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Statement before the Surface Transportation Board
Quarryville, PA, November 19, 20003
Concerning the historic importance of and preservation of the
Atglen-Susquehanna Line
Also known as the Enola Low Grade or Rails to Trail.

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I am a retired railroader of 39 years in the traffic department of the Pennsylvania Railroad, Lehigh Valley Railroad (Vice President Traffic), Penn-Central, and Conrail - an Assistant Vice-President Coal and Ore with a staff responsible for 100 million tons of coal, coke, and iron ore per year.

I was a member of the last Valley Forge State Park Commission (1970-77), during which period I was party to the development of the walking and bicycle trail throughout the Park. In 1976, the Sierra Club requested that I submit to Penn Central its plan for a bike trail on the abandoned Pennsylvania Railroad/Schuylkill Division from Betzwood to Philadelphia. Montgomery and Philadelphia Counties now complete the trail. 1.1 million people now use the trail yearly.

Montgomery County has extended the trail to Oakes where it joins the Perkiomen Trail (former Reading Company Right of Way). The dedication of the trail is scheduled for November 22, 2003. Monthly use of the trail averages 50,000 persons. Montgomery and Chester Counties are in preliminary stages of extending the trail to the Berks County line beyond Pottstown, a total of 13 miles.

I have been active in the Horse-Shoe Trail for Valley Forge - 133 miles to the Appalachian Trail beyond Hershey, PA. It is one of the longest trails (hiking and horseback) on private property in the Northeast - 55% private, 30% road, and 15% government land. I contacted five counties and many of the 27 townships through which it traverses, state, and federal government for help in protecting the trail from developers. The Federal government in 1990 approved an extensive public study of how best to preserve the trail.

It was during the trail study with the Lancaster County Planning Commission that I became acquainted with the abandonment of the Enola Low Grade. I share my experiences with the Schuylkill and Hibernia Trails. The latter in Chester County from Coatesville to Elverson - 18.5 miles of abandoned Reading Company Line. The project failed because of reversionary rights and Conrail at that time (circa 1985-86) was exempt from rail banking.

I have followed the ups and downs of the Atglen Susquehanna Trail (FAST) - and have on occasion rendered some support.

In connection with the present hearing, I submit an article (Exhibit 1) from The Keystone - a publication of the Pennsylvania Railroad Technical and Historical Society - Winter, 1994 entitled "The Atglen and Susquehanna Lancaster's Low Grade" - a History of Construction.

A few highlights of the article:

1. Work started in 1903 and was completed in 1906.
2. Purpose to relieve congestion on main line and promote an easier grade - .03% via low grade versus .06% via main line.
3. Electrified 1938
4. Traffic volume 1941
 - 52 trains with 46-48 cars (89 cars per train)
 - 22 freight - average on main line 66 passenger - a total of 89 trains

I estimated on a peak day 65-70 trains during the war years with 5000-6000 cars over the low grade. There was no major congestion on the East coast during World War II as a result of the Low Grade and the electrification of the Pennsylvania Railroad.

In addition to its historic importance as a transportation corridor, the Low Grade has today many beautiful stone arch bridges over water and roads - exhibiting the craftsmanship of a century ago. They should be preserved.

In 1992, Rettew Associates, Lancaster, developed the Lancaster County Regional Open Space Plan - a program for the cooperative efforts among all branches of government. Greenway Systems (greenways in a linear line of open space for many purposes) was one of three primary recommendations. The Atglen-Susquehanna line was included for recreational use, scenic views and open space. Greenways have been recommended by both State and Federal agencies.

The Atglen-Susquehanna Line as a rail-trail for recreation purpose is a fitting tribute to its historic import as a transportation corridor, its stone arch structures, and famous Martie Forge Bridge (Exhibit 2).

A trail will provide outdoor activity for walkers, joggers, bikers, birdwatchers, and horses on the shoulder. Plain folk in the area will enjoy the trail as well as county residents and visitors.

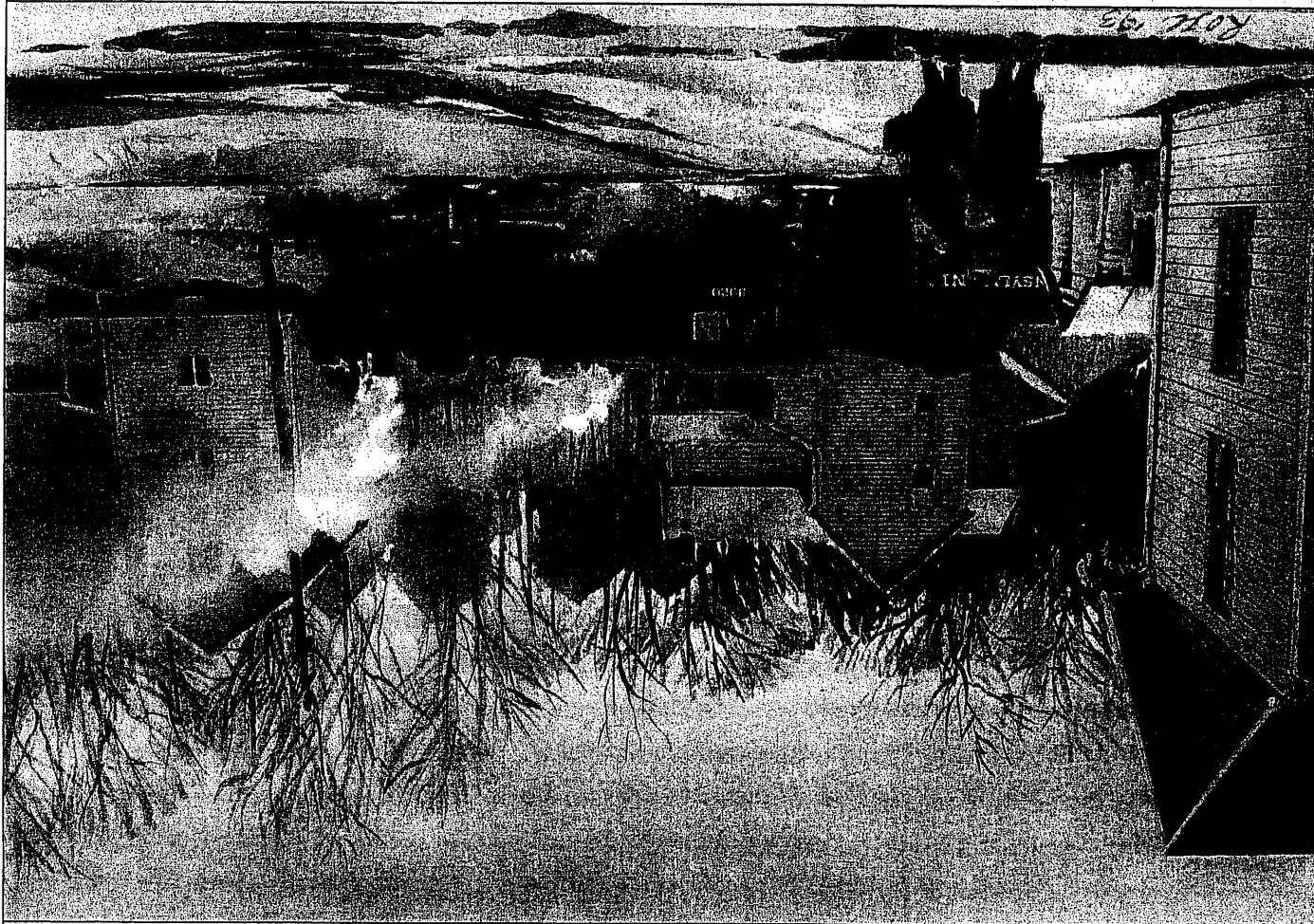
Equally important to the recreation is the health benefit of the trail. Obesity, depression, and stress are major national health problems that can be mitigated by trail use (Exhibit 3).

Dr. Anne Lusk, PhD in Urban Planning, University of Michigan, is currently working with the Harvard School of Public Health in writing a book on the health benefits of recreation.

I urge the Surface Transportation Board to find the entire line of historic value and that the townships, the County, and the State work cooperatively to develop the Atglen-Susquehanna Line into a class one rail-trail. The alternate use of the line could be "messy".

I am presently a member of the Chester County Park and Recreation Board appointed in 2002, a recent appointment for a second term. I am speaking today as an interested citizen and cyclist.

THE ATGLEN & SUSQUEHANNA: LANCASTER COUNTY'S LOW GRADE
100 YEARS AGO ON THE PENNSYLVANIA RAILROAD SYSTEM - 1894
THE PANHANDLE DIVISION: BRANCH LINES, PART III



The Official Publication of the Pennsylvania Railroad Technical and Historical Society

Volume 27, Number 4
Winter 1994

THE Keystone



Exhibit #1
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THE ATGLEN & SUSQUEHANNA:

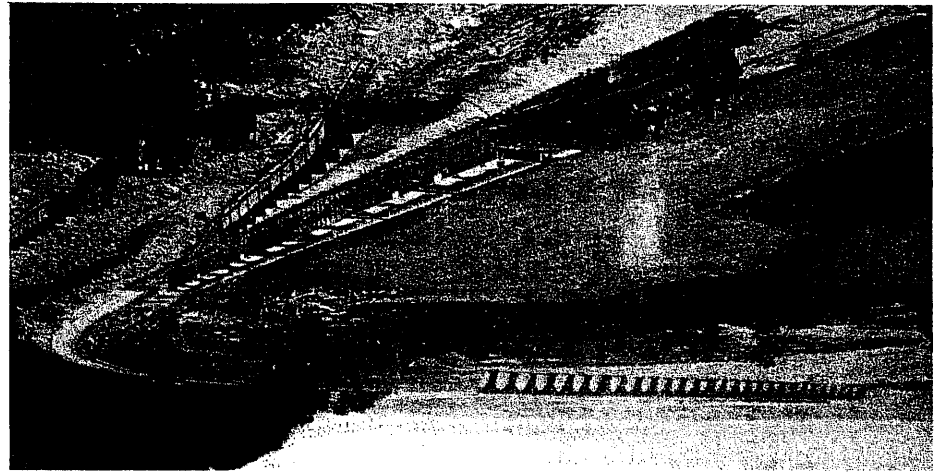
By the beginning of the twentieth century, the Pennsylvania Railroad's territory, traffic levels and income had grown substantially since the company's founding. The traffic was putting severe strains on the system and the railroad would have to invest considerable amounts of capital for relief in strategic areas. Lancaster County, Pennsylvania, had two routes through the western part of Lancaster County. The first, the Columbia Branch, followed the

Susquehanna River to its namesake town, where it left the river and climbed a steep grade to Mountville and continued on to Lancaster. There the Branch joined the other route, the main line, which, on its way to Lancaster, had climbed almost 200 feet in about seven miles from Elizabethtown. These grades limited train size or required the railroad to add costly helper engines. Problems existed east of Lancaster, too. Both the main line west of Lan-

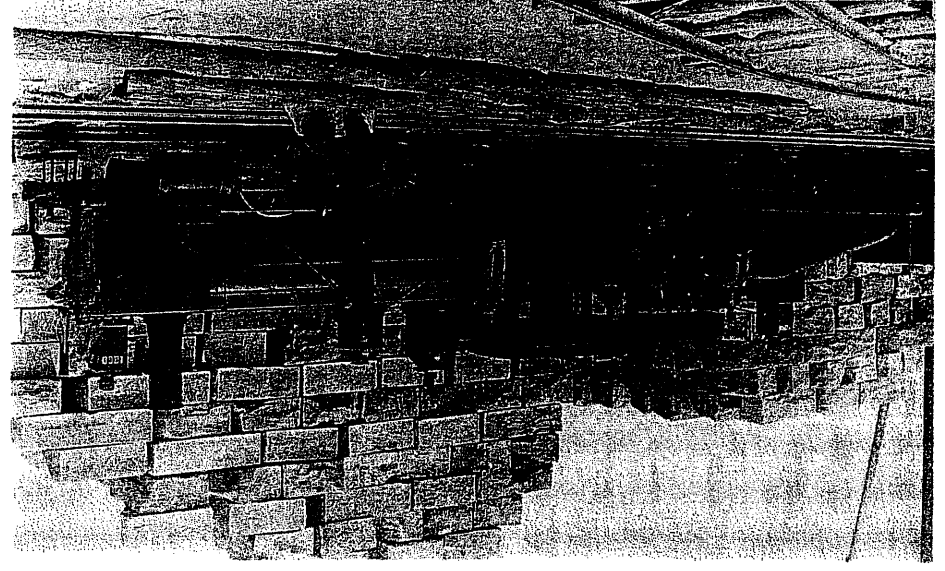
caster and the Columbia Branch had two tracks and the main line had four east of Lancaster. However, the Conestoga River bridge was only two tracks wide. When the railroad built the bridge it left protruding stones on the south side to mesh with a possible, but never pursued, expansion. At Gap the railroad had a 0.6% grade, compounded by sharp, speed-restricting curves. These and other problems led PRR President Alexander J. Cassatt to the solution of "an essentially new double-tracked railroad for freight only, from a connection with the main line and the Northern Central near Harrisburg on east to Philadelphia."

