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METAL-MINE ACCIDENTS
IN THE
UNITED STATES

DURING THE CALENDAR YEARS 1933-34

BY

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METAL-MINE ACCIDENTS IN THE UNITED STATES DURING THE CALENDAR YEARS 1933-34 ¹

By W. W. ADAMS ² AND M. E. KOLHOS ³

INTRODUCTION

Because of insufficient funds for printing, the Bureau of Mines was unable to publish its annual bulletin covering accidents at metal mines in the United States for the year 1933. A brief mimeographed summary of the principal statistical data for that year was released to the public late in 1934. Since then reports for 1934 have been received from the mining companies, and in order to avoid further delay in releasing this information to the mining industry and others interested in the prevention of accidents in mining, statistics for both years are presented in this publication with a minimum of interpretation and comment.

The fatal-accident rate for the metal and nonmetallic mines (excluding coal mines) of the United States was more favorable in 1933 than in any previous year since 1911, the first year for which the Bureau of Mines obtained reports from the operators. Further progress was made in 1934, when the fatality rate was even lower than that of 1933. On the other hand, the nonfatal-accident rate, which had reached its lowest level in 1932, increased in 1933 and increased further in 1934, although not to such an extent as to prevent the rate for either of those 2 years from being better than that for any year previous to 1931.

The relative standing of the principal mining States, arranged, first, according to their fatality rates per million man-hours of employment and, second, according to their injury rates per million man-hours, is indicated in table 1.

Gains in employment over the record for 1932 were reported in both 1933 and 1934. Not only did the number of employees increase, but gains were made also in the number of man-shifts worked and in the number of man-hours of labor performed. Moreover, the average employee had employment for a greater number of days and hours per year than in 1932. The period of employment per man during 1934 was within 4 percent of the number of workdays per man in 1931.

Reports from the operating companies to the United States Bureau of Mines showed that 57,016 men were employed at the mines during 1933, a gain of 3,728 over the number reported for 1932; and that the number of workers during 1934 was 66,645, an increase of 1,600 over the year 1933. The aggregate amount of work performed by all of the employees was 94,139,386 man-hours in 1933 and 116,146,400

¹ Work on manuscript completed July 1936.

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man-hours in 1934; each of these figures represented a material increase over the record for 1932.

Accidents in and about the mines resulted in 95 deaths and 5,925 nonfatal lost-time injuries in 1933 and 116 deaths and 7,892 injuries in 1934. The principal causes of the fatal accidents were falls of rock or ore from the roof or wall, explosives, and falls of persons down chutes, winzes, raises, and stopes. Accidents that resulted in nonfatal lost-time injuries were caused mainly by falls of rock from the roof or wall, falls of loose ore while loading at the working face, and haulage. The causes of the accidents are shown in more detail in tables 6 and 7. The number of employees, the number of man-days and man-hours of work performed, and the number of accidents for each of the principal classes of mines, according to kinds of mineral produced, are shown in table 2.

ACKNOWLEDGMENTS

The figures presented in this bulletin are based upon reports furnished voluntarily by mining companies to the United States Bureau of Mines. The Bureau acknowledges and deeply appreciates the cooperation it has received from the operators.

RELATION OF STATISTICS TO CALENDAR YEAR

This and all other regular statistical reports published by the United States Bureau of Mines relate to calendar years. The data contained in this bulletin are intended to show the number of deaths and injuries resulting from accidents that occurred during the calendar years 1933 and 1934. For accident-prevention studies, accidents should be charged to the year in which they occurred so that they may be examined in connection with the causes and conditions that produced them.

SCOPE OF STATISTICS

The tables in this paper are based on reports from 3,240 mines that were operated all or part of the year 1933, and 3,598 mines that were similarly active in 1934. Reports for mines in Alaska were furnished by the Territorial mine inspector and those for mines in California by the industrial commission of that State. Reports for all other States were received directly from the operating companies, except those for Arizona and Idaho; these were received from the companies through the offices of the State mine officials of those States. Reports for all States cover mines employing any men, whether the mines were productive or nonproductive; many prospects are also included, although many others are omitted, as it is obviously impossible to obtain complete reports for all prospects by mail.

CLASSIFICATION OF INJURIES

Statistics of accidents, employment, and mining methods at metal mines and all other mines except coal mines have been compiled by the Bureau of Mines since 1911. From 1911 to 1914, inclusive, the Bureau's classification of nonfatal injuries covered two groups: "Serious" injuries disabling a workman for more than 20 days and "slight" injuries causing disability not exceeding 20 days but longer than the remainder of the day of accident. Beginning with 1915 and

continuing through 1929 a "serious" injury, as the term was used in the Bureau's reports, signified a temporary injury disabling an employe more than 14 days. Beginning with 1930 all temporary injuries have been included in a single group, each injury causing disability for more than the remainder of the day on which the accident occurred.

CLASSIFICATION OF MINES

Tables on the following pages are arranged to represent five divisions of the mining industry, as follows:

Copper mines.—This group comprises all of the copper mines reported in operation in which copper was the principal mineral produced.

Gold, silver, and miscellaneous metal mines.—This group comprises gold mines (both lode and placer), silver mines, lead-silver mines, gold-silver mines, lead and zinc mines other than those in the Mississippi Valley, and mines working ores of quicksilver, manganese, manganiferous iron, tungsten, vanadium, chromium, etc. Pyrite mines are included, as the cinder is used in some metallurgical works for its iron and copper content, and bauxite mines because bauxite is the main source of metallic aluminum.

Iron mines.—All iron mines are included in this group except those whose ores are valuable chiefly for their manganese content.

Lead and zinc mines (Mississippi Valley).—This group comprises the lead and zinc mines of the Mississippi Valley only, but it also includes fluorspar mines in Illinois and Kentucky.

Nonmetallic mineral mines.—The nonmetallic mineral mines include those that produce asbestos, asphaltum, barite, borax, emery, feldspar, flint, fluorspar (except in Illinois and Kentucky), garnet, graphite, gypsum, kaolin, lithia, magnesite, mica, mineral paint, phosphate rock, quartz, salt, soapstone, sulphur, talc, and tripoli. Coal mines are not included, and the records do not cover properties that produce stone, clay, or sand and gravel.

Copper mines.—The copper-mining industry established a lower fatality rate and a lower nonfatal-injury rate from accidents during 1934 than in any other year. As the fatality rate had already been reduced to a new low level in 1933, the record established in 1934 was but further evidence of the effectiveness of the accident-prevention work that most of the leading copper producers of the country are conducting. The nonfatal-injury rate was higher in 1933 than in the preceding year, but with that single exception it was lower in 1934 than at any previous time. The principal copper-mining States are indicated in the following table, together with the number of fatal and nonfatal injuries per million man-hours of employment during the past 4 years. Most of the mining of copper ore in Utah is from open-cut workings, a type of operation that usually is less hazardous than underground mining. The number of men employed at the mines is shown in table 11.

	1931	1932	1933	1934
Arizona.....	52.1	52.1	49.5	41.7
Michigan.....	71.1	37.8	62.4	35.5
Montana.....	76.4	65.1	77.6	86.0
Utah.....	15.7	17.4	8.8	6.8

Gold, silver, and miscellaneous metal mines.—A marked increase in activity at gold and silver mines was shown by reports for 1933 and 1934. The reports for this group, which also include lead and zinc mines outside of the Mississippi Valley region, are summarized in tables 13 and 14, which show the number of employees in each State, the number of man-hours of labor, and the number of fatal and nonfatal injuries. Accidents were more frequent in 1933 and 1934 than in 1931 and 1932. The leading States, on the basis of number of men employed, were California, Alaska, Idaho, and Colorado; the number of workers in these and other States is shown in table 13, and the number of man-hours of employment and number of accidents are indicated in table 14. The accident-frequency rates for the five principal States are indicated below; the figures represent the number of fatal and nonfatal accidents per million man-hours of labor.

	1931	1932	1933	1934
California.....	107.3	96.2	122.5	120.8
Colorado.....	139.6	113.9	90.3	114.1
Alaska.....	37.1	33.8	40.3	53.3
Idaho.....	76.0	82.6	88.3	115.4
Utah.....	125.8	125.5	122.8	107.5

Iron mines.—The iron-mining industry is outstanding for the success it has achieved in reducing the number of accidents during the past 24 years, the full period covered by reports from the mining companies to the United States Bureau of Mines. The accident rate for 1933 was lower than that for any other year except 1932; and the nonfatal-injury rate for 1934, while higher than in 1932, was more favorable than in any other year for which figures are available. The number of men employed has increased during the past 2 years as has also the number of man-hours of employment. The record for the industry for 1933 and 1934 is shown in tables 15 and 16. The accident-frequency rates for the leading States—Minnesota, Michigan, and Alabama—are given in the following table:

	1931	1932	1933	1934
Minnesota.....	12.0	14.3	15.5	11.5
Michigan.....	16.4	17.1	16.2	19.1
Alabama.....	21.9	21.3	29.3	28.6

Lead and zinc mines (Mississippi Valley States).—A large increase in the number of men employed was reported for the lead and zinc mines of the Mississippi Valley States for 1933, and a further increase was shown by the reports for the year 1934. The total number of man-hours of labor also was larger in 1933 than in the previous year, but a more notable increase was revealed by the operators' reports for 1934. Compared with 1932, the number of man-hours worked increased 2 percent in 1933 and nearly 42 percent in 1934. Accidents at the mines reached a favorable low level of frequency in 1933, the rate per million man-hours of employment being lower than in any other recent year; but the rate increased in 1934. Nevertheless, the accident record of the past 2 years compared favorably with that of

any year during the period 1915-29. The principal States in the lead-zinc group were Oklahoma, Missouri, and Kansas. The accident-frequency rates for these States are shown by the following figures for 1934 and the 3 previous years.

	1931	1932	1933	1934
Oklahoma.....	113.4	135.3	101.4	145.9
Missouri.....	54.7	50.7	33.7	43.6
Kansas.....	94.8	46.8	69.7	87.9

Non-metallic-mineral mines.—This group includes all mines except those producing metal, coal, or stone. The group as a whole employed more men in 1933 than in the preceding year and a still larger number in 1934. An increase in the number of man-hours of labor also was reported for each of the past 2 years. The number of employees and the amount of labor performed are shown in tables 19 and 20. There was a higher accident rate in 1933 than in the preceding year, but the rate was lowered somewhat in 1934. The accident rates for the group are shown in table 2. While the miscellaneous character of the minerals covered by nonmetallic mines as a group make the accident rates for one State not entirely comparable with those for another State, the rates for several of the principal States are given below to indicate the change that has taken place in each State's rate during the past few years.

	1931	1932	1933	1934
California.....	90.8	76.3	89.2	74.9
Florida.....	36.5	31.4	29.7	30.3
Louisiana.....	23.6	47.3	77.1	87.7
New York.....	39.1	28.0	38.5	31.8
Tennessee.....	23.0	34.4	31.7	25.6
Texas.....	48.9	32.3	31.6	42.5
Virginia.....	49.0	34.5	16.5	36.8

COMPARISON OF NON-FATAL-INJURY RATES FROM CHIEF CAUSES OF ACCIDENTS UNDERGROUND (INCLUDING SHAFT) IN PRINCIPAL MINING STATES

More than 98 percent of all of the lost-time accidents that occurred at metal and nonmetal mines (except coal mines) in the United States during 1933 and 1934 were of a nonfatal character, although each injury was sufficiently serious to disable an employee for more than the remainder of the day on which the accident occurred. As less than 2 percent of the accidents resulted fatally, it is the nonfatal injuries more than the fatalities that indicate the nature and importance of the hazards to which the miners are exposed. For this reason table 22 has been prepared as a basis for comparing the frequency of certain classes of accidents in the mines of various States. The figures in the table relate to only seven classes of accidents, but these accounted for most of the accidents that occurred at the mines.

The largest number of accidents attributable to any single cause is that charged to falls of rock or ore from the roof or wall. Accidents of this kind usually occur at or near the place where the miners are

engaged in drilling or loading. The accident-frequency rate for this class of injuries for all mines in the United States was 14.47 in 1933 and 16.24 in 1934 per million man-hours of employment in underground work. Lower rates (and therefore better safety records) for accidents from falling rock and ore were established by a number of States, notably Missouri, Alabama, and Minnesota. On the other hand, the records for some States were less favorable than that for the country as a whole; among these States were California, Utah, and New Mexico.

The figures in table 22 show the accident rates for the United States for each of the principal causes of accidents underground and similar rates for each State in which 1,000 or more men worked underground. Comparative rates are also given for open-cut mines for the United States and for each State in which 200 or more men were employed in open-cut mining.

ACCIDENTS CLASSIFIED BY MINING METHODS

The mode of classifying mining methods employed in this bulletin was originated by the Mining Division of the Bureau of Mines and used in the Division's studies of the relative efficiency of various mining methods from the standpoint of productivity and costs. The classification was used for the first time in this series of statistical bulletins in the bulletin covering the calendar year 1929; it is as follows:

- A. Underground methods:
1. Open stope, including the room-and-pillar method and sublevel stoping.
 2. Shrinkage.
 3. Cut-and-fill.
 4. Square-set.
 5. Block caving.
 6. Sublevel caving.
 7. Top slicing.
- B. Surface methods:
8. Open-cut with power shovel.
 9. Open-cut with power scraper.
 10. Open-cut, hand loading only.
 11. Hydraulicizing.
 12. Dredging.

From the standpoint of the number of companies and States represented and the number of men employed in the mines the most widely used operating method in metal mines in the United States is the open-stope method, including the room-and-pillar method and sublevel stoping.

Figures for 1934 showed that the combined accident-frequency rate for fatalities and injuries in underground mining was most favorable for top slicing, the next lowest accident rate being that for sublevel caving. A slightly different order of standing was shown in 1933. The highest rates were reported by mines using square-set methods.

It should be made clear in this connection that a mining company is not free to choose any method of mining that officials may prefer; it is not free to adopt any method solely from the standpoint of safety. The method to be used is determined mainly by the type of deposit, the character and value of the ore, and the possibility of extracting the ore at an economically sound price.

Table 23 shows the number of employees in mines using each of the various methods and the comparative accident-frequency rates of these mines for fatalities and nonfatal lost-time injuries. Each mine is classified according to its principal mining method, as shown in the company report to the Bureau of Mines.

PLACER MINING

More men were employed at placer properties in 1933 than in the preceding year, and a further increase in employment was shown by the operating companies' reports for the year 1934. The increase in employment was accompanied by higher accident rates during the past 2 years. The rate covering fatal and nonfatal injuries was 34.77 per million man-hours of employment in 1932; this increased to 56.33 in 1933 and to 61.66 in 1934. Dredging was the principal method of operating the properties, although hydraulicking and underground working of placer deposits were important. Tables 24, 25, and 26 show the number of employees and number of persons injured by accidents during the past 2 years.

COMPARATIVE ACCIDENT RATES FOR 1934 AND PREVIOUS YEARS

Table 27 shows comparative accident rates for mines in 1934 and earlier years. The rates given in this table show the number of accidents per thousand 300-day workers. The preparation of rates on the basis of man-hours of employment was not practicable for the full period covered by the table, as figures for years prior to 1931 were prepared on a basis of man-shifts rather than man-hours.

ACCIDENT RATES FOR PRINCIPAL COUNTIES

Table 28 shows the accident-frequency rates per million man-hours of employment and other pertinent data for the principal counties of the more important metal-mining and non-metal-mining States covered by this publication. The accident rate of a State is obviously a composite rate, reflecting the net result of the accident-prevention efforts of all mines within the State. It is often true that the mines in one or two counties will account largely for the success or failure of a State as a whole to reduce its accident rate. The figures in table 28, therefore, are presented to aid in localizing the situation to some extent by revealing the accident rates of the counties separately, thus showing what sections of the State are contributing most to the general effort to prevent accidents.

MINES OPERATED WITHOUT FATAL ACCIDENTS

Although 95 men were killed by accidents during 1933, the records furnished by the operating companies to the United States Bureau of Mines showed that all of the fatalities occurred at only 71 mines out of the 3,240 that were in operation during the year. Similar records for 1934 showed that the 116 fatal accidents reported for that year occurred at only 94 out of a total of 3,598 active mines. The records thus show that the fatalities are limited to a comparatively small section of the mining industry and that most of the industry has a clear record as far as fatal accidents are concerned.

The reports from the operating companies also show that the nonfatal-injury rates for mines having no fatal accidents were lower than the corresponding rates for mines having fatalities. It should be stated, however, that the mines having fatal accidents averaged much larger in size than the mines in which no fatalities occurred, and, as a class, the larger mines have a more complex safety problem to solve than have the smaller mines. As shown in table 29, the mines in which no fatal accidents occurred accounted for more than 75 per cent of the total number of men employed in the entire industry.

TABLES FOR THE CALENDAR YEAR 1933

TABLE 1.—*Relative standing of States having 1,000 or more men employed at mines in 1933, classified according to number of men employed and fatality and injury rates per million man-hours of labor performed*

Relative standing	State	Number of men employed	Relative standing	State	Fatality rate ¹	Relative standing	State	Injury rate ¹
1	California.....	7,892	1	Missouri.....	-----	1	Minnesota.....	14.98
2	Michigan.....	6,282	2	Oklahoma.....	-----	2	Tennessee.....	17.34
3	Minnesota.....	5,854	3	Minnesota.....	0.45	3	Florida.....	29.27
4	Idaho.....	3,021	4	Florida.....	.45	4	Alabama.....	29.97
5	Alaska.....	2,981	5	South Dakota..	.66	5	Texas.....	30.48
6	Arizona.....	2,768	6	California.....	.68	6	Missouri.....	33.05
7	Alabama.....	2,747	7	Alabama.....	.71	7	Michigan.....	33.08
8	Colorado.....	2,414	8	Tennessee.....	.87	8	Alaska.....	38.97
9	Montana.....	2,244	9	New Mexico.....	.88	9	South Dakota..	44.92
10	Utah.....	2,237	10	Texas.....	.89	10	Arizona.....	63.27
11	Missouri.....	1,992	11	Montana.....	1.05	11	Montana.....	72.12
12	South Dakota..	1,798	12	Michigan.....	1.14	12	Nevada.....	74.89
13	New Mexico.....	1,547	13	Utah.....	1.20	13	Colorado.....	86.90
14	Oklahoma.....	1,433	14	Alaska.....	1.34	14	Idaho.....	87.27
15	Nevada.....	1,349	15	Nevada.....	1.45	15	New Mexico.....	88.78
16	Texas.....	1,340	16	Idaho.....	1.48	16	Utah.....	94.48
17	Tennessee.....	1,223	17	Arizona.....	1.58	17	Oklahoma.....	98.76
18	Florida.....	1,033	18	Colorado.....	3.71	18	California.....	119.45
	Total, United States.....	50,155		United States average.....	1.07		United States average.....	64.09

¹ Number of deaths or injuries per million man-hours of employment.

TABLE 2.—All mines: Number of active mines, men employed, man-days, man-hours of employment, and number killed and injured, by kind of mine, during the year ended Dec. 31, 1933

Kind of mine	Number of mines		Men employed				Man-days of employment				Man-hours of employment																			
	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total														
																	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total		
Copper.....	111	4,132	1,874	6,976	998,476	477,204	214,108	1,689,788	7,949,616	3,809,071	1,712,860	13,471,547																		
Gold, silver, and miscellaneous metal.....	2,608	14,001	7,159	23,775	3,548,036	1,703,192	286,873	5,538,101	28,295,081	13,477,855	2,318,259	44,091,195																		
Iron.....	130	6,877	3,807	13,954	3,974,400	1,573,567	484,037	1,982,004	8,130,958	4,866,955	3,783,603	16,781,516																		
Lead and zinc (Mississippi Valley)¹.....	81	2,002	888	4,633	601,032	91,966	10,020	703,018	4,829,522	751,849	80,160	5,661,531																		
Nonmetallic mineral.....	290	2,200	2,754	7,678	428,629	792,332	507,221	1,729,202	3,402,554	6,319,212	4,411,831	14,133,597																		
Total, 1933.....	3,240	32,202	16,160	57,016	6,551,573	3,638,281	1,452,259	11,642,113	52,607,731	22,942,942	12,306,713	94,139,386																		
Total, 1932.....	3,044	31,321	16,042	53,288	6,493,614	3,667,648	933,905	11,095,167	52,475,371	21,051,936	8,511,019	92,038,326																		
Kind of mine	Average days active		Average hours per man per year		Number killed		Number injured		Rates per million man-hours																					
	Under-ground	Surface	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Killed			Total																
											Under-ground	Surface	Open-cut		Under-ground	Surface	Open-cut													
Copper.....	242	255	221	242	1,924	2,063	1,766	1,931	6	13	1	13	1.51	0.26	0.58	1.04	77	11	19	69	26	86	54	49						
Gold, silver, and miscellaneous metal.....	238	238	167	233	1,899	1,883	1,349	1,855	50	9	9	59	3,054	633	79	3,766	26	42	1.77	.67	1.34	107	93	46	97	34	08	85	42	
Iron.....	142	147	136	142	1,182	1,249	1,190	1,203	10	2	2	12	230	72	32	334	11	26	1.23	.41	.72	28	29	14	79	8	46	19	90	
Lead and zinc (Mississippi Valley)¹.....	147	188	180	152	1,180	1,541	1,512	1,222	2	2	3	2	307	36	3	346	2	5	.41	.5	.35	63	47	88	57	43	61	11	11	
Nonmetallic mineral.....	195	288	186	225	1,547	2,295	1,620	1,841	2	2	4	8	313	222	210	745	1	1	.59	.32	.91	57	91	99	35	13	47	60	92	71
Total, 1933.....	203	225	168	204	1,634	1,807	1,424	1,651	76	14	5	95	4,517	1,038	370	5,925	46	86	1.64	.48	.41	1.01	85	86	35	52	30	06	62	94
Total, 1932.....	207	220	175	208	1,675	1,866	1,598	1,727	88	17	2	107	3,920	847	247	5,014	47	70	1.68	.55	.23	1.16	74	70	27	28	29	02	54	48

¹ Includes fluorspar mines in Illinois and Kentucky.

