

Allegheny Arsenal on the Trail of American Migration
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Index:

Rationale

Overview

Objectives

Classroom Activities

Annotated Bibliography

Standards

Rationale:

As a teacher in the Pittsburgh Public Schools, I face a variety of challenges. I believe none is more difficult than student motivation. Working at the middle school level, I find students engaged in every imaginable activity. Their world includes school, family, sports, music and a bulging social life. They are stimulated by a spectrum of modern resources that range from the Internet to M TV. Unfortunately, many students do not see academic pursuits as a high priority. And among the academic areas, history often seems far removed from their lives.

Given the foregoing, those of us in history are constantly seeking to enhance and energize our curriculum. Of course, many decisions have already been made for us. In the eighth grade social studies United States History course, we cover the period of time from late colonization to 1900. Additional activities in Black History, women's history, ethnic studies and current events are also addressed. While our calendar seems full, it is possible to include a few special projects in the program. These are teacher-made activities that are specifically tailored to the abilities and interests of our students. In my classes, the special units are often built on local history.

The city of Pittsburgh was conceived before the birth of our nation. It developed as the country did. The farmers, artisans and craftsmen who came to the confluence of the three rivers in the mid-1700's were among our first pioneers. The movement of people to this city demonstrated the development of the country from agrarian to industrial to technological. Those who continue to migrate to our city in the twenty-first century are building and changing our historic backdrop.

As a teacher, I seem to be constantly "selling" history. The key is to pull students into the discussion through some point of interest and motivate them to learn more. The "carrot" that involves students in history must be understandable and in some way

captivating. I have tried to encourage my classes to examine many topics. I continue to find that history that is personal and local is most interesting to middle school students.

Some of my students who developed an interest in history began with a personal genealogy. As they sought facts about their families, they learned about the history and geography of the places they went and the lives they lived. We have also done studies of neighborhoods and landmarks in the city. In these units, students learned that not all history is in books. In fact, some history is personal and local. It is possible to look at the site of an event and walk in historic footsteps.

I tell students at Arsenal that our school sits on the most historic ground in the city. Some would argue that the site of Fort Duquesne/Fort Pitt is more significant. Certainly, there is a case to be made in that regard. But careful analysis would reveal that the movement of people into our area and the development of the city limited the lifespan of the fort at the Point. (Those unfamiliar with Pittsburgh should note that the term The Point refers to the point of land at the confluence of the Allegheny, Monongahela and Ohio rivers in the heart of downtown Pittsburgh.) The United States Arsenal at Lawrenceville was built at the end of the War of 1812 and survived past the dawn of the twentieth century. Its nearly hundred year existence stood witness to the transformation of Pittsburgh from a frontier town to an industrial city. Those who came to Pittsburgh in that time period demonstrated the migration of a nation as it grew and thrived.

While kids may not relate to Mesopotamia, they can identify with the Arsenal. Our classroom windows overlook the Allegheny River. Many of my students walk through Arsenal Park and past the old powder magazine. They have read the historic marker that stands only yards from the entrance to our school and see the plaque in our auditorium lobby honoring those who died on this historic land.

From a purely practical point of view, the study of Allegheny Arsenal is workable. The Carnegie Library of Pittsburgh, The Senator John Heinz Regional History Center and the libraries of the University of Pittsburgh, Carnegie Mellon University and Chatham College all hold relevant historical information. Resources are also available through the Library of Congress and the National Archives Records and Administration. It is possible to design lessons from this material (as this unit does) and students seeking further information can certainly find it in the major repositories mentioned.

Moreover, the variety and depth of the material that can be developed in using local history allows the classroom to cater to a wide variety of student interests and thus draw students into the pursuit of history. Consider the topics: Indians, log cabins, construction, guns, mapping, steamboats, the War of 1812, the growth of the city, the

Mexican War, political intrigue, mapping and measuring, architecture, the iron industry, public health, criminal investigation, the Civil War, photography, the United States Army, explosions, Pittsburgh rivers, the Marquis de LaFayette and more. It's hard to imagine that there isn't some topic related to the history of the Arsenal that would interest an eighth grader.

And these topics can be the springboard to a larger appreciation of history.

Overview:

This unit: Allegheny Arsenal on the Trail of American Migration is being designed from my point of view as a teacher at Arsenal Middle School. However, I believe most of the activities and lessons are applicable for eighth graders across the city of Pittsburgh and in other localities.

In order to have a clear view of the role of the Arsenal it is necessary to look at the larger picture of the development of the city of Pittsburgh.

The confluence of the Allegheny, Monongahela and Ohio was and is a key location from the time that men first inhabited the area . The exact date of the arrival of Indians in western Pennsylvania is not clear. The Delaware (Lenni-Lenape), Shawnee, Mohicans and Iroquois all passed through the area at one time in the early eighteenth century. Early French settlers found inhospitable Indians in the 1730's and the encounters of young George Washington with Pennsylvania's first residents are also well-known.

The European presence in western Pennsylvania came first in the form of the French. This occupation was almost immediately disputed by the British. When Washington visited western Pennsylvania in November of 1753, he noted the importance of the confluence of the Allegheny, Monongahela and the Ohio

“As I got down before the canoe, I spent some time in viewing the rivers, and the land in the fork, which I think extremely well situated for a fort, as it has the absolute command of both rivers. The land at the point is twenty-five feet about the common surface of the water; and a considerable bottom of flat well-timbered land all around it very convenient for building. The rivers are each a quarter of a mile across, and run here very nearly at right angles; Allegheny, bearing north-east; and Monongahela, south-east. The former of these two is a very rapid and swift running water, the other deep and still, without any perceptible fall. A fort could be equally

well situated on the Ohio, and have the entire command of the Monongahela, which runs up our settlement, and is extremely well designed for water carriage, as it is of a deep, still nature. About two miles from this, on the south-east side of the river, at a place where the Ohio Company intended to erect a fort, lives Shingiss, king of the Delawares. We called upon him, to invite him to a council at Logstown.

As I had taken a good deal of notice yesterday of the situation at the fork, my curiosity led me to examine this more particularly, and I think it greatly inferior, either for defense or advantages, especially the latter. For a fort at the fork would be equally well situated on the Ohio, and have the entire command of the Monongahela, which runs up our settlement, and is extremely well designed for water carriage, as it is of a deep, still nature. Besides, a fort at the fork might be built at much less expense than at the other place.”¹

In 1754, the British began the construction of Fort Prince George at the Point. The fort was quickly seized by the French and renamed Fort Duquesne. Later battles of the raging French and Indian War would return the site to the British who christened it “Fort Pitt” for William Pitt, the Earl of Chatham and British Prime Minister.

Nearing the end of the French and Indian War, in November of 1758, General John Forbes named the place “Pitts-bourgh”. Fort Pitt quickly attracted craftsmen, traders and settlers who began the building of a new American city. The fort was not only a military outpost but a magnet for migration. The business and social activity of the new town encompassed the fort, with the fort acting as a resource for the community and drawing resources from that community. (That pattern would be repeated decades later as Allegheny Arsenal grew in Lawrenceville.) By 1761, 160 houses were situated outside Fort Pitt.²

While the local Indians posed some threat to the city’s development, Colonel Henry Bouquet’s 1763 victory at Bushy Run (effectively ending Pontiac’s Rebellion) and the 1768 purchase of western Pennsylvania Indian lands by Thomas and Richard Penn brought as some measure of safety to the area.

