

The creation of an adequate artillery establishment for an army of so large proportions was a formidable undertaking, and had it not been that the country possessed in the regular service a body of accomplished and energetic artillery officers, the task would have been almost hopeless..

The charge of organizing this most important arm was confided to Major (afterwards Brigadier General ) William F. Barry, chief of artillery, whose industry and zeal achieved the best results.

At the close of the Peninsular campaign General Barry assumed the duties of chief of artillery of the defenses of Washington, and was relieved in his former position by Colonel Henry J. Hunt, who had commanded the artillery reserve with marked skill, and brought to his duties as chief of artillery the highest qualifications. The services of this distinguished officer in reorganizing and refitting the batteries prior to and after the battle of Antietam, and his gallant and skillful conduct on that field, merit the highest encomium in my power to bestow.

The designations of the different batteries of artillery, both regular and volunteer, follow within:

### **Organization of the Federal Artillery, Army of the Potomac, October 15, 1861.**

#### **Colonel H. J. "Hunt's Artillery" Reserve.**

Batteries L, A, and B, Second U. S. Artillery

Batteries K and F, Third U. S. Artillery

Battery K, Fourth U. S. Artillery

Battery H, First U. S. Artillery

Battery A, Fifth U. S. Artillery

#### **CITY GUARD, Brigadier General ANDREW PORTER.**

Artillery.-Battery K, Fifth U. S. Artillery.

#### **BANKS' DIVISION**

Artillery.-Best's battery (F), Fourth U. S. Artillery; detachment Ninth New York Artillery; Matthews' battery (F), First Pennsylvania Artillery; Tompkins' battery (A), First Rhode Island Artillery.

### **M'DOWELL'S DIVISION**

Artillery.-Battery M, Second, and Battery G, First, U. S. Artillery.

### **HEINTZELMAN'S DIVISION**

Artillery.-Thompson's battery (G), U. S. Artillery

### **F. J. PORTER'S DIVISION**

Artillery.-Battery E, Second, and Battery E, Third, U. S. Artillery

### **FRANKLIN'S DIVISION**

Artillery.-Batteries D and G, Second U. S. Artillery, and Hexamer's battery (New Jersey Volunteers)

### **STONE'S DIVISION**

Artillery.-Kirby's battery (I), First United States; Vaughn's battery (B), First Rhode Island Artillery, and Bunting's Sixth New York Independent Battery

### **BUELL'S DIVISION**

Artillery.-Batteries D and H, First Pennsylvania Artillery

### **M'CALL'S DIVISION**

Artillery.-Easton's battery (A), Cooper's battery (B), and Kerns' battery (G), First Pennsylvania Artillery

### **HOOKER'S DIVISION**

Artillery.-Elder's battery (E), First U. S. Artillery

### **SMITH'S DIVISION**

Artillery.-Ayres' battery (F), Fifth U. S. Artillery; Mott's Second New York Independent battery, and Barr's battery (E), First Pennsylvania Artillery

### **GARRISONS (Fort Washington)**

Company D, First U. S. Artillery; Companies H and I, Thirty-seventh New York Volunteers, and United States recruits unassigned.

### **DIX'S DIVISION**

Artillery.-Battery I, Second U. S. Artillery, Second Massachusetts Light Battery, and a battery of New York artillery.  
[Battery E, Third U. S. Artillery, transferred to General Sherman's expedition.]

Upon Major-General McClellans' appointed command of the Division of the Potomac (July 25, 1861), a few days after the first battle of Bull Run, the

whole field artillery of his command consisted of no more than parts of nine batteries or thirty pieces of various and in some instances unusual and unserviceable calibers. Most of these batteries were also of mixed calibers, and they were insufficiently equipped in officers and men, and in horses, harness, and material generally.

*Reports of Captain James Totten, Second U. S. Artillery,  
of the seizure of the U. S. Arsenal at Little Rock, Ark.*

**LITTLE ROCK ARSENAL,  
Little Rock, Ark., January 29, 1861.**

SIR: I have the honor herewith to inclose a copy of a communication received this day from his Excellency Henry M. Rector, governor of the State of Arkansas, and also a copy of my reply to his excellency's communications.

Please submit both these communications to the Secretary of War for the decision of the President of the United States, with the request that instructions be sent me as to my future action in the premises. I also request that means and money may be sent me to carry out the orders I may receive.

I forward, in the same mail with this, copies of the communications, herein mentioned, to the general commanding the Department of the West. I deem it necessary in this connection respectfully to inform the authorities concerned that, in my opinion, most positive and unequivocal instructions are called for, in order that I may not mistake the intentions of the administration regarding the matter at issue. I believe there is trouble ahead for this command, and that by the 4th day of March coming decided action will be absolutely imperative in the officer who may than command this arsenal, and, if left to his own discretion, he may not in everything correspond with the wishes of the Federal authorities.

Whatever orders may be given, I respectfully ask that they may be sent by a reliable agent, and not by mails, as there appears to be some reason in believing that they are not entirely trustworthy at present. I would not myself, in the present instance, trust to this doubtful medium of communication if I had means at my disposal of sending an officer to Washington, and, indeed, if I can procure the necessary funds, I may yet forward copies of the various communications now inclosed by such an agent as indicated.

I am, sir, very respectfully, your obedient servant,  
**JAS. TOTTEN,**  
**Captain, Second Artillery, Commanding Post.**

**HEADQUARTERS ARTILLERY, S. I. AND M. P.,**  
**Fort Moultrie, S. C., April 13, 1861.**

**Major D. R. JONES,**  
**Adjutant-General:**

MAJOR:

I have the honor to report that we have had only two personal casualties in the force under my command, both very slight, and are privates in Company A (Sullivan and Miller). The effect of the enemy's fire upon this fort has been pretty effectually to demolish the quarters and to injure the hot-shot furnace to a certain extent. The effect of the Sumter, enfilade, Dahlgren, floating, and mortar batteries, has been to keep the enemy from his barbette guns. The direct fire has been quite accurate for the distance, several shots having passed through the arches of the second line of casemates, two or three into his lower embrasures, and many grazing the crest of his parapet and penetrating the roof of his quarters. Still, our direct fire is only annoying, and I have directed it to be economized, to look out and keep the man as fresh as possible for the channel fight, which, it is to be presumed, is impending. I note what has been said respecting the hot-shot furnace, and shall endeavor to attend to it, although it has three shot-holes in it, which has already rendered one bar inefficient. I have directed Captain Hamilton, and the floating battery especially, to be economical with their ammunition, and have to request that the letter be supplied with one hundred rounds of shell and one hundred cartridges, with appurtenances, by boat this evening from the city. All our 9-inch and 80 inch shells are defective, and Captain Hamilton has filled several with rice to use them as solid shot. It would be well to have the floating battery supplied also, if possible, with 42 and 32 pounder ammunition, as it will be especially effective in keeping out re-enforcements.

I also have to suggest that Captain Martin be supplied with one hundred and fifty shell and ammunition, with authority to practice as much as he pleases until he gets his shell in. All the mortar practice is wild, owing to the range and the effect of the wind. As I am sorely pressed for time, I have

respectfully to request that such requisitions as are approved may be ordered from headquarters.

I am, very respectfully, your obedient servant,  
**R. S. RIPLEY,**  
**Lieutenant-Colonel Artillery, Commanding.**

P. S.-One of the rear transoms of Captain Hallonquist's morass, being made of pine, is split. I shall endeavor to have it repaired. The merlons stand very well, except the vertical palmetto longs, which collapse under our own fire. One 42-pounder shot entered the embrasure, but, being stuffed with a cotton bale, had no further effect than to take a splinter off a carriage. The new 8-inch columbiad carriages will not stand much.

Very respectfully,  
**R. S. RIPLEY.**  
**CHARLESTON, S. C., April 13, 1861.**

**WAR DEPARTMENT, Washington, June 22, 1861.**

**Colonel H.K. CRAIG,, Chief of Ordnance:**

The Colonel of Ordnance will take measures to procure 300 wrought-iron field pieces, 6 pounder caliber, from the Phoenix Iron Company, price to be determined by the Ordnance Department and to be less than that of bronze pieces of the same caliber; a portion (two- thirds) of these guns to be rifled. The Ordnance Department will also report immediately which of the rifled projectiles heretofore submitted to the Government, including that now experimenting upon at the Washington Navy-Yard by Captain Dahlgren, is best adapted to this caliber, and will advise the War Department upon the best mode of procuring a supply of rifled ammunition to meet the exigencies of the present war. Dispatch is more important than even the selection of the very best model in this case.

**SIMON CAMERON,**  
**Secretary of War.**

**GENERAL ORDERS, } HDQRS. DEPT. OF NORTHEASTERN VIRGINIA,  
Numbers 21.}Centerville, July 19, 1861.**

Major W. F. Barry, Fifth Artillery, is announced as chief of artillery in this command. He will at once proceed to make a thorough inspection into the condition and wants of the various batteries, and will take all necessary steps to promote their efficiency. All estimates and requisitions for ordnance and ordnance stores and for battery horses will be made directly to the chief of artillery by the commanders of the batteries.

By command of Brigadier-General McDowell:  
**JAMES B. FRY,**  
**Assistant Adjutant-General.**

**SPECIAL ORDERS,} HDQRS. DEPT. OF NORTHEASTERN VIRGINIA,  
Numbers 43. Arlington, July 23, 1861.**

IV. Major H. J. Hunt, Fifth Artillery, is announced as chief of artillery in this department.

By command of Brigadier-General McDowell:  
**JAMES B. FRY,**  
**Assistant Adjutant-General.**

*Chief of all Artillery.*  
*Report of Major William F. Barry, Fifth U. S. Artillery*

**ARLINGTON, VA., July 23, 1861.**

**CAPTAIN:**

Having been appointed, by Special Orders, Numbers 21, Headquarters Department Northeastern Virginia, Centreville, July 19, 1861, chief of artillery of the corps d'armee commanded by Brigadier-General McDowell, and having served in that capacity during the battle of 21st instant, I have the honor to submit the following reports:

The artillery of the corps d'armee consisted of the following-named batteries: Ricketts' light company, I, First Artillery, six 10-pounder Parrott rifle guns;

Hunt's light company, M, Second Artillery, four light 12-pounders; Carlisle's company, E, Second Artillery, two James 13-pounder rifle guns, two 6-pounder guns; Tidball's light company, A, Second Artillery, two 6-pounder guns, two 12-pounder howitzers; Greene's company, G, Second Artillery, four 10-pounder Parrott rifle guns; Arnold's company, D, Second Artillery, two 13-pounder James rifle guns, two 6-pounder guns; Ayres' light company, E, Third Artillery, two 10-pounder Parrott rifle guns, two 12-pounder howitzers, two 6-pounder guns; Griffin's battery, D, Fifth Artillery, four 10-pounder Parrott rifle guns, two 12-pounder howitzers; Edwards' company, G, First Artillery, two 20-pounder and one 30-pounder Parrott rifle guns. The Second Regiment Rhode Island Volunteers had with it a battery of six 13-pounder James rifle guns; the Seventy-first Regiment New York Militia two of Dahlgren's boat howitzers, and the Eighth Regiment New York Militia a battery of six 6-pounder guns. The men of this last-named battery having claimed their discharge on the day before the battle because their term of service had expired, the battery was thrown out of service.

The whole force of artillery of all calibers was, therefore, forty-nine pieces, of which twenty-eight were rifle guns. All of these batteries were fully horsed and equipped, with the exception of the two howitzers of the Seventy-first Regiment New York Militia, which were without horse, and were drawn by drag-ropes, manned by detachments from the regiment.

General McDowell's disposition for the march from Centreville on the morning of the 21st instant placed Tidball's and Greene's batteries (eight pieces) in reserve, with the division of Colonel Miles, to remain at Centreville; Hunt's and Edwards' (six pieces, with the brigade of Colonel Richardson, at Blackburn's Ford; and Carlisle's, Ayres', and the 30-pounder eleven pieces), with the division of General Tyler, at the stone bridge; Ricketts, Griffin's, Arnold's, the Rhode Island, and Seventy-first Regiment batteries (twenty-four pieces) accompanied the main column came in presence of the enemy, after crossing Bull Run, I received from General McDowell, in person, direction to superintend the posting of the batteries as they severally debouched from the road and arrived upon the field.

The Rhode Island Battery came first upon the ground, and took up, at a gallop, the position assigned it. It was immediately exposed to a sharp fire from the enemy's skirmishes and infantry posted on the declivity of the hill and in the valley in its immediate front, and to a well-sustained fire of shot and shell from the enemy's batteries posted behind the crest of the range of hills about one thousand yards distant. This battery sustained in a very gallant manner the whole force of this fire for nearly half an hour, when the howitzers of the

Seventy-first New York Militia came up, and went into battery on its left. A few minutes afterwards Griffin brought up his pieces at a gallop, and came into battery about five hundred yards to the left of the Rhode Island and New York batteries.

Ricketts' battery came up in less than half an hour afterwards, and was posted to the left of and immediately adjoining Griffin's.

The enemy's right, which had been wavering from the moment Griffin opened his fire upon it, now began to give way throughout its whole extent and retire steadily, his batteries limbering up rapidly, and at a gallop taking up successively two new positions farther to his rear. The foot troops on our left, following up the enemy's retiring right, soon left our batteries so far in our rear that their fire was over the heads of our own men. I therefore directed the Rhode Island Battery to advance about five hundred yards in front of its first position, accompanied it myself, and saw it open fire with increased effect upon the enemy's still retiring right.

Returning to the position occupied by Ricketts' and Griffin's batteries, I received an order from General McDowell to advance two batteries to an eminence specially designated by him, about eight hundred yards in front of the line previously occupied by our artillery, and very near the position first occupied by the enemy's batteries. I therefore ordered these two batteries to move forward at once, and, as soon as they were in motion, went for and procured as supports the Eleventh (Fire Zouaves) and the Fourteenth (Brooklyn) New York Regiment. I accompanied the former regiment, to guide it to its proper position, and Colonel Heintzelman, Seventeenth U. S. Infantry, performed the same service for the Fourteenth, on the right of the Eleventh. A squadron of U. S. cavalry, under Captain Colburn, First Cavalry, was subsequently ordered as additional support. We were soon upon the ground designated, and the two batteries at once opened a very effective fire upon the enemy's left.

The new position had scarcely been occupied when a troop of the enemy's cavalry, debouching from a piece of woods close upon our right flank, charged down upon the New York Eleventh. The zouaves, catching sight of the cavalry a few moments before they were upon them, broke ranks to such a degree that the cavalry a few moments before they were upon them, doing them much harm. The zouaves gave them a scattering fire as they passed which emptied five saddles and killed three horses. A few minutes afterwards a regiment of the enemy's infantry, covered by a high fence, resented itself in line on the left and front of the two batteries at not more than sixty or seventy yards-distance, and delivered a volley full upon the batteries and their supports. Lieutenant



Ramsay, First Artillery, was killed, and Captain Ricketts, First Artillery, was wounded, and a number of men and horse were killed or disabled by this close and well-directed volley. The Eleventh and Fourteenth Regiments instantly broke and fled in confusion to the rear, and in spite of the repeated and earnest efforts of Colonel Heintzelman with the latter, and myself with the former, refused to rally and return to the support of the batteries. The enemy, seeing the guns thus abandoned by their supports, rushed upon them, and driving off the cannoneers, who, with their officers, stood bravely at their posts until the last moment, captured them, ten in number. These were the only guns taken by the enemy on the field.

Arnold's battery came upon the field after Ricketts', and was posted on our left center, where it performed good service throughout the day, and by its continued and well-directed fire assisted materially in breaking and driving back the enemy's right and center.

The batteries of Hunt, Carlisle, Ayres, Tidball, Edwards, and Greene (twenty-one pieces), being detached from the main body, and not being under my immediate notice during the greater portion of the day, I respectfully refer you to the reports of their brigade and division commanders for the record of their services.

The Army having retired upon Centreville, I was ordered by General McDowell in person to post the artillery in position to cover the retreat. The batteries of Hunt, Ayres, Tidball, Edward, Greene, and the New York Eighth Regiment (the latter served by volunteers from Willcox's brigade),\* twenty pieces in all, were at once placed in position, and thus remained until 12 o'clock p. m., when, orders having been received to retire upon the Potomac, the batteries were put in march, and, covered by Richardson's brigade, retired in good order and without haste, and early next morning reoccupied their former camps on the Potomac.