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TABLE 3.—All mines: Number of active mines, men employed, and number of man-days of employment, by States, during the year ended Dec. 31, 1933

State	Number of mines	Men employed				Man-days of employment			
		Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total
Alabama.....	20	1,879	703	165	2,747	333,348	112,397	31,631	477,376
Alaska.....	640	942	1,539	500	2,981	261,743	392,323	90,000	744,066
Arizona.....	122	1,808	683	277	2,768	345,953	153,258	58,193	557,404
Arkansas.....	7	181	15	58	254	38,361	3,993	7,705	50,059
California.....	973	4,731	2,438	723	7,892	1,027,662	519,625	122,824	1,670,111
Colorado.....	215	1,645	574	195	2,414	410,568	127,685	37,358	575,611
Florida.....	14		283	750	1,033		76,395	167,431	243,826
Georgia.....	13	67	18	175	260	11,760	3,860	45,839	61,459
Idaho.....	269	2,282	599	140	3,021	475,049	106,651	13,995	595,695
Illinois.....	10	132	18	50	200	24,943	4,190	9,847	38,980
Iowa.....	8	90	13	31	134	9,948	1,340	2,252	13,540
Kansas.....	24	740	179	9	928	118,823	40,238	1,120	160,181
Kentucky.....	16	121	87	195	403	21,301	17,318	29,706	68,325
Michigan.....	63	3,769	2,257	256	6,282	580,265	364,372	28,764	973,401
Minnesota.....	71	1,820	1,280	2,754	5,854	226,182	202,798	376,425	805,405
Missouri.....	19	1,709	85	198	1,992	178,326	8,069	17,699	204,094
Montana.....	120	1,839	363	42	2,244	491,515	97,031	5,174	593,720
Nevada.....	133	743	355	251	1,349	155,496	63,729	43,163	262,378
New Jersey.....	5	547	139		686	113,944	26,983		140,927
New Mexico.....	43	1,004	267	276	1,547	324,197	73,699	46,416	444,312
New York.....	26	621	194	47	862	114,298	50,851	10,538	175,687
North Carolina.....	14	86	37	72	195	12,646	5,685	10,641	28,972
Oklahoma.....	34	1,237	136	60	1,433	209,575	23,771	10,805	244,151
Oregon.....	105	189	86	92	367	27,597	15,762	11,372	54,731
South Dakota.....	14	842	942	14	1,798	266,256	296,918	1,741	564,915
Tennessee.....	15	502	380	341	1,223	124,205	96,742	56,316	277,263
Texas.....	26	197	967	176	1,340	44,659	345,658	42,704	433,021
Utah.....	81	1,433	491	313	2,237	393,445	138,795	98,454	630,694
Virginia.....	17	291	366	197	854	51,175	52,422	24,844	128,441
Washington.....	51	192	57	58	307	31,083	11,269	9,967	52,319
Wisconsin.....	7	232	114	10	356	53,489	29,105	1,724	84,318
Wyoming.....	28	62	29	47	138	18,117	5,198	5,369	28,684
Other States ¹	37	269	475	173	917	55,654	170,151	32,242	258,047
Total, 1933.....	3,240	32,202	16,169	8,645	57,016	6,551,573	3,638,281	1,452,259	11,642,113
Total, 1932.....	3,044	31,321	16,642	5,325	53,288	6,493,614	3,667,648	933,905	11,095,167

¹ Includes Connecticut, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 4.—All mines: Number of man-hours of employment and average days active, by States, during the year ended Dec. 31, 1933

State	Man-hours of employment				Average days active				Average hours per man per year			
	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total
Alabama.....	2,984,522	1,008,882	244,687	4,238,091	177	160	192	174	1,588	1,435	1,483	1,543
Alaska.....	2,093,944	3,138,854	720,000	5,952,798	278	255	180	250	2,223	2,040	1,440	1,997
Arizona.....	2,756,126	1,219,353	465,534	4,441,013	191	224	210	201	1,524	1,785	1,681	1,604
Arkansas.....	311,101	31,944	69,335	412,380	212	266	133	197	1,719	2,130	1,195	1,624
California.....	8,209,214	4,032,048	985,531	13,226,793	217	213	170	212	1,735	1,654	1,363	1,676
Colorado.....	3,275,962	1,021,466	282,708	4,580,136	250	222	192	238	1,991	1,780	1,450	1,897
Florida.....	628,362	1,692,360	2,220,722	4,541,444	270	223	236	236	2,220	2,123	2,150	2,289
Georgia.....	117,130	34,780	437,990	589,900	176	214	262	236	1,748	1,932	2,503	2,269
Idaho.....	3,772,827	845,098	114,686	4,732,611	208	178	100	197	1,653	1,411	819	1,567
Illinois.....	199,546	33,527	79,333	312,406	189	233	197	195	1,512	1,863	1,537	1,562
Iowa.....	77,609	10,840	18,016	106,465	111	103	73	101	862	834	581	795
Kansas.....	976,183	334,415	8,960	1,319,558	161	225	124	173	1,319	1,868	996	1,422
Kentucky.....	183,717	141,861	252,131	577,709	176	199	152	170	1,518	1,631	1,293	1,434
Michigan.....	4,630,055	3,050,851	240,021	7,920,927	154	161	112	155	1,228	1,352	938	1,261
Minnesota.....	1,816,479	1,624,047	3,300,323	6,740,849	124	158	137	138	998	1,269	1,198	1,151
Missouri.....	1,426,680	64,652	142,762	1,634,094	104	95	89	102	835	761	721	820
Montana.....	3,928,157	775,945	38,232	4,742,334	267	267	123	265	2,136	2,138	910	2,113
Nevada.....	1,224,934	505,960	338,926	2,069,820	209	180	172	194	1,649	1,425	1,350	1,534
New Jersey.....	911,554	215,868	---	1,127,422	208	194	---	205	1,666	1,553	---	1,643
New Mexico.....	2,466,279	563,903	371,330	3,401,512	323	276	168	287	2,456	2,112	1,345	2,199
New York.....	909,657	402,923	92,526	1,405,106	184	262	224	204	1,465	2,077	1,969	1,630
North Carolina.....	109,102	46,075	104,685	259,762	147	154	148	149	1,269	1,245	1,453	1,332
Oklahoma.....	1,673,146	190,728	80,231	1,944,105	169	175	180	170	1,353	1,402	1,337	1,357
Oregon.....	216,747	126,022	97,682	440,451	146	183	124	149	1,147	1,465	1,062	1,200
South Dakota.....	2,130,055	2,375,351	13,930	4,519,336	316	315	314	314	2,530	2,522	995	2,514
Tennessee.....	1,002,934	784,832	518,782	2,306,548	247	255	165	227	1,998	2,065	1,521	1,886
Texas.....	365,999	2,742,452	270,381	3,378,832	227	357	243	323	1,858	2,836	1,536	2,522
Utah.....	3,129,813	1,100,870	786,248	5,016,931	275	283	315	282	2,184	2,242	2,512	2,243
Virginia.....	408,963	419,376	215,230	1,043,569	176	143	126	150	1,405	1,146	1,093	1,222
Washington.....	239,572	88,509	79,466	407,547	162	198	172	170	1,248	1,553	1,370	1,328
Wisconsin.....	443,286	265,143	15,514	723,943	231	255	172	237	1,911	2,326	1,551	2,034
Wyoming.....	143,966	41,334	42,533	227,833	292	179	114	208	2,322	1,425	905	1,651
Other States ¹	472,472	1,358,671	286,740	2,117,883	207	358	186	281	1,756	2,860	1,657	2,310
Total, 1933.....	52,607,731	29,224,942	12,306,713	94,139,386	203	225	168	204	1,634	1,807	1,424	1,651
Total, 1932.....	52,475,371	31,051,936	8,511,019	92,038,326	207	220	175	208	1,675	1,866	1,598	1,727

¹ Includes Connecticut, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

12 METAL-MINE ACCIDENTS IN THE UNITED STATES: 1933-34

TABLE 5.—All mines: Fatalities and injuries and rates per million man-hours, by States, during the year ended Dec. 31, 1933

State	Number killed			Number injured (time lost, 1 day or more)				Widows	Orphans	Rates per million man-hours								
	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut			Total	Killed				Injured			
											Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total
Alabama.....	3	---	---	3	100	15	12	127	3	11	1.01	---	---	0.71	33.51	14.87	49.04	29.97
Alaska.....	6	2	---	8	127	95	10	232	---	---	2.87	0.64	---	1.34	60.65	30.27	13.89	38.97
Arizona.....	5	1	1	7	222	43	16	281	5	10	1.81	.82	2.15	1.58	80.55	35.26	34.37	63.27
Arkansas.....	---	---	---	---	5	---	---	5	---	---	---	---	---	---	16.07	---	---	12.12
California.....	6	2	1	9	1,281	219	80	1,580	4	3	.73	.50	1.01	.68	156.04	54.31	81.17	119.45
Colorado.....	14	3	---	17	315	71	12	398	8	11	4.27	2.94	---	3.71	96.15	69.51	42.45	86.90
Florida.....	---	1	1	---	---	20	45	65	---	---	---	---	.63	.45	---	31.83	28.26	29.27
Georgia.....	---	1	1	---	4	---	22	26	---	---	---	2.28	1.70	34.15	---	50.23	44.08	
Idaho.....	7	---	---	7	359	52	2	413	4	6	1.86	---	---	1.48	95.15	61.53	17.44	87.27
Illinois.....	---	---	---	---	27	4	4	35	---	---	---	---	---	---	135.31	119.31	50.42	112.03
Iowa.....	---	---	---	---	7	2	---	9	---	---	---	---	---	---	90.20	184.50	---	84.53
Kansas.....	---	---	(¹)	---	77	9	---	86	---	---	(¹)	---	---	78.88	26.91	---	65.17	
Kentucky.....	---	---	---	---	6	9	19	34	---	---	---	---	---	---	32.66	63.44	75.36	58.85
Michigan.....	7	2	---	9	219	40	3	262	5	9	1.51	.66	---	1.14	47.30	13.11	12.50	33.08
Minnesota.....	3	---	---	3	48	30	23	101	3	9	1.65	---	---	.45	26.42	18.47	6.97	14.98
Missouri.....	---	---	(¹)	---	42	8	4	54	---	---	(¹)	---	---	---	29.44	123.74	28.02	33.05
Montana.....	5	---	5	---	317	25	---	342	---	---	1.27	---	---	1.05	80.70	32.22	---	72.12
Nevada.....	2	1	---	3	121	22	12	155	2	2	1.63	1.98	---	1.45	98.78	43.48	35.41	74.89
New Jersey.....	1	---	1	---	48	3	---	51	1	2	1.10	---	---	.89	52.66	13.90	---	45.24
New Mexico.....	2	1	---	3	241	45	16	302	2	6	.81	1.77	---	.88	97.72	79.80	43.09	88.78
New York.....	2	---	2	---	44	4	5	53	---	---	2.20	---	---	1.42	48.37	9.93	54.04	37.72
North Carolina.....	---	---	---	---	7	3	5	15	---	---	---	---	---	---	64.16	65.11	47.81	57.75
Oklahoma.....	---	---	---	---	174	15	3	192	---	---	---	---	---	---	104.00	78.65	37.39	98.76
Oregon.....	---	---	---	---	6	11	1	18	---	---	---	---	---	---	27.68	87.29	10.24	40.87
South Dakota.....	3	---	---	3	137	66	---	203	3	6	1.41	---	---	.66	64.32	27.79	---	44.92
Tennessee.....	2	---	2	---	10	11	19	40	2	5	1.99	---	---	.87	9.97	14.02	36.62	17.34
Texas.....	1	2	---	3	23	61	19	103	---	---	2.73	.73	---	.89	62.84	22.24	70.27	30.48
Utah.....	6	---	---	6	428	37	9	474	4	6	1.92	---	---	1.20	136.75	33.61	11.45	94.48
Virginia.....	---	---	---	---	36	13	10	59	---	---	---	---	---	---	88.03	31.00	46.46	56.54
Washington.....	---	---	---	---	22	5	---	27	1	---	---	---	---	---	91.83	56.49	---	66.25
Wisconsin.....	1	---	1	---	13	2	3	18	---	---	2.26	---	---	1.38	29.33	7.54	193.37	24.86
Wyoming.....	---	---	---	---	9	4	1	14	---	---	---	---	---	---	62.51	96.77	23.51	61.45
Other States ²	---	1	---	1	42	94	15	151	---	---	---	---	3.49	.47	88.89	69.19	52.31	71.30
Total, 1933.....	76	14	5	95	4,517	1,038	370	5,925	47	86	1.44	.48	.41	1.01	85.86	35.52	30.06	62.94
Total, 1932.....	88	17	2	107	3,920	847	247	5,014	47	70	1.68	.55	.23	1.16	74.70	27.28	29.02	54.48

¹ Reports received too late to classify: 1 fatality due to cave-in in an iron mine in Missouri and 1 fatality at a lead-zinc mine in Kansas due to breaking of ladder, allowing victim to fall down shaft in an abandoned mine.

² Includes Connecticut, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 6.—All mines: Fatalities, by causes and States, during the year ended Dec. 31, 1933

State	Underground										Shaft														
	Fall of rock or ore from roof or wall	Rock or ore while leading at working face	Hand tools	Explosives	Haulage	Falling down chute, winze, raise, or slope	Run of ore from chute or pocket	Drilling	Electricity	Machinery	Mine fires	Suffocation from natural gases	Inrush of water	Stepping on nail	Handling materials (other than rock or ore)	Other causes	Total, underground	Falling down shaft	Objects falling down shaft	Breaking of cables	Overwinding	Skip, cage, or bucket	Other causes	Total, shaft	
Alabama.....	1				2																				
Alaska.....				1		1		1	1																
Arizona.....	1	1		1																					
California.....	2			1																					
Colorado.....	5			2				1																	
Idaho.....	3			3																					
Michigan.....	4	1		1																					
Minnesota.....	3			1																					
Montana.....	2	1		1																					
Nevada.....	1			1																					
New Jersey.....	1			1																					
New Mexico.....																									
New York.....				1																					
South Dakota.....	1					1																			
Tennessee.....					1			1																	
Texas.....	1					1																			
Utah.....	2					1																			
Wisconsin.....																									
Other States ¹																									
Total, 1933.....	28	4		7	6	9	3	3	1	2		1		2	1	1	2	64	6	1			1	4	12
Total, 1932.....	27			19	4	8	1											70	3	2			8	4	18

¹ Includes Arkansas, Connecticut, Florida, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Missouri, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 7.—All mines: Injuries, by causes and States, during the year ended Dec. 31, 1933

State	Underground										Shaft														
	Fall of rock or ore from roof or wall	Rock or ore while loading at work	Hand tools	Explosives	Haulage	Falling down raise, or slope	Run of ore from chute or pocket	Drilling	Electricity	Machinery	Mine fires	Suffocation from natural gases	Inrush of water	Stepping on nail	Handling material (other than rock or ore)	Other causes	Total, underground	Falling down shaft	Objects falling down shaft	Breaking of cables	Overwinding	Skip, cage, or bucket	Other causes	Total, shaft	
Alabama.....	7	22	14	4	28	2	7	8	9	10	11	12	13	14	15a	15b		16	17	18	19	20	21		
Alaska.....	7	15	7	7	9	3	23	13		9	0		5	2	11	37	100							1	
Arizona.....	28	29	28	7	27	7	2	19		0	0		3	3	17	48	220					1	1	2	
Arkansas.....	228	168	154	13	108	146	33	162	34	34	2	2	23	23	123	60	1,254	4	2			20	3	27	
California.....	60	26	13	4	23	20	26	37	1	8	2	2	2	2	30	59	311	1	1					4	
Colorado.....	65	53	37	4	29	31	4	13	3	3	2		8	8	63	36	346		6			2	5	13	
Florida.....	5	5	1	1	5	1	1	5								0	27								
Georgia.....	3	1	1													0	7								
Idaho.....	5	16	12	1	14			6	1	1	1		1	1	2	17	73	2	2			2		4	
Illinois.....	41	30	10	2	13	7	18	19	1	7	1		1	1	5	46	200	4	4			3	7	19	
Indiana.....	11	8	2	1	7	3	3	6	5	5	1		1	1	6	12	47			1				1	
Iowa.....	1	8	2	1	8	3	3	8	2	2	1		1	1	1	7	38			1		1	1	4	
Kansas.....	73	34	54	4	54	8	3	10	2	34	2		1	1	22	48	313	1	1			1	1	4	
Kentucky.....	30	11	21	2	13	5	3	16	2	2	3		1	1	5	27	117	1	2			3	4	4	
Louisiana.....	6	9	6	2	5	8	8	2	2	2	1		1	1	2	8	48	1	1					4	
Maine.....	49	55	21	3	9	13	7	34	2	2	1	1	6	6	14	16	235	2	1				3	6	
Maryland.....	4	16	4		4	2	1	5	4	2	1		1	1	2	3	44								
Massachusetts.....	1	2	1	1	2	1	1	3	1	1	1		4	4	4	56	173	1	1					1	
Michigan.....	19	40	1	1	28	1	3	14	1	1	1				2	6								1	
Minnesota.....	16	24		6	5	3	1	8	2	6	2				1	74	136					1	1	1	
Missouri.....	3	2		1	2		1	2	1	1	1				1	2	10								
Montana.....	4	6	1	1	4	2	1	2	1	1	1				1	2	22							1	
Nebraska.....	77	25	56	2	55	26	7	39	2	6	2	3	8	46	61	413		7				3	5	15	
Nevada.....	4	2	1	1	4	4	2	4	2	2	1				1	4	33					1	2	3	
New Hampshire.....	8	2	2	1	2	2	2	1	1	1	1				1	3	13								
New Jersey.....	2	2	5	2	2	1	1	1	2	2	1				1	3	9								
New Mexico.....	1	4	1	1	1	1	1	1	4	2	1				1	11	42								
New York.....	1	1	1	1	1	1	1	1	1	1	1				1	1	4								
North Carolina.....	19	40	1	1	1	1	1	1	1	1	1				1	11									
North Dakota.....	16	24		6	5	3	1	8	2	2	2				2	6									
Oklahoma.....	3	2		1	2		1	2	1	1	1				1	2	10								
Oregon.....	4	6	1	1	4	2	2	4	2	2	1				1	4	22								
Pennsylvania.....	77	25	56	2	55	26	7	39	2	6	2	3	8	46	61	413		7				3	5	15	
Rhode Island.....	4	2	2	1	2	2	2	1	1	1	1				1	4	33					1	2	3	
Tennessee.....	8	2	2	1	2	2	2	1	1	1	1				1	3	13								
Texas.....	1	5	4	2	1	1	1	1	2	2	1				1	3	9								
Utah.....	2	5	1	1	1	1	1	1	4	2	1				1	11	42								
Virginia.....	1	4	1	1	1	1	1	1	2	2	1				1	4	22								
Washington.....	8	2	2	1	2	2	2	1	1	1	1				1	3	13								
West Virginia.....	1	2	1	1	1	1	1	1	2	2	1				1	3	9								
Wisconsin.....	2	5	1	1	1	1	1	1	4	2	1				1	11	42								
Wyoming.....	1	1	1	1	1	1	1	1	2	2	1				1	4									
Other States 1.....	761	605	461	65	467	296	132	423	6	107	6	8	72	359	644	4,407	12	37			1	36	29	110	
Total, 1933.....	728	460	352	63	436	204	99	351	16	68	1	9	81	52	272	3,778	13	32			1	47	45	142	
Total, 1932.....																									

1 Includes Connecticut, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

State	Surface										Open-cut										Grand total					
	Mine cars, mine locomotives, or aerial trams	Railway cars and locomotives	Run or fall of ore bins in or from ore	Falls of persons	Stepping on nail	Hand tools	Electricity	Machinery	Handling mate-rials	Other causes	Total, surface	Falls or slides of rock or ore	Explosives	Haulage	Power shovels	Falls of persons	Falls of derricks, booms, etc.	Run or fall of ore bins in or from ore	Machinery	Electricity		Hand tools	Handling mate-rials	Other causes	Total, open-cut	
Alabama.....	22	23	24	25	26	27	28	29	30a	30c	15	31	32	33	34	35	36	37	38	39	40	41a	41b	12		
Alaska.....	4					4	4	1	6	2	15	1	1	1	1	2	1	3	1	1	3	1	1	1		
Arizona.....	1		1	6	2	14	4	11	15	5	43	3	3	1	1	1	1	1	1	1	1	8	7	10		
Arkansas.....																								16		
California.....	1	1	3	43	2	34	3	24	62	46	219	11	4	8	17	17	5	5	4	9	15	7	7	80		
Colorado.....	7		2	3	4	7	2	8	10	10	71	2	2		1	1	1	1	6	10	9	11	6	12		
Florida.....	1		3	1	1	2	1	5	7	7	20	2			1	6	1	1	1	6	10	9	11	12		
Georgia.....												1	1	3	1	5	5	5	1	6	2	2	2	2	22	
Idaho.....	6			5	3	5		1	21	11	52	4	3	1	1	1	1	1	1	1	2	2	3	2	413	
Illinois.....				1					4	4	4	3												4	35	
Iowa.....		1		1		2			2	2	2	2												9	86	
Kansas.....	1			3		2		1	2	3	9	5	1	2	3	2	1	1	1	1	1	5	5	19	34	
Kentucky.....		1		10		3	1	3	6	13	40	1	1	1	1	1	1	1	1	1	1	1	1	3	262	
Michigan.....	2	1	1	1	1	3	1	4	7	8	30	1	1	3	5	1	1	1	1	1	2	7	3	23	101	
Minnesota.....	1	2	1	9		3		4	4	2	8	1	1	1	1	1	1	1	1	1	2	1	2	4	54	
Missouri.....	1			6	1	9		1	1	1	25	8												342	342	
Montana.....	6		1	1	1	5		2	5	2	22	2	1	1	4	4	4	4	1	1	4	2	2	12	155	
Nevada.....	1	3		4		5		2	2	2	1	2	2	1	1	1	1	1	1	1	2	1	6	16	302	
New Jersey.....	18			2		3		1	1	19	45	3	1	1	1	1	1	1	1	1	2	1	2	5	51	
New Mexico.....		2				3		1	1	1	4	4									1	1	1	6	15	
New York.....		1		1		1		1	1	1	3	3									1	1	2	3	192	
North Carolina.....				1		1		1	1	1	15	1									2	1	1	5	18	
Ohio.....	1			1		1		1	2	2	13	1									1	1	2	3	18	
Oklahoma.....				1		3		2	2	3	11	1									2	1	1	1	203	
Oregon.....				7	3	3		2	2	2	66	2									2	1	5	19	40	
South Dakota.....	2		2	8	3	2		1	1	51	11	2									3	6	8	19	103	
Tennessee.....		2		3	6	5	1	12	9	18	61	1	1	1	1	1	1	1	1	1	1	4	1	9	474	
Texas.....	3		1	4	1	5	1	14	9	37	17	2	1	1	1	1	1	1	1	1	3	2	2	10	59	
Utah.....	3		1	1	1	2		2	2	2	3	2									3	2	2	2	27	
Virginia.....			1	1		2		1	1	1	2	4									2	2	1	3	18	
Washington.....				1		9		3	4	5	2	1									1	2	1	1	14	
Wisconsin.....		1		1	2	1		3	4	25	94	2	1	2	2	1	1	1	1	1	2	3	1	15	151	
Wyoming.....				10	2	9						1									1	2	3	1	14	
Other States ¹	58	15	10	170	25	129	14	98	220	299	1,038	40	11	24	14	55	4	10	17	8	49	70	68	370	5,925	
Total, 1933.....	41	10	17	139	20	112	7	87	151	263	847	35	2	20	19	18	1	1	15	3	22	54	58	247	5,014	
Total, 1932.....																										

¹ Includes Connecticut, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

18 METAL-MINE ACCIDENTS IN THE UNITED STATES: 1933-34

TABLE 8.—All mines: Accidents, by States and severity of injury, during the year ended Dec. 31, 1933

State	Killed	Nonfatal			Total nonfatal	Grand total
		Perma- nent total ¹	Perma- nent partial ²	Tempo- rary ³		
Alabama.....	3		14	113	127	130
Alaska.....	8		8	224	232	240
Arizona.....	7		5	276	281	288
Arkansas.....				5	5	5
California.....	9	1	21	1,558	1,580	1,589
Colorado.....	17	2	14	382	398	415
Florida.....	1			65	65	66
Georgia.....	1		1	25	26	27
Idaho.....	7		5	408	413	420
Illinois.....			1	34	35	35
Iowa.....				9	9	9
Kansas.....		1	6	79	86	86
Kentucky.....			1	33	34	34
Michigan.....	9		4	258	262	271
Minnesota.....	3		6	95	101	104
Missouri.....			2	52	54	54
Montana.....	5		1	341	342	347
Nevada.....	3		6	149	155	158
New Jersey.....	1		4	47	51	52
New Mexico.....	3		1	301	302	305
New York.....	2		5	48	53	55
North Carolina.....				15	15	15
Oklahoma.....			3	189	192	192
Oregon.....				18	18	18
South Dakota.....	3		5	198	203	206
Tennessee.....	2		1	39	40	42
Texas.....	3		2	101	103	106
Utah.....	6	1	10	463	474	480
Virginia.....				59	59	59
Washington.....				27	27	27
Wisconsin.....	1			18	18	19
Wyoming.....				14	14	14
Other States ⁴	1		1	150	151	152
Total, 1933.....	95	5	127	5,793	5,925	6,020
Total, 1932.....	107	10	167	4,837	5,014	5,121

¹ Permanent total disability: Loss of both legs or arms, 1 leg and 1 arm, total loss of eyesight, paralysis or other condition permanently incapacitating workmen from doing any work of a gainful occupation.

² Permanent partial disability: Loss of 1 foot, leg, arm, hand, eye, 1 or more fingers, 1 or more toes, any dislocation where ligaments are severed, or any other injury known in surgery to be permanent partial disability.

³ Disability for more than the remainder of day of accident.

⁴ Includes Connecticut, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 9.—All mines: Accidents, by causes and severity of injury, during the year ended Dec. 31, 1933

Cause of accident	Killed	Nonfatal			Total nonfatal	Grand total
		Perma- nent total ¹	Perma- nent partial ²	Tempo- rary ³		
Underground:						
1. Fall of rock or ore from roof or wall	28	2	16	743	761	789
2. Rock or ore while loading at working face	4	1	8	596	605	609
3. Hand tools	7	1	7	454	461	461
4. Explosives	6		10	54	65	72
5. Haulage	9		13	454	467	473
6. Falling down chute, winze, raise, or stope	3		4	292	296	305
7. Run of ore from chute or pocket	3			132	132	135
8. Drilling	3		6	417	423	426
9. Electricity	1			6	6	7
10. Machinery	1		17	90	107	107
11. Mine fires	1			9	9	10
12. Suffocation from natural gases	1			9	9	10
13. Inrush of water				72	72	72
14. Stepping on nail				72	72	72
15a. Handling materials (other than rock or ore)			4	355	359	359
15b. Other causes	2		8	636	644	646
Total, underground	64	4	93	4,310	4,407	4,471
Shaft:						
16. Falling down shaft	6			12	12	18
17. Objects falling down shaft	1	1	1	30	32	33
18. Breaking of cables				1	1	1
19. Overwinding	1		1	35	36	37
20. Skip, cage, or bucket	4		1	28	29	33
21. Other causes				106	110	122
Total, shaft	12	1	3	106	110	122
Surface:						
22. Mine cars, mine locomotives, gravity or aerial trams	1		2	56	58	59
23. Railway cars and locomotives	2		2	13	15	15
24. Run or fall of ore in or from ore bins	2			10	10	12
25. Falls of persons	2			170	170	172
26. Stepping on nail				25	25	25
27. Hand tools			2	127	129	129
28. Electricity	1			14	14	15
29. Machinery	4		12	86	98	102
30a. Handling materials	4		4	216	220	220
30b. Other causes	4		5	294	299	303
Total, surface	14		27	1,011	1,038	1,052
Open-cut:						
31. Falls or slides of rock or ore	1		1	39	40	41
32. Explosives			1	10	11	11
33. Haulage				24	24	24
34. Power shovels			1	13	14	14
35. Falls of persons				55	55	55
36. Falls of derricks, booms, etc.	1			4	4	5
37. Run or fall of ore in or from ore bins				10	10	10
38. Machinery				17	17	17
39. Electricity	3		1	7	8	11
40. Hand tools				49	49	49
41a. Handling materials				70	70	70
41b. Other causes				68	68	68
Total, open-cut	5		4	366	370	375
Grand total, 1933	95	5	127	5,793	5,925	6,020
Grand total, 1932	107	10	167	4,837	5,014	5,121

¹ Permanent total disability: Loss of both legs or arms, 1 leg and 1 arm, total loss of eyesight, paralysis, or other condition permanently incapacitating workman from doing any work of a gainful occupation.

² Permanent partial disability: Loss of 1 foot, leg, hand, eye, 1 or more fingers, 1 or more toes, any dislocation where ligaments are severed, or any other injury known in surgery to be permanent partial disability.

³ Disability for more than the remainder of day of accident.

