# The Compensation of Accidents incurred by Workers on their Way to and from Work

## Analysis of the Statistics of Industrial Accident Insurance in Germany from 1927 to 1931

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*Accidents incurred by workers on the journey between their home and their work are sometimes covered by industrial accident insurance, but in many countries they do not give rise to compensation. Opinions differ fairly widely on the question, and among the arguments maintained by the opponents of the extension of insurance to accidents of this kind is the practical one that the risk involved is not yet adequately known, but would certainly place a heavy burden on the insurance institutions. While the available statistics do not allow of a reliable estimate of this risk, they do, however, include certain data which throw light on some at least of the aspects of the problem. Taking by way of example the statistics of industrial accident insurance in Germany from 1927 to 1931, Mr. Mataré tries in the following article to ascertain the extent of the risk represented by accidents of the class in question, and also to determine the characteristics of these accidents, in particular their nature and their distribution among the various categories of insured persons.*

### INTRODUCTION

THE object of social insurance against occupational accidents is to cover the employer's liability for compensation. The employer can naturally be expected to assume liability only for accidents occurring in the operation of his undertaking. At the same time, however, this does not imply that his liability

covers only those accidents which occur on the working premises.

The employer is also undoubtedly liable when a person in the service of the undertaking incurs an accident in the performance of work which he is deputed to do outside the working premises. This also applies to accidents incurred by such workers on the journey between the undertaking and the place where the work is to be performed. Accidents to a person running an errand on the undertaking's business also give rise to compensation under nearly all accident insurance legislation.

Thus, certain road accidents, which may be termed road accidents incurred in the course of work, are covered by insurance in nearly all countries where an accident insurance scheme is in force.

The position is different in regard to accidents incurred by workers during their journey between their home and their work. The treatment of this class of accident varies from one scheme to another. In some countries they are covered by insurance and in others not.

It is clear, therefore, that the problem is still a debated one, the insurance carriers and employers, who bear the full cost of insurance, and the workers having taken different sides on the question.

The former hold that accidents occurring on the worker's way to and from his work should be excluded from the scope of insurance, and the latter that these accidents should be included.

The heads of undertakings argue that there is no reason to extend accident insurance, which covers their liability for compensation, to accidents for which the undertaking cannot be held responsible. Accidents incurred on the way to and from work are due for the most part to circumstances which lie quite outside the employers' control. It may be said that this also applies to accidents occurring between the undertaking and the place where the work is performed, which as already mentioned are usually covered by accident insurance; but the position in regard to these two groups is different, in that while travelling from the undertaking to the working site the insured person is under the orders of his employer, who may lay down instructions as to the route to be followed, whereas as a rule he has not this power in respect of the journey between the worker's home and the undertaking.

Another argument often advanced against extending insurance to cover accidents incurred on the way to work is that this type of accident would be particularly liable to give rise to abuses. It is said that a number of the insured persons might be induced by the hope of compensation to report as occupational accidents those which had happened at a time when they were journeying neither between the undertaking and the working site nor between the undertaking and their homes. As most accidents of this type happen without witnesses and the insured persons' statements cannot be regarded as false until they are so proved, the extension of the scope of insurance to cover this class of accident would open wide the door to abuses.

A third objection of a strictly practical kind is that although the risk involved by these accidents is not adequately known all the evidence points to its being a particularly high one, so that the payment of compensation for these accidents would place a heavy burden on the resources of the funds.

These three principal arguments against the extension of insurance to cover accidents incurred on the way to and from work are countered by the insured persons as follows.

The moral right of the insured person to compensation for this type of accident as well is unquestionable. To the worker himself it makes no practical difference whether the accident occurs while he is travelling in his employer's service or on his way to or from work, and he cannot be expected to understand why he is allowed compensation in the first case and refused it in the second. The argument that in the first case he is acting directly under the employer's instructions whereas in travelling between his work and his home he is his own master is not sound, since in fact the worker is by no means free to decide at will whether or not he shall go to his work. He is bound in this respect by his contract of employment, to fulfil which he is obliged to make the journey from his home to his place of work and back. The performance of this journey is thus the fulfilment in the service of the undertaking of a subsidiary obligation arising out of the insured person's contract of employment. It would accordingly be unfair to afford the protection of insurance solely to activities carried on within the undertaking and not to extend it to the fulfilment of subsidiary obligations which are in fact inseparable from these activities.

Again, the special opportunities for abuses cannot be

regarded as a valid reason for excluding accidents incurred on the way to work from the scope of insurance. Abuses are as inseparable from insurance as shadow from the sun. If this were accepted as a valid argument against the inclusion of accidents incurred on the way to work, those incurred on journeys made in the employer's service should also be excluded, for the alleged special danger of abuse is obviously just as great in the one case as in the other.

It cannot be denied that the magnitude of the risk assumed by the insurance scheme in extending its scope to cover accidents incurred in travelling to and from work is not yet adequately known. But this is no argument against the moral necessity of extending insurance to these accidents. Every country that introduces any social insurance scheme whatever is obliged to place upon it a much heavier burden of risks which cannot be accurately gauged beforehand; and since this objection was not regarded as an obstacle to the introduction of accident insurance legislation in general, it cannot now be maintained as an argument to oppose the regulation of a particular and more or less minor aspect of the general problem.

Comparing the arguments put forward on the one hand by the insurance carriers and heads of undertakings, and on the other by the insured persons, it may be concluded that, while the insured persons are justified in demanding that accidents incurred by workers travelling between their homes and the undertaking should be covered by insurance, the employers are equally justified in their unwillingness to bear the cost of this extension.

We have seen that the method adopted under different national schemes to escape this dilemma has been either to exclude accidents incurred on the way to or from work from the scope of their accident insurance legislation, or to include them at the cost of the employers. So far, Switzerland seems to be the only country to have adopted an intermediate solution. Compulsory accident insurance is there divided into " occupational accident insurance ", which covers industrial accidents proper, and " non-occupational accident insurance ", which provides compensation for all other accidents to insured persons, and therefore covers accidents incurred on the way to and from work, although excluding motor-cycle accidents. Heads of undertakings, who bear the full cost of occupational accident insurance, do not pay any contribution to non-

occupational accident insurance, the cost of which is defrayed as to one-quarter by the State and as to three-quarters by the insured persons themselves.

It is clear from what has been said above that the laws of the different countries do not agree in regard to the treatment of accidents incurred on the way to and from work under accident insurance schemes. Even where these accidents are covered by the schemes there is a widespread demand not for a mere redistribution of the cost but for the complete reversal of the policy adopted.

