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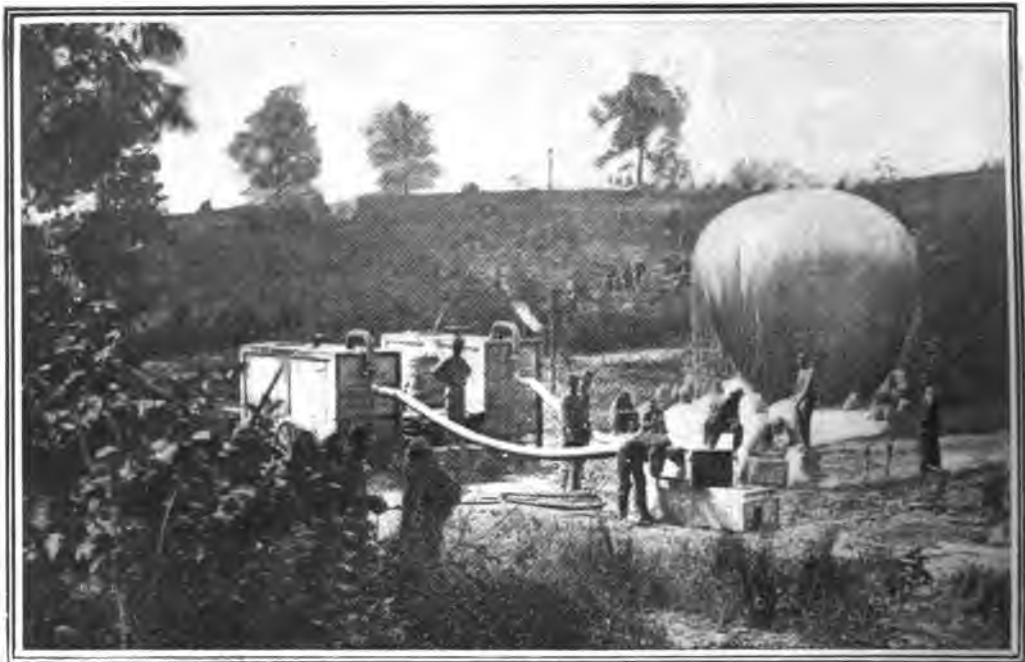
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INFLATING THE BALLOON "INTREPID" TO RECONNOITER THE BATTLE OF FAIR OAKS, JUNE 1, 1862
 (Professor Lowe stands at the right, with his hand on the network of the balloon. This and the three following pictures are reproduced from the REVIEW OF REVIEWS' collection of Civil War photographs)

OBSERVATION BALLOONS IN THE BATTLE OF FAIR OAKS

BY T. S. C. LOWE

[The article which follows has a double interest to readers of the REVIEW OF REVIEWS. Its account of war ballooning half a century ago is sufficiently detailed to prove instructive to the many students of modern aeronautics. The unusual manner in which the contribution was obtained is also worthy of remark. Professor Lowe wrote to the magazine after discovering himself and his balloon represented in a picture from the REVIEW OF REVIEWS' collection of Civil War photographs. This collection, numbering several thousand photographs, all taken between 1861 and 1865, was accumulated for the purpose of illustrating "The Photographic History of the Civil War," a ten-volume work now in preparation. In connection with its publication a series of articles will appear in the REVIEW OF REVIEWS during 1911, commemorative of the semi-centennial anniversary of the Civil War outbreak. Professor Lowe's present contribution thus serves as an introduction to the series of articles, which will begin in the March number, and will not only include the reminiscences and narratives of surviving participants of this greatest of civil conflicts, but also the conclusions of modern military scientists with regard to the strategy and conduct of the war. Mr. George Haven Putnam, Admiral French E. Chadwick, Gen. T. F. Rodenbough, Gen. Charles King, Gen. A. W. Greely, and other former Union soldiers, will contribute, as well as several who participated on the Confederate side.—THE EDITOR.]

WHEN I saw the photograph showing my inflation of the balloon *Intrepid* to reconnoiter the Battle of Fair Oaks—a photograph that constitutes one of the illustrations in "The Photographic History of the Civil War"—it surprised me very indeed.

Any one examining the picture will see my hand at the extreme right, resting on the network, where I was measuring the amount of gas already in the balloon, preparatory

to completing the inflation from gas in the smaller balloon in order that I might ascend to a greater height. This I did within a space of five minutes, saving a whole hour at the most vital point of the battle. With the conditions then existing, I estimate the value of that hour to the Union army at not less than a million dollars a minute.