20 METAL-MINE ACCIDENTS IN THE UNITED STATES: 1933-34

TABLE 10.—All mines: Causes of fatalities and injuries, showing percentage due to each cause and corresponding rates per million man-hours during the year ended Dec. 31, 1933

Cause of accident	Number killed				Number injured			
	Percent of—		Per million man-hours		Percent of—		Per million man-hours	
	Grand total	Class total	Grand total	Class total	Grand total	Class total	Grand total	Class total
Underground:								
1. Fall of rock or ore from roof or wall.....	29.47	43.75	0.30	0.53	12.84	17.27	8.09	14.47
2. Rock or ore while loading at working face.....	4.21	6.25	.04	.08	10.21	13.73	6.43	11.50
3. Hand tools.....	7.37	10.94	.07	.13	7.78	10.46	4.90	8.76
4. Explosives.....	6.32	9.38	.07	.11	1.10	1.47	.69	1.24
5. Haulage.....	9.47	14.06	.10	.17	7.88	10.60	4.96	8.88
6. Falling down chute, winze, raise, or stope.....	3.16	4.69	.03	.06	5.00	6.72	3.14	5.63
7. Run of ore from chute or pocket.....	3.16	4.69	.03	.06	2.23	2.99	1.40	2.51
8. Drilling.....	1.05	1.56	.01	.02	7.14	9.60	4.49	8.04
9. Electricity.....	1.05	1.56	.01	.02	.09	.14	.06	.11
10. Machinery.....					1.81	2.43	1.14	2.03
11. Mine fires.....								
12. Suffocation from natural gases.....	1.05	1.56	.01	.02	.15	.20	.10	.17
13. Inrush of water.....								
14. Stepping on nail.....					1.22	1.63	.76	1.37
15a. Handling materials other than rock or ore.....					6.06	8.15	3.81	6.82
15b. Other causes.....	2.11	3.12	.02	.04	10.87	14.61	6.84	12.24
Total, underground.....	67.37	100.00	.68	1.22	74.28	100.00	46.81	83.77
Shaft:								
16. Falling down shaft.....	6.32	50.00	.07	.11	.20	10.91	.13	.23
17. Objects falling down shaft.....	1.05	8.33	.01	.02	.54	29.09	.34	.61
18. Breaking of cables.....								
19. Overwinding.....					.02	.91	.01	.02
20. Skip, cage, or bucket.....	1.05	8.33	.01	.02	.61	32.73	.38	.68
21. Other causes.....	4.21	33.34	.04	.08	.49	26.36	.31	.55
Total, shaft.....	12.63	100.00	.13	.23	1.86	100.00	1.17	2.09
Surface:								
22. Mine cars, mine locomotives, gravity or aerial trams.....	1.05	7.14	.01	.03	.98	5.59	.62	1.98
23. Railway cars and locomotives.....					.25	1.44	.16	.51
24. Run or fall of ore in or from ore bins.....	2.11	14.29	.02	.07	.17	.96	.11	.34
25. Falls of persons.....	2.11	14.29	.02	.07	2.87	16.38	1.80	5.82
26. Stepping on nail.....					.42	2.41	.26	.86
27. Hand tools.....					2.18	12.43	1.37	4.42
28. Electricity.....	1.05	7.14	.01	.03	.24	1.35	.15	.48
29. Machinery.....	4.21	28.57	.04	.14	1.65	9.44	1.04	3.35
30a. Handling materials.....					3.71	21.19	2.34	7.53
30b. Other causes.....	4.21	28.57	.04	.14	5.05	28.81	3.18	10.23
Total, surface.....	14.74	100.00	.15	.48	17.52	100.00	11.03	35.52
Open-cut:								
31. Falls or slides of rock or ore.....	1.05	20.00	.01	.08	.67	10.81	.43	3.25
32. Explosives.....					.18	2.97	.12	.89
33. Haulage.....					.40	6.49	.26	1.95
34. Power shovels.....					.24	3.78	.15	1.14
35. Falls of persons.....					.93	14.87	.58	4.47
36. Falls of derricks, booms, etc.....	1.05	20.00	.01	.08	.07	1.08	.04	.33
37. Run or fall of ore in or from ore bins.....					.17	2.70	.11	.81
38. Machinery.....					.29	4.60	.18	1.38
39. Electricity.....	3.16	60.00	.03	.25	.13	2.16	.08	.65
40. Hand tools.....					.83	13.24	.52	3.98
41a. Handling materials.....					1.18	18.92	.74	5.69
41b. Other causes.....					1.15	18.38	.72	5.52
Total, open-cut.....	5.26	100.00	.05	.41	6.24	100.00	3.93	30.06
Grand total, 1933.....	100.00		1.01		100.00		62.94	
Grand total, 1932.....			1.16				54.48	

TABLE 11.—Copper mines: Men employed and man-days of employment, by States, during the year ended Dec. 31, 1933

State	Number of mines		Men employed			Man-days of employment			Average days active				
	Under-ground	Surface	Under-ground	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total
Arizona.....	1,495	523	2,271	253	2,524	287,008	124,315	55,413	466,736	192	238	219	206
Michigan.....	771	464	1,235	-----	1,235	210,023	134,565	-----	350,588	280	280	-----	284
Montana.....	1,500	289	1,789	-----	1,789	419,893	81,052	-----	500,750	280	280	-----	280
Nevada.....	4	234	532	213	745	15,884	40,182	36,262	92,115	185	172	170	173
New Mexico.....	83	83	166	255	421	20,181	16,497	36,678	79,560	243	187	168	187
Utah.....	34	190	473	249	722	2,682	59,986	79,556	142,203	79	316	319	301
Other States ¹	164	86	250	-----	250	37,190	20,640	-----	57,836	227	240	-----	231
Total, 1933.....	4,132	1,874	6,006	970	6,976	998,476	477,204	214,108	1,680,788	242	255	221	242
Total, 1932.....	5,441	2,943	8,384	1,171	9,555	1,276,440	758,107	259,122	2,290,669	284	258	221	240

¹ Includes Alaska, Colorado, Idaho, North Carolina, Oregon, Tennessee, Washington, and Wyoming.

TABLE 12.—Copper mines: Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1933

State	Man-hours of employment			Average hours per man per year			Number killed			Number injured			Wid-ows	Or-phans
	Under-ground	Open-cut	Total	Under-ground	Open-cut	Total	Under-ground	Open-cut	Total	Under-ground	Open-cut	Total		
Arizona.....	2,296,551	443,304	3,735,133	1,536	1,752	1,645	4	1	6	145	18	16	5	10
Michigan.....	1,728,180	-----	2,804,702	2,241	-----	2,271	3	-----	3	133	19	-----	172	1
Montana.....	3,357,584	-----	4,006,000	2,238	-----	2,239	5	-----	5	285	21	-----	306	3
Nevada.....	125,472	321,352	736,920	1,476	1,363	1,380	-----	-----	-----	10	5	11	-----	-----
New Mexico.....	122,280	122,476	343,024	1,473	1,345	1,380	-----	-----	-----	18	5	16	38	-----
Utah.....	21,456	479,732	1,137,624	1,631	2,556	2,405	-----	-----	-----	1	5	4	10	-----
Other States ¹	298,093	165,295	463,388	1,818	1,922	1,884	-----	-----	-----	1	2	-----	3	-----
Total, 1933.....	7,949,616	3,809,071	13,471,547	1,924	1,766	1,931	12	1	14	613	75	46	734	6
Total, 1932.....	10,153,047	6,382,398	20,722,976	1,860	1,770	1,948	21	1	23	700	107	52	859	9

¹ Includes Alaska, Colorado, Idaho, North Carolina, Oregon, Tennessee, Washington, and Wyoming.

TABLE 13.—Gold, silver, and miscellaneous metal mines: Men employed and man-days of employment, by States, during the year ended Dec. 31, 1933

State	Number of mines			Men employed			Man-days of employment			Average days active				
	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Average days active	
													Under-ground	Open-cut	Total
Alaska.....	630	1,538	500	2,980	261,743	301,958	90,000	743,701	278	255	180	713	180	250
Arizona.....	83	438	107	7,490	40,732	28,703	1,710	71,235	166	185	101	352	170	170
California.....	921	2,445	510	7,323	954,790	508,791	88,198	1,551,694	216	212	170	604	212	212
Colorado.....	289	573	168	2,308	408,295	127,597	33,928	567,896	251	223	191	240	240	240
Idaho.....	298	593	140	2,806	469,584	103,603	13,995	587,182	213	213	100	203	187	203
Montana.....	37	308	42	423	66,918	15,661	5,174	87,453	216	215	123	207	123	207
Nevada.....	121	688	24	773	133,294	21,892	4,277	167,463	212	194	178	208	178	208
New Mexico.....	30	863	84	973	263,277	51,492	1,594	316,325	327	320	266	325	320	325
Oregon.....	100	183	84	367	23,577	15,397	11,180	53,154	145	181	133	151	133	151
South Dakota.....	10	847	3	1,735	265,035	296,018	296,018	563,226	317	315	90	316	315	316
Texas.....	54	1,267	252	1,539	371,857	69,206	270	444,063	289	275	165	287	165	287
Utah.....	5	169	32	203	33,571	5,235	5,276	46,162	179	194	149	179	149	179
Virginia.....	38	169	13	203	23,570	6,263	1,940	32,763	158	188	149	161	149	161
Washington.....	34	102	27	203	3,625	6,705	2,765	7,095	88	78	102	92	78	102
Wyoming.....	24	77	9	110	3,625	6,705	2,765	7,095	88	78	102	92	78	102
Other States ¹	37	1,007	143	1,305	218,542	60,691	28,466	307,699	217	248	199	221	199	221
Total, 1933.....	2,608	14,901	7,156	23,775	3,548,036	1,708,192	286,873	5,538,101	238	238	167	233	167	233
Total, 1932.....	2,389	13,494	313	21,094	3,292,902	1,665,521	41,617	5,000,040	244	229	133	237	133	237

¹ Includes Alabama, Arkansas, Georgia, Michigan, Minnesota, New Jersey, New York, North Carolina, Tennessee, and Texas.

TABLE 14.—Gold, silver, and miscellaneous metal mines: Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1933

State	Man-hours of employment			Average hours per man per year			Number killed			Number injured				Wid-Or- ows phans				
	Under-ground	Surface	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total	Wid-Or- ows phans					
															Under-ground	Sur-face	Open-cut	Total
Alaska.....	2, 083, 944	3, 135, 984	720, 000	5, 949, 878	2, 223	2, 039	1, 440	1, 997	6	2	2	8	127	95	10	232		
Arizona.....	313, 871	222, 875	13, 680	550, 426	1, 231	1, 411	805	1, 311	1	1	1	1	58	25	83			
California.....	7, 632, 815	3, 945, 808	706, 012	12, 284, 635	1, 729	1, 645	1, 360	1, 675	6	2	2	8	1, 222	217	58	1, 497	3	
Colorado.....	3, 257, 006	1, 820, 712	240, 064	4, 417, 882	2, 004	1, 781	1, 429	1, 909	14	3	3	17	1, 315	71	5	1, 391	8	
Idaho.....	3, 729, 107	1, 890, 764	114, 696	4, 664, 507	1, 993	1, 494	1, 611	1, 691	7	7	7	17	352	51	2	405	4	
Montana.....	529, 033	124, 985	38, 232	692, 250	1, 718	1, 712	910	1, 637	2	2	2	3	29	3	3	32	2	
Nebraska.....	1, 065, 274	171, 800	33, 016	1, 270, 090	1, 670	1, 520	1, 376	1, 639	2	1	1	3	109	17	1	127	2	
New Mexico.....	12, 850	404, 409	12, 850	2, 498, 014	2, 582	2, 512	1, 142	2, 515	2	2	2	3	194	32	1	226	2	
Oregon.....	208, 587	123, 102	96, 146	427, 835	1, 140	1, 448	1, 145	1, 215	3	3	3	3	137	66	22	203	3	
South Dakota.....	2, 128, 311	2, 375, 351	2, 160	4, 505, 822	2, 534	2, 522	1, 720	2, 292	6	6	6	6	405	22	2	427	4	
Utah.....	2, 973, 217	553, 546	2, 197	3, 526, 763	2, 310	2, 197	1, 604	2, 467	3	3	3	3	337	34	2	371	6	
Virginia.....	285, 212	41, 884	51, 320	378, 416	1, 433	1, 551	1, 604	1, 467	6	6	6	6	34	12	2	48	6	
Washington.....	194, 943	40, 209	15, 520	250, 672	1, 203	1, 436	1, 194	1, 235	9	9	9	9	9	1	1	10		
Wyoming.....	28, 030	5, 330	21, 945	55, 365	684	599	813	719										
Other States ¹	1, 774, 976	491, 086	252, 628	2, 518, 690	1, 763	2, 004	1, 767	1, 806	3	3	3	3	57	10	67		1	2
Total, 1933.....	28, 295, 081	13, 477, 855	2, 318, 259	44, 091, 195	1, 899	1, 833	1, 349	1, 855	50	9	9	59	3, 054	633	79	3, 766	27	42
Total, 1932.....	26, 396, 453	13, 391, 162	377, 655	40, 165, 270	1, 956	1, 838	1, 207	1, 904	52	9	9	61	2, 464	506	18	2, 988	24	32

¹ Includes Alabama, Arkansas, Georgia, Michigan, Minnesota, New Jersey, New York, North Carolina, Tennessee, and Texas.

TABLE 15.—Iron mines: Men employed and man-days of employment, by States, during the year ended Dec. 31, 1933

State	Number of mines	Men employed			Man-days of employment			Average days active				
		Under-ground	Surface	Total	Under-ground	Sur-face	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total
Alabama.....	12	1, 873	698	2, 686	332, 808	111, 647	17, 125	461, 580	178	160	149	172
Michigan.....	53	2, 866	1, 749	4, 821	343, 060	220, 699	19, 611	583, 270	120	126	95	121
Minnesota.....	65	1, 816	1, 259	3, 075	225, 142	197, 693	369, 151	791, 886	124	157	135	136
Other States ¹	20	1, 322	191	643	73, 390	43, 728	28, 150	145, 268	223	229	217	226
Total, 1933.....	150	6, 877	3, 897	13, 954	974, 400	573, 667	434, 037	1, 982, 094	142	147	136	142
Total, 1932.....	135	6, 975	3, 372	11, 954	982, 597	511, 234	281, 021	1, 774, 852	141	152	175	148

¹ Includes Arkansas, Missouri, Montana, New Jersey, New York, Pennsylvania, Tennessee, Utah, Washington, Wisconsin, and Wyoming.

TABLE 16.—*Iron mines: Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1933*

State	Man-hours of employment			Average hours per man per year			Number killed			Number injured			Wid- ows	Or- phans	
	Under- ground	Surface	Total	Under- ground	Sur- face	Total	Under- ground	Sur- face	Total	Under- ground	Sur- face	Open- cut			Total
Alabama.....	2,980,222	1,002,882	4,124,814	1,591	1,437	1,536	3	3	3	100	15	3	118	3	11
Michigan.....	2,755,217	1,909,207	4,828,064	961	1,092	1,001	3	2	2	5	53	18	73	4	6
Minnesota.....	1,808,159	1,581,149	3,288,746	996	1,187	1,142	3	3	3	47	30	23	100	3	9
Other States ¹	587,360	373,717	1,200,584	1,824	1,957	1,867	1	1	1	30	9	4	43	1	0
Total, 1933.....	8,130,958	4,866,955	16,781,516	1,182	1,249	1,203	10	2	2	230	72	32	334	11	28
Total, 1932.....	8,242,252	4,936,628	15,908,514	1,182	1,464	1,331	5	1	1	204	30	30	264	4	9

¹ Includes Arkansas, Missouri, Montana, New Jersey, New York, Pennsylvania, Tennessee, Utah, Washington, Wisconsin, and Wyoming.

TABLE 17.—*Lead and zinc mines¹ (Mississippi Valley): Men employed and man-days of employment, by States, during the year ended Dec. 31, 1933*

State	Number of mines	Men employed				Man-days of employment				Average days active			
		Under- ground	Surface	Open-cut	Total	Under- ground	Surface	Open-cut	Total	Under- ground	Surface	Open-cut	Total
Illinois.....	7	132	18	33	183	24,943	4,100	6,336	35,469	189	233	192	194
Kansas.....	14	510	51	561	69,750	9,299	9,299	18,598	78,049	137	182	141	141
Kentucky.....	13	85	47	4	136	16,235	9,841	580	26,049	191	209	145	196
Missouri.....	10	1,702	82	1,784	177,636	7,769	7,769	155,865	185,395	104	95	104	104
Oklahoma.....	29	1,237	136	1,373	209,575	23,771	23,771	233,346	253,346	169	175	170	170
Other States ²	8	426	184	16	596	102,913	37,060	3,104	143,113	242	241	194	240
Total, 1933.....	81	4,092	488	53	4,633	601,032	91,966	10,920	703,018	147	188	189	182
Total, 1932.....	62	3,420	503	70	3,999	588,076	87,828	6,840	682,744	172	175	90	171

¹ Includes fluor spar mines in Illinois and Kentucky.

² Includes Tennessee and Wisconsin.

TABLE 18.—Lead and zinc mines ¹ (Mississippi Valley): Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1933

State	Man-hours of employment			Average hours per man per year			Number killed			Number injured				Wid-ows	Or-phan-s			
	Under-ground	Surface	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total	Under-ground			Sur-face	Open-cut	Total
Illinois	199,546	33,527	50,688	283,761	1,512	1,863	1,536	1,551					27	4	3	34		
Kansas	556,900	74,392		631,292	1,092	1,459	1,125	1,125					41	3		44		
Kentucky	130,875	82,062	4,640	217,577	1,540	1,746	1,160	1,600					4	3		7		
Missouri	1,421,080	62,252		1,483,332	1,835	1,759	831	1,358					42	3		50		
Oklahoma	1,673,146	190,728		1,863,874	1,353	1,402		1,358					174	13		189		
Other States ²	847,975	308,888	24,832	1,181,695	1,991	2,006	1,552	1,983	2				19	2		21		
Total, 1933	4,829,522	751,849	80,160	5,661,531	1,180	1,541	1,512	1,222	2				307	36	3	346		
Total, 1932	4,750,658	725,930	54,940	5,531,228	1,389	1,443	1,719	1,383	8	1		9	342	32	1	375		

¹ Includes fluorspar mines in Illinois and Kentucky.

² Includes Tennessee and Wisconsin.

TABLE 19.—Nonmetallic mineral mines: Men employed and man-days of employment, by States, during the year ended Dec. 31, 1933

State	Number of mines		Men employed				Man-days of employment				Average days active			
	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total		
Arizona.....	68	2	7	77	18,213	150	1,070	19,433	268	75	153	252		
California.....	316	39	204	559	72,957	10,834	34,626	118,417	231	278	170	212		
Florida.....	283	7	750	1,033	1,177	76,395	167,431	243,826	223	270	223	236		
Georgia.....	13	157	157	1,033	1,110	1,560	41,239	43,909	85	223	263	248		
Iowa.....	90	13	31	134	9,948	1,340	2,252	13,540	111	103	73	101		
Kansas.....	230	128	9	367	49,073	30,939	1,120	81,132	213	242	124	221		
Kentucky.....	36	40	191	267	5,076	7,477	29,126	41,679	141	187	152	156		
Louisiana.....	130	442	50	572	36,397	161,337	9,153	197,734	280	365	183	346		
Michigan.....	132	42	50	224	21,182	8,478	17,501	38,813	160	202	93	173		
Missouri.....	7	189	189	189	40,773	5,710	1,944	48,427	355	317	130	93		
New Mexico.....	115	18	15	148	83,327	29,678	10,538	123,543	188	243	224	202		
New York.....	444	122	47	613	6,885	1,526	9,294	17,705	119	76	141	123		
North Carolina.....	58	20	66	144	6,885	1,526	10,805	10,805	119	76	141	123		
Oklahoma.....	4	60	60	60	6,885	1,526	10,805	10,805	119	76	141	123		
Tennessee.....	8	198	317	515	14,759	53,194	51,836	105,030	151	269	164	204		
Texas.....	937	164	1,199	1,999	18,405	336,603	39,394	390,756	359	240	240	326		
Utah.....	100	49	17	166	15,524	9,623	4,714	32,742	184	196	277	197		
Virginia.....	92	339	165	596	3,053	47,187	19,568	82,279	169	139	119	138		
Washington.....	14	15	37	66	3,000	7,496	7,496	13,949	218	220	203	210		
Other States ¹	264	60	248	572	32,947	3,021	48,114	88,082	125	117	194	154		
Total, 1933.....	2,200	2,754	2,724	7,678	429,629	792,352	507,221	1,729,202	195	288	186	225		
Total, 1932.....	1,991	2,537	2,158	6,686	355,559	644,958	345,305	1,346,862	179	254	160	201		

¹ Includes Alabama, Arkansas, Colorado, Connecticut, Idaho, Illinois, Maine, Maryland, Massachusetts, Montana, Nebraska, Nevada, New Hampshire, New Jersey, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Vermont, Wisconsin, and Wyoming.

TABLE 20.—Nonmetallic mineral mines: Number of man-hours of employment and number killed and injured, by States, during the year ended, Dec. 31, 1933

State	Man-hours of employment			Average hours per man per year			Number killed			Number injured			Wid-ows	Or-phans
	Under-ground	Surface	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total		
Arizona.....	145,704	1,200	8,550	155,454	2,143	600	1,221	2,019	19	2	22	19	1	0
California.....	576,399	86,240	279,519	942,158	1,824	2,211	1,370	1,685	59	2	22	83	1	0
Florida.....	.....	628,362	1,592,362	2,220,722	1,824	2,220	2,123	2,150	.....	.....	.....	66	.....	.....
Georgia.....	10,680	12,480	1,390,690	1,413,840	822	1,783	2,488	2,338	1	1	1	23	1	.....
Iowa.....	77,609	18,016	106,465	186,086	862	1,834	581	1,795	7	2	.....	9	.....	.....
Kansas.....	419,283	260,023	8,960	688,266	1,823	2,031	996	1,823	36	6	.....	42	.....	.....
Kentucky.....	52,842	59,799	360,132	472,773	1,468	1,495	1,296	1,349	2	5	19	26	.....	.....
Louisiana.....	316,874	1,290,699	247,491	1,607,573	2,437	2,920	1,296	2,810	32	92	.....	124	.....	.....
Michigan.....	146,658	59,282	76,381	1,282,321	1,111	1,411	1,528	1,260	1	3	1	17	.....	.....
Missouri.....	.....	141,178	141,178	141,178	2,747	.....	.....	.....	.....	.....	.....	4	.....	.....
New Mexico.....	263,244	37,018	15,456	315,718	2,289	2,057	1,030	1,133	59	8	1	88	.....	.....
New York.....	661,863	233,541	92,526	987,960	1,491	1,914	1,969	1,612	1	1	.....	37	.....	.....
North Carolina.....	61,814	12,403	91,209	165,426	1,066	620	1,382	1,149	7	1	.....	13	.....	.....
Oklahoma.....	.....	.....	80,231	80,231	.....	.....	1,337	.....	.....	.....	.....	3	.....	.....
Tennessee.....	433,484	482,328	482,328	915,812	180	2,180	1,522	1,378	.....	.....	.....	10	.....	.....
Texas.....	126,799	2,670,012	243,901	3,040,712	1,264	2,850	1,487	2,536	18	57	19	29	.....	.....
Utah.....	130,098	36,332	36,332	176,430	1,301	1,370	2,437	1,416	2	2	.....	94	.....	.....
Virginia.....	123,751	377,492	163,910	665,153	1,345	1,114	993	1,116	22	10	8	37	.....	.....
Washington.....	24,424	26,400	59,698	110,522	1,745	1,761	1,613	1,675	12	2	.....	14	.....	.....
Other States ¹	264,482	52,345	383,095	699,922	1,092	1,872	1,545	1,224	22	3	32	57	.....	.....
Total, 1933.....	3,402,554	6,319,212	4,411,831	14,133,597	1,547	2,295	1,690	1,841	2	2	4	8	313	222
Total, 1932.....	2,932,961	5,615,818	3,276,114	11,824,893	1,473	2,214	1,518	1,769	210	172	146	745	1	5

¹ Includes Alabama, Arkansas, Colorado, Connecticut, Idaho, Illinois, Maine, Maryland, Massachusetts, Montana, Nebraska, Nevada, New Hampshire, New Jersey, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Vermont, Wisconsin, and Wyoming.

