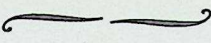


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A Study of Twenty-three Years' Effort Toward Reduction of Accidents in the Mines of The Union Pacific Coal Company

By Eugene McAuliffe



WITHIN the past few months an enlarged effort to secure a reduction in the incidence and severity of coal mining accidents was put into effect by the Coal Mines Administration, Department of the Interior, United States Government. This review of twenty-three years of intense effort on the part of the management and employes of The Union Pacific Coal Company in its Wyoming mines was prepared for the dual purpose:

Of providing the engineers of the U. S. Bureau of Mines with a record of what has been done over a period approaching a quarter of a century.

To furnish added inspiration to several hundred of our conscientious, loyal workmen, and the operating staff, all of whom have taken a lot of punishment in the years since December, 1941.

We are strongly of the opinion that further betterment must come from without rather than from within the mines. The task will always be an individual one, but if the recurring conflagrations that have continuously beset the industry could be resolved, we hold strongly to the belief that with a stabilized working force and adequate earnings and proper working conditions, both management and men will do a better job. Coal mining is at best a hazardous occupation; so, apparently, is automobile driving, but both will continue, and we should try to improve our practice and working conditions. That governmental regulation is necessary, even at times desirable, cannot be disputed; the question is, just what form should enforced regulation take? **The greatest boon that could be provided would be the end of war within the industry.** A study of our records will show conclusively that the major number of our accidents occur at the working face and on our more than one hundred miles of mine tracks.

The management of The Union Pacific Coal Company long ago committed itself to the importance of adequate ventilation, permissible explosives, rock dusting, closed lights, protective clothing and goggles. These safety precautions can only be put into effect by a willing management. Our yet unsolved problem, however, is that of outlawing the individual accident, where the employe involved too frequently decides to ignore his own personal safety. It is this class of accident that makes up the year's total which we deplore, and it is for the prevention of such we ask the cooperation of our workers, their families and friends, coupled with a further intensified effort on the part of our mine supervisory force.

Twenty-three Years of Accident Prevention Effort in the Mines of The Union Pacific Coal Company

THE following comment covering twenty-three years' accident experience on the properties of The Union Pacific Coal Company is set forth with the hope that a careful study of same by every person connected with the property will bring to them a deeper sense of the importance of accident prevention in and about the mines.

The compilation extends back to 1923 when a detailed record, with the causes leading up to the individual accident, was first placed in effect, and in the final summary the results have been set up in four blocks of five years, with the subsequent three years shown separately. When the number of accidents in all mines are consolidated in five-year periods, the diversity factor so obtained more correctly indicates the general result.

Inasmuch as any accident performance based on "tons mined per accident" fails of adjustment as between thick and thin seams, the measure of non-productive work done, hours worked per shift, and the relation of mechanical loading to hand loading employed, we have continuously held that "man-hours of exposure per lost-time accident" represents a more uniform basis of comparison between mines and periods, and while both methods of com-

parison are shown, we look upon the man-hours of exposure comparison as much preferable to that of tons mined per accident. Again, while our compilation shows fatal and non-fatal accidents separately, we look at the results obtained for "total" accidents as representing the best available comparison. The question of "accident severity," that is, the relative duration of temporary total disability, is informative, but the fact remains that every situation that may cause an accident represents a possible fatal accident or a permanent total disability, which, as measured by results in human suffering and economic loss, may be even more unfortunate than an accident causing immediate death. The basis on which non-fatal accidents are determined is that the accident must be of such severity that it will prevent the employe from returning to his place on the next succeeding work day.

One need not go beyond the summary which includes the record of both fatal and non-fatal accidents shown below, to realize that some progress has been made in the way of accident reduction, whether measured by tons mined or man-hours of exposure per accident suffered. The measure of the improvement made is set forth more completely in the tabulation that follows:

Period	FATAL ACCIDENTS				NON-FATAL ACCIDENTS			
	Acci- dents	Man-hours Per Accident	Increase Over 1923-1927		Acci- dents	Man-hours Per Accident	Increase Over 1923-1927	
			Man-hours	Pct.			Man-hours	Pct.
1923-1927.....	48	444,776			1,319	16,186		
1928-1932.....	35	503,854	59,078	13.28	1,045	16,875	689	4.26
1933-1937.....	22	731,205	286,429	64.39	241	66,749	50,563	312.39
1938-1942.....	26	756,626	311,850	70.11	142	138,537	122,351	755.91
1943-1945.....	26	866,712	421,936	94.86	216	104,326	88,140	544.54

It will be seen that a continuous increase in the man-hours worked to each fatal accident over the record shown for the first block of five years has taken place in each subsequent block, while the improvement in the number of man-hours per lost-time accident shows a startling increase in the second, third and fourth blocks; however, a sharp falling off was experienced in the last block of three years, 1943-1945, when compared with the preceding five-year period.

