savings are as meaningful to higher management as those which use frequency and severity figures Facts about the costs of accidents may be used effectively in securing the active cooperation of foremen Foremen are usually cost conscious because they are expected to run their departments profitably Monthly reports showing the cost of accidents or the savings resulting from good accident records are an important motivation to achieve safe operating procedures

#### Definition of work accidents for cost analysis

Work accidents, for the purpose of cost analysis, are unintended occurrences arising out of employment These accidents fall into two general categories (*a*) accidents resulting in work injuries and (*b*) accidents that cause property damage or interfere with production in such a manner that personal injury might result

The inclusion of the no-injury accidents makes "work accident" roughly synonymous with the type of occurrences a safety department strives to prevent

#### Method for estimating

To be of maximum usefulness, cost figures should represent as accurately as possible the specific experience of the company itself A fixed ratio of indirect to direct costs developed from experience representing many different companies in many different industries does not serve such a purpose Estimated costs of accidents in general do not take into account differences in hazards from one industry to another or the more important differences in safety performance from one company to another

Since the distinctions between "direct" and "indirect" costs are difficult to maintain they have been abandoned in favor of the more precise terms "insured" and "uninsured" costs Using these data, a company can estimate its accident cost with reasonable accuracy

**Insured costs** Every organization paying compensation insurance premiums recognizes such expense as part of the costs of accidents In some cases, medical expenses, too, may be covered by insurance These costs are definite, and they are known They comprise the insured element of the total accident cost

In addition to these costs, many other costs arise in connection with accidents The cost of damaged equipment is easily identified Others, such as wages paid to the injured employee for hours during which he is not producing, are hidden These items comprise the *uninsured element of the total accident* cost

**Uninsured costs.** Insured costs can be determined easily from accounting records The difficult part is determining uninsured costs, and the method described here will serve that purpose

The first step is to make a pilot study to ascertain approximate averages of uninsured costs for each of the following four classes of accidents

CLASS 1—Permanent partial disabilities and temporary total disabilities

CLASS 2—Medical treatment cases requiring the attention of a physician outside the plant

CLASS 3—Medical treatment cases requiring only first-aid or local dispensary treatment and resulting in property damage of less than $20 00 or loss of less than 8 hours' working time

CLASS 4—Accidents which either cause no injury or cause minor injury not requiring the attention of a physician, and which result in property damage of $20 00 or more, or loss of 8 or more man-hours

Once average costs have been established for each accident class, they may be used as multipliers to obtain total uninsured costs in subsequent periods These costs then may be added to known insurance premium costs to determine the total cost of accidents

#### Example of a cost estimate

An estimate of costs made by one company is given in the following example First, a pilot study was made to get the average cost of each class of accident Included in the study were 20 Class 1 accidents, 30 Class 2 accidents, 50 Class 3 accidents, and 20 Class 4 accidents Costs were determined and averages developed as in Table 12-B

During the entire year, the company had