Temporary:	9	1	19	1	16	1	3	8	15	73	8	3	1	2	8	2	5	10	5	44	724
Copper	39	3	7	106	78	10	55	119	187	619	8	1	5	1	19	2	4	16	15	70	3,690
Gold, silver, and miscellaneous metal	2	3	2	16	9	1	8	17	8	66	3	3	1	3	5	3	3	8	5	32	310
Iron	1	6	4	25	24	2	19	62	60	34	6	6	15	9	23	4	7	36	43	3	333
Lead and zinc (Mississippi Valley)	5	1	1	25	24	2	19	62	60	219	16	6	15	9	23	4	7	36	43	208	730
Nonmetallic mineral	56	13	10	170	127	14	86	216	294	1,011	39	10	24	13	55	4	10	70	68	366	5,793
Total	9	1	19	1	17	1	4	8	15	75	8	3	1	3	8	2	5	10	5	46	734
Total nonfatal:	40	3	7	106	79	10	62	121	190	633	9	3	5	1	19	6	4	16	15	70	3,766
Copper	2	5	2	16	9	1	9	19	9	72	3	3	1	3	5	3	3	8	5	32	334
Gold, silver, and miscellaneous metal	2	4	4	25	24	2	21	62	67	222	16	7	15	9	23	4	8	36	43	3	346
Iron	5	6	1	25	24	2	21	62	67	222	16	7	15	9	23	4	8	36	43	210	745
Lead and zinc (Mississippi Valley)	58	15	10	170	129	14	98	220	299	1,038	40	11	24	14	55	4	10	70	68	370	5,925
Nonmetallic mineral	9	1	19	1	17	2	4	8	15	76	9	3	1	3	8	2	5	10	5	47	748
Total fatal and nonfatal:	41	3	7	108	79	10	64	121	194	642	9	1	5	1	19	6	4	16	15	70	3,825
Copper	2	5	4	16	9	1	9	19	9	74	3	3	1	3	5	3	3	8	5	32	346
Gold, silver, and miscellaneous metal	5	6	1	25	24	2	23	62	67	224	17	7	15	9	23	4	10	37	43	214	753
Iron	59	15	12	172	129	15	102	220	303	1,052	41	11	24	14	55	5	10	70	68	375	6,020
Lead and zinc (Mississippi Valley)	43	12	17	141	112	11	89	153	265	864	36	3	20	18	18	1	3	54	58	249	5,121
Nonmetallic mineral	Total, 1933																				
Total, 1932																					

32 METAL-MINE ACCIDENTS IN THE UNITED STATES: 1933-34

TABLE 22.—All mines: Nonfatal-injury rates per million man-hours worked underground and in open-cut mines, by principal causes, for important States, during the year ended Dec. 31, 1933

UNDERGROUND													
Cause	Minne- sota	Missou- ri	Alaba- ma	Michi- gan	Arizona	Monta- na	United States	Idaho	Colora- do	N e w Mexico	Oklaho- ma	Utah	Califor- nia
Fall of rock or ore from roof or wall.....	6.06	0.70	2.35	8.86	10.16	18.58	14.47	17.23	18.31	19.87	11.36	24.60	27.77
Rock or ore while loading at working face.....	3.85	5.61	7.37	6.48	10.52	8.66	11.50	14.05	7.94	22.30	23.91	7.99	20.46
Haulage.....	1.10	1.40	4.69	2.16	10.16	13.75	8.76	9.81	3.97	8.51	.60	17.89	18.76
Hand tools.....	4.20	.67	4.10	6.89	2.54	8.04	3.45	11.29	13.79	13.79	8.37	12.46	19.73
Drilling.....	3.30	.70	3.69	1.08	6.17	5.60	6.82	16.70	9.16	5.68	2.39	14.70	14.98
Handling materials (other than rock or ore).....	1.65	2.10	.67	1.51	2.54	2.04	5.63	8.22	6.10	5.27	.60	8.31	17.78
Falling down chute, winze, raise, or stope.....	10.46	9.11	4.69	20.30	24.31	15.78	21.76	18.00	32.36	18.65	40.04	33.23	23.40
All other causes.....	26.42	29.43	33.51	47.30	80.55	80.70	85.86	95.15	96.15	97.72	104.00	136.75	156.04
All causes (underground, including shaft).....													
OPEN-CUT													
Cause	Minne- sota	Utah	Michi- gan	Alaska	Florida	United States	Arizona	Nevada	Tennes- see	N e w Mexico	Califor- nia		
Handling materials.....	2.12	5.09	4.17	-----	5.65	5.69	17.18	-----	1.93	2.69	15.22		
Falls of persons.....	1.51	1.27	-----	2.78	3.77	4.47	2.15	11.80	11.56	2.69	17.25		
Hand tools.....	.61	1.27	-----	1.39	6.28	3.98	-----	11.80	3.85	5.39	9.13		
Falls or slides of rock or ore.....	.31	1.27	-----	-----	1.25	3.25	6.44	5.90	-----	8.08	11.16		
Haulage.....	.91	-----	4.17	-----	-----	1.95	-----	2.95	-----	-----	8.12		
Machinery.....	.30	-----	-----	-----	3.77	1.38	-----	2.95	-----	-----	4.06		
Power shovels.....	-----	1.27	-----	-----	.63	1.14	2.15	-----	5.78	-----	-----		
All other causes.....	1.21	1.27	4.17	9.72	6.91	8.20	6.44	-----	13.51	24.24	16.23		
All causes (open-cut).....	6.97	11.44	12.50	13.89	28.26	30.06	34.36	35.40	36.63	43.09	81.17		

TABLE 23.—Metal-mine accident data, grouped by mining methods, during the year ended Dec. 31, 1933, for selected companies ¹

Method of mining	Number of mines	Number of States	Average days active	Man-days of employment	Men employed	Man-hours of employment	Number killed	Number injured	Rate per million man-hours	
									Killed	Injured
Open stope, including room-and-pillar and sublevel stoping.....	97	25	202	2,005,205	9,940	16,415,725	19	1,470	1.16	89.55
Shrinkage.....	18	9	220	251,670	1,142	2,013,364	2	205	.99	101.82
Cut-and-fill.....	16	10	235	517,529	2,201	4,144,195	6	288	1.45	69.49
Square-set.....	30	9	291	1,408,610	4,844	11,230,144	17	1,275	1.51	113.53
Block caving.....	5	5	130	85,944	660	697,549	2	74	2.91	107.63
Sublevel caving.....	16	4	112	179,931	1,604	1,442,581	3	26	2.08	18.02
Top slicing.....	21	4	139	333,691	2,394	2,673,408	4	91	1.50	34.04
Open-cut, with power shovel.....	54	16	171	812,714	4,751	6,876,926	2	129	.29	18.76
Open-cut, hand loading only.....	5	5	137	26,441	193	208,881	-----	16	-----	76.60
Total, 1933.....	262	-----	203	5,621,735	27,729	45,692,773	55	3,574	1.20	78.22
Total, 1932.....	233	-----	205	4,988,228	24,282	41,003,087	57	2,796	1.39	68.19

¹ Underground and open-cut only. No reports used when less than 25 men were employed.

TABLE 24.—Placer mines: Men employed, man-days of employment, and number killed and injured during the years ended Dec. 31, 1932 and 1933

	1932				
	Under-ground	Surface	Dredging	Hydrau-licking	Total
Men employed.....	894	960	1,345	1,096	4,295
Man-days of employment.....	148,400	187,176	333,688	159,765	829,029
Average days active.....	166	195	248	146	193
Man-hours of employment.....	1,182,687	1,514,828	2,630,783	1,343,952	6,672,250
Number killed.....	2	1	2	-----	5
Number injured.....	45	70	85	27	227
Killed per million man-hours.....	1.69	0.66	0.76	-----	0.75
Injured per million man-hours.....	38.05	46.21	32.31	20.09	34.02

	1933				
	Under-ground	Surface	Dredging	Hydrau-licking	Total
Men employed.....	1,025	1,001	1,536	1,153	4,715
Man-days of employment.....	175,090	199,645	389,082	190,372	954,189
Average days active.....	171	199	253	165	202
Man-hours of employment.....	1,386,724	1,374,315	2,951,132	1,602,502	7,314,673
Number killed.....	1	-----	-----	-----	1
Number injured.....	128	121	107	55	411
Killed per million man-hours.....	0.72	-----	-----	-----	0.14
Injured per million man-hours.....	92.30	88.04	36.26	34.32	56.19

TABLE 25.—Placer mines: Severity of injury during the years ended Dec. 31, 1932 and 1933

	1932					1933						
	Killed	Perma-nent total disa-bility	Perma-nent partial disa-bility	Tempo-rary	Total non-fatal	Grand total	Killed	Perma-nent total disa-bility	Perma-nent partial disa-bility	Tempo-rary	Total non-fatal	Grand total
Underground.....	2	-----	-----	45	45	47	1	-----	1	127	128	129
Surface.....	1	-----	1	69	70	71	-----	1	120	120	121	121
Dredging.....	2	-----	3	82	85	87	-----	2	105	107	107	107
Hydrauliclicking.....	-----	-----	1	26	27	27	-----	-----	55	55	55	55
Total.....	5	-----	5	222	227	232	1	-----	4	407	411	412

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TABLE 26.—*Placer mines: Number killed and injured by causes, during the years ended Dec 31, 1932, and 1933*

Cause	1932		1933	
	Killed	Injured	Killed	Injured
Underground:				
1. Fall of rock or ore from roof or wall.....	1	5		24
2. Rock or ore while loading at working face.....		4		14
3. Hand tools.....		6		17
4. Explosives.....				
5. Haulage.....		8		9
6. Falling down chute, winze, raise, or stope.....		4		8
7. Run of ore from chute or pocket.....		1		4
8. Drilling.....		2		13
9. Electricity.....				
10. Machinery.....		1		2
11. Mine fires.....				
12. Suffocation from natural gases.....				
13. Inrush of water.....				
14. Stepping on nail.....		1		2
15a. Handling materials (other than rock or ore).....		4		13
15b. Other causes.....		9		19
Total, underground.....	1	45		125
Shaft:				
16. Falling down shaft.....	1			
17. Objects falling down shaft.....				
18. Breaking of cables.....				
19. Overwinding.....				
20. Skip, cage, or bucket.....				3
21. Other causes.....			1	
Total, shaft.....	1		1	3
Surface:				
22. Mine cars, mine locomotives, gravity or aerial trams.....		1		2
23. Railway cars and locomotives.....				
24. Run or fall of ore in or from ore bins.....				1
25. Falls of persons.....		12		24
26. Stepping on nail.....		5		3
27. Hand tools.....		11		17
28. Electricity.....		1		4
29. Machinery.....	1	5		12
30a. Handling materials.....		7		24
30b. Other causes.....		28		34
Total, surface.....	1	70		121
Dredging:				
1. Machinery.....		9		13
2. Electricity.....	1			4
3. Boiler explosions or bursting steam pipes.....				
4. Falls of persons.....		24		19
5. Hand tools.....		9		23
6a. Handling materials.....		18		19
6b. Other causes.....	1	25		29
Total, dredging.....	2	85		107
Hydraulicking:				
7. Cave of bank.....				4
8. Explosives.....				
9. Hydraulic giants.....		4		3
10. Falls of persons.....		3		16
11. Rock while handling.....		7		
12. Hand tools.....		3		2
13. Machinery.....				
14a. Handling materials (other than rock or ore).....		3		16
14b. Other causes.....		7		14
Total, hydraulicking.....		27		55
Grand total.....	5	227	1	411

TABLE 27.—All mines: Number of fatalities and injuries and fatality and injury rates per thousand 300-day workers, classified by severity of injury, 1924-33

NUMBER OF ACCIDENTS

Severity of injury	Total 1924-28	1929	1930	1931	1932	1933	Total 1929-33
Fatal.....	1,844	350	271	158	107	95	981
Permanent total ¹	81	22	22	15	10	5	74
Permanent partial ²	2,679	455	481	292	167	127	1,522
Temporary ³	143,456	22,615	15,091	8,398	4,837	5,793	56,734
Total.....	148,060	23,442	15,865	8,863	5,121	6,020	59,311

RATES PER THOUSAND 300-DAY WORKERS

Fatal.....	3.13	3.03	2.92	2.53	2.89	2.45	2.83
Permanent total ¹.....	.14	.19	.24	.24	.27	.13	.21
Permanent partial ²	4.54	3.94	5.18	4.68	4.52	3.27	4.40
Temporary ³	243.27	195.98	162.44	134.58	130.79	149.28	163.74
Total.....	251.08	203.14	170.78	142.03	138.47	155.13	171.18
Average number of 300-day workers per year.....	589,683	115,394	92,900	62,405	36,984	38,807	346,490

¹ Permanent total disability: Loss of both legs or arms, 1 leg and 1 arm, total loss of eyesight, paralysis, or other condition permanently incapacitating workman from doing any work of a gainful occupation.

² Permanent partial disability: Loss of 1 foot, leg, arm, hand, or eye, 1 or more fingers, 1 or more toes, any dislocation where ligaments are severed, or any other injury known in surgery to be permanent partial disability.

³ Disability for more than remainder of day of accident.

TABLE 28.—Metal and nonmetal mines, man-hours of employment, and accident rates, by States and counties, in 1933-1

State and county	Man-hours of employment			Number killed			Number injured			Rate per million man-hours							
	Under-ground	Sur-face	Open-cut	Under-ground	Open-cut	Total	Under-ground	Open-cut	Total	Killed			Injured				
										Under-ground	Sur-face	Total	Under-ground	Sur-face	Total		
Alaska.....	2,093,944	3,138,854	720,000	6	2	8	127	95	10	232	2.87	0.64	1.34	60.65	30.27	13.89	38.97
Arizona.....	861,691	555,045	9,600	1	1	2	22	11	—	33	1.16	1.80	1.40	25.53	19.82	—	23.14
Cochise.....	62,072	44,032	1,061,077	—	—	—	—	5	—	6	—	—	—	16.11	113.55	—	56.55
Gila.....	89,092	41,082	138,727	—	—	—	26	2	—	28	—	—	—	291.83	48.68	—	201.84
Mohave.....	670,140	144,784	1,000	2	—	2	31	2	—	33	2.98	—	2.45	44.77	13.81	—	39.22
Pinal.....	909,071	312,573	442,184	2	1	3	133	13	16	162	2.00	—	2.26	133.12	41.58	36.18	92.36
Yavapai.....	23,472	80,128	4,200	—	—	—	1	7	—	8	—	—	—	42.60	87.36	—	74.35
Yuma.....	56,588	41,588	92,386	—	—	—	9	3	—	12	—	—	—	177.91	72.12	—	129.89
All other ²	2,756,126	1,219,353	465,534	5	1	7	222	43	16	281	1.81	.82	2.15	80.55	35.26	34.37	63.27
Total.....	1,141,974	329,121	3,552	1	—	1	215	10	1	226	.88	—	.68	188.27	30.38	281.53	153.26
California.....	205,232	122,536	7,412	1	—	1	30	10	—	40	—	—	—	146.18	81.61	—	119.34
Amador.....	444,140	159,134	1,496	—	—	—	105	21	—	126	2.25	6.27	3.31	236.41	131.72	—	208.24
Calaveras.....	518,721	200,450	6,976	1	—	1	98	11	—	109	1.63	—	1.38	188.93	54.88	—	150.11
El Dorado.....	118,215	31,550	2,600	—	—	—	152	4	—	156	—	—	—	109.97	126.76	—	111.57
Inyo.....	404,654	108,324	7,264	—	—	—	59	3	—	62	—	—	—	145.80	28.48	—	119.87
Kern.....	38,032	8,160	96,000	—	—	—	142	3	6	145	—	—	—	78.88	63.29	—	63.29
Los Angeles.....	293,891	64,140	11,320	—	—	—	14	—	—	14	—	—	—	68.66	46.77	—	60.86
Mariposa.....	29,926	6,859	24,720	—	—	—	2	—	—	2	—	—	—	66.83	145.94	—	40.45
Mono.....	3,073,216	833,693	148,816	—	—	—	589	53	12	654	.83	—	.25	191.60	63.57	80.64	161.25
Nevada.....	118,265	98,162	117,768	1	—	1	4	—	—	4	—	—	—	42.28	81.50	—	80.79
Placer.....	116,840	96,184	119,168	—	—	—	5	8	14	27	—	—	—	51.35	82.92	—	60.22
Plumas.....	62,455	24,403	3,712	—	—	—	6	8	—	14	—	—	—	48.03	269.40	—	44.16
Riverside.....	56,776	516,853	19,080	—	—	—	200	17	1	217	—	—	—	157.55	32.90	269.40	44.06
Sacramento.....	100,978	93,624	312,682	—	—	—	24	6	2	32	—	—	—	120.01	64.09	104.82	102.34
San Bernardino.....	98,206	67,556	62,804	—	—	—	2	15	23	27	—	—	—	61.04	29.61	238.84	104.59
Shasta.....	470,965	127,266	60,983	—	—	—	23	3	1	27	—	—	—	47.92	23.57	16.64	40.46
Sierra.....	164,400	118,220	82,132	—	—	—	1	—	—	1	—	—	—	7.86	8.46	48.70	35.63
Siskiyou.....	125,427	76,302	364,842	—	—	—	18	3	4	25	—	—	—	143.51	39.06	8.46	103.84
Stanislaus.....	21,870	176,328	82,693	—	—	—	10	14	6	30	—	—	—	125.23	79.69	72.56	87.81
Tehama.....	202,086	70,328	274,714	—	—	—	10	1	1	12	—	—	—	49.48	14.16	112.655	56.87
Tulahoma.....	49,060	391,060	6,160	—	—	—	8	29	1	37	40.77	—	4.48	163.07	74.16	56.56	82.91
All other ³	291,705	314,036	219,975	2	—	2	25	11	16	52	—	—	—	85.70	35.03	72.74	62.98

Total	8,209,214	4,032,048	985,531	13,226,793	6	2	1	9	1,281	219	80	1,680	.73	.50	1.01	.68	156.04	54.31	81.17	119.45
Colorado:																				
Boulder	70,548	27,568	4,160	102,276					7			7					99.22			68.44
Clear Creek	124,688	27,076	3,400	156,104	3			3		2		10	24.06				56.14	110.80		64.45
Engle	228,356	78,350	4,024	310,100	1			1	11			15	4.38				48.17	51.06		48.28
Gipin	60,373	13,312	11,576	85,261	1			1	2		1	20	16.56				28.58	150.24	86.30	231.57
Lake	599,528	102,472	6,576	702,000	2			1	52			53	6.67				84.73	9.70		75.50
Park	530,609	132,104	6,576	668,288	2			3	92			104	3.77	6.57			173.30	59.15		146.53
San Juan	269,856	83,512	10,520	353,338	1	2		3	31			34	3.71	23.86			114.88	31.95		96.22
Summit	34,440	116,160	19,120	170,120	1			2	61		4	74	1.84				56.08	26.05	204.92	188.10
Teller	1,087,824	398,064	190,208	1,676,096	2			3	37	18		52	11.12				137.15	127.29	161.87	138.34
All other 7	269,780	62,848	43,244	375,872	2			3		8	7	52								
Total	3,275,962	1,021,466	282,708	4,580,136	14	3	17	315	315	71	12	398	4.27	2.94		3.71	96.15	69.51	42.45	86.90
Idaho:																				
Boise	46,095	35,780	13,080	94,905						1		1								10.54
Bonner	75,816	11,600	87,416																	11.44
Elmore	245,344	9,600	314,608																	69.03
Idaho	136,550	96,672	48,474	281,692	1			1	3			22	7.32							20.63
Lemhi	33,496	3,262	7,422	46,180																39.05
Shoshone	2,969,642	491,050	21,720	3,482,312	6			6	322	34		356	2.02							102.23
Valley	114,852	34,880	149,832							4		7								46.72
All other 6	151,056	110,190	14,440	275,686	1			10	4	3	1	15								54.41
Total	3,772,827	845,098	114,686	4,732,611	7	2	7	359	52	2	413	1.86				1.48	95.15	61.53	17.44	87.27
Michigan:																				
Gogebic	1,008,195	762,960	196,650	1,907,805	2			2	22	10	2	34	1.98							14.64
Iron	609,191	459,455	1,200	1,069,846	1			1	19	3		22	1.64							20.56
Itasca	1,040,831	548,986	28,780	1,615,607	2			2	106	24		135	2.08	3.64						9.28
All other 6	1,971,858	1,279,450	76,381	3,327,669	4			4	166	24	1	191								57.40
Total	4,630,055	3,060,851	240,021	7,920,927	7	2	9	219	40	3	262	1.51	.66			1.14	47.30	13.11	12.50	33.08
Minnesota:																				
Crow Wing	118,429	26,691	110,571	255,691					7	1	1	9								9.04
Itasca	116,244	184,666	1,152,634	1,453,544	2			2	5	8	10	23	17.21							8.68
Saint Louis	1,581,806	1,412,690	2,037,118	5,031,614	1			1	36	21	12	69	.63							15.82
Total	1,816,479	1,624,047	3,300,323	6,740,849	3		3	48	30	23	101	1.65				.45	26.42	18.47	6.97	14.98
Montana:																				
Beaverhead	157,920	35,576	193,496						6		6									31.01
Granite	68,568	9,442	84,170						3	1	4									17.52
Madison	96,305	14,600	120,125						1	1	2									16.65
Silver Bow	3,372,320	632,384	4,024,704					5	285	2	306		1.48							70.03
All other 7	233,044	63,885	22,912	319,839	2			22	2	2	24									73.04
Total	3,928,157	775,945	38,232	4,742,334	5	5	5	317	25	25	342	1.27				1.05	80.70	82.22	72.12	

See footnotes at end of table.

TABLE 28.—Metal and nonmetal mines, man-hours of employment, and accident rates, by States and counties, in 1933—Continued

State and county	Man-hours of employment			Number killed			Number injured			Rate per million man-hours								
				Number killed			Number injured			Killed			Injured					
	Under-ground	Sur-face	Total	Under-ground	Sur-face	Total	Under-ground	Sur-face	Total	Under-ground	Sur-face	Total	Under-ground	Sur-face	Total			
Nevada:																		
Clark.....	86,124	11,600	104,784				5		5						58.06		47.72	
Elko.....	74,756	11,864	86,620				11	2	13						147.15	168.58	150.08	
Esmeralda.....	95,674	5,000	100,674				14		14						146.33		139.06	
Lander.....	57,732	28,400	86,132															
Lincoln.....	114,486	15,920	130,406	2		2	13	1	14	17.47		15.34			113.55	62.81	107.36	
Nye.....	326,220	33,728	359,948				19	6	25						58.24	177.89	69.45	
Pershing.....	111,432	27,904	139,336				25	3	28						224.35	107.51	200.95	
Storey.....	147,240	26,000	175,964				16	5	21						108.67	192.31	119.34	
White Pine.....	93,872	317,552	710,320				10	5	12						106.53	15.76	40.15	
All other 9.....	117,398	27,992	175,636	1		1	8		8	35.72		5.69			68.14		45.55	
Total.....	1,224,934	505,960	2,069,820	2	1	3	121	22	155	1.63	1.98	1.45	98.78	43.48	35.41	74.89		
Utah:																		
Juab.....	191,880	25,760	217,640				1	25	25						4.59		114.87	
Salt Lake.....	1,336,352	682,508	2,685,296	3		3	216	11	231	5.21	2.24	1.12	161.63	16.12	6.28	86.02		
Tooele.....	56,060	30,388	95,448				4	3	7						71.35	76.17	73.34	
Uintah.....	117,748	59,788	177,516				20	9	29						169.85	150.58	163.37	
Utah.....	557,701	151,054	708,755				84	2	86						150.62	13.24	121.34	
All other 9.....	840,072	142,392	1,132,276	2		2	79	12	96	2.38		1.77	94.04	84.27	33.38	84.78		
Total.....	3,129,813	1,100,870	5,016,931	6		6	428	37	474	1.92		1.20	136.75	33.61	11.45	94.48		
Other states 9.....	17,770,220	11,910,450	5,034,504	34,715,174	15	3	21	1,080	404	2,033	1,687	.60	60.78	33.92	40.32	48.60		
United States total.....	52,607,731	29,224,942	12,306,713	94,139,386	76	14	95	4,517	1,038	370	5,925	.41	85.86	35.53	30.06	62.94		

¹ The accident rates given in this table should be interpreted in the light of the number of accidents and man-hours of employment upon which the rates are computed.

- ² Includes Coconino, Graham, Greenlee, Maricopa, Pima, and Santa Cruz Counties.
³ Includes Alameda, Alpine, Colusa, Contra Costa, Del Norte, Fresno, Humboldt, Imperial, Lake, Lassen, Madera, Merced, Modoc, Monterey, Napa, Orange, San Benito, San Diego, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, Sonoma, Tehama, Tulare, and Ventura Counties.
⁴ Includes Chaffee, Custer, Delta, Dolores, Fremont, Gunnison, Hinsdale, Jefferson, La Plata, Larimer, Mesa, Mineral, Moffat, Ouray, Pitkin, Rio Blanco, Rio Grande, Routt, San Miguel, and Saguache Counties.
⁵ Includes Ada, Bear Lake, Benewah, Blaine, Bonneville, Boundary, Butte, Camas, Caribou, Cassia, Clearwater, Custer, Jerome, Kootenai, Letah, Lewis, Nez Perce, Oneida, and Owyhee Counties.
⁶ Includes Dickinson, Houghton, Iosco, Kent, and Wayne Counties.
⁷ Includes Broadwater, Deer Lodge, Ferguson, Gallatin, Jefferson, Judith Basin, Lewis and Clark, Lincoln, Meagher, Mineral, Park, Powell, Sanders, and Stillwater Counties.
⁸ Includes Churchill, Douglas, Eureka, Humboldt, Lyon, Mineral, Ormsby, and Washoe Counties.
⁹ Includes Beaver, Box Elder, Duchesne, Iron, Morgan, Piute, San Juan, Sevier, Summit, Wasatch, and Washington Counties.
¹⁰ Includes Alabama, Arkansas, Connecticut, Florida, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Missouri, New Hampshire, New Mexico, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, Wisconsin, and Wyoming.