Although geographically removed from the American Revolution, outspoken Pittsburghers nonetheless endorsed the Patriot cause. Following the Revolution, the British prohibitions on westward movement were gone. Revolutionary soldiers, given bounty lands in the area, and settlers and speculators of all kinds would move into the Ohio Valley.

Some doubted the future of the city. This December 17, 1784 journal entry by visiting Virginian, Arthur Lee gives a dismal view of the city:

¹ Citation to be added later.

² Lorant page 642

December 17, 1784---Arthur Lee of Virginia visited Pittsburgh and described the city in his journal: “Pittsburgh is inhabited almost entirely by Scots and Irish who live in paltry log-houses, and are as dirty as in the North of Ireland or even Scotland. There is a great deal of small trade being carried on; the goods being brought at the vast expense of forty shillings per cwt. from Philadelphia and Baltimore. They take in the shops money, wheat, flour and skins. There are in the town four attorneys, two doctors, and not a priest of any persuasion, nor church; nor chapel; so that they are likely to be damned, without the benefit of clergy . . . This place I believe will never be very considerable”³

However, accurate Mr. Lee’s description may have been, his prediction was clearly wrong. In spite of early Indian threats and the ever present danger of flooding, the city grew and prospered. Before 1800, the church was a real presence. The first Roman Catholic services had been held at Fort Duquesne. The Scotch-Irish Presbyterians and German Evangelical built churches and provided schooling. Local businesses included a distillery, a saltworks, a bookstore, a paper mill, a glass factory, and a packet service between Pittsburgh and Cincinnati. The Pittsburgh Gazette and a mail route from Pittsburgh to Philadelphia established some early communications. The city had been incorporated as a borough, held its first election, and purchased its first fire engine. While social and cultural institutions were limited, the forerunner to the city’s first university, the Pittsburgh Academy (later the University of Pittsburgh), several private schools, a circulating library and a race track were in operation.

Pittsburgh came to the attention of President Washington and the nation when local residents, concerned about a tax on “Monongahela Rye” spurred the Whiskey Rebellion.

The city’s growth was reflected in the military presence in the area. In the 1790’s, Major Isaac Craig, at Fort Pitt, sought additional arms and supplies from Secretary of War, Henry Knox for the defense of Pittsburgh. Knox complied and authorized the building, in 1791, of Fort La Fayette (usually called Fort Fayette) for that purpose.

While the Revolution was fought primarily on the Atlantic coast, the country had changed substantially before the next significant military conflict. The admission of Louisiana in 1812 brought the total of states to eighteen. The five states added since the Revolution: Vermont, Kentucky, Tennessee, Ohio and Louisiana demonstrated the trend in American migration. Long before Horace Greeley advised young men to go west they were doing exactly that. None of the new states was on the Atlantic seacoast. Rather, the movement was to the interior of the continent, with rivers playing a key role.

³ Citation to be added later.

The consequence of this movement was the development of interior river traffic and the cities along those rivers. Pittsburgh was a prime example of this movement.

The ever-present force of migration and change in the city would alter the military presence in the city. In the early 1800's, Fort Pitt and Fort Fayette would be gone and replaced by the United States Arsenal at Pittsburgh (Allegheny Arsenal).

The placement of the Arsenal at Pittsburgh was more complex than young students may imagine. Students envision the cavalry galloping through the gates at Fort Laramie to confront menacing Indians. However, by the time that the United States Arsenal was built at Pittsburgh, the defense of the city was not its primary purpose. The westward migration of traders, farmers and their families made Pittsburgh one of the doors of the west. Moreover, the water highways provided by the Allegheny, Monongahela and Ohio and ready access to abundant raw materials made Pittsburgh an ideal location for a federal location. The Arsenal would stand at this gateway while manufacturing military stores essential to westward development. During the first ten years of the Arsenal's existence six more states would be added including two in former Northwest Territory. The opening and supply of that territory was, in part, facilitated by passage through Pittsburgh and the work of its arsenal.

After the review of several possible sites for the construction of the arsenal, land along the Allegheny River, only a few miles from the center of Pittsburgh, was chosen. Capt. Abram Woolley, who served as the first commander of the Arsenal, also supervised its construction.

The building of the Arsenal was not without controversy. The land purchased from Colonel William Barclay Foster had been in his possession only a matter of days. Foster was accused of land speculation with critics citing his friendship with Woolley.

The design of the complex itself was assigned to English- born, Benjamin Henry Latrobe (1764-1820). Most historians describe him as the first professionally trained and premier architect of his day. He is best known for his design of the Richmond penitentiary, the Bank of Philadelphia, the United States Capitol, St. John's Church on Lafayette Square and the still surviving Stanhope Hall at Princeton University. While celebrated for this role in the design of the United States Capitol, Latrobe's time in Pittsburgh was troubled. He needed to work and had accepted other commissions in Pittsburgh including the design of homes and churches. At the time of the building of the Arsenal, Latrobe's financial situation was precarious. This surely influenced his decision to design the Arsenal complex.

Latrobe's original designs for the Arsenal were highly acclaimed. (Surviving drawings are owned by the Library of Congress.) However, local historians dispute how much

of the final work was actually Latrobe's. In the end, the Arsenal was functional and perhaps attractive but hardly an architectural masterpiece.

(Less well known is Benjamin Henry Latrobe's role as a steam engineer. His broad understanding of scientific principles and his accomplishments as an engineer led to progress in steamboating and canal building. Some historians credit Latrobe with major contributions in the development of professional engineering in the United States.)

Regardless of the aesthetics, Allegheny Arsenal was poised to fulfill its military role by early 1815. The War of 1812 had drawn to a close but its effects were mirrored in the development of the Arsenal. With the threat of Indian violence behind her, Pittsburgh became a stopping point on the move west. The settlement of the Northwest Territory accelerated after the war with the Arsenal becoming a staging area and manufacturer of munitions that would be needed for the defense of that territory.

Students who describe a fort often see it as a wholly independent and enclosed facility. This one dimensional picture is not accurate in the case of Allegheny Arsenal. Like most military installations, the Arsenal did have a wall, a gate and strict military control. But the wall did not exclude the community. Rather, there was a symbiotic relationship between the Arsenal, the Lawrenceville neighborhood and the city of Pittsburgh. (Lawrenceville had been annexed to the city prior to the building of the Arsenal.) The Arsenal always employed a variety of civilian laborers. Annie Royall, in her excellent 1829 view of early Pittsburgh, makes reference to a gunsmith on his way to the United States Arsenal. Payroll records of the arsenal bear this out. Many skilled craftsmen from the area and unskilled workers (including children) were part of the work force at Allegheny Arsenal. These jobs were important to the economy of Lawrenceville and were another magnet that encouraged migration and immigration to western Pennsylvania.

