WESTERN PENNSYLVANIA AND THE
NAVAL WAR ON THE INLAND
RIVERS, 1861-1863*

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WHEN the Civil War broke out in 1861, Pittsburgh and the
surrounding area had long been famous as a center of indus-
try and a focal point in the nation's transportation system. The
rivers were relatively more important than now in carrying both
freight and passengers. Highways and canals linked these natural
waterways into a network with Pittsburgh at its center, so that
ready access to the whole northwest was possible. The railroads
were already an important part of this transportation system, and
extended from the city in every direction. Along these channels
passed the raw materials and finished products of the industrial
metropolis of the "west," drawing to itself the natural resources of
its well-endowed hinterland and sending forth the tools and
machines, the vehicles and other products, needed to extend our
rapidly-advancing mechanical civilization to the Rockies. This was
the age of the steamboat and barge, and while their facilities would
not measure up to the demands of the present they were equal to
those of any other population center west of the mountains.

When compared to present-day standards, the industry of western
Pennsylvania was not so well developed as the transportation sys-
tem. It must be remembered that the industrial resources during the
Civil War period were entirely different from the great manufactur-
ing establishments which are a part of the regular life of every urban
community in the country today. Eighty years ago the machine was
just coming into its own—it had not yet reached maturity. During
the 1850's, Pennsylvania, the largest producer of coal in the Union,
could deliver only about 1,000,000 tons per year as compared with
the peak of 171,600,000 tons during World War I. The nation's
entire output of iron and steel in 1860 was only about 800,000 tons,

*A paper read before the Annual Meeting of the Pennsylvania Historical
Association, at Erie, October 22-23, 1948.
as compared to 90,000,000 tons produced during World War II.

In the midst of this industrial center, the chief concern was agriculture. About seventy per cent of the people of the western part of the state were directly dependent upon farming. This was not the industrialized farming of the present, but a type of agriculture not too far removed from the hand-tool methods of earlier centuries. Pittsburgh and her surrounding counties had not yet concentrated upon the heavy industries. The great blast furnaces which now line the river banks of the southwestern counties were nowhere in evidence. Some had been established in the Connellsville area, but much of the iron processed in the Pittsburgh area was brought as "pigs" from the east. The first blast furnace in the immediate vicinity of Pittsburgh was not placed in operation until 1859. A few had been built and tried earlier, but their average lifetime did not exceed two years. Nearly all of the area's iron and steel establishments were devoted to fabricating operations. There were nearly forty bar and strip mills in the city, but none of them would rate as a large plant at the present. There were several iron foundries, but only one of these, the Fort Pitt Works, could be classified as large. The combined capacity of all these factories was small when considered in twentieth century terms. It remained for the Carnegie interests to multiply the number of furnaces and large mills, and to increase their output by thousands of per cents. Practically all of this expansion occurred in the years following 1870.

In most respects coal was the important industrial product of the Pittsburgh area—a center for the industry since the opening of the century. The eleven counties in the southwestern part of the state were producing large quantities for that day, and were shipping it in barges to all parts of the Ohio valley, and beyond. Much of this coal was mined from small workings close to the rivers, and was brought down to markets in coal barges. This was the best quality of coal available in the west and the demand for it increased as the Civil War progressed. A large proportion of the fleet of tow-boats and barges necessary to transport this bulky commodity were owned in and operated from Pittsburgh. A majority of them had been constructed in the numerous yards that lined the three rivers from Brownsville and Parkers Landing to some distance below Pittsburgh. Many industrial establishments thrived upon this inland naval activity. Some specialized in the design and construction of boilers and engines, while others furnished timbers, smaller
machines, pumps, fixtures and furnishings. Still others concentrated on the business of maintaining and repairing this fleet in the marine railways scattered along these streams. Their work was much more important than today for the vessels were smaller and were not so strongly built as those in use now. Moreover, the lack of facilities available to the Army Engineers prevented them from keeping the rivers relatively free of dangerous obstacles as is done today. Pittsburgh was not only the headquarters of this inland fleet; it supplied most of the freight carried and kept the fleet operating at top efficiency.