This solution was not a new one, as an earlier PRR president, J. Edgar Thomson, had a vision of a low-grade route stretching from the eastern seaboard to the midwest; the eastern Pennsylvania line would have been part of this bigger scheme. Keeping such an extensive enterprise concealed was impossible. By late 1902 a report in the *Lancaster Inquirer* described the route as following the west shore of the Susquehanna from the new yards at Fairview (Enola Yard) to a new bridge at Shocks Mill, continuing along the east shore to Creswell, where it would start an easy grade to cross southern Lancaster County. The newspaper projected that contractor H. S. Kerbaugh would soon start work near York Haven on the west shore in Lancaster County and Shocks Mill in York County and would employ 1,000 men and 150 horses.

In southern Lancaster County the line would cross, from east to west, Sadsbury, Bart, Eden, Providence, Martic and Conestoga Townships. Work would start at Quarryville and proceed east and west from there. To secure the route, right-of-way men started visiting local farmers early in 1903 to obtain releases. Naturally, some resisted, but the PRR ultimately prevailed.



The new PRR bridge crossing the Susquehanna River at Shocks Mills, Pa., on the new low grade line. Postcard view showing a Pennsy construction train headed by a Consolidation on the York County (west bank of river) side. Note the narrow-gauge locomotive and cars to the right. At the upper right, a short, curved, arched span bridges the Codorus Creek. (James J. O. Lynch, Jr. collection)



PRR class M(B3) 0-6-0 #1260 construction locomotive pauses in front of a pile of quarried stones destined for the Shocks Mill Bridge. (author's collection)

LANCASTER COUNTY'S LOW GRADE

Some credit (or blame, depending on your point of view) for the route has to go to the PRR's Chief Engineer, William H. Brown. Born in southern Lancaster County, Brown got his start by running trial surveys on the narrow-gauge Lancaster, Oxford and Southern, near his home. After working on the U.S. military railroads at the start of the Civil War, he moved on to the PRR, staying there 44 years, 36 of them as Chief. He worked on many large PRR projects and often encountered the railroad counsel, who would warn him not to do some act because of its questionable legality. He would reply, "But I have done it." Consequently, he became known as "the Supreme Court of The Pennsylvania Railroad Company."

Rockville Bridge, completed in 1902, is the best-known of Brown's projects. The low-grade line across Lancaster County was Brown's last task, as he reached the PRR's mandatory retirement age of 70 in 1906, before the line's completion.

One of the first places work started was on Shocks Mill Bridge, which would cross the Susquehanna River. Work began on Dec. 3, 1902 and by May 1903 workers were building about one pier a week. (They started the first abutment on March 16, 1903 and the first pier on April 26, 1903.) The quickest pier went up in five days, three hours. When H. S. Kerbaugh Co. completed the bridge in the autumn of 1904 it had 27 piers and 28 arches. The bridge was 2,221 feet long, with the top of the coping 61 feet above low water and the key-stones 54 feet above the same mark. Sixty thousand cubic yards of masonry went into the bridge. Into the valley over the piers went sandy loam on the Lancaster County side and stone ballast on the York County side. First estimates called for two years to complete building the bridge. How-

An 0-6-0 construction locomotive, owned by H. S. Kerbaugh, and crew. (Tom King collection)

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THE KEYSTONE

bridge piers. The rafts had their lumber loads smashed, but crewman Wrightsville. The raftmen wanted to intervene and make the railroad remove one pier to form a safe passage-way through the area. However, with William H. Brown, "the Supreme Court of the PRR," in charge, guess who won.

Close by, on the York County side, Kerbaugh built another, smaller bridge over the Codorus Creek. Workers began the bridge in the autumn of 1903 and finished it in the spring of 1904. The bridge, which consumed 12,000 cubic yards of ma-

ter, Kerbaugh finished about three months sooner, impressive considering the company had to suspend work for 121 days during the summer of 1903 because of high water. Construction was not without its human cost; there were injuries from premature explosions and at least one drowning.

Also, during 1903's summer a potential legal problem surfaced. In July four rafts loaded with lumber came down the Susquehanna and collided with a coffer dam around one of the

A crowd gathers in the "Big Cut", east of Quarryville on July 27, 1906 for the A&S's Silver Spike Ceremony. George W. Hensel, Jr., a Quarryville merchant (in the center, wearing a white blouse), drove the last spike and Anna Acheson, (to the left, wearing a white blouse), daughter of an assistant construction supervisor, dedicated the line. (Lancaster New Era newspaper)



PRR inspection train, west of Quarryville, A&S Branch, November 1952. (Walter F. Minnich, Jr. photo)

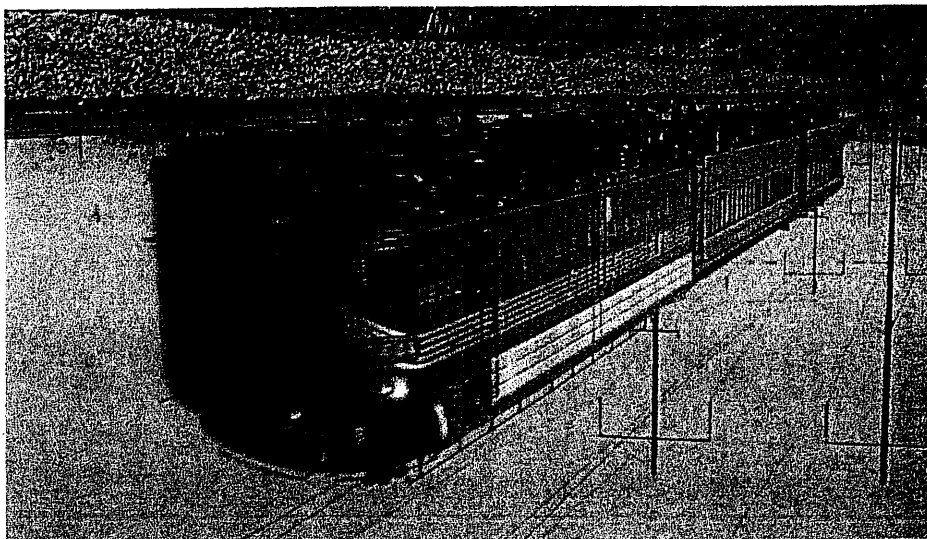
On the Lancaster County side, Kerbaugh faced a considerable physical challenge. The contractor had to build a bridge approach more than a mile long. The approach was a fill that grew to 36 feet in height at the bridge and was uniformly 40 feet wide. To supply fill material, Kerbaugh turned to the Vesta iron furnace's cinder banks a few miles downstream at Marietta. The contractor used a temporary narrow-gauge rail-

final capacity was to be over 50,000. was reportedly 20,000 cars, but its started, Enola's initial storage capacity operation in 1905. When service tors finished the yard and it went into mated cost of \$7,000,000. Contract-chipped in one quarter of Enola's est-ley and Philadelphia & Erie) each (Northern Central, Cumberland Val-The PRR and three subsidiaries the rest of the way to Enola Yard. expanded from two to four) trains ran thern Central, on whose tracks (newly tion, the line connected with the Nor-Near York Haven, at Wago Junction, 1905.

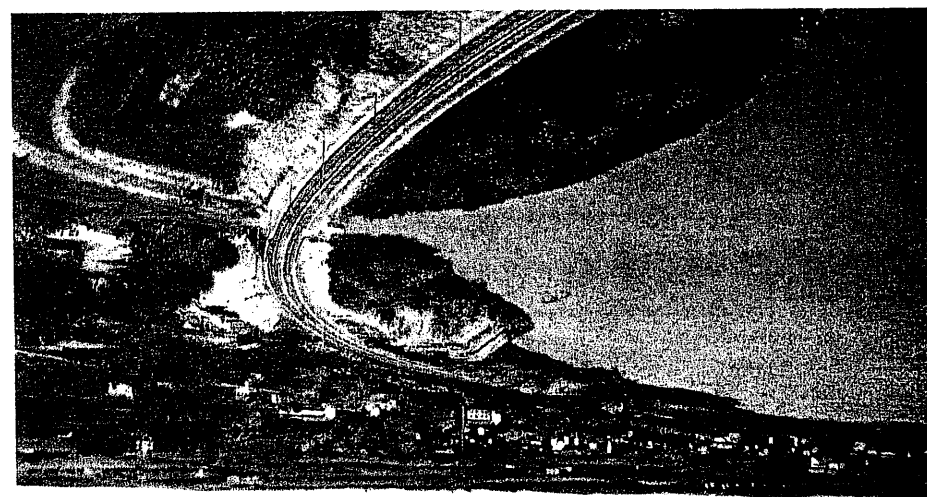
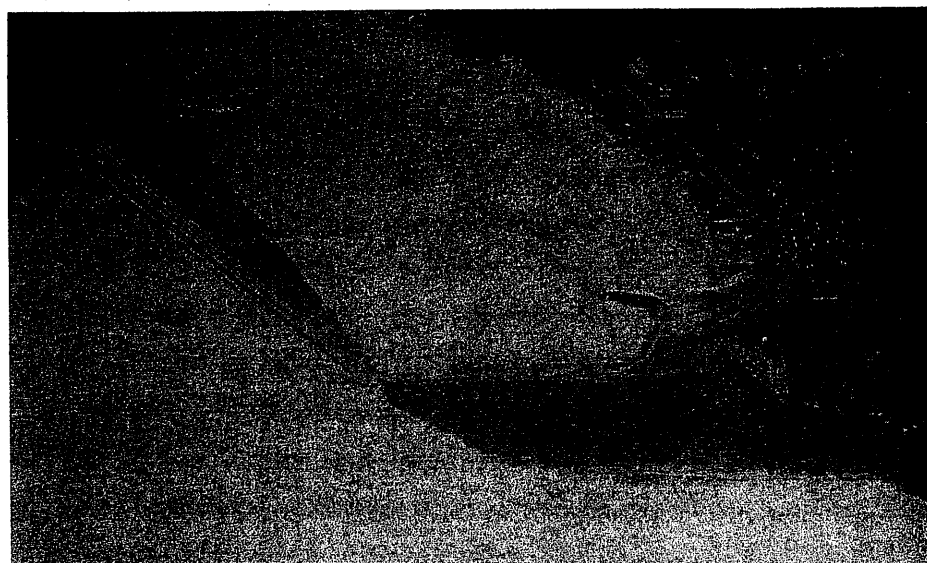
PRR system by buying it on Dec. 27, \$100,000 in stock securities into the of railroad, the PRR rolled it and its struction crews finished the six miles Columbia Branch. After the con-subsiary Northern Central and the sake towns and the railroad lines of Company, to run between its name-York Haven and Rowenna Railroad, the company established a railroad, the York County. To overcome this, the charter did not allow it to build in sides physical ones; the railroad's the PRR faced legal problems, be-To build the line in York County, cessed Rockville Bridge.

better known and more easily ac-similar in appearance to the much dorus and Shocks Mill Bridges were 6" above low water. Both the Co-stones 43'-6" and the bridge top 50'-sony, had six arches, with the key-

This view, from a postcard, is looking from Chickies Rock towards Marietta. The A&S curves through slag piles, whose centers went for fill on the Shocks Mill bridge approaches. (author's collection)



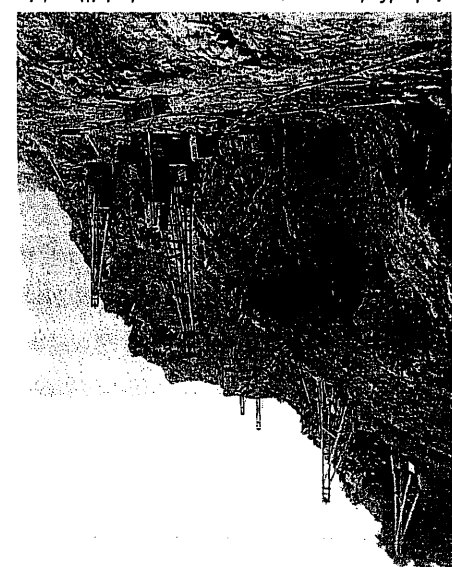
By following a tangent between two hills, the A&S cut off part of the Susquehanna River, forming Kerbaugh Lake. Flooding in 1936 cut off the line near both shores, creating an island of what remained. To prevent a recurrence, the PRR, after WWII, filled in the lake with dirt and rubbish, much of which came from Altoona. The Columbia Branch followed the base of the hills until the railroad abandoned it. (Railroad Museum of Pennsylvania collection)



In the autumn of 1903, the PRR from Columbia to Baltimore. temporarily transfer five freight crews Harbor. Still, the railroad had to north from Perryville, Md. to Safe south from Columbia to Creswell and trains continued to use the Port Road a safety precaution. Turnaround between Creswell and Safe Harbor as 1903, the PRR closed the Port Road's tracks below. On June 20, Road's progress in the rocky terrain enough progress in the rocky terrain around Safe Harbor. To speed up work, Contractor Sims wanted to use explosives that, unfortunately, had the potential to rain rocks on the Port Road's tracks below. On June 20, 1903, the PRR closed the Port Road between Creswell and Safe Harbor as a safety precaution. Turnaround trains continued to use the Port Road south from Columbia to Creswell and north from Perryville, Md. to Safe Harbor. Still, the railroad had to temporarily transfer five freight crews from Columbia to Baltimore.