Under these circumstances, a precise knowledge of the risk represented by accidents incurred in travelling to and from work is a matter of special importance. Is this risk really as heavy as is often alleged ? What is the ratio between the number of occupational accidents proper and that of accidents incurred on the way to and from work ? How many occupational accidents and accidents on the journey to and from work respectively occur among a given number of insured persons ? Do more of the latter type of accident occur among a given number of men workers than of women ? Is the risk heavier in the case of young persons than of adults, and so on ? It is all the more necessary that these and many other aspects of the question should be cleared up because in discussing the problem it is constantly being said that the extent of the risk is the unknown quantity, without any attempt being made to define it more closely.

The statistical data at present available do not allow of a reliable estimate of this risk. In order to make such an estimate possible, it would be necessary that the insurance institutions of schemes which cover the risk of accidents incurred on the way to and from work should enter the cost of compensation arising out of these accidents separately in their books. There are, however, serious difficulties in the way of this procedure, which would make it possible to ascertain the direct effect of the inclusion of this risk on the cost of the scheme, and none of the countries concerned appears to have compiled its statistics on this basis.

The statistics for certain countries do, however, include a certain amount of data which throw light on some at least of the aspects of the problem.

The following pages give some particulars of the statistics of the working of industrial accident insurance in Germany.

The figures are taken from the statistics of the causes of accidents published year by year since 1927 in the *Reichsarbeitsblatt*. They relate to a fairly large number of insured persons, about ten million on an average, and enable a mean to be calculated for the five-year period from 1927 to 1931. For the sake of completeness, the figures for the depression years, 1932 and 1933, are also given.

It should be noted that the following study is based only on the total figures, that is to say the sum of the accidents reported to or compensated by all the carriers of industrial accident insurance.

The results obtained therefore relate only to German industrial accident insurance in general, and no conclusions can be drawn from them in regard to the position in the various insurance institutions. It is obvious that in the individual institutions the covering of the risk of accidents incurred on the way to and from work may produce results differing more or less widely from those of the scheme in general. Generally speaking, the influence of accidents incurred on the way to and from work is felt in inverse ratio to that of occupational accidents proper. Their effect is slighter where compensation normally has to be paid for a large number of occupational accidents, i.e. in institutions covering undertakings where the accident risk is high, than in the case of insurance carriers which normally have to provide compensation for only a small number of occupational accidents, i.e. those covering undertakings in which the accident risk is low. Thus in 1933, for instance, the German Mining Accident Association had to pay compensation for 976 accidents for every 100,000 insured persons, 22 of these accidents being incurred on the way to or from work. The Tobacco Industry Accident Association, on the other hand, paid compensation for only 57 accidents for the same number of insured persons, of which 18 were accidents incurred on the way to or from work. Out of every 100 accidents compensated by the Mining Accident Association and the Tobacco Industry Accident Association, the number of those incurred on the journey to and from work was 2 and 32 respectively. The aggregate figures set forth in the following pages are thus made up of very diverse partial results. To enquire closely into the latter would lead too far afield, and all that is attempted here is a general survey of the problem.

## Statistical Data

A few preliminary remarks are called for in regard to the statistical data given below. The statistics show the number of accidents reported and the number which gave rise to compensation. In both cases fatal accidents are included, but statistics are also given of fatal accidents reported and fatal accidents for which no compensation was paid. [1] The statistics also show the number of accidents resulting in eye injuries, burns and drowning (as a result of accidents).

Accidents are classified by type. Those occurring on the way to or from work are divided into accidents to pedestrians, to cyclists and to passengers in vehicles. Separate figures are given for accidents which are not classifiable in any of these groups. The same classification is used for the total number of road accidents reported and compensated, and also for reported and non-compensated fatal accidents, and for the results of accidents.

As regards accidents to pedestrians and cyclists, the number of accidents which were or were not due to third parties and the number compensated are also given, with separate figures for the number of fatal accidents reported in the same groups for which no compensation was paid.

No further classification is attempted of the accidents reported or of the data concerning accident results. Compensated accidents are, however, divided into those incurred by adults and juveniles (under 18 years) respectively, and in each group are also classified by sex. The data concerning fatal and non-compensated fatal accidents relate only to juveniles and adults and do not include a sex classification.

The figures are compiled for the calendar year. Some of the accidents occurring during the year, however, are regularly reported after the close of the year, while in the case of some of those reported during the year the decision as to the award of compensation in accordance with the Federal Insurance Code is not taken until the following year. These cases are ordinarily dealt with in an appendix to the statistics of accidents classified by type showing all accidents incurred during the previous year and subsequently reported or compensated until 30 September

[1] It is assumed throughout this study that the difference between the number of accidents reported and of those that did not give rise to compensation represents the number of compensated accidents.

of the following year. For reasons of economy the supplementary reports for 1929, 1930 and 1931 were not published in full. They give the total figures only and do not contain a classification by type of accident, etc. If therefore a general survey of the data for the years 1927 and 1931 is to be obtained by comparing equivalent figures, only those relating to the accidents reported and compensated up to 31 December of each year must be taken into account. Accidents which occurred in the current year but were reported or compensated after 31 December must be left out of consideration, since detailed data in respect of them are available for two years only. This omission will have less effect on the reported accidents than on the compensated accidents. In spite of this deficiency, however, the figures given below furnish a fairly accurate picture of the facts.

In investigating the characteristics of accidents incurred on the way to and from work it is also necessary to ascertain whether and to what extent the data for this type of accident differ from those for other types. The number of accidents incurred on the way to and from work, as shown by the accident-cause statistics, are accordingly accompanied wherever possible by the figures for all other accidents. The latter, which may be briefly described as " working accidents " *(Betriebsunfälle)*, are, with the exception of those classified under " P. Working appliances "[1], all those incurred in the undertaking itself or in the course of activity directly serving the purposes of the undertaking. Accidents incurred on the way to and from work *(Arbeitswegunfälle)*, on the other hand, are those incurred by workers while not yet or no longer under the direct orders of an employer and not engaged in any activity directly serving the purposes of the undertaking.

### *Number of Insured Persons*

The data concerning the number of insured persons to whom the accident figures relate are incomplete. The only figure available is that for the total number of insured persons, to which may be added for the purpose of abstract calculations

[1] According to the Federal Insurance Code, " the storage, conveyance, maintenance and renewal of working appliances, even if they are supplied by the insured person himself, in connection with employment in an establishment liable to insurance, shall be deemed to be equivalent to employment in the said establishment."

the total number of insured full-time workers *(Vollarbeiter)*, i.e. the number of hours worked in the year divided by 2,400. These figures are given in the following table.

| Year | Number of insured persons | Number of full-time workers |
|---|---|---|
| 1927 | 10,711,769 | 9,472,825 |
| 1928 | 11,238,832 | 9,944,331 |
| 1929 | 11,495,151 | 10,105,513 |
| 1930 | 10,627,871 | 9,373,346 |
| 1931 | 9,136,970 | 7,909,013 |
| 1927-1931 | 10,642,119 | 9,360,986 |
| 1932 | 7,898,934 | 6,777,138 |
| 1933 | 8,639,056 | 7,400,798 |

No information is available as to the distribution of the insured persons into juveniles (under 18 years) and adults, or males and females. Some indication of the probable proportions of these groups is, however, provided by the 1925 census data on occupations and undertakings. The relevant figures are given below.

