UNITED STATES BUREAU OF MINES

GAS EXPLOSION

NO. 4 SHAFT

(Lansford, Pa., Sept. 16, 1914).

LEHIGH COAL AND NAVIGATION COMPANY.

Report by

Charles Enzian,
Mining Engineer.

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INTRODUCTION

Brief Statement:

At about 1:30 in the afternoon of September 16, 1914, a gas explosion occurred in the airway to the No. 5 east gangway, Mammoth seam, No. 4 shaft workings of the No. 5 Colliery, Lehigh Coal & Navigation Company, Lansford, Pa. Four men were instantly killed and three others so seriously injured that they died at the hospital within 48 hours of the explosion.

The explosion affected about 300 feet of the airway and about 240 feet of the No. 5 gangway.

GENERAL INFORMATION

Location:

The No. 4 shaft of No. 5 Colliery is located about 1½ miles east of Lansford near the Lansford Borough limits, Carbon County, Pa. The post office address is Lansford, Pa. Lansford is located on the Lehigh and Susquehanna Division of the Central Railroad of New Jersey and on a branch line of the Lehigh & New England Railroad, about 10 miles west of Mauch Chunk and about 20 miles east of Pottsville. The mine is indicated No. 309

on the Alder map of the anthracite coal fields of Pennsylvania. The coal is shipped over the Lehigh and Susquehanna Division of the Central Railroad of New Jersey and the Lehigh & New England Railroad.

Operators:

The colliery has been operated for many years by the Lehigh Coal & Navigation Company, employing jointly with No. 6 Colliery about 2200 men and boys. The two collieries have a combined annual production of about 1,000,000 tons. The property is controlled entirely in fee.

The colliery is bounded on the north by the barren measures of the Panther Creek basin; on the east by the Nesquehoning or No. 1 Colliery, Lehigh Coal & Navigation Company; on the south by the No. 4 Colliery, Lehigh Coal & Navigation Company and on the west by the No. 6 Colliery, Lehigh Coal & Navigation Company.

Year	Production of coal (tons)	Number of Employees	Number of days worked.
1903	232,738	380	249
1904	224,438	436	238
1905	236,136	417	256
1906	210,458	478	236
1907	271,752	602	253
1908	294,909	749	221
1909	257,519	589	258
1910	298,235	495	268
* 1911	963,097	1,880	282
* 1912	802,016	2,299	245
* 1913	944,783	2,319	260

(STATE MINE INSPECTORS' REPORT PART I, 1913)

*Subsequent reports group the tonnage, supplies, employees, etc. combining collieries Nos. , 4, 5 and 6 under the heading of Lansford.

Personnel of Organization:

Lehigh Coal & Navigation Company:

[redacted], President, Philadelphia, Pa.
Edwin Ludlow, Vice President, Lansford, Pa.
W. G. Whildin, Mining Superintendent, Lansford, Pa.

No. 5 Colliery:

H. M. Crankshaw, District Supt., Lansford, Pa.
John L. Richards, Mine Foreman, Lansford, Pa.

GEOLOGY AND CHARACTER OF COAL

Geology:

No. 5 Colliery is located in the Panther Creek basin near the eastern terminal of the southern region, Pennsylvania Anthracite Field. The coal measures in this colliery contain in part the Diamond, Orchard, Primrose, Holmes, Four Foot, Mammoth, Skidmore, Seven Foot, Buck Mountain and Lykens Valley seams.

The Mammoth seam in No. 4 shaft averages 55 feet in thickness. The coal is hard and brittle with characteristic anthracite fracture. It is the purest quality anthracite in that region and varies but slightly in chemical composition. The average composition of the Mammoth seam in the southern field is as follows:-

Moisture	3.09
Volatile matter	4.28
Fixed Carbon	83.81
Sulphur	0.64
Ash	8.18
	100.00

Roof:

Slatey sandstone; termed fair.

Floor:

Hard massive sandstone; termed good.

Moisture:

The rock strata and coal are naturally moist in the affected area.

Gas:

The colliery is designated gaseous by the Pennsylvania State Department of Mines. Methane is the only gas encountered; this is given off quite frequently under normal conditions and in large quantities during squeezes or falls of coal.

DESCRIPTION OF MINE AND METHOD OF OPERATION

Development:

The No. 4 shaft extends from the surface to the fifth level of the Mammoth seam, a depth of about 1000 feet; it is sunk on the north dip of the Panther Creek basin and cuts the Mammoth, Skidmore and Seven Foot seams. It is a 5 compartment shaft about 13 feet wide and 38 feet long. Landings for coal, supplies and men are provided on the second, third and fifth levels.

The No. 5 East Gangway is driven on water level grade from the main south tunnel at the shaft, to its boundary. The gangway is driven along the top rock of the seam and the airway on the same elevation along the bottom rock. Chutes on 35 degrees pitch are driven from the top of the gangway to the bottom rock of the seam, where a "monkey heading" or return airway, is driven parallel to the main airway. The regulation steep pitch chutes and batteries are employed. The breasts are driven on line with and on continuation of the chutes 18 to 24 feet wide. The latter are driven from the gangway at about 65 feet centers and 8 feet wide. The lifts average between 250 and 300 feet in length along the pitch of the seam. The affected area is about 2700 feet east of the tunnel.

Mining:

The coal in the affected area lies on an inclination varying from 65 to 80 degrees, and is brought from the face to the mine cars by the regulation chute method. The coal is shot off the solid and loaded into mine cars by company chute loaders. The physical condition of the seam is such that dust is made only in very small quantities by the blasting and loading. No dust accumulations were noted in the workings adjacent to the affected area.

