

ABSENCE OF STATISTICS.

The absence of dependable statistics and data would, on cursory reflection, seem a handicap. I am, however, of the opinion, that it will rather prove a blessing, and for this reason—it will inspire conservatism. It precludes our going into the problem too fast, which, if done, might result disastrously. The very absence of the statistics referred to prohibits this. Further, it will give us an opportunity to educate ourselves, as well as the employers and public at large, to this new system. It will, as it were, compel us to crawl before we walk, but it will, on the other hand, give us a splendid opportunity for building our foundations solidly, getting to bed rock, so to speak.

The absence of these statistics should, therefore, under no circumstances deter us from going ahead with our merit rating system as fast as prudence dictates. Our experience as liability underwriters, actuaries and safety engineers has given us sufficient training to warrant our assessing the common and apparent causes of accidents on the data already at hand, with comparative charges where found unguarded, and corresponding credits where they are found guarded, and likewise does our experience justify our judging the comparative importance, which the character and intelligence of employees bear to the ratio of accidents in the individual plants, and the relative value of good and poor management expressed in general cleanliness, order and sanitation of shops.

Acting upon the advice of the most experienced men on this subject, we have, however, refrained from going very far in our first general schedule. We have embodied in that schedule about eighty items, charges and credits, distributed under the following headings: Buildings, foundations, skylights, tanks on roofs, floors, floor openings, hoistways, stairs, elevated runways and platforms, boilers, boiler stacks, engines and prime movers, gas engines, electrical equipment, power transmission equipment not including direct transmission of power to working machine, maintenance and inspection, moral hazard, protection against fire hazard, explosives, sanitation, ladders, hand trucks, yards, grinding wheels, elevators.

To go into detail of each item comprised under these headings, and analyze the why and wherefore we have affixed a specific or discretionary value to them, is impossible in the time at my disposal. Suffice it to say that each item was taken up separately and discussed from all angles by representatives of nearly all companies before being submitted for final adoption.

STANDARDS AND SUPER-STANDARDS.

We have in addition to the schedule so constructed established an equal number of standards and super-standards to be used in connection with it. You will realize it is not enough to tell the owner of a plant that he must guard his equipment with approved safeguards. We must be able at the same time to lay down definite rules as to what constitutes approved safeguards, and we have done so. The standards are necessarily imperfect, and will undoubtedly have to be revised frequently, and suggestions to that end are invited, not alone from the inspection departments of the individual liability companies, but also from manufacturers, private safety engineers and State factory inspection departments, but until revised

or altered it is absolutely necessary that they be adopted *in toto* by all the subscribing companies, and that their inspectors be instructed to adhere strictly to them in making recommendations, that is, of course, as far as local conditions will permit, but on this principle only can we hope to finally get perfect standards. We appreciate the fact that it will work injustice in some cases, but in the long run it will be conducive to the greatest good to the greatest number, and anything based on that principle is fundamentally just and practicable. In the general schedule enumerated above you will note we have not taken into consideration the actual hazards inherent in the working machines used in the operation of the various industries. For this purposes we are now preparing special machine hazard schedules. They will necessarily also be imperfect in the beginning. There is a great divergence of opinion among safety engineers themselves as to what constitutes a proper safeguard on a given machine. The requirements which I would demand of a safeguard would be:

(a) That it be, if possible, automatic in its action, application or operation.

(b) That it be, if possible, an integral part of the machine itself.

(c) That it afford all possible safety to the operator and surrounding workmen.

(d) That it do not materially diminish the output or efficiency of the machine on which it is applied.

These are at least the principal points to be considered in general. Individual problems will arise in addition on separate machines in question, but my suggestion would be that the bureau approve no safeguards unless they fulfill these requirements. This would not mean that no credit should be given for safeguards which did not come up to that standard, but it would mean that safeguards not meeting at least the three first mentioned requirements would not be designated standard, and could not be advertised as having the indorsement of the bureau, and therefore be entitled to the maximum credit in the schedule, if applied.

RESEARCH WORK NECESSARY.

On this point there is apparent need for research work immediately in order to test and determine the relative value of the different safeguards on the market, and my suggestion would be that we lose no time in getting at it, because information so gathered will be absolutely necessary in the construction of scientific schedules for working machines.

Contractors' and mining schedules must also be constructed, but we have in the short time during which the Bureau has been in existence, not been able to get around to them. They are, however, as important as the manufacturers' schedule and will receive attention in due course.

I have so far dealt with the subject from the point of workmen's compensation insurance only, but I feel that merit rating is as essential and practicable in other forms of liability insurance. Let us take, for instance, elevator insurance. The hazards inherent in elevators are well known to all liability underwriters and engineers. Now if part of these hazards are eliminated, it appeals to reason and seems a matter of common justice that consideration should be given in premium rate in direct ratio to degree of elimination. The same argument applies to public liability on buildings.