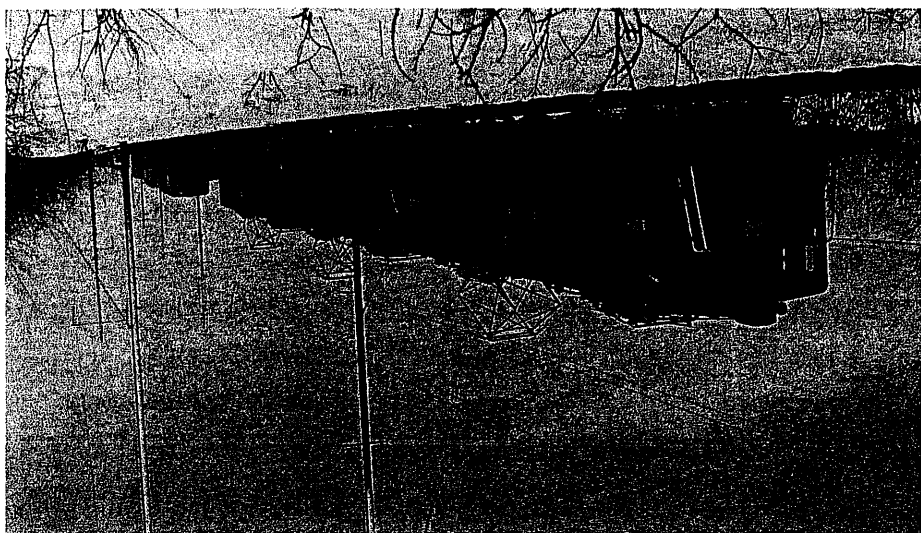
Steam shovels could not make fast working. these companies had over 3,000 men tions out of Quarryville. Together Company headed in opposite direc- Shields Company and McManus pany's base was at Safe Harbor. John Strohm's Mill, while Sims & Com- Kelley had their headquarters at southern Lancaster County. Ryan & construction companies were busy in Shocks Mills Bridge in 1903, other While Kerbaugh was tackling \$200,000 more than the bridge itself. approaches' cost was \$600,000, Mill Bridge catches the eye, the building the approach. While Shocks furnace site to where crews were road to move the cinders from the

A half-dozen steam-powered drills chip away at a hillside along the Susquehanna between Turkey Hill and Shenks Ferry, where the A&S would swing away from the river.

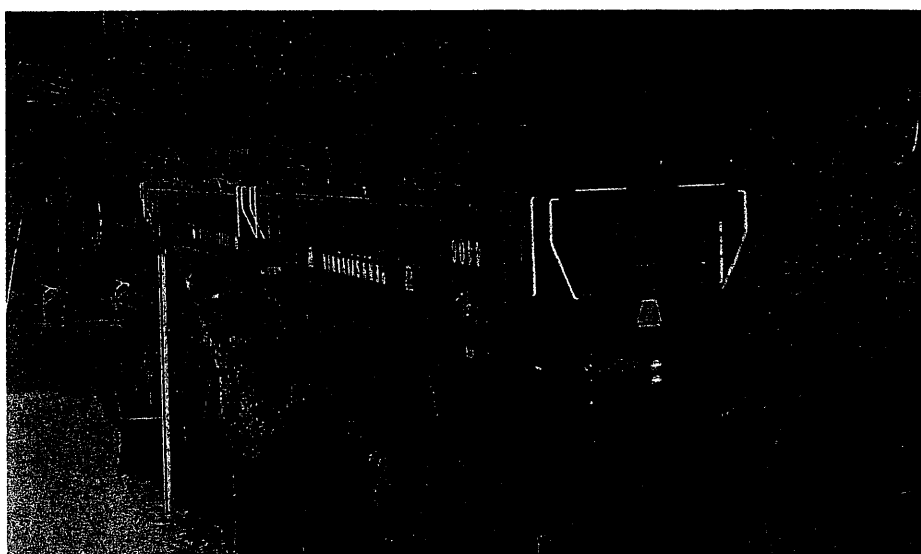


(Tom King collection)

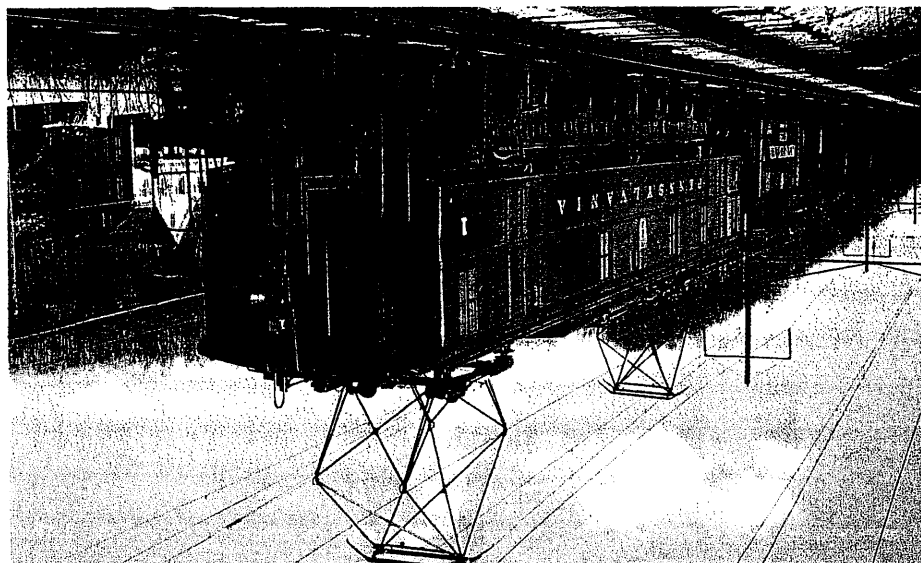
P5a motors #4741, 4711 and 4742 and freight consist, near Quarryville, Pa., February 1964. (Walter F. Minnich, Jr. photo)



E44 motors #4406 and 4413, skirting a rocky hillside west of Safe Harbor, Pa., with a westbound ore train. April 1962. (Walter F. Minnich, Jr. photo)

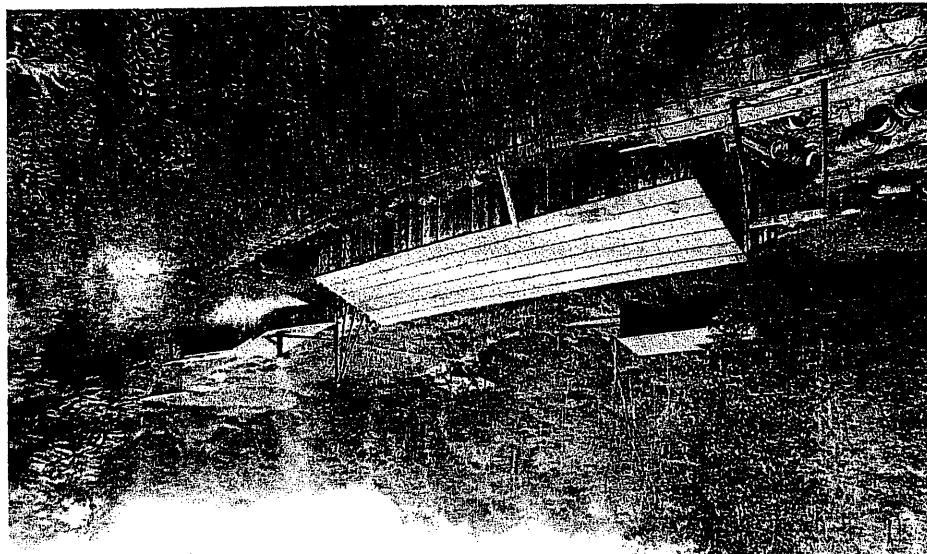


Snapper FF2 #1 on the A&S Branch. January 25, 1958. (James Shuman photo)

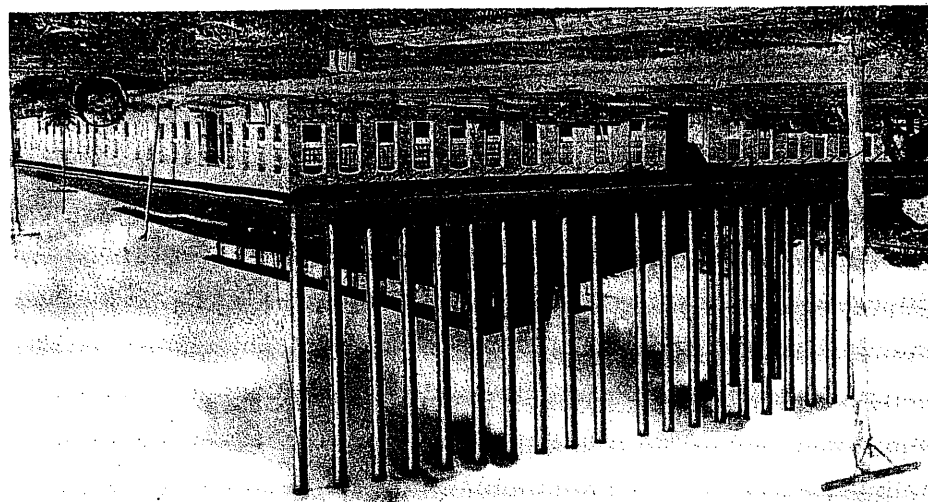


This was a typical dynamite manufacturing facility along the A&S. If an explosion occurred, fatalities and damage would be minimized because of the isolated locations. (Tom King collection)

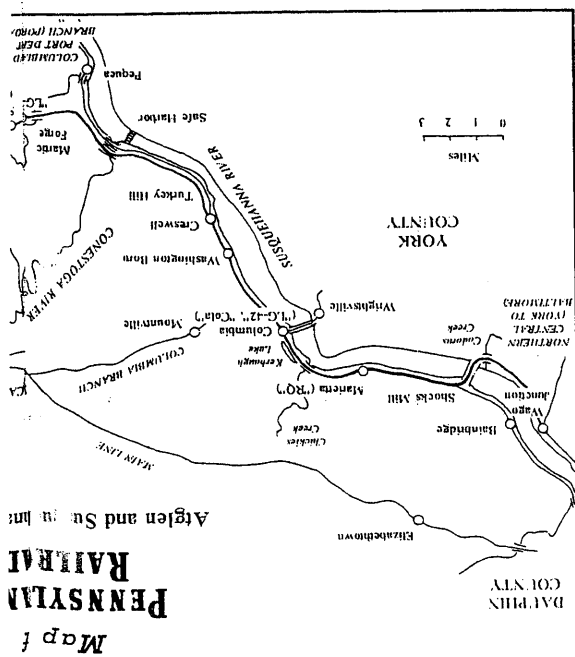
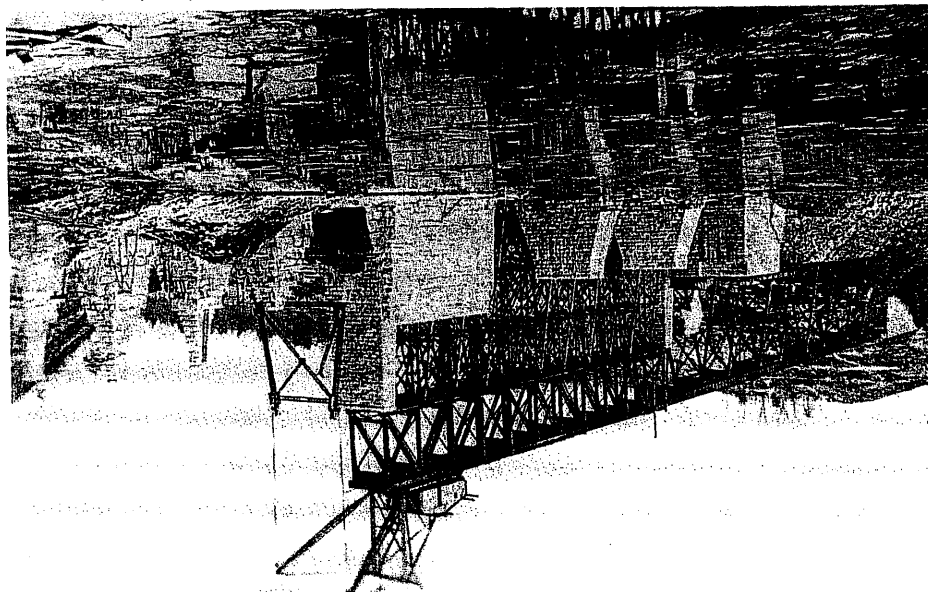
stopped work on the Low Grade. One explanation was that the delay in completing Shocks Mill Bridge prevented the line from being useful to the railroad in 1903, so the company decided to wait until 1904 to continue work. Another explanation was that a Chester County judge ruled that the PRR had no authority to build and had to stop. With William H. Brown, "the Supreme Court of the PRR," in charge, guess who won. In 1904 did not open auspiciously. In March ice broke up on the Susquehanna and created jams throughout its length in western Lancaster County. The PRR and Kerbaugh pulled men off the Low Grade construction and put 3,000 to work opening the line between Columbia and Harrisburg. Along with six steam shovels, they attacked the ice (30 feet deep in spots) that covered the railroad. The PRR brought in incredible amounts of food to feed the workers around Bainbridge: 2,250 loaves of bread, 30 hams, two beefs, six hogs, 250 lbs. of coffee, an equal amount of sugar and 30 gallons of milk *per day*, for about nine days. The ice also damaged the Shocks Mill Bridge, requiring later repairs.