When the Civil War became an armed conflict, the Northern Government turned almost immediately to Pittsburgh in order to assemble the nucleus of a naval force to operate on the Ohio-Mississippi River system. In his plan of action presented to President Lincoln two days after the attack on Fort Sumter, General Winfield Scott outlined the need for controlling the western rivers. This would enable the north to divide the Confederacy. During the following three weeks, Scott exchanged confidential letters with General George B. McClellan, then preparing for his attack upon western Virginia. McClellan followed the recommendations of Scott and procured naval assistance even though it was improvised on short notice. Scott also directed McClellan to make preliminary surveys of facilities, with a view to creating a fleet of from twelve to twenty steam gunboats and forty transports to be based at Cairo, Illinois. McClellan selected the prominent Pittsburgh Democrat, William J. Kountz, to assist him in these naval activities. As the owner of a fleet of nine towboats, Captain Kountz was thoroughly familiar with the rivers and their advantages. He performed important services for McClellan during the months of June, July and August 1861, in the Virginia campaign. Other Pittsburgh Democrats objected when the administration sent several naval officers to Pittsburgh to purchase, remodel and arm river vessels so that they might serve as gunboats on the lower rivers. As a compromise, the first naval commander, John Rogers, was ordered to report to General McClellan and to function as a part of his command. Thus was created a naval force operating within sight of land all the time, frequently on land, and under the direction of the commanding general of the district or area. Pittsburgh was the first place where this force began to function.
Commander John Rogers and his staff began the creation of their naval force during the summer months of 1861. They purchased a total of five excellent river steamers at prices ranging from $16,000 to $25,000 each. Three of these had been built at Pittsburgh, one at Brownsville, and the other just below Pittsburgh. All were given the highest rating. The oldest one was less than three years old. They were fast vessels of medium size, each averaging about 340 tons. At first Rogers was undecided about where to do the extensive modifications necessary to transform these towboats into gunboats. When he was informed, however, of the usual low level of the rivers by mid-July, he decided to send the boats down to Cincinnati for remodelling. Meanwhile, he was busy assembling ordnance stores and supplies from Erie and Washington, recruiting and training personnel, and in seeing that the contractors were supplying the proper timbers, iron, and equipment required for the completion of his vessels. The first three of these vessels saw extensive service in the successful attacks on Forts Henry and Donelson, at the Battle of Shiloh, and in many of the later battles all along the Mississippi Valley.

Dozens of towboats and barges owned and manned by Pittsburghers were chartered or purchased by the Union forces during the war. They were invaluable in the great task of assembling supplies, equipment and men, first at the many training points, and later in transporting them to the bases from which the expeditions in the west were set in motion. During these many campaigns they not only assured control of the "shore-line" to the Northern commanders; but literally they guaranteed adequate lines of supply and communication. From Cairo to New Orleans, and from the Ohio deep into Confederate territory by way of the Cumberland and Tennessee Rivers, the fleet from western Pennsylvania carried reinforcements and supplies and brought back the sick and wounded. How many hundred boats and barges were active in this service during the war years cannot be estimated.

The naval force established by Commander Rogers in 1861 grew rapidly during the following months under pressure of the political leaders of the northwest and the efforts of the naval officers who had been detailed to continue Rogers' work. Seven iron-clad vessels were built in and around St. Louis by James B. Eads and his associates. Several large vessels were also converted by strengthening their hulls, by adding iron armor to their casemates, and by mount-
ing heavy batteries in their forward sections. The national administration deemed this force sufficient to defend the rivers of the west, and at the same time to furnish convoys and naval support for the land forces of General Halleck and Grant. They performed well until July 1862, when the rivers dropped to their usual hot-weather low level. Then the Union commanders in the west found to their dismay that many of their heavy naval units were isolated by bars and shallows, and that large stretches of the western rivers were without any protection.

