

**DEPARTMENT OF COMMERCE**  
-----  
**UNITED STATES BUREAU OF MINES**  
**SCOTT TURNER, DIRECTOR**  
-----

**REPORT OF INVESTIGATIONS**

**COAL-MINE FATALITIES IN JANUARY, 1931**



**BY**

**W. W. ADAMS AND L. CHENOWETH**



REPORT OF INVESTIGATIONS  
DEPARTMENT OF COMMERCE - BUREAU OF MINES

COAL-MINE FATALITIES IN JANUARY, 1931<sup>1/</sup>

By W. W. Adams<sup>2/</sup> and L. Chenoweth<sup>3/</sup>

Accidents in the coal mines of the United States during the month of January, 1931, caused the loss of 174 lives, according to information received from State mine inspectors by the United States Bureau of Mines, Department of Commerce. This was a reduction of 56 deaths from the 230 reported in January, 1930, but is an increase of 48 over the fatalities which occurred in December, 1930. Production of coal in January, 1931, was 44,699,000 tons. This was a decrease both from the output of the preceding month and from that of January, a year ago. The death rate<sup>4/</sup> per million tons of coal mined in January, 1931, was 3.89, a decrease of about four per cent from January, 1930, but an increase of more than 40 per cent over December, 1930.

Considering bituminous mines alone, the January fatality rate was slightly lower than for January a year ago, but higher than for December, 1930, the rate being 3.48 per million tons, as compared with 3.60 for last January and 2.42 for December. There were 134 men killed in January of the present year, which was 45 less than in January a year ago, and 38 more than in December, 1930. The production of bituminous coal for January was 38,542,000 tons; for the same month a year ago it was 49,778,000 tons; and 39,716,000 tons for December, 1930.

In the anthracite mines of Pennsylvania 40 men lost their lives during the month; there was a production of 6,157,000 tons, thus resulting in a death rate of 6.50. This rate was lower than that of January a year ago which was 7.25; the figures also represent a reduction in the number of men killed and in the production of coal, there having been 51 fatalities and 7,038,000 tons recorded for January last year. Similar records for December, 1930 showed 30 fatalities, 6,086,000 tons of coal produced and a rate of 4.93 per million tons.

Three major disasters--that is disasters in each of which five or more lives were lost--occurred during January of the present year. These were

---

1/ The Bureau of Mines will welcome reprinting of this paper, provided the following footnote acknowledgment is used: "Reprinted from U. S. Bureau of Mines Report of Investigations 3090."

2/ Chief statistician, demographical division, U. S. Bureau of Mines.

3/ Senior clerk, demographical division, U. S. Bureau of Mines.

4/ Death rates in this paper are based on tonnage rather than on number of men employed, as the latter item is not reported monthly to the Bureau of Mines.

explosions, one at Midvale, Ohio, on January 3, which caused 5 deaths; one at Beckley, West Virginia, on January 6, which resulted in the loss of 8 lives; and one at Dugger, Indiana, on January 28, which resulted in 28 fatalities. During the same month, 1930, two major disasters occurred, which resulted in 15 deaths. Based exclusively on these major disasters the fatality rates per million tons of coal mined were 0.917 for January of the present year and 0.264 for the same month last year. The major disasters in January, 1931, occurred at the rate of 6.71 separate disasters (as distinguished from the number of deaths resulting from the disasters) for each hundred-million tons of coal produced, as compared with 3.52 separate disasters per hundred-million tons for the corresponding month last year.

Comparing the accident record for January, 1931, with that for the same month of 1930, a reduction is noted for falls of roof and coal, haulage, explosives, and electricity. The increased rate for gas or dust explosions is due to the major disasters which occurred in January of the present year, as the rate for local or non-major explosions was reduced. The comparative rates are as follows:

Cause	Year <u>1929</u>	Year <u>1930</u>	January <u>1930</u>	January <u>1931</u>
All causes	<u>3.592</u>	<u>3.790</u>	<u>4.048</u>	<u>3.893</u>
Falls of roof and coal	1.941	2.008	2.235	1.835
Haulage .....	.678	.570	.704	.537
Gas or dust explosions:				
Local explosions	.082	.115	.088	.067
Major explosions	.238	.402	.264	.917
Explosives	.145	.147	.194	.045
Electricity .....	.133	.143	.141	.067
Miscellaneous	.375	.405	.422	.425

Tables 1 to 4 present a detailed statistical comparison of the number and causes of accidents and the corresponding death rates in January, 1931, with similar figures for earlier periods. Table 5 gives a list of major disasters in coal mines in the United States during the year 1930 and during January, 1931.