The further very simple comparison which follows shows even more clearly that extraordinary reduction in the relative number of fatal accidents was effected in the second ten years, as compared with the preceding ten-year period covered by the compilation:

Period	Fatalities	Tons Mined	Man-hours
1st 10 years	83	27,752,995	38,984,148
2nd 10 years	48	33,415,732	35,758,768

Here we deal with fatal accidents only, for the reason that no element of evasion or misunderstanding can enter into the number of deaths that occur from accidents in and about a coal mine. The sharp increase in tons mined, 20.4 percent, with a decrease in the number of man-hours worked, 8.2 percent, in the second period is due in part to a reduction in the number of operating mines from 19 to 9, and the complete mechanization of all mines. Other items entailing heavy expenditures were put into effect in the first ten years, including increased roadway clearance, heavier mine tracks, improved ven-

tilation, rock dusting and water line installations to provide water for use on cutter bars of mining machines and for sprinkling. A complete overhauling of all underground electric installations and the use of protective clothing, goggles, and other individual items of employe safety were also effected during the first ten-year period.

A most comprehensive "Book of Standards" for the guidance of the supervisory force was issued on July 15, 1925, and on November 17, 1929, a book of "Rules and Regulations for the Government of All Employes" was placed in the hands of every worker then in the company's employ, as well as those subsequently hired. The Book of Standards has been revised seven times and the Rules and Regulations four times since their first publication.

The most recent effort toward safety betterment was the organization of the first Greek letter safety honor society known to the mining industry, SIGMA TAU EPSILON, organized at Rock Springs, Wyoming, on February 27, 1941, with an initial enrollment of 43 members, the present enrollment 96.

This society is the Phi Beta Kappa of the coal mining industry. Only those occupying the position of outside foreman or unit foreman are eligible to active membership; the requirement, in the case of an outside foreman, the surface operation of a mine where no lost-time accident was suffered for three successive calendar years. In the case of a unit foreman the requirement is equally severe, representing no less than the conduct of his section or sections for a period of three consecutive calendar years without a lost-time accident on the part of any employe.

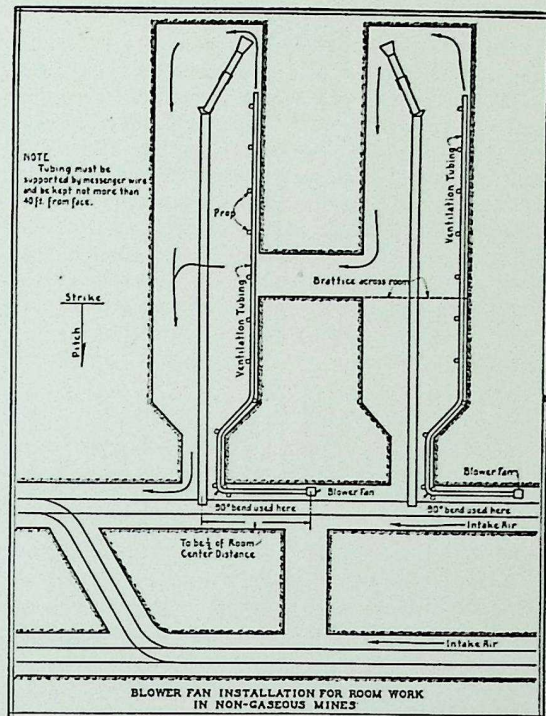
Mine superintendents and mine foremen who were in charge of any certain mine which won the Sentinels of Safety trophy subsequent to the organization of the society, are privileged to hold membership without the right to hold office or vote. No honorary memberships can be conferred by the society.