In conclusion, it gives me great satisfaction to state that the conduct of the officers and enlisted men of the several batteries was most exemplary. Exposed throughout the day to a galling fire of artillery and small-arms, several times charged by cavalry, and more than once abandoned by their infantry supports, both officers and enlisted men man-fully stood by their guns with a courage and devotion worthy of the highest commendation. Where all did so well it would be invidious to make distinctions, and I therefore simply give the names of all the officers engaged, viz: Major Hunt, Captains Carlisle, Ayres, Griffin, Tidball, and Arnold; Lieutenants Platt, Thompson, Ransom, Webb, Barriger, Greene, Edwards, Dresser, Wilson, Throckmorton, Cushing, Harris, butler,

Fuller, Lyford, Hill, Benjamin, Babbit, Hains, Ames, Hasbrouck, Kensel, Harrison, Reed, Barlow, Noyes, Kirby, and Elderkin.

I am, sir, very respectfully, your obedient servant,  
**WILLIAM F. BARRY,**  
**Major, Fifth Artillery. Chief of Artillery corps d'armee**

*Report of Captain Charles Griffin, Fifth U.S. Artillery.*

**CAMP NEAR ARLINGTON, VA.,**  
**July 23, 1861.**

COLONEL:

In compliance with your instructions, I have the honor to report that Battery D, Fifth Regiment of Artillery, arrived on the battle-field near Manassas at about 11.30 a.m. on the 21st instant, after a march of near twelve miles. The battery immediately opened on the enemy's battery at about one thousand yards' distance, and continued firing until his battery was silenced or forced to retire. The battery then advanced about two hundred yards, and opened upon a regiment of infantry formed upon the right of their line, causing it to fall back. The battery then changed position to the right and front, and opened upon a regiment formed near the enemy's right and a little in front of the one first referred to, doing deadly execution, and causing it to retreat in much confusion.

An order was then received through Major Barry, Fifth Artillery, to advance to the brow of the hill, near the position occupied by the enemy's battery when we first arrived on the field. The battery opened upon the enemy's battery amidst a galling fire from his artillery, and continued firing for near half an hour. It then changed position to the right and fired two rounds, when it was charged by the enemy's infantry from the woods on the right of our position. This infantry was mistaken for our own forces, an officer on the field having stated that it was a regiment sent by Colonel Heintzelman to support the battery. In this charge of the enemy every cannoneer was cut down and a large number of horses killed, leaving the battery [which was without support except in name] perfectly helpless. Owing to the loss of men and horses, it was impossible to take more than three pieces from the field. Two of these were afterwards lost in the retreat, by the blocking up of the road by our own forces and the complete exhaustion of the few horses dragging them. The same thing happened

with reference to the battery-wagon, forge, and one caisson. All that is left of the battery is one Parrott rifle gun and one 12-pounder howitzer limber.

Of the 95 men who went into action 27 are killed, wounded, and missing, and of 101 horses 55 are missing

In conclusion, I would state that my officers and men behaved in a most gallant manner, displaying great fearlessness, and doing their duty as becomes brave soldiers.

I am, colonel, very respectfully, your obedient servant,  
**CHAS.GRIFFIN,**  
**Captain, Fifth Artillery, Commanding Battery D.**

P.S.-In addition, I deem it my duty to add that Lieutenant Ames was wounded so as to be unable to ride on horse at almost the first fire; yet he sat by his command directing the fire, being helped on and off the caisson during the different changes of front or position, refusing to leave the field until he became too weak to sit up. I would also mention Captain Tillinghast, A.Q.M., who gallantly served with the battery, pointing a piece and rendering valuable assistance.

**CHAS.GRIFFIN,**  
**Captain, Fifth Artillery.**

*Report of Lieutenant Edmund Kirby, First U.S.Artilletry.*

**WASHINGTON, D.C.,**  
**July 23,1861.**

SIR:

I submit the following report:

On Sunday, July 21, Captain J.B.Ricketts was ordered to place his battery in position at about one thousand five hundred yards from the enemy. An order was afterwards received to advance about one thousand yards, which was executed at a trot, and where we remained in battery, firing as fast as possible, until obliged to retreat, leaving six rifled guns on the field.

Captain J.B.Ricketts was severely wounded at this critical moment, and First Lieutenant Douglas Ramsay was killed.

Lieutenant W.A.Elkderkin conducted the limbers and caissons to the rear, as I was separated from the battery at the moment the retreat became general. I joined the battery soon after and continued the retreat, but was obliged to abandon everything at Bull Run except three limbers and fifty-six horses.

The non-commissioned officers and privates acted with great bravery, and remained on the field as long as possible.

Our casualties are: Left on the field, 6 rifled guns and 49 horses, and 1 forge. Killed: 1 officer and 11 men; wounded, 1 officer and 14 men. Total, 27

My present station is the Park House, foot of Seventh street, Washington, D.C.

Respectfully submitted.

**E.KIRBY,**

**Second Lieutenant, First U.S.Artilery, Commanding Light Company I.**

*Report of Lieutenant John M.Wilson, Second U.S. Artillery.*

**FORT CORCORAN, VA.,**

**July 24, 1861.**

SIR:

In obedience to your order, I beg leave to make the following report of our attack and retreat at the battle of Bull Run:

By order of General Shenck, we prepared to move forward at exactly 2 a.m. Sunday, July 21, but owing to the infantry not being ready, our departure was delayed nearly an hour. Our brigade led off, our position being just behind the New York Second Regiment, who were preceded by the Ohio First and Second.

We moved forward slowly, experiencing little difficulty, except at the bridge across a small brook, the ford of the brook being obstructed by fallen trees. The difficulty arose from the weakness of the bridge, we fearing it would break under the weight of the 30-pounder gun. We passed over, however, without accident, and moved forward on the road, the troops taking position in line of battle, skirmishers in front.

At 5 a.m. exactly the first gun was fired by Captain Carlisle, who fired three times from the 30-pounder rifled gun without eliciting any reply from the enemy, who could be seen in crowds in the adjacent woods. Our battery then moved forward, and by order took up position on the brow of a small hill, facing down a ravine, with heavy woods immediately in rear of us. At the suggestion of Major Barry, of the artillery, I opened fire from my rifle section upon the enemy, immediately in rear of an abatis a short distance off, and dislodged them at the first fire; this was about 8.30 a.m. Colonel Hunter's column having moved to the right to go over Bull Run, the enemy advanced out to meet them, when I again opened from my rifle guns, with what execution I could not tell. The firing on the right soon after became very severe. A regiment now attempted to cross Bull Run, when a battery behind a hill in front of us opened upon them, and they fell before it, breaking rapidly.

Our battery now opened upon the enemy in the most gallant style, firing with the greatest rapidity shot, shell, spherical case, and canister, and silenced their battery in a short time, we being under a very severe fire of solid shot and Hotchkiss shell. On inspecting their position afterwards it was found that they had been literally cut to pieces.

We then opened on a battery much farther off, and with the 30-pounder gun [rifled], and were replied to with such accuracy as to take off half the splinter-bar of the limber, and some of the shell which fell among us proved to be from the Parrott gun. A short time before this our infantry support was withdrawn, and we were left entirely alone. Soon after, we were ordered from this position, and I moved forward alone with my section to cover the position where a bridge was to be thrown over Bull Run, we being supported by the First Ohio Regiment and some other.

By order of the commanding general of the brigade, I took position in an open road, and fired at a house and into the woods. A battery, which could not be seen, now opened upon us with remarkable precision. I continued to fire for some time, until I was ordered to move farther down towards the run. I limbered up, and was about to move off, when vast columns of the enemy were seen coming over the hill, and though evidently beyond the range of my guns I fired at them by order of the commanding general of the brigade, again coming into battery, still being under a severe fire from the battery which we could not see.

In a few moments, having run out of ammunition, with the exception of one shell for each gun, I retired, by order of Colonel McCook, and took position with the rest of the battery, under Captain Carlisle, on the brow of a hill about one hundred yards from the position I then occupied. Here again we were under fire from some unseen source, and the shot and shell rained in among us. Our battery

then again opened, the section under Lieutenant Fuller having been operating upon the enemy while Lieutenant Lyford had moved just to my front and left, by order, and was also under a galling fire. On his return, we limbered up and moved slowly off to the road for a new position. We halted in the road, and a few moments after, by order of Captain Carlisle, I moved forward to get a proper position.

Just as I started, an orderly brought me an order from the commanding general of the brigade to halt. I halted, but soon after Captain Carlisle, by order, ordered us forward again, but it was too late. We were charged by cavalry in a road where we could not come into action-woods on each side of us and we in column. The infantry fell back precipitately in the woods. We moved forward at a gallop. Our men were shot down and sobered. The wheels broke down in all the pieces and caissons of my section. I halted to see if they could be fixed, amidst a perfect shower of pistol bullets, but finding they could not be, moved forward with the pieces on a jump without wheels until every trace broke. The men behaved gallantly and the non-commissioned officers with great coolness and bravery. I halted at Centreville, where an attempt was made to make a stand, but soon after moved on with dispatches from Colonel Sherman to Fairfax Court-House, arriving there about dark and telegraphing the dispatch to Washington. With what men I could gather, and as many horses as I could get, I moved on the following day to Fort Corcoran, where my company is now being reorganized. Our loss is still unknown, as the horses and men are constantly coming in.

I am, sir, very respectfully, your obedient servant,  
**JOHN M. WILSON,**  
**Lieutenant, Second Artillery.**  
**Captain J. HOWARD CARLISLE,**  
**Commanding Company E, Second Artillery.**

*Report of Lieutenant William D. Fuller, Third U.S. Artillery.*

**FORT CORCORAN, VA.,**  
**July 24, 1861.**

SIR:

In obedience to your order, I beg leave to make the following report of the battle of Bull Run:

Leaving our camp near Centreville about 2.30 a.m. Sunday, the battery marched in rear of General Schenck's brigade, immediately preceded by a 30-pounder rifled gun of Parrott's make. The brigade, feeling its way, with skirmishers and flankers thrown out, arrived about 6 a.m. within two miles of Bull Run, across which the enemy were understood to be in position. At this point the road descends rapidly for three-quarters of a mile towards Bull Run. The 30-pounder rifled gun was placed in position in the road three-fourths of the way from the top to the foot of the hill, and fired twice at the supposed position of the enemy, without any effect of importance. Our battery having gone to the foot of the hill, almost down to the run, was countermarched, and formed into park on the top of the hill, behind and under cover of the woods.

Soon after, the battery was ordered and proceeded at once down the road, turned to the right near the foot of the hill, and came in battery in the edge of the wood. A party of the enemy having been observed to enter an abatis near the bridge, and just across Bull Run, Lieutenant Wilson fired two percussion shells from his rifled section, the first of which struck and burst in the abatis, scattering the enemy from it in all directions. More shots were fired from the 30-pounder rifled gun, and it was afterwards brought from the road and placed immediately on our right. The movements of the enemy were now and during the whole day studiously concealed under cover of woods or undulations of the ground.

At about 8.30 the column of Colonel Hunter was seen approaching across Bull Run and on our right. A movement of the troops of our division now began towards the right, and with the intention of crossing Bull Run. One of these regiments attempted to cut diagonally over the open field in front of our battery. When half way across, a light battery of six guns of the enemy galloped down, came in battery just across the run, and opened a rapid and unexpected fire of canister on this regiment which was marching by the right flank, and scattered it in confusion.

Captain Carlisle at once ordered the battery to open a fire of spherical case and shell on the enemy's pieces, which at once ceased firing at our volunteer regiment, and began a rapid fire of shell and solid shot on us. After fifteen minutes of rapid firing on our part the fire of the enemy's battery slackened. We then fired solid shot, and ended with a round of canister, the enemy having ceased firing, and retreated with heavy loss in men and horses, as we afterwards learned. My section consisted of a 6-pounder smooth-bore gun and a 12-pounder howitzer. But for the hot fire from our battery, under the direction of Captain Carlisle, the regiment which was within canister range of the enemy's battery must have been cut to pieces. The timely diversion caused by

the fire of our battery only saved them. A deliberate fire from the 30-pounder rifled gun was kept up with short intervals during the day, and evidently annoyed the enemy, who fired several rifled percussion shells at this piece with great precision.

Late in the afternoon the battery was directed to leave its position and go down near the bridge over Bull Run. While down there, Lieutenant Wilson, with his rifled section, and Lieutenant Lyford, with his section, were ordered out to take a position in front nearer the run, and both of these officers were under a heavy fire of shot and shell from batteries they could not reach with their guns. During their absence, being in command of the center section, by order of Captain Carlisle, I fired several rounds of spherical case and canister into the woods occupied by the enemy's troops. On the return of the other sections, the battery was drawn just back of the brow of a small hill, to be covered from a fire of Hotchkiss and Parrott shell thrown from masked batteries in position. A Parrott shell which had not exploded fell near me, and on examination proved to be of excellent make, and must, from peculiarities in its construction, have been made by machinery similar to that of Captain Parrott, at the Cold Spring Foundry at West Point. A number of volunteers were killed by these projectiles in my vicinity.

Our battery was finally ordered up the hill a short distance to the rear, to place it and the troops under cover. Accurate information of our movements must have reached the enemy, as they changed the direction of their fire at once, and threw rifled projectiles all around us. After waiting in this road the battery was ordered up the hill, and directed to find a safe position just beyond it. Proceeding up the road in column of pieces, we were unexpectedly charged by cavalry, and from the position we could not come into action. Our cannoneers and drivers were shot or sobered. While moving at a gallop our wheels came off of each piece in my section. Our efforts to repair this damage were unavailing, and amidst a shower of pistol bullets we dragged our pieces until the traces broke. The men and non-commissioned officers behaved with gallantry. I halted at Centreville and attempted to join my brigade, but unsuccessfully. Learning that the regiments of the brigade were marching to Fairfax Court-House, I followed them with as many men and non-commissioned officers of my company as I could collect. An order being issued after this for the troops to retire to Washington, I proceeded with a sergeant, four enlisted men, and five horses to Fort Corcoran, where the baggage of the company was stored, and arrived there about 8 o'clock Monday morning.



Very respectfully,  
**WILLIAM D. FULLER,**  
**Brevet Second Lieutenant, Third Artillery.**  
**Captain J.HOWARD CARLISLE,**  
**Commanding Company E, Second Artillery.**

*Report of Lieutenant Oliver D. Greene, Second U.S. Artillery.*

**ALEXANDRIA, VA.,**  
**July 24, 1861.**

SIR:

In compliance with your circular order of this date, just received, I have the honor to report that, on the morning of the 21st instant, my battery was placed in position in reserve near Centreville by Colonel Miles, commanding division, in person. Shortly afterwards, I received an order to hasten to the front with it, at Bull Run, as the enemy were there in force, and supposed to be attempting to turn our left flank. I took it forward as rapidly as possible, and came into action on the crest of a hill about six hundred yards from the enemy's line of skirmishers. I opened fire immediately upon a fixed battery partially masked by the woods, at a distance of about fifteen hundred yards, and also upon a point where it was known another masked battery was placed. The enemy were congregated in considerable force inside of the first battery, but as soon as I got the range the spherical case shot dispersed them and they disappeared from that position for nearly three hours. I then ceased firing, while skirmishers were thrown to the front from Colonel Richardson's brigade to feel the strength of the enemy in the edge of the woods in front of us. They were found to be in overwhelming force, and as our skirmishers retired theirs advanced in very strong force, but incautiously presented their flank to my battery. I threw in canister and spherical case as rapidly as possible, killing and wounding several, the first shot knocking over three. I kept up this fire for about five minutes, when I supposed the enemy were driven from that immediate vicinity. I then turned the fire of the battery upon columns of dust seen rising above the woods and indicating the march of troops in mass. Whether any effect was produced or not by this fire I cannot say.

At this time Lieutenant Prime, of the Engineers, directed my attention to a group of thirty or forty horsemen, evidently officers, on the plateau opposite, who, with maps on their horses' necks, were apparently taking a view of our position and strength at a safe distance. By diggings a hole under the trail I

got two pieces bearing upon them at an angle of twenty-five or thirty degrees. The distance must have been two and one-half or three miles, but the first shot sent the center figure of the group to the rear; the second scattered the remainder in all directions. Firing was then ordered to cease at all the guns, for some time nothing appearing worth attention, until finally a cloud of dust was seen approaching our position from the direction of Manassas upon a road that was entirely concealed by woods from our sight except at one here spot within our best range, and the range of this point we had got accurately before. The guns were all prepared with shell and spherical case, and pointed upon this spot. When the head of the column appeared it proved to be a battery of light artillery. I opened fire upon it instantly, and fired with the utmost rapidity. The smoke of the guns obscured my sight, so that I saw none of the effect produced, but Colonel Richardson, who was looking with a glass, informed me afterwards that I cut them up badly, and forced them to turn back. We saw them no more. Shortly after this one of my men called my attention to the battery we first fired upon. The enemy were endeavoring to plant a field piece, the horses of which were just passing to the rear as I looked with my glass. I opened upon them with spherical case, firing several rounds. When the smoke cleared away there was no gun to be seen, and the battery gave me no more trouble during the day.

