direction to be taken waits upon progressive development. Frequent re-definition may be necessary. We can say for the present that it is a fairly well defined study of the causes of fluctuating production, perhaps better stated as the relation between personal and social factors and employee effectiveness. Whether it shall become in time a more detailed study of the entire group cannot be decided now.

Nor can we say with any degree of certainty for how long it shall continue - be it six months or three years. Since the study is dependent on the interviewer-employee relationship it is possible that the present set-up cannot be maintained indefinitely. It would not be surprising if resistance became so great in certain operators that the regular weekly interviews with them would have to be discontinued permanently or temporarily. At present only two of the five operators can be said to be really cooperative, the other three vascillating between cooperation and antagonism. And since these three operators are close friends and probably reach agreements as to how far they shall cooperate, it makes their resistance much more difficult to breakdown, provided it can ever be done. There is a strong suspicion that one of the operators is deliberately attempting to antagonize the others so that she alone will make a good impression on the interviewer.

The existence of these antagonisms should not amaze us. It is a common occurrence for any one to resent attempts to pry into his private life. If we were to select ten employees out of fifty to study in this manner, we should be in an entirely different position for we could eliminate all those who were not willing to cooperate. But to take a definite small group and expect each one to enter into the spirit of the experiment at once is to expect the impossible. Furthermore the close contacts between operators and the friendships existing, make it a simple matter to organize resistence in the test group.

However, it is quite probable that at least cordial relationships can be maintained with all the operators and of course possible that in time existing antagonisms may disappear. By taking advantage of each opportunity to win their cooperation much resistance has already been broken down.

Undoubtedly the study will prove fruitful from a therapeutic viewpoint if it can be continued. The opportunities for minor therapy will be unlimited. Two of the most interesting examples so far are as follows: One operator who was about to resort to Lydia Pinkham to cure her "poisoned blood" decided to ask one of the doctors at the hospital about its reliability; another who has considerable foot trouble but wears French-heeled slippers to work decided to wear sensible oxfords. These decisions are not imposed by the interviewer but are arrived at by encouraging the operator to talk over her problems, however minute they appear to be, until she arrives at her own decisions. Three of the operators, who are heavily pre-occupied with personal problems or family responsibilities, should yield interesting data on the effects of unpleasant pre-occupation but major therapy will not be attempted.

It will be seen that this study is to serve several purposes. It's primary aim is to obtain two types of data, psychological and sociological, on the basis of which insite will be gained into the relation of personal and social factors to industrial effectiveness.

As a by-product of this process, however, possibilities for therapy have stood out so strongly that it seems inevitable that we should include them in our plans. Therapeutic considerations would mean that an attempt would be made to eliminate irrational elements from the thinking processes of the operators interviewed. As I see it there are two considerations involved here: First, irrationality which is due to personally peculiar modes of thinking - "schemas of assimilation"; secondly, erroneous ideas adopted from the environment because of ignorance or lack of criticism and which effect unfavorably

an employee's adjustment. In the last analysis these conditions may be resolved to the same thing - that is the acceptance of an error may be due to a faulty personal schema but this is not a matter for discussion here. The fact remains that much can be done to remove the "blind spots" from the thinking processes of the employees included in this study.

[redacted] - 6088-1.

IR-MMH