Unemployment within Employment [1]

by

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THE time seems to have arrived when we must pull our discussion of unemployment down out of the skies of speculative thought and intepret it in terms of actual everyday shop practice. This paper deals with the part any individual manufacturer can play — in fact must play — if he would hold his own under conditions likely to obtain in the industry of the near future. Unemployment in the large is an insoluble problem. It is only as we break it up into its constituent parts that we discover the remedial procedures. Nearly every representative manufacturing plant regularly collects the data required for the studies here recommended. But only a few plants here and there — and then in spasmodic fashion — have so collected the data as to reveal the relative significance of the various causes contributing to the total of unemployment.

Almost without exception our heretofore established standards for industrial management are in flux—in the crucible of change and refinement. It is equally true that all those criteria by which we seek to test the effectiveness of our industrial organisation are in process of revision. Yesterday's satisfaction with methods and results is today's divine discontent. Hence it behooves those of us who seek a place in tomorrow's sun to keep our technique so fluid as to be able to check performance with the measuring sticks of the moment and not with those of a day that is past and gone.

Henry L. Gantt, one of the great pioneers in the management movement, once said to me: "The ultimate object of everything we do in industrial engineering is to enable us to set tasks", that is, to establish a definite daily accomplishment for each and every worker. The daily check on the causes of failure to perform such predetermined tasks has come to be regarded as perhaps the most exacting test of good shop technique.

In the intervening years since Gantt made this remark we have come to recognise that the accomplishment of a predetermined task by an individual worker, or by any number of individual workers is but a part of the whole problem of effective manufacturing. For if the individual workers are

(1) A paper read before the Cleveland (Ohio) meeting of the Taylor Society, 9 May 1921.

to have the opportunity to work at all, management must concern itself with many matters not directly related to the individual task. And so a much broader generalisation, it seems to me, would be to the effect that everything we do —or should do—in industry must lead in the direction of affording increasingly steady employment for the entire body of workers. So the following discussion is a study of chronic unemployment rather than of its more acute phases, which we are at the moment experiencing.

It will be only as we study the everyday and all-the-year-round variety of unemployment and learn to cope with it that we shall be able to prevent, or at least to minimise, the effects of these great waves of unemployment, which we have come to look upon as necessarily associated with periods of business depression. My purpose then is (1) to direct attention toward what, I take it, will come to be recognised as the more important causes of unemployment in a well-ordered industrial society, (2) to localise responsibility for the reduction of the unemployment factor, and (3) more especially to advocate the development of increasingly precise methods of measuring the various phenomena we class under the general head of unemployment.

Assuming that the proper length of the work-day has been determined, employment for the individual or the group or the community as a whole is measured by the amount of time actually occupied in production work. The unemployment factor, then, is the percentage by which this falls short of the theoretical maximum. All current practice encourages another point of view — that the test of employment is being on somebody's pay-roll. Under such a concept, if every available worker were actually on someone's payroll, there would be no unemployment, which is, of course, absurd.

In approaching any large national problem good practice suggests that we first seek some method of localising it. So to bring this problem of unemployment within the range of our individual industrial hearthstones, so to speak, I have divided its treatment into two parts:

(*a*) Unemployment *within* employment, and
(*b*) Unemployment *without* employment;

the former being the unemployment of men and women who, technically at least, have jobs—those who are considered or consider themselves the employees of a given plant. It is becoming the union policy to have available work apportioned among the employees, rather than to have some laid off or discharged in order that the rest may work full time. The Amalgamated Clothing Workers do not consider lack of work a sufficient cause for discharge. Within the last few months one clothing establishment employing over 2,000 was working the entire staff less than one day a week. Even with work at this low ebb the effort on the part of the union

to hold the employer to responsibility for employment was in no way relaxed. We saw something of the same attitude on the part of the employees of Baldwin Locomotive Works — a non-union plant — when early in 1914 a normal staff of 19,000 had been reduced to 4,000, working part time. The unemployment was continued so long as to cause great destitution. But even in homes where essential furniture like chairs and beds had been disposed of the workers still considered themselves to be Baldwin employees. This feeling was so strong in many instances as to preclude any thought of looking for employment elsewhere.

Of course, a worker may "have a job" in the foregoing sense and yet obviously not be participating at all in the wage distribution or, if participating, then not to a normal extent and perhaps not fully occupied during the period of such participation. Under our definition of unemployment, be it remembered, we included all varieties of waiting time, whether paid for by the employer or not. It all represents an economic waste.

