

American industries. However, we cannot overlook the better records of the cement, steel, and machinery manufacturing industries, whose operations involve many hazards as great as our own.

Our showing from the standpoint of severity of lost-time injuries was not quite as good as for frequency. Lost-time averaged 1.94 days per thousand hours worked; our severity rate, consequently, was slightly lower than the rate of 1.97 for all industries and our standing among the 28 industries was fourteenth. Even this rate, however, was considerably less than for steel, cement, and machinery manufacturing.

Injury rates in different branches of our section vary widely. Plants manufacturing carbon products had the lowest frequency rate, 5.05, whereas coal tar distillers had the highest, 44.72. Paint and varnish manufacturing establishments, pharmaceutical and fine chemical manufacturing plants, and soap factories were other branches of the Section to have higher than average frequency rates. Serious injuries, however, occur more frequently in other divisions. Dye manufacturing and acid plants, with better than average frequency rates, have permanent partial disability rates exceeded only by soap manufacturing. Explosives plants, also with very low frequency rates, have the highest severity rate, due, of course, to the unusual hazards of their operations.

The experience of our own as well as other industries shows that small plants usually have higher frequency and severity rates than larger ones. In general, as plants increase in size, their injury rates decrease. The average frequency rate of 78 chemical plants employing less than 100 people was 26.94, in comparison to 13.04 for 17 plants with over 1000 employees. The difference in their severity rates was equally striking; these rates being 3.72 and 1.63 respectively.

Some good records have been made, however, by small plants in all branches of the industry. A tar refining plant with 36 employees went through 1930 without a lost-time injury; this plant had a frequency rate of 33.65 and a severity rate of 0.58 for 1929. A record of two-years without a lost-time injury was made by a plant producing carbon products and employing 64 people. Also, our smaller establishments have made, in many instances, much better records than larger ones in their division. For example, a small plant employing 39 people led the explosives division with a no-accident record during 1930. These are only a few of the illustrations that can be cited to prove that safety can be achieved in small plants.

In discussing our injury experience during 1930, I have indicated where we should look for improvement in the future. Many of us are particularly interested in comparing our 1930 records with those of previous years because of the business depression. We have 106 plants in our industry with an exposure of approximately 145,000,000 man-hours that have reported in each of the last three years; the records of these identical establishments most accurately measure our improvement during this period. The 1930 frequency rate of this group was 20 per cent below their rate for 1928—a reduction which was, however, somewhat less than the decrease of 28 per cent for over 1500 identical establishments in all industries. This reduction in frequency included a decrease of 34 per cent in our fatality rate during 1929 and 1930 in comparison with 1928, but, unfortunately, the frequency of permanent partial disabilities has risen steadily in the past two years. The decrease in our general frequency rate is largely due to the decline in the frequency of temporary disabilities. While the decline in the fatality rate of our identical plants is much larger in many other industries, our experience with other types of injuries is much the same.

The rise in the frequency of permanent partial disabilities during 1929 and 1930 was largely responsible for holding down our decrease in severity to only 6 per cent. The reduction in this rate was less than the 8 per cent decrease made by all industries. The permanent partial disability rate doubled during 1930 in comparison with 1928 and 1929. The large drop in the frequency of temporary disabilities, on the other hand, resulted in a decrease of 25 per cent in the severity of these injuries.

Several explanations have been advanced in the Council's Annual publication on "Industrial Accidents" to account for the large difference in the reductions of temporary disabilities and the more serious injuries. It is thought that an undue proportion of effort may have been devoted to minor hazards with the result that the more serious ones may have been neglected. Also, the increasing use of machinery may have eliminated some minor accidents but introduced new hazards with more serious consequences.

It is also possible that more accurate reporting tended to increase rates, particularly for permanent partial disabilities with their arbitrary scale of time charges. More liberal compensation awards in recent years may have had the effect of increasing time charges for a permanent partial disability; and furthermore, an injury which may have been a temporary disability several years ago might now be considered a permanent partial.

We need, therefore, to give special thought to the reduction of our serious injuries. The importance of knowing the frequency and severity of accidents which are happening in our industry each year is apparent to anyone seriously interested in safety. The fact that we have never been able to ascertain these figures from all the members of our Section is regrettable. We have yet to get the most out of the use of statistics in the work of preventing accidents. The more they are understood and studied the better are we able to apply protective and corrective treatment. Statistics to a safety man are just as indispensable as the compass is to the mariner. They give him the range and scope of the hazard. They eliminate the guess work and a great amount of time ascertaining for himself that which statistics can give him at a glance.

Several industries follow the practice of exchanging full details on fatalities and other serious injuries. Many such cases result from accidents whose causes are unusual and difficult to control. With this plan, however, there is no good reason for a similar accident occurring from the same cause in other plants.

In conclusion, I desire to emphasize the value of reporting your annual accident records to headquarters. In spite of the steady growth of plants reporting from year to year, and our particularly good showing this year, we are getting accident reports from only slightly over one-half of our members. Every member should take advantage of this opportunity to check up on his accident experience from year to year and then compare it with other plants in his industry. A good record is always gratifying and stimulating to the officials and employees of a plant. An organization whose record makes a poor comparison with others in its division should certainly learn the reason for it and take necessary steps for improvement.

Furthermore, every safety man should feel it his personal responsibility to contribute his accident experience for the benefit of the Section. Our non-reporting members are certainly not supporting the efforts of our Sectional Officers to advance the development of full information on the problems and progress of our Section in accident prevention work. Our Section is exactly what we make it, and we get out of it in proportion to what we give, and the growth of the Chemical Section statistics depends on the support from its members.

In closing I wish to take this opportunity to thank the National Safety Council Staff, the Sectional officers, members of the Chemical Section Statistics Committee, and all members reporting, for the help they have given me in making this report possible.

CHAIRMAN ROACH: That was a very excellent report, and I certainly hope that during the next year the other half of our membership that has not contributed accident experience will do so. I know of nothing more stimulating to the interest of the safety committee and men interested in accident prevention than a correct listing of accident experiences. I know of nothing that causes more enthusiasm on the part of all of us who are interested in this human conservation work than to learn