NUMBER AND PERCENTAGE OF OCCUPIED PERSONS IN INDUSTRY AND HANDICRAFTS IN 1925

| Age group | Males | | Females | | Total | |
|---|---|---|---|---|---|---|
| | Number | Per cent. | Number | Per cent. | Number | Per cent. |
| Under 18 years | 1,288,837 | 9.7 | 448,008 | 3.4 | 1,736,845 | 13.1 |
| Over 18 years | 9,041,506 | 68.3 | 2,460,872 | 18.6 | 11,502,378 | 86.9 |
| Total | 10,330,343 | 78.0 | 2,908,880 | 22.0 | 13,239,223 | 100.0 |

Thus only 22 per eent. of the industrial workers were women and only 13.1 per cent. were under 18 years of age. It is unlikely that the distribution of the population insured against accidents with the industrial accident associations differed very widely from that of the whole occupied industrial population as shown above. On this assumption the distribution of the average number of persons insured from 1927 to 1931 may be roughly calculated as follows:

| | Males | Females | Total |
|---|---|---|---|
| Under 18 years | 1,028,000 | 360,000 | 1,390,000 |
| Over 18 years | 7,240,000 | 1,972,000 | 9,212,000 |
| Total | 8,268,000 | 2,332,000 | 10,600,000 |

These estimates will be referred to as occasion arises for the purpose of enabling the reader to appreciate the importance of certain figures.

## Analysis of the Statistics

### *Number of Accidents on the Way to and from Work* [1]

*Total number of accidents.*

The first table given below shows the total number of accidents and their distribution into occupational accidents proper (" working accidents ") and accidents on the way to and from work (" road accidents "). The figures relate, as already noted, to all accidents reported up to 31 December. The proportion of each type of accident per 1,000 is given side by side with the absolute figures.

STATISTICS OF ACCIDENTS REPORTED

| Year | Total number of accidents | Working accidents | | Road accidents | |
|---|---|---|---|---|---|
| | | Total | Per 1,000 | Total | Per 1,000 |
| 1927 | 828,756 | 790,872 | 954 | 37,884 | 46 |
| 1928 | 924,222 | 873,104 | 945 | 51,118 | 55 |
| 1929 | 927,995 | 866,152 | 933 | 61,843 | 67 |
| 1930 | 707,808 | 662,398 | 936 | 45,410 | 64 |
| 1931 | 512,743 | 476,094 | 929 | 36,649 | 71 |
| 1927-1931 | 780,305 | 733,724 | 940 | 46,581 | 60 |
| 1932 | 406,620 | 378,480 | 930 | 28,140 | 70 |
| 1933 | 510,975 | 475,186 | 933 | 35,789 | 67 |

[1] The statistics obviously do not cover all road accidents without exception. They exclude all accidents incurred by insured persons while running errands or going from one working site to another in the same undertaking. These are not covered by the definition laid down in section 545*a* of the Federal Insurance Code and therefore figure under occupational accidents proper (Group E2).

All road accidents incurred by insured persons when they are neither on the premises of the undertaking nor on their way to or from work are also, in principle, excluded from the statistics. It may be assumed, however, that some of these accidents also figure among the total number of accidents, since the statements

Every 1,000 accidents thus include 60 road accidents for the average of the five-year period under consideration.

During the same period there were 6,894 working accidents and 438 road accidents per 100,000 insured persons.

As the insured persons are exposed to the risk of working accidents longer than to that of road accidents, the number of working accidents is obviously much higher than that of road accidents. But as neither the hours of work in the undertaking nor the time spent by the workers on their way to and from work are known, it is not possible to say which kind of accident has the higher frequency. Indirectly, however, it can be shown that the risk of road accidents is the lower of the two. In fact, if the frequency of the two risks were the same, the period of exposure to each kind of accident would be proportional to the corresponding number of accidents. Taking the average figures for the five-year period considered (734,000 working accidents and 46,000 road accidents), we should thus have the following relation between the times $w$ and $r$ of the exposure to the risk of working accidents and road accidents respectively:

$\frac{w}{734{,}000} = \frac{r}{46{,}000}$, or $r = \frac{46}{734}\,w$. If $w$ is taken to be 8 hours, $r$ would therefore be $\frac{46 \times 8}{734} = 0.5$ hour or 30 minutes.

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of the insured persons must be accepted as true until the contrary is proved. If it is subsequently established that an accident reported as falling under section 545*a* of the Federal Insurance Code is not in fact covered by that provision, the accident concerned is not deducted from the total number of accidents but classified among the accidents not giving rise to compensation.

Accidents occurring on the way to or from work can obviously be recorded in the statistics only if they come to the notice of the sickness fund to which the insured person belongs. The sickness funds are bound to notify the competent accident association of every accident reported to them by the insured person as having occurred during his journey to or from work, but these accidents are not included in the accident-cause statistics if it is clear from the notification that they did not result in disablement of more than three days' duration. Whether a road accident is included in the statistics or not therefore depends only partly on the nature of the accident and to a much greater extent on the particulars contained in the notification from the sickness fund. This notification may be affected by purely casual circumstances unconnected with the gravity of the accident. If it is not clear from the notification that the insured person was disabled for less than three days the accident figures in the statistics, even if the duration of incapacity did not actually exceed this limit. Thus, some of the accidents incurred on the way to or from work which should not legitimately figure in the statistics are nevertheless included, while on the other hand similar accidents which were not regarded as serious at the time but subsequently resulted in a longer period of incapacity are not mentioned.

The result thus reached is inadmissible. In fact, a very large proportion of insured persons go to and from their work twice a day, and in addition the period of exposure to risk, over and above the journey between the home and the undertaking, may be further increased by stoppages or occasional detours. It is not possible to assume that an insured person is exposed to the risk of road accidents for an average of only half an hour per day. The hypothesis of equal risks corresponding to this estimate must therefore be given up, and it can, on the contrary, be deduced from thea bove argument that for the insured persons as a whole the frequency of working accidents is considerably higher than that of road accidents.

*Classification of road accidents by type.*

The distribution of accidents occurring on the way to and from work by type of accident was as follows.