My own impression is that the total of "Unemployment without employment", i.e. the unemployment of what may be called jobless men, represents a relatively small percentage of the total. In some industries, and especially in good times, it may easily represent an almost negligible part of the total unemployment. If this assumption proves even relatively near the truth, it will pay us to devote our most painstaking attention to the unemployment of men and women who can, very broadly speaking, be said to have jobs.

And, of course, if we can assume that — let us say — ninety per cent. of all the unemployment in the world is that suffered or enjoyed by those "with jobs", we have localised the responsibility, in the first instance at least, within the scope of the individual plant. And every employer is cited at the bar of public opinion to show cause why he is not guilty of contributory negligence in adding to the sum total of unemployment. In other words, the burden of proof is on every employer who lays any claim to industrial leadership to show that he has availed himself of every possible device for providing steady employment.

But *self-interest* will more and more move manufacturers to undertake the detailed study of the unemployment problem, as it becomes recognised that general industrial effectiveness, and more especially low costs, are altogether inconsistent with intermittency of employment.

It would certainly be most unfortunate if there was any warrant for feeling that in this matter we were like rudderless ships on unknown and boisterous seas. And yet this appears to be the attitude most commonly held. The moment the subject of unemployment is mentioned, we are apt to drift off into a more or less loose discussion of the possible influence of exchange, the tariff, the disorganisation due to a change

from a seller's to a buyer's market, styles, and seasonal demand, through all of which we are supposed to be relieved of our individual responsibility. This is frequently little more than a smoke-screen to cover up either our lack of knowledge or a purposeful avoidance of responsibility. If what has already been done in this field has not proven that reasonably steady employment is possible of attainment for most industrial establishments, it at least points strongly in that direction.

Before we get very far in the scientific study of any subject we discover the need for some means of making measurements. So it is in this study of unemployment, and, of more immediate interest, in this study of "unemployment within employment". The moment we undertake the analysis of our own contributions to the total distress, we discover that "we need some formula or expression or device by which we can measure the amount of unemployed time of those who have jobs. Such a mechanism will enable us to rate the performance of individual employers in this respect, to evaluate the results achieved in different industries in providing steady work, and even to contrast the experience of different communities in this matter. In applying this test we should be able to determine the record made in any given period of time — a day, a week, a month, a season, or a year. The formula should be so exact as to include lay-offs of a few moments or of a few hours as well as of days and of weeks" (2). Such a measure as the one proposed should be so broadly conceived as to be applicable to a given room or department of a single industrial establishment or to the plant as a whole, to regional divisions of an industry or to the industry throughout the nation, to geographical areas including all industries, and to the nation at large. We seek a method which is both reasonably exact and capable of being developed in the direction of even greater exactitude. But to be broadly useful the method must be one that is readily simplified to meet the conditions found in most small concerns or expanded to meet the necessities of our more highly organised industrial establishments. For the lack of a more descriptive title I suggest we call this factor — this measuring stick for unemployment — the "Unemployment Score". Such Unemployment Score, it will be understood, is the percentage by which the actual employment, given an individual or group, compares to the theoretically possible maximum.

It seems desirable to point out the absolute dissimilarity between labour turnover (3) and the Unemployment Score.

(2) *Unemployment within Employment*, by Morris L. Cooke, in the *American Federationist*, Washington, D. C., Nov. 1919, pp. 1034-1036.

(3) The educational value of the term "labour turnover" in calling attention to the waste involved in frequent changes of employees has been very great. It can also be said that "by appreciating the human consequences of high labour turnover, organised labour has come to see a practical value to wage-earners through better labour administration policies". (Extract from a letter by a labour leader.)

An unnumbered *Bulletin* of the Bureau of Labor Statistics, on the *Standard Definition of Labour Turnover and Methods of Computing the Percentage of Labour Turnover*, says :

> Labour turnover for any period consists of the number of separations from service during that period. Separations include all quits, discharges, and lay-offs, for any reason whatsoever.
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> The percentage of labour turnover for any period considered is the ratio of the total number of separations during the period to the average number of employees on the force report during that period. The force report gives the number of men actually working each day as shown by attendance records.

In the ten or fifteen years of its use this term "labour turnover" has, of course, achieved some degree of definition. But even so it is a crude unit of measurement, with not much significance in a well-run establishment. A study of the definition will show that its relation to the proposed unemployment-within-employment factor, or Unemployment Score, proposed in this paper, is at best indirect.