Explosives:

Dynamite and permissible explosives only are in general use at this colliery. Dynamite is employed where rock mining is done and permissible explosives are used exclusively for blasting the coal.

Year	Days worked	Pounds of explosives used per working day. Black Powder	Dynamite	Permissible Explosives
1903	249	11	17	
1904	238	240	321	
1905	256	---	303	
1906	236	---	138	
1907	253	---	263	
1908	221	---	245	
1909	258	---	216	
*1910	268	---	1,259	
*1911	282	---	1,100	
*1912	245	---	1,319	
*1913	260	---	1,010	259

(State Mine Inspectors' Report Part I,1913.)

* Reported as Colliery No. 6, which combines Collieries Nos. 4, 5 and 6.

The explosives are distributed to the miners in accordance with the anthracite mine law and company regulations which provide that only "sufficient quantity for the day's work but not to exceed 25 pounds" is to be taken into the mines by any miner. The powder is stored in the tool box which by law every miner is required to provide for himself.

Haulage:

The haulage system at this colliery consists of mules, electric locomotives, gravity planes and steam driven slope and shaft engines. Mules are employed to distribute and gather mine cars from the main haulage roads to the face of the gangways and loading chutes in sections newly developed. Electric locomotives are used exclusively between the collecting branches and shaft landings on the main haulage roads. The steam driven slope and shaft engines are employed to raise coal to higher levels and to lower and raise men and material from and to the surface. A gravity plane has recently been completed to lower the coal from the No. 4 level to the No. 5 east level.

Lighting:

Henson's report says [illegible] lamps are used on all main gangways.

Only locked Wolfe safety lamps and Hirsch permissible electric miners lamps are used on the No. 5 level. Electric incandescent lights are used at the foot of the shaft, in hospitals, foreman and other underground stations.

Ventilation:

The affected section of the mine is ventilated by a 36,000 cubic feet per minute split of the main current circulated by a 15 foot diameter Guibal fan; total capacity 150,000 cubic feet per minute. The colliery ventilating plant is given in the following table.

Diameter of fan in feet.	Width of blades (feet)	Depth of blades (feet)	Revolutions per minute	Water gauge (inches)	Name of fan.
24.0	8.0	7.0	90	2.1	Sturtevant
24.0	8.0	7.0	90	2.1	"
21.0	7.0	6.6	50	1.4	Guibal
22.0	8.0	6.0	87	1.4	"

The circulation of the air current through the affected area is indicated on attached reproduction of map of mine workings.

Humidity:

No method of humidifying the air is necessary at this colliery.

Drainage:

The water from the workings above and including the third lift flows in drainage ditches, along the side of the gangway, to the main sumps and is discharged to the surface by a pump in the shaft, which under normal conditions pumps 1500 gallons per minute. The water from the fourth and fifth levels is hoisted to the surface in two 3500 gallon tanks operating in the compartment at the northern end of the shaft. These tanks average about 1500 gallons per minute.

Fire Protection:

Along the main haulage roads, 2½ inch compressed air pipe lines may conveniently be converted into fire fighting lines

by connection to an emergency pump at the foot of the shaft. Frequent hose connections are provided off this line and supplies of fire hose are kept on the surface and at convenient stations underground.

THE EXPLOSION

Local Conditions:

No variation in the barometric pressure was noted on the day of the explosion. However, from the early morning inspection on the previous day a small fall of coal about 50 feet long and averaging 6 feet in height had been discovered on the airway directly under chute No. 30, and about 130 feet west of the junction of No. 2 Branch plant section. A force of men using Wolfe safety lamps and Hirsch permissible electric miners lamps had immediately been placed at work to clean up this fall and retimber the airway.

A blast fired by the rockmen on the night shift (Sept. 15 and 16) in the Rogan Tunnel District had disconnected the current which drives the booster fan in the Rogan Tunnel. This interruption of the air current allowed gas to accumulate in the first 3 breasts on the east side of the tunnel. This

condition was discovered during the early morning inspection on September 16th by the Assistant Foreman and he thereupon prohibited the miners from entering their working places in that section. As the return from the Rogan Tunnel workings enters the No. 5 East main return airway, inside of the fall, men were placed at the mouth of the intake tunnel and at the outside end of the return air-course tunnel to prevent men from entering the tunnel, and to observe the air current for presence of gas.

To expedite the cleaning of the fall, and later to remove the gas in the Rogan tunnel workings, the officials, on the morning of September 16, decided to put 3 shifts of men to work and designated a responsible man to take charge of each shift. Fireboss Barney Cunning was placed in charge of the day shift.

The Accident:

Shortly after the noon hour at about 1:30, while the men were engaged in removing the fall and timbering the roof, an explosion of gas occurred which instantly killed John Lasko and seriously injured and burned Barney Cunning, Joe Mishick and Albert Dobish. The latter were removed to the Panther Creek hospital where they all died within 48 hours after the accident.

Three others,-Peter Pasko, Joe Gurko and Yatzick Ratrap engaged in removing a small fall and retimbering weak roof on the west side of the first fall were buried under the large fall following the explosion. Mike Setina and John Tap, engaged in timbering the airway about 350 feet inside of the supposed origin of the explosion and several others were slightly injured but all have since recovered.

