REPORTS AND ENQUIRIES

Compulsory Accident Insurance in Switzerland from 1928 to 1932

The report recently published by the Swiss National Accident Insurance Fund [1] on the statistical results of the third quinquennial period, from 1928 to 1932 inclusive, is on the same general lines as the two previous reports already analysed in these pages. [2]

This report, like its predecessor, gives the frequency and severity rates per full-time worker and therefore takes account of the requirements of international statistics.

The Fund has done its utmost to place the results of its research and experience before the public with the least possible delay. Economic conditions change so rapidly that only the very latest statistical data of accidents have any really practical value for the promotion of preventive measures, which after all is the main object to be achieved.

It may be recalled that the legislative and financial bases of the Swiss accident insurance system were described in these pages when the first quinquennial report published by the Fund was analysed. Since then, no vital changes have been made. The report, however, draws attention to the following two changes :

(1) The ratification by Switzerland of the International Convention concerning equality of treatment for national and foreign workers as regards workmen's compensation for accidents, as the result of a decision taken by the Federal Council on 18 January 1929. The financial consequences of this decision were nil for the Fund, since it was required to pay over to the Confederation the part of the benefits which up to that date had not been paid to foreign workers.

(2) The inclusion of certain risks not previously covered by non-industrial accident insurance, such as the use of motor bicycles. Such risks were included only during the years 1929 to 1931, during which period the general risk increased very perceptibly in this branch of insurance.

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[1] SCHWEIZERISCHE UNFALLVERSICHERUNGSANSTALT : *Ergebnisse der Unfallstatistik der dritten fünfjährigen Beobachtungsperiode 1928-1932.* 76 pp. The summary given here has been provided by the Head Office of the National Accident Insurance Fund at Lucerne.

[2] Cf. *International Labour Review*, Vol. X, No. 5, Nov. 1924, pp. 837-853 : " Five Years of Compulsory Accident Insurance in Switzerland ", and Vol. XX, No. 2, Aug. 1929, pp. 230-251 : " Compulsory Accident Insurance in Switzerland rom 1923 to 1927 ".

As regards the conditions of compensation, there has been very little variation.

More important, however, are the changes caused by economic conditions. The continual increase in the total amount of wages paid and the number of insured persons, which characterised the years of the previous quinquennial period, was maintained until 1930. But in that year a perceptible decline occurred in certain industries with a low risk, such as watchmaking, and in the following years this decline was still more rapid and was no longer counterbalanced by the continual progress noted in other branches with a high accident risk, such as building. The fall in the total wages bill and the number of insured persons which took place in 1931 and which has since been even more pronounced has thus been accompanied by a change in the relative importance of the various branches of industry, which in turn has had a certain amount of influence on the total average risk.

With these few brief remarks we may now proceed to analyse the figures for 1928-1932.

The General Accident Risk

The number of accidents in respect of which compensation was paid is shown in table I. It may here be noted that under Swiss law compensation equal to 80 per cent. of the insured person's earnings is payable as from the third day after the accident. Minor accidents that are cured within this period are not included in the figures of the table.

TABLE I. NUMBER OF ACCIDENTS, 1928-1932

Year	Industrial accidents					Non-industrial accidents				
	Total	Permanent incapacity		Deaths		Total	Permanent incapacity		Deaths	
		Number	Per 1,000 accidents	Number	Per 1,000 accidents		Number	Per 1,000 accidents	Number	Per 1,000 accidents
1928	105,988	3,528	33.3	329	3.1	33,105	990	29.9	255	7.7
1929	118,400	4,019	33.9	357	3.0	41,843	1,426	34.1	333	8.0
1930	115,692	3,925	33.9	348	3.0	40,921	1,466	35.8	348	8.5
1931	110,674	3,410	30.8	340	3.1	41,523	1,390	33.5	341	8.2
1932	98,894	3,050	30.8	314	3.2	36,350	1,195	32.9	274	7.5
Total	549,648	17,932	32.6	1,688	3.1	193,742	6,467	33.3	1,551	8.0

It will be seen that the proportion of serious accidents followed by permanent incapacity or death remains practically constant in the industrial accident insurance branch ; there is even a slight decrease in the proportion of accidents followed by permanent incapacity. For

non-industrial accidents, on the contrary, the table shows clearly the adverse effect of the inclusion of the non-industrial risks referred to above.

As in previous reports, the Fund gives the distribution of accidents by days of the week and hours of the day although it considers that no special conclusions can be drawn from these figures. It is pointed out, however, that, contrary to observations made in other countries, the number of accidents occurring on a Monday is not exceptionally high, except in commerce and the transport industry (not including railways), but no explanation is offered.

The frequency and severity rates are shown in table II. [1]

TABLE II. FREQUENCY AND SEVERITY OF ACCIDENTS AND AVERAGE COST OF COMPENSATION, 1928-1932

Year	Number of accidents per 100 full-time workers		Number of working days lost				Average cost of compensation per 1,000 francs of wages	
			Per full-time worker		Per accident			
	Industrial accidents	Non-industrial accidents	Industrial accidents	Non-industrial accidents	Industrial accidents	Non-industrial accidents	Industrial accidents	Non-industrial accidents
							Frs.	Frs.
1928	15.1	4.7	14.9	6.4	98.8	135.7	19.0	7.0
1929	15.9	5.6	16.1	8.0	101.2	142.7	20.4	8.4
1930	15.9	5.6	16.5	8.8	103.8	155.8	20.6	8.9
1931	16.1	6.0	15.8	9.0	98.0	149.6	19.5	8.8
1932	15.8	5.8	16.4	8.5	103.9	147.3	19.0	8.2

The severity rate and the average cost remain parallel, but while for industrial accident insurance the average cost is stable, for non-industrial accidents it has a strong upward tendency.

As the economic conditions for the period under consideration are characterised by wide changes in the relative importance of the various branches of industry — some of which have developed while others have undergone a setback — and as these changes, as already stated, have a considerable effect on the average frequency of accidents and the general average cost, the Fund has tried to determine what the results would have been if no change had taken place in the position of the various industrial branches. Taking the year 1923 as a basis for its calculation, it assumed that the economic structure remained without change during a period of ten years. It then calculated the number of accidents which would have occurred in each year of this period, by means of the accident frequency found for those years in

[1] For the method of calculating severity rates, see the previous article (*International Labour Review*, Vol. XX, No. 2, Aug. 1929, p. 231).

the different branches of industry. In this way, the Fund obtained the figures shown in table III.

TABLE III. NUMBER OF ACCIDENTS WHICH WOULD HAVE OCCURRED DURING 1923-1932, IF THE ECONOMIC STRUCTURE HAD REMAINED THE SAME AS IN 1923

Year	Industrial accidents	Non-industrial accidents
1923	100	100
1926	99	111
1929	108	144
1932	100	145

It will be seen that the number of industrial accidents remains virtually stationary; this in itself is a good sign, as it proves that, contrary to what has occurred in other countries, no increase in the risk has taken place in Switzerland.

As regards non-industrial accidents, it will suffice at this stage to note the enormous increase; the causes of this increase will be studied later.