The usefulness of such a factor or Score will be limited, unless it is arrived at as the summary of factors measuring contributory causes, each in turn built up in like manner. The process should be capable of being carried to any useful degree of sub-division. Let me illustrate this broadly. Assume that the possible theoretical total of working hours for those engaged in a given building last week was 1,000 units of production time. Things ran unusually smoothly, material was delivered on schedule, there were no labour troubles, and the workers were actually engaged during 920 units of production time. The unemployment is, of course, the difference between the theoretical and the actual, or 80 units of production time. Under this proposal the Unemployment Score will be

$$\frac{1{,}000-920}{1{,}000} = \frac{8}{100} \text{ or 8 per cent.}$$

We can take the figures on that same building for all of last year and, assuming a result not so favourable, we can take 50,000 units as the theoretical maximum for the entire year of which not more than 30,000 were actually accomplished. Then the Unemployment Score would be 40 per cent. Under the proposed plan it must be possible to subdivide this percentage indefinitely. Thus the major causes may be rated as follows :

	per cent.
Absenteeism	5
Lack of materials	10
Bad weather	4
Strikes	10
Scattering	11
Total	40

Any such approach to the study of unemployment involves some assumptions which, while not current, seem to be fully in line with our probable industrial development. For instance, it appears to be altogether in the interest of a higher qualitative production that much more importance should attach to the separation of the individual worker from a given industrial unit than to his joining it. Trial periods of employment are generally accepted as reasonable. A mistake made in taking on a given worker may always be " rectified " by a discharge before the end of the trial period. This is the purpose of the trial engagement. But once the worker has been finally accepted and made a part of the organisation, he must be held much more tenaciously than is our common practice. This is not because of any ownership to the title of the job, but simply because, if the worker has been carefully selected at the start, well trained in his specific duties, and properly oriented in the organisation, his leave-taking must be a matter of financial and human concern. In the long run, however, we cannot hold people for whom we do not provide work. So we pass to the concept that it may be just as bad to take more work than our " regular force " can perform as it is to fail to secure enough work to keep that " regular force " busy.

It is the testimony of the best managers the world over that, as we learn to carry on a given class of work in better fashion, the percentage of skilled workers increases. In fact, there is an abundance of evidence supporting the theory that, when industry becomes truly scientific, there will be no place for the unskilled. Hence we can safely conclude that the better the management, the greater will be the financial sacrifice necessarily associated with lay-offs and dismissals.

I believe we have now arrived at the time when the manufacturers who are to be the most prosperous in the long run will definitely decide on the size of force required and hold to it. In almost every case this will mean a force smaller than the one now employed. The better methods involved in this decision to give steady employment to those employed almost invariably mean an ultimate reduction in the normal force. Every effort should be made to effect this reduction gradually through normal separations and not by " firing " anybody. There is nothing here to preclude growth, but it should be growth considered in the light of a steady long-time demand for service.

Another idea which, while not current, nevertheless appears to be inherent in effective manufacturing, suggests that idleness on the part of piece-workers has as decided an effect on costs as idleness anywhere else. The employer does not appear to pay in any way for this type of idleness, simply because he does not pay in direct wages. But he pays in unnecessarily high piece-rates and in other more indirect ways. In an economic sense all idleness during predetermined

hours of work is waste. Important as it is from a manufacturing standpoint to keep machines busy, it is much more so to keep the workers busy. Viewed from this angle a check on man-hours becomes altogether as important as a check on machine-hours.

If these Unemployment Scores are to have the largest social significance and be fully effective as a guide to operating policies, lost time of every character and description must be included in the percentages, especially at the start. I recall, on a visit some years ago to an establishment which had just introduced so-called "Industrial Democracy", that a large number of the employees throughout the plant had obviously nothing to do. It developed that, as a feature of the new order, a promise of continuous employment had been made. The firm thereafter experienced difficulty in getting an adequate supply of their raw material; hence the people idle at their work-places. Continuous employment comes as the result of planning and good management. It cannot be had by the issuing of an order.

On the other hand, a type of unemployment results directly from a high type of management—I almost am tempted to say the highest type—such, for instance, as is found at the Clothcraft Shops. Under the quota system which they have used so successfully, employees having finished their tasks are permitted to go home. Hence the attendance curve begins to drop shortly after one o'clock. Under our definition, the difference between the total of these hours of work and the predetermined hours of work (44-hour week basis) constitutes unemployment. It may be considered a desirable variety. But it should be measured.

I do not want to multiply hypothetical illustrations, but to convey a more detailed idea of the picture which a fully developed Unemployment Score might give. Let us assume that a given group of workers over a given period have been employed 64 per cent. of the theoretical time, leaving 36 per cent. as the Unemployment Score, which might be divided as shown on the following page.