40 METAL-MINE ACCIDENTS IN THE UNITED STATES: 1933-34

TABLE 29.—Comparative fatal and nonfatal accident data for metal and nonmetal mines (other than coal mines) in the United States in 1933

	Mines that had no fatal accidents	Mines that had fatal accidents	All metal and non-metal mines
Number of mines.....	3, 169	71	3, 240
Number of employees.....	43, 325	13, 691	57, 016
Proportion of total employees..... percent.....	76. 0	24. 0	100
Number of employees per mine.....	14	193	18
Man-days of employment.....	7, 886, 565	3, 755, 548	11, 642, 113
Average worked per man..... days.....	182	274	204
Man-hours of employment.....	63, 793, 024	30, 346, 362	94, 139, 386
Average worked per man..... hours.....	1, 472	2, 217	1, 651
Number of men killed.....	.....	95	95
Number of men injured.....	3, 755	2, 170	5, 925
Death rate per million man-hours.....	.....	0. 31	1. 01
Injury rate per million man-hours.....	58. 86	71. 51	62. 94

TABLE 30.—All mines: Number of men employed in 1933

State	Men at mines that had fatalities	Men at mines that had no fatalities	Em- ployees repre- sented by mines that had no fatal- ities (per- cent)	State	Men at mines that had fatalities	Men at mines that had no fatalities	Em- ployees repre- sented by mines that had no fatal- ities (per- cent)
Missouri.....	.....	1, 992	100. 0	Michigan.....	1, 333	4, 949	78. 8
Oklahoma.....	.....	1, 433	100. 0	United States.....	13, 160	40, 875	75. 7
Kansas.....	.....	928	100. 0	Tennessee.....	298	925	75. 6
Virginia.....	.....	854	100. 0	Colorado.....	734	1, 680	69. 6
Kentucky.....	.....	403	100. 0	Florida.....	346	687	66. 5
Oregon.....	.....	367	100. 0	Georgia.....	95	165	63. 5
Washington.....	.....	307	100. 0	Texas.....	492	848	63. 3
Arkansas.....	.....	254	100. 0	Idaho.....	1, 158	1, 863	61. 7
Illinois.....	.....	200	100. 0	Utah.....	918	1, 319	59. 0
North Carolina.....	.....	195	100. 0	Montana.....	980	1, 264	56. 3
Wyoming.....	.....	138	100. 0	Alabama.....	1, 317	1, 430	52. 1
Iowa.....	.....	134	109. 0	New Mexico.....	788	759	49. 1
California.....	179	7, 713	97. 7	Wisconsin.....	202	154	43. 3
Minnesota.....	223	5, 631	96. 2	New Jersey.....	422	284	38. 5
Nevada.....	117	1, 232	91. 3	Arizona.....	1, 704	1, 064	38. 4
New York.....	106	756	87. 7	Other States.....	1, 748	967	35. 6

TABLE 31.—All mines: Number of man-hours worked in 1933

State	At mines that had fatalities	At mines that had no fatalities	Man-hours represented by mines that had no fatalities (percent)	State	At mines that had fatalities	At mines that had no fatalities	Man-hours represented by mines that had no fatalities (percent)
Oklahoma		1,944,105	100.0	Michigan	2,337,373	5,583,554	70.5
Missouri		1,634,094	100.0	United States	28,818,090	59,368,498	67.3
Kansas		1,319,558	100.0	Florida	814,976	1,405,746	63.3
Virginia		1,043,569	100.0	Colorado	1,823,984	2,756,152	60.2
Kentucky		577,709	100.0	Texas	1,419,719	1,959,113	58.0
Oregon		440,451	100.0	Utah	2,301,800	2,715,131	54.1
Arkansas		412,380	100.0	Georgia	286,660	303,240	51.4
Washington		407,547	100.0	Montana	2,350,008	2,392,326	50.5
Illinois		312,406	100.0	Idaho	2,362,048	2,370,563	50.1
North Carolina		259,762	100.0	Wisconsin	402,881	321,062	44.4
Wyoming		227,833	100.0	Alabama	2,366,135	1,871,956	44.2
Iowa		106,465	100.0	New Mexico	2,112,804	1,288,708	37.9
Minnesota	191,622	6,549,227	97.2	Other States	28,818,090	59,368,588	32.0
Nevada	110,662	1,959,158	94.7	New Jersey	781,520	345,902	30.7
New York	178,680	1,226,426	87.3	Arizona	3,500,881	940,132	21.2
Tennessee	537,209	1,769,339	76.7				

TABLES FOR THE CALENDAR YEAR 1934

TABLE 1.—Relative standing of States having 1,000 or more men employed at mines, in 1934, classified according to number of men employed and fatality and injury rates per million man-hours of labor performed

Relative standing	State	Number of men employed	Relative standing	State	Fatality rate ¹	Relative standing	State	Injury rate ¹
1	California	10,076	1	Texas	0.27	1	Minnesota	10.98
2	Michigan	6,551	2	Florida	.38	2	Tennessee	20.97
3	Minnesota	6,188	3	Minnesota	.39	3	Michigan	24.83
4	Arizona	3,413	4	South Dakota	.39	4	Florida	29.95
5	Idaho	3,351	5	Oklahoma	.42	5	Alabama	34.29
6	Alaska	3,312	6	Alabama	.45	6	Missouri	40.29
7	Colorado	3,080	7	Montana	.45	7	Texas	45.50
8	Montana	3,078	8	Missouri	.54	8	South Dakota	47.13
9	Alabama	2,843	9	Kansas	.55	9	Alaska	52.40
10	Utah	2,760	10	Michigan	.55	10	New York	55.65
11	Nevada	2,168	11	Tennessee	.71	11	Arizona	67.88
12	South Dakota	2,115	12	Alaska	.89	12	Kansas	83.92
13	Oklahoma	1,651	13	Utah	.97	13	Utah	84.15
14	Texas	1,551	14	Arizona	1.13	14	Montana	85.81
15	New Mexico	1,548	15	Idaho	1.44	15	Nevada	92.00
16	Tennessee	1,514	16	California	1.50	16	New Mexico	105.23
17	New York	1,328	17	Nevada	1.80	17	Colorado	110.18
18	Florida	1,320	18	New York	1.95	18	Idaho	112.82
19	Missouri	1,282	19	New Mexico	2.26	19	California	115.69
20	Kansas	1,229	20	Colorado	2.92	20	Oklahoma	141.94
	United States total	66,645		United States average	1.00		United States average	67.95

¹ Number of deaths or injuries per million man-hours of exposure.

TABLE 2.—All mines: Number of active mines, men employed, man-days, man-hours of employment, and number killed and injured, by kind of mine, during the year ended Dec. 31, 1934

Kind of mine	Number of mines			Men employed			Man-days of employment			Man-hours of employment			
	Underground	Surface	Total	Underground	Open-cut	Total	Underground	Surface	Total	Underground	Surface	Total	
													Underground	Open-cut	Total	Underground	Surface	Total
Copper.....	88	4,605	1,942	1,537	8,084	1,016,390	493,607	330,801	1,840,798	8,131,118	3,949,020	2,646,479	14,726,617
Gold, silver, and miscellaneous metal.....	2,908	19,209	8,650	1,922	29,781	4,543,165	2,089,435	325,388	6,936,991	36,135,517	15,637,669	2,505,232	54,278,418
Iron.....	176	7,009	3,780	3,788	15,477	1,528,784	802,974	681,594	3,013,352	12,240,724	6,411,860	5,454,359	24,109,943
Lead and zinc (Mississippi Valley) ¹	119	4,257	1,697	1,105	3,069	818,907	148,298	17,810	985,013	6,403,667	1,192,094	151,600	7,847,361
Nonmetallic mineral.....	307	2,235	3,106	2,893	8,224	486,455	938,619	527,987	1,947,061	3,890,108	7,164,807	4,326,146	15,187,061
Total, 1934.....	3,568	38,225	18,175	10,245	66,645	8,387,701	4,451,934	1,883,580	14,723,215	66,707,134	34,355,450	15,083,816	116,146,400
Total, 1933.....	3,240	32,202	16,169	8,645	57,016	6,551,573	3,638,281	1,452,259	11,642,113	52,607,731	29,224,942	12,306,713	94,139,386

Kind of mine	Average days active			Average hours per man per year			Number killed			Number injured			Rates per million man-hours													
	Underground	Surface	Total	Underground	Surface	Total	Underground	Surface	Total	Underground	Surface	Total	Killed			Injured										
													Underground	Open-cut	Total	Underground	Surface	Total	Underground	Surface	Total					
Copper.....	221	254	215	228	1,766	2,033	1,722	1,822	3	12	566	60	53	669	7	11	11	1.13	.81	68.38	15.19	20.03	45.43			
Gold, silver, and miscellaneous metal.....	237	239	169	233	1,881	1,808	1,303	1,823	4	77	4,274	903	130	5,307	32	52	1.83	0.45	1.60	1.42	118.23	97.75	51.89	97.77		
Iron.....	193	212	180	195	1,548	1,696	1,440	1,558	13	3	345	51	89	485	12	23	1.06	0.55	0.66	0.55	28.18	7.95	16.32	20.12		
Lead and zinc (Mississippi Valley) ¹	192	213	170	194	1,524	1,710	1,444	1,548	2	1	537	77	30	644	3	4	0.31	0.41	0.38	0.41	82.57	64.59	197.89	82.07		
Nonmetallic mineral.....	215	302	183	236	1,654	2,307	1,495	1,834	3	1	291	346	150	787	8	21	0.81	0.14	0.92	0.53	78.73	48.29	34.67	51.82		
Total, 1934.....	219	245	184	221	1,745	1,890	1,472	1,743	93	8	15	116	6,003	1,437	452	7,892	62	111	1.39	0.23	0.99	1.00	89.99	41.83	29.97	67.95
Total, 1933.....	203	225	168	204	1,634	1,807	1,424	1,651	76	14	5	95	4,517	1,098	370	5,925	46	86	1.44	0.48	1.41	1.01	85.86	35.52	30.06	62.94

¹ Includes fluorspar mines in Illinois and Kentucky.

TABLE 3.—All mines: Number of active mines, men employed, and number of man-days, by States, during the year ended Dec. 31, 1934

State	Number of mines	Men employed				Man-days of employment			
		Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total
Alabama.....	28	1,776	723	344	2,843	329,132	149,917	76,075	555,124
Alaska.....	527	1,066	1,696	550	3,312	289,092	440,680	99,000	828,772
Arizona.....	140	2,014	710	689	3,413	468,761	177,748	130,916	777,425
Arkansas.....	9	170	50	111	331	25,767	8,648	18,067	52,482
California.....	1,227	6,110	3,010	956	10,076	1,361,192	654,966	159,922	2,176,080
Colorado.....	282	2,267	714	99	3,080	572,869	169,011	30,385	772,265
Florida.....	17	458	862	1,320	3,640	125,693	193,087	318,780	637,560
Georgia.....	19	119	27	101	247	19,638	4,300	21,624	45,562
Idaho.....	292	2,532	736	83	3,351	538,080	149,224	9,263	696,567
Illinois.....	17	175	34	61	270	31,210	7,988	12,632	51,830
Iowa.....	8	67	8	28	103	8,399	1,018	2,373	11,790
Kansas.....	26	1,024	171	34	1,229	186,158	34,666	5,046	225,870
Kentucky.....	48	335	159	251	745	54,210	28,641	19,869	102,720
Michigan.....	57	4,350	1,985	216	6,551	875,591	460,436	33,889	1,369,916
Minnesota.....	77	1,859	1,293	3,036	6,188	437,045	285,014	552,676	1,274,735
Missouri.....	24	1,046	64	172	1,282	202,102	12,303	18,136	232,541
Montana.....	123	2,532	505	41	3,078	459,067	95,836	5,670	560,573
Nevada.....	166	1,345	366	457	2,168	323,644	88,473	83,255	495,372
New Jersey.....	6	710	197	1	908	128,462	30,215	240	158,917
New Mexico.....	55	946	317	285	1,548	219,868	82,878	41,731	343,477
New York.....	32	963	303	62	1,328	174,633	75,936	12,466	263,035
North Carolina.....	12	76	16	117	209	15,066	5,600	22,740	44,406
Oklahoma.....	31	1,407	182	62	1,651	257,619	35,254	11,433	304,306
Oregon.....	82	184	64	76	324	29,878	13,726	11,368	54,972
South Dakota.....	14	1,019	1,077	19	2,115	332,631	306,721	2,746	642,098
Tennessee.....	19	609	468	437	1,514	155,608	123,978	61,081	340,667
Texas.....	25	338	1,079	134	1,551	98,905	385,805	27,334	512,044
Utah.....	97	1,893	542	325	2,760	509,832	162,526	109,107	781,465
Virginia.....	18	322	229	190	741	69,020	40,929	38,688	148,337
Washington.....	57	212	84	107	403	36,684	14,848	17,969	69,501
Wisconsin.....	7	382	162	13	557	103,763	44,254	1,874	149,891
Wyoming.....	21	46	76	105	227	5,312	10,077	8,604	23,993
Other States ¹	35	331	670	221	1,222	68,463	224,625	44,314	337,402
Total, 1934.....	3,598	38,225	18,175	10,245	66,645	8,387,701	4,451,934	1,883,580	14,723,215
Total, 1933.....	3,240	32,202	16,169	8,645	57,016	6,551,573	3,638,281	1,452,259	11,642,113

¹ Includes Connecticut, Indiana, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 4.—All mines: Number of man-hours of employment and average days active, by States, during the year ended Dec. 31, 1934

State	Man-hours of employment				Average days active				Average hours per man per year			
	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total
Alabama.....	2,650,323	1,202,028	609,096	4,461,447	185	207	221	195	1,492	1,663	1,771	1,569
Alaska.....	2,312,716	2,525,440	792,000	5,630,156	271	260	180	250	2,170	1,489	1,440	1,700
Arizona.....	3,738,985	1,431,049	1,046,859	6,216,893	233	250	190	228	2,016	1,519	1,822	1,822
Arkansas.....	206,553	69,184	154,278	430,015	152	173	163	159	1,215	1,384	1,390	1,299
California.....	10,846,252	5,234,580	1,293,590	17,374,422	223	218	167	216	1,775	1,739	1,353	1,724
Colorado.....	4,581,449	1,467,534	122,740	6,171,723	253	237	307	251	2,021	2,055	1,240	2,004
Florida.....	1,030,735	1,607,050	2,637,785	5,275,570	274	224	242	242	2,251	1,864	1,998	1,998
Georgia.....	157,104	34,400	172,549	364,053	165	159	214	184	1,320	1,274	1,708	1,474
Idaho.....	4,294,530	1,196,561	75,224	5,566,315	213	203	112	208	1,696	1,626	906	1,661
Illinois.....	249,681	63,906	102,924	416,511	178	235	207	192	1,427	1,880	1,687	1,543
Iowa.....	64,568	8,144	18,982	91,694	125	127	85	114	964	1,018	678	890
Kansas.....	1,482,638	282,350	46,204	1,811,192	182	203	148	184	1,448	1,651	1,359	1,474
Kentucky.....	434,942	233,341	157,111	825,394	162	180	79	138	1,298	1,468	626	1,108
Michigan.....	6,960,377	3,684,479	271,123	10,915,979	201	232	157	209	1,600	1,856	1,255	1,666
Minnesota.....	3,496,364	2,280,803	4,420,678	10,197,845	235	220	182	206	1,881	1,764	1,456	1,648
Missouri.....	1,617,576	98,424	145,714	1,861,714	193	192	105	181	1,546	1,538	847	1,452
Montana.....	3,666,237	766,779	42,160	4,475,176	181	190	138	182	1,448	1,518	1,028	1,454
Nevada.....	2,517,361	713,617	660,156	3,891,134	241	242	182	228	1,872	1,950	1,445	1,795
New Jersey.....	1,028,812	241,720	1,920	1,272,452	181	153	240	175	1,449	1,227	1,920	1,401
New Mexico.....	1,721,654	595,898	333,822	2,651,374	231	261	146	222	1,820	1,880	1,171	1,713
New York.....	1,366,017	581,613	100,948	2,048,578	181	251	201	198	1,419	1,920	1,628	1,543
North Carolina.....	128,530	44,840	183,680	357,050	211	350	194	212	1,691	2,803	1,570	1,708
Oklahoma.....	2,034,632	282,390	85,396	2,402,418	183	194	184	184	1,446	1,552	1,377	1,455
Oregon.....	236,800	109,813	90,584	437,197	162	214	150	170	1,287	1,716	1,192	1,349

44 METAL-MINE ACCIDENTS IN THE UNITED STATES: 1933-34.

TABLE 4.—All mines: Number of man-hours of employment and average days active, by States, during the year ended Dec. 31, 1934—Continued

State	Man-hours of employment				Average days active				Average hours per man per year			
	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total
South Dakota.....	2, 661, 053	2, 452, 172	21, 964	5, 135, 189	326	285	145	304	2, 611	2, 277	1, 156	2, 428
Tennessee.....	1, 253, 160	1, 014, 747	545, 460	2, 813, 367	256	265	140	225	2, 058	2, 168	1, 248	1, 858
Texas.....	751, 301	2, 762, 375	178, 508	3, 692, 184	293	358	204	330	2, 223	2, 560	1, 332	2, 381
Utah.....	4, 049, 640	1, 294, 149	871, 579	6, 215, 368	269	300	336	283	2, 139	2, 388	2, 682	2, 252
Virginia.....	527, 927	326, 784	320, 630	1, 175, 391	214	179	204	201	1, 640	1, 427	1, 688	1, 586
Washington.....	286, 490	116, 569	142, 102	545, 161	173	177	168	172	1, 351	1, 388	1, 328	1, 353
Wisconsin.....	798, 570	334, 208	16, 714	1, 149, 492	272	273	144	269	2, 090	2, 063	1, 286	2, 064
Wyoming.....	42, 496	80, 616	68, 484	191, 596	115	133	82	106	924	1, 061	652	844
Other States ¹	542, 396	1, 794, 202	383, 537	2, 720, 135	207	335	201	276	1, 639	2, 678	1, 735	2, 226
Total, 1934.....	66, 707, 134	34, 355, 450	15, 083, 816	116, 146, 400	219	245	184	221	1, 745	1, 890	1, 472	1, 743
Total, 1933.....	52, 607, 731	29, 224, 942	12, 306, 713	94, 139, 386	203	225	168	204	1, 634	1, 807	1, 424	1, 651

¹ Includes Connecticut, Indiana, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 5.—All mines: Fatalities and injuries and rates per million man-hours, by States, during the year ended Dec. 31, 1934

State	Number killed				Number injured (time lost, 1 day or more)				Widows		Orphans		Rates per million man-hours							
													Killed				Injured			
	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total	Underground	Surface	Open-cut	Total				
Alabama.....	2	---	---	2	70	34	49	153	2	3	0.75	---	---	0.45	26.41	28.29	80.45	34.29		
Alaska.....	5	---	---	5	163	123	9	295	---	---	2.16	---	---	0.89	70.48	48.70	11.36	32.40		
Arizona.....	3	---	4	7	335	50	37	422	3	6	0.80	---	---	3.82	1.13	89.60	34.94	67.83		
Arkansas.....	---	---	---	1	13	---	1	14	---	---	---	---	---	6.48	2.33	62.94	---	6.48	32.56	
California.....	23	3	---	26	1, 563	340	107	2, 010	14	32	2.12	0.57	---	1.50	144.11	64.95	82.72	115.69		
Colorado.....	15	2	1	18	569	103	8	680	6	4	3.27	1.36	---	8.15	2.92	124.20	70.19	65.18	110.18	
Florida.....	---	---	1	1	---	45	34	79	1	2	---	---	---	0.62	0.38	---	43.66	21.16	29.95	
Georgia.....	---	---	---	---	3	---	---	3	---	---	---	---	---	---	19.10	---	---	---	8.24	
Idaho.....	7	---	1	8	548	76	4	628	1	3	1.63	---	---	13.29	1.44	127.60	63.52	53.17	112.82	
Illinois.....	---	---	---	---	29	8	5	42	---	---	---	---	---	116.15	125.18	148.58	48.58	100.84		
Iowa.....	---	---	---	---	6	---	---	6	---	---	---	---	---	92.93	---	---	---	---	65.44	
Kansas.....	1	---	---	1	116	23	13	152	1	1	0.67	---	---	0.55	78.24	81.46	281.36	83.92		
Kentucky.....	---	1	---	1	24	7	1	32	1	4	---	---	---	6.36	1.21	55.18	30.00	6.36	38.77	
Michigan.....	6	---	---	6	249	20	2	271	4	3	0.86	---	---	0.55	35.77	5.43	7.38	24.83		
Minnesota.....	2	---	2	4	55	14	43	112	4	7	0.57	---	---	0.45	0.39	15.73	6.14	9.73	10.98	
Missouri.....	2	---	1	3	57	3	15	75	1	3	---	---	---	6.86	0.54	35.24	30.48	102.94	40.29	
Montana.....	2	---	---	2	338	46	---	384	---	---	0.55	---	---	0.45	92.19	59.99	---	---	85.81	
Nevada.....	6	---	1	7	277	64	17	358	3	1	2.38	---	---	1.51	1.80	110.04	89.68	25.75	92.00	
New Jersey.....	---	---	---	---	51	3	---	54	1	6	1.94	---	---	1.57	49.57	12.41	---	---	42.44	
New Mexico.....	5	1	---	6	229	42	8	279	4	11	2.90	1.68	---	2.26	133.01	70.48	23.96	105.23		
New York.....	4	---	---	4	101	7	6	114	4	7	2.93	---	---	1.95	73.94	12.04	59.44	55.65		
North Carolina.....	---	---	---	---	5	---	---	5	---	---	---	---	---	---	38.90	---	---	---	21.78	
Oklahoma.....	1	---	---	1	307	30	4	341	1	---	0.49	---	---	0.42	160.89	106.24	46.84	141.94		
Oregon.....	---	---	---	---	8	7	---	15	---	---	---	---	---	---	33.78	63.74	---	---	34.31	
South Dakota.....	1	1	---	2	158	83	1	242	2	---	0.38	0.41	---	0.39	69.37	33.85	45.53	47.13		
Tennessee.....	---	1	---	1	24	20	15	59	2	4	0.80	---	---	1.83	71.19	19.71	27.50	20.97		
Texas.....	1	---	---	1	72	82	14	168	---	---	1.33	---	---	0.95	83.83	29.68	78.43	45.50		
Utah.....	6	---	---	6	497	14	12	523	6	14	1.48	---	---	0.27	122.73	10.82	13.77	84.15		
Virginia.....	---	---	---	---	33	11	15	59	---	---	---	---	---	---	62.51	33.66	46.78	50.20		
Washington.....	---	---	---	---	40	17	2	59	---	---	---	---	---	---	139.62	145.84	14.07	108.22		
Wisconsin.....	---	---	---	---	27	2	3	32	---	---	---	---	---	---	33.81	5.98	179.49	27.84		
Wyoming.....	---	---	---	---	4	3	---	7	---	---	---	---	---	---	94.13	37.21	---	36.54		
Other States ¹	1	1	---	2	32	160	23	215	1	---	---	---	---	0.56	2.61	0.74	59.00	89.18	59.97	79.04
Total, 1934.....	93	8	15	116	6, 003	1, 437	452	7, 892	62	111	1.39	---	---	0.23	99	1.00	89.99	41.83	29.97	67.95
Total, 1933.....	76	14	5	95	4, 517	1, 038	370	5, 925	47	86	1.44	---	---	0.48	41	1.01	85.86	35.52	30.06	62.94

¹ Includes Connecticut, Indiana, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 6.—All mines: Fatalities, by causes and States, during the year ended Dec. 31, 1934

State	Underground										Shaft														
	Fall of rock or ore from roof or wall	Roek or ore while loading at work	Hand tools	Explosives	Haulage	Falling down chute, winze, raise, or stope	Run of ore from chute or pocket	Drilling	Electricity	Machinery	Mine fires	Suffocation from natural gases	Inrush of water	Stepping on nail	Handling materials (other than rock or ore)	Other causes	Total, underground	Falling down shaft	Objects falling down shaft	Breaking of cables	Overwinding	Skip, cage, or bucket	Other causes	Total, shaft	
Alabama.....	1				1																				
Alaska.....	1					3																1			1
Arizona.....	3																								
Arkansas.....																									
California.....	10	1	1	5	1																				
Colorado.....	7	1	1	3	1	2					1											2			5
Florida.....																									
Idaho.....	4			1																					
Illinois.....	1																								
Kansas.....																									
Kentucky.....																									
Michigan.....	3				1	1																			
Minnesota.....	2																								
Missouri.....																									
Montana.....																									
Nevada.....	2	1																							
New Jersey.....	1						1																		
New Mexico.....				2	1																				
New York.....	1						1	1																	
Oklahoma.....	1																								
South Dakota.....							1																		
Tennessee.....						1																			
Texas.....						1																			
Utah.....	3					1		1																	1
Other States ¹																									
Total, 1934.....	40	3	1	11	5	9	3	2			1														17
Total, 1933.....	28	4		7	6	9	3	3	1																12

¹ Includes Connecticut, Georgia, Illinois, Indiana, Iowa, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Vermont, Virginia, Washington, Wisconsin, and Wyoming.

TABLE 6.—All mines: Fatalities, by causes and States, during the year ended Dec. 31, 1934—Continued

State	Surface											Open-cut											Grand total		
	Mine cars, mine locomotives, or aerial trams	Railway cars and locomotives	Run or fall of ore bins or from ore	Falls of persons	Stepping on nail	Hand tools	Electricity	Machinery	Handling mate-rials	Other causes	Total, surface	Falls or slides of rock or ore	Explosives	Haulage	Power shovels	Falls of persons	Falls of derricks, booms, etc.	Run or fall of ore bins or from ore	Machinery	Electricity	Hand tools	Handling mate-rials		Other causes	Total, open-cut
	22	23	24	25	26	27	28	29	30a	30b	31	32	33	34	35	36	37	38	39	40	41a	41b			
Alabama.....																									
Alaska.....																									
Arizona.....																									
Arkansas.....												2	1		1									4	
California.....																								1	
Colorado.....				2		1	1	1																1	
Florida.....																								1	
Idaho.....																								1	
Kansas.....																								1	
Kentucky.....																								1	
Michigan.....																								1	
Minnesota.....												1		1										2	
Missouri.....																								1	
Montana.....																								1	
Nevada.....																								1	
New Jersey.....																								2	
New Mexico.....																								2	
New York.....							1																	4	
Oklahoma.....																								1	
South Dakota.....																								2	
Tennessee.....																								2	
Texas.....																								1	
Utah.....																								1	
Other States ¹																								6	
Total, 1934.....	1		2	2	1	1	2	1		2	3	4	2	1	2	1			1				2	15	
Total, 1933.....																								5	96

¹ Includes Connecticut, Georgia, Illinois, Indiana, Iowa, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Vermont, Virginia, Washington, Wisconsin, and Wyoming.