A volume of my reminiscences, in press at the time of writing, deals with this early epi-



PROFESSOR LOWE ASCENDING WITH HIS BALLOON "INTREPID" TO RECONNOITER THE BATTLE OF FAIR OAKS

sode in the history of war balloons more in detail. Four weeks before, midnight observations with one of my war balloons had enabled me to discover that the fortifications of Yorktown (before which McClellan's advance toward Richmond had halted) were being evacuated. After full confirmation of the fact, I aroused the commanding general and other quietly sleeping corp commanders in time to put the whole army in motion, in the very early hours of the morning, which enabled us to overtake the Confederate army at Williamsburg, about half way between Yorktown and Richmond.

FROM WILLIAMSBURG TO RICHMOND

Without the time and knowledge gained by the midnight observations, the battle of Williamsburg might never have taken place, and the Confederates might have gotten away with all their stores and ammunition without injury.

It was also my practice of night observations which gave the primary knowledge that saved the Army of the Potomac at the Battle of Fair Oaks.

On arriving in sight of Richmond I took observations to ascertain the best location for crossing the Chickahominy River. The

one selected was where the Grape Vine or Sumner Bridge was afterward built across that stream. Mechanicsville was the nearest point to Richmond, being only about four miles away, but there we would have to face the gathering army of the Confederacy, together with the only point properly fortified with trenches and earth works. Here I established one of my aëronautic stations, where I could better estimate the increase of the Confederate Army, and observe their various movements.

ON THE CHICKAHOMINY

My main station and personal camp was on Gaines' Hill, overlooking the bridge where our army was to cross.

After this bridge was completed, about half of our army crossed over on the Richmond side of the river. The remainder delayed a while to protect our transportation supplies and railway facilities. In the meantime the Confederate camp in and about Richmond grew larger every day. Suddenly a heavy rain caused the Chickahominy to resemble a lake, rather than a small stream. This completely cut off the supplies to General Heintzelman's command. The water flowed deeply at both ends of the bridge, which under great difficul-

ties must be lengthened before the balance of our army or supplies could cross over.

General Lee saw the fix that we were in. He immediately took advantage of it by calling on Jackson and his command, and every other source from which soldiers could be gathered.

General McClellan made a request for a portion of the good-sized army at Washington to guard his supply trains. The remainder of the army was to join Heintzelman as quickly as the extension of the bridge could be completed. He was led to believe that this reasonable request would be acceded to. He asked me to take frequent observations in that direction and to let him know as soon as I spied reinforcements coming.

My report that no reinforcements were in sight was a great disappointment to the General. To join that portion of the army that had already crossed would uncover his source of supplies, and leave him quite isolated should he not be able to capture the city of Richmond, the defenses of which were fast being strengthened.

My night and day observations convinced me that, with the great army then assembled in and about Richmond, we were too late to gain the victory which a short time before had been within our grasp.

CONFEDERATE ATTACK ON A BALLOON

In the meantime, desperate efforts were being made at Mechanicsville to destroy my observation balloon. At one point the

Confederates massed twelve of their best rifled cannon. While I was taking an early morning observation, all these twelve guns were simultaneously discharged at short range. Some of the shells passed through the rigging of the balloon. Nearly all burst not more than 200 feet beyond me. Evidently, through spies, they had got my base of operation and range perfectly.

I quickly changed my base after that, and they never again came so near destroying the balloon—and myself.

DISCOVERING A CONFEDERATE ADVANCE FROM RICHMOND

I felt that it was important to take thorough observations of their camps that very night, at that point. I did so. I saw the great camps about Richmond ablaze with camp fires. From previous experience I realized what this meant. The Confederate troops were cooking rations preparatory to a movement. I knew that this must be aimed against that portion of the army then across the river.

At daylight the next morning (June 1st) I took another observation, continuing until the sun lighted up the roads. The atmosphere was perfectly clear. I knew exactly where to look for their line of march. I soon discovered one, then two, and finally three columns of troops, with artillery and ammunition wagons, moving toward Heintzelman's command.

All this information was conveyed to the



THE BALLOON "CONSTITUTION" IN USE BY PROFESSOR LOWE DURING THE BATTLE OF FAIR OAKS

(This was the smaller of the balloons employed by Professor Lowe in his observation work. During the battle its lifting power proved insufficient and its gas was transferred to the larger balloon *Intrepid*.)



PROFESSOR LOWE (IN CENTER) COMPLETING A DISPATCH AT THE BATTLE OF FAIR OAKS, JUST BEFORE ASCENDING WITH TELEGRAPH APPARATUS AND WIRE

Commanding General. I was surprised and gratified at the rapidity with which he added a great force to the work on both ends of the bridge.