Alleged Cause:

As near as can be determined, from other workmen in the vicinity of Number 2 Branch, Joe Mishick one of the laborers assisting in the cleaning of the fall on the airway went through the double doors, between the airway and gangway, and about 90 feet east on the gangway to Thomas Murphy and Harry McElmoyle, the motorman and the loader boss respectively, to whom he distributed cigarettes, who with Mishick lighted them from the naked light carried by motorman Murphy.

Mishick left Murphy and McElmoyle to return to his work in the airway; he had been gone less than 6 or 8 minutes when the explosion occurred. It is presumed that during Mishick's absence from the airway another fall was about to occur and that gas had been accumulating in the cavity of the first fall, or was

being given off during the process of the coal breaking and extended down into the airway, and after contact with his lighted cigarette it exploded. This seems the most plausible theory as to the origin of the explosion that can be advanced; however another supposition prevails,-that Mishick may have had matches on his person and after returning to the airway finding his cigarette out, attempted to light the same by striking a match.

The force of the explosion doubtless caused the extended fall which buried Lasko, Gurko and Ratrap, working about 175 feet outside of the first fall.

Although smoking in the airway was forbidden, the men did smoke on the gangway. The airway men were not supposed to have smoking material or matches on their persons; cigars and cigarettes, but no matches were found in the clothing of the victims.

Rescue and Recovery:

The bodies of Lasko, Cunning, Mishick and Dobish were recovered by men working on the gangway near the No. 2 Branch immediately after the explosion,-before breathing apparatus could be brought into the mine. After the injured men had been

removed to the first-aid hospital, about 1800 feet west of the point where they were found, a large force of men were immediately placed at work to rescue the three buried men. Workmen were placed at every possible point of attack cleaning the large fall of coal, about 115 feet in length, and the first fall. One party was placed at work cleaning the fallen coal west and along the airway from the No. 2 Branch, and 2 parties worked from the gangway through the second and third cross-cuts outside of this branch. The 3 rescue parties were organized for continuous shifts of 8 hours each. The roof from which the coal had fallen was very free and required a large amount of timbering and fore-poling to insure the safety of the rescuers.

At 10 A. M., September 21, 1914, the badly decomposed and apparently burned bodies of Pasco, Gurko and Ratrap were found. (For location see Plate II).

Coroner's Verdict:

Inquest held September 18, 1914 on deaths of John Lasko, Barney Cunning, Joe Mishick and Albert Dobish.

"These men came to their death by an explosion of mine gas in No. 4 Shaft; the cause of the explosion being unknown. The Jury recommends that the Lehigh Coal & Navigation Company shall use safety lamps from No. 1 turnout in. We also

recommend that smoking, matches, pipes and cigarettes be prohibited from the East side of No. 4 Shaft".

Inquest held October 7, 1914 on deaths of Peter Pasko, Joe Gurko and Yatzick Ratrap.

"We find these men came to their death by an explosion of gas set off by some unknown cause, and we suggest that the Company post notices in English and foreign languages that the employees working in gaseous places be instructed not to carry matches or anything that will ignite gas, and put a man at such places to search and see that these notices are carried out".

EVIDENCE OF EXPLOSION OBTAINED FROM INVESTIGATION

The writer was not aware of the accident until the afternoon of September 19, while in attendance at the Philadelphia & Reading Coal & Iron Company First-Aid Drill at Lakeside, Pa. Foreman Miner Henson and the writer immediately proceeded to Lansford.

The Investigation:

The scene of the accident was investigated in company with Mining Superintendent, W. G. Whildin and District Superintendent, H. M. Crankshaw.

Three crews of men were at work in the second and third cross-cuts outside of the No. 2 Branch, reopening and timbering the same, and one crew was working westward along the airway in the vicinity of the first fall of coal. The stoppings in the first and second cross-cuts, outside of the turnout of the No. 2 Branch, had been blown out and the openings caved full of coal; the debris of the stoppings was noted on the gangway opposite the cross-cuts.

The timbers were slightly scorched on the gangway from the first cross-cut outside of the No. 2 Branch a point about 15 feet inside of Chute No. 33; a distance of about 100 feet. The outside one of a pair of doors in the slant section from the gangway to the airway at No. 2 Branch was partly destroyed, but later repaired, and the inside door had been blown outward and it had been repaired.

A mule, which had been standing on the gangway near the No. 2 Branch, was killed, undoubtedly from burns, bruises and afterdamp.

At the junction of the No. 2 Branch section and the airway, the rear trucks of a mine car had been blown off the track toward the north rib.

On the airway the timber bore evidence of scorching a distance of 70 feet eastward from the No. 2 Branch junction and westward along the airway a distance of 170 feet to the fall of coal.

Indications of the force of the explosion were noted for a distance of about 120 feet in both directions from the No. 2 Branch on the gangway, and about 130 feet eastward along the airway from the junction of the No. 2 Branch and west to the first fall of coal.

The odor of afterdamp was still very pronounced. The air current in the airway on the west of the large fall contained, at times traces of gas, and for that reason the rescue work was prosecuted from the third cross-cut, where the men could work in fresh air and the loaded material be conveniently disposed of.

(Note:)
For a comprehensive description of developing and mining anthracite in the Panther Creek basin, it is suggested the reader refer to a paper on "Steep Pitch Mining of Thick Coal Veins" by Mr. W. G. Whildin, Bulletin No. 96, American Institute of Mining Engineers, Page 2795. Particular attention is called to typical cross-sections of the coal measures pages 2796, 2797 and 2798.