About this time heavy re-enforcements commenced being sent into the main action from Manassas, passing along the plateau opposite, and at about two miles distance. I fired upon them as often as large masses could be seen to justify firing at such a distance. Not much effect was produced, so far as I could see. One column of cavalry was, however, scattered in all directions by a solid shot. Very little firing was done by us for the next two hours, at which time we were ordered to Centreville to protect our left flank and our retreat. I chose a position on the crest of a hill, which from its shape gave me command of the ground to our left, and also of the road which our division was retiring. From the position I could perfectly sweep with my fire 180 front right and left down a gentle slope. Four regiments were placed as my supports, and the force at the point could have stopped double its number.

At this time an unauthorized person gave the order to retreat. I refused to obey the order, but all my supporting regiments but one (Colonel Jackson's Eighteenth New York) moved off to the rear. Colonel Jackson most gallantly offered his regiment as a support for the battery, saying "that it should remain by me as long as there was any fighting to be done there." The above-mentioned unauthorized person again made his appearance at this time and again ordered me to retreat, and ordered Colonel Jackson to form in column of

division on my right and retreat with me, as all was lost. The order was, of course, disregarded, and in about two minutes the head of a column of the enemy's cavalry came up at a run, opening out of the woods in beautiful order. I was prepared for it, and the column had not gone more than a hundred yards out of the woods before four shells were burst at their head and directly in their midst. They broke in every direction, and no more cavalry came out of the woods. Shortly after my battery was ordered to fall a little farther to the rear, to form in a park of artillery. At that point the battery remained until about 12 o'clock at night, when it was ordered to take up the line of march for Washington, which point it arrived at in perfect order, although much exhausted, men and horses having been hard at work for thirty hours, almost without food and water and without sleep.

My officers, Lieutenant Cushing, Harris, and Butler, were coolly and assiduously attentive to their duties during the day. The accuracy of our fire was mainly owing to their personal supervision of each shot. The men of the company behaved well, and every one seemed to try and do his duty in the best possible manner. My only trouble was to keep the drivers from leaving their horses to assist at the guns.

To Lieutenant Prime, of the Engineers, and Colonel Richardson, of the Third Michigan Regiment, I am indebted for the most valuable assistance in securing the best effect from the firing.

One of the officers and one of the men were struck by spent balls, but I am happy to say we had no loss either in men or horses.

I am, sir, very respectfully, your obedient servant,  
**OLIVER D. GREENE,**  
**First Lieutenant, Second Artillery, Commanding Light Co.G.**

*Report of Captain Romeyn B. Ayres, Fifth U.S. Artillery.*

**LIGHT COMPANY E, THIRD ARTILLERY,**  
**Camp Corcoran, Virginia, July 25, 1861.**

SIR:

I have the honor to report the part taken in the battle of the 21st instant by this battery.

The battery advanced in the morning with the brigade to which it was attached-Colonel W.T.Sherman's -on the center route upon the front of the enemy's position. The battery operated from this position at times upon the enemy's batteries and troops as occasion offered. About noon I started with the brigade, as ordered, to cross the open ground, the run, and to rise the bluff, with a portion of the battery, one section being detached at this time, operating upon a battery to the left. On arriving at the run it at once was apparent that it was impossible to rise the bluff opposite with the pieces. I sent an officer immediately to report the fact to Colonel Sherman and ask instructions. I received for reply that I should use my discretion.

I immediately returned to the central position. I remained at this point, operating upon the enemy's guns and infantry, till ordered by General Tyler to cover the retreat of the division with the battery.

A body of cavalry at this time drew up to charge the battery. The whole battery poured canister into and demolished them. The battery moved slowly to the rear to Centreville

I will add, that the coolness and gallantry of First Lieutenant Dunbar R. Ransom on all occasions, and particularly when under fire of three pieces, with his section at short range, when the battery was about to be charged by a large body of cavalry, and also when crossing a broken bridge in a rough gully, and fired upon in rear by the enemy's infantry, were conspicuous. The good conduct of First Lieutenant George W.Dresser, Fourth Artillery, was marked, especially when threatened by cavalry, and at the ravine referred to above. Second Lieutenant H.E.Noyes, cavalry, was energetic in the performance of his duties.

I lost four horses killed on 18th; two horses wounded on 18th; seven horses on 21st; three caissons, the forge, and a six-mule team and wagon [excepting one mule], on the 21st. I sent all these caissons, &c., ahead when preparing for the retreat, to get them out of the way. The fleeing volunteers cut the traces and took the horses of the caissons.

Very respectfully, your obedient servant,

**R.B. AYRES,**

**Captain, Fifth Artillery, Commanding Company E.**

**First Lieutenant ALEXANDER PIPER,  
Third Artillery, A.A.A.G.**

*Reports of Captain J.H. Carlisle, Second U.S. Artillery.*

**DEPARTMENT OF NORTHEASTERN VIRGINIA,  
Fort Corcoran, July 25, 1861.**

DEAR GENERAL:

I intend to have visited you this morning, but in consequence of conflicting authority was unable to cross the river. I have not as yet been able to prepare a report, having only just received the reports of my subaltern officers. My report shall be prepared immediately and forwarded to your headquarters.

I herewith have the honor to submit a report of casualties in my command, viz: Men killed and missing, 11; wounded, 4. Horses killed and missing, 35. Guns lost, 4.

Being appointed chief of artillery of the defenses at this point, and being overwhelmed with the various duties incident to my command, I have been unable to communicate with you. If possible, I shall see you personally to-morrow, or at least communicate with you through an officer of my command.

I am, sir, with great respect, your obedient servant,  
**J. HOWARD CARLISLE,**  
**Commanding Company E, Second Artillery.**

*Report of Captain Richard Arnold, Fifth U.S. Artillery.*

**WASHINGTON, D.C.,  
July 25, 1861.**

SIR:

In compliance with your order, I have the honor to submit the following report of the operations of Light Company D, Second Artillery, in the battle of the 21st instant, at Bull Run:

The brigade to which my battery was attached halted, on arriving to the right and rear of the enemy to rest the men and prepare for action, and the battery was placed under cover in a ravine to await further orders. As soon as the brigades in advance became engaged, I was ordered to place my battery to the left and rear, to guard well that flank, and prevent its being turned and the enemy gaining our rear. Scarcely was this position reached when orders came to move forward as quickly as possible to the support of Captain Ricketts, then warmly engaged in front and in great peril. The pieces were immediately limbered, and the battery run up under whip and spur, and placed in position about eight hundred yards from the enemy's lines, to support and give confidence to the volunteers. A rapid and incessant fire was kept up for one hour and a half, throwing at least four hundred rounds of shot, shell, spherical case, and some canister, and I was informed did good execution. Their loss from artillery must have been very heavy. During all this time the battery was exposed to a severe and most accurate artillery fire.

Owing to the great loss of horses, the exhaustion of the men, and the fear that I should not be able to bring my pieces off the field, the volunteers supporting me having left the position very soon after I commenced firing, I was induced, after consultation with my officers, to withdraw to the left and rear, when Lieutenant Barrige was dispatched to Colonel Heintzelman. He returned without finding him. I then, in the absence of any superior officers, moved to the right, where I thought I could be of great service, and at once received orders from Captain Fry to cover the retreat, as I was informed the order to retreat had been given.

During the rest of the day I commanded the left section and brought up the rear, the right section, under Lieutenant Barriger, being in advance of the regular cavalry. At one time a body of the enemy's cavalry threatened our rear, but two rounds of canister dispersed them, and we were not again threatened until we arrived near Cub Run, when the battery was exposed to a severe flank and enfilading fire from artillery and infantry to a bridge across that stream, which had been destroyed or broken in by the advanced trains and artillery. Seeing at once that it was impossible to push forward or extricate the guns, I gave orders to spike them and clear as many horses as possible. Had my battery not been detailed in the rear, it might have been saved; but it was sacrificed to prevent a total rout and great loss, which would certainly have ensued had not the display of cavalry and artillery given the impression that the Army was retiring in good order.

Too much praise cannot be bestowed upon the officers of my company, Lieutenants Barriger and Throckmorton, for their gallantly and efficiency during the

action. The non-commissioned officer and privates all to a man stood to their posts and performed their duties most gallantly.

From fifteen to twenty horses were killed and wounded on the battle-field and Cub Run.

I am, sir, very respectfully, your obedient servant,

**RICHARD ARNOLD,**

**Captain, Fifth Artillery, Commanding Light Co.D, Second Artillery.**

*Report of Lieutenant Edward B.Hill, First U.S. Artillery.*

**JULY 26, 1861.**

SIR:

I have the honor to report that on Sunday, the 21st day of July, at 2.30 a.m., we left our camp at Centreville to proceed to Bull Run. At 5 o'clock we opened the action by firing the heavy rifled gun attached to our battery, electing no response. We then moved forward to the foot of the hill, and took a position in the woods on the right. A battery of the enemy presenting itself opposite us, doing much injury to one of our regiments, we opened upon it, and after an hour's sharp firing completely destroyed it. We then used the heavy rifled gun with great advantage. In the afternoon we took a position on the left with Captain Ayres' battery, but found it untenable on account of masked batteries of the enemy the precise situation of which we could not ascertain. We then moved up the hill and halted. The enemy fired shell into this position, and we were ordered to go farther on. We then halted for a few moments, and soon after moved on over the hill. I was detained in the rear of the battery attending to once of the caissons which had lost a wheel. In the mean time Captain Ayres' battery passed by me, so as to come between myself and our battery in front.

When I was ready to move on, I found Captain Ayres' battery preparing for action at the brow of the hill. I then learned that our battery had been attacked by a body of secession cavalry, and all cut to pieces. Captain Ayres then advised me to attach my caisson, battery-wagon, and forage to his battery, and that I should go on and try to discover what had become of our own. On riding ahead I found a complete scene of destruction; wheels, limber-boxes,

guns, caissons, dead and wounded men and horses were scattered all along the road. I was enabled, however, to find two pieces which I could bring along, and two men, Corporal Callghan and Private Whitenech. I applied to the division commander for a detail of men to assist in bringing off these pieces, which he seemed indisposed to grant. Captain Ayres, on my applying to him, furnished me with men to act a teamsters, and placed my two pieces in his battery.

We thus arrived at the foot of the hill, when the enemy opened a fire of musketry upon us, which created the utmost confusion in our already retreating column. My men were obliged to leave the battery-wagon, forge, and caisson. At Centreville the retreating column made a stand, and I reported myself to Major Barry, chief of artillery, who attached me to Lieutenant O.D.Greene's battery at my request. My two pieces were then placed in position with the rest of the artillery to resist an attack. Colonel Jackson, of the New York Eighteenth Regiment, most kindly lent me a number of men to aid me as teamsters in place of those of Captain Ayres, whom I returned. We soon after received an order to retreat to Fairfax. Owing to the inexperience of my men I did not get my horses harnessed in time, and consequently when I started was nearly half a mile in rear of the whole retreating column. I finally caught up to Major Hunt's battery, and was advised by him to push ahead, which I did. At Fairfax I received an order to proceed immediately to Washington. I reached Fort Albany, opposite Washington, at 11 o'clock Monday morning, July 22, where Lieutenant Cook, of the Twenty-fifth Regiment, kindly received me, and gave me all that was necessary to restore me after thee fatigues of the march.

I feel particularly indebted to Captain Ayres and to thee officers of his battery -Lieutenant Greene, Colonel Jackson, and Major Hunt-for their valuable aid through the difficulties and embarrassments of the retreat from Bull Run to Washington.

I have the honor to be, your most obedient servant,  
**EDWD.BAYARD HILL,**  
**Second Lieutenant, First Artillery.**

**DEPARTMENT OF NORTHEASTERN VIRGINIA,**  
**Fort Corcoran, July 26, 1861.**



SIR:

I have the honor to submit the following report of the engagement at Bull Run of Sunday, July 21:

Being in your brigade, and occupying the advance of the column, we reached the enemy's position at 5 a.m. Your command advancing, my battery was placed more directly under the command of General Tyler, commanding the First Division. During the day we were under a most severe fire from the enemy's batteries, and succeeded in completely silencing one of them, composed of six pieces. The sections of my battery acting separately during a great part of the day, the separate reports of the officers commanding these sections are herewith respectfully submitted. Throughout the entire day the officers and men under my command behaved in the most creditable manner. Lieutenant Wilson, Second Artillery, with the rifled guns, was frequently detached, and did excellent service. Lieutenant Lyford, First Dragoons, U.S. Army, and Lieutenant Fuller, U.S. Artillery, each commanding sections, were each during the day at times acting separately from the battery, and acquitted themselves in the best manner. Lieutenant Hill, First Artillery, deserves great credit for his exertions in collecting horses and carriages and bringing two of the pieces from the field.

I have the honor to be, sir, very respectfully, your obedient servant,  
**J. HOWARD CARLISLE,**  
**Captain, Second Artillery, Commanding Company E.**

*Report of Bvt. Major Henry J. Hunt, Second U.S. Artillery.*

**LIGHT BATTERY M, SECOND ARTILLERY,**  
**Camp near Fort Albany, July 25, 1861.**

SIR: I have the honor to submit a report of the operations of my battery on the 21st instant.

The company arrived at New York on the 12th instant from Fort Pickens, Fla., with its battery, but without horses. A large portion of the men were recruits, and no opportunity for instruction as field artillery had been afforded them. The company reached Washington by rail on Sunday, 14th, and on Wednesday evening the battery, which came by sea, was received at the arsenal. Necessary repairs and refitting were at once commenced, ammunition and other stores drawn and packed, horses procured, and on Friday, the 19th, we marched from works at Blackburn's Ford, a distance of twenty-eight miles. Saturday was devoted to

instructing the recruits, shoeing horses, &c., and on that evening Lieutenant Platt's section was detached to join the advanced guard.

On Saturday night Lieutenant Edwards, Third Artillery, reported to me with a section of two heavy rifled guns. On Sunday morning, the 21st, Lieutenant Thompson's section was placed in position on the right of the main road, overlooking the ford, and commanding the road by which the enemy's advance was expected. A few shells were, by direction of Colonel Richardson, dropped into the woods and amongst the buildings which were supposed to contain the enemy, but no answer was returned, and the firing ceased. Soon after this an infantry column was seen pushing into the wood skirting Bull Run. Lieutenant Thompson moved forward a piece, and after a few rounds they disappeared.

At about 10 a.m. Colonel Miles ordered both sections of my battery to the extreme left, occupied by Davies' brigade. Edwards' section had been sent early in the morning to that position, from which he had opened his fire upon the woods and houses in front. I transmit herewith his report of the operations of his section, in which he describes the nature of the ground.

The firing was continued at intervals by the whole battery "as a demonstration," but produced little or no effect, as there was no definite object, except when the enemy's moving columns came from time to time within our range. We were supported by two infantry battalions, drawn up in line behind the battery. On inquiry, made immediately after my arrival on the ground, I was informed that a brigade of infantry was posted in the wood to our left and rear, commanding a deep and wide ravine on our left flank, and watching the road beyond it, which leads from below the ford to Centreville; and as we had skirmishers pushed forward into the ravine, I felt no apprehension of danger from that quarter, but still requested, as a precaution, that the battalion on the left should be formed on the brink of the ravine and in column, so that it might be readily deployed to front in any direction. No attention was paid to this request, and the regiment remained in line.