The name of the society, "SIGMA TAU EPSILON", represents the three initial letters of the Greek words, SOTERIA TIME ETAIREIA, which, translated into English, reads: "Safety Honor Association, Club or Brotherhood." Quarterly meetings are held by the society and ten active committees in charge of some phase of mine safety work make continuing recommendations to the management.

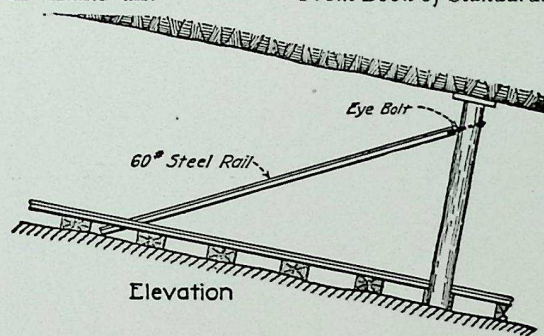
It is axiomatic that no great change ever takes place without a cause, and the falling off in man-hours per non-fatal accident in the last three-year period can be definitely charged to the labor problem that plagued our properties just as it did all industry in the west, a section of the country where war industries and army and navy activities assumed



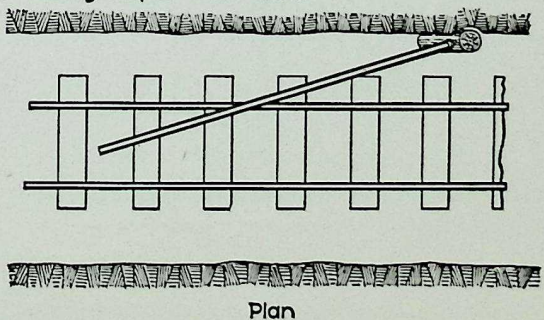
Emblem worn by 96 members of Sigma Tau Epsilon



Standard method of installing blower fans for ventilating rooms in non-gaseous mines. Blower fan must be located 20 feet from neck of room in intake air. —From Book of Standards



Safety Device for the protection of Men sinking Slopes and Panels

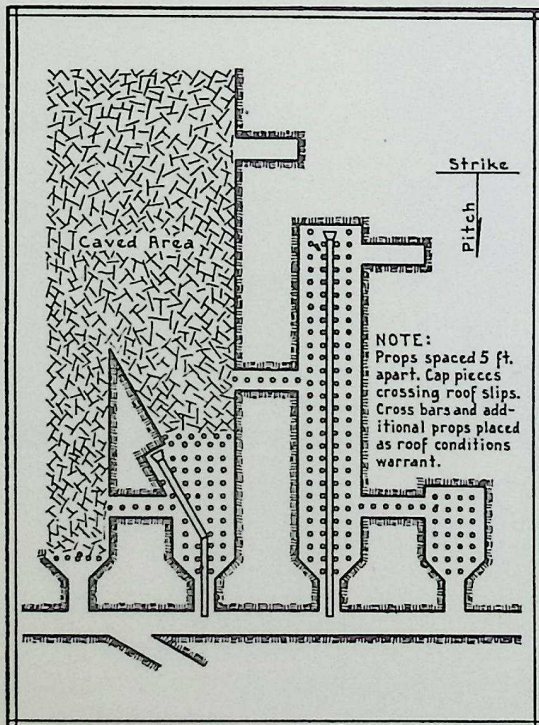


Plan
Derailing device for the protection of men working at the face while sinking main and panel slopes. —From Book of Standards

extraordinary proportions almost over night. World War II, with the debacle of Pearl Harbor, suddenly shifted the war from the Atlantic to the Pacific, and while the states located west of the Rocky Mountains represent a veritable empire in extent, the population normally residing therein is relatively small, with no reservoir of idle labor to draw upon for airplane and ship construction. An extraordinary increase in the demand for lumber, the metals and for coal, added to the demand for labor, all of which, from necessity, was brought in from remote states. How this situation affected our properties will be readily gathered from the following presentation:

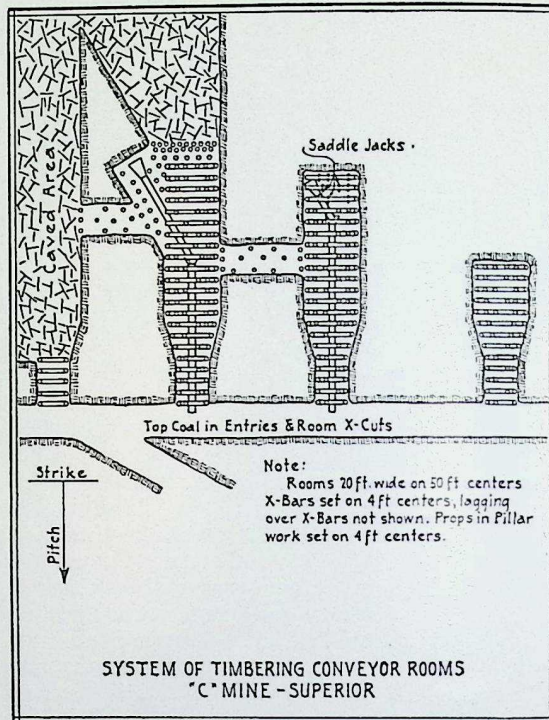
Year	Avg. No. Mine Employees	Number Employed	Number Left Service	Percent Turnover	Percent Absenteeism
1943	2,945	3,338	3,226	109.54	12.6
1944	2,946	3,805	3,632	123.29	15.8
1945	2,892	6,157	6,104	211.07	18.1

During these three hectic years, an average of 6,309,417 tons of coal were mined annually, the average annual production for the preceding five years 3,885,221 tons, an increase approximating 62 percent. The management of the property anticipated and struggled with the accident situation, but no one will dispute the fact that the employment of 13,300 persons, many of whom were totally ignorant of the mining industry, represented in itself an



Standard method of timbering rooms and breakthroughs where roof conditions are not too bad.
—From Book of Standards

appalling task. That the mine supervisory forces held the line as well as they did speaks volumes for their loyalty to the cause of mine safety, to which



Standard method of timbering rooms where roof conditions are unfavorable.

—From Book of Standards

some eighteen hundred permanent and dependable union employes made a great contribution.

Reference has heretofore been made to the more general causes that have impeded the conscientious effort of management to bring the incidence of mine accidents down to the irreducible minimum. A glance at the summary of causes that attach to the list of 157 fatal accidents will show that 95 deaths, or 60.51 percent of the total listed, were caused by falls of roof and coal. The second major type of accident is that relating to underground transportation, to which is chargeable 35 deaths, or 22.29 percent of all deaths, leaving to all other causes of a varying character, 27 deaths, or 17.20 percent of the total fatalities suffered. From these figures one can only conclude that in falls of roof and coal, and in transportation, accidents covering 130 deaths, or 82.80 percent of the total, lies the most fertile field for betterment.

When reviewing underground transportation accidents, consideration must be given to the fact that the combined length of The Union Pacific Coal Company mine tracks in constant operation, two shifts per day, totalled in 1945, 109.57 miles. This mileage is operated by main and auxiliary hoisting ropes on slopes, with 161 trolley type electric locomotives in constant service.

SUMMARY OF CAUSES OF FATALITIES IN THE UNION PACIFIC COAL COMPANY'S MINES, 1923 TO 1945, INCLUSIVE

CAUSE	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	Total	Per Cent
Fall of Roof.....	2	3	2	2	1	6	6	2	2	1	1	0	2	3	2	2	1	1	1	4	2	8	5	59	37.58
Fall of Coal.....	8	5	1	2	2	2	3	1	0	0	0	1	1	0	0	0	0	3	1	1	1	1	1	36	22.93
Mine Cars and Haulage.....	4	1	2	3	2	0	0	0	0	0	0	0	0	0	0	0	2	3	0	4	1	0	4	35	22.29
Explosives.....	0	1	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	3.18
Infection.....	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	1.91
Mining Machines.....	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	2.55
Drowned.....	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1.27
Loading Machines.....	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	5	3.18
Railroad Cars.....	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.64
Electrocuted.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1.27
Sinking Shafts.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.64
Kicked by Horse.....	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.64
Fall from Ladder.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.64
Mine Fire.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.64
Tipple Machinery.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.64
TOTAL.....	16	11	6	8	7	8	12	8	6	1	3	3	8	6	2	2	4	6	5	9	4	10	12	157	100.00