TABLE IV. EFFECT OF AGE ON ACCIDENT FREQUENCY

Age group (years)	Per cent. of insured persons	Per cent. of injured persons	
		Industrial accidents	Non-industrial accidents
Up to 19	12.1	12.2	14.5
20-24	14.6	17.7	19.7
25-29	13.5	16.6	16.1
30-34	11.6	13.1	12.3
35-39	10.0	10.2	9.7
40-44	9.1	8.4	7.9
45-49	8.5	7.1	6.6
50-54	7.6	5.8	5.3
55-59	5.8	4.2	3.7
60-64	3.7	2.2	2.1
65-69	2.1	1.0	1.0
70 and over	1.4	1.5	1.1
Total	100.0	100.0	100.0

The Fund has also made a study of the highly controversial question of the effect of age on accident frequency. It finds that not only does frequency not increase with age but even that the rate is even somewhat higher in the younger age groups.

But while in Switzerland the accident frequency does not increase with age, the average cost per accident, on the contrary, does. The Fund further remarks that this increase is not entirely due to the longer duration of temporary incapacity but also to a higher proportion of accidents followed by permanent incapacity.

The Consequences of Accidents

Temporary Incapacity

The Fund has ceased to classify accidents by the length of temporary incapacity, as was done for the two previous periods. On the other hand, it has adopted a classification by sex and age groups.

TABLE V. DISTRIBUTION OF ACCIDENTS BY LENGTH OF TEMPORARY INCAPACITY

(Base : 10,000 injured persons)

Period since occurrence of accident	Number of injured persons not yet cured				
	Sex		Age group		
	Males	Females	16-34 years	35-54 years	55 years and over
3-7 days	10,000	10,000	10,000	10,000	10,000
1 week	9,119	9,162	9,003	9,251	9,517
2 weeks	5,852	6,023	5,447	6,338	7,147
3 ,,	3,386	3,536	2,942	3,930	4,756
4 ,,	2,025	2,138	1,684	2,422	3,162
5 ,,	1,295	1,381	1,021	1,613	2,208
6 ,,	905	972	698	1,140	1,625
9 ,,	427	423	311	549	841
13 ,,	228	222	161	294	473
18 ,,	129	118	91	167	265

Table V shows that sex has virtually no influence on the duration of the period of recovery, but that that of age is enormous. The in-

fluence of age, which is clearly shown by Figure 1 (percentage of cases not cured after specified periods), is also to be seen in table VI, which shows the probable period that an injured person under treatment will take to recover after a given period of incapacity.

FIGURE 1. LENGTH OF TEMPORARY INCAPACITY

(Percentage of cases not cured at the end of the various periods indicated)

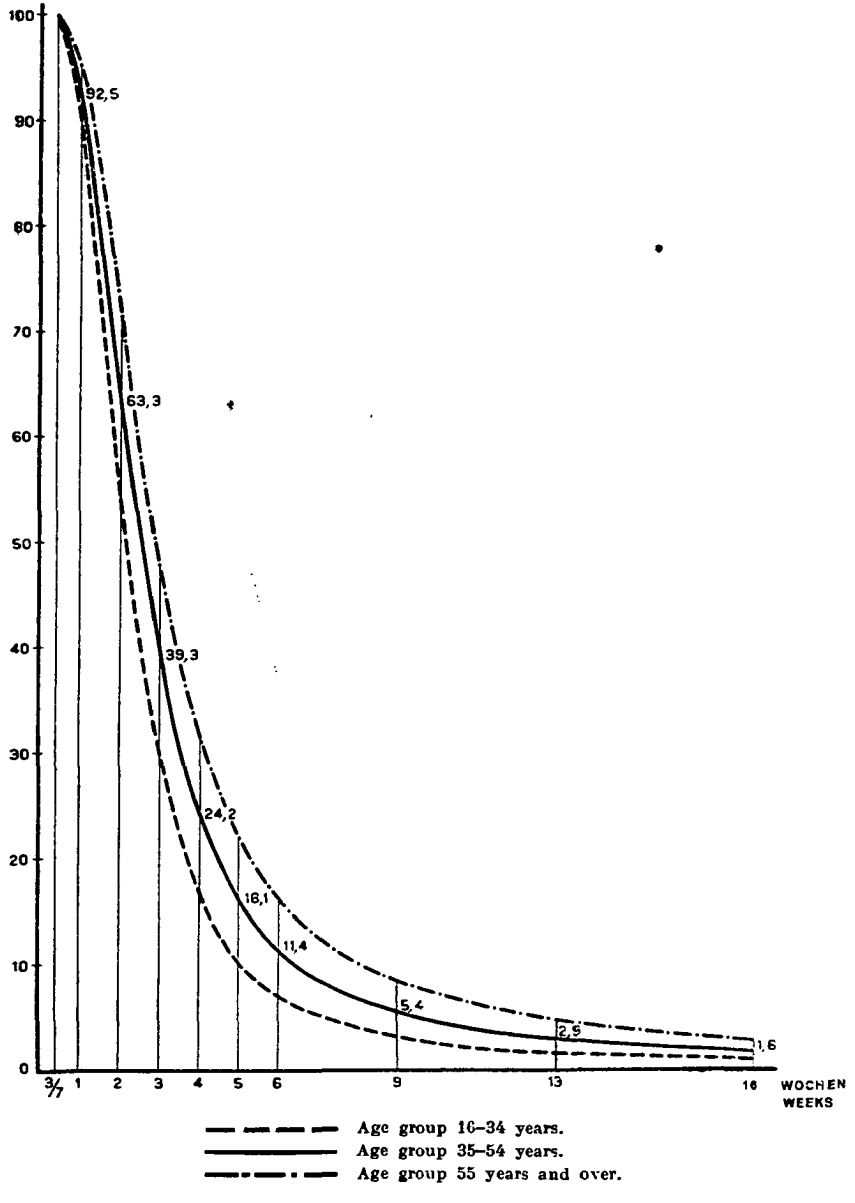


TABLE VI. AVERAGE EXPECTANCY OF TEMPORARY INCAPACITY

Period since occurrence of accident	Probable period still necessary for recovery				
	Sex		Age group		
	Males	Females	16-34 years	35-54 years	55 years and over
	Weeks	Weeks	Weeks	Weeks	Weeks
3-7 days	2.90	2.94	2.58	3.27	3.99
1 week	2.58	2.60	2.25	2.94	3.61
2 weeks	2.74	2.70	2.39	3.06	3.63
3 „	3.37	3.25	3.00	3.62	4.21
6 „	6.57	5.88	6.17	6.72	7.06
9 „	9.56	8.96	9.37	9.65	9.42
13 „	12.44	11.57	12.52	12.61	11.39
18 „	15.27	14.67	15.47	15.52	13.49

A comparison of the average duration of temporary incapacity with the corresponding figures for the previous quinquennial period shows that there has been a slight fall. The average duration is 15.16 days as against 15.9 days in 1923-1927 for industrial accidents, and 16.6 days as against 17.2 days in 1923-1927 for non-industrial accidents. Notwithstanding this improvement the Fund is very much afraid that the average duration will increase in the future, in spite of the efforts made to cope with the evil effects of the economic depression.