To supply compressed air for tools, the local contractor turned the abandoned Safe Harbor rolling mill into a powerhouse. Under each of these 20 stacks was one boiler, each supplying steam to operate an air compressor. (Tom King collection)



A crane lowers another section into position on the A&S bridge spanning the Conestoga River where it empties into the Susquehanna at Safe Harbor. (Tom King collection)



On February 10, 1905, a special train, with General Manager William W. Atterbury and Philadelphia Division Superintendent W. B. McCaleb aboard, stopped in Columbia so the entourage on board might examine the Columbia Yard. The two had ventured from Philadelphia in an attempt to break up congestion that had 30,000 cars tied up between Jersey City and Pittsburgh, with the worst bottleneck being the Philadelphia Division. The congestion and resulting inspection trip stressed how

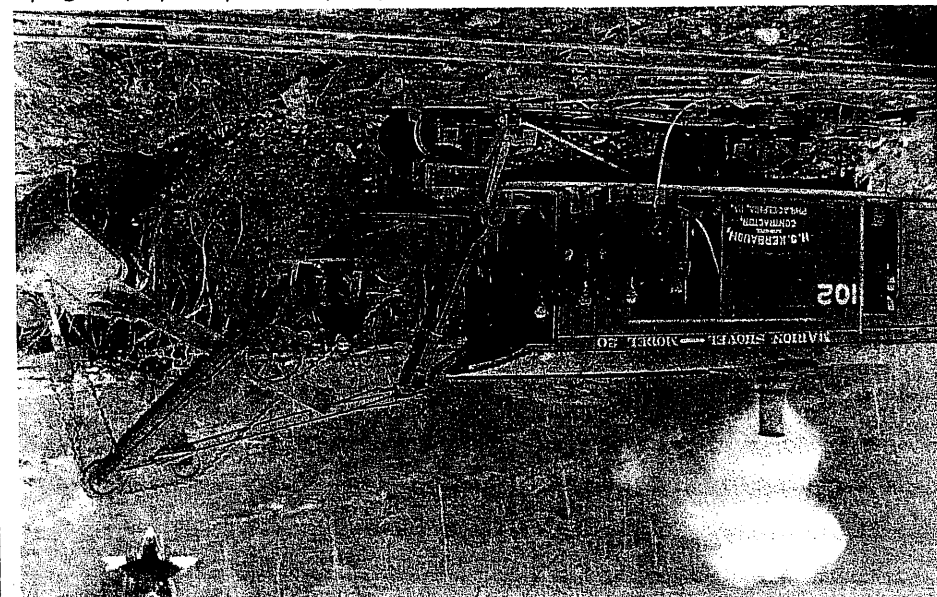
1905 did not start any better. On January 5, 1905, steam pipes used to keep Sims & Co. dynamite dry in Christina overheated and caused an explosion that destroyed the storage building. The 40 cases (one ton) of dynamite exploding reportedly damaged every house in town and caused an estimated \$25,000 to \$30,000 in property damage. The explosive force leveled a commercial greenhouse and lifted lathes and drills off their foundations at the Christiansa Machine Company.

1904 also saw the start of preparatory work for an even larger project that would capture not only Lancaster Countians' imaginations, as the Low Grade had, but that of all Americans - the Panama Canal. The Canal would end up taking almost three times as long and cost about 19 times as much as the A&S.

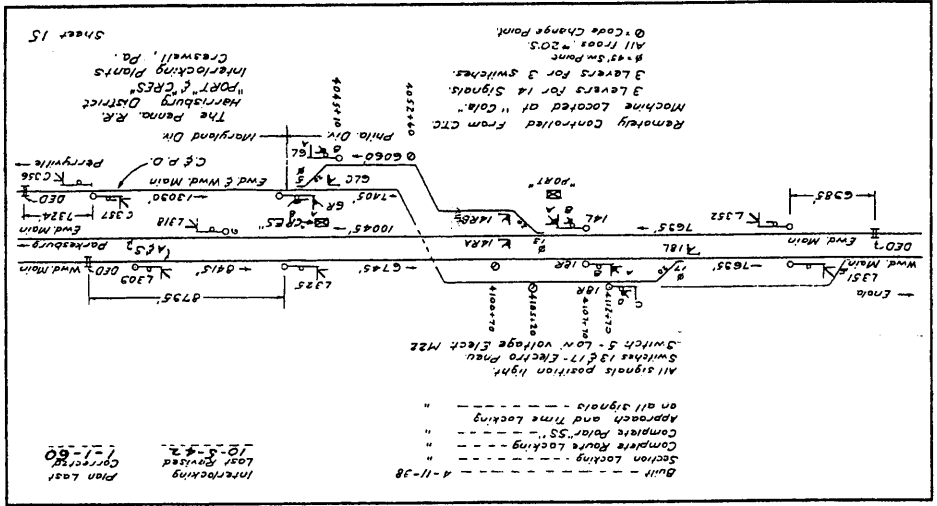
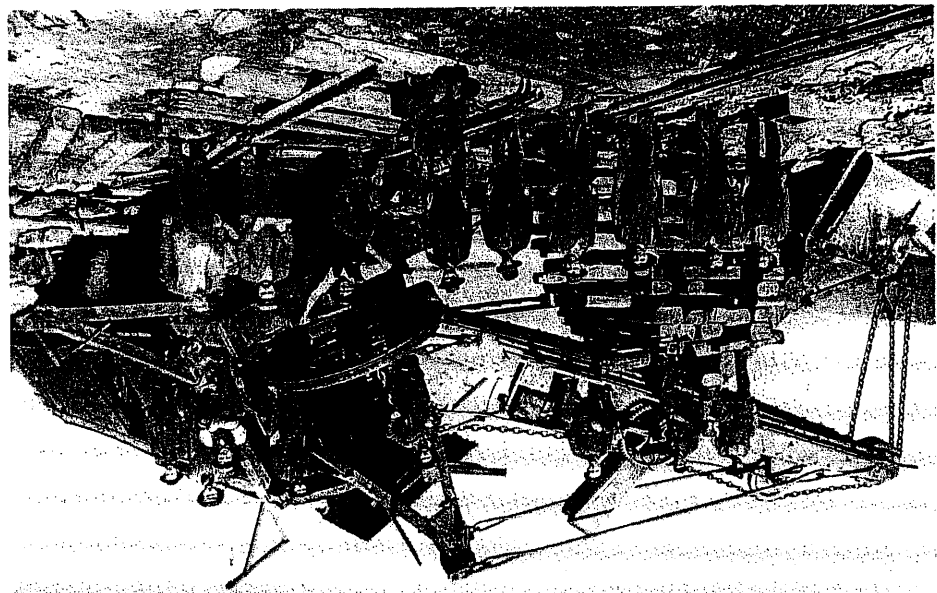


A ranch

Marion Shovel Model 20, #102, owned by H. S. Kerbaugh, at work on the Low Grade. (Tom King collection)



Another steam shovel, being righted after a mishap. (Tom King collection)



badly the railroad needed the Low

Grade.
Throughout the summer of 1905 work proceeded with an increasing human toll, as minor and major accidents happened regularly. Headlines such as "Peeled Out Pipe, Skull Crushed," "Blown Into Atoms His Awful Fate" and "Three More Killed On Railroad Work" were typical; these all appeared in a span of one week in May.

On July 17, PRR officials (including Atterbury) held a mysterious conference in Columbia on board his private car. The next day, before the train left for a trip down the Port Road, officials refused to talk. Speculation ran rampant, with most centering on the meeting being on the Low Grade. Some thought the PRR might expand its operations in Columbia by building new shops. Others were not as optimistic.

The summer of 1905 saw much blasting, especially along the river between Safe Harbor and Turkey Hill. On July 1 workers started drilling in a headland of rock about one-half mile west of Safe Harbor. Drilling finished a month later and work-



On January 11, 1965, 32 ore cars accor-
dianed themselves in the "Big Cut". Here
a Reading Company wrecker, borrowed
by the PRR, works on the east end. No-
tice the worker on top of the catenary
pole, placing a light so that work can con-
tinue into the night.
(Walter F. Minnich, Jr. photo)

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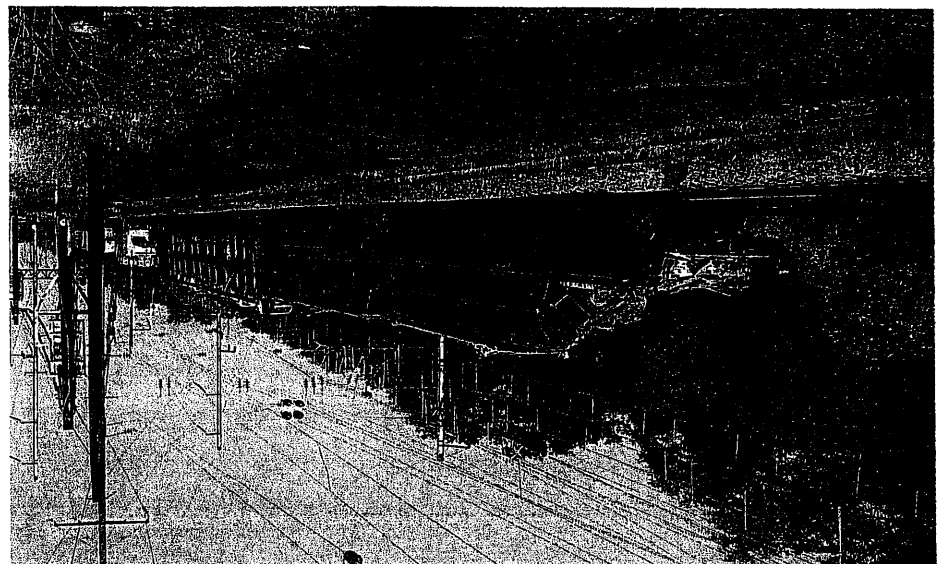
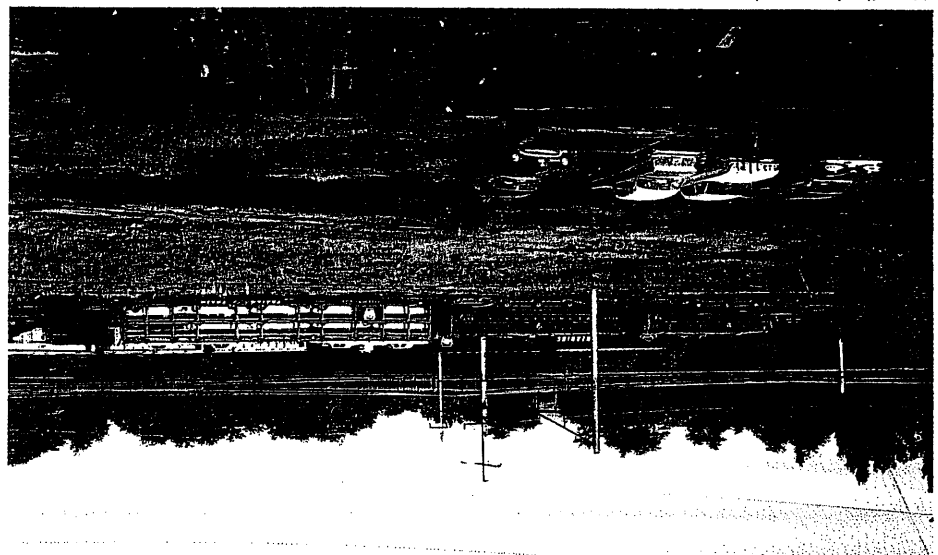
(James J. D. Lynch, Jr. photo)

Cola Tower, A&S Branch, Columbia, Pa. View looking southward, August 1966.



(James Shuman photos)

Heavily damaged P5a motors 4755 and 4722 arrive in Columbia behind a wreck train after a rear-end collision with another freight in August 1962 that left two dead.



ers started filling the holes with 225 tons of explosives. When the explosion went off (at what became known as Stigterwals Cut) it dislodged about 240,000 cubic yards of material.

And the accidents continued: "Awful Fate of Six Men," "Four Men Torn to Shreds at Highville" and "Two Men Burned to Death at Safe Harbor." Again, all three accidents happened within a one-week span during late August and early September.

While almost all the Low Grade passed through tranquil townships, the PRR did have to contend with one boisterous borough - contentious Columbia. A special Borough Council meeting on May 6 resulted in a list of demands on the railroad. On August 2 there was a follow-up meeting, in which Council heard the original demands and the recommendations of an Advisory Committee. After much discussion, Council prepared a new list of seven demands that included subway or overhead road crossings, sewer improvements and a second deck for vehicular traffic on the Columbia-Wrightsville bridge.

While Columbia Council was debating, contractors were doing preliminary work in the town. One task was to tear down the railroad's brick warehouse at Walnut Street. The Baltimore and Susquehanna had erected the building as its passenger station in Columbia (for its line that crossed the Susquehanna to Wrightsville).