Such Unemployment Scores would have an added significance, if there were included in the plan some classifying and weighting of the various contributing causes, so as to show their importance from a management standpoint. For instance, unemployment occasioned by bad belting practice might be heavily penalised on the ground that it can be absolutely eliminated under proper management. Again, some types of unemployment within employment, such as that occasioned by considered vacations, are altogether desirable from a social standpoint. Cognisance of all such considerations should be taken in the weighting scheme.

Assuming that we had Unemployment Scores for a number of different branches of the same enterprise or for a number of different plants in the same industry or for typical plants

AN "UNEMPLOYMENT SCORE" (1)

Productive Time 64 %	—	—		
Unemployed Time 36 %	A. Orders 12 %	1. Inadequate volume	8 %	
		2. Lack of standardisation	1 %	
		3. Uneven flow of orders	0	
		4. Miscellaneous	3 %	
	B. Lack of materials 8 %	1. Broken promise of manufacturer	2 %	
		2. Transportation delay	1 %	Chargeable to Purchasing, Storekeeping, Gang boss, Drafting room, etc.
		3. Errors	3 %	
		4. Seasonal (as with canneries)	0	
		5. Miscellaneous	2 %	
	C. Absenteeism 6 %	1. Sickness	3 %	Colds Contagious Chronic
		2. Accidents	0	
		3. Home conditions	½ %	
		4. Recognised holidays	0	
		5. Liquor	½ %	
		6. Weather	0	
		7. Tardiness	1 %	
		8. Vacations, regular	0	
		9. Personal business incl. jury duty	0	
		10. Miscellaneous	1 %	
	D. Equipment 2 %	1. Belting	½ %	
		2. Broken parts	0	
		3. Poor adjustment	1 %	
		4. No power	0	
		5. Introduction of machines	0	
		6. Miscellaneous	½ %	
	E. Factory control 8 %	1. Strikes and labour stoppages	4 %	Order of Work Routing Delay getting into work Tools or jigs not ready
		2. Lock-outs	0	
		3. Bad planning	½ %	
		4. Stock-taking	0	
		5. Disciplinary lay-offs	¼ %	
		6. Labour policy	1 %	
		7. Sales—Factory maladjustment	2 %	
		8. Miscellaneous	¼ %	
100 %	**36 %**			

(1) The percentages here given are assumed for purposes of illustration and for their suggestive value.

from each of several different industries, it would be possible for those making poor records in any respect to seek the counsel of those securing better results.

Until we have developed a generally recognised method of taking off Unemployment Scores, each employer will have to make for himself certain assumptions and adopt tentative rules. But a very little experimentation in any well-run establishment will make data now being regularly collected available for this purpose. The Unemployment Score is nothing more than a re-assembling of data usually available through methods current in well-run plants. It would appear that the expense involved in collating these figures would be trifling, especially in those plants where individual job-tickets are used as a part of the wage system. It is suggested that a working result will be expedited by providing at the start a heading "Unassigned", into which can be thrown all items of unemployment within employment the proper classification of which may be in doubt.

We approach nearer and nearer the time when propositions for unemployment insurance must be seriously entertained in this country. The development of a satisfactory scheme for measuring and accurately analysing unemployment will certainly facilitate the operation of such plans. It will remove what appears to be the strongest argument against unemployment insurance at the present time, i.e. a lack of information as to its real causes and our almost complete inability to localise and pro-rate responsibility for it. Under the proposed Wisconsin law (4) a manufacturer's previous record in affording steady employment determines the rate he pays. This affords a strong incentive for learning how to provide steady employment before such a law goes into effect. Of course, the most important service which unemployment insurance can render will grow out of the pressure it will exert on management to reduce unemployment to a minimum. This statement is warranted through our experience with workmen's compensation Acts. The relief afforded injured workmen and their families, important as it has been, is nothing compared with the results obtained in the matter of accident prevention.

It is altogether certain that, through this kind of study of unemployment, we are going to expose certain weaknesses

(4) The main features of the State of Wisconsin Unemployment Compensation Bill (which was introduced on 4 February 1921 by Senator Huber) are the following :

(i) *Scope of Act.* Applies to all employees of every corporation or non-incorporated employer employing more than three persons.

(ii) *Exemptions.* (*a*) Farmers ; (*b*) employees of State, cities, towns, villages, townships, and school districts ; (*c*) those receiving pensions of $500 or over annually ; (*d*) persons mainly dependent upon others for their livelihood ; (*e*) private employers of less than three persons.