The only way to remedy this was to build light auxiliary vessels that would draw only a few feet of water, and which would thus be able to function throughout the summer and autumn. Facilities for building such a fleet were not available, so the Northern commanders began the assemblage of a fleet by purchasing and modifying small stern-wheel towboats. Most of these were purchased in the western Pennsylvania area, and before the summer of 1863 had brought low water, Admiral Porter, commanding the Mississippi Squadron, had a fleet of more than sixty such vessels at his disposal. This new force, subdivided into small commands of from four to six vessels and assigned to specific areas, was really successful in controlling smuggling, convoying supply ships, protecting Union sympathizers in doubtful areas, and in checking the efforts of Morgan and other Confederate cavalry raiders. The number of Pittsburgh men who contributed to the success of this fleet of thin-clads, or "tin-clads," can only be estimated. Not only many of the vessels, but much of the materials necessary to convert them into gun-boats were supplied by the western Pennsylvania area.

The several munition and ordnance plants in the Pittsburgh area also made notable contributions to the Union naval forces. One of the best known was the Federal Arsenal located in what was then the borough of Lawrenceville. Here hundreds of men and women were employed, and among their assignments was that of furnishing small arms and ammunition to the naval forces on the western rivers. Much more important, however, was their task of supplying the large shot, shells, grape and other special ammunition for the large guns of the fleet. They also made the fuses and fixed charges of powder used by the naval forces in the west. Other establishments throughout the area contributed additional types of ordnance equipment. Rolling mills produced armor for the turrets and case-
mates, and laminated sheets to protect the decks and boilers of the "tin-clad" cruisers.

The best known of these various war industries was the Fort Pitt Works located in the center of Pittsburgh. Heavy munitions industry had been an early arrival in western Pennsylvania. Cannon were cast here first in 1781. The Fort Pitt Works was founded in the early months of the War of 1812. Since that period it had been an outstanding leader in the manufacture of cannon. In the 1840's, this firm had cast and bored the first eight-inch and ten-inch guns built in this country. It was here that Lieutenant (later Major) Rodman supervised production of the first gun made according to his patents—which called for casting the inside hollow and cooling the inside while keeping the outside heated. This method produced a more efficient gun but required from five to seven days for the cooling process. In 1859, the first fifteen-inch gun was made in this establishment. Before the war ended, Major Rodman and the Fort Pitt Works had designed and built successfully a twenty-inch gun that weighed fifty-seven tons and fired a solid shot weighing 1,000 pounds. Several of similar size were produced for the defense of New York City and for the navy.

During the war the establishment was enlarged by the investment of an additional quarter million dollars—a substantial sum for those days. Practically all of the heavy guns used by the naval forces in the west were produced in this plant. It was the most important heavy gun foundry in the world by 1864, and had become a mecca for visiting celebrities from all over the world. At its peak in the war period, this factory had a maximum capacity of 160 tons molten metal at one time, and had fifteen gun-pits in the foundry floor. The combined efforts of the foundry and machine shops, which formed a very important part of the establishment, enabled this firm to turn out eighteen very heavy guns a week—all eight-ten- and fifteen-inch—in addition to many smaller field guns. The twenty-inch guns were produced without interrupting this schedule. The Fort Pitt Works was also the first establishment to develop a testing laboratory and equipment to measure accurately the characteristics and dimensions of their products as the guns passed from stage to stage.

The Civil War provided the boat-builders of the Pittsburgh area with an opportunity to try their skill at constructing a new type of vessel. As soon as John Ericsson had demonstrated the possibility
of building a monitor-type warship, Congress appropriated sufficient money to build twenty such vessels for use on the rivers and harbors of the Atlantic coast and in the west. They were to draw no more than six feet of water, to have one turret, and to have reasonable speed. Two of these light-draft monitors were assigned to the Pittsburgh area. Originally designated numbers 11 and 12, they were later dignified by the names Marietta and Sandusky. Supervision of their construction was the responsibility of Commander John Hull, whose headquarters were in St. Louis. J. W. King was the naval constructor in immediate charge. Contracts with the firm of Tomlinson and Hartupee were signed during April and May, 1862, and the preparatory work was begun during the summer. The engines and other large components for these vessels were contracted for by firms in Brownsville and Allegheny. Unfortunately these vessels were of a group that had been designed by men of questionable standing within the Navy Department. One of these individuals was later apprehended as he was about to flee the country with a complete set of plans for what was then the latest type of sea-going monitor.