TABLE 7.—All mines: Injuries, by causes and States, during the year ended Dec. 31, 1934

State	Underground										Shaft													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15a	15b	Total, under- ground	16	17	18	19	20	21	Total, shaft
	Fall of rock or ore from roof or wall	Rock or ore while loading at work- ing face	Hand tools	Explosives	Haulage	Falling down chute, winze, raise, or slope	Run of ore from chute or pocket	Drilling	Electricity	Machinery	Mine fires	Suffocation from natural gases	Inrush of water	Stepping on nail	Handling materi- als (other than rock or ore)	Other causes	Total, under- ground	Falling down shaft	Objects falling down shaft	Breaking of cables	Overwinding	Skip, cage, or bucket	Other causes	Total, shaft
Alabama.....	9	6	7	1	27	1	1	1	2	2	—	—	—	—	—	—	70	—	—	—	—	—	—	—
Alaska.....	9	21	6	1	11	1	45	11	3	2	—	—	—	—	—	4	160	—	—	—	—	2	—	3
Arizona.....	87	21	29	2	48	10	5	28	14	—	—	—	—	—	—	—	327	1	—	—	—	2	—	8
Arkansas.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
California.....	272	181	166	25	139	176	42	209	4	33	9	9	31	131	100	100	1,518	10	8	—	—	23	4	45
Colorado.....	135	32	38	5	47	26	27	63	2	11	4	4	8	58	103	559	1	—	—	—	—	7	1	10
Florida.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Georgia.....	102	87	45	4	34	29	12	27	2	2	—	—	20	86	73	3	523	10	1	—	—	5	9	25
Idaho.....	3	—	—	—	5	—	1	10	—	—	—	—	—	—	6	—	29	—	—	—	—	—	—	—
Illinois.....	2	2	—	1	—	—	—	—	—	—	—	—	—	—	—	—	6	—	—	—	—	—	—	—
Iowa.....	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kansas.....	3	39	4	—	27	2	—	15	2	—	—	—	—	—	—	—	113	—	—	—	—	—	—	—
Kentucky.....	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Michigan.....	57	25	15	2	19	10	6	24	2	14	—	—	1	20	44	237	2	3	—	—	—	4	3	12
Minnesota.....	13	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Missouri.....	7	3	—	—	19	3	3	1	4	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Montana.....	59	37	70	—	49	8	3	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nevada.....	58	26	27	7	29	12	5	21	4	1	—	—	5	18	52	329	1	3	—	—	—	3	2	9
New Jersey.....	13	16	6	2	3	5	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New Mexico.....	29	36	31	6	33	12	3	24	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New York.....	6	31	9	—	2	6	9	10	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina.....	18	82	4	3	39	5	—	33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Oklahoma.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Oregon.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
South Dakota.....	48	11	5	—	19	2	1	4	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee.....	1	2	—	2	7	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Texas.....	11	11	2	1	13	2	—	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Utah.....	121	19	66	1	52	26	11	41	2	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Virginia.....	—	7	3	—	6	1	3	5	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Washington.....	4	8	4	2	4	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Wisconsin.....	2	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Wyoming.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other States ¹	4	7	2	—	2	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, 1934.....	1,083	713	550	67	651	356	181	593	24	113	—	1	96	530	880	5,855	18	36	—	1	1	54	38	148
Total, 1933.....	1,761	603	461	65	467	296	132	423	6	107	—	—	72	359	644	4,407	12	32	—	—	—	36	29	110

¹ Includes Connecticut, Indiana, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 7.—All mines: Injuries, by causes and States, during the year ended Dec. 31, 1934—Continued

State	Surface										Open-cut										Grand total					
	22	23	24	25	26	27	28	29	30a	30b	Total, surface	Falls or slides of rock or ore	Explosives	Haulage	Power shovels	Falls of persons	Falls of derricks, booms, etc.	Run or fall of ore in or from ore bins	Machinery	Electricity		Hand tools	Handling mate-rials	Other causes	Total, open-cut	
Alabama.....				5	1			5	4	8	34										9	18	22		49	
Alaska.....	6			6	2	18		11	53	123		2	1			4					5	8	3		9	
Arizona.....	3			6	2	5		5	16	50				8	3	6				1	5				37	
Arkansas.....																									4	
California.....	6	1	2	70	7	53	2	56	83	340		12	2	6	3	22	1		7	1	16	32	5		107	
Colorado.....	7	2	2	21	1	12	1	23	10	103		2	2			2	2		2	2					2,010	
Florida.....				4	4	4	3	1	9	26		2	1	1	3	3			1	2	5	16	6		8	
Georgia.....																									34	
Idaho.....				13	3	11	2	9	19	76		1	1	1	1	1					2	1			4	
Illinois.....				1	1	1		1	2	8		1				2					2				4	
Iowa.....																									6	
Kansas.....	3				7	2			9	23															13	
Kentucky.....				1	1	1		1	2	7															1	
Michigan.....		2	1	1	1	1		6	4	6															2	
Minnesota.....				3	3	2		1	4	14		2	1	6	3	6	1			1	2	13			43	
Missouri.....				1	1				1	3															11	
Montana.....	11			1	8	7	1	5	8	46															15	
Nevada.....	4	1	3	9	2	4	2	12	14	13		2	1	1	1					6	6	1			384	
New Jersey.....				1	1			7	1	3															17	
New Mexico.....	3		1	1	1	1		7	7	42		1	1	1						2	2				54	
New York.....	1			2				2	23	42		1	1	1						2	1	1			8	
North Carolina.....																									6	
North Dakota.....	2		2	3	3	1		2	6	11		2													9	
Oregon.....									3	7															4	
South Dakota.....	1			14	1	13		8	17	29															4	
Tennessee.....	3		2	5	4	3		4	3	20		2		4					1						15	
Texas.....				14	4	4		15	21	24		2									2	3	4	6	14	
Utah.....	1			2	2	3		2	4	2		1		1											12	
Virginia.....				2	1	1		5	1	11		1		1							8	1	3		15	
Washington.....	3			2	2	2		6	2	2		1								2					59	
Wisconsin.....				3	2			2	2	17		2													3	
Wyoming.....				1	2				4	4		5	1												2	
Other States ¹				25	2	13		26	49	160		5	1		2				3		2	2	5	5	23	
Total, 1934.....	51	22	18	244	46	165	13	204	295	379	1,437	37	5	26	13	57	5		20	1	66	119	103		452	
Total, 1933.....	58	15	10	170	25	129	14	98	220	299	1,038	40	11	24	14	55	4		10	8	49	70	68		370	
Total.....																										5,925

¹ Includes Connecticut, Indiana, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, New Hampshire, South Carolina, and Vermont.

TABLE 8.—All mines: Accidents, by States and severity of injury, during the year ended Dec. 31, 1934

State	Killed	Nonfatal			Total non-fatal	Grand total
		Perma- nent total ¹	Perma- nent partial ²	Tempo- rary ³		
Alabama.....	2		17	136	153	155
Alaska.....	5		2	293	295	300
Arizona.....	7		18	404	422	429
Arkansas.....	1			14	14	15
California.....	26		34	1,976	2,010	2,036
Colorado.....	18		12	668	680	698
Florida.....	1			79	79	80
Georgia.....				3	3	3
Idaho.....	8		20	608	628	636
Illinois.....			1	41	42	42
Iowa.....				6	6	6
Kansas.....	1		6	146	152	153
Kentucky.....	1		1	31	32	33
Michigan.....	6		8	263	271	277
Minnesota.....	4		8	104	112	116
Missouri.....	1		10	65	75	76
Montana.....	2			384	384	386
Nevada.....	7		9	349	358	365
New Jersey.....	2	1	10	43	54	56
New Mexico.....	6		7	272	279	285
New York.....	4		1	113	114	118
North Carolina.....				9	9	9
Oklahoma.....	1		6	335	341	342
Oregon.....				15	15	15
South Dakota.....	2		2	240	242	244
Tennessee.....	2	1	2	56	59	61
Texas.....	1		2	166	168	169
Utah.....	6		8	515	523	529
Virginia.....			3	56	59	59
Washington.....				59	59	59
Wisconsin.....			1	31	32	32
Wyoming.....				7	7	7
Other States ⁴	2		3	212	215	217
Total, 1934.....	116	2	191	7,699	7,892	8,008
Total, 1933.....	95	5	127	5,793	5,925	6,020

¹ Permanent total disability: Loss of both legs or arms, 1 leg and 1 arm, total loss of eyesight, paralysis or other condition permanently incapacitating workmen from doing any work of a gainful occupation.

² Permanent partial disability: Loss of 1 foot, leg, arm, hand, eye, 1 or more fingers, 1 or more toes, any dislocation where ligaments are severed, or any other injury known in surgery to be permanent partial disability.

³ Disability for more than the remainder of day of accident.

⁴ Includes Connecticut, Indiana, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

50 METAL-MINE ACCIDENTS IN THE UNITED STATES: 1933-34

TABLE 9.—All mines: Accidents, by causes and severity of injury, during the year ended Dec. 31, 1934

Cause of Accident	Killed	Nonfatal				Grand total
		Perma- nent total ¹	Perma- nent partial ²	Tempo- rary ³	Total non- fatal	
Underground:						
1. Fall of rock or ore from roof or wall	40		33	1,050	1,083	1,123
2. Rock or ore while loading at working face	3		11	702	713	716
3. Hand tools	1		10	540	550	551
4. Explosives	11	1	15	51	67	78
5. Haulage	5		20	631	651	656
6. Falling down chute, winze, raise, or stope	9	1	4	351	356	365
7. Run of ore from chute or pocket	3		5	176	181	184
8. Drilling	2		14	579	593	595
9. Electricity			2	22	24	24
10. Machinery			11	102	113	113
11. Mine fires						
12. Suffocation from natural gases	1			17	17	18
13. Inrush of water				1	1	1
14. Stepping on nail				96	96	96
15a. Handling materials (other than rock or ore)			3	527	530	530
15b. Other causes	1		19	861	880	881
Total, underground	76	2	147	5,706	5,855	5,931
Shaft:						
16. Falling down shaft	9			18	18	27
17. Objects falling down shaft	2		1	35	36	38
18. Breaking of cables	1			1	1	2
19. Overwinding	1		1		1	2
20. Skip cage, or bucket	4		5	49	54	58
21. Other causes			1	37	38	38
Total, shaft	17		8	140	148	165
Surface:						
22. Mine cars, mine locomotives, gravity or aerial trams				51	51	51
23. Railway cars and locomotives				22	22	22
24. Run or fall of ore in or from ore bins				18	18	18
25. Falls of persons	2		3	241	244	246
26. Stepping on nail				46	46	46
27. Hand tools	1		3	162	165	166
28. Electricity	2		2	11	13	15
29. Machinery	1		9	195	204	205
30a. Handling materials			6	289	295	295
30b. Other causes	2		3	376	379	381
Total, surface	8		26	1,411	1,437	1,445
Open-cut:						
31. Falls or slides of rock or ore	3			37	37	40
32. Explosives	4			5	5	9
33. Haulage	2		1	25	26	28
34. Power shovels	1		2	11	13	14
35. Falls of persons	2			57	57	59
36. Falls of derricks, booms, etc.				5	5	5
37. Run or fall of ore in or from ore bins						
38. Machinery	1		2	18	20	21
39. Electricity				1	1	1
40. Hand tools			1	65	66	66
41a. Handling materials			4	115	119	119
41b. Other causes	2			103	103	105
Total, open-cut	15		10	442	452	467
Grand total	116	2	191	7,699	7,892	8,008

¹ Permanent total disability: Loss of both legs or arms, 1 leg and 1 arm, total loss of eyesight, paralysis or other condition permanently incapacitating workman from doing any work of a gainful occupation.

² Permanent partial disability: Loss of 1 foot, leg, hand, eye, 1 or more fingers, 1 or more toes, any dislocation where ligaments are severed, or any other injury known in surgery to be permanent partial disability.

³ Disability for more than the remainder of day of accident.

TABLE 10.—All mines: Causes of fatalities and injuries, showing percentage due to each cause and corresponding rates per million man-hours during the year ended Dec. 31, 1934

Cause of accident	Number killed				Number injured			
	Percent of—		Per million man-hours		Percent of—		Per million man-hours	
	Grand total	Class total	Grand total	Class total	Grand total	Class total	Grand total	Class total
Underground:								
1. Fall of rock or ore from roof or wall.....	34.48	52.63	0.34	0.60	13.72	18.50	9.32	16.24
2. Rock or ore while loading at working face.....	2.59	3.95	.03	.04	9.04	12.18	6.14	10.69
3. Hand tools.....	.86	1.32	.01	.01	6.97	9.39	4.73	8.24
4. Explosives.....	9.48	14.47	.09	.17	.85	1.14	.58	1.00
5. Haulage.....	4.31	6.57	.04	.08	8.25	11.12	5.60	9.76
6. Falling down chute, winze, raise, or stope.....	7.76	11.84	.08	.14	4.51	6.08	3.06	5.34
7. Run of ore from chute or pocket.....	2.59	3.95	.03	.04	2.29	3.09	1.56	2.71
8. Drilling.....	1.73	2.63	.02	.03	7.51	10.13	5.11	8.89
9. Electricity.....	-----	-----	-----	-----	.30	.41	.21	.36
10. Machinery.....	-----	-----	-----	-----	1.43	1.93	.97	1.69
11. Mine fires.....	-----	-----	-----	-----	-----	-----	-----	-----
12. Suffocation from natural gases.....	.86	1.32	.01	.01	.22	.29	.15	.26
13. Inrush of water.....	-----	-----	-----	-----	.01	.02	.01	.01
14. Stepping on nail.....	-----	-----	-----	-----	1.22	1.64	.83	1.44
15a. Handling materials other than rock or ore.....	-----	-----	-----	-----	6.72	9.05	4.56	7.95
15b. Other causes.....	.86	1.32	.01	.01	11.15	15.03	7.58	13.19
Total, underground.....	65.52	100.00	.65	1.14	74.19	100.00	50.41	87.77
Shaft:								
16. Falling down shaft.....	7.76	52.94	.08	.14	.23	12.16	.16	.27
17. Objects falling down shaft.....	1.73	11.77	.02	.03	.46	24.32	.31	.54
18. Breaking of cables.....	.86	5.88	.01	.01	.01	.68	.01	.01
19. Overwinding.....	.86	5.88	.01	.01	.01	.68	.01	.01
20. Skip, cage, or bucket.....	3.44	23.53	.03	.06	.68	36.49	.46	.81
21. Other causes.....	-----	-----	-----	-----	.48	25.67	.33	.67
Total, shaft.....	14.65	100.00	.15	.25	1.87	100.00	1.28	2.22
Surface:								
22. Mine cars, mine locomotives, gravity or aerial trams.....	-----	-----	-----	-----	.65	3.55	.44	1.49
23. Railway cars and locomotives.....	-----	-----	-----	-----	.28	1.53	.19	.64
24. Run or fall of ore in or from ore bins.....	-----	-----	-----	-----	.23	1.25	.15	.52
25. Falls of persons.....	1.73	25.00	.02	.06	3.09	16.98	2.10	7.10
26. Stepping on nail.....	-----	-----	-----	-----	.58	3.20	.40	1.34
27. Hand tools.....	.86	12.50	.01	.03	2.09	11.48	1.42	4.80
28. Electricity.....	1.73	25.00	.02	.06	.16	.90	.11	.38
29. Machinery.....	.86	12.50	.01	.03	2.59	14.20	1.76	5.94
30a. Handling materials.....	-----	-----	-----	-----	3.74	20.53	2.54	8.59
30b. Other causes.....	1.73	25.00	.02	.06	4.80	26.38	3.26	11.03
Total, surface.....	6.90	100.00	.07	.23	18.21	100.00	12.37	41.83
Open-cut:								
31. Falls or slides of rock or ore.....	2.59	20.00	.03	.20	.47	8.18	.32	2.45
32. Explosives.....	3.44	26.67	.03	.26	.06	1.11	.04	.33
33. Haulage.....	1.73	13.33	.02	.13	.33	5.75	.22	1.72
34. Power shovels.....	.86	6.67	.01	.07	.17	2.88	.11	.86
35. Falls of persons.....	1.73	13.33	.02	.13	.72	12.61	.49	3.78
36. Falls of derricks, booms, etc.....	-----	-----	-----	-----	.06	1.11	.04	.33
37. Run or fall of ore in or from ore bins.....	-----	-----	-----	-----	-----	-----	-----	-----
38. Machinery.....	.86	6.67	.01	.07	.25	4.42	.17	1.33
39. Electricity.....	-----	-----	-----	-----	.01	.22	.01	.07
40. Hand tools.....	-----	-----	-----	-----	.84	14.60	.67	4.38
41a. Handling materials.....	-----	-----	-----	-----	1.51	26.33	1.03	7.89
41b. Other causes.....	1.73	13.33	.02	.13	1.31	22.79	.89	6.83
Total, open-cut.....	12.93	100.00	.13	.99	5.73	100.00	3.89	29.97
Grand total, 1934.....	100.00	-----	1.00	-----	100.00	-----	67.95	-----
Grand total, 1933.....	-----	-----	1.01	-----	-----	-----	63.95	-----

TABLE 11.—Copper mines: Men employed and man-days of employment, by States, during the year ended Dec. 31, 1934

State	Number of mines	Men employed			Man-days of employment			Average days active					
		Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total
		26	1,368	501	641	2,510	357,928	135,097	122,317	614,672	261	270	191
2	854	580	-----	1,434	227,583	136,120	-----	363,703	266	269	-----	268	
21	2,020	384	-----	2,404	359,683	27,960	-----	387,643	178	177	-----	178	
7	135	115	354	604	24,923	24,173	71,063	120,159	185	210	201	199	
New Mexico.....	5	7	82	276	365	22,008	40,614	53,347	104	146	147	146	
Utah.....	4	8	188	266	1,325	68,003	96,807	166,135	166	362	364	360	
Other States ¹	23	213	92	305	45,020	30,316	-----	75,336	211	330	-----	247	
Total, 1934.....	88	4,605	1,942	1,537	8,084	493,607	330,801	1,840,798	221	254	215	228	
Total, 1933.....	111	4,132	1,874	1,970	6,976	477,204	214,108	1,689,788	242	255	221	242	

¹ Includes Alaska, California, Colorado, Idaho, North Carolina, Oregon, Tennessee, Washington, and Wyoming.

TABLE 12.—Copper mines: Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1934

State	Man-hours of employment			Average hours per man per year			Number killed			Number injured			Wid-ows	Or-phans
	Under-ground	Open-cut	Total	Under-ground	Surface	Total	Under-ground	Surface	Total	Under-ground	Surface	Total		
	2,868,632	1,080,217	978,537	4,917,386	2,090	2,156	1,959	3	3	6	161	14		
1,820,644	543,840	-----	3,069,602	2,132	2,153	2,141	3	-----	3	101	5	106	3	3
2,875,902	1,543,840	-----	3,419,742	1,424	1,416	1,423	1	-----	1	279	14	293	-----	-----
199,384	193,384	568,504	961,272	1,477	1,682	1,606	1	-----	1	11	15	41	-----	-----
5,800	96,084	324,982	426,846	829	1,172	1,177	1	-----	1	-----	4	8	-----	-----
10,600	544,024	774,456	1,829,080	1,325	2,894	2,911	-----	-----	-----	-----	3	6	-----	-----
360,156	242,533	-----	1,602,689	1,691	2,036	1,976	1	-----	1	4	5	9	-----	-----
8,131,118	3,949,020	2,646,479	14,726,617	1,766	2,033	1,722	9	-----	3	556	60	699	8	13
7,949,616	3,809,071	1,712,860	13,471,547	1,924	2,033	1,766	12	-----	1	613	75	734	6	13

¹ Includes Alaska, California, Colorado, Idaho, North Carolina, Oregon, Tennessee, Washington, and Wyoming.

TABLE 13.—Gold, silver, and miscellaneous metal mines: Men employed and man-days of employment by States, during the year ended Dec. 31, 1934

State	Number of mines		Men employed			Man-days of employment			Average days active			
	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total
Alaska.....	1, 066	1, 695	550	3, 311	289, 092	440, 315	99, 000	828, 407	271	260	180	250
Arizona.....	109	2, 005	35	9, 443	110, 145	42, 121	6, 395	158, 662	177	205	183	184
California.....	5, 748	2, 959	736	2, 981	1, 264, 656	641, 609	115, 060	2, 027, 325	220	217	156	214
Colorado.....	2, 205	702	74	3, 276	564, 079	167, 281	26, 403	757, 743	256	258	357	254
Idaho.....	2, 477	716	83	3, 276	527, 801	140, 821	9, 263	677, 885	213	197	112	207
Montana.....	96	480	35	636	97, 351	27, 876	4, 320	124, 547	192	220	122	196
Nevada.....	1, 188	246	38	1, 472	293, 681	63, 180	4, 357	361, 218	247	257	115	245
New Mexico.....	42	817	.....	951	182, 502	39, 424	.....	221, 926	223	264	.....	233
Oregon.....	178	64	68	310	28, 768	13, 726	11, 176	53, 670	162	214	161	173
South Dakota.....	1, 016	1, 077	7	2, 100	332, 314	306, 721	510	636, 545	327	285	73	309
Utah.....	1, 797	291	16	2, 104	492, 382	81, 512	2, 356	576, 250	274	280	147	274
Virginia.....	200	27	33	246	39, 629	8, 278	8, 122	54, 029	198	233	246	208
Washington.....	43	173	21	246	30, 070	9, 084	2, 955	45, 109	174	175	141	171
Wyoming.....	26	33	28	87	3, 548	4, 080	3, 140	10, 768	156	124	112	121
Other States ¹	1, 216	328	198	1, 742	292, 146	84, 430	32, 331	408, 907	240	257	163	235
Total, 1934.....	19, 209	8, 650	1, 922	29, 781	4, 543, 165	2, 068, 438	325, 388	6, 938, 991	237	230	169	233
Total 1933.....	14, 901	7, 156	1, 718	23, 775	3, 548, 636	1, 703, 192	286, 873	5, 638, 101	238	238	167	233

¹ Includes Alabama, Arkansas, Georgia, Minnesota, New Jersey, New York, North Carolina, Tennessee, and Texas.

TABLE 14.—Gold, silver, and miscellaneous metal mines: Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1934

State	Man-hours of employment				Average hours per man per year				Number killed				Number injured				Wid- dows orphans
	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	Under-ground	Surface	Open-cut	Total	
Alaska.....	2,312,716	2,522,530	792,000	5,627,236	2,170	1,488	1,440	1,700	5	---	---	---	163	123	9	295	
Arizona.....	870,053	345,092	30,690	1,245,835	1,399	1,688	1,448	1,470	---	---	---	---	171	36	13	220	
California.....	10,081,224	5,133,117	933,326	16,147,667	1,754	1,735	1,268	1,710	21	3	---	---	1,497	336	93	1,927	
Colorado.....	4,510,224	1,453,534	90,852	6,055,045	2,046	2,071	1,228	2,071	---	---	---	---	1,564	101	8	1,673	
Idaho.....	4,212,268	1,193,230	5,416,859	75,224	1,701	1,577	908	1,653	7	---	---	---	538	75	4	617	
Montana.....	732,611	2,272,950	31,350	986,910	1,526	1,842	896	1,552	---	---	---	---	58	32	---	90	
Nevada.....	2,278,334	512,313	2,825,751	35,104	1,819	2,083	924	1,920	5	---	---	---	256	40	---	306	
New Mexico.....	1,485,958	307,352	1,787,310	1,310	1,918	1,249	1,879	4	1	---	---	---	220	31	---	251	
Oregon.....	227,920	100,312	89,048	427,280	1,280	1,716	1,310	1,377	---	---	---	---	83	7	---	90	
South Dakota.....	2,658,517	4,527,172	4,080	5,114,769	2,617	2,277	1,178	2,436	1	1	---	---	158	83	---	241	
Utah.....	3,916,370	602,294	18,844	4,587,207	2,179	2,241	1,178	2,180	6	---	---	---	475	11	---	487	
Virginia.....	313,584	70,427	79,215	437,473	1,585	1,860	2,128	1,683	---	---	---	---	24	8	---	32	
Washington.....	23,354	24,260	326,301	373,915	1,350	1,060	1,060	1,326	---	---	---	---	29	6	---	35	
Wyoming.....	28,384	32,640	23,120	84,144	1,092	989	1,887	990	---	---	---	---	1	---	---	---	
Other States 1.....	2,269,885	643,226	266,879	3,185,990	1,867	1,979	1,348	1,823	1	---	---	---	113	4	---	118	
Total, 1934.....	36,135,517	15,637,669	2,505,232	54,278,418	1,831	1,808	1,303	1,823	66	7	4	59	4,274	903	130	5,307	
Total, 1933.....	28,295,081	13,477,855	2,318,259	44,091,195	1,890	1,833	1,349	1,855	50	9	---	---	3,054	633	79	3,766	

¹ Includes Alabama, Arkansas, Georgia, Minnesota, New Jersey, New York, North Carolina, Tennessee, and Texas.