About 4.30 or 5 p.m., after the battle was apparently gained on the right, and whilst large re-enforcements of infantry and cavalry were observed hurrying up from the direction of Manassas, a strong force of infantry and some cavalry, variously estimated at from 2,500 to 5,000 men in all, appeared on our left, approaching parallel to our front by the lateral openings into the great ravine on our flank. The infantry only was first seen, and as they approached without any apparent attempt at concealment, preceded by our skirmishers, they were supposed to be our own troops. As the number increased, I rode down the ravine with my first sergeant to reconnoiter them. Some of our skirmishers stated that they had seen no troops; others said they were the Thirty-first [?] New Yorkers

coming in. They carried no colors, and their numbers increasing to an alarming extent, I hurried back and changed the front of the battery, so as to command all the openings into the ravine and the approaches to our position. Colonel Davies at the same time detached a couple of companies into the ravine as skirmishers. The latter had scarcely deployed, when a sharp rattle of musketry removed all doubts as to the character of the advancing troops. We had been surprised, and the enemy was close upon us in large force. Our infantry regiments had changed front with the battery, but unfortunately closed their intervals behind it. Precious time was now lost in getting them on our flanks. Had they remained in our rear they would have been unnecessarily exposed to the fire directed on the battery, and in case of a determined charge for our capture, which I confidently expected, they would have been apt to fire through us, destroying men and horses and crippling the guns. At length they were moved to the right and left, and ordered to lie down and await the approach of the enemy, who by this time were closing up in apparently overwhelming numbers. I now directed the gunners to prepare shrapnel and canister shot, and in case the enemy persisted in his advance not to lose time in sponging the pieces-for minutes were now of more value than arms-but to aim low, and pour in a rapid fire wherever the men were thickest or were seen advancing.

The enemy having by this time completed his preparations and driven in our skirmishers, now rushed forward and opened a heavy musketry fire on the battery, ;but from the shortness of range, or from aiming upwards as they ascended the ravine, their shot mostly passed over us. The command was then given to the battery to commence firing. Under the directions of Lieutenants Platt and Thompson, Second Artillery, and Edwards, Third Artillery, commanding sections, the most rapid, well-sustained, and destructive fire I have ever witnessed was now opened. The men took full advantage of the permission to omit sponging, yet no accident occurred from it. The guns were all of large caliber [two 20-pounder Parrott rifle guns and four light 12-pounders], and they swept the field with a perfect storm of canister. No troops could stand it, and the enemy broke and fled in every direction, taking refuge in the woods and ravines; and in less than fifteen minutes not a living man could be seen on the ground which so recently had swarmed with them. The infantry regiments had not found it necessary to fire a single shot.

Believing now there was no support on our left [original rear], I executed a flank movement, so as to bring the left of the battery close to the wood and in front of the lateral road by which it had reached the ground. This movement threw the regiment on our left into the wood, and thus secured its possession. The fire was now reopened, the rifled guns throwing shell and the others round

shot, so as to sweep the woods and search the ravines into which the enemy had been driven. In a few minutes orders were given to retreat, and I sent an officer to Colonel Davies to inquire if such were his directions; that the enemy were defeated, and that they would be unable to reform. The answer returned was "to retire at once on Centreville." The pieces were limbered up, and, Lieutenant Edwards' guns leading, moved off.

Scarcely was the column fairly in the road when a scattering fire was opened on the rear, doubtless by those who, having taken refuge in the woods, observed the withdrawal of our troops. The cry to the battery to "trot" was now clamorously raised from the rear, and confusion was fast spreading, when I directed a deliberate walk should be maintained, and pushed forward myself to the place where the ambulances and wagons were standing in the main road. The teamsters had taken the alarm from the rapid firing and the cries, and a panic was rapidly growing, when my assurance of our having beaten the enemy, and that there was no necessity for hurry, together with the appearance of the head of the battery emerging at a walk from the wood, reassured them and calmed the excitement.

The whole column now retired in good order, and was formed, together with all the disposable field artillery, in front of Centreville, under the immediate direction of General McDowell in person, and in so imposing an attitude as to deter the enemy from any advance in that direction, and to hold him completely in check.

During the night the troops were put in motion for their former camps on the Potomac. Barry's battery, under Lieutenant Tidball, and my own were the last we could perceive on the ground. Just as I was leaving I received a message from Colonel Richardson, stating that his brigade was drawn up in column on the road, and that he wished me to pass him with the battery, but to remain near him, and that we would constitute the rear guard. This was accordingly done, but a mass of stragglers collected around the guns, and could not be prevailed upon to pass them or move without them. I was thus constrained to move forward until some 2,000 or 3,000 men interposed between us, when I received a message from Colonel Richardson, stating that a force of the enemy's cavalry and horse artillery was in our rear and threatening an attack. I now drew up at the side of the road-to turn back in such a crowd was impossible-and only by representing that the rear was about being attacked could I urge them forward. On Colonel Richardson's coming up, he stated that the demonstration of the enemy was very feeble, and we saw them no more. It is but just to say that the disorder and mob-like mixture of the volunteers did not appear to proceed from fear, but from sheer fatigue. They were footsore,

lame, hungry, and tired, but seemed to be in good heart, and on my representing that it was important that a certain position in our advance should be occupied, some of Blenker's German and of Montgomery's New Jersey regiments formed in good order and took the position indicated. Had we been attacked by any force, I have little doubt that a stout resistance would have been made.

The officers of the battery [Lieuts.E.R.Platt and James Thompson, Second Artillery, commanding sections] performed all the duties devolving upon them with promptness, skill, and gallantry. Their labors in bringing the battery into good condition had been untiring, and to the thoroughness of the instruction they had imparted to their sections before they were dismounted in Texas is mainly attributable the efficiency with which the pieces were served on the field and the successful result of the action.

First Lieutenant Presley O.Craig, Second Artillery, on sick leave on account of a badly-sprained foot, which prevented his marching with his own company, having heard of the sickness of my second lieutenant, volunteered for the performance of the duties, and joined the battery the day before it left Washington. He was constantly and actively employed during the night preceding and on the day of the battle, and his services were very valuable. When the enemy appeared he exerted himself in perfecting the preparations to receive him, and conducted himself with the greatest gallantry when the onset was made. He fell early in the action, whilst in the active discharge of his duty, receiving a shot in the forehead, and dying in a few minutes afterwards. This was the only casualty in the battery.

Cadet John R.Meigs, of the U.S.Military Academy, being in Washington on furlough, also volunteered his services, and was employed actively from the time he joined at Washington until the close of the battle. On the death of Lieutenant Craig, Cadet Meigs performed his duties until the close of the action with spirit and intelligence, and was very useful, after the affair was over, in conveying orders, observing the enemy, and rallying our troops.

Lieutenant Edwards commanded his section with skill and efficiency, and I can indorse the favorable report he makes of his lieutenants, Benjamin and Babbitt, and of the conduct of his men.

The behavior of the men of my battery was all that could be desired. They were cool, collected, prompt, and obedient, and not an instance of misconduct or neglect occurred during the action in the whole battery.

The first sergeant, Terrence Reily, was very efficient, as were also the chiefs of pieces-Sergeants Smith, Pfeffer, Flood, and Relinger.

A detachment of twenty recruits, under Lieutenant Brisbin, had been dispatched from Carlisle Barracks to fill up my company. Lieutenant Brisbin did not reach Washington until after we had left, but he followed us up, and sought us on the field. He did not succeed in finding the battery, but employed his men usefully in endeavoring to stop the retreat of our forces and in resisting the pursuit of the enemy. In the performance of these duties he was twice wounded. He speaks favorably of the services of Sergeants Bowman and Rogers, of his detachment.

Very respectfully, your obedient servant,

**HENRY J.HUNT,**

**Bvt.Major and Captain , Second Artillery, Commanding Lt.Co.M.**

*Report of Lieutenant John Edwards, Third U.S.Artilletry.*

**FORT ALBANY, VA.,**

**July 27, 1861.**

SIR: I have the honor to submit the following report with reference to the part taken by Light Company G, First Artillery, in the late engagement at Bull Run:

At about 5 a.m. on the morning of July 21 I left camp with my battery, consisting of two 20-pounder rifled cannon, and proceeded to the camp of Colonel Richardson. By his order was halted on the road about two hours. At the expiration of that time Colonel Davies, who was accompanied by Colonel Richardson, directed me to follow them with my guns. The general direction of the road taken was southeasterly, and winding through a heavily-timbered country. After a march of a mile, came to an open space on the brow of a range of high hills. This seemed to be a position on the extreme left of the line, and from it there was aa good view of the valley of Bull Run and the wooded heights beyond. I was directed to open fire upon a white house in front, partially concealed by trees, and from which a secession flag was flying. The distance was about 2,000 yards. Immediately after the firing of the first shell a flight of men, wagons, and horses took place from that locale. The direction of their flight was up the ridge to the left. Their speed being hastened by other shots, they soon disappeared in the forests. About a half hour thereafter large bodies of troops debouched from the woods at the same point where those

who fled had disappeared. They marched across an open space some three miles from my position, and were then lost to sight in the woods, but the direction of their march could be traced by the dust.

Near the summit of the chain of hills, on the opposite side, a large brick house could be seen by the aid of a glass. Towards this these troops moved. By columns of dust thrown up on the right troops were judged to be approaching this direction also. This house on the summit must have been a central rallying point. I kept up an irregular fire from my guns, dropping shell occasionally into the wooded ravines below us and throwing solid shot and shell at columns of dust within range raised by rebel troops. My position being somewhat exposed, and having no adequate support, the battery was temporarily withdrawn to the rear, and subsequently reordered to take the same position. I applied to General Miles to have some lighter guns near me, to throw canister, in case of a demonstration on our flank. Hunt's battery afterwards came up, and took its position in the same field.

After the retreat of the right and center a strong body of rebel infantry appeared on our flank. I placed my guns in position, and opened on it with canister at a distance of two hundred and fifty yards, and as the force fell back into the ravines beyond continued the fire with shell. The enemy being no longer in sight, Colonel Davies said, "Now we have driven them back, we'll retire upon Centreville." I proceeded to the rear with my guns. A regiment was drawn up in the woods by the roadside in such a manner that my battery was forced to pass closely in its front. It was the most dangerous position occupied during the day. One gun was fired over the battery, and there was a simultaneous movement of muskets along the line, as if to continue the fire. Fortunately it was not followed up. I left Centreville at about 9 p.m. and proceeded to the Potomac, reaching Arlington between 8 and 9 a.m. on the 22nd. Lieutenants Benjamin and Babbitt performed their several duties with gallantry, coolness, and spirit. The enlisted men, though unpracticed in the drill-the company having been hastily mounted-remained unshaken in the conflict.

Very respectfully, your obedient servant,

**JNO.EDWARDS,**

**First Lieutenant, Third Artillery, Commanding Lt.Co.G.**

**Major H.J.HUNT,**

**Fifth Artillery, U.S.Army, Chief of Artillery.**

**GENERAL ORDERS, } HDQRS. DIVISION OF THE POTOMAC,  
Numbers 1. } Washington, July 27, 1861.**

In accordance with General Orders, Numbers 47, of July 25, 1861, from the War Department, the undersigned hereby assumes command of the Division of the Potomac, comprising the Military Department of Washington and Northeastern Virginia. Headquarters for the present at Washington.

**GEO. B. McCLELLAN,  
Major-General, U. S. Army.**

**WASHINGTON,  
July 29, 1861.**

Captain G. STONEMAN:

SIR:

In conformity with your request, I transmit an informal statement of the present condition of the artillery south of the Potomac.

Fort Corcoran, above arlington, with its two redoubts, has an armament of twelve 8-inch sea-coast howitzers, seven 24-pounder barbette guns, two 12-pounder field guns, and two 24-pounder howitzers. About two hundred light artillerists, under Captains Carlisle and Ayres, are at these works; also the German regiment (De Kalb), which has in its ranks many artillerists.

Fort Albany, on the Fairfax road, has eighteen guns, of various caliber (twelve being 24-pounders), Griffin's and Edwards' companies light artillery many artillerists.

Fort Albany, on the Fairfax road, has eighteen guns, of various caliber (twelve being 24-pounders), Griffin's and Edwards' companies light artillery, and a Massachusetts regiment.

Fort Runyon, at the forks of the Alexandria and Fairfax roads (end of Long Bridge), one 30-pounder Parrott rifled gun, eight 8-inch seacoast howitzers, ten 32-pounders, and four 6-pounder field guns. Garrison-Colonel Rogers' Twenty-fifth New York; artillery officer in charge-Captain Seymour, Fifth Artillery.

Fort ellsworth, Alexandria, two 30-pounder and two 10-pounder Parrott rifles, twelve 8-inch sea-coast howitzers, four 24-pounder siege guns, one 24-pounder



field howitzer, three 6-pounder guns. Garrison-Captain Arnold's light company, one hundred and twenty men, and Seventeenth New York, Colonel Lansing.

The supply of ammunition for these forts, although not complete, is sufficient for an emergency, averaging about one hundred rounds per gun, and the amount is being increased as rapidly as possible.

The field batteries are in a very unsatisfactory condition, many of them, but as fast as the materials can be procured they are refitting.

Platt has four light 12-pounders, 107 men, in good condition; Tidball has two 6-pounders, two 12-pounder howitzers, 127 men, in good condition; Greene has four Parrott 10-pounders, rifled, 130 men, in good condition; Greene has four Parrott 10-pounders, rifled, 130 men, in good condition: Carlisle has 100 men, no guns; Arnold has 120 men, no guns; Ayres has two 6-pounders, two 12-pounder howitzers, 120 men; Edwards has two 10-pounder Parrott guns, 75 men; Griggin has one 10-pounder, rifled, 120 men.

Platt and Griffin are to have two additional light 12-pounders each. They will soon be ready for issue from the arsenal. There are five 10-pounder rifles now preparing. Three will be given to Griffin and two to Tidball, and others are being prepared for issue. when the guns, howitzers, &c., are received, the batteries will be composed as follows: Platt, six light 12-pounders; Tidball, Greene, and Ayres, four 10-pounder Parrotts and two 12-pounder howitzers each; Carlisle and Edwards, two 20-pounder Parrotts and two 24-pounder howitzers each; Griffin, four 10-pounder Parrotts and two light 12-pounders; Arnold, four 6-pounder guns and two 12-pounder howitzers.

I further propose to equip Captain Bookwood's company, of Von Steinwehr's German regiment, with four 6-pounder guns and two 12-pounder howitzers. Captain Bookwood brought of the Varian battery from the field-that is, the guns and one caisson-when that battery was abandoned by its company. His company has a number of German artillerists, and he can easily fill up with instructed men from the brigade of German regiments (Blenker's) to which I propose the battery be attached.

The German regiments contain a number of artillery officers and soldiers. I suggested the propriety of placing, for the present at least, those regiments in the forts, that the guns may be served by drafts from the instructed men. One company, Captain Morozoviecz's, of the De Kalb regiment, is composed almost exclusively of old German artillery soldiers, and should there be lack of field artillery, could readily be made available.

Respectfully, &c.,  
**HENRY J. HUNT,**  
**Brevet Major, and Chief of Artillery.**

*Report of Captain James Totten, Second U. S. Artillery.*

**SPRINGFIELD, MO.,**  
**August 19, 1861.**

SIR:

In obedience to instructions, I have the honor to make the following report relative to the part taken by my company in the battle on Wilson's Creek, August 10, 1861:

Light Company F, Second Regiment of Artillery, marched, in company with the other troops composing General Lyon's command, from Springfield on the evening of Friday, August 9, for the position occupied by the enemy. Early on the following morning (August 10, 1861), the camp of the Southern army was discovered about one mile and a half south of the head of General Lyon's command, and soon after the infantry of our advance was fired upon by the pickets of the enemy. From this time our march, as directed by General Lyon in person, lay through a small wheat field, across a hill, and down into a small valley which debouches into that through which Wilson's Creek runs at the point immediately occupied by the front of the enemy, had just where the main road to Springfield enters the valley. Keeping somewhat to the west, our advance crossed this road along the foot of the hills, and soon afterwards our skirmishers found those of the enemy, and the battle opened. Here the left section of my battery, under Lieutenant Sokalski, was at first brought to bear upon the enemy in the woods in front, and shortly afterwards the other four pieces were thrown forward into battery to the right on higher ground. A few rounds from the artillery assisted the infantry of our advance in driving the enemy back from their first position, and they fell back towards the crests of the hills nearer and immediately over their own camp. I now conducted my battery up the hills to the left and front, and soon found a position, where I brought it into battery directly over the northern position of the enemy's camp.

The camp of General Rains (as I afterwards learned) lay directly beneath my front and to the left, very close to my position, and a battery of the enemy to

my front and right, within easy range of my guns. The camp of General Rains was entirely deserted, and therefore my first efforts were directed against the battery of the enemy to the right and front. The left half battery was then brought into position, but the right half battery, in reality occupying the most favorable ground, was principally directed against the enemy's battery, although the whole six pieces, as opportunity occurred, played upon the enemy's guns. As the position of the enemy's guns was masked, the gunners of my pieces were obliged to give direction to their pieces by the flash and smoke of the opposing artillery.