Summary of Evidence:

1. Only a few minutes before the explosion, Joe Mishick lighted a cigarette on the gangway, and left for his work in the airway with the lighted cigarette in his possession.

2. The officials had placed Barney Cunning, who in their opinion was a competent and reliable man, in charge of the shift working in the airway. His sole duty was to see that the men got their supplies and that no open lights were used, or smoking was done in the airway.

3. Mishick apparently passed Cunning without he detecting the lighted cigarette.

4. Two falls of coal were noted on the airway; the larger one of the two undoubtedly was the result of the explosion, which tore out the timbers and brought down the loose coal directly above.

5. The coal of the Mammoth seam at this point is very free; no doubt influenced to a great extent by previous mining of the coal from the chutes driven off the gangway.

6. Prior to this accident it was the custom to permit employees to use naked lights and to smoke on the gangway. On the airway however, only locked safety and permissible electric miners lamps were permitted and smoking was prohibited.

7. For some time prior to this accident the management had considered the prohibition of naked lights and smoking on all the levels where gas was being generated; but on account of the possibility of creating fear or distrust regarding the safety of the miners, such action was deferred until the completion of another and more stable return aircourse. The accident however precipitated the action; at the present time and hereafter only safety and electric lamps are permitted, and the possession of matches and smoking materials is strictly prohibited on the Nos. 3, 4 and 5 levels. A man is employed for the sole purpose of searching the men and detecting surreptitious smoking.

CONCLUSIONS.

1. From the extent of the evidence of the explosion the destruction zone may be said to have been of limited area.

2. The accumulation of gas which exploded apparently was very small.

3. Four deaths undoubtedly resulted from the violence and burns of the explosion; the other 3, perhaps less severely burned, were smothered or crushed to death by the fall of coal following the explosion.

4. An examination of the extensive timbering required in the gangway and airway of the No. 5 level impresses one with the possibilities of imminent danger and disasters of this kind, consequent to failure of the timbering which is absolutely required under the mining conditions of this region. Along the gangways and airways sets of timbers, spaced about 3 feet centers and almost continuous lagging of roof and ribs is necessary. The mine air is such that the life of timber is comparatively very brief and its usefulness destroyed without apparent evidence of failure. Decay is very rapid and unusual roof and rib pressure so frequent that the installation of stronger supports such as steel or concrete and brick arch as recommended in previous reports, is perhaps the only precaution that will tend to minimize accidents of this kind in existing workings. Such exclusive method however would entail a prohibitive cost, as even the present method of timbering entails an expense equal to more than 15 per cent of the total mining cost in this section, and the cost of supports as above recommended would increase the present cost about three times.

The officials have under consideration a plan to employ quite generally on main haulage gangways, and are placing now, in the most important sections, steel timbers consisting of 2 legs and collar of 5 inch H-section with light weight second hand steel rail lagging. This will no doubt eventually minimize accidents originating from falls of coal or roof, and perhaps ultimately prove an economical method.

Lansford, Pa., September 18th, 1914

NOTES OF CORONER'S INQUEST REGARDING THE DEATHS OF BERNARD CUNNING.

JOE MISHIK. ALBERT DOBISH. JOHN LASKO- BY AN EXPLOSION OF GAS IN NO. 4 SHAFT, LANSFORD COLLIERY. WEDNESDAY SEPTEMBER 16th, 1914. about 1:30 P.M.

Inquest held in Town Hall,. Lansford, Pa., September 18th, 1914.

CORONER:- E. G. Bray   STENOGRAPHER:-A.E. Watkins

JURORS:- A. R. Howard
George Jones
James McGilloway
Russel Shannon
Frank Ochsenfeld
Harry Fry

WITNESSES:- Mike Stetina
Herman Elsasser
Harry McElmoyle
Edward Kennedy
Thomas Murphy
William E. Stickler

Mine Inspector I. M. Davies and Mining Superintendant W. G. Whildin were present at the inquest.

First Witness   Mike Stetina   Sworn
(Questions asked thro interperter
(Michael Edlestein

Q. What is your name?
A. Mike Stetina
Q. How old are you?
A. 21
Q. Where do you work?
A. No. 4 Shaft.
Q. Were you working there when this accident happned?
A Yes.
Q. What do you do in the mines?
A. Timbering.
Q. What part of No.4 were you working in when this explosion occurred?
A. At the platform with the miner (John Pap)
Q. Were you in the airway or the gangway?
A. Airway.
Q. Was it on the East side or West side?
A. East side.
Q. Was it in the airway?
A. Yes.
Q. How far away were you from the explosion?
A. I don't know how far
Q. What time of day was it?
A. After 2 o'clock.
Q. What was the first thing you knew about this accident?
A My light was out.
Q. What did you do then?
A. Just went out.
Q. Did you see the fire?
A. No, just heavy wind.

Q. Did your face get burned while in the mines?
A. No, the gas did not do any harm, only flying pices.
Q. What did you do after the wind?
A. I went out.
Q. Where to.
A. I stayed around untill they got the rest out, then went up on the cage.
Mine Inspector:-
What he means by going out is going from the airway to the gangway.
A. Yes.
Q. Were did you go from the gangway?
A. I went out of the airway to the gangway then up with the men.
Q. What did you find when you went up where the men were?
A. I saw the men that were burned.
Q. Where did you see them?
A. I see the men in the gangway.
Q. Did you talk to any of them that were burned and not killed?
A. No.