CLASSIFICATION OF ROAD ACCIDENTS BY TYPE

| Year | Accidents to pedestrians | | Accidents to cyclists | | Accidents to passengers in vehicles | | Miscellaneous accidents | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | Total | Per 1,000 accidents | Total | Per 1,000 accidents | Total | Per 1,000 accidents | Total | Per 1,000 accidents | |
| 1927 | 15,927 | 420 | 18,938 | 500 | 2,878 | 76 | 141 | 4 | 37,884 |
| 1928 | 18,360 | 359 | 27,690 | 542 | 5,042 | 98 | 26 | 1 | 51,118 |
| 1929 | 26,003 | 420 | 29,037 | 470 | 6,746 | 109 | 57 | 1 | 61,843 |
| 1930 | 15,766 | 347 | 24,295 | 535 | 5,304 | 117 | 45 | 1 | 45,410 |
| 1931 | 14,368 | 392 | 18,835 | 514 | 3,407 | 93 | 39 | 1 | 36,649 |
| 1927-1931 | 18,085 | 389 | 23,759 | 510 | 4,675 | 100 | 62 | 1 | 46,581 |
| 1932 | 9,658 | 343 | 16,088 | 572 | 2,353[1] | 84 | 41 | 1 | 28,140 |
| 1933 | 11,458 | 320 | 21,872 | 611 | 2,439 | 68 | 20 | 1 | 35,789 |

[1] The official statistics give this figure as 2,553, but this appears to exceed the real figure by 200.

About half (51 per cent.) of the road accidents during the average of the five-year period considered occurred to cyclists,

one-tenth to passengers in vehicles, and about four-tenths to pedestrians.

For every 100,000 insured persons during the same period, 170 accidents happened to pedestrians, 223 to cyclists, 44 to passengers, and one unspecified; in all, 438.

No conclusion can of course be drawn from these figures as to the method of travelling to work involving the highest accident rate, since there is no indication of the number of hours spent by the insured persons in travelling by each of the three methods classified.

### *Compensated Road Accidents*

*All accidents.* [1]

For statistical purposes, a " compensated accident " is an accident which has given rise to the award, by an accident insurance institution, of a pension in respect of permanent incapacity or death, temporary incapacity benefit, or funeral benefit. The very numerous accidents the victims of which receive benefits only under sickness insurance are therefore classed as " non-compensated ".

The following table gives the number of compensated accidents, their distribution into working accidents and road accidents, and also the rate per thousand accidents in both groups.

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[1] It is obvious that a road accident is not eligible for compensation under compulsory accident insurance unless it actually occurred during the worker's journey from his home to his work or vice versa. Whereas the statistics of all road accidents reported also include accidents wrongly reported by the worker as having occurred on his way to or from work, the figures for compensated accidents relate only to those which insurance legislation is actually intended to cover. All accidents reported which do not fulfil this condition remain uncompensated. The same is of course true of those accidents which are recognised as having occurred on the way to or from work but are not serious enough to give rise to compensation. The accident-cause statistics do not specify the grounds for the refusal of compensation, so that it is impossible to ascertain the number of working and road accidents for which compensation was refused on the ground that they did not come under the definitions laid down by the Federal Insurance Code. Information on this point would be of considerable interest, as the fact that compensation is awarded for accidents incurred on the way to or from work may act as an inducement to insured persons to claim compensation for accidents occurring under other circumstances. But it is clear that a notion of the position could be obtained only if the statistics also stated how many of the accidents reported as road accidents incurred on the way to or from work and of those occurring during work were recognised as occupational accidents or road accidents in the sense of the Federal Insurance Code.

STATISTICS OF COMPENSATED ACCIDENTS

| Year | Total number of compensated accidents | Working accidents | | Road accidents | |
|---|---|---|---|---|---|
| | | Total | Per 1,000 compensated accidents | Total | Per 1,000 compensated accidents |
| 1927 | 53,283 | 49,827 | 935 | 3,456 | 65 |
| 1928 | 56,469 | 52,011 | 921 | 4,458 | 79 |
| 1929 | 55,257 | 50,009 | 905 | 5,248 | 95 |
| 1930 | 44,956 | 41,054 | 913 | 3,902 | 87 |
| 1931 | 30,988 | 28,104 | 907 | 2,884 | 93 |
| 1927-1931 | 48,191 | 44,201 | 918 | 3,990 | 82 |
| 1932 | 19,321 | 17,766 | 920 | 1,555 | 80 |
| 1933 | 23,482 | 21,608 | 920 | 1,874 | 80 |

The extension of liability for compensation to accidents on the way to or from work thus led to an average increase of 3,990 or nearly 8.3 per cent. in the total number of compensated accidents.

Of every thousand compensated accidents over the period as a whole, 918 were working accidents and 82 road accidents. The fact that, as a previous table showed, only about six out of every 100 accidents reported were road accidents, points to the conclusion that relatively more road accidents than working accidents gave rise to compensation. That this was actually the case is shown by the next table.

NUMBER OF ACCIDENTS COMPENSATED PER 1,000 ACCIDENTS REPORTED

| Year | All accidents compensated | Working accidents compensated | Road accidents compensated |
|---|---|---|---|
| 1927 | 64.3 | 63.0 | 91.2 |
| 1928 | 61.1 | 59.6 | 87.2 |
| 1929 | 59.5 | 57.7 | 84.8 |
| 1930 | 63.5 | 62.0 | 85.9 |
| 1931 | 60.4 | 59.0 | 78.7 |
| 1927-1931 | 61.7 | 60.2 | 85.7 |
| 1932 | 47.5 | 46.6 | 55.2 |
| 1933 | 45.9 | 45.5 | 52.1 |

The average number of accidents per 100,000 insured persons for the five-year period under review was as follows :

| | Accidents reported | Compensated accidents |
|---|---|---|
| Working accidents | 6,894 | 415 |
| Road accidents | 438 | 38 |
| Total | 7,332 | 453 |

The average proportion of accidents for which compensation was awarded throughout the period was about 6 per cent. for working accidents and 9 per cent for road accidents.

In each of the five years considered the proportion of road accidents compensated was substantially higher than that of working accidents compensated.

The proportion of cases in which compensation was refused was also higher in every year for working accidents than for road accidents. In both groups, the refusal of compensation may have been due either to the slightness of the accident or to the fact that it did not meet the definition of the Federal Insurance Code, having been wrongly reported as an occupational or a road accident. The statistics do not give the reasons for which compensation was refused; it is not possible, therefore, to ascertain whether the proportion of cases in which compensation was refused owing to inaccurate declaration was higher for occupational accidents or for road accidents.

*Distribution of compensated accidents among juveniles and adults.*

The next table shows how the compensated accidents were distributed as between juveniles (under 18 years) and adults.