In the mean time the battle was raging in the thick woods and under-brush to the front and right of the position occupied by my battery, and the First Regiment Volunteers was being hardly pressed. I now received an order from General Lyon to move a section of my battery forward to the support of the First Missouri, which I did in person, coming into battery just in front of the right company of this regiment. Within 200 yards of the position occupied by this section of my battery a regiment of the enemy were in line, with a secession flag and a Federal flag displayed together. This trick of the enemy caused me for a moment some uncertainty, fearing that by some accident a portion of our own troops might have got thus far in advance, but their fire soon satisfied me upon this head. I immediately opened upon them with canister from both pieces, in which service, I am happy to be able to say, I was ably and gallantly assisted by Captain Gordon Granger, acting adjutant-general, and First Lieutenant D. Murphy, First Missouri Volunteers.

The next step in the progress of the battle was where the enemy tried to force his way up the road passing along by their battery towards Springfield. This was an effort to turn the left of our position on the hill where my battery first came into position, and for a time the enemy seemed determined to execute his object. Four pieces of my battery were still in position there, and Captain Du Bois' battery of four pieces on the left nearer the road. As the enemy showed himself our infantry and artillery opened upon his ranks and drove him back, and they appeared no more during the day.

About this time, and just after the enemy had been effectually driven back, as last mentioned, I met General Lyon for the last time. He was wounded, he told me, in the leg, and I observed blood trickling from his head. I offered him some brandy, of which I had a small supply in my canteen, but he declined, and rode slowly to the right and front. Immediately after he passed forward General Lyon sent me an order to support the Kansas regiments on the extreme right, who were then being closely pressed by the enemy. I ordered Lieutenant Sokalski to move forward with his section immediately, which he did, and most gallantly,

too, relieving and saving the Kansas regiments from being overthrown and driven back. After this the enemy tried to overwhelm us by an attack of some 800 cavalry, which, unobserved, had formed below the crest of the hills to our right and rear. Fortunately, some of our infantry companies and a few pieces of artillery from my battery were in position to meet this demonstration, and drove off their cavalry with ease. This was the only demonstration made by their cavalry, and it was so effete and ineffectual in its force and character as to deserve only the appellation of child's play. Their cavalry is utterly worthless on the battle field.

The next and last point where the artillery of my battery was engaged was on the right of the left wing of the Iowa regiment and somewhat in their front. The battle was then, and had been for some time, very doubtful as to its results. General Lyon was killed, and all our forces had been all day engaged, and several regiments were broken and had retired. The enemy, also sadly dispirited, were merely making a demonstration to cover their retreat from the immediate field of battle. At this time the left wing of the Iowa regiment was brought up to support our brave men still in action, while two pieces of my battery were in advance on their right. The last effort was short and decisive, the enemy leaving the field and retiring down through the valley, covered by thick underbrush, to the right of the center of the field of battle towards their camp on Wilson's Creek. After this we were left unmolested, and our forces were drawn off the field in good order under Major Sturgis, who had assumed command directly after General Lyon's death.

It should be borne in mind that in the foregoing report I have only glanced at the main points of the battle where the pieces of my own battery of artillery were engaged. I have not entered into details at all, and could not without entering into a more elaborate history of the affair than appears to be called for on this occasion from me.

I wish simply now, in conclusion, to make a few deserving remarks upon the conduct of my officers, non-commissioned officers, and soldiers during the battle. In reference to Lieutenant Sokalski, it gives me the liveliest satisfaction to bear witness to his coolness and bravery throughout the entire day. No officer ever behaved better under as trying circumstances as he found himself surrounded by at times during the day.

The non-commissioned officers and men to a man behaved admirably, and it is hard to distinguish between them in this particular; but I am constrained to mention Sergeants Robert Armstrong and Gustavus Deyand, Corporals Albert Watchman and Lorenzo D. Trummel, who were on several occasions during the day

greatly exposed and severely tried, and bore themselves with great credit. the other non-commissioned officers and men were equally deserving and meritorious according to the time they were in action, but those mentioned were constantly engaged nearly, and deserve particular notice, because they were always equal to the duties imposed upon them

I am, very respectfully, your obedient servant,

**JAS. TOTTEN,**

**Captain , Second Artillery, Commanding Light Co. F.**

**OFFICE CHIEF OF ARTILLERY, ARMY OF THE POTOMAC,  
Washington, August 23, 1861.**

**Major-General MCCLELLAN,  
Commanding Army of the Potomac:**

GENERAL: In obedience to your directions I have the honor to submit the following.

To insure success, it is of vital importance that the Army of the Potomac should have an overwhelming force of field artillery. To render this artillery the most effective, the field batteries should as far as possible consist of regular troops. At present, of the twenty-five batteries of your army thirteen are regulars and twelve are volunteers. With every disposition to do their best, the volunteer artillery do not possess the knowledge or experience requisite for thoroughly efficient service. I would therefore recommend that companies of regular artillery be withdrawn from many of the forts of the Atlantic and Pacific sea-boards and ordered to this point at as early a date as possible, to be mounted as field artillery. For this purpose I am of the opinion that four of the seven companies at Fort Monroe, one of the two companies at Fort McHenry, and seven of the eleven companies on the Pacific coast-in all twelve companies-can very well be spared. Their places in the forts might be very well filled by companies of battalions of volunteer artillery. For this latter purpose I would recommend that corps of volunteer artillery be raised for this special service exclusively. In many of our cities and large towns in the immediate vicinity of the sea-board forts, portions of the militia have been drilled at or have otherwise become familiar with the sea-coast guns. it is believed that many such persons, who would not enlist under ordinary circumstances, would readily enroll themselves for the sole purpose of

garrisoning works in the immediate vicinity, and intended for the defense of their homes and places of business.

I am, general, very respectfully, your obedient servant,  
**WILLIAM F. BARBY,**  
**Brigadier-General, Chief of Artillery.**

**OFFICE CHIEF OF ARTILLERY, ARMY OF THE POTOMAC,**  
**Washington, August 23, 1861.**

**Major General GEORGE B. MCCLELLAN, Commanding:**

GENERAL: I have the honor to submit a proposed organization of the artillery for the Army of the Potomac. This organization is based upon an establishment of 100,000 men, and as it is presumed a large majority of the troops will not be over-well discipline or instructed, the artillery, to give them confidence and steadiness, is arranged upon the basis of three pieces to 1,000 men: Three pieces to 1,000 men—two-thirds guns of which one-fourth are 12-pounders, three-fourths are 6-pounders, and of each of which one-half are rifled; one-third howitzers, of which one-eighth are 32-pounders, one-eighth are 24-pounders, and three-fourths are 12-pounders, the whole distributed as follows:

For the infantry, two pieces to 1,000 men—light 12-pounders, Parrott 10-pounders, James 13-pounders, or 6-pounder guns and 12-pounder howitzers, assembled in mounted batteries.

For the cavalry, two pieces to 1,000 men—6-pounder guns and 12-pounder howitzers mixed, and 12-pounder howitzers alone, assembled in horse artillery batteries.

For the reserve, one piece to 1,000 men—one-half 6-pounder horse artillery and mounted batteries and one-half 12-pounder mounted batteries.

As the troops improve in discipline and become veterans by experience and continued service the ratio of guns to men might be reduced one-half, and thus a force of three hundred guns would amply suffice for an army of 200,000 men. Seven thousand five hundred men and 5,000 horses will be required to equip an artillery force of the above organization.

With regard to the artillery of the field works erected and erecting for the defense of Washington, I have the honor to state the defensive works at present completed mounted seventy-eight guns. Of these, thirty are shell guns, five are rifled guns, and thirty-four are 24 and 32 pounders, the remainder being field-guns for flank defense. The new defensive works in process of construction will mount about fifty guns. One thousand one hundred men will be required for the service of these guns. These men can be readily furnished by details from the volunteer foot regiments assigned as garrisons for the works.

I am, general, very respectfully, your obedient servant,  
**WILLIAM F. BARRY,**  
**Brigadier-General, Chief of Artillery.**

**HDQRS. DISTRICT SOUTHEAST MISSOURI,**  
**Cairo, Ill., September 9, 1861.**

**Colonel G. WAAGNER,**  
**Chief of Artillery, Commanding Detachment near Norfolk, Mo.:**

I am directed by General Grant to acknowledge the receipt of your dispatches from camp near Norfolk, and to inform you that he has issued orders to Colonel Wallace to send you four additional companies of infantry and two days' rations for your whole command. You will hold your position as long as you think it prudent to do so.

**WM. S. HILLYER,**  
**Captain and Aide-de-Camp.**

**HEADQUARTERS DISTRICT SOUTHEAST MISSOURI,**  
**Cairo, Ill., September 11, 1861.**

**Colonel G. WAAGNER, Chief of Artillery, Norfolk, Mo.:**

You will renew your reconnoissance of yesterday, pushing as far down the river as practicable, and annoying the enemy in every way possible. Colonel Oglesby is instructed to give you all the force that can be spared from Norfolk, and the

gunboat Conestoga will act in conjunction with you. Should you make any important discoveries, inform me as early as possible.

**U. S. GRANT,**  
**Brigadier-General, Commanding.**

**WASHINGTON, D.C., October 22,1861.**  
**General WILLIAMS,.**

Assistant Adjutant-General:

GENERAL: Circumstances preventing a circumstantial report\* to-day of the number of men required for the garrisons of the defenses of Washington, we respectfully present the following summary, with the intention of giving another report to-morrow or as soon as practicable:

For full garrisons of works of exterior line south of Potomac.....	5,952
For three reliefs of gunners for Forts Ellsworth and Scott.....	363
For one relief of gunners for Forts Runyon, Jackson, Corcoran, Bennett, and Haggerty..	230
Total garrison south of Potomac.....	6,545
Garrisons of works at Chain Bridge.....	1,500
Total.....	8,045
For three reliefs of gunners for all the works south of the Potomac.....	3,000
Total garrisons considered necessary for all the works.....	11,045
For reserves south of Potomac from Fort Lyon to Fort Corcoran.....	12,000
Reserve at Chain Bridge.....	750
Reserve in city.....	10,000



Total..... 33,795

The full garrisons of the works north of Potomac would amount to 9,000 men. The above estimate is based on the supposition that in all ordinary circumstances it would be only necessary to supply them with men enough to man the guns.

**Respectfully submitted.**  
**WILLIAM F. BARRY,**  
**Brigadier-General, Chief of Artillery.**

**WASHINGTON, D.C., October 24, 1861.**

**General S. WILLIAMS,**  
**Assistant Adjutant-General:**

GENERAL: In our report of the 22nd instant we stated the number of men we deemed necessary for garrisons and reserves "for the various works in and about Washington to satisfy the conditions of a good defense." It seems proper to exhibit more clearly the grounds on which our estimate is founded. We have adopted the rule, which experience showed to be satisfactory for the lines of Torres Vedras, in computing the garrison of the various works, viz: Two men per running yard of front covering line and one man per running yard of rear line, deducting spaces occupied by guns. Computed in this manner, the total of the full garrisons of all the works would amount to 19,789 men, of which 6,581 should be gunners, in order to furnish three relief to each gun. Of these works, however, the following on the south side of the Potomac are on interior lines, and do not require full garrisons, while the exterior line is intact, viz: Forts Ellsworth, Scott, Runyon, Jackson, Corcoran, Bennett, and Haggerty.

Fort Albany might, perhaps, have been included in the above list in our estimate of the 22nd. However, we have considered it as fully garrisoned.

As Fort Ellsworth and Fort Scott have commanding views of the valleys of Hunting Creek and Four-mile Run, we have considered it necessary to provide for the efficient service of all their guns by three reliefs of gunners; to the others we have assigned but one relief. With regard to the assignment of garrisons to works of the exterior lines, we remark that if Washington, were thrown upon its own defenses, without external aid, and the enemy were so far in the ascendant in the field as to be able to act on either shore, it is evident that all the works should be fully garrisoned.

We do not consider this extreme supposition the proper basis for garrisoning the works, and it is evidently desirable to shut up in them as few men as possible. The more probable supposition is that the army moves from here in force, fully occupying the bulk of the enemy's forces by its own movement, leaving the capital so strengthened by its defensive lines as to prevent danger of sudden seizure by a strategical movement of the enemy, and enable it to be held a reasonable time in case of serious reverses to our own arms in the field.

On this basis we have estimated for full garrisons of all the works of the exterior line south of the Potomac, for three reliefs of gunners for Forts Ellsworth and Scott, and for one relief for the other interior works, and for three reliefs of gunners only for all the works north of the Potomac, giving a total, as stated in our report of October 22, of 11,045 men. As without reserves a line of detached field works possesses little or no strength, we have considered as included in our instructions to provide for these. We are of opinion that two brigades should be distributed along the lines from Hunting Creek to Four Mile Run and two between Four Mile Run and Fort Corcoran, making, say, 12,000 men; one regiment in reserve at Chain Bridge of 750 men, and stationed in the city a reserve of 10,000 men; making a total of reserves of 22,750 men. As the total of full garrisons of all the works north of the Potomac is 7,343 men, it will be seen that in case of necessity part of these works or all might be full garrisoned from the reserves, still leaving over 15,000 men.

We herewith inclose two tabular statements, giving the names of works, perimeters, full garrisons, number of gunners, of works north and south of the Potomac. We would add that the system is not entirely completed, and that three or four more works than are mentioned in these statements may yet be found necessary.

#### RECAPITULATION.

For full garrisons of all works of exterior line south of the Potomac, except the Chain Bridge.....	5,952
Full garrisons of Forts Ethan Allen and Marcy.....	1,500
Three reliefs of gunners at Forts Ellsworth and Scott.....	363
One relief of gunners for other interior work.....	230

For three reliefs of gunners for all works north of Potomac..... 3,000

Total..... 11,045

Total garrisons..... 11,045

Reserves..... 22,750

Total..... 33,795

We have the honor to be, general, very respectfully, your obedient servants,  
**WILLIAM F. BARRY,**  
**Brigadier-General, Chief of Artillery.**

**OFFICE OF CHIEF ENGINEER EXPEDITIONARY CORPS,**  
**Hilton Head, S. C., December 5, 1861.**

**Brigadier General THOMAS W. SHERMAN,**  
**Commanding Expeditionary Corps, Hilton Head, S. C.:**

SIR: Should it be determined to attempt the reduction of Fort Pulaski from Tybee Island, I recommend the following armament for the batteries, inclusive of pieces held in reserve to replace those dismounted or otherwise rendered unserviceable:

Ten 10-inch sea-coast mortars; ten 13-inch sea-coast mortars; eighty heavy rifled guns of the best kind, to be used some against the barbette guns of the fort and some against the walls; eight columbiads for firing solid principally, some of them to fire shells, in case it be found practicable to drop them in or explode them over the fort. The northers should each have 900 rounds of shell, the guns and columbiads the same number of rounds of solid shot, and the columbiads 300 rounds of shell besides. It would be well to have a 15-inch columbiad, if one can be obtained.

Very respectfully, your obedient servant,  
**W. A. GILLMORE,**  
**Captain, and Chief Engineer Expeditionary Corps.**

The project set forth in the foregoing communications received General Sherman's sanction at once, with some slight modifications as to the number and

caliber of the mortars to be used, and was forwarded to Washington and approved there. Information was in due time received that orders to prepare and forward the ordnance and ordnance stores had been issued. For months, therefore, preceding the fall of Pulaski, its reduction from Big Tybee, favored by a thorough investment, formed one of General Sherman's approved plans, awaiting only the action of others in sending the necessary supplies for its completion. The Forty-sixth Regiment New York Volunteers, Colonel R. Rosa, was sent to occupy Big Tybee Island early in December.

Operations for investing the place by the erection of batteries on the Savannah River above the work were set on foot about the middle of January, 1862. It was known to General Sherman before that time that gunboats of medium draught could enter the river above Fort Pulaski without encountering any batteries on the south side through Warsaw Sound, Wilmington Narrows (or Freeborn's Cut), and Saint Augustine Creek, and on the north side through New River, Wall's Cut, and either Wright or Mud Rivers.

Wall's Cut is an artificial channel, narrow but deep, connecting New and Wright Rivers, and has for years been used in making the inland water passage between Charleston and Savannah. This cut the enemy had obstructed by an old hulk and numerous heavy piles, as ascertained about the 1st of January by Lieutenant J. H. Wilson, of the Topographical Engineers. These obstructions had all been removed by a detachment of our engineers troops, under Major Beard, Forty-eight Regiment New York Volunteers, secretly sent from Hilton Head by General Sherman for that purpose. The piles were sawed off on a level with the bottom of the stream, and the hulk was swung around against the side of the cut, leaving ample room for the passage of transports and gunboats. The opening of Wall's Cut, which required four days and four nights to effect, was reported to the Navy on the 14th January, in order that the gunboats might enter the Savannah River and cover us in the erection of our investing batteries. At this time the enemy's gunboats were daily passing up and down the river.