Permanent Incapacity

The proportion of accidents followed by permanent incapacity and the average initial degree of incapacity are both stationary. The latter is 24.8 per cent. in industrial accident insurance and 26.9 per cent. for non-industrial accidents; the average is 25.3 per cent.

The Fund observes that the average initial degree of incapacity varies greatly with the various industries. The lowest average incapacity (14.2 per cent.) is in watchmaking, the highest (30.2 per cent.) in the production and distribution of electricity. Contrary to what is generally supposed, this shows that it is not possible to compare the invalidity risk between different industries solely on the basis of the number of accidents followed by permanent incapacity.

The new observations made on the relations between age and permanent incapacity confirm the result previously noted that the risk of incapacity increases with age. The most recent observations show that this tendency has latterly become still more pronounced. Future experience will show whether this is a temporary phenomenon or otherwise.

The average age at the date of the accident of persons affected by permanent incapacity is 37.7 years for industrial accidents and 39.3 years for non-industrial accidents.

The report of the Fund includes a chapter on the two elements used in calculating the capitalised value of pensions: the mortality of the disabled persons and the results of the revision of pensions in cases of partial recovery or the reverse. The Fund has tried to determine the influence of these two elements and has calculated the separate and combined effects of mortality and revision. These figures are shown in table VII. This table further shows the rate of extinction of pensions as used by the Fund in calculating the actuarial reserve necessary to cover the capitalised value of pensions and as indicated by the most recent experience of the Fund.

TABLE VII. RATE OF EXTINCTION OF PERMANENT INCAPACITY PENSIONS

Period since award of pension (years)	Sum to which pensions of 10,000 francs initial value are reduced			
	Basis of calculation of capitalised values used by the Fund	Recent experience of the Fund	Under the exclusive influence of:	
			Death	Revision
	Frs.	Frs.	Frs.	Frs.
0	10,000	10,000	10,000	10,000
¼	9,214	9,065	—	—
½	8,341	8,157	—	—
¾	7,606	7,431	—	—
1	7,263	7,089	9,884	7,175
1¼	6,697	6,511	—	—
1½	6,481	6,307	—	—
1¾	6,216	6,062	—	—
2	6,024	5,878	9,736	6,040
3	5,214	5,106	9,568	5,339
4	4,843	4,810	9,373	5,135
5	4,669	4,686	9,162	5,117
6	4,440	4,565	8,968	5,093
7	4,097	4,216	8,775	4,806
8	3,993	4,109	8,585	4,788
9	3,772	3,987	8,353	4,777

It will be noticed that the differences between the first two series of figures in the table are extremely small. The data on which these figures are based are sufficiently extensive to eliminate any effect of chance. As, moreover, the methods followed for the fixing and the revision of pensions have been stabilised, it may be presumed that the capitalised value of pensions will not undergo any considerable change in the future.

The Fund has continued its study of the mortality of disabled persons. The new observations made confirm the findings of the previous report and tend to show that the higher rate of mortality noted among cases of serious incapacity cannot be regarded as a function of the degree of incapacity, for, as table VIII indicates, the high differential rate of the first few years fades away rapidly, so that in calculating the capitalised value of pensions it is unnecessary to use mortality rates varying with the degree of incapacity.

TABLE VIII. AVERAGE RATE OF REDUCTION OF PENSIONS BY DEATH, ACCORDING TO DEGREE OF PERMANENT INCAPACITY

Period since award of pension (years)	Slight incapacity (0-20 per cent.)	Medium incapacity (21-75 per cent.)	Serious incapacity (76-100 per cent.)
1	0.008	0.011	0.031
2	0.013	0.015	0.023
3	0.015	0.017	0.026
	Incapacity under 50 per cent.		Incapacity 50 per cent. and over
4	0.018		0.026
5	0.020		0.029
6	0.022		0.021
7	0.023		0.024
8	0.023		0.025
9	0.027		0.034

A comparison between the mortality of persons disabled by accidents and that of the Swiss population as a whole has again shown that on the average the mortality is no higher among disabled persons. There were even, as in Sweden, definitely lower rates during the first three years, contrary to what is observed for disabled persons in general.

The average age of the disabled is 43.25 years for industrial accidents (21,506 disabled persons) and 44.41 years for non-industrial accidents (6,901 disabled persons), or an average of 43.54 years for a total number of 28,407 disabled persons on 31 December 1932.

Table IX shows the classification by degree of incapacity of persons in receipt of permanent incapacity pensions on 31 December 1932.

TABLE IX. DISTRIBUTION OF BENEFICIARIES OF PERMANENT INCAPACITY PENSIONS ACCORDING TO DEGREE OF INCAPACITY, AT 31 DECEMBER 1932

Degree of incapacity (per cent.)	Cases of permanent incapacity			
	Industrial accidents		Non-industrial accidents	
	Number	Per cent.	Number	Per cent.
Up to 9	5,057	24	1,130	16
10-19	7,838	36	2,890	42
20-29	4,057	19	1,473	21
30-49	2,515	12	796	11
50-69	1,371	6	397	6
70-99	425	2	107	2
100	243	1	108	2
Total	21,506	100	6,901	100

The average degree of incapacity of persons in receipt of pensions on 31 December 1932 was 19.9 per cent. for industrial accidents and 20.4 per cent. for non-industrial accidents.

Death

During the period 1928-1932, as during the two previous quinquennial periods, the proportion of fatal accidents was much higher for non-industrial than for industrial accidents. Table I clearly shows the adverse influence resulting from the extension of insurance to certain non-industrial risks.

Table X gives the distribution of the fatal cases according to the age of the victims in the last two periods.

TABLE X. PERCENTAGE DISTRIBUTION BY AGE GROUPS OF PERSONS KILLED BY ACCIDENTS

Age group (years)	Industrial accidents		Non-industrial accidents	
	1923-1927	1928-1932	1923-1927	1928-1932
Up to 19	6.0	6.1	10.5	9.8
20-29	21.0	21.8	20.9	30.8
30-39	21.9	23.1	17.3	17.9
40-49	22.6	19.4	20.6	18.4
50-59	19.0	20.2	19.1	16.0
60 and over	9.5	9.4	11.6	7.1
Total	100.0	100.0	100.0	100.0
Average age	40.4	40.0	39.9	36.8

It will be seen that the average age has fallen considerably from one period to the other for non-industrial accidents, where the age group 20-29 years occupies a predominant place, a fact which influences the cost of compensation.

With regard to the mortality and remarriage of widows, the Fund states that its observations agree with the experience of the Netherlands. The frequency of remarriage is very much lower than the estimates made on the basis of observations relating to the Swiss population in general. According to the latter, the capitalised value of a pension of 1 franc on the head of a widow aged 25 years is 7.57 francs, while according to the experience of the Fund it amounts to 9.89 francs.