The Arsenal was also a social force in the community. The presence of eligible young men at the military installation was not overlooked by the young ladies of Pittsburgh. Many social events such as dances were held at the Arsenal. Apparently, the fort also welcomed various local groups that met on the grounds. And a number of celebrities of the day including the Marquis de La Fayette and Presidents James Monroe and John Quincy Adams visited the Arsenal. Writer Charles Dickens compared Pittsburgh to Birmingham, England, citing the arsenal as a point of likeness.

The attention visiting dignitaries gave to the Arsenal was due to its growing reputation. By the 1830's, the production of leather holsters, and straps became an important Arsenal function. The physical plant of the military installation grew in that decade under the supervision of its commander, Rufus Baker.

Readers of information on the Arsenal will find frequent reference to the laboratories. This is an odd word to be associated with a place that many perceived as a munitions plant. But, as the term implies, Allegheny Arsenal was far more than that. A number of important processes in the manufacture of weapons were developed at the Arsenal. Historian James Wudzarczyk, in his excellent book on the Arsenal devotes a chapter to the work of Thomas Jackson Rodman. Rodman developed and patented several key procedures used in the casting of guns and invented the famed 20 inch Rodman cannon.

Much of his work was done in Pittsburgh at Allegheny Arsenal and at the Fort Pitt Foundry in the years immediately before and during the Civil War. (Hopefully more of this material will be discussed in Arthur Fox's soon to be published book on Pittsburgh and the Civil War.)

Well known in Lawrenceville is the fact that the highest and lowest points of Arsenal's history are associated with the Civil War. Prior to the war, President James Buchanan's attention was directed at the production of weaponry at the fort. Pittsburghers anticipated the conflict and urged President Buchanan to take steps to insure that the products of the important Arsenal would not fall into Southern hands. At the beginning of the war, Allegheny Arsenal was a key government installation. The height of the Arsenal's production was during those war years when hundreds of people were employed to produce munitions for the Union Army. However, Pittsburgh's greatest tragedy also took place during those war years.

It has been noted that the Arsenal was bound to the Lawrenceville community both socially and economically. No facts better demonstrate this than the events of September 17, 1862. Students of American history recognize the date of the battle of Antietam. Readers of the Pittsburgh Gazette on the day after the battle would read first of Antietam then of Allegheny Arsenal. (Nineteenth century newspapers did not favor local news even when the events were of gigantic proportion.)

On September 17, 1862, production at the Arsenal was at an all time high. The view of child labor was very different in the mid-nineteenth century. So much of the work force at the Arsenal was young girls between the ages of ten and fifteen. Prior to the explosion there had been rumors and official concern about the handling of gun powder. Post Commander Symington had dismissed boys as employees because of their carelessness.

On September seventeenth, the danger was illustrated in a horrific accident. About two in the afternoon, a series of three explosions occurred. One laboratory building exploded and burned and seventy-eight died. This accident remains the largest loss of life in a single accident in the city of Pittsburgh and the greatest civilian loss in the Civil War.

Later investigation would conclude that a spark, perhaps from a horseshoe had ignited near a powder wagon. The explosions occurred with such force that windows were broken in downtown Pittsburgh. The Gazette's, September 18th account spared no details in reporting the tale of intense heat, whitened bones and blackened bodies. It noted that the sound of the explosion was heard three miles away.

The investigation of the event would assign blame to the commander of the post, Colonel John Symington and the superintendent of the laboratories, Alexander McBride.

While the grief of the massive loss of life hung over the community, the war effect could not cease. Correspondence of Col. Symington and newspaper accounts make it clear that it was business as usual only days after the explosions.

The Civil War was Allegheny Arsenal's finest hour. Guns and ammunition of all kinds from Pittsburgh supplied the Union cavalry and infantry.

Following the Civil War, the peacetime economy and the Industrial Revolution seemed to pass by the Arsenal. Although briefly pressed into service for the Spanish American War, Allegheny Arsenal's years of service drew to a close in the early twentieth century.

During the time that the Arsenal served Pittsburgh, the city grew from a small town to a major industrial center. The Arsenal was the backdrop for travel and trade and a mirror of national events.

Objectives:

This unit will be used with my eighth grade United States history classes. It will be used, with some changes, in both the mainstream and advanced classes. Since the material varies in nature and difficulty, I believe that other teachers will be able to use it and adapt it to their needs.

As stated in the rationale, the topic of Allegheny Arsenal was chosen because I believe it will generate student interest in this unit specifically and history in general. That is a primary objective.

Beyond the goal of student motivation, there is a concern for the development of student skills. The Pittsburgh Public Schools is a standards based district. Goal setting in the classroom is based on state and district standards. In social studies, we endeavor to meet our citizenship standards while incorporating mathematics and communications standards into our lessons. At the middle school level, we are most

aware of the need to improve and expand student skills. Successful ninth graders read, write, compute, communicate, speak, question and analyze . They understand and use computers, online resources and the spectrum of library materials. Moreover, they are curious, thoughtful and ambitious. It is the responsibility of the middle school to foster these abilities and traits. We prepare students for high school.

History and geography lend themselves to skill development in many areas. Reading and writing are key to the study of history. Our students read the text, reflect upon it and analyze it. The factual material in the text can be used as a starting point for a variety of writing and discussion projects. Cooperative learning lessons, writing essays, mock trials, creation of newspapers, role play, debates, storytelling, oral presentations, analysis of current events and library research are examples of lessons that imbed communications standards in the social studies curriculum.

Mathematics has always been a part of social studies. Map reading, measurement, making of timelines, measuring distances, compiling statistics, making charts and graphs, determining longitude and latitude, estimating distances, drawing flags, computing ages, and using technology in the classroom are all examples of incorporating mathematics in the study of history and geography.

Of course, the key to teaching all of the foregoing skills is to find a captivating vehicle for that endeavor. I believe that local history can be a background for such study and a basis for skill development that will allow our students to meet state standards in the middle school.

This unit will utilize historical lessons as a vehicle for skill development. Classroom discussions employ basic and higher level questions and examine historic events and societal values. These and other skills are examples of the way that history incorporates the standards of other disciplines and seeks to fulfill them.

In designing a curricular unit, it is important to find a topic that is not only rich in history but one that offers many possibilities for multi-disciplinary lessons. In choosing to examine the history of early Pittsburgh migration with specific concentration on Allegheny Arsenal, I have chosen a topic that meets this definition. This unit will reveal varied and abundant historical material that can be used to teach standards in history, communications and mathematics. And, I think that the kids will enjoy it.

Classroom Activities:

Rather than design lesson packages that are labeled: day one, day two, etc., I have chosen to create lessons that could be used as a whole unit over a period of days or

could be used independently by being inserted in a chronologically appropriate place in the curriculum.

I have chosen this approach since the time span of the existence of Allegheny Arsenal is nearly one hundred years. It makes sense to include Arsenal in the 1830's with the study of the Jacksonian era and to hold lessons on Arsenal's role in the Civil War until the class addresses that topic as a whole. I would suggest that the first three lessons (background lessons) should be taught in September or October. The additional lessons can be used when they fit into the chronological study of the history of the United States. And since the lessons are designed to be used independently, the teacher can pick and choose lessons that may function as enrichment for a given topic or as a skill builder, when needed.