Seccond Witness Herman Klaasser Sworn

Q. Were you at No. 4 Shaft on the 16th, when this explosion happned?
A. Yes.
Q. Do you work in the mines?
A. Yes.
Q. What do you do?
A. Timbering.
Q. The afternoon this happned; this happned about 2 oclock(See next question)
A. Between 1.30 and 2.00.
Q Where were you working in the mines?
A. In the airway.
Q. Were you working near this man Stetina?
A. No, he was working inside, I am working beside these men closed in.
Q. How far were you from the accident?
A. I could not tell you, I had gone out.
Q. What was the first thing you knew?
A. I had gone out to the hospital with two laborers from the airway for the props, and while I was comming back the gas went off.
Q. Were you in the airway when the explosion took place?
A. No.
Q. What did you do then?
A. I went back in to see if I could help. I went in as far as where the turnout comes off the gangway, and found Albert Dobish with the side of his face blown off out.
Q. Where there any other men there?
A. I do not know if there were men there.
Q. Where was that?
A. At branch 2.
Q. (Mine Inspector)When you got him out did you go in again?
A. Yes.
Q. Did you find anybody the second time?
A. No. I could not find any one, all I could see was battery cars and nails on a car.

Q. (Mine Inspector) How long have you been working in the airway?
A. This is my seccond pay out of it.
Q. (Mine Inspector) Did you ever see anybody smoke in there?
A. I had a deaf fellow laboring for me, I took a pipe from him.
Q. (Mine Inspector) Are you a miner?
A. Yes. I took a pipe from about two weeks ago.
Q. Did you ever see anybody smoke cigarettes there?
A. No.
Q. Did you ever see this man smoke a pipe?
A. As soon as I saw that he was going to smoke I took it off him.
A. How is No. 4 ventilated?
A. The air comes in the gangway and out the airway.
Q. (Mine Inspector) What were you doing?
A. Laboring.
Q. (Mine Inspector) Were you working in there were the men were buried?
A. Right where they are buried. There was a big spill there and they were ketching the spill, and I was timbering in back of him. I was propping in back of him.
Q. (Mine Inspector) While you were away this explosion took place?
A. Yes.
Q. (Mine Inspector)Can you form any idea in your mind where the explosion took place.
A. I would think that it took place between the branch and the spill.
Q. (Mine Inspector) Were you working west of the outside cross-cut?
A.. Yes.
(Mine Inspector) Then the spill was West of you then?
A. Yes.
Q. Is that all you know in reference to smoking, that you had taken a pipe from who?
A. I could tell you, his name was Joe.
Q. Did you ever see naybody smoke in there?
A. I have not seen anybody smoke in there.
Q. Are there orders?
A. Nobody ever said anything about smoking to me. As soon as he went to smoke I took his pipe.
Q. (Juryman) Were you working with safety lamps?
A Yes with safety lamps and batteries.
Q. Were there matches allowed in there?
A. Not in the Northwest. by
Q. What protection have you from gas explosion?
A. That I could not say.
Q. To notify you that there id gas?
A. There is a man in there to watch the gas.
Q. These men are in the return.
A. Yes.
Q. How big is the return?
A. 8 foot collar and 8 foot leg.It is on the bottom rock side that cuts off a few feet of the bottom of the return,there is a 3 foot stump, or 4 foot stump.

Q. How do you think the thing happned?
A. The only explanation I can give beside the men smoking would be a heavy fall of coal forced the gas out the airway and blow these doors open, and proably Mr. Gunning was sitting there with his naked light and somking out in the ~~airway~~ gangway. It might of happened that way, forced it out the branch into the gangway.
Q. That is the way it could ~~of~~ happnened?
A. That is the way it could happened.
Q. They do not know wether these spills occurred after or before the gas went off.
A. There are two fresh spills in there.
Q. Could the explosion occurred in the gangway as well as the airway?
A. I don't think in the gangway because the air comes in the gangway.
Q. Was he(Gunning) in the gangway?
A. Yes. You cannot tell how these men ere burnt in there, but the men right inside of the branch were burned pretty bad.
Q. Do you know of any instructions in regards to smoking in there?
A. I do not know of any only in the Northwest. There is a man in the Northwest to take the matches and cigarettes.
Q. How far is that from here?
A. About 100 yards.
Q. Then this air course besides goes to the Northwest?
A. Yes it goes in and comes out.
Q. Is the return airway considered dangerous?
A. Nobody ever said anything to me about it; if it goes in the Northwest it is bound to come out.
Q. (Mine Inspector)Would you as a miner, wait to be told by anyone not to somke or use a naked light in the return air course in a gaseous mine?
A. No. certainly not.
Q. You have worked in No. 4 for a couple of weeks?
A. Yes.
Q. Is No.4 and practically all connected with No. 4 gaseous?
A. The old lift is not considered gaseous.
Q. (Juryman) How about the old curve gangway.
A. It is shut down.
Q. Were there any men sent away that morning on account of gas?
A. Yes.
Q. Were was that?
A. In the Northwest.
Q. There was too much gas in No. 4 to work?
A. In the Northwest.
Q. (Juryman)Does the electricity run in there?
A. Itcruns as far as the door in the Northwest.
Q. Does it run were this spill is?
A. No it does not run in there at all; there is a mule there to haul the cars.
Q. Did you help carry the men out?
A. I only helped carry Dobish.
Q. What men have been right near the gas?
A. I could not tell. I could not recall the men.