(iii) *Requirements.* (*a*) Must have worked for one or more employers six months under the Act ; (*b*) must make application in proper manner and be continually unemployed ; (*c*) must be available and capable, but

in our present manufacturing methods. For instance, it will be promptly demonstrated that steady volume, both for the plant as a whole and by departments, is equally desirable both from the standpoint of profits and of steady employment (5). It seems highly probable, if this could be demonstrated by each factory for itself, that some of the more obvious expedients by which steady volume is encouraged would be introduced.

Perhaps an even better illustration of the kind of facts which will be developed by a scientific analysis and tabulation of unemployment data will be the effect of jobbing or contract

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unable to obtain suitable employment (but is not required to work where there is a strike or lock-out, or where less than prevailing wages are paid, etc.).

(iv) *Rate.* $ 1.50 for each working day for males and females over 18 years, and 75 cents for those between 16 and 18 years ; payments to commence the third day and paid weekly.

(v) *Employers must insure Payments.* Unless exempted by the Industrial Commission, every employer must insure his liability for payments of unemployment compensation in a mutual insurance company that is under the control of the Compensation Insurance Board. No employer shall deduct from employee's wages, or otherwise make him pay, the cost of insuring this liability.

(vi) *Unemployment Compensation Rating Bureau.* Every mutual insurance company doing business under this Act shall be a member of the State Bureau to classify industries for unemployment compensation purposes, and to establish premium rate systems based upon the regularity of employment.

(vii) *Service Card.* Every employee shall be provided by the Industrial Commission with a card or book, upon which the employment agency shall record the number of weeks the employee has been in the services of the employers ; this will then show how many weeks of unemployment compensation the unemployed worker is entitled to.

(viii) *Rates.* (*a*) Not more than thirteen weeks shall be payable in any calendar year ; (*b*) for every four weeks' work, employees are entitled to one week of unemployment- compensation ; (*c*) no agreement by any employee to waive his rights to unemployment compensation under this Act shall be valid; (*d*) no compensation shall be paid on account of stoppage of work trough a strike or lock-out.

(ix) *Claims and Procedures.* All claims shall be first considered by a deputy of the Industrial Commission, who shall give his decision in allowing or disallowing claim within one day ; whereupon an order on the employer is issued for the amount of unemployment compensation due.

(x) *Contested Cases.* In any case where the claim is disputed, it shall be referred to the Industrial Commission, and a still further appeal is provided to the circuit court, the court action to be defended by the Industrial Commission.

(xi) *Unemployment Advisory Board.* Consisting of five members, representing both employer and employees, selected by the Industrial Commission from lists submitted by employers and employees. The fifth member shall be selected at large to serve as chairman. The Board shall serve without pay, and shall meet monthly to aid in general administration of the Act.

(xii) *Penalties.* Employees endeavouring to secure payment by fraud, or employers attempting to avoid payment through misrepresentation, may be punished by a sentence of imprisonment, or fine, or both, at the discretion of the court.

(5) Henry L. GANTT : *Organising for Work.* New York, Harcourt Brace & Howe. 1919.

work on steadiness of employment. It should be obvious that it is much more difficult to provide an even flow of work when one is doing it measurably under the specifications or on the demand of customers rather than on one's own detailed plans. But the weight of this handicap will not be revealed until we are able to compare the Unemployment Scores of establishments on a repetitive basis, i.e. continuously manufacturing stocks to be put on sale, with those still operating on a contractual or jobbing basis, i.e. making goods only as sold or ordered. Getting away from jobbing and into repetitive manufacturing constitutes one of the master-strokes lying ready to the hand of American industry, whereby we can secure not only a large reduction in costs, but make possible a vastly better showing as to continuity of employment. Our slogan must be "make-then-sell"; our present practice is too largely to "sell-then-make".

For the development of any such mechanism as the Unemployment Scores we must depend, as usual, upon the best managed plants. But it is also true that the most interesting and helpful Scores will come from those plants which have only started on the road to good management. It should be obvious that in the Scores made by the best plants many factors common to most plants will not appear at all, simply because they have been eliminated. I rather think that the Score now being made by a few model plants is from 8 per cent. to 10 per cent.; the average achieved by representative American plants is probably not far from 25 per cent., while plants falling to 40 per cent. and even 50 per cent. cannot be considered exceptional.

In my opinion the employer who wants a master-index to the effectiveness of his management—one that includes a maximum of facts—would do well to develop his Unemployment Score.