Background Lessons:

Lesson One:

The first lesson should be an introduction to local history. The teacher can explain that history is not just in textbooks. History begins at home. People, families, neighborhoods and cities all have a history. To get students thinking about this concept, I tell them that an Indian village was only a few miles from our school and that Pittsburgh is one of the first cities west of the Alleghenies. My students are asked to imagine Pittsburgh in 1770.

Such a discussion about local history can revolve around the neighborhood or the school itself. One way to handle this lesson would be to ask the question: What's the history of our school? Students could investigate this by touring the school seeking plaques and cornerstones, interviewing veteran teachers, searching the school archives for programs from dedications and anniversaries and using community resources. (In the Pittsburgh Public Schools, the Board of Education's library can help in this regard.) After collecting information, students could take photographs of the school and use the school's computer lab to publish a short booklet on the history of the school.

Another venue for interest in local history is genealogy. Students can write short essays on questions such as: "When did your family come to Pittsburgh?" or "My grandfather's experiences in the steel mills (or coal mines or the Heinz plant)."

The exact nature of this first lesson is not as important as the goal of introducing local history. Students should understand that textbooks provide only an overview of the broad range of topics in United States history. It should be clear to students that their books could not possibly deal in depth with all the material that they discuss. Students

and teachers can expand on these topics and supplement required materials. Moreover, independent local research can broaden our understanding of all history.

Lesson Two:

Secondly, students should consider the history of the city of Pittsburgh. The purpose of this lesson is three-fold. It will further develop the concept of the value of local history, it will illustrate the concept of change, development and migration and it will offer the background material needed for our future study of Allegheny Arsenal. There are a number of excellent histories of Pittsburgh and a newly developed web site that can serve as resources for this lesson. Since time and the demands of the curriculum as a whole must be considered, an in-depth study is not possible. But Pittsburgh can be seen across several centuries by dividing the work. Students working in cooperative groups (Appendix Five: Cooperative Groups) can be assigned to research one time period in the history of the city. Suggested areas are: Indian Culture in Western Pennsylvania, Eighteenth Century Pittsburgh, Mines, Steamboats and Canals, the Civil War, Industrial Pittsburgh and Twentieth Century Pittsburgh. The groups can go to the school or community library and collect information for their reports. Students can then share their information with the entire class in oral reports. Each group could also make posters for their time period. The posters could be displayed on the wall in chronological order forming a timeline of the history of the city.

Lesson Three:

The third lesson should be a broad review of the history of the Arsenal. (Initially, the Arsenal was called the United States Arsenal at Lawrenceville or at Pittsburgh. By the 1830's, the more commonly used name of Allegheny Arsenal was being used. Both are acceptable.) The overview of this unit gives a cursory view of the history of Allegheny Arsenal. This may serve teachers. However, more in-depth information can be drawn from the writings of local historians: Allan Becer, Arthur Fox and James Wudarczyk. It is suggested that the teacher tell students the story of Allegheny Arsenal. An outline could be used for note-taking by students. Photographs of some of the buildings of the Arsenal could be shown to the students. (Appendix Four) The telling of the story at Arsenal Middle School often generates offerings of stories and opinions by our students. Students who are less familiar with the story might want to read excerpts from Mr. Wudarczyk's book.

Additional Lessons:

Lesson Four:

The creation of parallel timelines is a useful activity. Given large drawing or construction paper, student would create three parallel timelines. The lines should be drawn so that the times on each of the lines are the same. The first would show events that took place at Allegheny Arsenal. The second would show events that took place in the city of Pittsburgh, and the last line would show national events. It is not

necessary that student material for each date on the three lines, but rather that they seem parallel events. Sometimes middle school students have difficulty grasping the concept of time. Some students think that Christopher Columbus knew George Washington, while others would dispute the fact that Washington and Mozart lived in the same century. Of course, many historic events were happening simultaneously. By creating parallel timelines, students can see what was happening in the country and the world as our local picture expanded. Teachers could adapt this as they choose. Perhaps some might use four timelines, including a fourth for world events. (Appendix Three offers samples of information that could be used for this activity.)

Lesson Five:

Biography is another useful tool. Allegheny Arsenal as a topic does not offer too many key personalities for study. However, some names come to mind. Student researchers would find some information on Colonel William Barclay Foster. While best known as the father of the composer, Colonel Foster was the founder of Lawrenceville and a prominent citizen. Another choice for study is his son, Stephen Collins Foster who was born on July 4, 1826 only blocks from the Arsenal. Young Stephen surely attended some events at the Arsenal. A writing project might involve some speculation on Stephen Foster's Pittsburgh. Some writing by the commanders of the Arsenal survives. Older students seeking a research project might look into the career of Abram Woolley or James Symington. And, the name that is perhaps most often associated with the Arsenal is that of architect, Benjamin Henry Latrobe. Certainly, research on the life and work of Latrobe could be done as a class project.

Lesson Six:

Students are always surprised by the level of scientific understanding of their forebears. Actually, most of our scientific knowledge was developed in the last two centuries. So the study of science then and now can offer dramatic contrasts. One lesson that can be done is an examination of the cholera epidemic of 1833 in Pittsburgh. Primary source material for this lesson includes the rather matter of fact order given to soldiers at the Arsenal and several newspaper accounts of the events. Students can examine the final newspaper entry of June 25, 1833 that speculates on the geological influence on the disease. Library research will advise them that cholera is a contagious, bacterial infection and they may draw conclusions about the scientific theories of 1833.

Using the same newspaper entries on cholera, students may want to examine the Gazette's descriptions of the victims. The teacher could search the newspapers for similar articles written today. Then students could compare and contrast the styles of writing, the use of information and the newspaper's point of view.

Lesson Seven:

Mathematics can be incorporated into this unit in a variety of ways. It is suggested that one lesson be devoted to the maps of Pittsburgh and the Arsenal. (Appendix Four) This lesson will come together in the second draft. I haven't yet acquired the necessary maps.
Some of the materials I seek are at the Library of Congress.

Lesson Eight:

One activity that my students have always enjoyed is a mock trial. Records show that the military held courts martial at Allegheny Arsenal. Item five of Appendix One shows primary source material relating to the trial of Private Christopher Hope. Hope was tried for being absent without leave (the most common military crime). In 1834, he was swiftly found guilty and punished. Students in 2002 may have a different interpretation. Two possible scenarios can work for this activity. Students can re-enact the trial. Using the original material in the appendix, they should write a factual script describing the events as would have occurred. Another possibility, is to have the student incorporate their own version of events in a trial for Private Hope. They can add a plausible defense and fictional witnesses, then assess the outcome.

The material on Private Christopher Hope can also be used as a writing exercise. After reviewing the primary source material, student could answer essay questions such as:

“Did Christopher Hope get a fair trial?” or “Was Hope’s punishment fair?”

Lesson Nine:

A vocabulary lesson can be inserted in any of the other lessons or can be taught independently. The teacher can select words from the primary source material that may not be familiar to students. (For example: munitions, arsenal, cholera, indigenous, migration, dissolute, ordnance, caissons) The selected words should be introduced to the class in an oral presentation. The teacher can use varied questions to develop the meaning of the words and practice their use in examples. Mastered words can be added to a classroom word wall.