COMPARISON OF TONS MINED AND MAN-HOURS WORKED INSIDE AND OUTSIDE PER FATAL, NON-FATAL AND ALL ACCIDENTS, FOUR 5-YEAR PERIODS, AND YEARS 1943-1944-1945

Year	Tons Mined	Percent- age Loaded Mechan- ically	Number of Accidents		Tons Mined per Accident		Man-hours Worked		Man-hours per Accident			
			Fatal	Non- fatal	Fatal	Non- fatal	Fatal	Non- fatal	Fatal	Non- fatal		
											Total	Total
5 years, 1923-1927.....	14,368,523	15.61	48	1319	1367	299,344	10,893	10,511	21,349,248	444,776	16,186	15,617
5 years, 1928-1932.....	13,384,472	63.18	35	1045	1080	382,413	12,808	12,393	17,634,900	503,854	16,875	16,329
5 years, 1933-1937.....	13,989,629	97.18	22	241	263	635,892	58,048	53,192	16,086,503	731,205	66,749	61,165
5 years, 1938-1942.....	19,426,103	100.00	26	142	168	747,158	136,804	115,632	19,672,265	756,626	138,537	117,097
Year 1943.....	6,136,042	100.00	4	70	74	1,534,011	87,658	82,919	6,751,936	1,687,984	96,456	91,242
Year 1944.....	6,300,822	100.00	10	72	82	630,082	87,511	76,839	7,712,776	771,278	107,122	94,058
Year 1945.....	6,491,386	100.00	12	74	86	540,949	87,721	75,481	8,069,790	672,483	109,051	93,835

Emerson, the Sage of Concord, is credited as saying:

"If a man write a better book, preach a better sermon, or make a better mousetrap than his neighbor, tho' he build his house in the woods, the world will make a beaten path to his door."

It would be presumptuous to say that we have attained the honor that Emerson accorded the mousetrap builder, but the fact remains that men have visited our properties to discuss mine safety methods from Great Britain, Canada, Australia, and China, and the various coal producing states, with visitors from France, Germany, and Japan in the period preceding World War II.

The most welcome visitor to the property is one that has come to our mines eight times, the little bronze statue of the miner's wife and child, known as the Sentinels of Safety Trophy, which, donated by the Hercules Powder Company of Wilmington, Delaware, is awarded annually by the United States Bureau of Mines to the bituminous coal mine making the best mine safety record in the preceding year. This beautiful award was instituted in 1925, and with that made for 1945, a total of twenty-one mines have been honored. Of this number, eight awards were made to The Union Pacific Coal Company. The detail of the twenty-one awards follows:

RECORD OF AWARDS MADE, SENTINELS OF SAFETY TROPHY, TO BITUMINOUS COAL MINES, FROM YEAR OF FIRST AWARD, 1925, TO 1945, INCLUSIVE

Year	Coal Company	Mine	Location	Man Hours	Accidents	Severity Rate
1925	United States Coal & Coke Co.	No. 6	Gary, W. Va.	756,585	13	0.320
1926	United States Coal & Coke Co.	No. 6	Gary, W. Va.	815,715	7	0.202
1927	United States Coal & Coke Co.	No. 2	Gary, W. Va.	688,937	1	0.132
1928	United States Coal & Coke Co.	No. 4	Gary, W. Va.	418,869	3	0.053
1929	DeBardeleben Coal Corporation	Hull No. 33	Dora, Alabama	264,656	3	0.079
1930	Penn Central Light & Power Co.	No. 1	Coalmont, Pa.	211,760	4	0.184
1931	Phelps-Dodge Corporation	Dawson No. 1	Dawson, New Mexico	117,661	—	0.000
1932	Electro Metallurgical Company	Alloy	Alloy, W. Va.	225,687	—	0.000
1933	The Union Pacific Coal Company	"B"	Superior, Wyoming	187,888	—	0.000
1934	The Union Pacific Coal Company	"C"	Superior, Wyoming	225,426	—	0.000
1935	Elkhorn Piney Coal Company	Ingram Branch	Ingram Branch, W. Va.	235,211	—	0.000
1936	Koppers Coal Company	Coxton	Coxton, Ky.	339,156	—	0.000
1937	The Union Pacific Coal Company	"D"	Superior, Wyoming	301,051	—	0.000
1938	The Union Pacific Coal Company	"B"	Superior, Wyoming	243,094	—	0.000
1939	The Union Pacific Coal Company	No. 1	Winton, Wyo.	277,139	—	0.000
1940	The Union Pacific Coal Company	No. 4	Rock Springs, Wyo.	360,955	1	0.108
1941	Electro Metallurgical Company	Alloy No. 2	Alloy, W. Va.	335,060	—	0.000
1942	Knife River Coal Mining Co.	Knife River	Beulah, North Dakota	250,531	1	0.088
1943	The Union Pacific Coal Company	"D"	Superior, Wyoming	307,529	—	0.000
1944	The Union Pacific Coal Company	"D"	Superior, Wyoming	81,650	—	0.000
1945	Rockhill Coal Company	No. 5	Robertsdale, Pa.	289,924	1	0.186