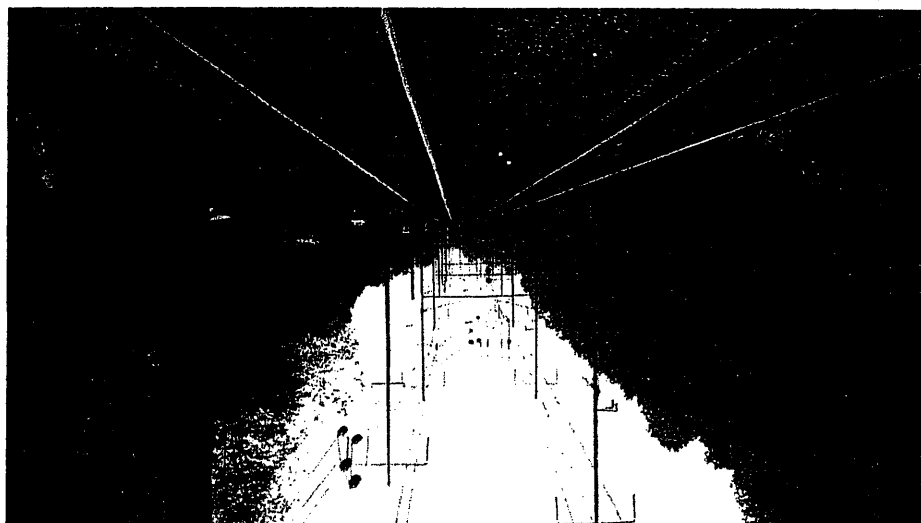
On September 21 the Columbia station heated up when H. S. Kerbaugh workers started to excavate at the foot of Locust Street. This work prompted a visit from the Borough Council President and Borough Engineer, who then called for the railroad to halt work. The local PRR engineer agreed and temporarily stopped work on the dinky (construction) tracks. Many unverified rumors circulated, but it appeared that the railroad would wait until contractors had finished more work on either side of the Borough.

In the autumn, workmen started stringing communication and signal wire along the route, starting at Mar-tic Forge and heading east. In the

June 3, 1973.

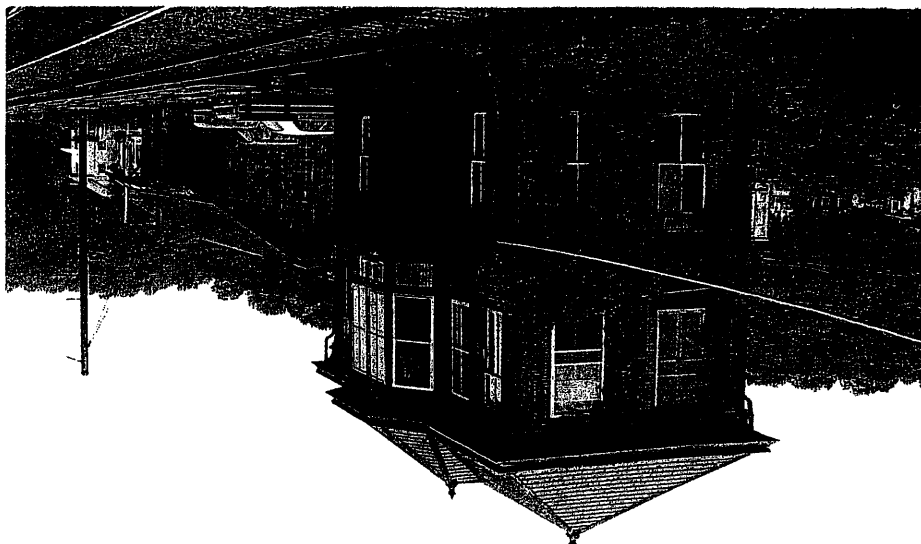
Smith westbound home signal, emergency block station. A&S Branch, Smithville, Pa.,

(James J. D. Lynch, Jr. photo)



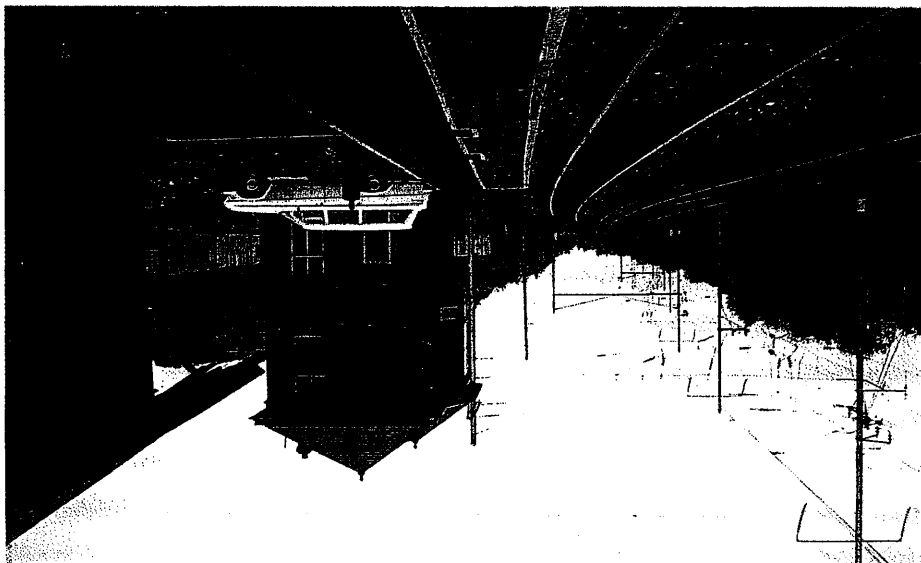
(James J. D. Lynch, Jr. photo)

Cly Tower, south and east elevations. Northward is to the right. May 31, 1976.



(James J. D. Lynch, Jr. photo)

Cly Tower, Cly, Pa., looking southward, August 1966.



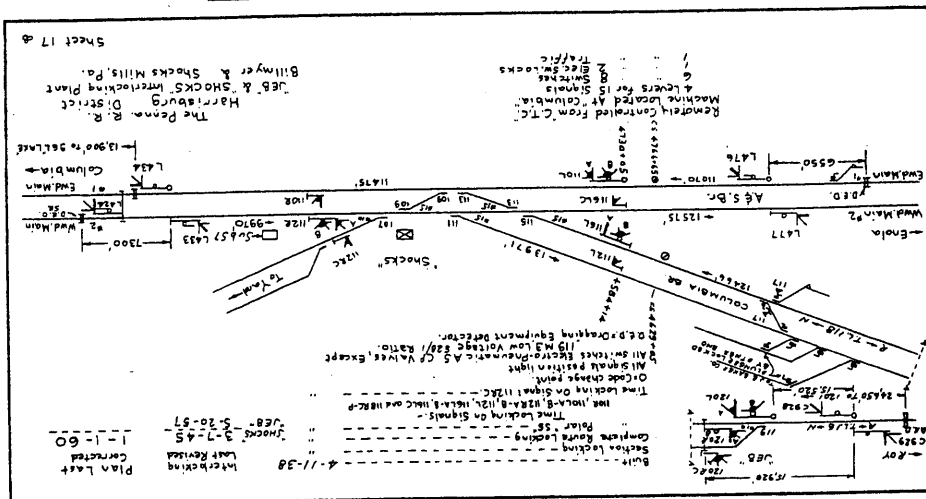
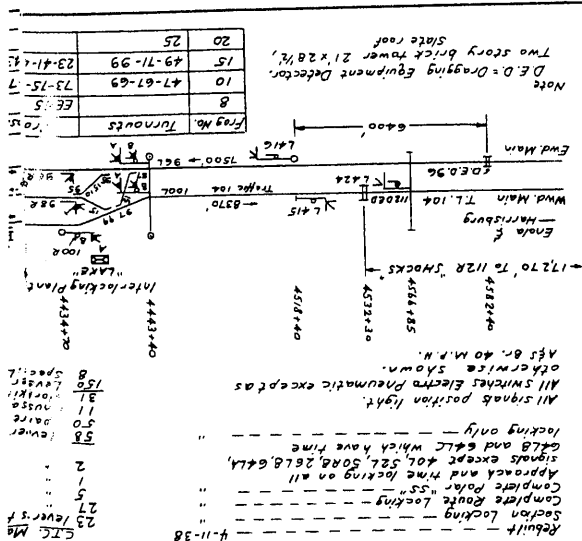
On a brighter note, the PRR opened a new low-grade freight line between Thordale and Glen Loch on

The railroad started 1906 by taking the water supply from a dozen residents at Creswell for the steam locomotives that would soon be running on the Low Grade. The railroad ordered Kerbaugh to build a tank to draw from a reservoir that would take almost all the water from a small creek near the small Turkey Hill community.

Autumn also brought a smallpox outbreak in Conestoga Township. The Township's school board (organized as a health board) met with Kerbaugh officials, who agreed to put notices at their camps from Martie Forge to Washington Boro, ordering their men to get vaccinated. Company doctors performed the vaccinations, also offering this service to any challenge the ordinance.

same season, the PRR's Philadelphia Superintendent made a statement justifying the railroad's need for the Low Grade: "The Philadelphia Division of the Pennsylvania railroad (sic) is growing so rapidly that soon, both in point of tonnage and mileage, it will be the largest railroad division in the entire world."

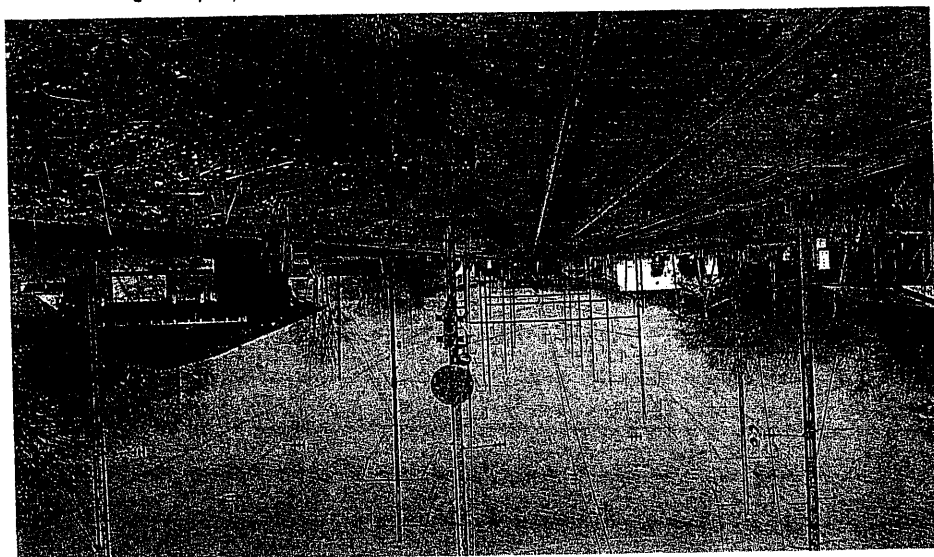
same season, the PRR's Philadelphia



Martic Forge bridge, spanning the Pequea Creek, seen in the early stages of construction. What is now River road curves by the far bridge pier. (Tom King collection)



Eastbound home signal from the A&S Branch, Park Interlocking, Parkesburg, Pa.
(James J. D. Lynch, Jr. photo)
March 1976.



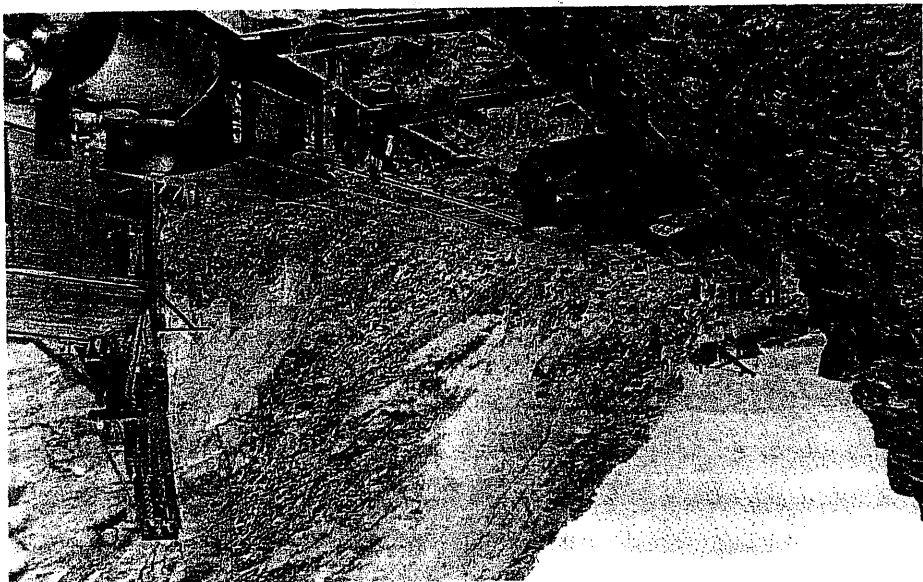
ing over Locust Street and this gave it way from the Philadelphia and Read-ic was that it had bought the right-of-morning of June 18. The PRR's log-tracks across Locust Street on the road forced the issue by extending the umbia problem remained. The rail-fast coming to an end, but the Col-Despite all the accidents, work was ker for burial.

mile radius, went into a common cas-the others, found thrown over a half-identity only one, and the remains of Eleven men died. Relatives could stored in a nearby building went up. shells later, one ton of nitroglycerine house, where workers filled paper of dynamite exploded in the punching burgh. At 12:40 p.m., 2,500 pounds Powder and Oil Company of Pitts-known origin destroyed a dynamite from Piquette, when explosions of un-struction happened a mile and a half dents during the Low Grade con-On June 9 one of the worst acci-