Lesson Ten:

A guest speaker from a with a military background can be invited to the class to discuss munitions and military equipment. A member of the local ROTC staff or a retired soldier would be appropriate. Civil War re-enactors also visit schools. Students can participate in the guest’s lecture and demonstration by listening and asking questions. On a day following the visit, students can write summaries of material gleaned or make charts demonstrating changing military technology.

Lesson Eleven:

Students can participate in a walking tour of the neighborhood. The tour can walk the perimeter of the Arsenal grounds to get a sense of the size of the installation. Along the way, they can speculate on the nature of buildings in the neighborhood and suggest (from their maps) where original Arsenal buildings might have stood. They can also visit St. Mary's Cemetery where victims of the Arsenal explosion are buried and view the old powder magazine and historic markers. Cameras can be used by one or two designated class photographers, who will record highlights of the tour. The next day, students can create a bulletin board of their tour using the photographs and writing captions for the photographs and adding narrative accounts.

Lesson Twelve:

The date of the tragic Arsenal explosion is September seventeenth. Students of history will be struck by the ironic comparisons with the more recent tragedies that also took place in September. Like the victims of the World Trade Center, the Arsenal dead were linked to a war in which they were not soldiers. Most, in fact, were children. Parallels to last years' events can be seen in Pittsburgh's rush to aid the victims of 1862. (Appendix Two, Items -----) Stark contrast can be seen in the reporting of events. The Pittsburgh Gazette's descriptions of victim would strike twenty-first century Americans as overwhelmingly graphic. (although, historically interesting) As a writing project, student can examine these likenesses and differences. Much library and online material can be collected on September eleventh and it can be viewed along with the newspaper accounts of September 18, 1862. The teacher can select topics for essays (For example: "Were the details necessary?" "Nineteenth vs. Twenty First Century Compassion") or allow the students to formulate topics.

Lesson Thirteen:

It's been my experience that kids are always interested in old money. Many accounts of the tragedy at the Arsenal in September 1862 make note of the fact that it was pay day. One reference mentions the treasury notes. As a quick research project, students could go online and determine exactly what type of currency would have been given to the Arsenal's employees. Perhaps, they can then draw or illustrate this on posters or charts.

Lesson Fourteen:

Students should be aware that while places and circumstances change throughout history, human behavior seems to be a constant. Item Three of Appendix One is an 1830 order issued by Commander R. L. Baker regarding the behavior of children on the post. This is interesting since so many of the government documents are rather

matter of fact. This one tells us that the some of the soldiers of one hundred seventy years ago were also the parents of unruly children.

Students should read Baker's order and consider his options. Ask the students to assume the role of the commander of Allegheny Arsenal and devise a list of rules for children living on a military post in 1830. Students could then share their views with the class.

Lesson Fifteen:

One of the earliest pieces of information that was found in government documents (Appendix One, Item One) was Capt. Abram Woolley's recording of the service and entitlements of a deceased Sergeant George Havenden. No details of Havenden's life and death are given except the facts that he died during the war (War of 1812) and had faithfully served. If Woolley had written a letter of condolence to the family, it has not survived. As a writing project, students could imagine the service of Havenden in the War of 1812 and write such a letter.

Lesson Sixteen:

Following the tragedy of September 17, 1862, the post's commander, Col. John Symington, sent an immediate telegram to his superior, General J. W. Ripley, Chief of Ordnance. The next day, he followed up with a lengthy letter. (Appendix One, Item Eight) It would provide interesting analysis for students to compare and contrast the style and choice of details in Symington's reporting with that of newspaper accounts of the the same day. This work could be shared through essay or oral reports.

Lesson Seventeen:

The records of wages of civilian laborers at the Arsenal are useful in teaching mathematics standards. Students can use the work sheet on nineteenth century wages as homework and practice. (Appendix Seven—to be added later)

Lesson Eighteen:

The sample of workers at Allegheny Arsenal in 1870 is a useful tool for viewing migration and can be used for meeting several standards in math. (Appendix Eight—to be added later) The teacher can design work sheets or use those provided in the appendix.

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APPENDIX ONE: GOVERNMENTAL RECORDS

Note: Only the latest of the records of Allegheny Arsenal were typewritten. Almost all the existing records of the Arsenal were handwritten in varying types of old script.

I have attempted to transcribe them exactly as they were. Spacing and spelling were preserved as I found them. In case where it was impossible to decipher a word or there is doubt, (?) is used to show that problem.

Item One:

I hereby certify George Havenden Enlisted in the army of the US on the seventeenth day of February 1814 for during the war and that he died on the 4 day of September 1814 while in the service of the United States and faithfully performed his duty as Sergeant while in said service. The said George Haverden had received the first money (?), only the Bounty, allowed by the act of 27 January 1814 and further received all the pay, subsistence and clothing due him at the time of his decease he had been mustered and had joined a Military Corps for service and his heirs are fully entitled to the remaining moiety of the bounty amounting to Fifty Dollars and the further sum of twenty four dollars allowed by the act of assets 27 January 1814 and such allowances of land as provided for by law ~

Given by my hand this sixteenth day of April

1815

Abm R. Wooley
Capt. US Ordnance

Item Two:

Garrison Order Arsenal Pittsburgh February 10, 1821

The Arrangement of the Men in Companies perform particular duties in case of Fire happening at this post has been altered and will henceforth stand as hereto annexed. The engine will be worked once a fortnight on Saturdays at 5 o'clock P M and the men drilled to their duty. Citizens who may offer their services in case of Fire will be assigned to particular posts by the Officers. On an alarm of Fire the Corporal will turn out the Guard and post a Sentinel at each gate whose duty it shall be to prevent all persons from passing out and left directed by an Officer---No use less noise will be allowed by the officers or the non commissioned officers who have charge of parties.

Every man must do his duty with alacrity and steadiness. The bell will ring at 5 o'clock on Saturday afternoons as a signal for men to break off work, clean up the shops and clean their arms.

G. Talcott
Capt. Com.

Item Three:

Order Allegheny Arsenal
XXII October 20th 1830

The commander officer has assayed by orders to correct habits common among children of families occupying the public quarters, of throwing stones and shooting arrows within the walls of the place_____

A recent repair of the windows with near hundreds of panes of glass is evidence of the inefficacy of all attempts to put a stop to the practice____and as the only means of correcting it, he has determined to make the parents responsible not for the preservation of their windows and likewise of the conduct of their children _____ In future therefore unless parents (?) control their children, as to prevent violations by

them, of the regulations of the post, they will be required without ceremony to provide themselves with private quarters.

(Sig) R. L. Baker
Major Comm.

Item Four:

Order

27

June 24, 1833

During the prevalence of Cholera in the city, men on leave of absence or pass will not visit the city or the villages in its vicinity without specific permission.

Whenever a man or any member of the family may have the slightest bowel complaint, the circumstances must be reported without any Delay, in order that a remedy may be immediately applied, as the only sure means of preventing a dangerous results.