TABLE XI. COMPARISON OF THE PROBABILITY OF REMARRIAGE OF WIDOWS IN RECEIPT OF A PENSION FROM THE NATIONAL FUND AND OF SWISS WIDOWS IN GENERAL

Age (years)	Experience of the National Fund	Observations relating to the Swiss population in general
20	0.127	0.085
25	0.090	0.121
30	0.068	0.100
35	0.047	0.070
40	0.030	0.042
50	0.006	0.011
60	0.000	0.002

THE COST OF COMPENSATION

Total Cost

The accounts for the third quinquennial period have been drawn up on the same plan as those for the previous period, so that the results may be compared.

TABLE XII. WAGES INSURED AND COST OF COMPENSATION

Wages and cost	Industrial accidents		Non-industrial accidents	
	1923-1927	1928-1932	1923-1927	1928-1932
	Frs.	Frs.	Frs.	Frs.
Wages insured	9,281,000,000	10,815,000,000	—	—
Compensation :				
Total cost	178,406,000	226,316,000	54,783,000	91,306,000
Per 1,000 francs of wages insured	19.2	20.9	5.9	8.4

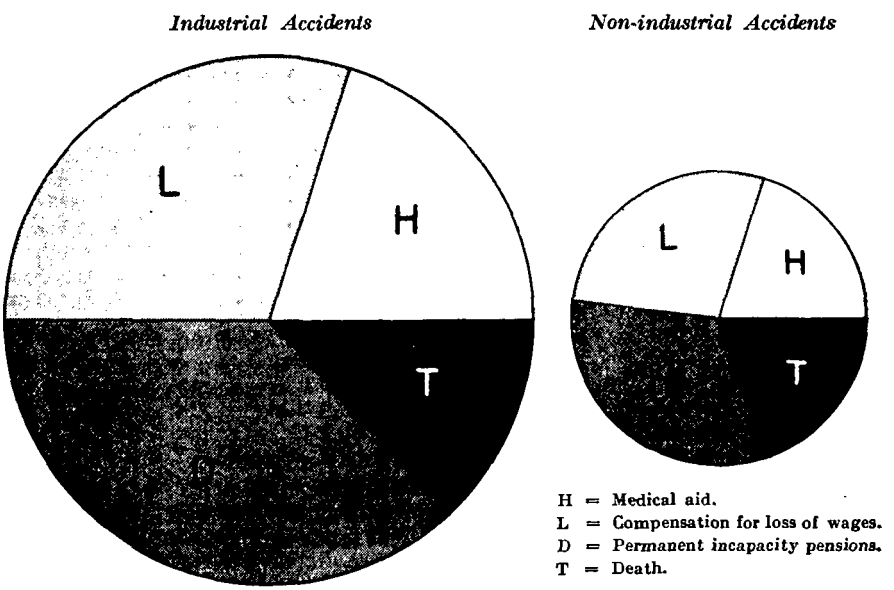
The general average cost (average for all accidents) is higher for the period 1928-1932. The increase is small for industrial accident insurance, where it is entirely due to a change in the relative importance of the various branches of industry, but is exceedingly high for non-industrial accident insurance, where it is the result of the inclusion of certain higher risks, as already mentioned, during three out of the five years, and of a general rise in the accident risk.

The relative cost of the various kinds of compensation in the two quinquennial periods is shown in table XIII as a percentage of the total expenditure. The absolute figures for the last period are illustrated graphically in Figure 2.

TABLE XIII. PERCENTAGE DISTRIBUTION OF THE DIFFERENT KINDS OF COMPENSATION

Kind of compensation	Industrial accidents		Non-industrial accidents	
	1923-1927	1928-1932	1923-1927	1928-1932
Medical treatment and drugs	20	20	20	19
Compensation for loss of wages	29	30	28	26
Permanent incapacity pensions	37	37	32	32
Survivors' pensions	14	13	20	23
Total	100	100	100	100

FIGURE 2. DISTRIBUTION OF THE DIFFERENT KINDS OF COMPENSATION



No great changes have taken place. The Fund strongly criticises the cost of medical treatment and drugs, which has not been cut down and still remains abnormally high. Compensation for loss of wages and permanent incapacity pensions do not give rise to any

comments. The high cost of fatal accidents in non-industrial accident insurance is due solely to the fact that these accidents were more numerous during the period 1928-1932.

Table XIV shows the average cost per accident of the different kinds of compensation.

TABLE XIV. AVERAGE COST PER ACCIDENT OF THE DIFFERENT KINDS OF COMPENSATION

Kind of compensation	Industrial accidents		Non-industrial accidents	
	1923-1927	1928-1932	1923-1927	1928-1932
	Frs.	Frs.	Frs.	Frs.
Medical treatment and drugs	85.3	83.4	89.7	89.5
Compensation for loss of wages	118.7	122.9	122.4	124.8
Permanent incapacity pensions : Cost of a pension	4,657	4,705	4,563	4,653
Survivors' pensions : Cost of a pension : (*a*) In francs	16,657	16,895	13,461	14,190
(*b*) Per 100 francs of the wages of the person killed	463	464	377	392

The differences between the two periods are not large and are mainly the effect of chance. The cost of fatal accidents is distinctly lower for non-industrial accident insurance, in which the proportion unmarried is relatively very high among persons killed by accidents.

Cost by Industry

As in its previous reports, the Fund points out that the general average cost cannot be used as a basis for fixing the scale of premiums, the system adopted being to calculate the premium rates on the basis of the actual results obtained in the different branches of industry, grouped for this purpose in separate risk classes. The number of these classes has fallen with each important revision of the premium schedule, for as soon as experience shows that the risk in two classes, already similar on account of the industries they include, is homogeneous, the Fund proceeds to amalgamate them.

The Fund points out that the calculation of the premium rate is not such a simple operation as is often thought, and that great prudence must be observed in drawing conclusions from a comparison of the results for different periods. The quotient

$$\text{Premium} = \frac{\text{Total cost of compensation}}{\text{Wages insured}}$$

cannot be used as the average rate of the net premium. This rate must be calculated by using the constructive method, which is the only way to ensure a rational combination of the various constituent parts of the total cost of compensation by eliminating the effects of chance. This is the method used by the Fund in its study of the problem—not yet definitely solved—of the utilisation of results based on the experience of a single risk class or even a single undertaking for the calculation of their risk of serious accident, permanent incapacity, and death, with a view to the establishment of individual premiums.

The report gives detailed results for all the risk classes in the premium schedule, and shows for each of them the total cost of compensation per 1,000 francs of wages insured. Table XV shows some of the industrial groups in which the accident risk has risen.