TABLE 1 - NUMBER OF DEATHS, BY CAUSES OF ACCIDENTS,  
AT ALL COAL MINES IN THE UNITED STATES

(Includes both anthracite and bituminous coal)

Cause	1929	1930	1930	1931
	Year	Year	January	January
Falls of Roof & Coal .....	1,182	1,067	127	82
At face .....	872	754	89	64
In room .....	172	157	18	10
On entry .....	133	144	20	8
On slope .....	5	12	-	-
Haulage .....	413	303	40	24
Switching and spragging .....	11	4	1	1
Coupling .....	21	20	2	1
Falling from trips .....	16	11	2	-
Run over .....	169	124	16	8
Caught between car and rib .....	108	68	11	8
Caught between car and roof .....	28	18	1	-
Runaway cars .....	38	38	4	4
Miscellaneous .....	22	20	3	2
Gas or Dust Explosions .....	195	275	20	44
Open flame lamp .....	)			
Matches or smoking .....	) 83	37	3	28
Defective safety lamp .....	5	4	-	-
Electric arc .....	63	118	7	-
Blasting .....	7	38	-	5
Miscellaneous .....	37	78	10	11
Explosives .....	88	78	11	2
Transportation .....	4	4	-	-
Charging .....	4	2	-	-
Suffocation .....	2	2	-	-
Drilling into old holes .....	8	12	3	-
Striking in loose rock .....	1	2	2	-
Thawing .....	-	-	-	-
Caps & detonators .....	2	3	-	-
Unguarded shots .....	4	8	1	-
Returned too soon .....	10	7	-	-
Premature shot .....	24	24	2	2
Sparks from lamp, etc. ....	1	3	2	-
Delayed shots .....	4	2	-	-
Shot breaking through rib .....	5	5	-	-
Miscellaneous .....	19	4	1	-
Electricity .....	81	76	8	3
Direct contact with trolley wire ..	42	39	5	3
Tools striking trolley wire .....	2	2	-	-
Contact with mining machine .....	7	9	1	-
Contact with machine feed wire ....	6	8	1	-
Contact with haulage motor .....	1	1	-	-
Miscellaneous .....	23	17	1	-
Miscellaneous .....	228	215	24	19
Total .....	2,187	2,014	230	174

TABLE 2 - DEATH RATES, BY CAUSES OF ACCIDENTS, PER MILLION TONS OF COAL  
PRODUCED AT ALL COAL MINES IN THE UNITED STATES  
(Includes both anthracite and bituminous coal)