(Sig) R. L. Baker
Major Comm

Item Five:

Order 38

Allegheny Arsenal
24 Nov 1834

A Garrison Court Martial for the Trials of Christopher Hope, an enlisted Laborer of the Ordnance Dept will convene tomorrow at 11 o'clock A.M at this Arsenal. The Court will be comprised of 1st Lieut. M. Burke, President 2nd " T. B. Adams
" " William Hoffman

The junior member will record the proceedings of the court.

(Sig) R.L. Baker
Major U S A
Commanding

Proceedings of Garrison Court Martial, which convened at Allegheny Arsenal on 25th November 1834, pursuant to the following order- Vis: Allegheny Arsenal

A Garrison Court Martial for the Trials of Christopher Hope, an enlisted Laborer of the Ordnance Dept will convene tomorrow at 11 o'clock A.M at this Arsenal.

The Court will be comprised of
1st Lieut. M. Burke, President
2nd " T. B. Adams
" " William Hoffman

The junior member will record the proceedings of the court.

(Sig) R.L. Baker
Major U S A
Commanding

The court met pursuant to the above order –present 1st Lieut. Burke, President –2 Lieut.

Adams and Hoffman, members---

Private Christopher Hope, an enlisted Laborer of the Ordnance Department, having been brought before the Court, was asked if he had any objections to nay of its members, and answering in the negative, it proceeded to try him on the following charge and specification, after having been duly sworn in his presence ~

Charge—Absence without leave---

Specification – In that he absented himself from the ? and tattoo roll calls of the Company at Allegheny Arsenal on the evening of the 23rd of November 1834 and the morning 24th of November and without leave from his commanding officer and in violation of orders.

Allegheny Arsenal
25 November 1834

(Sig) R. L. Baker
??????????

To the above charge and specification, the prisoner pleads Guilty

Sergeant Colsten, a witness for the prosecution being duly sworn says---“The Prisoner Christopher Hope was absent as specified in the specification, and without leave---

The Prisoner having nothing to offer in his defense, the Court was cleared, and after mature deliberation on the testimony adduced, confirm the plea of the prisoner private Christopher Hope, and find him guilty of the charge and Specifications preferred against him, and do sentence him to

forfeit one half his monthly pay for one month. –

Sine die. The Court having no further business before it adjourned

Signed Martin Burke
1st Lieut. President

Sign. Wm Hoffman,
Lieut 6 Infy Rec

Item Six:

Chess Kough Rudd & Co
Gentlemen
1862

Allegheny Arsenal
February 17,

Be pleased to inform me in about what time (the shortest possible) you can supply (delivered at this Arsenal) two or three thousand, state for each quantity, of 4 ½ inch rifled gun projectiles of the same make as those recently furnished except that one half of the shells will be made with a shoulder into the fuse hole to be used for projectile shells. These projectiles to be supplied in the following proportions, ½ solid shot, ¼ hollow with fuse holes tapped throughout for the 2 inch long pince (?) fuse and ¼ inch partially tapped, and with a seat of shoulder left as shown in the accompanying sketch.*

Please also state the price for the projectiles per round all round or for each kind separately. An early reply is respectfully requested as the projectiles are wanted as soon as they can be supplied.

(Signed) Very respectfully,
John Symington
Col Ordnance

Another important change from the projectiles formerly made is to wrap iron wire around the body of the shell in the recessed part to receive the soft metal composition and prevent the stripping off, a sketch* of this is also included herewith
J.S.

*The sketches did not survive with this material.

Item Seven:

Brig Gen J. W. Ripley

Allegheny Arsenal

Ordnance Officer

February 18, 1862

Sir I have respectfully to report that 2048 of the 71 inch Austrian rifled muskets with sword bayonets recently issued to Gov. Pierpoint of Virginia, have been returned to this Arsenal by order of General Rosecranz, they have been found by a board of survey, worthless.

These arms are inferior in every respect and I fully concur in the opinion of the board.

Very respectfully,
John Symington
Col Ordnance

Item Eight:

Genrl J W Ripley
Washington, D.C.
1862

Allegheny Arsenal
September 18,

Sir I informed you by telegram yesterday, as soon as I could, of the terrible calamity that had occurred here. The explosion of the Laboratories and the death and maiming of so many persons, employed in them, since which I have ascertained the following facts regarding it which I respectfully report. The explosion took place about 2 o'clock in the afternoon whilst the monthly payment of employees in those buildings was being made by Mr. Bosworth, the S. K. & Paymasters clerk and assistant, Mr. Jesse ? who occupied for this purpose a small temporary wood building, used by the females as a living room to deposit their shawls and other clothing but not necessary for them at their work. The explosion occurred Mr. Bosworth and others say whilst the wagon was delivering the last load for that day of five barrels of powder from the magazine and was caused, it was supposed by the braking out of the powder when one of the barrels was being placed on the platform. The powder is only brought to the Laboratories in small parcels, at a time, each day, as t is required, as to have little or none remaining overnight and the product of each day's work of making ammunition of all kinds, is boxed early in the afternoon and carried to the magazine. The load of powder being delivered at the time of the explosion was as the last of the day, and much have been used in about an hour or two, to complete the day's work to be sent to the Magazines. No ammunition yet being sent to the magazines and the whole product of the day, was consequently, exploded amounting to about 125,000 of 71 and 54 inch small arms cartridges and 175 rounds Field Ammunition assorted for 12 pd and 10 Parrot guns.

There were three explosion, the first as stated of the powder being delivered from the wagon, when a large number of those employed in the adjoining room escaped, two others followed in different portions of the buildings, at short intervals, causing the roof and walls to fall, in flames, over those who could not escape. The whole number of persons employed in those buildings was 186, of whom 156 were females, and 36 men and boys ~ Of these the bodies of 53 females & 21 males were removed from the ruins, but submit as to being recognized in very few cases only. 80 females were ??? more or less injured some of which have since died.

These buildings contain the whole of the laboratory, tools for all the laboratory purposes, (except formers for small area cartridges) and are entirely destroyed. The upper floor of

_____ No. 1 fronting Butler Street, about 2100 yards from the Laboratories was used for forming the paper cartridge cylinders only, from whence they were sent to the Laboratories, to be filled, bundled and packed in this room about (blank) females were employed some of whom received injuries more or less severe from their efforts in the excitement to hurry down the back stairway or from throwing themselves out of the windows.

A temporary building will be put in the Upper Park (their being no room in the lower grounds) as soon as possible for the preparation of _____ ammunition and I trust will be occupied in a week or so. And arrangement made for placing temporary building for small arm ammunition on the ground (the most suitable) occupied by those destroyed.

And especially for replacement of various laboratory tools.

The Civil Authorities of Pittsburgh & Lawrenceville have today made preparation for the interment of bodies and will tomorrow investigate the causes of the calamity. I will also order a Board of Inquiry and report the result.

Very respectfully,
(Signed) John Symington,
Colonel of Ordnance

Item Nine:

Genl J W. Ripley
Washington

Allegheny Arsenal
September 22, 1862

Sir I respectfully recommend the discharge from the service of Private of the First Class James Fitzsimmons on the ground of habits of intoxication, and insolent and

insubordinate conduct to officers whilst under the influence of liquor ----- His place can readily be filled by one of better and reliable habits.