Q. The people working in ther, are American or foreingners?
A. About two thirds are foreingners.I was the only English speaking person working in the airway.
Q. Is there any reason for that?
A. Not that I knew of.
Q. Are the Americans adverse to going in?
A. I could not tell you that.I asked Richards(Mine Foreman)for a job and he gave me a job laboring in ~~the/place~~ a shute.I asked Rotett(Assistant Foreman) for a job mining, and he said fetch your tools out in the morning, I had my papers since Christmas.
Q. Is there more difficulty or less difficulty in getting coal at No.4
A. The only difficulty in getting coal out the Northwest is by Mules. They did not put the electricity in there on account ofthe gas; the motor runs into the door and the mules pull ~~the~~ it the rest into the the place were the gas is.
(Mine Inspector) That is a long distance from were the accident occurred.
Q. (Juryman)Did all your men, to your knowledge, understand English?
A. Yatsick and Lasko understood English and Mishick understood pretty good English,you could speak to them three.The deaf Joe you could not speak to him.
Q. (Juryman) What is he, a laborer or miner?
A. A laborer pushin the buggy.
Q. Where did you find Dobish?
A. I did not find Dobish, he was lying were Cunning was sitting, and the three other men were right at the end of the branch loading a car.That fellow that was ~~lying~~ here(Stetina) and his miner were in East and it tumbled him around,and they were here(see sketch)at this spill(meaning the men still entombed), and there were two buggy men pushing the buggy back and forth taking the stuff away,and there were two men there taking it away.
Q. (Mine Inspector)You stated there was a couple of little spills along here (see sketch)there were not there when you were timbering here(see sketch) It is evident these two little spills came eitherby the explosion or falls.It was since you were there they came.
A. Yes.
Q. Were these fellows in there?
A. Yes a pretty good piece. The driver was killed,I could not say were he was, and the three men are closed in there (see sketch). I took three laborers with me when I went out for the poles.
Q. When you were working in there did you see any smoking, or did they use naked lights?
A. No. The only time I remember was they tried to smoke was the day my laborer went to smoke.
Q. Had any of them tryed to smoke?
A. No.
Q.)Mine Inspector)Was Stickler(Shaft Foreman)in there?
A. Yes, and he gave Cunning strict orders that if anybody interfered with the spill~~s~~ to let him know and he would see that they would not work untill it was cleaned up.
Q. How do you know that some of the men~~/were~~ in the Northwest went home?
A. They went in to work with me.

Q. You were working with safety lamps?
A. Safety lamps and battery lamps.
Q. Do they allow naked lights in the gangway?
A. Yes, the motormen use them because because there is fresh air in the gangway.
Q. Do theyy use them off the gangway?
A. No.
Q. Where do the have the fellow that takes the matches?
A. In here(see sketch) at the Northwest.
Q. How are they working to get them out?
A. They are working at these cross-cuts and working in this way, they are working three different ways.
Q. You said something about a spill that closes the gas off that makes a lot of gas in a compact space.
A. No.
Q. Did your safety lamp show gas while you were in?
A. No
Q. How long were you away from there?
A. I left right after we had our dinner, about a half an hour.
Q. (Mine Inspector)Do you think it was possible during your absence to have struck a heavy feeder?
A. They could have done that.
Q. Where they just picking this spill up?
A. Yes just trying to get this spill.

Harry McElmoyle Third Witness Sworn

Q. Were you working in No.4 on September 16th, about two o'clock?
A. Yes.
Q. What part of No.4 were you working in?
A. No. 2 turnout.
Q. (Mine Inspector) Was that in No. 4 Shaft?
A. Yes.
Q. (Mine Inspector) What side?
A. East side.
Q. Where abouts were you on this sketch?
A. About 100 feet up the turnout from No. 2 branch.
Q. What was the first thing you knew about the explosion?
A. I felt the wind.
Q. Did you see any fire?
A. No, nothing only above us.
Q. What did you do when you heard the explosion?
A. I did not do nothing.
Q. Did you come up the gangway?
A. I told them to go out the gangway.
Q. When you came out what did you find?
A. I ran into the mule.I just came out the gangway on my hands and knees and run into the mule.
Q. (Mine Inspector)Where did you find the mule.
A. Right at No.2 branch in the middle of the gangway.
Q. What did you do?
A. I seen Willie Stickler comming in and I asked for a safety lamp, and I went back in again.

Q. Where did you go to then?
A. I went back with Willie, and by the time I got in they were comming out with Cunning, and then I went to the Hospital.
Q. How long have you been working in No. 4 ?
A. I am down the shaft about two years.
Q. Are you working in this return airway?
A. No I am leader boss, and I go only in the gangway.
Q. Did you ever meet these fellows who work in the airway, did you ever happen to see anybody smoke cigarettes?
A. Not inside.
Q. Where did you see them smoke?
A. In the gangway, I never go in the ai...y.
Q. If you had no business in the airway you would not know whether they smoked or not.
Q. Do they allow naked lights in the gangway?
A. Yes.
Q. Do they now?
A. No.
Q. Is anybody suposed to have matches in there?
A. Nobody is supposed.
Q. Do you see them smoking there?
A. Yes on the gangway.
Q. Who sees they do not have matches?
A. It is a standing rule.
Q. Did you ever see anybody punished for it?
A. They ought to be if they ain't.
Q. Do you know of anybody that was?
A. No.
Q. Do you have any idea how this accident happned?
A. Well this fellow(Mishick)came out on the turnout, and he came out and gave us all a cigarette and took one himself, I do not know whether he went in with it or not.
Q. Were you all smoking?
A. We were all there.
Q. Smoking?
A. Yes.
Q. Which one was that?
A. Joe Mishick.
Q (Juryman) If he went in he would have to pass Cunning going in with the lit cigarette.
A. Yes, but you can easily pass him with a cigarette.
Q. Would he have to pass hiam with that lit cigarette?
A. Yes, but he was looking for cars, and ~~why~~ maybe he did not pan any attantion. A man that works in ther is supposed to have sense not to go in there with a ~~cigarette~~ cigarette.
A. There is quite a few do a lot of smoking on the sly.
Q. Do you ever see any?
A. No, but you can smell it.