DISTRIBUTION OF COMPENSATED ACCIDENTS BETWEEN JUVENILES AND ADULTS

| Year | All compensated accidents | | Compensated working accidents | | Compensated road accidents | |
|---|---|---|---|---|---|---|
| | Juveniles | Adults | Juveniles | Adults | Juveniles | Adults |
| 1927 | 3,746 | 49,537 | 3,552 | 46,275 | 194 | 3,262 |
| 1928 | 3,744 | 52,725 | 3,471 | 48,540 | 273 | 4,185 |
| 1929 | 3,437 | 51,820 | 3,170 | 46,839 | 267 | 4,981 |
| 1930 | 2,928 | 42,028 | 2,717 | 38,337 | 211 | 3,691 |
| 1931 | 1,995 | 28,993 | 1,831 | 26,273 | 164 | 2,720 |
| 1927-1931 | 3,170 | 45,021 | 2,948 | 41,253 | 222 | 3,768 |
| 1932 | 1,105 | 18,216 | 1,027 | 16,739 | 78 | 1,477 |
| 1933 | 1,227 | 22,255 | 1,148 | 20,460 | 79 | 1,795 |

On the basis of these figures it is possible to calculate the proportion of accidents to juveniles among working accidents and road accidents respectively.

PROPORTION OF JUVENILES AND ADULTS RESPECTIVELY, PER 1,000 COMPENSATED ACCIDENTS

| Year | Per 1,000 compensated working accidents | | Per 1,000 compensated road accidents | |
|---|---|---|---|---|
| | Juveniles | Adults | Juveniles | Adults |
| 1927 | 71 | 929 | 56 | 944 |
| 1928 | 67 | 933 | 61 | 939 |
| 1929 | 63 | 937 | 51 | 949 |
| 1930 | 66 | 934 | 54 | 946 |
| 1931 | 65 | 935 | 57 | 943 |
| 1927-1931 | 67 | 933 | 56 | 944 |
| 1932 | 58 | 942 | 50 | 950 |
| 1933 | 52 | 948 | 42 | 958 |

These figures show that every year there were relatively more accidents to juveniles among compensated working accidents than among compensated road accidents. The average was 6.7 per cent. for compensated working accidents and 5.6 per cent. for compensated road accidents.

During the five years as a whole there were 70.0 compensated road accidents per 1,000 compensated accidents to juveniles and 83.7 compensated road accidents per 1,000 compensated accidents to adults.

If the estimates of the total number of insured persons given above (see p. 443) are at all accurate, it may be reckoned that the number of compensated accidents per 100,000 insured juveniles was 228, of which 16 were road and 212 working accidents. For every 100,000 insured adults the corresponding figures were 489, 41 and 448.

It therefore seems that more road accidents occur among a given number of adults than among the same number of juveniles.

*Distribution of compensated accidents by sex.*

The distribution of compensated accidents as between males and females was as follows :

DISTRIBUTION OF COMPENSATED ACCIDENTS ACCORDING TO SEX OF INSURED PERSONS

| Year | Compensated accidents | | | | | |
|---|---|---|---|---|---|---|
| | All accidents | | Working accidents | | Road accidents | |
| | Males | Females | Males | Females | Males | Females |
| 1927 | 49,102 | 4,181 | 46,247 | 3,580 | 2,855 | 601 |
| 1928 | 51,942 | 4,527 | 48,209 | 3,802 | 3,733 | 725 |
| 1929 | 50,195 | 5,062 | 45,972 | 4,037 | 4,223 | 1,025 |
| 1930 | 40,680 | 4,276 | 37,522 | 3,532 | 3,158 | 744 |
| 1931 | 27,634 | 3,354 | 25,434 | 2,670 | 2,200 | 684 |
| 1927-1931 | 43,911 | 4,280 | 40,677 | 3,524 | 3,233 | 756 |
| 1932 | 17,279 | 2,042 | 16,103 | 1,663 | 1,176 | 379 |
| 1933 | 21,068 | 2,414 | 19,630 | 1,978 | 1,438 | 436 |

As the result of the inclusion in insurance of road accidents, the industrial accident associations have had to pay compensation on an average for 3,233 road accidents to males and 756 to females.

The next table shows the proportions of accidents to males and females respectively in every thousand compensated working and road accidents.

PROPORTION OF ACCIDENTS TO MALES AND FEMALES RESPECTIVELY, PER 1,000 COMPENSATED WORKING AND ROAD ACCIDENTS

| Year | Per 1,000 compensated working accidents | | Per 1,000 compensated road accidents | |
|---|---|---|---|---|
| | Males | Females | Males | Females |
| 1927 | 928 | 72 | 826 | 174 |
| 1928 | 927 | 73 | 837 | 163 |
| 1929 | 919 | 81 | 805 | 195 |
| 1930 | 914 | 86 | 809 | 191 |
| 1931 | 905 | 95 | 763 | 237 |
| 1927-1931 | 920 | 80 | 811 | 189 |
| 1932 | 906 | 94 | 756 | 244 |
| 1933 | 908 | 92 | 767 | 233 |

According to these figures the proportion of compensated accidents to females was much lower in the case of working

accidents than of road accidents, the averages being 8 per cent. and 18.9 per cent. respectively.

Over the five-year period as a whole, 74 out of every 1,000 compensated accidents to males were road accidents and 926 working accidents, while the corresponding figures for every 1,000 compensated accidents to females were 177 and 823.

According to the estimates already mentioned, an average of some 8,268,000 males and 2,332,000 females were insured with the industrial accident associations during the five years under review. The number of compensated accidents per 100,000 insured males may thus be estimated at 531, including 492 working accidents and 39 road accidents, and per 100,000 females at 183, including 151 working accidents and 32 road accidents.

It may be assumed from these figures that more road accidents occurred among a given number of insured males than among the same number of insured females.

*Distribution of compensated accidents between juveniles and adults.*

The following table shows how the compensated working and road accidents to males and females were distributed as between juveniles and adults.

DISTRIBUTION BETWEEN JUVENILES AND ADULTS, AND BY SEX, OF COMPENSATED WORKING AND ROAD ACCIDENTS

| Year | Working accidents | | | | Road accidents | | | |
|---|---|---|---|---|---|---|---|---|
| | Males | | Females | | Males | | Females | |
| | Juveniles | Adults | Juveniles | Adults | Juveniles | Adults | Juveniles | Adults |
| 1927 | 3,048 | 43,199 | 504 | 3,076 | 153 | 2,702 | 41 | 560 |
| 1928 | 2,982 | 45,227 | 489 | 3,313 | 212 | 3,521 | 61 | 664 |
| 1929 | 2,708 | 43,264 | 462 | 3,575 | 200 | 4,023 | 67 | 958 |
| 1930 | 2,346 | 35,176 | 371 | 3,161 | 159 | 2,999 | 52 | 692 |
| 1931 | 1,602 | 23,832 | 229 | 2,441 | 130 | 2,070 | 34 | 650 |
| 1927-1931 | 2,537 | 38,140 | 411 | 3,113 | 171 | 3,062 | 50 | 706 |
| 1932 | 874 | 15,229 | 153 | 1,510 | 56 | 1,120 | 22 | 357 |
| 1933 | 975 | 18,655 | 173 | 1,805 | 61 | 1,377 | 18 | 418 |

The extension of insurance to cover accidents on the way to and from work has increased the number of compensated accidents in proportions varying widely in respect of juveniles and adults of both sexes. The average increase in compensated cases over the period was 181 or 6.5 per cent. for boys, 3,311 or 7.9 per cent. for men, 55 or 12 per cent. for girls and 719 or 21.9 per cent. for women.