TABLE 15.—Iron mines: Men employed and man-days of employment, by States, during the year ended Dec. 31, 1934

State	Number of mines	Men employed			Man-days of employment			Average days active			
		Under-ground	Surface	Total	Under-ground	Surface	Total	Under-ground	Surface	Total	
											Open-cut
Alabama.....	20	1,751	703	2,731	322,642	144,657	63,755	184	206	230	104
Michigan.....	48	3,350	1,373	4,981	619,227	296,636	21,919	185	216	192	192
Minnesota.....	74	1,847	6,124	434,855	283,934	544,472	1,293,291	235	221	182	206
Missouri.....	3	296	29	2,646	2,646	448	2,118	102	112	73	95
New Jersey.....	6	265	116	380	23,646	11,228	2,118	89	98	---	---
New York.....	3	363	46	463	49,110	20,319	158	34,874	88	---	---
Wisconsin.....	6	279	122	404	73,033	32,342	150	135	212	40	150
Other States 1.....	16	28	80	327	3,595	13,410	49,322	262	265	50	261
Total, 1934.....	176	7,909	3,788	15,477	1,528,784	802,974	681,594	193	212	180	195
Total, 1933.....	150	6,877	3,180	13,954	974,400	573,567	484,637	142	147	136	142

¹ Includes Arkansas, California, Georgia, Montana, Pennsylvania, Tennessee, Utah, Virginia, Washington, and Wyoming.

TABLE 16.—Iron mines: Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1934

State	Man-hours of employment			A average hours per man per year			Number killed			Number injured			Wid- ows	Or- phans
	Under- ground	Surface	Open-cut	Total	Under- ground	Sur- face	Open- cut	Total	Under- ground	Sur- face	Open- cut	Total		
Alabama.....	2,592,428	1,156,948	510,046	4,259,417	1,481	1,646	1,841	1,560	2	16	37	120	2	3
Michigan.....	4,953,417	2,375,081	179,964	7,508,462	1,479	1,739	1,095	1,537	2	126	1	146	1	1
Minnesota.....	3,479,084	2,272,163	4,355,057	10,106,304	1,584	1,765	1,457	1,650	2	55	43	112	4	7
Missouri.....	51,928	89,823	16,940	158,691	896	896	584	720	2	15	1	16	1	0
New Jersey.....	190,282	89,823	280,105	550,210	718	781	395	1,462	4	66	4	70	4	7
New York.....	392,884	159,553	1,580	554,017	1,082	2,085	400	2,068	4	0	2	11	1	0
Wisconsin.....	583,460	259,724	1,200	845,384	2,091	2,085	400	2,068	1	4	8	11	1	0
Other States ¹	27,246	104,984	396,572	528,802	973	1,312	1,213	1,216	1	4	4	10	1	0
Total, 1934.....	12,240,724	6,411,860	5,454,359	24,106,943	1,548	1,696	1,440	1,558	13	51	80	485	12	23
Total, 1933.....	8,130,858	4,866,955	3,783,603	16,781,516	1,182	1,249	1,190	1,203	10	72	32	334	11	26

¹ Includes Arkansas, California, Georgia, Montana, Pennsylvania, Tennessee, Utah, Virginia, Washington, and Wyoming.

TABLE 17.—Lead and zinc mines¹ (Mississippi Valley): Men employed and man-days of employment, by States, during the year ended Dec. 31, 1934

State	Number of mines	Men employed			Man-days of employment			Average days active					
		Under- ground	Surface	Open-cut	Total	Under- ground	Sur- face	Open-cut	Total	Under- ground	Sur- face	Open-cut	Total
Illinois.....	13	170	34	50	254	29,835	7,988	10,000	47,823	176	235	200	188
Kentucky.....	45	335	132	20	487	54,210	24,348	2,800	81,358	162	184	140	167
Kansas.....	17	824	112	22	958	139,945	20,080	3,300	163,325	170	179	150	170
Missouri.....	10	1,020	60	8	1,088	199,456	11,855	960	212,271	196	194	120	195
Oklahoma.....	27	1,407	182	1	1,589	257,619	35,254	750	292,873	183	194	184	184
Other States ²	7	511	177	5	693	137,842	48,771	750	187,363	270	276	150	270
Total, 1934.....	119	4,267	697	105	5,069	818,907	148,296	17,810	985,013	192	213	170	194
Total, 1933.....	81	4,092	488	53	4,633	601,032	91,966	10,020	703,018	147	188	189	152

¹ Includes fluor spar mines in Illinois and Kentucky.

² Includes Tennessee and Wisconsin.

TABLE 18.—Lead and zinc mines¹ (Mississippi Valley): Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1934

State	Man-hours of employment			Average hours per man per year			Number killed			Number injured			Wid-ows	Or-phans
	Under-ground	Surface	Total	Under-ground	Surface	Total	Under-ground	Surface	Total	Under-ground	Surface	Total		
Illinois.....	238,681	63,906	302,587	1,404	1,880	1,606	1	29	8	4	41	1		
Kentucky.....	434,942	199,104	634,046	1,308	1,508	1,353	1	24	7	31	7	1		
Kansas.....	1,119,460	167,501	1,310,961	1,559	1,490	1,378	1	83	19	13	115	1	1	
Missouri.....	1,595,648	94,840	1,698,168	1,552	1,486	1,561	1	57	3	13	73	1	2	
Oklahoma.....	2,034,632	282,390	2,317,022	1,446	1,552	1,458	1	307	30	337	1	1		
Other States ²	1,080,304	384,353	1,470,657	2,114	2,171	2,122		37	10	47				
Total, 1934.....	6,503,667	1,192,094	7,847,361	1,524	1,710	1,444	2	537	77	30	644	3	3	
Total, 1933.....	4,829,522	751,849	5,661,531	1,180	1,541	1,222	2	307	36	3	340	2	3	

¹ Includes fluor spar mines in Illinois and Kentucky.

² Includes Tennessee and Wisconsin.

TABLE 19.—Nonmetallic mineral mines: Men employed and man-days of employment, by States, during the year ended Dec. 31, 1934

State	Number of mines	Men employed			Man days of employment			Average days active			Total	
		Under-ground	Surface	Total	Under-ground	Surface	Total	Under-ground	Surface	Total		
California.....	55	358	51	579	96,256	13,357	144,975	35,362	269	262	208	250
Colorado.....	17	60	12	97	8,540	1,750	14,272	3,982	146	146	159	147
Florida.....	17	458	862	1,320	2,508	125,693	318,780	193,087	209	273	224	242
Georgia.....	9	12	9	111	2,108	2,540	26,477	21,429	209	292	238	239
Iowa.....	8	67	8	103	8,399	1,018	11,790	1,746	125	127	86	114
Kansas.....	9	200	12	271	46,213	14,586	62,545	17,069	231	247	146	231
Kentucky.....	3	258	27	285	37,901	21,293	59,194	3,764	243	159	74	88
Louisiana.....	6	156	614	782	28,783	212,512	254,167	7,059	346	313	325	325
Michigan.....	7	146	32	236	28,783	7,680	48,733	15,058	197	240	612	206
Missouri.....	8	135	135	135	5,040	1,120	13,058	6,901	220	224	112	112
Nevada.....	11	22	6	92	8,450	1,028	13,995	7,835	211	121	152	152
New Hampshire.....	5	40	4	38	35,641	31,446	67,087	1,117	292	237	200	200
New Mexico.....	6	122	101	223	91,357	33,630	127,987	33,630	105	111	124	294
New York.....	24	468	137	663	5,666	480	137,205	22,640	182	245	212	207
North Carolina.....	10	47	2	116	116	11,433	31,696	11,433	182	182	195	192
Oklahoma.....	4	62	62	62	642	60,172	118,313	58,141	184	184	184	184
Tennessee.....	11	255	387	642	15,064	362,610	403,503	25,834	106	236	150	184
Texas.....	20	77	1,008	1,214	15,064	362,610	403,503	25,834	106	236	200	332
Utah.....	15	58	13	157	16,025	11,821	30,644	2,798	186	204	215	204
Virginia.....	11	122	202	473	29,391	34,651	94,173	30,136	241	172	202	199
Washington.....	5	13	13	13	2,424	2,402	18,028	14,102	186	185	181	185
Other States ¹	46	239	176	456	39,897	15,820	84,329	28,612	167	310	172	185
Total, 1934.....	307	2,235	3,106	8,234	480,455	988,619	1,947,061	527,987	215	302	183	236
Total, 1933.....	280	2,200	2,754	7,678	429,629	792,352	1,726,202	507,221	195	288	186	225

¹ Includes Alabama, Arizona, Arkansas, Connecticut, Idaho, Illinois, Indiana, Maine, Maryland, New Jersey, Montana, Ohio, Oregon, Pennsylvania, South Dakota, Vermont, Wisconsin, and Wyoming.

TABLE 20.—Nonmetallic mineral mines: Number of man-hours of employment and number killed and injured, by States, during the year ended Dec. 31, 1934

State	Man hours of employment			Average hours per man per year			Number killed			Number injured			Wid-ows	Or-phans	
	Under-ground	Surface	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total	Under-ground	Sur-face	Open-cut	Total			
															Under-ground
California	762,278	101,463	284,064	1,148,315	2,131	1,989	1,671	1,983	2	66	4	14	84	2	9
Colorado	68,820	14,000	31,858	1,114,678	1,147	1,167	1,274	1,182		5	2		7		
Florida	1,030,735	1,607,050	1,607,050	2,637,785	1,147	2,251	1,864	1,998	1		45	34	79	1	2
Georgia	20,064	20,320	170,980	211,373	1,672	2,258	1,900	1,900							
Iowa	64,568	8,144	18,982	91,694	964	1,018	1,000	1,000							
Kansas	363,178	114,840	13,204	491,231	1,816	1,947	1,100	1,800		6			6		
Kentucky	303,209	34,237	132,191	166,428	1,944	1,268	1,572	1,645	1	33	4	1	37	1	4
Louisiana	186,316	1,700,098	27,483	2,030,700	1,944	2,789	2,200	2,597	1	22	155	1	177	1	
Michigan	39,643	7,920	56,548	104,111	1,270	1,920	1,692	1,466		19	5	2	25		
Missouri	67,600	8,224	83,989	159,813	1,802	1,584	870	1,135		10		1	11		
New Hampshire	226,806	198,482	8,840	437,218	1,884	2,056	2,210	1,949	1	1		1	1		
New Mexico	733,968	268,147	99,368	1,001,483	1,568	1,965	1,982	1,882	1	9	7		16		4
North Carolina	68,530	3,960	182,880	255,370	1,458	1,957	1,713	1,661		26	3	6	35		
Oklahoma			85,396	85,396	1,377	1,880	1,577	1,548		5		4	9		
Tennessee		498,296	517,908	1,016,204	1,954	1,954	1,338	1,583			10	15	95		2
Texas	120,088	2,584,048	168,008	2,872,144	1,560	2,564	1,302	2,366		27	81	14	122		
Utah	121,870	88,612	21,111	231,593	1,417	1,528	1,624	1,475		22			23		
Virginia	210,893	276,560	247,025	734,478	1,720	1,309	1,658	1,555		9	3	15	27		
Washington	19,392	119,216	112,546	151,154	1,492	1,478	1,443	1,453		8	6	1	15		
Other States ¹	315,285	126,056	237,453	678,794	1,319	2,472	1,430	1,480		23	21	37	81		
Total, 1934	3,696,108	7,164,807	4,326,146	15,187,061	1,654	2,307	1,495	1,844	3	291	346	150	787	8	21
Total, 1933	3,402,554	6,319,212	4,411,831	14,133,597	1,547	2,295	1,620	1,841	2	313	222	210	745	1	

¹ Includes Alabama, Arizona, Arkansas, Connecticut, Idaho, Illinois, Indiana, Maine, Maryland, New Jersey, Montana, Ohio, Oregon, Pennsylvania, South Dakota, Vermont, Wisconsin, and Wyoming.

TABLE 21.—All mines: Fatalities and injuries, classified by kind of mine and severity of injury, during the year ended Dec. 31, 1934

Kind of mine and severity of injury	Underground											Shaft											
	Fall of rock or ore from roof or wall	Rock or ore while loading at working face	Hand tools	Explosives	Haulage	Falling down chute, mine, raise, or slope	Run of ore from chute	Drilling	Electricity	Machinery	Suction from natural gases	Inrush of water	Stepping on nail	Handling material (other than rock or ore)	Other causes	Total, underground	Falling down shaft	Objects falling down shaft	Breaking of cables	Overwinding	Skip, cage, or bucket	Other causes	Total, shaft
Killed:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15a	15b	16	17	18	19	20	21	
Copper	5	1			1	1											1						1
Gold, silver, and miscellaneous metal	25	2	1	11	1	7	1	1				1				1	7	2	1	1	4		15
Iron	7				1	1	2	1									1						1
Lead and zinc (Mississippi Valley)	2					1																	
Nonmetallic mineral	1				2																		
Total	40	3	1	11	5	9	3	2			1					1	76	9	2	1	4		17
Permanent total:																							
Copper																							
Gold, silver, and miscellaneous metal				1																			
Iron						1																	
Lead and zinc (Mississippi Valley)																							
Nonmetallic mineral																							
Total				1		1																	
Permanent partial:																							
Copper	6		2		1	2	1																
Gold, silver, and miscellaneous metal	18	11	4	10	6	2	2	9	1	5						4	13				4		5
Iron	6		2	3	5	2	2	2		2						2	80				1		
Lead and zinc (Mississippi Valley)			1	2	8	2	1	2		3						1	28				1		
Nonmetallic mineral	3						1	1	1	1											1		3
Total	33	11	10	15	20	4	5	14	2	11					3	19	147				5		8
Temporary:																							
Copper	110	56	83	41	70	13	5	31	17	12				6	25	115	526				4		17
Gold, silver, and miscellaneous metal	822	433	382	41	397	302	151	435	17	62		16	1	83	400	542	4,084	12	26	1	39		104
Iron	54	35	21	2	43	12	15	23	3	17		1			41	39	306	2			5		10

Lead and zinc (Mississippi Valley).....	39	114	13	2	86	13	1	62	4	48	124	512	1	1	1	1	1	2	4
Nonmetallic mineral.....	25	64	35	6	35	11	4	28	7	13	41	278	18	35	1	49	37	3	5
Total.....	1,050	702	540	51	631	351	176	579	102	61	861	5,706	18	35	1	49	37	140	
Total nonfatal:																			
Copper.....	116	56	85	---	71	13	5	31	12	6	119	539	4	6	---	4	3	17	
Gold, silver, and miscellaneous metal.....	840	444	386	52	403	304	162	444	18	83	401	4,165	12	26	1	43	27	109	
Iron.....	60	35	23	5	48	15	17	25	3	1	43	41	335	2	---	5	3	10	
Lead and zinc (Mississippi Valley).....	39	114	14	4	94	13	2	64	7	6	48	125	---	1	---	2	2	7	
Nonmetallic mineral.....	28	64	42	6	35	11	5	29	8	1	13	41	286	1	---	1	3	5	
Total.....	1,083	713	550	67	651	356	181	593	24	17	880	5,855	18	36	1	54	38	148	
Total fatal and nonfatal:																			
Copper.....	121	57	85	---	72	14	5	31	12	6	119	547	5	6	---	4	3	18	
Gold, silver, and miscellaneous metal.....	865	446	387	63	404	311	163	445	18	83	401	555	19	28	2	47	27	124	
Iron.....	67	35	23	5	49	16	19	26	3	1	43	41	347	2	---	5	3	11	
Lead and zinc (Mississippi Valley).....	41	114	14	4	94	13	2	64	7	6	48	125	---	1	---	2	2	7	
Nonmetallic mineral.....	29	64	42	6	37	11	5	29	8	1	13	41	289	1	---	1	3	5	
Total, 1934.....	1,123	716	551	78	656	365	184	595	24	18	881	5,931	27	38	2	58	38	165	
Total, 1933.....	1,789	609	461	72	473	305	135	426	7	10	646	4,471	18	33	---	37	33	122	

TABLE 21.—All mines: Fatalities and injuries, classified by kind of mine and severity of injury, during the year ended Dec. 31, 1934—Contd.

Kind of mine and severity of injury	Surface										Open-cut																	
	Mine cars, mine loco- motives, or aerial trams	22	23	24	25	26	27	28	29	30a	30b	Total surface	Falls or slides of rock or ore	31	32	33	34	35	36	37	38	39	40	41a	41b	Other causes	Total, open-cut	
Killed:																												
Copper.....					2	1	1	2	1		1	7	1	2	1	1											3	
Gold, silver, and miscellaneous metal.....																					1						4	
Iron.....																											77	
Lead and zinc (Mississippi Valley).....																											3	
Nonmetallic mineral.....											1	1	2	1	1										1	1	3	
Total.....					2	1	2	1	1		2	8	3	4	2	1						1			2	15	116	
Permanent total:																												
Copper.....																												
Gold, silver, and miscellaneous metal.....																												
Iron.....																												1
Lead and zinc (Mississippi Valley).....																												1
Nonmetallic mineral.....																												
Total.....																												2
Permanent partial:																												
Copper.....						1	2	2	6	3	1	2	1										1	1			3	
Gold, silver, and miscellaneous metal.....												15	4								2						2	
Iron.....					1				2	1		3	1														102	
Lead and zinc (Mississippi Valley).....					1						2	4															36	
Nonmetallic mineral.....										1	1	2	3														24	
Total.....					3	3	2	2	9	6	3	26	1								2		1	4			191	

Temporary:																						
Copper.....																						
4	1	1	8	2	11	2	6	12	11	58	3	1	9	3	8	3	9	14	3	50	651	
38	2	10	164	24	112	5	132	168	233	888	13	2	4	2	29	3	4	18	36	128	5,204	
1	4	4	9		2	5	13	13	47	13	5	1	6	2	7	1	11	20	31	85	448	
5	1	5	8	11	4	4	10	10	74	74	1	1	6	2	2	1	2	25	30	30	620	
3	14	2	52	9	33	4	48	80	93	344	15	1	6	4	11	1	7	23	45	149	776	
Total.....																						
51	22	18	241	46	162	11	195	280	376	1,411	37	5	25	11	57	5	18	65	115	442	7,699	
Total nonfatal:																						
Copper.....																						
4	1	1	8	2	12	2	6	13	11	60	3	1	10	3	8			10	15	3	53	669
38	2	10	165	24	114	7	138	171	234	903	13	2	4	2	29	3		18	36	10	130	5,307
1	4	4	10		2	5	14	13	51	13	5	1	6	3	7	1		11	23	31	89	485
5	1	5	9	11	4	4	10	10	28	77	1	1	6	2	2			2	25	25	30	644
3	14	2	52	9	33	4	49	87	93	346	15	1	6	0	11	1	7	23	45	84	150	787
Total.....																						
51	22	18	244	46	165	13	204	295	379	1,437	37	5	26	13	57	5	20	66	119	103	452	7,892
Total fatal and nonfatal:																						
Copper.....																						
4	1	1	8	2	12	2	6	13	11	60	3	3	11	3	8			10	15	3	56	681
38	2	10	167	24	115	9	139	171	235	910	14	2	5	2	30	3		18	36	10	134	5,384
1	4	4	10		2	7	14	13	51	13	5	2	6	4	8	1		11	23	31	92	501
5	1	5	9	11	4	4	10	10	28	77	1	1	6	2	2			2	25	26	31	647
3	14	2	52	9	33	4	49	87	94	347	17	2	6	0	11	1	7	23	45	85	154	795
Total, 1934.....																						
51	22	18	246	46	166	15	205	295	381	1,445	40	9	28	14	59	5	21	66	119	105	467	8,008
Total, 1933.....																						
59	15	12	172	25	129	15	102	220	803	1,052	41	11	24	14	55	5	10	49	70	68	375	6,020

TABLE 22.—All mines: Nonfatal-injury rates per million man-hours worked underground and in open-cut mines, by principal causes for important States, during the year ended Dec. 31, 1934

UNDERGROUND

Cause	Minnesota	Alabama	Missouri	Michigan	South Dakota	Alaska	Kansas	Arizona	UNITED STATES	Montana	Nevada	Utah	Colorado	Idaho	California	Oklahoma
Fall of rock or ore from roof or wall	3.72	3.40	4.33	8.19	18.04	3.89	2.02	28.27	16.24	16.09	23.04	29.88	29.47	23.75	25.08	8.85
Rock or ore while loading at working face	2.57	2.26	1.85	3.59	4.13	9.08	26.30	5.62	10.69	10.09	10.33	4.69	6.98	20.26	16.69	40.30
Haulage	2.57	10.19	11.75	2.73	7.14	4.76	18.21	12.84	9.76	13.37	11.62	12.84	10.26	7.92	12.82	19.17
Hand tools	.29	2.64	.62	2.15	1.88	2.69	2.70	7.76	8.24	19.09	10.73	16.30	8.29	10.48	15.30	1.96
Drilling	.29	.38	2.47	3.45	1.60	4.76	10.12	7.49	8.89	8.18	8.34	10.12	13.75	6.29	19.27	16.22
Handling materials (other than rock or ore)	3.14	4.15	2.47	2.87	6.77	-----	2.70	4.28	7.94	4.91	6.35	17.04	12.66	20.02	12.08	20.15
Falling down chute, winze, raise, or scope	.86	-----	1.85	1.44	4.13	.43	1.35	2.67	5.34	2.18	4.77	6.42	5.68	6.75	16.23	2.46
All other causes	6.15	3.39	9.90	11.35	15.78	44.97	14.84	25.67	22.89	18.28	34.96	25.44	37.11	32.13	26.64	41.78
All causes (underground, including shaft)	15.73	26.41	35.24	35.77	59.37	70.48	78.24	89.60	89.99	92.19	110.04	122.73	124.20	127.60	144.11	150.89

OPEN-CUT

Cause	Kentucky	Michigan	Minnesota	Alaska	Utah	Florida	New Mexico	Nevada	Tennessee	UNITED STATES	Arizona	Alabama	California
Handling materials	-----	3.69	2.94	-----	3.44	9.96	5.99	9.06	5.50	7.89	7.64	29.55	24.74
Hand tools	-----	-----	.45	1.26	-----	3.11	5.99	9.09	3.67	4.38	4.78	14.78	12.37
Falls of persons	6.36	-----	1.36	5.05	2.23	1.87	5.99	1.51	-----	3.78	5.73	-----	17.01
Falls or slides of rock or ore	-----	-----	.45	-----	1.15	1.25	3.00	3.03	3.67	2.45	1.91	-----	9.27
Machinery	-----	-----	.23	-----	1.15	.62	-----	-----	-----	1.33	.96	-----	5.41
Haulage	-----	-----	1.36	-----	1.15	.62	-----	1.51	-----	1.72	7.64	-----	4.64
Power shovels	-----	-----	.68	-----	-----	-----	-----	-----	7.33	-----	2.86	-----	2.92
All other causes	-----	3.69	2.26	5.05	4.69	3.78	3.00	1.51	5.50	7.56	3.82	36.12	6.96
All causes (open-cut)	6.36	7.38	9.73	11.36	13.77	21.16	23.96	25.75	27.50	29.97	35.34	80.45	82.72

TABLE 23.—Metal-mine accident data, grouped by mining methods, during the year ended Dec. 31, 1934, for selected companies ¹

Method of mining	Number of mines	Number of States	Average days active	Man-days	Men employed	Man-hours of employment	Number killed	Number injured	Rate per million man-hours	
									Killed	Injured
Open stope, including room- and - pillar and sublevel stoping.....	351	31	222	3,315,621	14,922	26,079,187	21	1,998	0.81	76.61
Shrinkage.....	82	16	244	630,279	2,579	5,200,923	14	658	2.69	126.52
Cut-and-fill.....	116	16	248	1,221,020	4,925	9,668,867	10	958	1.03	99.08
Square-set.....	81	13	256	1,120,916	4,377	8,895,976	11	1,021	1.24	114.77
Block-caving.....	10	6	243	133,777	551	1,088,214	3	103	2.76	94.65
Sublevel caving.....	20	4	223	625,835	2,807	5,006,681	1	92	.20	18.38
Top slicing.....	20	4	222	725,370	3,272	5,808,730	2	95	.34	16.35
Open-cut, with power shovel.....	85	23	212	1,419,402	6,683	11,250,073	4	182	.36	16.18
Open-cut, with power scraper.....	3	1	157	2,515	16	20,120	-----	4	-----	198.81
Open-cut, hand loading only.....	42	18	177	66,369	374	528,773	2	42	3.73	79.43
Total.....	810	-----	229	9,261,104	40,506	73,547,544	68	5,153	.92	70.06

¹ Underground and open-cut only. No reports used when less than 25 men were employed.