The combined performance of our eight winning mines indicates a total of 1,984,732 man-hours worked with but one lost-time accident, a period equivalent to 992 work years of 2,000 hours.

Many other expressions of commendation have been given individual mines, two in particular coming from the Joseph A. Holmes Safety Association, seemingly deserving of mention.

Year 1936

No. 4 Mine, Rock Springs, Wyoming; "for having operated without a fatality from April 17, 1923, to January 6, 1936, producing 3,490,429 tons of coal with 4,313,040 man-hours of exposure to an average force of 214".

Year 1941

No. 1 Mine, Reliance, Wyoming; "for operating 3,143,972 man-hours without a fatality from January 25, 1933 to December 31, 1940 (and continuing) employing an average force of 261 men and producing 3,024,351 tons of coal".

We have made reference to the recognition freely accorded our management and our men by that most capable branch of the national government, the U. S. Bureau of Mines, and we are grateful for

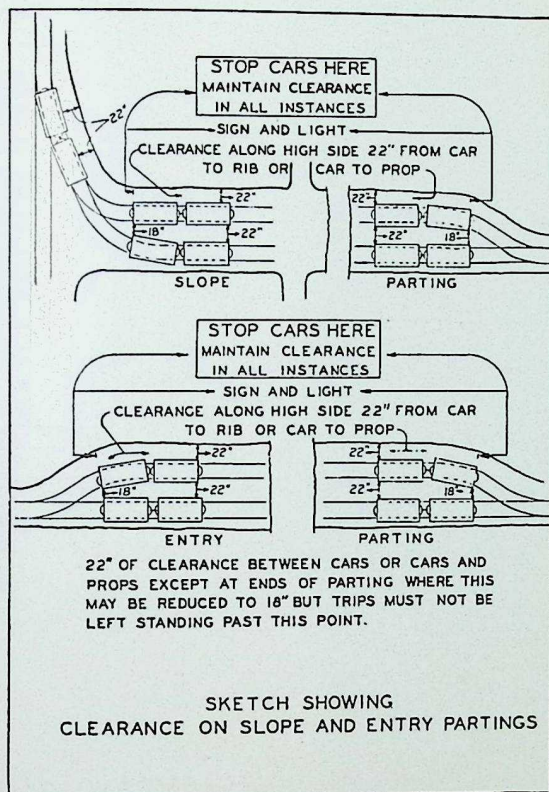
the honors accorded, but we are not ourselves satisfied with the results so far obtained. The management has ever been receptive to suggestions and advice offered, and we cheerfully acknowledge our debt to the engineers of the Bureau of Mines.

Some reference can properly be made to the inherent conditions that affect a safety performance in the Rocky Mountain region. The roof conditions in southern Wyoming, where the seams are badly faulted and pitching from seven to twenty-two degrees, present conditions that call for eternal vigilance. With a full realization of this fact and that an earnest campaign for safety necessitates expenditure, we submit the following table of charges included in mine costs for the five years shown:

Year	Labor and Material	Tons Coal Mined	Cost Per Ton
1941	\$ 89,868.62	4,276,186	\$.021
1942	106,423.95	5,283,346	.020
1943	141,744.71	6,136,042	.023
1944	202,445.46	6,300,822	.032
1945	208,085.84	6,491,386	.032
5 Years	\$748,568.58	28,487,782	\$.026

Only the items that are related wholly to safety, apart from production, are included above. The detail for 1945 includes the following:

Sprinkling lines, hose, etc.	\$ 87,386.72
Rock dusting	80,926.39
Barriers, gates, signs, etc.	5,785.93
Safety lamps (flame)	1,366.35
First aid apparatus	4,487.14
Fire extinguishers, material only	4,088.91
Total safety	\$184,041.44
Safety engineers	11,167.16
Safety contests, including prizes	12,877.24
Grand total	\$208,085.84



Standard method for establishing clearance on slope and entry partings.