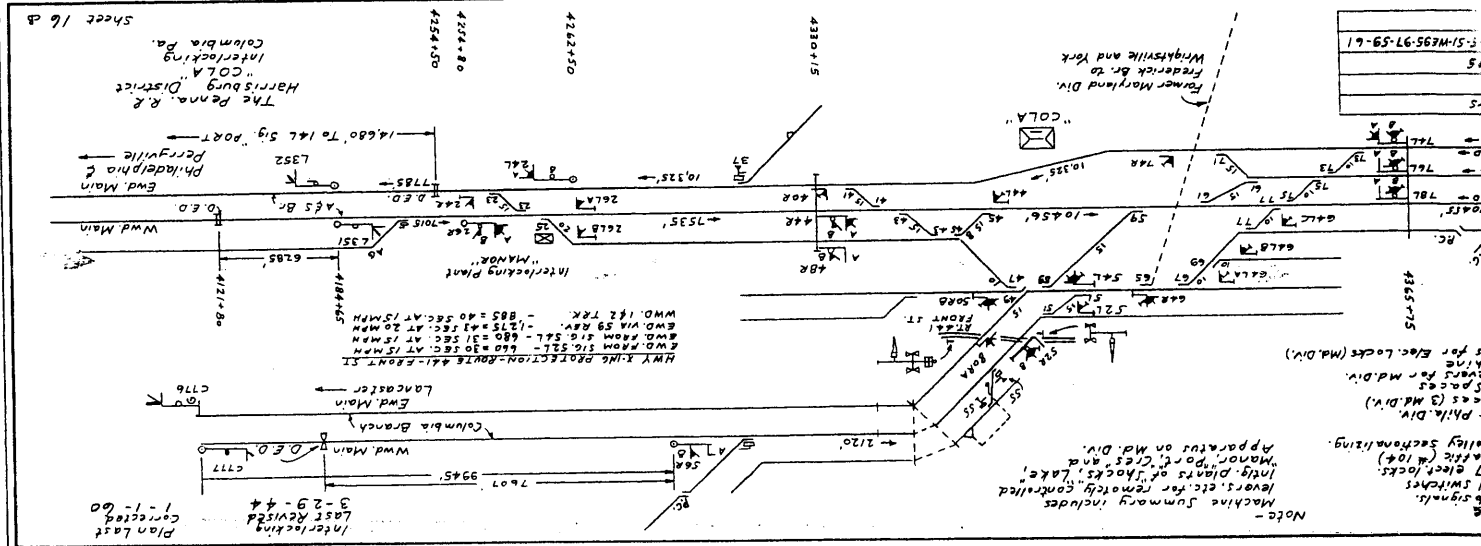
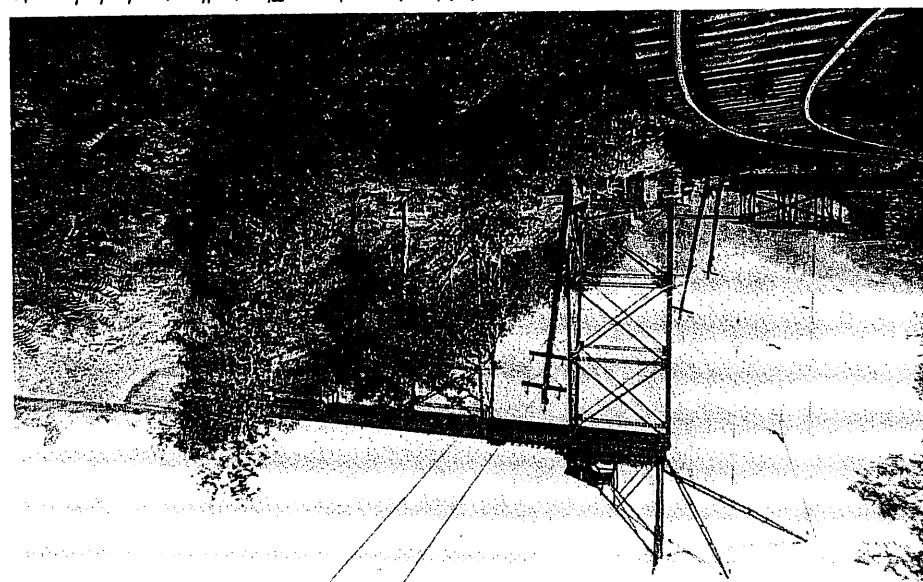
gotations. sions and Council moved to stop ne-would not make any more conces-the railroad ordinance. The railroad asked what Council would do about PRR, met with Borough Council and Murray, Assistant Engineer of the Back in Columbia, on June 5, J. F. Philadelphia to the north.

Trenton Cut-off, which bypassed through Lancaster County with the PRR linked the Low Grade line the April 11. With this 12-mile line the

Dinky locomotives and steam shovels at work in an A&S cut.



A crane hoists a section of the Martie Forge bridge into place. The trolley tracks belong to the line running between Millersville and Piquette.

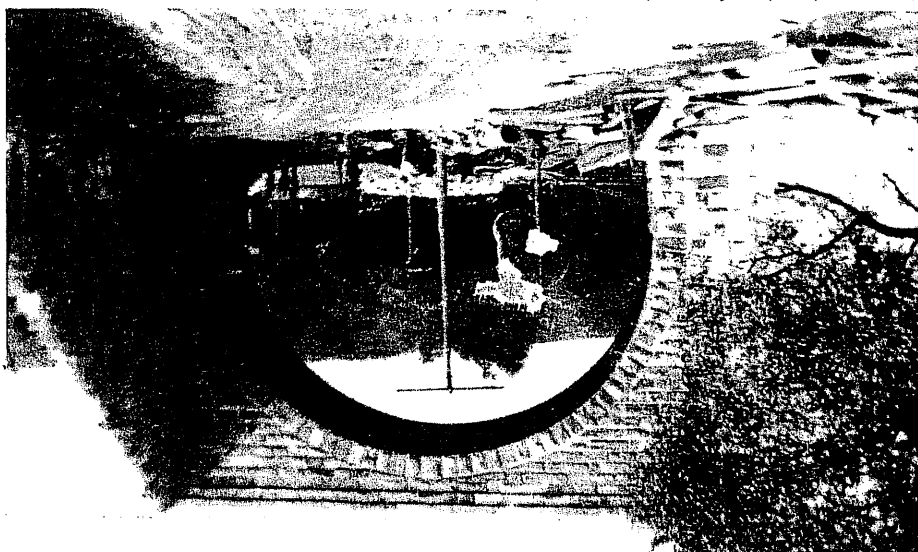


the right to lay the track. Council disagreed and directed town workers to remove the tracks and to get help from the fire companies if needed. Soon fire bells rang and factory whistles blew to summon the fire companies. The railroad ran a train back and forth over the new track to protect it. To stop the engine, firemen sprayed the crew with water, until another passing train severed the hose. Firemen immediately dug a trench under the tracks for a replacement hose and resumed spraying. Several thousand citizens soon began tearing up the track, despite a heavy rain. The railroad ordered their workers away about the same time the sheriff arrived with an injunction against interfering with the railroad. Late that night, Borough officials obtained an injunction, preventing the railroad from re-laying the track. With the various injunctions in place, stalemate resulted. But, although William H. Brown, the PRR's Supreme Court, was retired, he had like-minded successors and, so, guess who won.

Ultimately, the Low Grade made it through Columbia and all the various segments began linking together. The last part finished was the "Deep Cut" near Quarryville, where the John Shields Construction Company worked a year blasting and digging through hundreds of feet of almost solid rock to a depth of 90 feet.

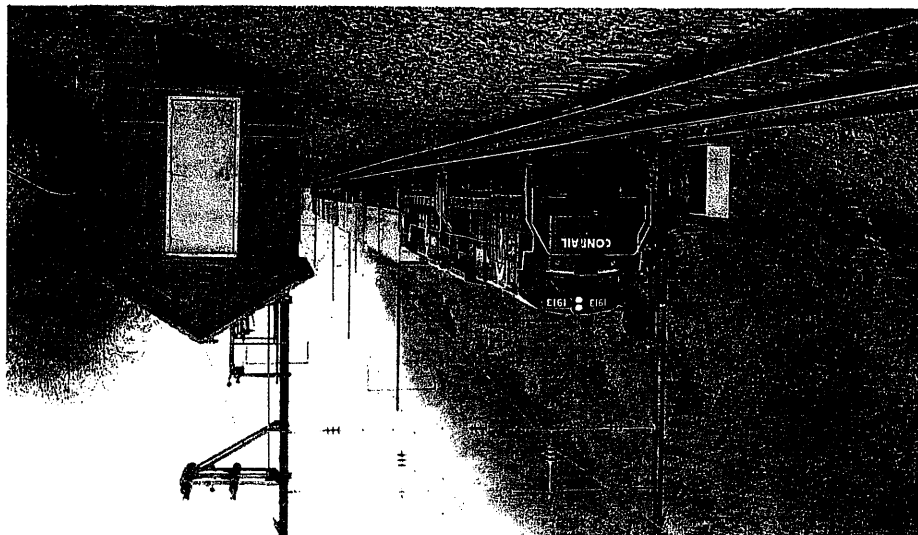
The railroad held the dedication ceremony in this cut on July 27, 1906. John Hendrie, a superintendent for Shields, was the master of ceremony. At noon George W. Hensel, Jr., a prominent Quarryville merchant, swung a silver-plated hammer and, with three blows, drove in the silver spike. Hensel's father presided over a similar ceremony in May 1875 when the Lancaster and Reading Narrow Gauge Railroad reached Quarryville.

The ceremony's highlight came when Miss Anna Acheson, daughter of J. R. L. Acheson, an assistant superintendent of construction, broke a bottle of champagne over the rail and declared, "I dedicate this enterprise to the uses of humanity and to the glory-



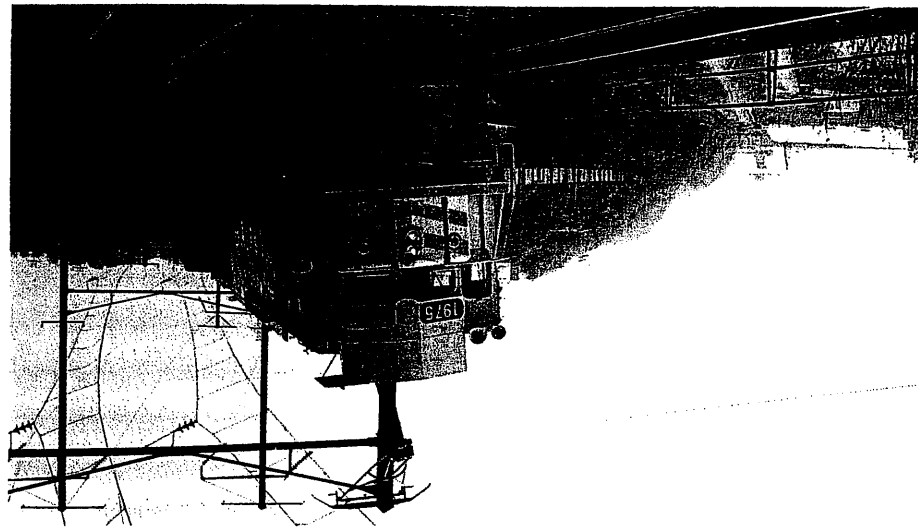
Just-completed 60-foot arch, near Atglen, Pa.

(author's collection)



Conrail Mail Train #9, led by newly-arrived GE B23-7 units #1913 and 1914, westbound on the A&S near Creswell, Pa. May 7, 1978. Note the keystone over the concrete building's door.

(author's photo)



One-of-a-kind EMD motor demonstrator #1975 on Conrail PF-6 crosses the Safe Harbor bridge on the A&S. May 7, 1978.

(author's photo)

fication of God's chosen country - the lower end of Lancaster County."

Finally, after over three-and-a-half years, \$19.5 million, and reportedly more than 200 lives lost, the Pennsylvania had its freight bypass through Lancaster County. The railroad named the line the "Arglen and Susquehanna Branch," but crews and local people would abbreviate it "the A&S" or call it the "Low Grade."