TABLE XV. INDUSTRIAL GROUPS IN WHICH THE RISK OF ACCIDENT HAS INCREASED

Group in the premium schedule of the National Fund	Average cost of compensation per 1,000 francs of wages insured	
	1923-1927	1928-1932
	Frs.	Frs.
Manufacture of cement, lime, etc.	30.5	41.4
Manufacture of artificial stone and cement articles	30.8	37.4
Foundries	22.8	26.5
Extraction of minerals	72.6	77.1
Building undertakings	41.7	45.0
Motor transport undertakings	26.1	31.3
Gas and water works	18.4	22.2

The increase in the risk is due to a number of causes. For instance, the composition of the first group, consisting of lime and cement works, is not the same in the two periods. The extraction of the raw materials, which used to be classified separately, has been joined to the manufacturing group, thus considerably increasing the risk. The premium rates have naturally been revised in consequence. The position is quite different in the industry manufacturing artificial stone and articles in cement, where the increase in the risk is real ; the future will show whether this is due solely to the increase in production (the total amount of wages insured having increased from 41.3 million to 64.5 million francs). In foundries, serious accidents are the cause of the unfavourable results. These accidents may be attributed partly to the progress of mechanisation and the use of more rapid transport

machinery. But other factors seem to have played their part, for the serious accidents are confined to a few undertakings only, so that the remedy would appear to lie in a revision of the premium rates for those undertakings rather than in a general increase in rates. The extraction of stone for road construction and paving, an industry entailing heavy risks, continued to develop in the later period. The building trade also shows some increase in activity. The ever shorter periods allowed for construction, the more and more intensive use of machinery, the increased speeding up of work, and the difficulty of finding skilled workers all tend to increase the risk. The increase in the group "motor transport undertakings" is due to the increase in both the volume and the speed of motor lorry traffic. Finally, the building operations carried out by gas works, several of which have extended or modernised their plant, explain the increase for this group. It is possible that the suppression of certain operations as a result of the transformation of the methods of production is having a permanent effect on the risk.

Table XVI shows some industrial groups in which the average risk has fallen.

TABLE XVI. INDUSTRIAL GROUPS IN WHICH THE RISK OF ACCIDENT HAS FALLEN

Group in the premium schedule of the National Fund	Average cost of compensation per 1,000 francs of wages insured	
	1923-1927	1928-1932
	Frs.	Frs.
Tanneries	27.5	20.4
Drinks	30.2	25.9
Chemical industry	23.1	20.5
Forestry	65.5	57.6

The improvement in the first two groups is due to a fall in the accident frequency. As these groups are not very large, it is impossible as yet to draw any definite conclusions.

The decrease in the average cost in the chemical industry is not due to a fall in the risk, for neither the frequency nor the severity rate has fallen. It is presumably mere chance that the persons killed by accidents have left few or no dependants entitled to a survivor's pension.

In the forestry group the improvement is due to a number of causes. As a result of the strict supervision exercised by the Fund, wages have been more accurately reported than in the past, while there seems to have been an improvement in the organisation of the work from the point of view of safety, for the frequency rate of serious accidents has fallen considerably.

The Causes of Accidents

The main object of accident statistics is to provide data from which to determine the relative importance of the constituent factors of the risk. Even a rough classification of accidents by their immediate objective causes, i.e. by the events producing them, gives sufficiently accurate information about the risks in the various branches of industry to show whether the composition of the risk classes in the premium schedule is satisfactory and whether the factors regarded as composing the accident risk really play the part attributed to them. The Fund compiled statistics of this kind during the period 1923-1927; it published the results in its previous report in the form of tables showing, with a view to international comparisons, the number of working days lost in important industrial groups per cause of accident and per 1,000 full-time workers. For the last quinquennial period the Fund has confined itself to the publication of a few tables of the same kind concerning the wood-working industry and the building industry (navvying and construction).

The Fund has tried to compile statistics showing the effects of industrial evolution and improvements in technical preventive measures. But here a summary classification based on accident causes is not sufficient, and it is necessary to carry out thorough enquiries limited to certain special points.

Industrial Accidents

Effect of Machinery on the Accident Risk.

The experience of the Fund corroborates the observations made elsewhere that accidents due to machinery do not account for as much as 20 per cent. of the total cost of compensation.

Considered by itself, this comparatively low average might appear to offer an argument against requirements in the matter of accident prevention. This, however, would be a serious error, for the general average, which is lowered by the fact that many undertakings and even whole branches of industry employ few or no machines, is meaningless in itself and gives only a false idea of the real facts.

The only scientific way of determining the effect of machinery on industrial accidents is to study the effects of machinery separately for each industry. The figures in table XVII show that the risks of mechanical work vary enormously from industry to industry.

In a number of industries machinery is the main cause of accidents; this is especially so in cabinet making, where accidents due to machinery are responsible for two-thirds of the cost of compensation.

The examples in table XVII show the importance of machinery and the usefulness of providing adequate protective devices. The Fund makes great efforts to extend the use of the protective devices which it has introduced: goggles, protective hoods for circular saws, safety devices for spindle-moulding machines, respiratory masks with fresh air

supply, etc., all well known to the readers of the *Industrial Safety Survey*. As will be seen later, the results achieved by the Fund are most encouraging.

TABLE XVII. EFFECT OF MACHINERY ON THE ACCIDENT RISK IN VARIOUS INDUSTRIAL GROUPS

Industrial group	Accidents due to machinery		
	Per cent. of all accidents	Per cent. of all cases of death and permanent incapacity	Per cent. of total cost of compensation
Metal working	16.8	40.5	21.8
Wood industry	24.2	54.5	41.1
Building industry	1.9	3.4	3.1
Other industries	8.0	19.0	11.6
All industries	8.5	21.5	13.0

Without underrating in any way the value of psychological methods, the Fund attaches great importance to technical prevention, for it is convinced that when an employer brings the plant in his works into line with the modern requirements of industrial safety and closely supervises the use of protective devices, his efforts have a great influence on the workers, as ever-present proof of the employer's interest in his staff's welfare. Technical measures of this kind contribute largely to the creation of a general safety atmosphere without which there can be no adequate preventive action.

Occupational Diseases.

Not all occupational diseases give the right to compensation. Compensation is paid only for cases due to substances in the list of poisons drawn up in accordance with section 68 of the Swiss Act, and cases admitted to insurance benefit by a special decision of the Administrative Council of the National Fund. Table XVIII shows the number of cases in respect of which compensation was paid during the period 1928-1932.

The 1,669 cases of illness caused by substances in the list of poisons involved an expenditure of 1,640,222 francs, while the 10,750 other cases cost 2,395,015 francs.

Compensation for occupational diseases represents 1.8 per cent. of the total cost of compensation. The number of cases has increased a little. But even though their number varies greatly with the nature of the industry, their cost has no specific effect on the results of any risk class.