Cause	1929	1930	1930	1931
	Year	Year	January	January
Falls of roof & coal .....	1.941	2.008	2.235	1.835
At face .....	1.432	1.419	1.566	1.432
In room .....	.283	.295	.317	.224
On entry .....	.218	.271	.352	.179
On slope .....	.008	.023	..	..
Haulage .....	.678	.570	.704	.537
Switching and spragging .....	.018	.007	.018	.022
Coupling .....	.035	.038	.035	.022
Falling from trips .....	.026	.021	.035	..
Run over .....	.279	.233	.281	.179
Caught between car and rib .....	.177	.128	.194	.179
Caught between car and roof .....	.046	.034	.018	..
Runaway cars .....	.062	.071	.070	.090
Miscellaneous .....	.036	.038	.053	.045
Gas or Dust Explosions .....	.320	.517	.352	.984
Open flame lamp .....	) .136	) .070	) .053	.626
Matches or smoking .....	)	)	)	..
Defective safety lamp .....	.008	.007	..	..
Electric arc .....	.104	.222	.123	..
Blasting .....	.011	.071	..	.112
Miscellaneous .....	.061	.147	.176	.246
Explosives .....	.145	.147	.194	.045
Transportation .....	.007	.007	..	..
Charging .....	.007	.004	..	..
Suffocation .....	.003	.004	..	..
Drilling into old holes .....	.013	.023	.053	..
Striking in loose rock .....	.002	.004	.035	..
Thawing .....	..	..	..	..
Caps & Detonators .....	.003	.006	..	..
Unguarded shots .....	.007	.015	.018	..
Returned too soon .....	.016	.013	..	..
Premature shot .....	.039	.045	.035	.045
Sparks from lamp, etc. ....	.002	.006	.035	..
Delayed shots .....	.007	.004	..	..
Shot breaking through rib .....	.008	.009	..	..
Miscellaneous .....	.031	.007	.018	..
Electricity .....	.133	.143	.141	.067
Direct contact with trolley wire..	.069	.073	.088	.067
Tools striking trolley wire .....	.003	.004	..	..
Contact with mining machine .....	.011	.017	.018	..
Contact with machine feed wire ...	.010	.015	.018	..
Contact with haulage motor .....	.002	.002	..	..
Miscellaneous .....	.038	.032	.018	..
Miscellaneous .....	.375	.405	.422	.425
Total .....	3.592	3.790	4.048	3.893

TABLE 3 - COAL-MINE FATALITIES IN THE U. S. IN JANUARY, 1931, BY CAUSES AND STATES

CAUSE	Ala	Alas	Ark	Col	Ill	Ind	Ia	Kan	Ky	Md	Mch	Mo	Mnt	NMx	NDk	O	Ok	Pa bit	Tenn	Tex	Ut	Va	Wsh	WVa	Wyo	TOTAL FATALITIES	Pa anti	GRAND TOTAL	
<u>UNDERGROUND</u>																													
Falls of roof .....	1	-	-	-	6	2	1	-	3	1	-	2	-	-	-	3	-	6	2	-	-	1	-	15	1	44	19	63	
Falls of side .....	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	7	-	12	7	19	
Haulage .....	-	-	-	2	1	1	-	-	1	-	-	-	-	-	-	-	-	4	1	-	2	-	-	9	-	21	3	24	
Gas or dust explosions .....	-	-	-	-	-	28	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	8	-	41	3	44	
Explosives .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
Suffocated by mine gases .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Electricity .....	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	-	3	
Animals .....	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	
Mining machines .....	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	3	-	3	
Mine fires .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other causes .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	4	5	
Total .....	1	-	-	4	9	31	1	-	5	1	-	2	-	-	-	8	-	15	3	-	2	1	-	42	1	126	38	164	
<u>SHAFT</u>																													
Persons falling .....	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	1	3
Objects falling .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	1	
Cages, skips .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other causes .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total .....	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	3	1	4	
<u>SURFACE</u>																													
Mine cars .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	2	
Electricity .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Machinery .....	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	2	
Boiler explosions .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Railway cars .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other causes .....	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	2	
Total .....	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	5	1	6	
GRAND TOTAL, JANUARY, 1931..	2	0	0	4	9	31	1	0	6	1	0	3	0	0	0	9	0	17	3	0	2	1	1	43	1	334	40	174	
GRAND TOTAL, JANUARY, 1930..	14	0	0	7	10	3	3	3	23	1	0	1	0	1	0	7	3	33	1	0	7	8	1	49	4	179	51	230	





TABLE 4 - AVERAGE NUMBER OF MEN KILLED PER MILLION TONS OF COAL PRODUCED IN THE U. S. IN JANUARY, 1931, AND EARLIER PERIODS