Mud River is navigable at high spring tide for vessels of 8 1/2 to 9 feet draught. Wright River Bar has about 11 1/2 feet of water at ordinary high tide. The Wright River passage rendered it necessary to approach to within about 2 miles of Fort Pulaski.

After the removal of the Wall's Cut obstructions a joint expedition of land and naval forces for the investment was organized by General Sherman and Commodore DuPont. This expedition consisted of one regiment of infantry (the Forty-eighth New York Volunteers), two companies of the New York Volunteer Engineers, and two companies of the Third Rhode Island Volunteer Heavy Artillery, with 20 guns of all caliber, viz, two 8-inch siege howitzers, four 30-pounders Parrotts,

three 20-pounder Parrotts, three 12-pounder James rifles, and eight 24-pounder field howitzers, and was accompanied by three gunboats. The troops were to rendezvous at Daufuskie Island, where we already had three companies of the Seventh Connecticut Volunteers, under Major Gardiner, guarding Wall's Cut. They had been posted there on January 13. The land force was in readiness at Hilton Head soon after the middle of January. Various causes delayed the expected naval co-operation, so that no gunboats passed Wall's Cut until the 28th of January. The naval forces were commanded by Commander John Rodgers, U. S. N.; the land forces by Brigadier-General Viele. Another mixed force, approaching by way of Warsaw Sound, presented itself on the south of the Savannah River, in Wilmington Narrows (or Freeborn's Cut), at the same time, the land force being commanded by Brigadier General H. G. Wright and the gunboats by Fleet Captain Davis.

On the afternoon of January 28 a reconnaissance was made by me of Mud River and the Savannah River shore of Jones Island. Venus Point, on the margin of the Savannah, was selected as the position for one of the investing batteries. The line for a road or causeway over the marsh between Venus Point and Mud River was also located. Its length was nearly 1,300 yards. This causeway or corduroy was never completed.

Jones Island is nothing but a mud marsh, covered with reeds and tall grass. The general surface is about on the level of ordinary high tide. There are a few spots of limited area, Venus Point being one of them, that are submerged only by spring tides or by ordinary high tides favored by the wind, but the character of the soil is the same over the whole island. It is a soft unctuous mud, free of grit or sand, and is incapable of supporting a heavy weight. Even in the most elevated places the partially dry crust is but 3 or 4 inches in depth, the substratum being a semi-fluid mud, which is agitated like jelly by the falling of even small bodies upon it, like the jumping of men or ramming of earth. A pole or an oar can be forced into it with ease to the depth of 12 or 15 feet. In most places the resistance diminishes with increase of penetration. Men walking over it are partially sustained by the roots of reeds and grass, and sink in only 5 or 6 inches. When this top support gives way they go down from 2 to 2 1/2 feet, and in some places much farther. A road or causeway of some kind across Jones Island from Mud River to Venus Point was deemed necessary and determined upon at the outset, even if the guns should not have to be carried over it, as the means of getting speedy succor to the Venus Point battery in case of attack; Daufuskie Island, 4 miles distant, being the nearest point where troops could be kept for that purpose.

On the 29th of January Lieutenant O'Rorke, of the Engineers, was dispatched by me in a small boat to examine Long and Elba Islands, in the Savannah River. Major Beard, Forty-eighth New York Volunteers, accompanied him. They entered the Savannah River via Cunningham Point at the lower end of Jones Island, pulled up the Savannah, stopping several times on Long and Elba Islands, and went around the west end of the latter to within about 2 miles of Fort Jackson. Lieutenant O'Rorke reported the upper end of Long Island favorable for batteries, the surface being fully as high as that at Venus Point.

The following extracts from my journal furnish a portion of the history of the operations on Jones Island and the Savannah River for the investment of Fort Pulaski, and may be properly introduced into this report:

Extracts from journal of Brigadier-General Gillmore, chief engineer Expeditionary Corps.

February 1, 2, 3, and 4. - The two engineer companies on Daufuskie Island, commanded by Captain Sears, were employed in cutting poles for a causeway on Jones Island from Mud River to Venus Point, and for the engineer wharf on Daufuskie Island, New River.

On the 4th, the wharf with 8 feet of water at low tide, was completed. Ten thousand poles, 5 to 6 inches in diameter and 9 feet long, had been cut on Daufuskie Island, and 1,900 of them deposited at the wharf. The men of the Forty-eighth New York and Seventh Connecticut Volunteers transported the poles on their shoulders, the average distance carried being 1 mile. At the suggestion of Captain Sears I had a swath cut and cleared of reeds and grass across the upper end of Jones Island, to prevent the enemy burning the island over.

Navy officers were engaged in sounding Mud and Wright Rivers. No certainty as yet that the gunboats will enter the Savannah River. Mud River has about one and one-half feet of water in it at the extreme low tide, with a very soft (almost semi-fluid) bottom. Sounding in Wright River are not completed yet.

February 5 and 6. - Nothing specially new. Engineer force engaged in cutting poles, filling sand bags on Daufuskie Island, building a temporary wharf of poles and sand bags on Mud River, and constructing a wheelbarrow track of planks laid end to end from Venus Point to Mud River Wharf. The Forty-eighth New York, Seventh Connecticut Volunteers, and a portion of the engineer forces engaged in transporting poles and planks and carrying filled sand bags from Daufuskie Island to Jones Island (a distance of about 4 miles) in row-boats.

February 7 and 8. - Finished temporary wharf on Mud River. Carried several hundred filled sand bags across to Venus Point; also a quantity of planks and other battery materials. Had the balance of the engineer materials required for the Venus Point battery put into lighters, so as to be ready whenever the gunboats should move. There appears to be no immediate prospect of their moving.

February 9. - I visited Commander Rodgers to consult in regard to his moving into the Savannah. He said he intended to attempt the Mud River passage that night on the high tide. The signal for his starting would be one note from his steam-whistle. Returned to Daufuskie and consulted with General Viele and Captain Hamilton, the chief of artillery. It was arranged that the flats, with the guns and ammunition on them, should be towed by the steamer Mayflower through Wall's Cut and up Mud River into the Savannah, just behind the gunboats. They were accordingly taken in tow in the evening after dark from the engineer wharf. The night was windy, rainy, and very dark. The Mayflower, after several attempts, failed to reach Wall's Cut, and cast anchor near the spot she started from. The gunboats did not move on account of the weather.

February 10. - The gunboats Pembina and Unadilla are at anchor in Wright River, near Wall's Cut. The gunboat Hale has taken up position in Mud River about 200 yards to the eastward of the temporary wharf, in order to protect the landing and cover us if driven back. Captain Hamilton quite ill from last night's exposure in the Mayflower. I consulted with General Viele in the afternoon, and it was determined to establish the Venus Point battery at once, and wait no longer for the gunboats to go ahead of us. Orders from General Sherman to that effect were subsequently received that same evening, also to effect this by landing the guns on Jones Island from Mud River and hauling them over the marsh instead of towing them into the Savannah in flats, as first contemplated. Major Beard, Forty-eighth New York Volunteers, and Lieutenant J. H. Wilson, Topographical Engineers, volunteered to assist Lieutenant Horace Porter, the ordnance officer, in getting the flats into Mud River and the guns on shore and into position. Accordingly the flats with the guns were towed by our row-boats up the river against the tide and landed without accident. Two of them were taken about 300 yards into the marsh by Lieutenant Wilson. The Forty-eighth New York Volunteers furnished the fatigue parties, which had already been twenty-four hours at work on Jones Island and were very much exhausted. Deeming it impossible to get the guns over that night, I directed them to be covered with reeds and grass, to prevent their discovery by the enemy, and left there until the following night.

During the night of the 10th, Lieutenant O'Rorke, of the Engineers, with a party of volunteer engineers, commenced the magazine and gun platforms at Venus Point.

The party concealed their work at daybreak (11th) and withdrew. The platforms were made by raising the surface 5 or 6 inches with sand, carried over in bags. On this sand foundation thick planks at right angles to the line of the battery were laid, nearly, but not quite, in contact with each other. At right angles to these, deck-planks were laid, giving a platform 9 by 17 feet. The floor of the magazine was 20 inches above the natural surface, and rested on sand bags.

February 11. - Continued getting battery and road materials to Jones Island during the day. Early in the evening I went to Jones Island with fresh men, to finish the labor of getting the guns over. Lieutenants Wilson and Porter and Major Beard took charge of the fatigue parties as before. The work was done in the following manner: The pieces, mounted on their carriages and limbered up, were moved forward on shifting runways of planks about 15 feet long, 1 foot wide, and 3 inches thick, laid end to end. Lieutenant Wilson, with a party of 35 men, took charge of the two pieces in advance, one 8-inch siege howitzer and a 30-pounder Parrott, and Major Beard and Lieutenant Portere, with a somewhat larger force, of the four pieces in the rear, two 20 and two 30 pounder Parrotts. Each party had one pair of planks in excess of the number required for the guns and limbers to rest upon when closed together. This extra pair of planks being placed in front, in prolongation of those already under the carriages, the pieces were then drawn forward with drag-ropes one after the other the length of a plank, thus freeing the two planks in the rear, which in their turn were carried to the front. This labor is of the most fatiguing kind. In most places the men sank to their knees in the mud, in some places much deeper. This mud being of the most slippery and slimy kind and perfectly free from grit and sand, the planks soon became entirely smeared over with it. Many delays and much exhausting labor were occasioned by the gun-carriages slipping off the planks. When this occurred the wheels would suddenly sink to the hubs, and powerful levers had to be devised to raise them up again. I authorized the men to encase their feet in sand bags to keep the mud out of their shoes. Many did this, tying the strings just below the knees. The magazines and platforms were ready for service at daybreak. Lieutenant Wilson got his two pieces into position at 2.30 a. m. and Major Beard and Lieutenant Porter their four pieces at 8.30 a. m. on the 12th. At 3 a. m. Lieutenant Wilson started back to General Viele, on Daufuskie, to report the success.

February 12. - After giving directions for the fresh relief to be put to work in throwing up a dike around the battery to keep out the spring tides, which



were beginning to flow, I returned to Daufuskie Island. The high tide to-day came within 8 inches of the surface at Venus Point.

February 13, 14, 15. - Various causes, particularly the weather, delayed the establishment of the battery on Long Island. On the morning of the 13th the rebel steamer *Ida* passed down by Venus Point under full steam. Nine shots were fired at her, striking her astern, all but one. Elevation good, but not enough allowance made for speed of vessel. I was not in the battery at the time. All the pieces, except one 30-pounder, recoiled off the platforms. These were at once enlarged to 18 by 17 1/2 feet. On the afternoon of the 14th three rebel gunboats came down the river and opened fire on the battery, taking a position about 1 mile distant. Battery fired about 30 shots. One of the vessels was struck. The boats then withdrew.

February 16. - The steamer *Ida*, which ran the battery on the 13th, left Fort Pulaski and returned to Savannah, via Lazaretto Creek, Wilmington Narrows, Turner's Creek, and Saint Augustine Creek.

February 17. - I returned to Hilton Head, by General Sherman's order, leaving Lieutenant O'Rorkee with General Viele, with written instructions concerning the engineering operations to be carried on.

The foregoing extracts from my journal are all that bear directly upon the operations on the Savannah above Fort Pulaski. I did not return there on duty. I soon received official information, however, that a second battery, consisting of one 8-inch siege howitzer, one 30-pounder Parrott, one 20-pounder Parrott, and three 12-pounder James rifles, was established on Bird Island, just above Long Island. This was done on the night of February 20, the flats, with the guns, ammunition, & c., on them, being towed up Mud River and across the Savannah by row-boats. Lieutenant O'Rorke, of the Engineers, was present as engineer officer, and Lieutenant Porter as ordnance officer. Captain John Hamilton, General Sherman's chief of artillery, was also present.

On the 19th of February I was ordered by Brigadier General T. W. Sherman to Big Tybee Island, to place it "in a thorough state of defense against approach from Wilmington Narrows and Lazaretto Creek, to prevent all approach by water, and blockade the channel," thereby completing the investment, and also to "commence operations for the bombardment of Fort Pulaski."

The absolute blockade of Pulaski dates from the 22nd of February, at which time I stationed two companies of the Forty-sixth New York Volunteers, with a

battery of two field pieces, on Decent Island, Lazaretto Creek. This force was subsequently placed on board an old hulk, anchored in Lazaretto Creek, about 2 1/4 miles from Fort Pulaski. One 30-pounder Parrott was then added to the battery. A small guard boat, mounting a Navy 6-pounder, was posted considerably in advance of the hulk, to intercept messengers attempting to reach Fort Pulaski by way of McQueen's Island Marsh. On the 31st of March the guard boat and 18 men were captured by a large scouting party of the enemy, who suddenly appeared on Wilmington Island. After this the services of the gunboat Norwich, Captain Duncan, were secured in Wilmington Narrows, to assist the blockade.

It was found impossible to perfectly isolate the work. In order to appreciate the difficulty and even impracticability of securing, with ordinary means, the complete blockade of a place like Fort Pulaski, it is necessary to understand something of the topography of the position.

The Savannah River, from its mouth on Tybee Roads to its confluence with Saint Augustine Creek, 8 miles above, is skirted on both sides by low marsh islands, submerged by spring tides, covered with a thick growth of reeds and tall grass, and cut up by numerous small, tortuous creeks and bayous. With light boats that can be hauled over the marsh by hand from creek to creek small parties familiar with the locality can with comparative security find their way over these marshes in the night, and avoid guards and pickets. It was known that messengers passed to and from the fort in this way quite frequently. Several of these were caught. One of them started from the fort and made his escape to Savannah, just after the white flag was raised, on the day of the surrender.

On the 21st of February the first vessel with ordnance and ordnance stores for the siege arrived in Tybee Roads. From that time until the 9th of April all the troops on Tybee Island, consisting of the Seventh Regiment Connecticut Volunteers, the Forty-sixth Regiment New York Volunteers, two companies of the Volunteer Engineers, and, for the most of the time, two companies of the Third Rhode Island Volunteer Artillery, were constantly engaged in landing and transporting ordnance, ordnance stores, and battery materials, making fascines and roads, constructing gun and mortar batteries, service and depot magazines, splinter and bomb proof shelters for the relief of cannoneers off duty, and drilling at the several pieces.

The armament comprised 36 pieces, distributed in eleven batteries, at various distances from the fort, as shown in the following table:

1. Battery Stanton, three heavy 13-inch mortars, at 3,400 yards.

2. Battery Grant, three heavy 13-inch mortars, at 3,200 yards.
3. Battery Lyon, three heavy 10-inch columbiads, at 3,100 yards.
4. Battery Lincoln, three heavy 8-inch columbiads, at 3,045 yards.
5. Battery Burnside, one heavy 13-inch mortar, at 2,750 yards.
6. Battery Sherman, three heavy 13-inch mortars, at 2,650 yards.
7. Battery Halleck, two heavy 13-inch mortars, at 2,400 yards.
8. Battery Scott, three 10-inch and one 8-inch columbiad, at 1,740 yards.
9. Battery Sigel, five 30-pounder Parrotts and one 48-pounder James (old 24-pounder), at 1,670 yards.
10. Battery McClellan, two 84-pounder James (old 42-pounder) and two 64-pounder James (old 32-pounder), at 1,650 yards.
11. Battery Totten, four 10-inch siege mortars, at 1,650 yards.

Each battery had a service magazine capable of containing a supply of powder for about two days' firing. A depot powder magazine of 3,600 barrels' capacity was constructed near the Martello Tower, which was the landing place for all the supplies. Serious difficulties were encountered in making a road sufficiently firm to serve for this heavy transportation.

Tybee Island is mostly a mud marsh, like other marsh islands on this coast. Several ridges and hummocks of firm ground, however, exist upon it, and the shore of Tybee Roads, where the batteries were located, is partially skirted by low sand banks, formed by the gradual and protracted action of the wind and tides. The distance along this shore from the landing place to the advanced batteries is about 2 1/2 miles. The last mile of this route, on which the seven most advanced batteries were placed, is low and marshy, lies in full view of Fort Pulaski, and is within effective range of its guns. The construction of a causeway resting on fascines and brush-wood over this swampy portion of the line; the erection of the several batteries, with the magazines, gun platforms, and splinter-proof shelters; the transportation of the heaviest ordnance in our service by the labor of men alone; the hauling of ordnance stores and engineer supplies, and the mounting of the guns and mortars on their carriages and beds

had to be done almost exclusively at night, alike regardless of the inclemency of the weather and of the miasma from the swamps.