TABLE XVIII. NUMBER OF CASES OF INDUSTRIAL DISEASE FOR WHICH COMPENSATION WAS PAID, 1928-1932

Diseases	Number of cases admitted		
	Total	Permanent disability	Deaths
I. Diseases caused by substances appearing on the poison list (section 68 of the Swiss Act) :			
1. Slow poisoning :			
Aniline and its homologues	31	1	11
Lead, its compounds and alloys	298	23	8
Chlorine and its compounds	22	—	—
Mercury, its compounds and alloys	83	6	1
Other substances	257	10	9
Total	691	40	29
2. Skin diseases :			
Alkalis	122	1	—
Benzine	72	—	—
Hydrochloric and sulphuric acids	82	1	—
Coal tar, its fumes and oils	52	2	—
Turpentine	130	3	—
Other substances	520	5	—
Total	978	12	—
II. Cases admitted to insurance benefit by a special decision of the Administrative Council of the National Fund :			
1. Slow poisoning	94	11	10
2. Skin diseases :			
Slaked lime, cement, mortar	1,154	7	—
Oils	93	1	—
Soaps	101	2	—
Other substances	842	2	—
Total	2,190	12	—
3. Lesions due to work :			
Fissures	426	3	—
Inflamed callosities	2,371	12	—
Tenosynovitis	4,899	1	—
Epicondylitis	106	2	—
Bursitis	339	1	—
Wounds caused by friction	193	—	—
Various other lesions	132	1	—
Total	8,466	20	—

Non-industrial Accidents

The results of the experience of the non-industrial accident insurance branch are definitely unfavourable. It will be remembered that this branch had to be organised on collective lines, with the result that the individual risk of each insured person cannot be determined.

The accidents occurring in specified risk groups have been classified, not on the basis of the direct causes of accident, but by the work or occupation in the course of which the accident occurred.

The observations for the last period show that the risk has risen in every field ; this means that all causes contribute more or less equally towards the rise in the risk, and not sport alone as was more or less expected. The rise is due mainly to the greater amount of spare time at the disposal of the insured workers, with the consequent extension of the period during which they are exposed to the risk of non-industrial accidents.

In 1930, when all road traffic accidents, including those due to the use of motor vehicles, were covered by non-industrial insurance, bicycle and motor-cycle accidents were responsible for a considerable part of the total cost of compensation (22.6 and 19.6 per cent. respectively). But while the use of bicycles is very widespread, the motor-cycle is used by only a very small minority (about 3 per cent. of the insured persons). The Fund therefore decided that it could not continue to ask the general body of insured persons to pay for the serious risk to which a minority exposed itself. From 1 January 1932 onwards the use, whether as driver or as passenger, of motor vehicles, with the exception of those engaged on a public service, has again been included in the list of special risks excluded from this branch of insurance.

The Fund has tried to ascertain the amount of truth in the widespread opinion that the non-industrial accident risk among town dwellers differs so widely from that among the rural population that it would be fairer if the terms of insurance took the difference into account. In estimating the non-industrial accident risk separately for the town and the rural population, the Fund has had to base its enquiry on the site of the undertakings, for as the insurance is collective it has no means of knowing where the insured persons live.

The enquiry shows that, while the actual nature of the risks is different for town and country, the total risk is very much the same. The figures are shown in table XIX.

TABLE XIX. COMPARISON OF NON-INDUSTRIAL ACCIDENT RISKS IN TOWNS AND RURAL DISTRICTS

Situation of the undertaking	Wages insured (million francs)	Number of accidents per million francs of wages insured	Cost of medical aid and compensation for loss of wages, per 1,000 francs of wages insured	Average duration of temporary incapacity giving rise to payment of compensation
			Frs.	Days
Towns	128.9	25.2	4.8	15.0
Rural districts	90.5	27.9	5.2	15.5

The Human Factor

The report groups under the term " human factor " the accident causes which are inherent in the insured persons themselves.

The advocates of psychological methods in accident prevention consider that, side by side with purely occupational risks, a high percentage of accidents in general may be attributed to various human factors, such as inattention, laziness, carelessness, and physical or moral deficiencies.

As a matter of fact, accidents attributable solely to external causes are comparatively rare. In the great majority of cases, the origin of the accident will be found to lie in a temporary lapse by the person injured or by a fellow worker ; this is generally a failure of attention, which in most cases cannot be described as a fault or negligence, for the power of attention has its limits.

It is, however, none the less true that human factors play an important part in the genesis of accidents and that efforts should be made to define them. But this task is rather a matter for the head of the undertaking than for the insurance institution, which cannot devote the necessary time and money to the thorough and methodical study which alone can isolate the more personal risk factors of most importance from the point of view of accident prevention.

The enquiries carried out by the Fund, which are briefly described below, show clearly that the frequency of accidents depends largely on the care given by heads of undertakings to the recruiting of new workers and the instruction and supervision of their staff.

During the first two quinquennial periods, embracing the years 1918 to 1927, the Fund found that accident frequency is not a function of age, but that, on the contrary, the younger age groups show a considerably higher frequency. As has been shown above (table IV), these observations have been confirmed by the experience of the last quinquennial period. Table XX shows the results of a recent enquiry into the insurance of apprentices.

TABLE XX. COMPARISON BETWEEN ACCIDENT FREQUENCY OBSERVED AMONG ALL INSURED WORKERS AND AMONG APPRENTICES

Accidents	Number of accidents per 1,000 full-time workers	
	All insured workers	Apprentices
Industrial accidents : Metal industry	160	270
Wood industry	220	260
Non-industrial accidents	58	97

The high frequency of industrial accidents observed in the younger age groups is partly due to lack of occupational training and of adaptation to surroundings. The disastrous effect of insufficient training is brought out by table XXI, which shows the toll paid to accidents by newcomers in the undertakings.

TABLE XXI. DISTRIBUTION OF ACCIDENTS BY LENGTH OF SERVICE OF INJURED PERSONS IN THE UNDERTAKING

Kind of undertaking	Per cent. of total number of accidents		
	Up to 1 week's service	Up to 1 month's service	Up to 1 year's service
Metal industry	1.2	5.2	36.2
Wood industry	2.0	7.4	38.0
Building industry	8.4	24.3	72.6
Forestry	13.2	27.5	59.8
Federal Railways staff	0.4	1.4	8.2

A further proof that badly trained labour increases the accident risk is forthcoming from the very unfavourable results achieved by undertakings set up for a limited time for special jobs of short duration. These undertakings — in most cases some sort of syndicate formed for the purpose — hastily recruit a highly heterogeneous staff, often quite without the necessary training. To this want of skill on the part of many of the staff must be added another factor tending to increase the risk, namely, the feeble interest which this kind of undertaking takes in accident prevention.

With regard to negligence, the Swiss Act states (section 98) that " if the insured person has caused the accident by serious fault, the compensation other than funeral expenses shall be reduced in proportion to the degree of fault ". But, the Fund remarks, it is not easy to prove serious fault, especially in industrial accident insurance where the working conditions of an undertaking, the habits tolerated in it, and the mentality of the head of the undertaking must all be taken into account, and are often enough to exonerate the injured person who at first sight seems to have committed a serious fault. Reductions of compensation under section 98 of the Swiss Act are much more frequent in non-industrial accident insurance than in industrial accident insurance (0.3 cases of reduction for serious fault per 100 industrial accidents, as against 3.2 per cent. in the non-industrial accident branch).

Recent research by the Fund into the effects of accident proneness confirms the observations made during the previous period that there undoubtedly exists a class of insured persons with a marked accident proneness. This class includes a large proportion of unskilled workers and general labourers. Such persons are just as liable to industrial as to non-industrial accidents, but they do not differ in age, civil status, or nationality from other victims of accidents. Neither negligence nor a tendency to take wrongful advantage of insurance appear to have any definite influence.