In the group of compensated working accidents, 6.2 per cent. of all accidents to males and 11.7 per cent. of those to females happened to juveniles, while in the road-accident group the corresponding figures were 5.3 per cent. and 6.7 per cent.

On an average 13.9 per cent. of the compensated working accidents among juveniles and 23 per cent. of the compensated road accidents among juveniles happened to girls. For adults, the proportions of accidents to women in the same groups were 7.6 and 18.7 per cent.

Some idea, though necessarily a rough one, of the distribution of compensated accidents among juveniles and adults of both sexes may be obtained on the basis of the previous estimates of the distribution of insured persons by sex and age. If these estimates are approximately correct, the number of accidents of each type per 100,000 insured persons of each category over the whole five-year period would have been as follows :

| | Compensated working accidents | Compensated road accidents | All compensated accidents |
|---|---|---|---|
| Boys | 246 | 17 | 263 |
| Men | 527 | 42 | 569 |
| Girls | 114 | 14 | 128 |
| Women | 158 | 35 | 193 |

Failing evidence to the contrary, it may be argued from these figures that more compensated road accidents occurred among a given number of insured men than among the same number of insured women. In both groups, however, the proportion was higher than among insured boys, while the figure for the latter group was higher than that for insured girls.

*Compensated road accidents classified by type of accident.*

The next point to be considered is the various types of accident which give rise to compensation from the industrial accident institutions. The absolute figures and the rate per thousand compensated accidents are given in the following table.

DISTRIBUTION OF COMPENSATED ROAD ACCIDENTS

| Year | Accidents to pedestrians | | Accidents to cyclists | | Accidents to passengers in vehicles | |
|---|---|---|---|---|---|---|
| | Number | Per 1,000 | Number | Per 1,000 | Number | Per 1,000 |
| 1927 [1] | 1,463 | 423 | 1,691 | 490 | 301 | 87 |
| 1928 | 1,632 | 366 | 2,279 | 511 | 547 | 123 |
| 1929 [2] | 2,307 | 440 | 2,212 | 422 | 724 | 138 |
| 1930 [1] | 1,335 | 342 | 1,995 | 511 | 571 | 147 |
| 1931 | 1,161 | 403 | 1,338 | 464 | 385 | 133 |
| 1927-1931 | 1,580 | 396 | 1,903 | 477 | 506 | 127 |
| 1932 [3] | 531 | 342 | 861 | 555 | 159 | 103 |
| 1933 [4] | 655 | 350 | 1,038 | 555 | 178 | 95 |

[1] 1 unclassified accident. [2] 5 unclassified accidents. [3] 4 unclassified accidents. [4] 3 unclassified accidents.

Accidents to cyclists thus formed the largest group of compensated accidents (477 per 1,000) throughout the period under review. Accidents to pedestrians came next with 396 per 1,000 and those to passengers in vehicles last with 127 per 1,000.

The next table shows the number per 1,000 accidents to pedestrians, cyclists and passengers respectively which gave rise to compensation.

NUMBER OF COMPENSATED ACCIDENTS, PER 1,000 ACCIDENTS OF EACH TYPE

| Year | Per 1,000 accidents to pedestrians | Per 1,000 accidents to cyclists | Per 1,000 accidents to passengers |
|---|---|---|---|
| 1927 | 91.9 | 89.3 | 104.6 |
| 1928 | 88.9 | 82.3 | 108.5 |
| 1929 | 88.7 | 76.2 | 107.3 |
| 1930 | 84.7 | 82.1 | 107.6 |
| 1931 | 80.8 | 71.0 | 113.0 |
| 1927-1931 | 87.4 | 80.1 | 108.0 |
| 1932 | 55.0 | 53.5 | 67.6 |
| 1933 | 57.2 | 47.5 | 73.0 |

These figures show that in every year a larger proportion of accidents to passengers in vehicles than of those to pedestrians or cyclists gave rise to compensation.

*Accidents to juveniles and adults classified by type of accident.*

The following table shows, for juveniles and adults, the distribution of compensated accidents as between pedestrians, cyclists and passengers in vehicles.

DISTRIBUTION BETWEEN JUVENILES AND ADULTS OF COMPENSATED ROAD ACCIDENTS, ACCORDING TO TYPE OF ACCIDENT

| Year | Pedestrians | | Cyclists | | Passengers in vehicles | |
|---|---|---|---|---|---|---|
| | Juveniles | Adults | Juveniles | Adults | Juveniles | Adults |
| 1927 [1] | 46 | 1,417 | 132 | 1,559 | 16 | 285 |
| 1928 | 59 | 1,573 | 184 | 2,095 | 30 | 517 |
| 1929 [2] | 73 | 2,234 | 148 | 2,064 | 46 | 678 |
| 1930 [1] | 54 | 1,281 | 135 | 1,860 | 22 | 549 |
| 1931 | 41 | 1,120 | 105 | 1,233 | 18 | 367 |
| 1927-1931 | 54 | 1,526 | 140 | 1,763 | 27 | 479 |
| 1932 [3] | 15 | 516 | 57 | 804 | 6 | 153 |
| 1933 [4] | 14 | 641 | 60 | 978 | 4 | 174 |

[1] 1 unclassified accident. [2] 5 unclassified accidents. [3] 4 unclassified accidents. [4] 3 unclassified accidents.

A glance at these figures shows that in each of the years concerned compensated accidents to cyclists were much more numerous in the juvenile groups than those to pedestrians or passengers. This was not the case for adults, however.

The average proportion of compensated accidents to cyclists over the whole period covered was 63.2 per cent. for juveniles and only 46.8 per cent. for adults. The proportion of compensated accidents to pedestrians among all compensated road accidents was consistently much higher among adults (40.5 per cent.) than among juveniles (24.7 per cent.), while the proportion of passenger accidents was about the same in both groups (12.1 per cent. for juveniles and 12.7 per cent. for adults).

*Compensated road accidents classified by sex and type of accident.*

A classification of compensated accidents to pedestrians, cyclists and passengers by sex gives the following figures.