—From Book of Standards

After twenty-three years of intensified effort, we have evolved two certain premises:

That the performance attained over the first ten years of our compilation shows conclusively that the responsibility for betterment then largely rested with the management of the property. In this period 1923 to 1932, inclusive, the man-hours of exposure, fatal and non-fatal accidents, were pegged at a point paralleling the national average, or 15,931 man-hours per accident. A real job of housekeeping was carried out, with the result that in the second ten-year period the man-hours per accident rose to 59,765, the nation's bituminous mines showing, for the year 1945, but 15,657 man-hours, this last figure subject to some revision.

That while the overall national coal mine situation does, without question, include many examples of housekeeping, ranging from bad to indifferent, the situation as a whole can only be brought up to the standard attained in the European coal mining countries in the pre-war period by what, for want of a better term, might be called a new and inclusive attitude of mind on the part of every man connected with the industry.

This new attitude of mind should extend beyond the immediate area of more than 6,000 coal mines in which the accidents take place. The one thing that would prove most conducive to mine safety would be a greater measure of stability, a sense of responsibility to both the producer and the consumer of coal that would be best expressed with the complete elimination of strikes.

A glance at the graph on following page tells the story. The light line covering production for 1944 shows but two major sags in that year, those resulting from the July 4 and Christmas holidays. The line covering the year 1945 shows the lessened production caused by the attempted organization of the supervisory forces in the east which led to numerous lawless strikes. The third line, covering the first portion of the year 1946, shows the effect of the strikes which occurred nationwide between April 1 and May 12, inclusive, and from May 26 to 30, inclusive, a total of 47 days.

How these two strikes affected safety as well as production on our properties in 1946 is shown by the following comparison:

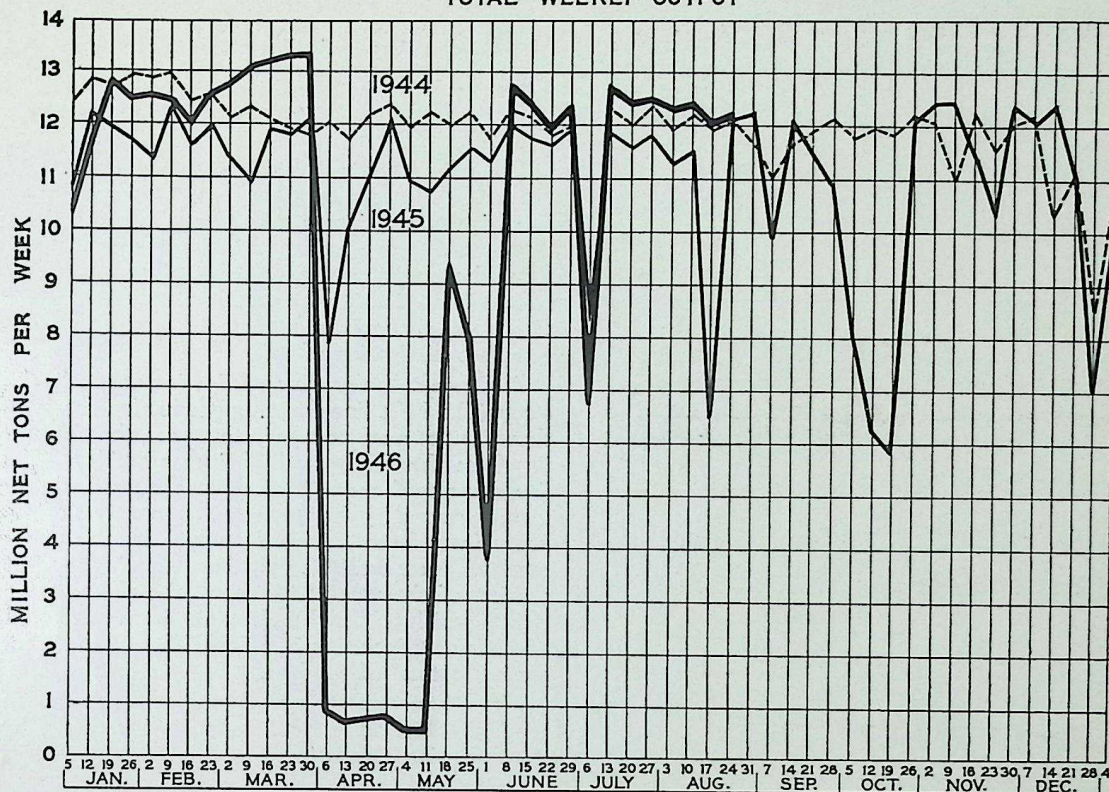
January to June, inclusive	1945	1946
Duration of strikes, days	—	47
Number of accidents	39	38
Tons of coal mined	3,277,176	2,069,480
Tons per accident	84,030	54,460
Man-hours exposure	4,033,804	2,654,404
Man-hours per accident	103,431	69,853