Very respectfully,
John Symington, Col of Ordnance

Item Ten:

Post Orders
No. 32
1892

Allegheny Arsenal
November 23,

Tomorrow, 24th inst. having been designated by the President of the United States as a day of Thanksgiving, the offices and shops will be closed and all work, except the necessary guard and police duty will be suspended.

(Signed) Frank R. Phipps,
Major Ord. Supt. NJA Comdg

APPENDIX TWO: NEWSPAPER ACCOUNTS

Pittsburgh Gazette, Tuesday Morning, June 18, 1833:

Our city continues entirely healthy. No case of cholera, either indigenous or imported has occurred since Tuesday, last.

“Health of our City”
Pittsburgh Gazette, Friday, June 21, 1833:

On Wednesday, last, two deaths, by Cholera, occurred in the city---Mr. Losey, Steel Manufacturer & Mrs. Daughtery. Mr. Losey had been suffering under the premonitory symptoms for several days and on the morning of his death had ate a large quantity of cherries. Yesterday, a German, by the name of Cope died in this city, and a Mr. Pollock at the steel factory on the south side of the Ohio, about one mile below this city. During the last twenty four hours since nine o'clock on Friday morning, no new cases have occurred.

“Cholera”

Pittsburgh Gazette, June 25, 1833:

On Saturday, last, George Pollock, a man of very dissolute habits, Anthony Maria Capaduro, an Italian, who had been living on board a flat boat, died in the Hospital, a female, name unknown, at the corner of Cecil’s alley and Penn street, and B. Best, a leecher at his residence, in Fourth street---all of cholera.

On Sunday, Bidwell, a black man, who had a boot and shoe blacking shoe in Market street, died at his house in Arthursville. Several cases of Cholera Morbus occurred during the day, but no deaths.

The Hospital Report, dated Monday, morning, 9 o’clock, states that no case of Cholera Asphyxia had been presented there during the last 24 hours.

“Geological Causes of Cholera”

Pittsburgh Gazette, June 25, 1833:

Mr. Boubee has made some researches into the geology of the countries through which cholera has passed, from which he remarks that the epidemic has spread most speedily, and with its greatest intensity, through those districts where the tertiary and alluvial earths are the most extensive, whilst it appears to have been propagated with great difficulty, to have lost its intensity, and even to have been extinguished in those parts where the older and particularly the primordial formations predominate. This coincidence of the cholera with particular geological districts agrees with the observation pretty well established, that the circumstance of humidity and evaporation favor the development of this disease.

In fact, tertiary and alluvial earths have, to a remarkable degree, the property of imbibing water, which being again yielded by a prolonged evaporation, producing a humidity of the atmosphere entirely dependent on the nature of the soil. The older formations, on the contrary, compose ordinary compact rocks, which being impermeable, can neither absorb moisture nor present it to the atmosphere by evaporation. Sometimes the old formations present rocks that are friable or decomposed in particular places, in which cases they will resemble the more recent ones in absorbing and affording moisture, and this circumstance may explain some of the exceptions to the general rule of Cholera adhering in its progress to the modern formations.---*Jour. du Chemie Med.*

“Appalling Disaster”

Pittsburgh Gazette, September 18, 1862.

(These are excerpts of a much larger article.)

Part One:

The most appalling sight was the burning bodies. In some places they lay in heaps, and burnt as rapidly as pine wood, until the flames were extinguished by the firemen. In other places nothing could be seen but the whitened and consuming bones, the intensity of the heat having consumed every particle of flesh. The steel bands remaining from the hoop skirts of the unfortunate girls, marked the place where many of them perished.

As soon as the fire was subdued the removal of the bodies commenced. But very few could be recognized, as heads, arms and legs were generally gone. The remains were carried on boards, and placed at different points on the grounds, to await further disposition. Sixty three had been removed when we left the spot, and but a few remained in the ruins. As we have before said, many were utterly consumed, and the whole number lost cannot be much more than seventy or seventy-five. Those bodies which were identified were removed by friends, but the most of them still remained on the ground.

In the chest of one of the unfortunate victims, who had been partially consumed by fire, eleven cannister balls were found. She had evidently been killed by the explosion of a shell. These shot would perhaps weigh a half pound each.

In the side of another girl, seven Minie balls were discovered. These balls together with the cannister shot mentioned above were all picked out and carried off by curiosity hunters.

A small brass tube, supposed to be a cannon primer, was picked from the heart of one of the victims where it had buried itself.

We need not attempt to describe the heartrending scenes which were witnessed, as mothers, sisters and relatives arrived on the ground and viewed the horrid spectacle. There were tears of joy as friend met friend alive, and there were bitter tears of anguish from those who recognized the deceased, or sought in vain for those who can never return. May we never behold such sorrow and mourning.

Part Two:

The sufferers by the terrible calamity are all of the poorer class, and a fund should at once be raised for their relief. It is a singular fact that M.M. Bosworth, the clerk, had nearly finished paying off all the hands, only three of them were absent. We heard of two or three instances where half burnt treasury notes were found upon the persons of the victims.

Part Three:

Lest parties abroad should misapprehend the facts, it is necessary to say that but a small fraction of the Allegheny Arsenal has been destroyed. The loss of material is nothing compared to the loss of life. The Arsenal with its immense shops, stores, and munitions, may be said to be uninjured, and the government will experience but a very slight interruption to its business as a consequence of the accident.

“Meeting for Relief of Sufferers”
Pittsburgh Gazette, September 19, 1862.

At ten o'clock a public meeting was held at the Board of Trade Meeting Rooms, for the purpose of making arrangements for the relief of sufferers by the terrible explosion at the Arsenal.

Hon. Wilson McCandless was called to the chair.

Capt. Batchelor, Capt. Bear, S.F. Von Bonhorst and Edwin H. Stowe were appointed Vice Presidents, and Geo. H. Thurston, D. O'Neill and William M. Hartzell, Secretaries.

Judge McCandless stated the object of the meeting in a few appropriate remarks.

Mr. Streeter, from the Committee appointed at the Lawrenceville meeting, stated that the citizens of Lawrenceville had made arrangements for the interment of the unclaimed bodies, and that they would be buried to day. A lot had been generously tendered by the Managers of Allegheny Cemetery for the purpose and their interment would take place with proper ceremonies.

It was moved that a Committee of Finance, and a Committee to prepare a suitable monument to be placed over the graves of the deceased. The following committees were appointed: To Confer with Lawrenceville Committee—B.C. Sawyer, A.A. Alexander,

Isaac Jones, James Herdman, George Fortune, D. Bernard, J.H. Sewell. The committee started immediately to their duties.

Committee to Raise Funds for Monument—Thos. M. Howe, C.W. Batchelor, Jas. P Barr, Geo. H. Thurston and Josiah King.