No one except an eye-witness can form any but a faint conception of the herculean labor by which mortars of 8 1/2 tons' weight and columbiads but a trifle lighter were moved in the dead of night over a narrow causeway, bordered by swamps on either side, and liable at any moment to be overturned and buried in the mud beyond reach. The stratum of mud is about 12 feet deep, and on several occasions the heaviest pieces, particularly the mortars, became detached from the sling-carts, and were with great difficulty, by the use of planks and skids, kept from sinking to the bottom. Two hundred and fifty men were barely sufficient to move a single piece on sling-carts. The men were not allowed to speak above a whisper, and were guided by the notes of a whistle.

The positions selected for the five most advanced batteries were artificially screened from view from the fort by a gradual and almost imperceptible change, made little by little every night, in the condition and appearance of the brush-wood and bushes in front of them. No sudden alteration of the outline of the landscape was permitted. After the concealment was once perfected to such a degree as to afford a good and safe parapet behind it less care was taken, and some of the work in the batteries requiring mechanical skill was done in the daytime, the fatigue parties going to their labor before break of day and returning in the evening after dark. In all the batteries traverses were placed between the pieces. With two exceptions (Batteries Lincoln and Totten) the magazines were placed in or near the center of the battery, against the epaulement, with the opening to the rear. An ante-room for filling cartridge bags was attached to each. The magazines for the Batteries Lincoln and Totten were located in the rear of the platforms.

For rivetting the sides of the traverses and epaulements fascines, hurdles, brush, and marsh sods were used. Marsh sods form the best revetment for sandy soil. All the others allow the sand to sift through them to such an extent as to become a serious annoyance to the men serving the pieces.

In order to diminish as much as possible the labor of forming the parapets in front of the pieces the foundation timbers of all the gun and mortar platforms were sunk to high-water mark. This brought them in many cases to within 6 or 8 inches of the substratum of soft clay. To secure them against settlement the lateral as well as vertical dimensions usually adopted for platforms were considerably enlarged.

On the 31st day of March Major-General Hunter assumed command of the Department of the South, and Brigadier-General Benham, of the Northern District thereof, comprising the States of South Carolina, Georgia, and a part of Florida. During the week which followed these generals visited Tybee Island at separate times, and inspected the siege works and batteries there established. No change or modification of any of the works was suggested by either.

On the afternoon of April 9 everything was in readiness to open fire. Generals Hunter and Benham had arrived the evening before with their respective staffs.

The following general orders, regulating the rapidity and direction of the firing and the charges and elevation of the pieces of each battery, were issued. As the instructions then given were, with one or two trifling exceptions, adhered to with remarkable fidelity throughout the action, they are inserted here in full, to save the necessity of further reference to them:

**GENERAL ORDERS, HEADQUARTERS U. S. FORCES,  
Numbers 17. } Tybee Island, Ga., April 9, 1862.**

The batteries established against Fort Pulaski will be manned and ready for service at break of day to-morrow. The signal to begin the action will be one gun from the right mortar of Battery Halleck (2,400 yards from the work), fired under the direction of Lieutenant Horace Porter, chief of ordnance. Charge of mortar, 11 pounds; charge of shell, 11 pounds; elevation, 55 degrees; length of fuse, 24 seconds. This battery (two 13-inch mortars) will continue firing at the rate of fifteen minutes to each mortar alternately, varying the charge of mortars and the length of fuse so that the shells will drop over the arches of the north and northeast faces of the work and explode immediately after striking, and not before.

The other batteries will open as follows, viz, Battery Stanton (three 13-inch mortars, 3,400 yards distant) immediately after the signal, at the rate of fifteen minutes for each piece, alternating from the right. Charge of mortars, 14 pounds; charge of shell, 7 pounds; elevation, 45 degrees; length of fuse, 23 seconds; varying the charge of mortar and length of fuse as may be required. The shells should drop over the arches of the south face of the work and explode immediately after striking, but not before.

Battery Grant (three 13-inch mortars, 3,200 yards distant) immediately after the ranges of Battery Stanton have been determined, at the rate of fifteen minutes for each piece, alternating from the right. Charge of shells, 7 pounds;

elevation, 45 degrees; charges of mortars and length of fuse to be varied to suit the range, as determined from Battery Stanton. The shells should drop over the south face of the work and explode immediately after striking, but not before.

Battery Lyon (three 10-inch columbiads, 3,100 yards distant), with a curved fire, immediately after the signal, allowing ten minutes between the discharges for each piece, alternating from the right. Charge of gun, 17 pounds; charge of shell, 3 pounds; elevation, 20 degrees, and length of fuse, 20 seconds; charge and length of fuse to vary as required. The shells should pass over the parapet into the work, taking the gorge and north face in reverse, and exploding at the moment of striking or immediately after.

Battery Lincoln (three 8-inch columbiads, 3,045 yards distant), with a curved fire, immediately after the signal, allowing six minutes between discharges for each piece, alternating from the right. Charge of gun, 10 pounds; charge of shell, 1 1/2 pounds; elevation, 20 degrees, and length of fuse, 20 seconds. Directed the same as Battery Lyon, upon the gorge and north face in reverse, varying the charge and length of fuse accordingly.

Battery Burnside (one 13-inch mortar, 2,750 yards distant) firing every ten minutes from the time the range is obtained for Battery Sherman. Charge of shell, 7 pounds; elevation, 45 degrees; charge of mortar and length of fuse varying as required from those obtained for Battery Sherman. The shells should drop on the arches of the north and northeast faces, and explode immediately after striking, but not before.

Battery Sherman (three 13-inch mortars, 2,650 yards distant) commencing immediately after the ranges for Battery Grant have been determined, and firing at the rate of fifteen minutes for each piece, alternating from the right. Charge of shell, 7 pounds elevation, 45 degrees; charge of mortar and length of fuse to be fixed to suit the range, as determined from Battery Grant. The shells should drop over the arches of the north and northeast faces.

Battery Scott (three 10-inch and one 8-inch columbiads, 1,740 yards distant) firing solid shot, and commencing immediately after the barbette fire of the work has ceased. Charge of 10-inch columbiads, 20 pounds; elevation, 4 1/2 degrees. Charge of 8-inch columbiad, 10 pounds; elevation, 5 degrees. This battery should breach the pancoupe between the south and southeast faces, and the embrasure next to it, in the southeast face, the elevation to be varied accordingly; the charge to remain the same. Until the elevation is accurately

determined each gun should fire once in ten minutes; after that every six or eight minutes.

Battery Sigel (five 30-pounder Parrotts and one 48-pounder James, old 24-pounder rifled, 1,670 yards (distant) to open with 4 3/4 seconds fuses on the barbette guns of the fort at the second discharge from Battery Sherman. Charge for 30-pounder, 3 1/2 pounds; charge for 45-pounder, 5 pounds; elevation, 4 degrees for both calibers. As soon as the barbette fire of the work has been silenced this battery will be directed with percussion shells upon the walls, to breach the pan-coupe between the south and southeast faces, the elevation to be varied accordingly, the charge to remain the same. Until the elevation is accurately determined each gun should fire once in six or eight minutes; after that every four or five minutes.

Battery McClellan (two 84 and two 64-pounders James, old 42 and 32 pounds rifled, 1,650 yards distant) opens fire immediately after Battery Scott. Charge for 84-pounder, 8 pounds; charge for 64-pounder, 6 pounds; elevation for 84-pounder, 4 1/2 degrees, and for the 64-pounder, 4 degrees. Each piece should fire once every five or six minutes after the elevation has been established. Charge to remain the same. This battery should breach the work in the pan-coupe between the south and southeast faces and the embrasure next to it in the southeast face. The steel scraper for the grooves should be used after every fifth or sixth discharge.

Battery Totten (four 10-inch siege mortars, 1,650 yards distant) opens fire immediately after Battery Sigel, firing each piece about once in five minutes. Charge of mortar, 3 1/2 pounds; charge of shell, 3 pounds; elevation, 45 degrees, and length of fuse, 18 1/2 seconds. The charge of mortar and length of fuse to vary so as to explode the shells over the northeast and southeast faces of the work. If any battery should be unmasked outside the work, Battery Totten will direct its fire upon it, varying the charge and length of fuse accordingly. The fire from each battery will cease at dark, except especial directions be given to the contrary. A signal officer at Battery Scott, to observe the effect of the 13-inch shells, will be in communication with other signal officers stationed near Batteries Stanton, Grant, and Sherman, in order to determine the range for these batteries in succession.

**By order of Brigadier General Q. A. Gillmore:**  
**W. L. M. BURGER,**  
**First Lieutenant, Volunteer Engineers, and Actg. Adj. General**

Just after sunrise, on the morning of the 10th, Major General David Hunter, commanding the department, dispatched Lieutenant J. H. Wilson, of the Topographical Engineers, to Fort Pulaski, bearing a flag of truce and a summons to surrender. To this demand a negative answer was returned.

The order was given to open fire, commencing with the mortar batteries, agreeably to the foregoing instructions.

The first shell was fired at a quarter past 8 o'clock a. m. from Battery Halleck. The other mortar batteries opened one after the other, as rapidly in succession as it was found practicable to determine the approximate ranges by the use of signals. The guns and columbiads soon followed, so that before half past 9 a. m. all the batteries were in operation, it having been deemed expedient not to wait for the barbette fire of the work to be silenced before opening with Breaching Batteries Scott and McClellan.

The three 10-inch columbiads in Battery Scott were dismounted by their own recoil at the first discharge, and one of those in Battery Lyon, from the same cause, at the third discharge. The gun-carriages were the new iron pattern, while the pintles and pintle-crosses belonged to the old wooden carriages, and were unsuitable. They were all, except one in Battery Scott, subsequently remounted and served.

As the several batteries along our line, which was 2,550 yards in length, opened fire one after another, the enemy followed them up successively with a vigorous though not at first very accurate fire from his barbette and casemate guns. Subsequent inquiry showed that he knew the exact position of only two of our batteries - Sherman and Burnside. These were established just above high-water mark, on low ground, void of bushes or undergrowth of any kind. During their construction no special attempt at concealment had been made after once securing good parapet cover by night work.

Great surprise and disappointment were expressed by all experienced officers present at the unsatisfactory results obtained with the 13-inch mortars. Although the platforms were excellent and remained for all useful purposes intact, and although the pieces were served with a fair degree of care and skill, not one-tenth of the shells thrown appeared to fall within the work - an estimate that was afterwards found to be rather over than under the correct proportion. Whether this inaccuracy is due to the fact that no cartridge-bags were furnished for the mortars, to inequalities in the strength of the powder, to defects inherent in the piece itself, or to these several causes combined, remains yet to be ascertained. It is suggested that the earnest attention of the proper department be directed to this subject.



By 1 o'clock in the afternoon (April 10) it became evident that the work would be breached, provided our breaching batteries did not become seriously disabled by the enemy's fire. By the aid of a powerful telescope it could be observed that the rifled projectiles were doing excellent service, that their penetration was deep and effective, and that the portion of the wall where the breach had been ordered was becoming rapidly honey-combed.

It also became evident before night, on account of the inefficiency of the mortar firing, that upon breaching alone ending perhaps in an assault, we must depend for the reduction of the work.

In order to increase the security of our advanced batteries a tolerably brisk fire against the barbette guns of the fort was kept up throughout the day. Probably from 15 to 20 per cent. of the metal thrown from the breaching batteries on the 10th was expended in this way.

As evening closed in, rendering objects indistinct, all the pieces ceased firing, with the exception of two 13-inch mortars, one 10-inch mortar, and one 30-pounder Parrott, which were served throughout the night at intervals of fifteen or twenty minutes for each piece. The object of this was to prevent repairs of the breach or the filling of the casemates in rear of it with sand bags or other material.

I extract as follows from my preliminary report to Brigadier-General Benham, dated April 12, 1861:

The only plainly perceptible result of this cannonade of ten and a half hours' duration (on the 10th), the breaching batteries having been served but nine and a half hours, was the commencement of a breach in the easterly half of the pan-coupe connecting the south and southeast faces, and in that portion of the southeast face spanned by the two casemates adjacent to the pan-coupe.

The breach had been ordered in this portion of the scarp so as to take in reverse, through the opening formed, the powder magazine, located in the angle formed by the gorge and the north face.

Two of the barbette guns of the fort had been disabled and three casemate guns silenced.

The enemy served both tiers of guns briskly throughout the day, but without injury to the materiell or personnel of our batteries.

On the morning of the 11th, a little after sunrise, our batteries again opened fire with decided effect, the fort returning a heavy and well-directed fire from its casemates and barbette guns. The breach was rapidly enlarged. After the expiration of three hours the entire casemate next the pan-coupe had been opened, and by 12 o'clock the one adjacent to it was in a similar condition. Directions were then given to train the guns upon the third embrasure, upon which the breaching batteries were operating with effect, when the fort hoisted the white flag. This occurred at 2 o'clock. The formalities of visiting the fort, receiving its surrender, and occupying it with our troops, consumed the balance of the afternoon and evening.

During the 11th about one-tenth of the projectiles from the three breaching batteries were directed against the barbette guns of the fort. Eleven of its guns were dismounted, or otherwise rendered temporarily unserviceable.

The garrison of the fort was found to consist of 385 men, including a full complement of officers. Several of them were severely, and one fatally, wounded.

Our total loss was 1 man killed. None of our pieces were struck.

I take pleasure in recording my acknowledgment of the hearty, zealous, and persevering co-operation afforded me by the officers and men under my command, not only during the 10th and 11th, when all more or less forgot their fatigue in the excitement and danger of the engagement, but throughout the exhausting and unwholesome labors of preparation, occupying day and night a period of nearly eight weeks.

The entire available strength of the command was on guard or fatigue duty every twenty-four hours.

The details for night work were always paraded immediately after sunset, and were usually dismissed from labor between 1 and 2 o'clock in the morning, although circumstances frequently required parties to remain out all night. In unloading the ordnance and ordnance stores advantage was always taken of favorable tide and weather day and night.

There is one circumstance connected with this siege which appears to deserve special mention, and that is, that with the exception of a detachment of sailors from the frigate Wabash, who served four of the light siege pieces in Battery Sigel on the 11th, we had no artillerists of any experience whatever. Four of the batteries were manned by the Third Rhode Island Volunteer Artillery, who were conversant with the manual of the pieces, but had never been practiced at firing. All the other pieces were served by infantry troops, who had been on constant fatigue duty, and who received all their instructions

in gunnery at such odd times as they could be spared from other duties during the week or ten days preceding the action.

Instructions had been given by General Benham to place a mortar battery on the lower end of Long Island and two 10-inch columbiads on Turtle Island, in order to obtain a reverse fire on the work. These batteries were to have been erected and manned by detachments from General Viele's command. One 10-inch siege mortar was therefore placed on Long Island, and was served on the 11th April by a detachment commanded by Major Beard, Forty-eighth New York Volunteers. It was entirely ineffective on account of the distance - nearly 1,900 yards. The idea of Turtle Island battery was not carried into effect, and no pieces were landed there.

Throughout the siege Colonel Alfred H. Terry, Seventh Regiment Connecticut Volunteers, and Lieutenant Colonel James F. Hall, commanding battalion of New York Volunteer Engineers, were conspicuous for the zeal and perseverance with which they discharged the varied duties to which they were assigned.

Captain Hinckel, with one company of the Forty-sixth Regiment New York Volunteers and a small battery, occupied for eight weeks, with credit to himself and command, an advanced and exposed position on a hulk in Lazaretto creek, cutting off boat communication in that direction between Fort Pulaski and the interior.

Lieutenant Horace Porter, of the Ordnance Department, rendered important and valuable service. Besides discharging most efficiently the special duties of chief of ordnance and artillery, he directed in person the transportation of nearly all the heavy ordnance and instructed the men in its use. He was actively engaged among the batteries during the action.

Captain Charles E. Fuller, assistant quartermaster, served with me four weeks, assuming during that time the entire charge of unloading the ordnance and ordnance stores from the vessels; a duty which he discharged with a success worthy of special notice.

Lieutenant James H. Wilson, Topographical Engineers, joined my command eleven days before the action, and was assigned to duty as instructor of artillery. He rendered valuable service in that capacity, and also at the breaching batteries on the 10th and 11th.