It will be recalled that during this period the industry's safety shortcomings were being blazoned to the world by labor leaders, newspaper and radio commentators, and many others who professed a superior interest in mine safety.

We have, since the inception of the U. S. Bureau of Mines, held more than a common interest in its efforts to sell the theory of mine safety to employers and employes alike. The way has been long and arduous, and volumes could be written on the opposition (which is not yet dead) made against permissible explosives, rock dusting, water for allaying dust, protective clothing and goggles, as well as the Bureau's engineers' efforts to promote first aid training. Neither operator nor mine worker were completely without sin during this trying period. In this connection we are reminded of the words in an often used prayer book:

"We have left undone those things which we ought to have done; And we have done those things which we ought not to have done; And there is no health in

BITUMINOUS COAL AND LIGNITE PRODUCTION TOTAL WEEKLY OUTPUT



Graph showing interruptions in production of bituminous coal, year 1945 and first half 1946, caused by strikes. (From U. S. Bureau of Mines' weekly reports.)

us. But thou, O Lord, have mercy upon us, miserable offenders."

At the present moment we are working under a new code of safety regulations, the outcome of the bitter and costly wage contract battle that took place in the first half of 1946. This code, if enforced, will annoy more mine workers than operators, whom they outnumber many times. It will, however, effect some betterment, but it will not prove a complete solution of our problems. Such can only be attained by the complete elimination of strikes, interference with orderly management, and caustic, soul-searing criticism, and the substitution therefor of genuine cooperation of every man on the property.

Between January 1 and August 20, 1946, a total of 85 deaths occurred on the streets and highways of Wyoming. A great American insurance company (that lives by selling insurance) recently published this shocking statement:

"Has plain, common sense vanished from our highways along with the horse? Has the era of the horseless carriage become an era of blind recklessness?"

"Let's look at the record. In the past 35 years, over 800,000 men, women and children have been killed in auto accidents. Over twice as many American lives as were lost in two world wars!

"Traffic accidents have brought injury to 28,000,000. An American casualty list 30 times as high as both

world wars produced. A number equal to one-fifth of the present population of the United States.

"Three accidents will have happened in the time it takes you to read this message."

In 1940, while attending a meeting where the Sentinels of Safety Trophy was being awarded to a Pennsylvania anthracite mine, we said, referring to our experiences in the first ten years covered by this presentation:

"I often despaired of trying to convince our employes that we really sought a reduction in mine accidents for reasons other than to reduce our workmen's compensation costs. Perhaps the thing that is most wrong with America is that we either insist on ignoring a bad condition entirely or else when we decide to cure it, we expect to get betterment over night. That has never been done. Human nature is slow of change. If you read your history you will conclude that the human race has ever seen betterment come slowly. The road upward has always been a cruel, bitter and hard one to travel. Betterments that come too fast have usually been lost and when humanity slipped back, some man or woman with vision and courage has forever come into the picture to take leadership and to point the way upward.

"Common honesty, and a will on the part of the management and workers to work together, will eliminate more accidents than all the sumptuary 'don't' laws that can be written. The real problem of this country today lies in the fact that too many people want 'another law', rather than to do the things that conscience and common sense should dictate."