The first vessel of the class launched on the Atlantic coast sat twelve inches too low in the water—such an error was fatal in a monitor-type vessel. All work was stopped on the remaining nineteen and new plans were drawn, adding several inches height to the hulls, twelve feet to their length and three feet to the beam to overcome these mistakes. The Pittsburgh contractors were fortunate as they had made less progress with this construction than the other builders, one excepted. As redesigned these vessels were only mediocre. Some were completed in time to see active service during the latter part of the war, but the two in Pittsburgh were not launched until December 1864, and, in an official report of March 15, 1865, had not yet been assigned to the Mississippi Squadron. This episode of the “light-draft monitors” was one of the most dismal in the naval history of the Civil War, and might well have been fatal had the North not enjoyed such industrial supremacy in the conflict.

As soon as the light-draft monitor project had been safely launched, the Navy Department embarked upon a more ambitious monitor-building program. This plan provided for the construction of a series of fast monitors, much larger and heavier, with two turrets, and drawing approximately ten feet of water. These vessels
were designed primarily for service on the high seas, but Secretary Welles decided to take advantage of the industrial resources of the west and contracted to have nine built in this area. He believed that as soon as completed they would be of great service to the Mississippi Squadron. When their mission on the western rivers had been completed they would be available for further service in the Gulf and with the blockading squadrons. In power, speed and dependability, this class would rank favorably with the capital ships of other naval powers of the time. Their original design called for four fifteen-inch guns, two in each turret. As such they were the grandparents of the superdreadnought of the twentieth century.

Supervision of these vessels was assigned to Admiral Gregory, whose office was in New York City. One of this group, the Manayunk, was contracted for by the Pittsburgh firm of Mason and Snowden in the autumn of 1862. A few months later this firm received a second contract to build the Umpqua, a vessel of approximately the same size but with somewhat different characteristics, mounting two twelve-inch rifles in place of two of the fifteen-inch smooth-bore guns. It is interesting to note that the builders received special permission to make their vessels approximately one foot less in width because the locks at Louisville would not accommodate a vessel as wide as that specified in the original plans. Two and one-half feet in length were added to make up for the change.

Progress on these vessels was no more rapid than on the light-drafts. By the end of the year, Mason and Snowden had fewer than 100 men employed and were just beginning to lay the keep-plates. When the armies of General Lee invaded Pennsylvania, there was much consternation since the vessels were not sufficiently advanced to be floated downstream. This delayed the work still further as most of the employees were withdrawn by the city authorities to help build fortifications. In February 1864, the naval constructor in charge estimated that another year would be required to complete these two vessels. Workmanship and materials were good, but progress was slow. Other vessels in the series were progressing more rapidly. Too many components of the Pittsburgh vessels were being furnished by sub-contractors in other towns of the area. The first one of this class was completed at St. Louis during August 1864. The first of the two Pittsburgh vessels was not launched
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until December 1864, and neither was commissioned before the end of the war. These vessels were well-designed and well-built. More than twenty-five years later, after they had become obsolete, several of them, including the Manayunk, were in the service of the Peruvian Navy and out-fought and out-maneuvered vessels which were much newer and which were considered as superior in design.

Western Pennsylvania and her industry made many other contributions to the western naval forces during the Civil War. Hundreds of men from all parts of the state served on the vessels. The farmers who remained at home made their contribution by supplying an important part of the food and clothing required by the fleet. Small establishments furnished gauges and valves, shafting and pulleys, castings and forgings of all kinds—not only to the vessels built in the city, but to the vessels built at other locations, and to the repair shops of the Squadron at Mound City, Memphis, and Vicksburg. Much of the iron and many of the components that went into the gunboats and monitors built at Cincinnati, Mound City, St. Louis, and in other towns along the rivers, came originally from the western Pennsylvania area. The contributions of our area were as important as they were varied, but it would be next to impossible to measure this achievement in its relation to the final result.