Captain Louis H. Pelouze, Fifteenth U. S. Infantry, and Captain J. W. Turner, commissary of subsistence, U. S. Army, members of Major-General Hunter's staff, volunteered for the engagement, and were assigned to the command of batteries, where their knowledge and experience as artilleryists proved of great value.

On the 11th two pieces of Battery Sigel were served by a detachment from the Eighth Regiment Maine Volunteers, under Captain McArthur, of that regiment. The men had all served exclusively as infantry, and received their first artillery drill from Captain Turner and Lieutenant Wilson under a severe fire. They readily adapted themselves to their new duties, and served their guns creditably.

Captain F. E. Graef and Lieutenant T. B. Brooks, commanding respectively the two companies (D and A) of Volunteer Engineers, were indefatigable in the discharge of their duties as engineer officers, which required them to be out with the working parties every night.

I am under obligations to Commander C. R. P. Rodgers and Lieutenant John Irwin, U. S. Navy, for skillfully serving with a detachment of sailors four siege guns in Battery Sigel on the 11th.

Lieutenant W. L. M. Burger, of the regiment of New York Volunteer Engineers, served with zeal and efficiency as my adjutant-general during the operations on Tybee Island.

Lieutenant P. H. O'Rorke, of the Corps of Engineers, and Adam Badeau, esq., volunteered to serve as my aides on the 10th and 11th, and rendered valuable assistance.

The services of Sergt. James E. Wilson, of Company A, Corps of Engineers, deserve special mention, and largely contributed towards getting the breaching batteries ready for service. Sergeant Wilson commanded Battery Burnside during the action.

To Major-General Hunter and Brigadier-General Benham, commanding respectively this department and district, I am under obligations for the official courtesies with which they allowed the project for reducing the fort, which was planned and all but executed before they assumed their commands, to be carried out in all its details without change or modification.

GENERAL OBSERVATIONS.

The three breaching batteries - Sigel, Scott, and McClellan - were established at a mean distance of 1,700 yards from the scarp walls of Fort Pulaski.

The circumstance, altogether new in the annals of sieges, that a practicable breach, which compelled the surrender of the work, was made at that distance in a wall 7 1/2 feet thick, standing obliquely to the line of fire and backed by heavy casemate piers and arches, cannot be ignored by a simple reference to the time-honored military maxims that "Forts cannot sustain a vigorous land attack," and that "All masonry should be covered from land batteries."

A comparative glance at the status of military science as regards breaching prior to the invention of rifled cannon will enable us to form a tolerably correct estimate of the importance to be attached to the results developed by this improved arm of the service. A standard military work furnishes the following extract:

An exposed wall may be breached with certainty at distances from 500 to 700 yards, even when elevated 100 feet above the breaching battery; and it is believed that in case of extreme necessity it would be justifiable to attempt to batter down an exposed wall from any distance not exceeding 1,000 yards; but then the quantity of artillery must be considerable, and it will require from four to seven days' firing, according to the number of guns in battery and the period of daylight, to render a breach practicable.

During the Peninsular war breaching at 500 to 700 yards was of frequent occurrence, and at the second siege of Badaajos fourteen brass 24-pounders breached an exposed castle wall backed by earth alone, and consequently much weaker than a scarp sustained in the rear by heavy piers and arches, in eight hours, at a distance of 800 yards.

Experiments of breaching with rifled guns have recently been made. I shall notice two cases:

In August, 1860, experiments with Armstrong's rifled guns were made against a condemned martello tower at Eastbourne, on the coast of Sussex, England. The tower was of brick, fifty-six years old, and designed for one gun, the wall being 7 1/2 feet thick at the level of the ground and 5 3/4 thick at the spring of the vault, which was 19 feet above the ground. It was 31 1/2 feet high, 46 feet exterior diameter at the bottom, and 40 feet at the top. The pieces used against it were: one 40-pounder of 4 3/4-inch caliber, one 82-pounder of 6-inch caliber, and one 7-inch howitzer throwing 100-pound shells. A practicable breach, 24 feet wide, including most of the arch, was made with an expenditure

of 10,850 pounds of metal, at a distance of 1,032 yards. The projectiles expended were: 40-pounder gun, 20 solid shot, 1 plugged shell, 43 live shells; 82-pounder gun, 19 solid shot, 8 plugged shells, 36 live shells; 7-inch howitzer, 2 plugged shells, 29 live shells.

Projectiles that failed to hit the wall are excluded from the above table.\* General Sir John Burgoyne, in his report upon these experiments, says: Trials were subsequently made to breach a similar tower from smooth-bored 68 and 32-pounders at the same range of 1,030 yards, and the result may be deemed altogether a failure, both accuracy of fire and velocity of missiles being quite deficient for such a range. At 500, or perhaps 600, yards the superiority of the rifled ordnance would probably have been very little, if any.

Experimental siege operations for the instruction of the Prussian army, comprising the demolition of the defective and obsolete fortifications at Juliers, were carried on in the month of September, 1860, especially with reference to the effect of rifled breech-loading guns.

The following brief summary of the breaching experiments is taken from the report of Lieutenant Colonel A. Ross, Royal Engineers:

Four 12-pounder iron guns and two 12-pounder brass guns, weighing, respectively, 2,700 pounds and 1,300 pounds, throwing a conical ball weighing 27 pounds, and fired with a charge of 2.1 pounds, at 800 Prussian paces (640 yards), made a practicable breach 32 feet wide in a brick wall 3 feet thick, with counter-forts 4 feet thick, 4 feet wide, and 16 feet from center to center, the wall being 16 feet high, and built en decharge, after firing 126 rounds. The first six rounds are omitted from this calculation, as they did not strike the wall, the wall being entirely covered from the guns. No difference was observed between the effects of the brass and the iron guns. The bursting charge of the shells was fourteen-fifteenths of a pound. The penetration was 15 inches.

Six 6-pounder guns, four of iron and two of cast steel, weighing, respectively, 1,300 and 800 pounds, throwing a conical shell weighing 13 pounds, and firing with a charge of 1.1 pounds, at 50 paces, made a practicable breach 70 feet wide, in precisely the same description of wall as that above described, after firing 276 rounds, the battery being situated on the counterscarp opposite the wall. No difference was observed between the effects of the cast steel and iron guns. The bursting charge of a shell was half a pound. The penetration of the first single shot averaged 18 inches.

Four 24-pounder iron guns, weighing between 53 and 54 hundredweight, throwing a shell weighing 57 pounds and firing with a charge of 4 pounds, at a distance

of 60 yards made a practicable breach 62 feet wide in a loop-holed brick wall 24 feet high and 6 1/2 thick after firing 117 rounds, the wall being seen from the battery. The bursting charge of the shell was 2 pounds. The penetration of the two first single shots was 2 1/2 and 3 feet.

The same guns, after firing 294 rounds with the same charges and at a distance of 96 yards, made a breach 46 feet wide in a brick wall 40 feet high and 12 feet thick at the foot, with a batter of about 4 feet. The wall was 12 feet thick, and built en decharge, with counter-forts 6 feet wide and 16 feet from center to center, and connected by two rows of arches, one above the other. The penetration of the first single shot was 3 feet and 3 1/2 feet. All the above-mentioned guns were rifled breach-loaders.

It is impossible to institute a very close comparison of the relative value of rifled and smooth-bore guns for breaching purposes from any data which experience has thus far developed.

The experiments at Eastbourne, hereinbefore mentioned, are the only ones on record where they have been tried side by side to the extent of actual breaching against the same kind of masonry and at the same distance. We have seen how on that occasion the rifles were a complete success, while the smooth-bores were an utter failure.

Against brick walls the breaching effect of percussion shell is certainly as great as that of solid shot of the same caliber. They do not penetrate as far by 20 to 25 per cent., but by bursting they make a much broader crater. Such shell would doubtless break against granite walls without inflicting much injury.

Sir W. Dennison, from a comparison of the several sieges in Spain during the Peninsular war, estimated that a practicable breach at 500 yards could be made in a rubble wall backed by earth by an average expenditure of 254,400 pounds of metal fired from smooth-bore 24-pounders for every 100 feet in width of breach equal to 2,544 pounds of metal for every linear foot in width of breach.

Before we can draw any comparison, however imperfect, between this estimate and the results obtained at Fort Pulaski, it is necessary to make certain deductions from the amount of metal thrown from the breaching batteries used against that work, as follows:

*First.* For the shots expended upon the barbette guns of the fort in silencing their fire.

*Second.* For 10 per cent. of Parrott projectiles, which upset from some defect which I know from personal observation has been entirely removed by the recent improvements of the manufacturer.

*Third.* For nearly 50 per cent. of the 64-pound James shot, due to the fact that one of the two pieces from which they were thrown had by some unaccountable oversight been bored nearly one-fourth of an inch too large in diameter, and gave no good firing whatever. Making these deductions, it results that 110, 643 pounds of metal were fired at the breach.

The really practicable portion of the breach was of course only the two casemates that were fully opened, say 30 feet in aggregate width; but the scarp wall was battered down in front of three casemate piers besides, and had these piers not been there, or had the scarp been backed by earth alone, as was generally the case in Spain, the practicable portion of the opening would have been from 45 to 50 feet wide. Calling it 45 feet, the weight of metal thrown per linear foot of breach was 2,458 pounds, against 2,544 per linear foot in the Peninsular sieges. Had the fort held out a few hours longer this difference would have been much greater, for the wall was so badly shattered to the distance of 25 or 30 feet each side of the breach that the opening could have been extended either way with a comparatively trifling expenditure of metal. On repairing the work 100 linear feet of the scarp wall had to be rebuilt. It must be borne in mind that at Fort Pulaski only 58 per cent. of the breaching metal was fired from rifled guns, the balance being from smooth-bored 8-inch and 10-inch columbiads (68 and 128 pounders) of Battery Scott.

It may therefore be briefly and safely announced that the breaching of Fort Pulaski at 1,700 yards did not require as great an expenditure of metal, although but 58 per cent. of it was thrown from rifled guns, as the breaches made in Spain with smooth-bores exclusively at 500 yards. In the former case the wall was good brick masonry, laid in lime mortar, and backed by heavy piers and arches; in the latter, rubble masonry, backed by earth.

A knowledge of the relative value of heavy round shot, 10-inch for example, and elongated percussion shells from lighter guns, say James 64-pounders (old 32-pounders), in bringing down the masses of brick masonry cracked and loosened by the elongated solid shot, is a matter of some importance, considering the vast difference in the amount of labor required to transport and handle the two kinds of ordnance. The penetration of the percussion shell would exceed, and its local effect would at least equal, that of the solid round shot. The general effect of the latter, within certain rangers, is a matter for consideration.



My own opinion, based principally upon personal observation, corroborated by the reports of experiments made in Europe, may be stated in the following terms:

*First.* Within 700 yards heavy smooth bores may be advantageously used for breaching, either alone or in combination with rifles.

*Second.* Within the same distance light smooth-bores will breach with certainty, but rifles of the same weight are much better.

*Third.* Beyond 700 yards rifled guns exclusively are much superior for breaching purposes to any combination of rifles and heavy or light smooth bores.

*Fourth.* Beyond 1,000 yards a due regard to economy in the expenditure of manual labor and ammunition required that smooth-bores, no matter how heavy they may be, should be scrupulously excluded from breaching batteries.

*Fifth.* In all cases when rifled guns are used exclusively against brick walls at least one-half of them should fire percussion shells. Against stone walls shell would be ineffective.

For breaching at long distances the James and Parrott projectiles seem to be all that can be desired. The grooves of the James gun must be kept clean at the seat of the shot. This is not only indispensably necessary, but of easy and ready attainment, by using the very simple and effective scraper devised on the principle of the searcher for the pieces we employed against Pulaski. This scraper consists of a number of steel springs or prongs, one for each groove, firmly attached by screws to the cylindrical part of a rammer-head, and flaring like a broom, so as to fit closely into the grooves. About half an inch of the lower end of each prong is bent out at right angles. The prongs being compressed by a ring, to which a lanyard is attached, when entering the bore spring out firmly into the grooves when the ring is removed, and clean them thoroughly as the scraper is drawn out.

The failure of the James shot, as reported on two or three occasions by apparently good authority, is probably due to neglect in this particular. There were no failures in our firing, except as before mentioned, with the 32-pounders (carrying a 64-pound shot), that had been bored too large.

Although the James projectiles are surrounded when first made by greased canvas, there is believed to be an advantage in greasing them again at the moment of loading. This was done in our batteries against Fort Pulaski. As the

Parrott projectiles receive their rotary motion from a ring of wrought-iron or brass which surrounds the lower portion of the cylinder, and which does not foul the grooves while engaging them, no special precaution to prevent fouling need be taken with the Parrott guns.

With heavy James or Parrott guns the practicability of breaching the best-constructed brick scarp at 2,300 to 2,500 yards with satisfactory rapidity admits of very little doubt. Had we possessed our present knowledge of their power previous to the bombardment of Fort Pulaski, the eight weeks of laborious preparation for its reduction could have been curtailed to one week, as heavy mortars and columbiads would have been omitted from the armament of the batteries as unsuitable for breaching at long ranges.

It is also true beyond question that the minimum distance, say from 900 to 1,000 yards, at which land batteries have heretofore been considered practically harmless against exposed masonry, must be at least trebled, now the rifled guns have to be provided against.

The inaccuracy of the fire of the 13-inch mortars has already been adverted to. Not one-tenth of the shells dropped inside of the fort. A few struck the terre-plain over the casemate arches, but, so far as could be observed by subsequent inspection from below, without producing any effect upon the masonry. Whether they penetrated the earth work to the roofing of the arches was not ascertained.

Two or three striking in rapid succession into the same spot over an arch might be expected to injure it seriously, if not fatally. Such an occurrence would, however, be rare indeed. Against all, except very extraordinary casualties, it would be easy for a garrison to provide as they occurred, by repairing with sand bags or loose earth the holes formed in the terre-plain by shells.

We may therefore assume that mortars are unreliable for the reduction of a good caseated work of small area, like most of our sea-coast fortifications.

As auxiliary in silencing a barbette fire, or in the reduction of a work containing wooden buildings and other exposed combustible material, mortars may undoubtedly be made to play an important part.

For the reduction of fortified towns or cities, or extensive fortresses containing large garrisons, there is perhaps no better arm than the mortar, unless it be the rifled gun, firing at high elevations.

To the splinter-proof shelters constructed for the seven advanced batteries I attribute our almost entire exemption from loss of life. We had 1 man killed by a shell from one of the mortar batteries outside the fort, which was the only casualty.

The demoralizing effect of constant and laborious fatigue duty upon the health and discipline of troops, particularly upon such as are unused to the privations of war, like our volunteers, who can but slowly adapt themselves to the stinted comforts of a campaign, is a subject which demands the earnest attention of commanding officers in the field.

Upon regular troops, to whom the drill in their special arm has to a certain extent become a second nature, who are accustomed to the vicissitudes of the field and familiar with expedients and make-shifts to secure comfort, the bad effects of excessive labor and constant interruption of drill are of course less apparent.

With the average of our volunteer regiments every alternate day should be devoted to drill, in order to keep them up to a fair standard of efficiency.

Very respectfully, your obedient servant,  
**Q. A. GILLMORE,**  
**Major-General Volunteers.**

**HEADQUARTERS ARTILLERY RESERVE,**  
**December 22, 1861.**

**General S. WILLIAMS,**  
**Assistant Adjutant-General, Army of the Potomac:**

GENERAL: I have respectfully to call attention to the want of men in the batteries of the reserve. The number of companies present is seventeen; total strength required for seventeen batteries, 2,550. There are but thirteen batteries, two companies being united in four cases in the same battery. The number of men required for thirteen batteries is 1,950. The total number of enlisted men reported this morning as belonging to the companies, (including) 69 reported absent, is 1,435..

To complete fully the thirteen batteries would therefore require 500 men; to complete the seventeen batteries, 1,100 are required; from 400 to 1,000 men would probably answer..

I respectfully urge that some means be taken to furnish recruits to these batteries. They are commanded many of them by experienced officers, and are supplied with old non-commissioned officers, whose services it is important to make available to the fullest extent. If special recruiting rendezvous cannot be established, recruits may possibly be obtained from the regiment of volunteers by discharging from the service those who are willing to re-enlist from the batteries, with a promise that they shall be discharged at the end of the war if they desire it..

I am, sir, very respectfully, your obedient servant,.

**HENRY J. HUNT,**  
**Colonel, Commanding..**

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