Once again the effect of alcohol has not been made the subject of special study. It is known that the consumption of alcohol in any

form tends to increase the accident risk and that alcohol should be prohibited in workshops and workplaces.

As already stated, the head of the undertaking has a predominant part to play in the campaign for the prevention of accidents due to human factors. The newcomer in the undertaking must be warned against dangers, he must be taught and required to use safety devices and he must be helped in every way to adapt himself in the shortest possible time to his new surroundings. In the field of accident prevention, as in so many others, nothing is worth the eye of an experienced master.

Financial Results of Accident Prevention

The report points out that accident statistics hardly lend themselves to conclusions as to the effects of prevention, as it is not possible to compare them with statistics of production. Nevertheless, a few results obtained by special enquiries may be noted.

The Fund has put at the disposal of the undertakings various patterns of goggles which have been studied with great care and are constantly improved. The Fund has always laid great stress on the necessity of wearing them. As a result of this energetic campaign against eye accidents, their number has gradually fallen; they have decreased by 50 per cent. in the space of ten years, and accidents due to abrasive wheels by as much as 80 per cent.

The Fund has continued its efforts for the prevention of accidents due to the use of circular saws and spindle-moulding machines. It is however very difficult, especially in the wood-working industry, to express the results obtained in figures, for changes in working methods and the increasing use of machinery are two of the characteristics of this industry.

It is noted, however, that accidents due to wood-working machinery have not increased in spite of the continual increase in its use.

TABLE XXII. FREQUENCY OF ACCIDENTS CAUSED BY WOOD-WORKING MACHINERY IN THE WOOD INDUSTRY

Year	Wages insured (million francs)	Number of full-time workers	Number of accidents caused by wood-working machinery	Frequency rate (number of accidents per 1,000 full-time workers)
1928	122	43,500	2,268	52
1929	134	46,600	2,789	60
1930	134	45,800	2,722	59
1931	132	45,200	2,418	53
1932	121	42,100	2,178	52

The distribution of accidents among the different machines causing them has been considerably modified. The number of accidents due

to circular saws has fallen appreciably owing to the more general use of protective hoods. As may be seen from table XXIII, the cost of compensation has fallen by nearly one-third.

TABLE XXIII. COMPARISON OF THE FREQUENCY AND AVERAGE COST, AT TWO DIFFERENT PERIODS, OF ACCIDENTS DUE TO CIRCULAR SAWS IN THE WOOD-WORKING INDUSTRY

Period	Wages insured (million francs)	Accidents due to circular saws				
		Total	Per million francs of wages insured		Average cost of compensation	
			All cases	Cases of death and permanent incapacity	Per accident	Per 1,000 francs of wages insured
					Frs.	Frs.
1923-1924	195.7	1,226	6.3	1.2	1,244	7.8
1931-1932	252.6	1,373	5.4	0.9	983	5.3
Decrease (per cent.)	—	—	14	25	21	32

The efficacy of the device constructed by the Fund for the protection of presses and punching machines has been still further confirmed and its effects are now considerable. In the risk class formed by factories making cut, stamped, and pressed metal articles, the total number of accidents due to mechanical presses has fallen by 46 per cent. from 1923-1924 to 1931-1932 and that of cases of permanent incapacity by 35 per cent.

It is known that the Fund adopts measures of compulsion against undertakings which fail to comply with the instructions issued by its accident prevention service, by raising their premium rates, and that it reduces the rates when undertakings follow the instructions given and their heads can prove that they are keeping their promises as regards the use of protective devices. In this connection it is interesting to note that the insurance accounts of wood-working undertakings using protective devices, and for this reason paying lower premiums, show a more favourable balance than the general accounts for all undertakings in the group, spite of the lower premium income. The practice followed by the Fund thus benefits not only the undertakings directly concerned but also the whole risk class to which they belong, as the insurance results of the class as a whole are improved by those of the undertakings with the lower risk.

Generally speaking it may be said that the Fund has had encouraging results from all the safety devices which it has introduced, which will be an incentive to it to take steps to make their adoption still more general.

But it should not be thought from the interest shown by the Fund in the safety of machinery that it considers that technical methods

are alone sufficient to ensure a considerable and lasting improvement in the insurance results. In its annual reports, the Fund has always maintained that the results that can be expected from safety devices are small in comparison with those deriving from other factors, and in particular from the attention which the head of the undertaking gives to accident prevention. Energetic intervention by the employer in the safety campaign is a decisive factor ; a fixed determination to achieve results is a much more important factor in success than the choice of the methods to be followed, which must also of necessity vary with the nature of the industry and even in different undertakings.

The examples cited by the Fund furnish striking proof of the truth of this point of view. Its report mentions a whole series of undertakings belonging to all sorts of industries, for which the insurance results have shown a great improvement in the course of a few years solely on account of the zeal displayed by the employers working in close collaboration with the organs of the Fund. The latter has been able in a large number of cases to reduce premiums to a not inconsiderable extent. In this way the employer who strives to promote accident prevention is the first to benefit, a fact which ends by convincing him that his moral duty to protect his workers is closely bound up with his business interests, and the Fund does not fail to make good use of this powerful stimulus.

The examples which follow have been chosen with prudence and refer to undertakings whose business activities have not shown any great variation during recent years.

Engineering. In order to avoid the increase in premiums contemplated by the Fund, an undertaking decided to engage an inspector to organise an accident prevention service. In an astonishingly short time, this inspector managed to convince the management and the supervisory staff of the advantages to be gained by the undertaking from the prevention of accidents.

In the first place, he energetically attacked the question of eye accidents, the frequency of which was reduced in six months to one-fifth of what it previously was, and to one-seventh for certain important categories of staff (turners, chippers and trimmers). Eye accidents even disappeared completely among tool grinders.

The lifting and moving of loads formed the subject of a special study. Particular attention was given to the state and maintenance of lifting and hoisting apparatus and to the correct fastening of loads. Facts established as a result of enquiries into accidents were reproduced photographically, and shown at lantern lectures given to the supervisory staff and workers.

The undertaking in question considers the systematic use of the results of its own experience to be the most effective psychological means of promoting accident prevention ; the results obtained in each department have been brought to the notice of the workers concerned in the form of illustrated leaflets, but ordinary posters representing accidents have been discontinued. The undertaking, however, keeps accurate statistics for each kind of work and each department of the undertaking, which show the danger of accidents and classify them

by cause, part of the body injured, and nature of the injury. These statistics provide valuable information concerning the protective measures to be taken not only in connection with machinery but also in regard to the plant and equipment in general. In one case, for instance, by inventing special footwear to protect the feet of foundry workers against burns, which are painful and slow in healing, the undertaking has also rendered good services to the community at large.

The medical officer of the undertaking has tried to improve the standard of treatment given in the works' infirmary. In order to reduce the cost of accidents, the undertaking decided to employ all injured persons partly able to work by giving them a job suitable to their state of health.