DISTRIBUTION OF COMPENSATED ACCIDENTS, BY SEX OF INSURED PERSONS AND TYPE OF ACCIDENT

| Year | Pedestrians | | Cyclists | | Passengers | |
|---|---|---|---|---|---|---|
| | Males | Females | Males | Females | Males | Females |
| 1927 [1] | 1,086 | 377 | 1,522 | 169 | 246 | 55 |
| 1928 | 1,240 | 392 | 2,041 | 238 | 452 | 95 |
| 1929 [2] | 1,638 | 669 | 1,948 | 264 | 633 | 91 |
| 1930 [1] | 884 | 451 | 1,779 | 216 | 494 | 77 |
| 1931 | 727 | 434 | 1,135 | 203 | 338 | 47 |
| 1927-1931 | 1,115 | 465 | 1,685 | 218 | 433 | 73 |
| 1932 [3] | 318 | 213 | 712 | 149 | 144 | 15 |
| 1933 [4] | 417 | 238 | 853 | 185 | 167 | 11 |

[1] 1 unclassified accident. [2] 5 unclassified accidents. [3] 4 unclassified accidents.
[4] 3 Three unclassified accidents.

In each of the years under review accidents to cyclists formed the largest group of compensated accidents to males, and accidents to pedestrians of those to females.

Over the period as a whole, 34.5 per cent. of compensated accidents to males and 61.4 per cent. of those to females happened to workers who went to and from their work on foot. The percentages of the other accident groups among males were cyclists 52.1 and passengers 13.4, as compared with cyclists 28.9 and passengers 9.7 among females.

On the average, 29.4 per cent. of all compensated accidents to pedestrians, 14.4 per cent. of those to passengers and 11.5 per cent. of those to cyclists happened to females.

*Compensated accidents to juveniles and adults of both sexes classified by type of accident.*

The next table shows the distribution of compensated accidents to pedestrians, cyclists and passengers, by sex, among juveniles and adults.

DISTRIBUTION OF COMPENSATED ROAD ACCIDENTS, BY TYPE OF ACCIDENT AND SEX AND AGE OF THE VICTIMS [1]

| Year | Males | | | | | | Females | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pedestrians | | Cyclists | | Passengers | | Pedestrians | | Cyclists | | Passengers | |
| | Juveniles | Adults | Juveniles | Adults | Juveniles | Adults | Juveniles | Adults | Juveniles | Adults | Juveniles | Adults |
| 1927 | 31 | 1,055 | 111 | 1,411 | 11 | 235 | 15 | 362 | 21 | 148 | 5 | 50 |
| 1928 | 38 | 1,202 | 154 | 1,887 | 20 | 432 | 21 | 371 | 30 | 208 | 10 | 85 |
| 1929 | 46 | 1,592 | 121 | 1,827 | 33 | 600 | 27 | 642 | 27 | 237 | 13 | 78 |
| 1930 | 34 | 850 | 113 | 1,666 | 12 | 482 | 20 | 431 | 22 | 194 | 10 | 67 |
| 1931 | 28 | 699 | 88 | 1,047 | 14 | 324 | 13 | 421 | 17 | 186 | 4 | 43 |
| 1927-1931 | 35 | 1,080 | 117 | 1,568 | 19 | 414 | 19 | 446 | 23 | 195 | 8 | 65 |
| 1932 | 5 | 313 | 45 | 667 | 6 | 138 | 10 | 203 | 12 | 137 | — | 15 |
| 1933 | 9 | 408 | 49 | 804 | 2 | 165 | 5 | 233 | 11 | 174 | 2 | 9 |

[1] For the years 1927, 1929, 1930, 1932, and 1933 see the notes to the preceding table.

In each year the largest group of compensated accidents is that of cycling accidents to men, but the number of compensated accidents to pedestrians in the men's group was also very high. A clearer notion of the bearing of these figures may be obtained by calculating the proportion of all compensated accidents formed by each group. These percentages are given below for the five-year period as a whole.

PERCENTAGE DISTRIBUTION OF COMPENSATED ACCIDENTS BY TYPE OF ACCIDENT AND SEX AND AGE OF THE VICTIMS

| Type of accident | Per 100 compensated accidents to juveniles | | | Per 100 compensated accidents to adults | | |
|---|---|---|---|---|---|---|
| | Males | Females | Total[1] | Males | Females | Total[1] |
| Pedestrians | 15.9 | 8.6 | 24.5 | 28.7 | 11.8 | 40.5 |
| Cyclists | 52.9 | 10.4 | 63.3 | 41.6 | 5.2 | 46.8 |
| Passengers | 8.6 | 3.6 | 12.2 | 11.0 | 1.7 | 12.7 |
| Total | 77.4 | 22.6 | 100.0 | 81.3 | 18.7 | 100.0 |

[1] The percentages in these colums differ slightly from those given earlier in the text, because a few unclassified accidents have been left out of account.

Every 100 compensated accidents in the various groups during the five years under review was made up as follows :

PERCENTAGE DISTRIBUTION OF THE VARIOUS TYPES OF ACCIDENT, ACCORDING TO SEX AND AGE OF THE VICTIMS

| Type of accident | Per 100 compensated accidents to boys | Per 100 compensated accidents to men | Per 100 compensated accidents to girls | Per 100 compensated accidents to women |
|---|---|---|---|---|
| Pedestrians | 20.5 | 35.3 | 38.0 | 63.1 |
| Cyclists | 68.4 | 51.2 | 46.0 | 27.7 |
| Passengers | 11.1 | 13.5 | 16.0 | 9.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

It will be seen that in the women's group the distribution of compensated accidents was quite different from that in the other groups.

### *Fatal Accidents Reported*

*All fatal accidents reported.*

The next point to be considered is the distribution of fatal and non-fatal accidents as between working accidents and road accidents.

CLASSIFICATION OF ACCIDENTS AS FATAL OR NON-FATAL

| Year | All accidents | | Working accidents | | Road accidents | |
|---|---|---|---|---|---|---|
| | Fatal | Non-fatal | Fatal | Non-fatal | Fatal | Non-fatal |
| 1927 | 4,486 | 824,270 | 4,074 | 786,798 | 412 | 37,472 |
| 1928 | 4,621 | 919,601 | 4,079 | 869,025 | 542 | 50,576 |
| 1929 | 4,597 | 923,398 | 3,998 | 862,154 | 599 | 61,244 |
| 1930 | 3,623 | 704,185 | 3,164 | 659,234 | 459 | 44,951 |
| 1931 | 2,624 | 510,119 | 2,297 | 473,797 | 327 | 36,322 |
| 1927-1931 | 3,990 | 776,315 | 3,522 | 730,202 | 468 | 46,113 |
| 1932 | 2,715 | 403,905 | 2,393 | 376,087 | 322 | 27,818 |
| 1933 | 3,750 | 507,225 | 3,304 | 471,882 | 446 | 35,343 |

Thus, out of every thousand fatal accidents over the years 1927-1931, 117 were road accidents, while out of every thousand non-fatal accidents only 59 were road accidents.