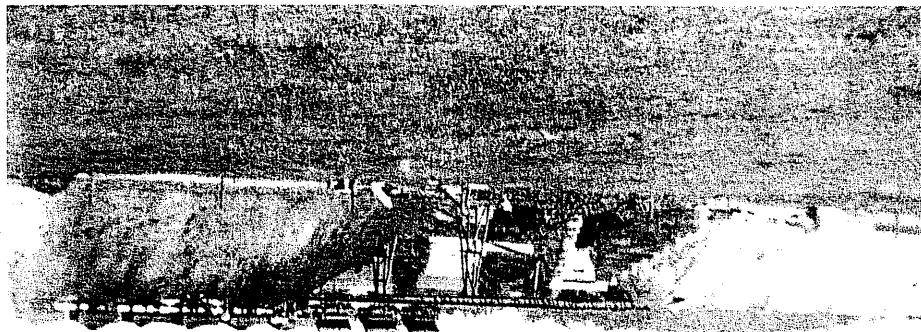
What did the railroad get for its investment? The A&S had two tracks over its 50.6 miles (close to the length of the Panama Canal), from Parkesburg to Wago Junction. East-bound the ruling grade was only 0.3%, half the main line's, while west-bound it was 0.6%. Where the ruling grades were (from near Washington Boro to Arglen) there were no grade crossings for engineers to worry about encountering cars or wagons. Divided into 11 sections, the A&S was reportedly the first long route of stream railroad controlled by telephone. These telephones were at 40 locations, spaced apart (on average) 1.26 miles. There were eight train order offices (or block stations) on the A&S where operators could switch trains from one track to the other and give them train orders from the dispatcher in Columbia: from east to west, Parkesburg (M.P. 0.0, "PG"), Arglen (M.P. 3.2, "NI"), Quarryville (M.P. 10.8, "Q"), Shenks Ferry (M.P. 22.0, "SF"), Creswell (M.P. 33.3, "CO"), Columbia (M.P. 37.7, "LG-42"), Marietta (M.P. 42.1, "RQ"), and Wago Junction (M.P. 50.6).

Notice that the one tower in Columbia was called "LG-42." The "LG" represents "Low Grade;" the railroad assigned the designation LG and a number to key points on the A&S. For example, at "LG-14," west of Quarryville, there was a manually-operated crossover from one track to the other. The "LG" is not the milepost marker. There are separate milepost markers (white, cast-iron, vertical posts marked with the milepost number) along the A&S. Addition-

cal posts marked with the milepost number) along the A&S. Addition-

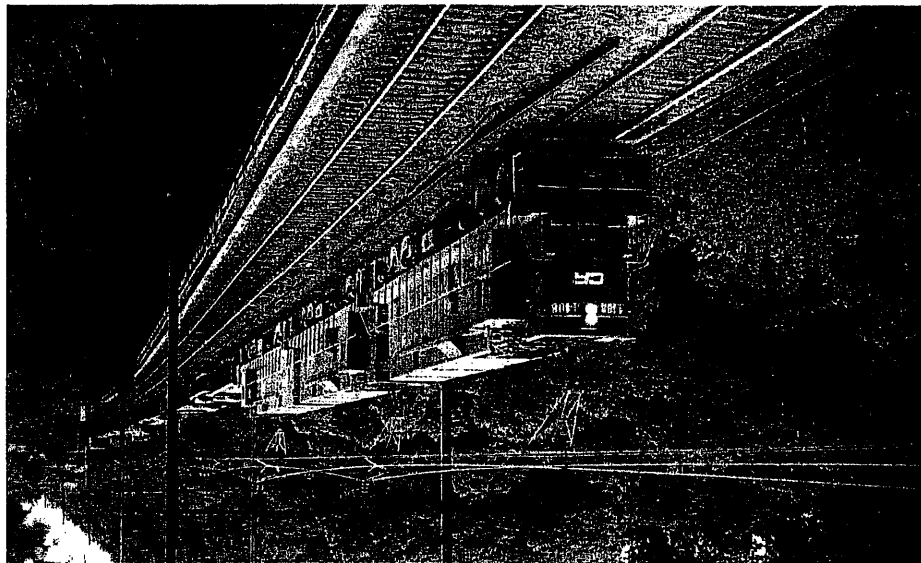
A Conrail eastbound freight on the massive Safe Harbor bridge in April 1986.

(Robert Kise photo)



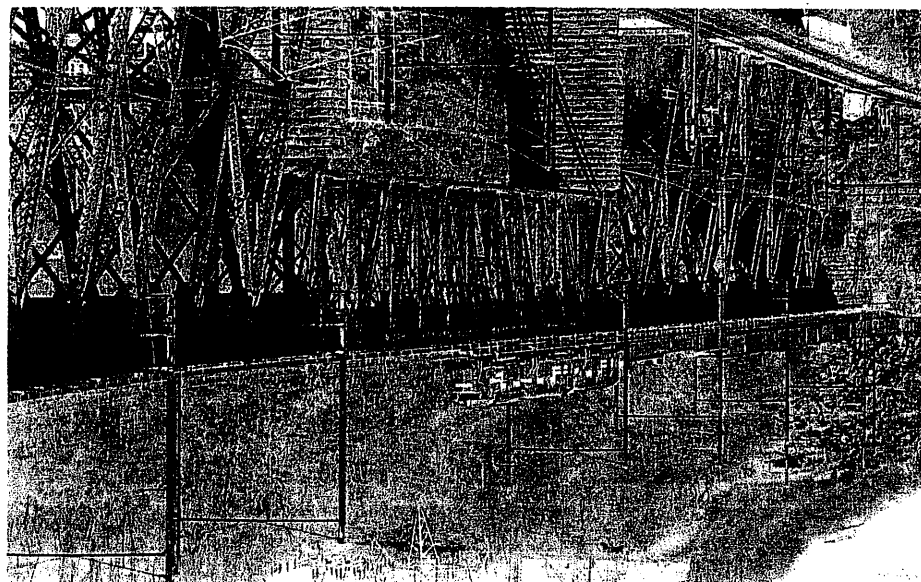
After a contractor built a stone arch bridge, workers would bring train loads of fill in to build up the approaches.

(author's collection)



Conrail E44 motors 4408, 4400 and 4412 with an eastbound freight, crossing Martic Forge Bridge. July 2, 1978.

(author's photo)



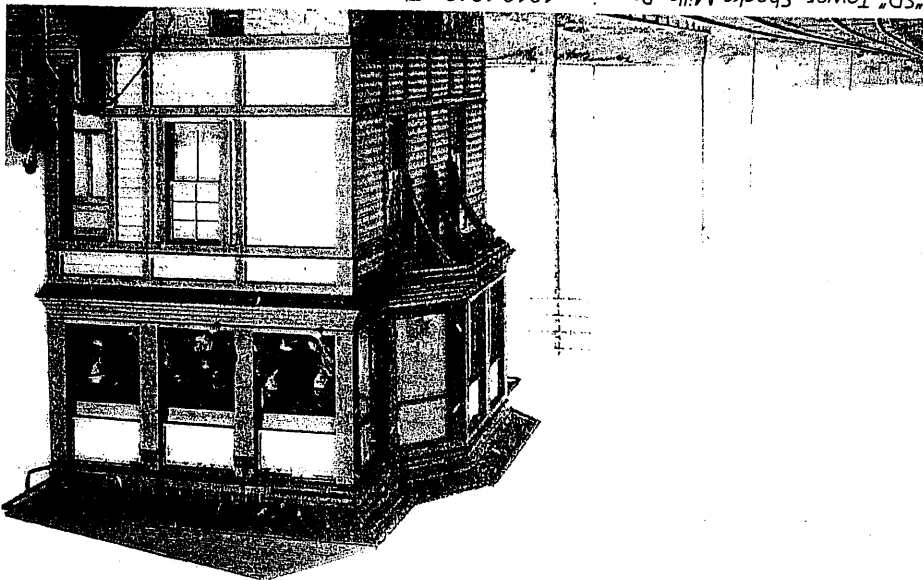
tenance. When the PRR built the A&S, labor rates were low, but as time passed, labor costs for maintenance became increasingly significant. Soon after the dedication, the railroad started to run freights over the A&S and provide relief to the main line. On August 23, 1906, the railroad ran a special so that General Manager Atterbury and other railroad officials could inspect the new route. Unfortunately (near Buzzard's Rock), west of Safe Harbor, the special struck and killed a track worker, the first to die on the new line.

With the A&S open, the PRR finally opened the Port Road up for regular service on August 1, 1906. The railroad had wanted to open it four weeks earlier, but a storm loosened rocks and carried stone walls away. Travelers would find a railroad much changed between Washington Boro and Shenks Ferry. To accommodate the A&S, contractors filled in much of the previously-existing raft channel and moved the Port Road onto this new fill.

The A&S's opening had a great effect on Columbia. The railroad announced that it was breaking up 39 Columbia-based crews, with some members going to Enola for work on the A&S, while others would stay based in Columbia for work on the Philadelphia Division, besides the crews for shifting and local work.

Ultimately the A&S settled down into normal operations. However, in 1936 a flood struck that knocked the line out of service for several months. To understand what happened, an examination of the track layout in the Chickies Rock-to-Columbia stretch is in order.

The PRR's Columbia Branch, aside from running between Lancaster and Columbia, continued along the Susquehanna, passed through a tunnel north of Columbia and followed the curving shoreline (as the canal had done) to Chickies Rock. When workers built PRR's A&S through the area, they followed a straight line between the two points protruding into the river (Chickies Rock and the tunneled hill near Columbia) instead



"SD" Tower, Shocks Mills, Pa., circa 1910-1912. The A&S Branch is in front of the tower. Geographic south (bay) and east (right) elevations. (James J. D. Lynch, Jr. collection)



"LG-41" Tower stood at the foot of Locust St. in Columbia, Pa., near M.P. 41 on the A&S. To the left of the tower is a marker which indicates the start of the Columbia & Port Deposit, owned by the Philadelphia, Baltimore & Washington, in turn owned by the PRR. (Tom King collection)

ally, the signals are marked with numbers such as "L71," which relate to the mileposts (or miles from Parkersburg). Here the "L" also stands for "Low Grade" and the "71" represents the milepost times ten (or milepost 7.1). Odd-numbered signals are for the westbound track, even ones for the eastbound.

Despite all the A&S's advantages, the railroad now owned a route that had many cuts (prone to landslides and fills (subject to washouts). To guard against these natural disasters,

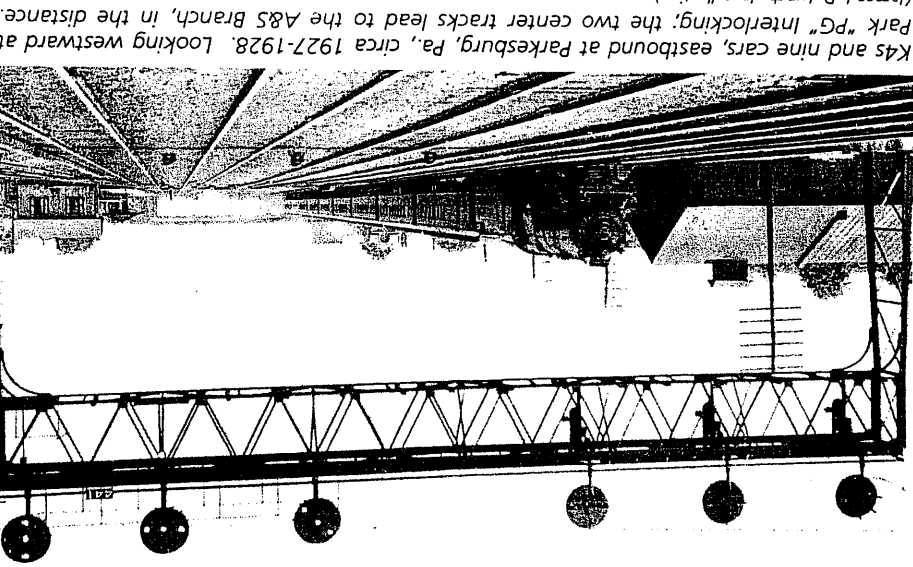
the PRR built 11 watchboxes, staffed round-the-clock, where employees could start patrols to check track conditions and phone the dispatcher to halt trains if there were problems. The watchbox names ran from the ordinary (Mann's Run) to the colorful (Buzzard Rock and Crow's Head). The route also had three major stone bridges (Codorus, Shocks Mill and Chickies), two major steel ones (Safe Harbor and Martie Forge), and various culverts, underpasses and overhead road bridges that required main-

of following the shore. To make this straight line, the workers had to dump huge amounts of fill into the river. When completed, the A&S formed one side of a cut-off, backwater, poorly-drained area named Kerbaugh Lake (after the contractor). In late March 1936 the Susquehanna began flooding because of spring rains and runoff from melting snows. The flood waters broke through the A&S roadbed fill near Chickies, quickly filled Kerbaugh Lake and rushed through the tunnel, inundating the PRR's Columbia Yard. In searching for an outlet, the waters knocked "LG-42" Tower (on the north side of what is now the Pa. Route 462 bridge) off its foundation. Water, trying to escape Kerbaugh Lake, broke through the A&S fill near the Columbia tunnel. All that remained of the A&S between Columbia and Chickies Rock was a small island in the midst of the swirling Susquehanna's raging waters. The railroad worked for several months to restore service. At the lower end of Kerbaugh Lake, workers put larger pipes (still present and visible) under the roadbed to improve drainage.