The following table summarises the results obtained :

Period	Number of accidents per million francs of wages	Cost of cure and compensation for loss of wages per 1,000 francs of wages
1918-1929	73	12.8
1930	50	10.1
1931	31	6.3
1932	26	4.8

Building and Public Works. A large firm which carries on building operations throughout the whole of Switzerland was showing unfavourable insurance results. As a result of an increase in its premium rate this undertaking set up an accident prevention service.

For the organisation of the workplaces, a task to which special attention was given, the undertaking got into touch with the accident prevention office of the Swiss Association of Building Contractors. An immediate study was made on the spot of all accidents and the necessary steps were taken to prevent their recurrence. Each week all the workplaces received a communication showing the number and nature of the accidents that had occurred.

The undertaking methodically supervised the process of recovery of its injured workers and warned its staff that non-observance of the instructions of the prevention service would lead to dismissal.

The results of these measures are shown below :

Branch and period	Number of accidents per million francs of wages	Cost of cure and compensation for loss of wages per 1,000 francs of wages
Building :		
1918-1930	123	24.6
1931-1932	76	12.3
Publics works :		
1918-1930	164	34.8
1931-1932	84	20.1
Quarries :		
1918-1930	430	100
1931-1932	173	40

Manufacture of Boots and Shoes. A manufacturer to whom the Fund pointed out the main causes of the accidents in his works decided to give more attention to their prevention. No special post was created but the work was entrusted to an employee who was given, as in the other firm mentioned above, the necessary freedom of action and support by the management. The results were as follows :

Period	Number of accidents per million francs of wages	Cost of cure and compensation for loss of wages per 1,000 francs of wages
1918-1928	25.6	4.40
1929-1930	16.2	2.70
1931-1932	12.3	2.18

Brewing. As the result of a discussion with the Fund, an employer decided personally to organise accident prevention in his works, without creating a special post. He made a study of each accident, took the necessary steps to avoid any recurrence, and closely supervised the process of recovery of persons injured. The result was the improvement shown below :

Period	Number of accidents per million francs of wages	Cost of cure and compensation for loss of wages per 1,000 francs of wages
1918-1930	87	18.4
1931-1932	47	11.1

Tanneries. By methods similar to those described above an employer improved his results as follows :

Period	Number of accidents per million francs of wages	Cost of cure and compensation for loss of wages per 1,000 francs of wages
1918-1930	33	8.7
1931-1932	7	4.1

Small Metal-Working Factory. An increase in its premium rate induced the head of an undertaking to get into contact with the accident prevention service of the Fund and to obtain information as to what was to be done. The results are shown below :

Period	Number of accidents per million francs of wages	Cost of cure and compensation for loss of wages per 1,000 francs of wages
1918-1930	205	25.8
1931-1932	113	14.9

These examples show with great clearness what can be achieved by vigorous preventive measures. The Fund hopes that they will lead the heads of industrial concerns to consider accident prevention as an integral part of the organisation of their undertakings. Naturally an accident prevention campaign entails a certain outlay of capital,

but this is a mere drop in the ocean when compared with the loss of time and money due to accidents. Money spent on the prevention of accidents is money well invested.

Abuses, their Consequences, and their Suppression

That insurance gives rise to certain abuses, that it has a paralysing effect on the will and even provokes fraud in all its forms, is too well known to require any comment. As in its previous report, the Fund points out that serious abuses and offences punishable by law are comparatively rare and hardly exceed a dozen a year on an average. It must be obvious that all the offences committed cannot come to the notice of the Fund, but it is none the less certain that the amount of money of which the Fund is defrauded by such abuses represents only an infinitesimal proportion of the total cost of compensation.

The petty abuses of a mild character which are committed at every turn are much more serious in their consequences. These methods of defrauding the Insurance Fund of small sums cause the greatest harm to the community by their pernicious and contagious effects which help to spread what has accurately been described as pilfering. All kinds of abuses must be combated by unceasing efforts. An insurance institution wanting in vigilance must rapidly become the victim of an ever increasing number of frauds.

The temptation to make insurance pay more than is absolutely necessary is especially strong in times of economic depression. This is easily understood, for it is natural for an insured person who is deprived of his earnings to try to draw compensation as long as possible. In such circumstances the individual sees only his own immediate advantage and hardly even thinks of the disastrous effects of such practices. But before passing judgment on the morals of the insured it must be remembered that the insurance institution pays no compensation without a medical certificate. The severe criticism of social insurance and its alleged unnecessary expenditure, which comes chiefly from hostile quarters, is in reality a charge against the medical profession. It may here be pointed out that the Swiss Act, which gives the insured free choice of doctor with no restrictions, allows the doctors wide latitude with regard to benefits in kind, i.e. medical treatment and drugs. It might be asked whether the Fund is really in a position to protect itself against certain abuses of which examples might easily be quoted. The free choice of doctor has at any rate the disadvantage that it makes it very much easier for the victim of an accident to obtain a medical certificate enabling him to prolong unduly the period for which he draws compensation for loss of wages.

A brief summary is given below of several pages of statistics which the Fund has compiled in an attempt to show the effects of some abuses.

A curious feature of the average duration of temporary incapacity in respect of which compensation was paid is that it rose continuously during the first quinquennial period, fell during the second period,

and again showed a tendency to rise during the third period. During the period 1928-1932 it fluctuated between 14.6 and 15.6 days in industrial accident insurance and between 15.6 and 17.2 days in non-industrial accident insurance.

An enquiry covering the year 1931 confirmed the fact noted in 1925 that in 51 per cent. of the cases work was resumed on a Monday. The Fund is thus faced with a custom which is equally deep-rooted among the insured persons, the medical profession, and the employers, and which is not easy to eradicate.

Supplementary insurance for the amount of wages not covered by compulsory insurance—which pays compensation of only 80 per cent. of the insured person's earnings—results in a fairly considerable extension of the average length of temporary incapacity. The thorny question of over-insurance by subscriptions to newspapers and periodicals is being closely studied by the Fund, as it might easily result in serious abuses.

Another problem occupying the attention of the Fund is the cost of medical aid, which amounts to nearly 4 francs per day of treatment and which it has been found impossible to reduce to the necessary extent. The Fund contemplates drawing up new scales for medical treatment and drugs ; it even hints in its report that it would not be opposed to even such a drastic measure as making injured persons pay a part of the cost of medical aid.

With regard to small incapacity pensions, the report states that the practice followed for the compensation of cases of minor importance from the point of view of loss of earning capacity, which consists in paying a lump sum equal to the value of a temporary pension, has given very good results and should be further developed.

Finally, the Fund finds that cases of traumatic neurosis are very rare and that expenditure entailed by them is negligible.

The experience of the Fund shows that abuses—the existence of which it would be vain to deny—can be successfully combated. Armed with adequate means, the insurance institution is in a position if not to suppress abuses completely, at least to keep them within relatively narrow limits. It is thus possible to check the evil before it develops and becomes a danger to the whole structure of the social insurance system. But it is essential to take the necessary steps in time and to act with firmness.

Insurance does not lose any of its value because it lends itself to fraud. The best things may be abused, but this is no reason for renouncing them.