Fourth Witness **Edward Kennedy** **Sworn**

Q. You were working in No. 4 shaft on the East side, September 16th, about two o'clock.
A. Yes sir.
Q. That is the day of the accident?
A. Yes sir.

Q. What do you do in the mines? miner?
A. No, I am a loader.
Q. Where abouts were you working in the gangway or airway?
A. In the gangway, but right befor the explosion went for a prop,me and Mleasser.
Q. When you were comming back the explosion occurred?
A. Yes.
Q. You had been working there all morning?
A. Yes from about 9 o'clock.
Q. Have you worked in that air place before?
A. That was the first time I ever worked there.
Q. (Mine Inspector)How long have you been working in the return air course?
A. Only that day.
Q. In the morning while you were working there did you see naybody smoke?
A. No.
Q. Did you smell people smoking inside, can you smell that, did you ever notice that?
A. No, I did not smell it.
Q. Did you smell any tobacco smoke?
A. No.
Q. No time?
A. No.
Q. What happned when the explosion occurred?
A. We went out for a prop from No. 2 airway to No. 4 cross hole, passed No 1 airway and comming back in when we met the motor, and we left the prop down untill the motor would pass,and sit on the prop a little bit, and with that the explosion took plade.
Q. You heard the explosion what did you do?
A. We threw ourselfes on the face.
Q. What did you do after?
A. We went out to the hospital.
Q. Did you go in at all?
A. No.
Q. Did you talk to any of these fellows that was injured and not killed?
A. No, only John Buba.
Q. What does he do?
A. Miner.
Q. What did he have to say about it?
A. He said he got knocked down with the wind of the explosion.
Q. During the morning did you smell any cigarette smoke in the return airway?
A. No sir.
Q. You have worked in No. 4 before?
A. I have worked in there since the first of January.
Q. Have you ever seen them somke on the gangway?
A. On the main gangway but not on the air way, or in the Northwest where I am.
Q. Did you see any of them smoke that morning?
A. No sir.
Q. This gas that caused the explosion, can you smell it before it happned?
A. No.

Fifth Witness **Thomas Murphy** **Sworn**

Q. Were you working in No. 4 Shaft, East side about 2 o'clock on the afternoon of September 16th,
A. Yes Sir.

Q. What is your position a miner?
A. No, I am a loader boss.
Q. When the accident occurred, where were you working,look at this sketch?
A. We were right up here, 55 shute. In the main gangway.
Q. What was the first thing you knew, anything, when you felt the wind?
A. Yes.
Q. What did you do?
A. I jumped in the ditch.
Q. After it was over you crept out?
A. Yes.
Q. Did you see Cunning?
A. No.
Q. Where did you go?
A. I went out to shute 21 and stayed there for a while and met the motorman coming out with a man, and then I went to the hospital.
Q. Do you smoke in the gangway?
A. Yes, but not in the airway.
Q. You smoke and have naked lights?
A. Yes sir.
Q. Have you ever worked in this airway?
A. No.
Q. You saw them smoke around there?
A. Yes.
Q. Did they smoke off there?
A. No.
Q. You should not smoke on the main gangway?
A. Yes you can smoke on the main gangway but not in the airway.
Q. (Mine Inspector) Did you hear of anybody smoking in the airway?
A. No sir I never heard of anybody smoking in there.
Q. Have you ever heard any remarks that the outlet there is verg gassous and that it would be dangerous to smoke?
A. Yes sir.
Q. Were they afraid of this return air?
A. Yes.
Q. Afraid to light a light there? (Mine Inspector)
A. Yes.
Q. (Mine Inspector)As far as you know,do you know or do you not know whether a naked light was allowed in that return aircourse?
A. No.
Q. (Mine Inspector) It was not allowed?
A. No sir.
Q. Do you know of anyone smoking cigarettes there?
A. No, I never caught cigarettes there. About this fellow Joe Mishick he had he had come out on the turnout and gave me a cigarette and gave the other loader boss one and he emptied the box and went back in he was not in 10 minutes untill the explosion, but whether he lit it or not I don't know.He had a cigarette in his mouth when he ~~left~~ leaving us.
Q. Did he go past Cunning?
A. (MINe Inspector) Not Necessarily.
Q. How would he go into the place?
A. (Mine Inspector)He could go in through here(see sketch)
Q. What are Cunnings duties?
A. (Mine Inspector) He Looked after these people(The men who are injures and Killed)