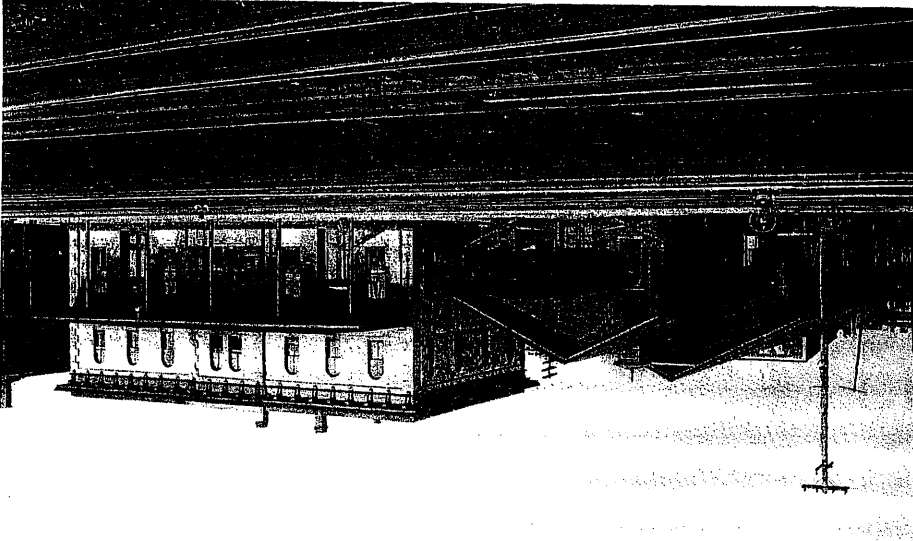
The mid-Depression years saw a major addition to the A&S - electrification. The Pennsy had been electrifying many of its eastern tracks since the turn of the century and in 1937 started working west from Paoli. In just over a year the PRR electrified the A&S. On April 15, 1938 the first electric-powered freight train rolled out of Enola.

The high-voltage lines at the top of catenary poles, spaced about 20 per mile along the A&S, ran at 132,000 volts, 25 cycles and could carry electrical power from the generators at Safe Harbor not only for the A&S, but also for the main line, which the railroad electrified simultaneously. The Safe Harbor turbines supplied the cheapest electricity of any of the sources the PRR used for its electricity.

The lower catenary wires, from which the electric locomotives ("motors", in PRR terminology) drew their power, operated at 11,000 volts. There were seven substations along



K&S and nine cars, eastbound at Parkesburg, Pa., circa 1927-1928. Looking westward at Park "PG" Interlocking; the two center tracks lead to the A&S Branch, in the distance. (James J. D. Lynch, Jr. collection)



The 1877 PRR station stood (and still stands) at the foot of Walnut St. in Columbia. While passenger trains never ran over the entire A&S, they did use part of the Branch, including the tracks in front of the passenger station (and express building, to the left). (PRR photo; author's collection)

the A&S to step the high voltage down to this lower voltage that the motors used.

While electrifying, the PRR took the opportunity to consolidate block stations at Columbia. The railroad built a new tower at the foot of Locust Street and named it "Cola." Operators in Cola would control the Columbia Branch, the Port Road and the A&S between Port Interlocking (the point where the A&S and Port Road joined) and Wago Junction. West of Wago, Clay Tower would control.

East of Port, the railroad consolidated

dated block stations also. At the A&S east end, Parkesburg (which also controlled part of the main line) remained. Near Smithville, Smith Tower controlled train movements over the section that traversed southern Lancaster County. Located off Pennsy Road, which paralleled the tracks on the north side for a considerable distance, Smith was at the east end of a long passing siding. This siding, which could hold 86 50-foot cars, made the A&S three tracks wide at that location.

By September of 1941, the A&S at Parkesburg was handling (on average)

Following the War's end, the railroad could tackle the problem of Kerbaugh Lake. Not wanting a repeat of the 1936 disaster, the railroad decided to eliminate the lake by filling it. On August 6, 1948, the railroad submitted a proposal to the Sims Construction Company to fill the lake. After reaching terms with Sims, the railroad

effects such as seasonal trends and 1948 and not adjusting for other terms of cars when comparing 1941 A&S traffic was down almost 20% in 55 (a drop of about one). Overall the main line's average freight was near decrease of about four), while the A&S train had around 85 cars (a decrease of about four). The average with 738 cars, 37 eastbound passengers and 34 westbonds. The average with 311 cars and twelve westbonds, main line hosted seven eastbonds, westbonds, with 1,736 cars. The June of 1948 the A&S saw 24 eastbonds, with 2,022 cars, and 20 still quite busy. At Parkersburg in June of 1948 the A&S saw 24 eastbonds, with 2,022 cars, and 20

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On the A&S the PRR handled the increase in traffic caused by World War II without any major changes. The railroad did invest \$11,000 to improve its water supply in the Quarryville area.

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The worst wreck in the last half of the A&S's life happened on August 14, 1962 at Arglen. Because of track work on the eastbound (#1) Track, "Q" Block Station was open and the

In another case, the railroad suspected a mechanical failure on the 32nd car of a 94-car ore train for derailing the suspect car and the following 36 in the big cut east of Quarryville. Because the PRR's wreck cranes were in use, the railroad borrowed two from other railroads to untangle the January 11, 1965 wreck. A Reading Company wreck crane worked from the east and a Western Maryland Railway came in from the west. The cars were accorded in the cut, making them difficult to extract. While no one was hurt during the accident, two cleanup workers received leg injuries when they fell off one of the cars when it shifted unexpectedly.

While eliminating Kerbaugh Lake solved a potential natural disaster, normal railroad operations always had problems, such as wrecks. While many were spectacular, most did not cause deaths. On April 17, 1963, 18 cars out of 75 in a Philadelphia-to-Pittsburgh train loaded with ore went on the ground in front of Smith Tower. The railroad needed a day to restore operations (with diesels) and another half day to get the wires re-stored. Trains detoured over the main line.

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The March 1936 flood knocked "LG-42" Tower off its foundations. The single track crossing the A&S was the Frederick Branch, which crossed the Susquehanna (to the right) at Columbia.



The March 1936 flood knocked "LG-42" Tower off its foundations. The single track crossing the A&S was the Frederick Branch, which crossed the Susquehanna (to the right) at Columbia.

In addition to wrecks and special 1976 over the A&S. "National Limited," on October 9, ed an eastbound Amtrak train, the special, ran in 1978. A wreck diverted Still another, a Philadelphia Chapter, New York-to-Harrisburg excursion. duty, traveled the route in 1957 on a that normally had commuter train Another, with PRR MP54 electric bor high bridge for photographs. as power and paused on the Safe Har- 1936 that had PRR #5725, a 4-6-0, ger trains were specials like the one in whole A&S. Most times, the passen- trains did, occasionally, travel the On a more pleasant note, passenger trains did, occasionally, travel the

On a more pleasant note, passenger trains did, occasionally, travel the whole A&S. Most times, the passenger trains were specials like the one in 1936 that had PRR #5725, a 4-6-0, as power and paused on the Safe Harbor high bridge for photographs. Another, with PRR MP54 electric bor high bridge for photographs. duty, traveled the route in 1957 on a New York-to-Harrisburg excursion. Still another, a Philadelphia Chapter, National Railway Historical Society special, ran in 1978. A wreck diverted an eastbound Amtrak train, the "National Limited," on October 9, 1976 over the A&S.

The conductor and flagman on Extra 4415 were able to alight from the cabin car before the collision and escaped injury. Unfortunately, the impact killed the two engineers on #4755 and telescoped the front half of the motor, injured the other three crewmen of Extra 4755 and five guards who were on the last car (a passenger-baggage), ahead of Extra 4415's cabin. The guards were accompanying a shipment of low-level, fissionable material, possibly nuclear submarine fuel. This car (and four others on Extra 4415) derailed, but was only somewhat damaged. The Interstate Commerce Commission report officially listed the cause as: "failure to control properly the speed of a following train moving in an occupied block."

operator sent Extra 4415 (E44, running with another E44, #4407) over the crossover and east on the westbound (#2) Track. He did the same for a following train, Extra 4755 (an unmodified P5a with another, #4772). Cola had given each train orders that this crossover operation would happen. While Extra 4415 was going ten mph, Extra 4755, going at an undetermined speed, collided with the first train's rear, 0.4 miles west of Arglen.

along the right-of-way. The fire spread to a nearby meadow, burning over two acres before three PRR employees, the Quarryville Fire Department and a State Forest Fire Warden, managed to extinguish it.

In the early 1960s fire created a most unusual problem to vex the Pennsy. The large fill near the curve at Shenks Ferry, where the railroad swings east away from the river, ignited. Made of coal mine tailings, the fill burned, proved difficult to extinguish and caused the roadbed to settle dangerously. To keep watch on the road built a temporary block station and, appropriately, called it "Fire."

The merger of the PRR and New York Central in 1968 to form Penn Central did not cause many changes to A&S operations. Four years later, Hurricane Agnes changed operations drastically. The June storm undermined piers of the Shocks Mill Bridge and caused the center section to collapse into the river. Penn Central, now bankrupt, had to obtain court approval to rebuild the center section; this took several years.

When Conrail took over Penn Central and other bankrupt Northeast railroads in 1976 and Amtrak gained the Philadelphia-to-Harrisburg main line and electric power distribution system, the operations again changed dramatically. Conrail had to pay Amtrak for power from the overhead for the electric locomotives and for track-age rights over the main line east of Parkersburg. Conrail felt Amtrak's charges were excessive, while Amtrak felt it was merely recouping costs for the power and wear and tear on its property.

Conrail, however, had an alternate route into Philadelphia, the ex-Read-Road main line from its hometown. Conrail upgraded that route and diverted freight off the A&S. From 40 million plus gross ton-miles per mile of track before Conrail, the A&S fell to under half that amount.

By using alternative routes, Conrail had no need for its electric freight motors (ex-PRR GGI motors from

P5a triplerheader, led by #4718, westbound past Smith Tower, June 1961.

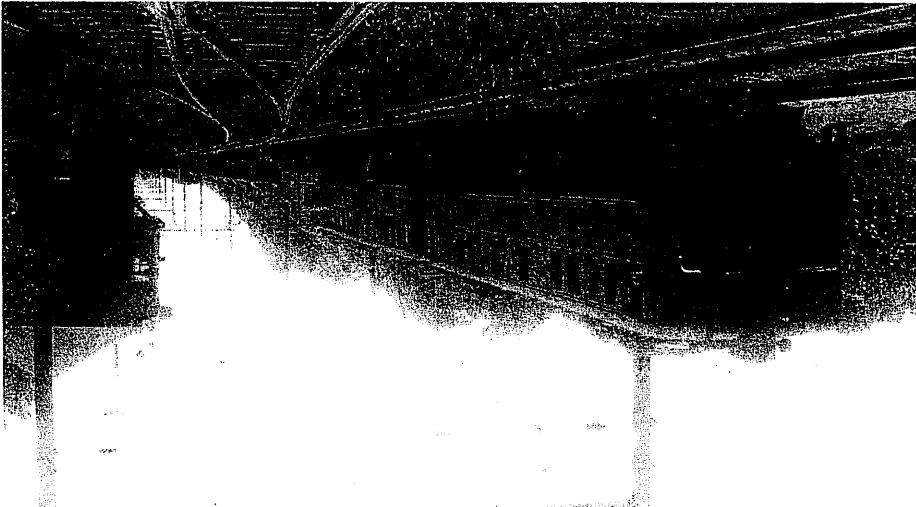
(J. P. Shuman photo; James J. D. Lynch, Jr. collection)

the '30s and '40s and E44 locomotives from the '60s), could retire them and remove the catenary from its freight-only lines. Contractors tore down the Low Grade catenary in 1986 but left the Amtrak-owned poles and higher-voltage upper wires to carry power from Safe Harbor to the main line.

By 1988 there were only two scheduled freight over the line in each direction: PIMO and PIML east-bound and MOP and LMPI west-bound. On December 19 the last regularly-scheduled freight ran on the Low Grade. When train PIMO-8 with locomotives 6459, 6482, 7743 and 1612, 77 loads and 57 empties, passed Parkersburg at 3:18 p.m., over 80 years of service on Lancaster County's Low Grade came to an end.

Conrail began removing the tracks from the Low Grade in 1990. Some rail was welded (and installed as recently as 1976) and some was bolted. The rail would go to Conrail's Lucknow rail processing plant north of Harrisburg for reconditioning and ultimate re-laying.

With the tracks gone and the line abandoned by Conrail there has been much discussion in Lancaster County as to what to do with the route. Some want to turn the route into a highway that will be a southern by-pass. This proposal faces the problems of what to do with the Amtrak-owned and used catenary poles that would be hazardous to motorists and how to logically tie the line into the road network. Others want to convert the route into a hiking trail and face problems of vandals, trash



Both face the problems of who will replace the deteriorating over- and underpasses and maintain the Safe Harbor and Martie Forge bridges. Conrail continues to use the remaining part of the Low Grade between Wago Junction and Port Interlocking (now out-of-service) regularly, as a natural continuation of the Port Road Branch (ex-PRR Columbia and Port Deposit Branch). After the Conrail-Amtrak collision at Gunpow Interlocking, Amtrak essentially forced Conrail to run freight on the Northeast Corridor at night. This ban greatly affected Conrail operations on the Low Grade. In the evening a procession of trains heads east to run on the Corridor after dark. In the early morning there is a reverse procession of trains which came the opposite direction on the Corridor at night. Another train that follows the same pattern is the daily turnaround that runs from Enola to Lancaster and back. The only trains normally running in daylight on the Low Grade are the local from Lancaster that works to Marietta, plus work extras.

Born in an era when America regularly tackled big projects, the Low Grade was one of the largest civil engineering projects Lancaster County has ever seen. Half the route now has no rails, only an overhead power line; the rest remains an active nighttime railroad. All of it is an important part of Lancaster County's railroad heritage.