Committee to Raise Funds for Relief of Sufferers—Adams Getty, David Fitzsimmons, 1st Ward, John McD. Corssan and Reuben Miller, Jr. 2d Ward, James Herdman and Jas. Montooth 4th Ward; Richard Thompson and James M. Taylor, 5th Ward; George Wilson, J.R. Hunter, 6th Ward, Samuel Barckley, Wm McCutcheon, 7th Ward, B.C. Sawyer, Jr., J.M. Killen, 8th Ward, William O. Davis, 9th Ward, Pittsburgh, John Atwell, William Bagley, 1st Ward, J.G. Coffin, 2d Ward, John Wright, James Marshall, 4th Ward, Allegheny

Committee to Memorialize Congress to Provide Pensions for the Families of the Deceased---Hon. Wilson McCandless, Capt. C.W. Batchelor, Capt. R. Bears, S. F. Von Bounhorst, E. H. Stowe, D. O'Neill, Geo. H. Thurston and William H. Hartzell.

Committee to Receive and Disperse the Relief Funds---Joshua Hanna, Capt. Batchelor, Thomas Bakewell, James Parke, Jr., James I. Bennett, William McCreery and Chas. H. Paulson.

“Death at the Arsenal” by Joe Bennett
Pittsburgh Press, October 22, 1978

It was payday. M.M. Bosworth, chief clerk at the United States Arsenal in Pittsburgh, had almost finished dispersing cast to the employees by 2 p.m. Most were teenaged girls and as they collected their pay, they returned to their stations to resume making munitions for the Union Army's use in the Great Rebellion. It was September 17, 1862.

J. R. Frick, a wagon driver, had just delivered 10 kegs of powder to the laboratory, a one-story building where shells were filled and bullets made. With his wagon backed up to the porch, Frick had seen to the unloading of the powder and was waiting while workers loaded some empty boxes for him to return to the magazine. Looking down idly, he saw between the rear wheels a small, sputtering fire, seeming to burn out of the paving stones. He knew what it meant. Within the next ticking of his watch, thoughts and memories would race through Frick's mind at terrible speed.

At the end of the ticking, the strange little fire jumped through the air, into an open barrel of powder on the porch. The powder exploded.

Alexander McBride, superintendent of the laboratory, heard the explosion and for an instant wasn't sure what the sound meant. Then the realization struck him and he rushed outside to look for his 15-year old daughter, Kate, who also worked in the building. The first thing he saw was a running girl, her clothes on fire. He filled a bucket with water and threw it no her before racing off in the direction of the explosion.

A man named Geary also heard the blast. He knew immediately what was going to happen and fled, outside, where he, too, confronted a frantic, burning girl. Geary dragged her to the ground and smothered the flames with his coat. As he was getting to his feet, the second explosion knocked him down again.

Frick, the wagon driver, had been impossibly lucky. When the powder barrel blew up, Robert Smith, standing nearby had been literally blown to pieces. Frick, just a few feet away, through some quirk of physics, was hit with only a blast of compressed air, which lifted him out of the wagon seat and dropped him against a fence on the other side of the yard.

From that vantage point, Frick watched as the second, and then a third explosion erupted.

The roof of the laboratory lifted off, and the walls burst outward, he later told an investigating jury. The air filled with debris, dismembered human bodies and screams.

Newspaper accounts that next day told a hellish story of death, panic and grief. The while Lawrenceville section of the city was rocked by explosions. Windows shattered and door latches were burst hundreds of yards away. The arsenal grounds at 40th and Butler Streets quickly filled with hysterical families of employees, trying to identify bodies. The death count eventually had to be put at somewhere between 73 and 78. About 45 of the bodies were buried in a common grave because it was impossible to identify or even count them.

Almost all were girls between the ages of 10 and 20. The laboratory workers had number 186, all but 30 of them women and girls. Col. John Symington, the officer in charge of the arsenal, had found boys careless in handling explosives and dismissed them in favor of girls.

Feelings against the arsenal authorities ran high in the aftermath of the disaster. An inquest was quickly convened and a six man jury heard testimony of witnesses and experts for 10 days. McBride reported that the boys who swept the laboratory often swept powder out into the street instead of disposing of it properly as he had ordered. He said anyone caught doing this was fired, but the practice had continued.. McBride also maintained that powder was sometimes delivered in faulty kegs which caused spillage in the streets.

Frick described to the jury his own concern a few days before the explosion when he had looked down from his wagon to see what he thought were dangerous amounts of powder on and between the paving stones. A mineral expert testified that the paving material was a “bastard stone” high in iron content, very prone to creating sparks. It was believed that a wheel of Frick’s wagon or possibly a mule’s shod hooves had struck the spark that ignited the powder. Symington, McBride and their assistants were ruled responsible because of neglect. For McBride, the conclusion was a humiliation added to tragedy: His daughter had been one of those killed.

The day after the explosion, most Pittsburghers learned that at the same time their daughters were dying at the arsenal, munitions made there were killing soldiers by the thousands on a Maryland creek called Antietam in one of the bloodiest battles in history.

A small monument to the arsenal dead was erected in Allegheny Cemetery shortly after the explosion. It was replaced with a larger one in 1928.

APPENDIX THREE: ARSENAL PHOTOGRAPHS

Insert photographs of the Arsenal here.

APPENDIX FOUR: MAPS

Maps will be reproduced here.

APPENDIX FIVE: SPANISH AMERICAN WAR DESCRIPTION

The following article on the role of the Arsenal in the Spanish American War was originally published in the June 3, 1898 issue of the Clipper and was reprinted in “Historic Happenings”, the newsletter of the Lawrenceville Historical Society.

Turning Out Work

Rapidly at the Arsenal. The Product Very Satisfactory.
Shipping Gun Carriages.

Rapid progress is being made at the arsenal, in the fitting out of equipments for the army. The leather workers under the management of George Stewart, saddler, Butler Street, have been kept busy on blanket straps, shoulder straps, haversacks, knapsacks and canteens. As an instance of high capacity of the men employed it may

be stated that of these articles between 1,500 and 2,000 are turned out daily. The progress so far made is very gratifying to the authorities, especially when it is borne in the mind that for nearly forty years nothing of any account has been done at the arsenal. This is the first big contract for many years, and despite the difficulties in executing it, and the want of machinery, the local institution is more than holding its own.

As soon as sufficient numbers of the present orders have been executed work will begin on saddles, bridles and harness for cavalry and artillery horses, cartridge boxes and sword belts for the infantry. Other equipments are badly needed to outfit these soldiers before they can be sent to follow the advance guard of the regular army. Some of the volunteer soldiers are already on their way without a complete outfit. The President, after his visit to Camp Alger last week, gave it out that he wished the army to be fully and properly equipped at the earliest moment. As a result of this expression, a hurry order was immediately dispatched to those engaged on the much wanted materials. During the civil war, when the local arsenal was in full blast, no less than a force of 300 men were in constant employment.

Applications for employment by the most skilled craftsmen continue to be received, both personally and by letter. During last week no less than 100 applications were received by mail alone. If an order is at any moment received to increase the force already employed, it can therefore be done in a short time.

Col. Farley adheres to his orders as to giving out details. He says he does not think it for the benefit of the service that such information at the present should go to the public.

More gun carriages and caissons were shipped from the Arsenal Wednesday night. They were taken to the Duquesne freight station and loaded on cars there. The soldiers who had charge of the work refused to state where the material was being sent.

The gun carriages and caisson were coupled in trains of three sets each and caused considerable interest on Butler Street and Penn Avenue.