Cause of accident	Per cent of total 1921 - 1930	Death rates per million short tons						
		Average for 10 years 1921-1930	Year 1929	Year 1930	Average for January 10 years 1921-1930	1930		1931 Jan.
						Jan.	Dec.	
Bituminous Mines								
1. Falls of roof and coal .....	49.72	1.756	1.724	1.820	1.738	1.969	1.435	1.453
2. Underground haulage .....	17.58	.621	.651	.574	.639	.703	.479	.545
3. Explosions of gas or coal dust:								
Local explosions .....	2.24	.079	.043	.052	.111	.080	--	--
Major explosions .....	13.58	.479	.271	.464	.564	.301	.126	1.063
4. Explosives .....	2.84	.100	.084	.069	.111	.121	.050	--
5. Electricity .....	4.43	.157	.140	.149	.126	.141	.101	.078
6. Mining machines .....	1.43	.051	.052	.050	.061	.060	.076	.078
7. Other causes underground .....	2.33	.082	.054	.080	.061	.141	.050	.052
8. All causes underground .....	94.15	3.325	3.019	3.258	3.411	3.516	2.317	3.269
9. All shaft accidents .....	1.33	.047	.032	.035	.036	.020	.050	.078
10. All accidents on surface .....	4.52	.160	.136	.117	.138	.060	.050	.130
11. All accidents .....	100.00	3.532	3.187	3.410	3.585	3.596	2.417	3.477
Anthracite Mines								
1. Falls of roof and coal .....	47.16	2.787	3.522	3.252	2.917	4.120	2.136	4.223
2. Underground haulage .....	12.58	.744	.880	.545	.858	.711	.821	.487
3. Explosions of gas:								
Local explosions .....	7.24	.428	.366	.530	.406	.142	--	.487
Major explosions .....	1.84	.109	--	--	--	--	--	--
4. Explosives .....	10.85	.641	.582	.659	.639	.711	.986	.325
5. Electricity .....	1.12	.066	.081	.100	.078	.142	--	--
6. Other causes underground .....	8.29	.490	.420	.630	.390	.425	.493	.649
7. All causes underground .....	89.08	5.265	5.851	5.716	5.288	6.252	4.436	6.171
8. All shaft accidents .....	1.91	.113	.163	.029	.094	--	--	.163
9. All accidents on surface .....	9.01	.532	.515	.559	.951	.994	.493	.163
10. All accidents .....	100.00	5.910	6.529	6.304	6.333	7.246	4.929	6.497

TABLE 5 - COAL-MINE FATALITIES IN THE UNITED STATES IN WHICH FIVE OR MORE MEN WERE KILLED DURING 1930 and 1931

Date	Name of mine	Location of mine	Nature of accident	Alleged cause of ignition	Killed
1930:					
Jan. 13	Peerless .....	Straven, Ala. ....	Gas or dust explosion	(c)	7
Jan. 19	No. 1 .....	Lillybrook, W. Va. .	"	(f)	8
Feb. 6	Standard .....	Standardville, Utah.	"	(d)	<u>1</u> / 23
Mch. 8	New Peerless .....	Lynn, Utah .....	"	(c)	5
Mch. 26	Yukon .....	Arnottsville, W. Va.	"	(f)	12
Mch. 30	Kettle Island .....	Kettle Island, Ky...	"	(a)	16
Apr. 12	Carbonado .....	Carbonado, Wash. ...	"	(d)	17
Aug. 8	Gilberton Colliery <sup>2</sup> /	Gilberton, Pa. ....	Fall of roof	-	8
Oct. 27	Wheatley #4 .....	McAlester, Okla. ...	Gas or dust explosion	(f)	30
Nov. 5	No. 6 .....	Millfield, Ohio.....	"	(c)	<u>3</u> / 79
Nov. 29	Lutie No. 5 .....	Wilburton, Okla.....	"	(f)	15
Dec. 6	Lamb .....	Madrid, N. Mex. ....	"	(c)	5
1931:					
Jan. 3	Midvale #4 .....	Midvale, Ohio .....	Gas or dust explosion	(e)	5
Jan. 6	Glen Rogers .....	Beckley, W. Va. ....	"	(f)	8
Jan. 28	Little Betty.....	Dugger, Ind. ....	"	(a)	28

## Alleged cause of ignition:

- (a) Open flame lamp.
- (b) Matches or smoking.
- (c) Defective safety lamp.
- (d) Electric arc.
- (e) Blasting.
- (f) Miscellaneous.

<sup>1</sup>/ Includes 3 killed by fall of slate about 28 hours later.

<sup>2</sup>/ Anthracite mine.

<sup>3</sup>/ Does not include 3 visitors, in no way connected with mining.