The next table shows the proportion of fatal cases among all accidents, all working accidents and all road accidents respectively.

PROPORTION OF FATAL ACCIDENTS

| Year | Fatal accidents per 1,000 accidents reported | | |
|---|---|---|---|
| | Per 1,000 accidents in general | Per 1,000 working accidents | Per 1,000 road accidents |
| 1927 | 5.41 | 5.15 | 10.87 |
| 1928 | 5.00 | 4.67 | 10.60 |
| 1929 | 4.95 | 4.61 | 9.69 |
| 1930 | 5.12 | 4.77 | 10.11 |
| 1931 | 5.12 | 4.82 | 8.92 |
| 1927-1931 | 5.11 | 4.80 | 10.05 |
| 1932 | 6.68 | 6.06 | 11.44 |
| 1933 | 7.34 | 6.95 | 12.46 |

According to these figures, over the five years as a whole rather less than 5 out of every thousand working accidents were fatal and about 10 out of every thousand road accidents.

Do these figures justify the conclusion that the risk of death by accident is twice as heavy in the sphere of accidents on the way to and from work as in the sphere of working accidents ? Obviously not, for the question of the magnitude of the accident risk cannot be settled unless it is known for how many hours a given number of insured persons were exposed to this risk. To find whether the insured person runs a greater risk of incurring a fatal accident while on his way to and from work than while working in the undertaking, it would be necessary to establish how many fatal accidents occurred among all insured persons per million hours spent at work in the undertaking and per million hours spent on the way to and from work. Nothing is known, however, of the average number

of hours spent in the undertaking or on the way to and from work, or even of the relation between the two. All that can be safely asserted is that the time during which the worker runs the risk of a fatal accident on his way to or from work normally represents only a small fraction of the time during which he is exposed to the risk of a fatal working accident. Some attempt may, however, be made on the basis of a rough estimate of the ratio between these two periods to obtain a general notion of the position in this respect. This is the object of the calculations given below, which are intended to show, not what the position actually was, but what it would have been, given a hypothetical but probable ratio between the periods of time spent by the insured person in the undertaking and on his way to and from work respectively.

Assuming that the 9,360,986 insured full-time workers representing the average insured population for the five-year period under review had worked in the undertakings for 2,400 hours each year, and had spent an average of one hour daily, or 300 hours a year, in travelling to and from their work, these full-time workers would have been exposed to the risk of a working accident for $2{,}400 \times 9{,}360{,}986 = 22{,}466$ million hours, and to the risk of a road accident for $300 \times 9{,}360{,}986 = 2{,}808$ million hours in the year. If it is further considered that during 22,466 million working hours there were 3,522 fatal accidents, and during 2,808 million hours spent on the way to and from work only 468 fatal accidents, it is evident that there were about 0.157 fatal accidents for every million working hours and about 0.167 for every million hours spent on the way to and from work. The ratio between the frequency of fatal accidents in the undertaking and on the road respectively was therefore about 100 : 106.

Even if the hypotheses underlying these calculations differed widely from the truth, they would still show that the assumption that the fatal accident risk run by the insured person on his way to and from work is twice as great as that during his work in the undertaking is entirely without foundation. This assumption could only be upheld if the ratio between the time spent in the undertaking and the time spent on the way to and from work was not 8 to 1, but 8 to 0.5, a hypothesis which, as we have already seen, is most unlikely.

### *Compensated Fatal Road Accidents*

The next table gives the number of compensated and non-compensated fatal accidents in the undertaking and on the way to and from work respectively.

COMPENSATED AND NON-COMPENSATED FATAL ACCIDENTS

| Year | All fatal accidents | | Fatal working accidents | | Fatal road accidents | |
|---|---|---|---|---|---|---|
| | Compensated | Non-compensated | Compensated | Non-compensated | Compensated | Non-compensated |
| 1927 | 3,770 | 716 | 3,427 | 647 | 343 | 69 |
| 1928 | 3,839 | 782 | 3,379 | 700 | 460 | 82 |
| 1929 | 3,752 | 845 | 3,292 | 706 | 460 | 139 |
| 1930 | 2,904 | 719 | 2,543 | 621 | 361 | 98 |
| 1931 | 2,142 | 482 | 1,887 | 410 | 255 | 72 |
| 1927-1931 | 3,281 | 709 | 2,906 | 616 | 375 | 93 |
| 1932 | 2,233 | 482 | 1,993 | 400 | 240 | 82 |
| 1933 | 2,942 | 808 | 2,618 | 686 | 324 | 122 |

Although these figures show that the number of compensated fatal accidents was very much higher in the case of working accidents than of road accidents, it is to be noted that if fatal road accidents had not been compensated the total number of compensated fatal accidents would have been over 10 per cent. lower.

Of every 1,000 compensated fatal accidents over the period 1927-1931 as a whole, 885 were working accidents and 115 road accidents.

Out of every 100 fatal accidents incurred in the undertaking and on the way to and from work respectively, an average of 82.5 in the first case and 80.3 in the second were compensated.

In the case of working accidents an average of 4 per thousand, and in that of road accidents an average of 8 per thousand, were compensated fatal accidents.

## Conclusion

The following are the conclusions which may be drawn from this review of German industrial accident statistics for the period 1927-1931.

1. The inclusion in insurance of accidents incurred on the way to and from work has had the effect of increasing the number of accidents reported by 6 per cent. and that of compensated accidents by 8 per cent. For the insured population as a whole, the risk of road accidents was less than that of working accidents.

2. The results of road accidents were more serious than those of working accidents. The number of compensated cases per thousand reported was 86 in the case of road accidents and only 60 in the case of working accidents.

3. Among both reported and compensated road accidents, those incurred by cyclists formed the largest group, representing about half of all road accidents on the way to and from work. Accidents to pedestrians held the second place, and those to passengers in vehicles the third.

4. The passengers' group was that in which the results of the accidents were most serious (11 per cent. compensated). Next comes the pedestrians' group (9 per cent.), and last the cyclists' group (8 per cent.).

5. It seems that the number of compensated road accidents per 100,000 insured persons was lower among juveniles than among adults.

6. It also seems that the number of compensated road accidents per 100,000 insured persons was higher among men than among women. The figures for compensated accidents per 100,000 insured males under 18 years of age seem to have been lower than those for insured females of the same age class. It is probable that the figures for road accidents giving rise to compensation per 100,000 males over 18 years of age were higher than those for insured females of the same age group.

7. Fatal cases were more frequent among road accidents than among working accidents (10 per cent. as compared with 5 per cent.), but it cannot be concluded from this that the risk of death is greater on the way to and from work than during work in the undertaking.