pear under the date upon which they were adopted upon the master or standard sheets. Every drawing, and consequently every blue print, bears the officially accepted title of the product to which it refers. Every individual part shown on a blue print bears an identifying number. Any combination of parts entering into a final assembly, where such parts are permanently attached as by soldering, riveting, etc., and are not to be separated or detached from each other, are designated as X combinations, while such assemblies as may be separated without injury to the parts, or are designed to be sold at times separately, are designated as Y assemblies. In the first category might occur, for instance, such an item as a spatula, with a steel blade and a riveted handle. It is not contemplated that the blade, the handle or the rivets will ever be sold as separate units; this would be an X combination, while perhaps the most simple example of a Y combination would be that of a bolt and a nut. These could be readily separated without injury to either part, and this would be done if there were a demand for the separate parts. In any changes in design not affecting the use or interchangeability of a part or not of sufficient importance to be noted as a change by a customer, the same blue-print number is maintained with a letter prefix added to the number, A for the first change, B for the second, and so on. If any change of greater magnitude is introduced an entirely new number is assigned to the part affected. The number previously applying is removed from the blueprint list and is thereafter only to be found in the history file of the product.

Another important and interesting step in maintaining quality has been the development of our tool-board system whereby, for each operation on each part of a product, the necessary tools, go and not-go gauges and a model piece are delivered to the foreman with his instructions on the particular job in hand.

There may be other ways of attaining the same result as that for which we strive—quality production—and I hope to learn of them from those who are to follow me this evening. The particular brief I hold for the plan to which you have so patiently listened is that, in our experience, it works.

Perhaps it would be well if I terminated my remarks at this point. Your program committee, however, suggested that I comment on what it deems a matter of considerable interest, namely, the effective use of those who have passed the prime of what is supposed to be efficient productivity. Since forty-five years of age has sometimes been indicated as this point, I approach this subject with some degree of diffidence. The exigencies of the present moment are perhaps a sufficient excuse for giving this topic serious consideration.

The daily press, economic publications, business reviews and official bulletins all appraise the situation of unemployment as most seriously affecting the workers over forty or forty-five years of age, and this, they tell us, is because industry has decided that these men cannot produce at the requisite speed. Such a generalization is not, I believe, a sound basis for procedure. It cannot be said truthfully that all men of forty-five are less efficient than men of twenty; for some things they may be, and probably are, but what are those things? Many foolish decisions are arrived at by considering one side of the question only. Let us grant that in some cases, and there may be many, the alertness and speed of youth are most desirable factors, indeed, almost prerequisites, but do these qualities sum up the whole range of desirable attributes in an employe? What about experience, judgment, loyalty, conscientious application? Have these no value? Are these the outstanding qualities of youth or do we find them best exemplified where seasoned maturity and a realization of the eternal fitness of things in life have made an impression on consciousness? Generalizations are all very well but somehow or other they do not get us very far. Often too many exceptions have to be introduced even to suggest that a rule exists.

One of the problems of industry today is how to utilize the older worker. Our state of society does not contemplate that they can be permanently disposed of by wholesale execution; they must be provided with food and shelter and clothes, and in such manner and quantity as not to create within the state a menace to its own existence. Industry cannot thrive on revolution. The trouble in large measure with the problem, it seems to me, is not only the error of generalization but the blind acceptance of that generalization by many who have assumed that what has been found worthy of acceptance in their business by its proponents must without question be good for all. My plea is for an analysis of each business by the executives in charge on this most vital question. Speed may be exacting too high a premium. The temporary advantage secured may be offset by taxes to support old-age pensions and other alternatives which may be equally undesirable. Men must live. A recent bold-type headline in a prominent Sunday paper in a large eastern city asks the question, "After forty, what?" And Edward C. Rybicki is quoted in this connection as follows:

"It has always been a mystery to me why the average employer considers a man of forty or over a liability. In my opinion he is an asset, with his years of practical experience, his wisdom and his stability. He is usually loyal, serious and interested in his work. The young man or woman may have a bit more pep—that is quite true; but they sometimes scatter their forces. Many of them have not yet learned how to co-ordinate, how to concentrate, how to apply themselves to their tasks in the most efficient way. They are often flighty, with their minds on things apart from their work—play, love affairs, their outside social and recreational activities." And in the *United Business Service* for November 1 there is an article on the subject "How shall we provide for the unemployed?" This statement in particular I call to your attention:

"Any social economic system that is to survive must find a way of providing a means of living for the great mass of the people under any and all circumstances."

The American Academy of Political and Social Science, meeting in Philadelphia on next Friday and Saturday, December 5 and 6, has as its topic for this two-day conference, "Security in Industry." The heads under which this subject will be considered are interesting. They are: (1) the problem of security in industry; (2) irregularity of employment; (3) the possibility of stability of employment; (4) methods of stabilizing employment; (5) the problem of the older worker and old age; (6) facing and solving the problem of security.

This security so much emphasized is security not for the worker only, whatever his age, but security for industry itself, which is indissolubly bound up with and is in the same boat with all its workers.

Without any thought that we have completely solved the problem of the older employe, for I know that we have not, I wish to place before you some experiences which may be suggestive. Whether our list of employes is average in age or top-heavy with old timers as compared with other industries I have not had the time to investigate, but the following table of percentages may have some significance in the study of the question:

Age Group	Percentage of Employes
Under 20 years	12.7
20 to 25 years	18.0
25 to 30 years	12.1
30 to 35 years	10.2
35 to 40 years	8.5
40 to 45 years	9.0
45 to 50 years	7.6
50 to 55 years	7.5
55 to 60 years	5.6
Over 60 years	8.8

The total of those up to and including forty-five years of age is 70.5 per cent. The total of those over forty-five years of age is 29.5 per cent. Segregating our factories into a group by themselves, I find the relationship to be 64 per cent under and 36 per cent over forty-five years of age.

In a survey of the effectiveness of workers over forty-five compared with those under this age, we have taken a six-weeks' period of production in several departments and found that 70 per cent of those over forty-five are regularly making their quota or better and earning a bonus, while in the group under forty-five, 87 per cent are making the quota or earning a weekly bonus. If we exclude from our calculations those in the older group who are over sixty-five, where age is unquestionably a factor, we find that 85 per cent of the employes are able to make or exceed their quota—not a bad showing for the "old guard." This is only 2 per cent below the record by the youngsters, so that our contention that in some instances at least the experience of age may prove an acceptable substitute for the speed of youth seems to have some foundation in fact. The hare and the tortoise are still contestants, and the race is not always to the swift.

The basis for our judgment of efficiency is a plan which contemplates that an operator deliver to his employer sixty units of work per hour for an hour's pay, and that the operator be paid at his regular rate for work done in excess of the sixty units per hour. The determination of what is a normal hour's work is difficult. The answer can never be exact, but the plan under which we are