TABLE 24.—Placer mines: Men employed, man-days of employment, and number killed and injured during the years ended Dec. 31, 1933 and 1934

	1933				
	Underground	Surface	Dredging	Hydraulic	Total
Men employed.....	1,025	1,001	1,536	1,153	4,715
Man-days.....	175,090	199,645	389,082	190,372	954,189
Average days active.....	171	199	253	165	202
Man-hours of employment.....	1,386,724	1,374,315	2,951,132	1,602,502	7,314,673
Number killed.....	1	-----	-----	-----	1
Number injured.....	128	121	107	55	411
Killed per million man-hours.....	0.72	-----	-----	-----	0.14
Injured per million man-hours.....	92.30	88.04	36.26	34.32	56.19

	1934				
	Underground	Surface	Dredging	Hydraulic	Total
Men employed.....	1,124	1,147	1,669	1,241	5,181
Man-days.....	186,317	213,953	437,282	198,308	1,035,860
Average days active.....	166	187	262	160	200
Man-hours of employment.....	1,481,924	1,717,443	2,516,779	1,582,033	7,298,179
Number killed.....	1	-----	3	2	6
Number injured.....	81	149	120	94	444
Killed per million man-hours.....	0.67	-----	1.19	1.26	0.82
Injured per million man-hours.....	54.66	86.76	47.68	59.42	60.84

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TABLE 25.—Placer mines: Severity of injury during the years ended Dec. 31, 1933 and 1934

	1933					1934						
	Killed	Per- manent total disability	Per- manent partial disability	Temp- orary	Total non- fatal	Grand total	Killed	Per- manent total disability	Per- manent partial disability	Temp- orary	Total non- fatal	Grand total
Underground.....	1	-----	1	127	128	129	1	-----	-----	81	81	82
Surface.....	-----	-----	1	120	121	121	-----	-----	2	147	149	149
Dredging.....	-----	-----	2	105	107	107	3	-----	-----	120	120	123
Hydrauliclicking.....	-----	-----	-----	55	55	55	2	-----	1	93	94	96
Total.....	1	-----	4	407	411	412	6	-----	3	441	444	450

TABLE 26.—Placer mines: Number killed and injured, by causes, during the years ended Dec. 31, 1933 and 1934

Cause	1933		1934	
	Killed	Injured	Killed	Injured
Underground:				
1. Fall of rock or ore from roof or wall.....	-----	24	-----	13
2. Rock or ore while loading at working face.....	-----	14	-----	12
3. Hand tools.....	-----	17	-----	14
4. Explosives.....	-----	-----	1	1
5. Haulage.....	-----	9	-----	6
6. Falling down chute, winze, raise, or stope.....	-----	8	-----	9
7. Run of ore from chute or pocket.....	-----	4	-----	-----
8. Drilling.....	-----	13	-----	9
9. Electricity.....	-----	-----	-----	-----
10. Machinery.....	-----	2	-----	2
11. Mine fires.....	-----	-----	-----	-----
12. Suffocation from natural gases.....	-----	-----	-----	1
13. Inrush of water.....	-----	-----	-----	-----
14. Stepping on nail.....	-----	2	-----	1
15a. Handling materials (other than rock or ore).....	-----	13	-----	6
15b. Other causes.....	-----	19	-----	5
Total, underground.....	-----	125	1	79
Shaft:				
16. Falling down shaft.....	-----	-----	-----	-----
17. Objects falling down shaft.....	-----	-----	-----	-----
18. Breaking of cables.....	-----	-----	-----	-----
19. Overwinding.....	-----	-----	-----	-----
20. Skip, cage, or bucket.....	-----	3	-----	2
21. Other causes.....	1	-----	-----	-----
Total, shaft.....	1	3	-----	2
Surface:				
22. Mine cars, mine locomotives, gravity or aerial trams.....	-----	2	-----	5
23. Railway cars and locomotives.....	-----	-----	-----	-----
24. Run or fall of ore in or from ore bins.....	-----	1	-----	-----
25. Falls of persons.....	-----	24	-----	28
26. Stepping on nail.....	-----	3	-----	7
27. Hand tools.....	-----	17	-----	29
28. Electricity.....	-----	4	-----	1
29. Machinery.....	-----	12	-----	24
30a. Handling materials.....	-----	24	-----	20
30b. Other causes.....	-----	34	-----	35
Total, surface.....	-----	121	-----	149
Dredging:				
1. Machinery.....	-----	13	1	18
2. Electricity.....	-----	4	1	2
3. Boiler explosions or bursting steam pipes.....	-----	-----	-----	-----
4. Falls of persons.....	-----	19	-----	29
5. Hand tools.....	-----	23	1	16
6a. Handling materials.....	-----	19	-----	23
6b. Other causes.....	-----	29	-----	32
Total, dredging.....	-----	107	3	120

TABLE 26.—Placer mines: Number killed and injured, by causes, during the years ended Dec. 31, 1933 and 1934—Continued

Cause	1933		1934	
	Killed	Injured	Killed	Injured
Hydrauliclicking:				
7. Cave of bank.....		4	1	8
8. Explosives.....				2
9. Hydraulic giants.....		3	1	2
10. Falls of persons.....		16		24
11. Rock while handling.....				
12. Hand tools.....		2		10
13. Machinery.....				6
14a. Handling materials (other than rock or ore).....		16		31
14b. Other causes.....		14		13
Total, hydrauliclicking.....		55	2	94
Grand total.....	1	411	6	444

TABLE 27.—All mines: Number of fatalities and injuries and fatality and injury rates per thousand 300-day workers, classified by severity of injury, 1925-34

NUMBER OF ACCIDENTS

Severity of injury	Total, 1925-29	1930	1931	1932	1933	1934	Total, 1930-34
Fatal.....	1,776	271	158	107	95	116	747
Permanent total ¹	93	22	15	10	5	2	54
Permanent partial ²	2,732	481	292	167	127	191	1,258
Temporary ³	133,365	15,091	8,402	4,837	5,793	7,699	41,822
Total.....	137,966	15,865	8,867	5,121	6,020	8,008	43,881

RATES PER THOUSAND 300-DAY WORKERS

Fatal.....	3.03	2.92	2.53	2.89	2.45	2.36	2.67
Permanent total ¹.....	.16	.24	.24	.27	.13	.04	.19
Permanent partial ²	4.66	5.18	4.68	4.52	3.27	3.89	4.49
Temporary ³	227.60	162.44	134.64	130.79	149.28	156.88	149.27
Total.....	235.45	170.78	142.09	138.47	155.13	163.17	156.62
Average number of 300-day workers per year.....	585,963	92,900	62,405	36,984	38,807	49,077	280,173

¹ Permanent total disability: Loss of both legs or arms, 1 leg and 1 arm, total loss of eyesight, paralysis, or other condition permanently incapacitating workman from doing any work of a gainful occupation.

² Permanent partial disability: Loss of 1 foot, leg, arm, hand, or eye, 1 or more fingers, 1 or more toes, any dislocation where ligaments are severed, or any other injury known in surgery to be permanent partial disability.

³ Disability for more than remainder of day of accident.

TABLE 28.—Metal and nonmetal mines, man-hours of employment, and accident rates, by States and counties, in 1934

State and county	Man-hours of employment			Number killed			Number injured			Rate per million man-hours									
				Number killed			Number injured			Killed			Injured						
	Under-ground	Surface	Total	Under-ground	Open-cut	Total	Under-ground	Open-cut	Total	Under-ground	Open-cut	Total	Under-ground	Open-cut	Total				
Alaska.....	2, 312, 716	792, 000	5, 630, 156	5			163	0	123	206			2.16		.89	70.48	48.70	11.36	52.40
Arizona:																			
Cochise.....	1, 212, 577	8, 410	685, 134				42		10	52			1.65		1.05	34.64		14.60	27.28
Gila.....	1, 169, 424	1, 760	41, 000	2			14		14	14						87.82		60.24	60.24
Mohave.....	222, 860	24, 632	85, 188				85		15	100						387.41		176.12	800.61
Pinal.....	792, 267	122, 504	312, 660	1			22		2	22			1.26		1.09	27.77		3.16	25.14
Santa Cruz.....	224, 976	28, 016	262, 992				20		2	22						85.19		17.39	83.65
Yavapai.....	1, 025, 548	420, 759	2, 002, 027				141	6	21	168						137.49	10.80	49.91	83.91
Yuma.....	62, 713	36, 456	99, 169				9		1	10						143.51		27.43	102.84
All other ¹	28, 620	456, 337	496, 960	4			2	31		33						69.88	67.92		66.90
Total.....	3, 738, 985	1, 431, 049	6, 216, 993	3	4	7	335	37	50	422			.80		1.13	89.60	35.34	34.94	67.88
California:																			
Alameda.....	1, 037, 816	22, 312	317, 750	1			190	1	14	205			.96		3.15	183.08	44.82	44.06	148.78
Butte.....	5, 640	86, 624	293, 872				26		7	33			4.96			128.96		80.81	112.20
Calaveras.....	695, 476	10, 120	254, 792	2			112		20	133			2.83			163.04	98.51	78.50	132.49
El Dorado.....	880, 033	13, 750	284, 305	5			134	3	19	154			5.68		4.32	152.27	72.73	71.89	132.08
Inyo.....	265, 700	31, 176	135, 742				40		15	55						110.60	127.13		127.13
Kern.....	590, 654	480	173, 156	1			64		6	68			1.69		1.31	108.35		23.10	86.99
Lake.....	43, 456	30, 240	25, 940				6		5	11						207.54	33.07	192.75	150.65
Los Angeles.....	197, 882	86, 962	23, 080	1			10	4	1	15			5.05		3.16	69.53	48.24	47.74	63.37
Mariposa.....	345, 686	20, 728	138, 644				23	1	8	32						64.18		57.74	63.92
Mono.....	46, 744	2, 400	13, 928				3		1	4						64.18		71.80	69.42
Nevada.....	519, 211	220, 350	857, 916				649	26	49	726			2.27		1.74	184.49	127.07	17.12	157.61
Placer.....	286, 706	51, 972	187, 816				47	8	12	59						163.08	153.03	101.16	143.85
Plumas.....	19, 926	158, 739	380, 146				19		1	20						94.90	60.19	75.60	84.98
Riverside.....	83, 704	4, 320	59, 712				18		38	56						58.57		48.45	60.92
Sacramento.....	19, 696		784, 743				1		1	2			3.36		1.91	145.03	22.40	34.69	122.37
San Bernardino.....	297, 238		137, 037				44	2	1	46						62.27	58.14	136.69	52.77
San Diego.....	31, 896	17, 200	27, 280				2	1	2	5						60.20		136.08	54.42
San Luis Obispo.....	49, 776	24, 600	12, 604				3		1	4						172.30	53.09	126.98	131.16
Shasta.....	145, 097	75, 343	286, 683				25	4	1	30						69.34	67.88	44.32	62.46
Sierra.....	676, 725	14, 732	287, 680				47		12	60			1.48		1.04	69.34	67.88	44.32	62.46
Siskiyou.....	219, 189	161, 269	538, 410				8	14	2	29						36.60	86.81	44.32	56.96
Stanislaus.....	127, 953	90, 284	213, 237				16		2	18						126.00		22.10	82.46

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Trinity.....	137,512	179,036	182,749	499,297	1	1	13	32	23	68	2.99	2.29	94,541	178,741	125,861	136.19
Tuolumne.....	334,888	1,332	100,484	438,734	1	1	18	18	9	27	2.99	2.29	53,75	89,57	61.82	
Yuba.....	6,480	515,268	622,526	692,756	1	1	19	19	32	51	1.61	1.61	188,46	62,10	81.92	
All other 2.....	399,307	100,254	191,406	690,967	1	1	33	7	12	5.22	5.22	106,69	36,79	62,69	75.25	
Total.....	10,846,252	1,293,590	5,234,580	17,374,422	23	3	1,563	107	340	2,010	2.12	1.50	144,11	82,72	64,95	115.69
Colorado:																
Boulder.....	298,195	2,400	39,808	340,403	1	1	54		3	57	3.35	5.88	181,09		75,36	167.45
Clear Creek.....	401,610	5,024	44,674	211,230	2	2	35		3	38	12.38	9.47	216,66		67,15	179.89
Eagle.....	80,160	15,210	106,629	508,230	1	1	23		2	18	2.49	1.97	57,27		9,38	47.22
Gilpin.....	67,708		28,962	124,322			14	2	1	2			174,65	131.49	69,06	144.77
Gunnison.....	645,848		116,592	762,434	3	3	71		1	72	4.65	3.93	109,93		8,58	94.43
Lake.....	120,816		15,368	136,184			12		2	10			66,22		130,14	73.43
Mineral.....	95,808		13,048	108,856			12		2	12			125,25		110,24	
Ouray.....	650,320	8,336	134,072	702,738	1	1	130	2	23	165	1.64	119.96	199,90	239.92	171.55	195.53
Park.....	396,858	1,600	106,962	503,818	1	1	29		2	31	2.62	1.98	73,07		18,70	61.53
San Juan.....	133,398		16,320	152,718	1	1	20		7	27	7.50	6.61	149,93		428.92	178.43
San Miguel.....	28,956		174,744	222,698	1	1	13	4	13	17	34.54	4.30	105,22		74,39	73.08
Summit.....	1,187,931	13,720	484,721	1,686,372	3	1	125		11	136	2.53	2.06	138,27		22,69	80.65
Teller.....	312,300	47,522	170,242	536,064	1	1	40		35	75	3.20	1.87	128,08		205.59	141.49
All other 3.....	4,681,449	122,740	1,467,534	6,171,723	15	2	569	8	103	680	3.27	8.15	124,20	65.18	70,19	110.18
Total.....	106,943	5,520	87,392	149,855			4		6	10			37,40		160,46	66.73
Boise.....	59,776	1,800	12,464	74,040			2		2	2			33,46		27,01	
Bonner.....	54,040	2,220	14,980	71,240			47		9	56			141,34		123,00	137.83
Custer.....	332,532	6,000	73,171	403,203			3	2	17	22	10.46	4.65	15,68	65,29	81,62	51.14
Elmore.....	191,275	30,632	208,292	433,201	2	2	5	1	7	7			60,82	107.99	90,19	68.26
Idaho.....	82,208	9,800	31,088	102,556			5	1	1	1			28,52		18,27	
Lemhi.....	70,128		38,512	108,240			458		38	497	1.67	1.40	152,72	81.12	67,73	139.12
Owyhee.....	2,990,011	12,328	563,020	3,572,269	5	5	11		12	12			60,00		16,75	49.21
Shoshone.....	183,336		59,716	243,852			16		4	20			74,32		22,23	49.21
Valley.....	215,280	11,294	173,900	406,430			8	4	76	628	1.63	13.29	127,60	53.17	63,52	112.82
All other 4.....	4,294,630	75,224	1,196,561	5,566,315	7	1	548	4	4	4			20,08	10.99	3,77	29.87
Total.....	1,925,949	91,027	1,060,039	3,077,015			56	1	4	61			42,83		4,75	29.87
Michigan:																
Geogette.....	837,966	64,137	721,809	2,863,466	3	3	38		4	43	1.58	1.05	55,05	8.62	6,89	34.96
Iron.....	2,037,609	115,959	1,451,230	3,746,822	3	3	120	1	10	121			35,77	7.38	5,43	24.83
Marquette.....	2,179,653	271,123	3,684,479	10,915,979	6	6	249	2	20	271						
All other 5.....	6,960,377															
Total.....																

See footnotes at end of table.

TABLE 29.—Comparative fatal and nonfatal accident data for metal and nonmetal mines (other than coal mines) in the United States in 1934

	Mines that had no fatal accidents	Mines that had fatal accidents	All metal and non-metal mines
Number of mines.....	3,504	94	3,598
Number of employees.....	51,949	14,696	66,645
Proportion of total employees..... percent.....	78.0	22.0	100.0
Number of employees per mine.....	15	156	19
Man-days of employment.....	10,938,167	3,785,048	14,723,215
Average worked per man..... days.....	211	258	221
Man-hours of employment.....	85,879,514	30,266,886	116,146,400
Average worked per man..... hours.....	1,653	2,060	1,743
Number of men killed.....	116	116	116
Number of men injured.....	5,200	2,692	7,892
Death rate per million man-hours.....	3.83	3.83	1.00
Injury rate per million man-hours.....	60.55	88.94	67.95

TABLE 30.—Metal and nonmetal mines (other than coal mines): Number of men employed in 1934

	At mines that had fatalities	At mines that had no fatalities	Employees represented by mines that had no fatalities (percent)		At mines that had fatalities	At mines that had no fatalities	Employees represented by mines that had no fatalities (percent)
Georgia.....		247	100.0	Tennessee.....	236	1,278	84.4
Illinois.....		270	100.0	California.....	1,627	8,449	83.9
Iowa.....		103	100.0	Idaho.....	564	2,787	83.2
North Carolina.....		209	100.0	Alaska.....	635	2,677	80.8
Oregon.....		324	100.0	Arkansas.....	64	267	80.7
Virginia.....		741	100.0	United States.....	14,696	51,949	78.4
Washington.....		463	100.0	Other States ¹	354	868	71.0
Wisconsin.....		557	100.0	Alabama.....	839	2,004	70.5
Wyoming.....		227	100.0	New Jersey.....	274	634	69.8
Missouri.....	8	1,274	99.4	Nevada.....	699	1,469	67.8
Florida.....	10	1,310	99.2	Michigan.....	2,144	4,407	67.3
Oklahoma.....	60	1,591	96.4	Colorado.....	1,029	2,051	66.6
Texas.....	95	1,456	93.9	New York.....	448	880	66.3
Kansas.....	88	1,141	92.8	Arizona.....	1,528	1,885	55.2
Montana.....	279	2,799	90.9	New Mexico.....	731	817	52.8
Utah.....	252	2,508	90.9	South Dakota.....	1,967	148	7.0
Minnesota.....	652	5,536	89.5				
Kentucky.....	113	632	84.8				

¹ Includes Connecticut, Indiana, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 31.—Metal and nonmetal mines (other than coal mines): Number of man-hours worked in 1934

	At mines that had fatalities	At mines that had no fatalities	Man-hours represented by mines that had no fatalities (percent)		At mines that had fatalities	At mines that had no fatalities	Man-hours represented by mines that had no fatalities (percent)
Georgia.....		364, 053	100. 0	Tennessee.....	418, 999	2, 394, 368	85. 1
Illinois.....		416, 511	100. 0	New Jersey.....	197, 888	1, 074, 564	84. 4
Iowa.....		91, 694	100. 0	Kentucky.....	139, 228	686, 166	83. 1
North Carolina.....		357, 050	100. 0	Idaho.....	954, 522	4, 611, 793	82. 9
Oregon.....		437, 197	100. 0	California.....	4, 080, 671	13, 293, 751	76. 5
Virginia.....		1, 175, 391	100. 0				
Washington.....		545, 161	100. 0	United States....	30, 266, 886	85, 879, 514	73. 9
Wisconsin.....		1, 149, 492	100. 0				
Wyoming.....		191, 596	100. 0	New York.....	549, 117	1, 499, 461	73. 2
Missouri.....	7, 680	1, 854, 034	99. 6	Nevada.....	1, 141, 950	2, 749, 184	70. 7
Florida.....	23, 500	2, 609, 285	98. 9	Other States ¹	820, 276	1, 899, 859	69. 8
Oklahoma.....	79, 312	2, 323, 106	96. 7	Alaska.....	1, 836, 284	3, 793, 872	67. 4
Texas.....	199, 500	3, 492, 684	94. 6	Alabama.....	1, 505, 979	2, 955, 468	66. 2
Kansas.....	134, 768	1, 676, 424	92. 6	Arkansas.....	153, 600	276, 415	64. 3
Montana.....	478, 492	3, 996, 684	89. 3	Michigan.....	4, 034, 934	6, 881, 045	63. 0
Utah.....	680, 384	5, 534, 984	89. 1	Colorado.....	2, 600, 641	3, 571, 082	57. 9
Minnesota.....	1, 179, 415	9, 018, 430	88. 4	Arizona.....	2, 938, 743	3, 278, 150	52. 7
				New Mexico.....	1, 310, 250	1, 341, 124	50. 6
				South Dakota.....	4, 795, 753	339, 436	6. 6

¹ Includes Connecticut, Indiana, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, South Carolina, and Vermont.

TABLE 32.—Number of men employed, man-days of employment, and number of men killed and injured at all mines (except coal mines) in the United States, 1911-34

Year	Average days active	Men employed		Total shifts	Number killed		Number injured	
		Actual number	Equivalent in 300-day workers (calculated)		Total	Per thousand 300-day workers (calculated)	Total	Per thousand 300-day workers (calculated)
1911.....	282	165, 979	156, 088	46, 826, 573	695	4. 45	26, 577	170. 27
1912.....	287	168, 550	161, 059	48, 317, 800	661	4. 10	30, 734	190. 82
1913.....	288	191, 276	183, 594	55, 077, 855	683	3. 72	32, 971	179. 59
1914.....	271	158, 115	142, 620	42, 785, 840	559	3. 92	30, 216	211. 87
1915.....	280	152, 118	141, 997	42, 599, 015	553	3. 89	35, 295	248. 56
Average for 5 years..	282	167, 208	157, 072	47, 121, 417	630	4. 01	31, 159	198. 37
1916.....	282	204, 685	192, 455	57, 736, 425	697	3. 62	48, 237	250. 64
1917.....	287	200, 579	192, 085	57, 625, 811	852	4. 44	46, 286	240. 97
1918.....	297	182, 606	181, 006	54, 301, 748	646	3. 57	42, 915	237. 09
1919.....	279	145, 262	134, 871	40, 461, 350	468	3. 47	31, 506	233. 60
1920.....	296	136, 583	134, 540	40, 361, 893	425	3. 16	32, 562	242. 02
Average for 5 years..	288	173, 943	166, 991	50, 097, 445	618	3. 70	40, 301	241. 34
Average for 10 years.	285	170, 576	162, 031	48, 609, 431	624	3. 85	35, 730	220. 51
1921.....	238	93, 929	74, 509	22, 352, 702	230	3. 09	18, 604	249. 69
1922.....	276	105, 697	97, 138	29, 141, 293	344	3. 54	26, 080	268. 48
1923.....	297	123, 279	121, 866	36, 559, 805	367	3. 01	33, 563	275. 41
1924.....	290	123, 128	119, 113	35, 734, 008	418	3. 51	33, 118	278. 04
1925.....	293	126, 713	123, 908	37, 172, 359	371	2. 99	35, 132	283. 53
Average for 5 years..	281	114, 549	107, 307	32, 192, 033	346	3. 23	29, 299	273. 04

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TABLE 32.—Number of men employed, man-days of employment, and number of men killed and injured at all mines (except coal mines) in the United States, 1911-34—Continued

Year	Average days active	Men employed		Total shifts	Number killed		Number injured	
		Actual number	Equivalent in 300-day workers (calculated)		Total	Per thousand 300-day workers (calculated)	Total	Per thousand 300-day workers (calculated)
Average for 15 years.	284	151,933	143,790	43,136,965	531	3.69	33,586	233.58
1926.....	291	127,823	123,870	37,160,978	430	3.47	30,350	245.01
1927.....	284	119,699	113,447	34,033,963	352	3.10	25,133	221.54
1928.....	288	113,866	109,345	32,803,610	273	2.50	22,483	205.61
1929.....	292	118,735	115,594	34,618,120	350	3.03	23,092	200.11
1930.....	270	103,233	92,900	27,869,982	271	2.92	15,594	167.86
Average for 5 years...	285	116,671	110,991	33,297,330	335	3.02	23,330	210.20
Average for 20 years.	284	143,093	135,590	40,677,056	482	3.55	31,022	228.79
1931.....	231	80,940	62,405	18,721,486	158	2.53	8,709	139.56
1932.....	208	53,288	36,984	11,095,167	107	2.89	5,014	135.57
1933.....	204	57,016	38,807	11,642,113	95	2.45	5,925	152.68
1934.....	221	66,645	49,077	14,723,215	116	2.36	7,892	160.81

TABLE 33.—United States metal and nonmetallic mineral mines: Accident rates per thousand 300-day workers, 1911-34

Year	Copper		Gold, silver, miscellaneous		Iron		Lead and zinc (Mississippi Valley)		Nonmetallic mineral		Total	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
1911.....	5.18	225.3	4.28	80.3	4.64	252.3	4.03	139.4	2.01	34.0	4.45	170.3
1912.....	4.53	258.4	4.32	93.0	3.96	241.8	4.28	158.3	1.66	66.4	4.09	190.1
1913.....	4.08	230.8	3.83	70.4	3.29	268.3	3.90	133.5	3.02	84.9	3.72	179.6
1914.....	3.85	312.2	4.06	126.9	3.78	224.1	4.32	189.0	3.73	99.9	3.92	211.9
1915.....	3.72	322.0	4.79	201.5	2.88	233.5	5.37	238.3	2.43	107.8	3.89	248.6
1916.....	3.64	319.6	4.05	190.8	3.41	240.2	3.14	263.1	3.00	144.7	3.62	250.6
1917.....	5.88	313.4	4.03	172.5	3.54	227.5	4.09	273.0	2.48	123.6	4.44	241.0
1918.....	3.45	322.1	4.27	185.2	3.45	185.5	3.58	319.5	1.67	104.7	3.57	237.1
1919.....	3.54	309.6	4.41	191.3	3.09	202.4	4.13	292.3	1.65	139.3	3.47	233.6
1920.....	3.43	323.2	4.20	204.8	2.34	200.5	3.27	328.0	2.89	161.9	3.16	242.0
1921.....	3.70	317.5	3.29	225.5	3.04	210.9	2.58	379.7	1.98	215.5	3.09	249.7
1922.....	3.00	320.8	5.35	260.3	3.00	177.4	2.64	464.2	2.39	247.5	3.54	268.5
1923.....	3.11	349.1	3.93	298.9	2.38	150.2	2.73	495.7	2.67	212.5	3.01	275.4
1924.....	3.55	347.8	4.99	297.8	2.95	151.0	2.76	464.2	1.94	178.7	3.51	278.0
1925.....	2.94	350.6	3.83	307.4	2.54	159.4	3.32	468.1	1.71	165.4	2.99	283.5
1926.....	3.45	288.3	3.27	299.5	4.23	133.9	3.05	304.2	2.62	190.7	3.47	245.0
1927.....	3.46	261.2	3.91	279.8	2.45	114.6	2.64	297.7	2.19	171.2	3.10	221.5
1928.....	3.03	221.0	2.60	268.7	2.16	98.1	1.62	295.7	2.13	108.6	2.50	205.6
1929.....	3.03	223.8	3.66	269.4	2.98	89.6	2.08	238.3	2.29	168.1	3.03	200.1
1930.....	2.76	193.5	4.49	239.7	2.68	81.4	1.63	176.6	.75	138.3	2.92	167.9
1931.....	3.01	152.5	2.88	190.0	1.91	52.7	2.56	176.6	1.63	124.3	2.53	139.6
1932.....	3.01	112.5	3.66	179.3	1.18	44.6	3.95	164.8	1.56	117.6	2.89	135.6
1933.....	2.49	130.3	3.20	204.0	1.82	50.6	.85	147.6	1.39	129.3	2.45	152.7
1934.....	1.96	109.0	3.33	229.5	1.59	48.3	.91	196.1	1.23	121.3	2.36	160.8

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