Q. (Juryman) Has he a seat on the door leading from the branch to the gangway?
A. No, he had no seat right were the explosion occurred. Right here he was sitting on a stick of timber.
Q. (Juryman) I mean down here (see sketon)
Q. Where did the explosion occur?
A. Right inside of the door.
Q. (Mine Inspector) Are you thinking or do you know?
A. I am just thinking.
Q. What makes you think so?
A. We were on the inside and it did not go off inside,so it must of occurred in No. 2 airway.
Q. (Juryman) Could this Cunning smoke where he was stationed?
A. No sir,but I heard he smoked in there and he was positively forbidden not to smoke.
Q. (Mine Inspector) In the return aircourse?
A. In the return air course.
Q. Have you ever heard anybody use or smell tobacco smoke in the return air course?
A. No sir.
Q. You were smoking in there,and 10 minutes after that man left you the explosion occurred?
A. Yes.
Q. How far do you think he could have gone?
A. I could not say.
Q. Where did they find him?
A. I was hurrying them out on the motor.
(Mine Inspector) He could go from here to there in 10 minutes(from point where he gave Murphy cigarette to where the explosion is supposed to have occurred)
Q. What was Mishick doing with you?
A. He was looking for a battery.
Q. How long would it take him to walk into where Cunning was killed?
A. Just about 7 minutes.
Q. He could not have gotten into the return airway?
A. Yes he could have gotten into the return airway from the time he left us. Whether he had a cigarette lit going in or not I could not say, but he gave each of us one, and he had one in his mouth when he left.
Q. (Mine Inspector) You cannot say whether he went in there with a lit cigarette?
A. No.
Q. It occurred in the airway?
A. Yes.

Sixth Witness William E. Stickler. Sworn

Q. On September the 16th,about 2 o'clock in No. 4 Shaft, East side, were you there that morning?
A. I was there in the morning.
Q. What time in the morning?
A. I left there about 11 o'clock. I was there from 10 to 11.
Q. What is your position?
A. Shaft Foreman.
Q. No. 4 Shaft?
A. Yes sir.
Q. How long have you been there?
A. I have been there two years this November.

Q. What are the rules in regards to smoking and carrying naked lights in No. 4 Shaft, are the rules just understood or printed rules.
A. We have men stationed where we collect matches and any cigarettes and tobacco.
Q. What are the rules?
A. That they are stopped in these gasy sections and in the airway they are not allowed to smoke in.
Q. What part do they get naked lights and smoke in, on the gangway?
A. Yes.
Q. Do you allow men to have naked lights in the return air course(Inspector)
A. No sir.
Q. Mine Inspector) How far do you permit naked lights in the gangway?
A 49 shute, that is the last chute in the straight East gangway.
Q. That gangway is what part of the mines, 1/10 of the mines or so?
A. Oh yes.
Q. A very small part.
A. Taking the levels, that is the fifth level.
Q. Have you personally seen anybody smoke in the airway?
A. No sir.
Q. Have you ever smelled tobacco smoke?
A. No sir.
Q. Have you seen men smoke on the gangway?
A. Yes.
Q. Have you seen them come out (from the airway) and smoke?
A. Not come out smoking.
Q. But they have come out and smoked?
A. They came out and smoked and then threw them away.
A. I could not say whether they threw them away or not, but they smoked there.
Q. (Mine Inspector) Do you use tobacco Mr.Stickler?
A. No sir. If I could smell tobacco smoke in the airway I would follow it up untill I would find who had it.
Q. Are your rules printed or is it understood?
A. It is an understood thing where there is gas or in the airway.
Q. You have quite a good many foreigners?
A. Yes.
Q. Naturally a good many cannt talk English?
A. Quite a good many.
Q. (Mine Inspector) What lift did this occury on?
A. On the 5th, level.
Q. (Juryman) Is it very deep?
A. (Mine Inspector) 1,000 feet.
Q. What is your idea of the explosion?
A. The way I think, the gas must have come through these fellows working at the fall.
Q. These fellows was in the air shaft,did it block up the whole air shaft?
A. There was a considerable amount of air going through, and when I left them they were poling the top.
Q. Have you been in there since the explosion?
A. Yes.
Q. (Mine Inspector) There were a couple of other falls, do you think they occurred before this, or caused by the explosion?
A. I think they were caused by the explosion.
Q. (Mine Inspectee) Where do you think the exlposion occurred?
A. In the airway.
Q. (Mine Inspector) Close to the spill?
A. Yes.

Q. Is it nearer to the spill th n to this No 2 ?
A. Yes.
(Mine Inspector) You have proof positively of that because it knocked out the stoppings.

Herman Elsasser (Recalled)
Q. While you were working in the airway any time during the morning did you smell tobacco smoke in the air?
A. No sir, I did not.
Q. Do you know whether any of the men who worked for you had matches or tobacco?
A. I could not say that.
Q. Do you smoke?
A. No, I do not use tobacco at all.
Q. (Juryman) Could a heave wind drive air enough to drive the blase out of the safety lamp.
A. I could not tell that, they are new safety lamps they are using, they are Wolf lamps, and because I have not been working long enough with them lamps but there could be a fall heavy enough to blow these Davy lamps out.
Q. (Juryman)You would not know whether it would carry with the new lamp then?
A. I have not worked long enough with them.

V E R D I C T

These men came to their death by an explosion of mine gas in No 4 Shaft; the cause of the esplosion being unknown. The Jury Recommends that the Lehigh Coal and Navigation Company shall use safety lamps from No. 1 turnout in. We also recommend that smoking, matches pipes and cigarette be prohibited from the East side of No. 4 shaft.

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NOTE:-
After the inquest, Coroner Bray stated that in view of the fact that the deaths of the men still entombed were from the same cause as those for which the inquest was held, he deemed it unnecessary to hold a second inquest after the bodies had been recovered.

The men still entombed are YATZICK RATRAB. PETER PASKO and JOE GURKO.