TRANSFERRING GAS FROM ONE BALLOON TO ANOTHER

I operated the balloon *Washington* at Mechanicsville for observations until the Confederate army had reached within four or five miles of our lines. I then telegraphed my assistants to inflate the large balloon *Intrepid*, in case anything should happen to either of the other two balloons. This order was quickly put in motion. A six-mile ride on horse brought me back to my camp at Gaines' Hill. I took another observation from the balloon *Constitution*, but found it necessary to double the altitude usually sufficient in order to overlook the forests and hills intervening.

To carry up my telegraph apparatus wires and cables at this double height, the lifting force of the *Constitution* proved too weak. I was put to my wits' end as to how I could best save an hour's time, which was the most important and precious hour of all my experiences in the army. The two armies visibly came nearer and nearer together. There was no time to be lost.

It flashed through my mind that if I could only transfer the gas from the smaller balloon *Constitution* into the balloon *Intrepid*, then only half filled, I could save an hour's time, and to us that hour's time would be worth a million dollars a minute.

But how to rig up the proper connection between the balloons? And in the little time remaining? I was at a loss—until I glanced down and saw a ten-inch camp kettle, which instantly gave me the key to the situation. I immediately ordered the bottom cut out of the camp kettle, the *Intrepid* disconnected from the gas generating apparatus, the *Constitution* brought down the hill—and, in the course of five or six minutes, connection was made to both balloons, and the gas in the *Constitution* transferred into that of the *Intrepid*. This one simple act, in my opinion, saved the Union army from destruction.

TELEGRAPHING FROM THE SKY

I immediately took a high altitude observation as rapidly as possible, wrote my most important despatch to the Commanding General on my way down, dictated it to my expert telegraph operator; then, with the telegraph cable and instruments, ascended to the height desired, and remained there almost constantly during the entire battle, keeping the wires hot with information.

The Confederate skirmish line soon came in contact with our outposts. I perceived the whole well-laid plan. They had massed the bulk of their artillery and troops on our right wing, then resting near the Chickahominy River, not only with the intention of cutting off our ammunition supplies, but to prevent the main portion of the army from crossing the bridge to join Heintzelman. In the meantime they had planned a raid to cut



PROFESSOR T. S. C. LOWE

off our supplies from the north, which that portion of the army, not yet over the river, for the time being prevented.

As I reported the movements of the Confederates, I could see that, in a very few minutes, the Union troops were maneuvering to offset their plans.

THE FIGHTING AT FAIR OAKS

At about twelve o'clock of June 1 both armies were in deadly conflict along the whole line. Our army not only held its line firmly, but repulsed the enemy at all its weaker points.

In the meantime many brigades and regiments had entirely exhausted their ammunition. Brave Heintzelman rode along the line giving orders for the men to shout. Then I could hear the shouts distinctly—but they

did not spring with the heartiness that was hoped for; a soldier with an empty cartridge box does not feel much like shouting.

CROSSING THE RIVER

It was one of the greatest strains upon my nerves that I have ever experienced, to observe for many hours an almost drawn battle, while the bridge to connect the two armies still lacked completion. By four o'clock, however, our first troops under Sumner's command were able to cross, followed by wagons of ammunition.

As these troops swung in line I could hear a real shout, which sounded entirely different from the former one.

The Confederates then began to prepare a retreat. Their wagons were turned toward Richmond and the fighting force kept intact until after nightfall, leaving us the victors. For the want of the reinforcements requested, we were in no position to follow them over their earth works into Richmond.

We had saved the army, which on the following day began its masterly fighting retreat to the James River.

[EDITOR'S NOTE.—Appended is a quotation from the Confederate General Longstreet's reminiscences, describing Professor Lowe's ballooning as it appeared to the men in gray. It is remarkable that Professor Lowe himself assisted in the capture of the Confederate balloon. General Longstreet writes: "It may be of interest to relate an incident which illustrates the pinched condition of the Confederacy even as early as 1862.

"The Federals had been using balloons in examining our positions, and we watched with envious eyes their beautiful observations as they floated high up in the air, well out of range of our guns. While we were longing for the balloons that poverty denied us, a genius arose for the occasion and suggested that we send out and gather silk dresses in the Confederacy and make a balloon.

"It was done, and soon we had a great patchwork ship of many and varied hues which was ready for use in the Seven Days' campaign.

"We had no gas except in Richmond, and it was the custom to inflate the balloon there, tie it securely to an engine, and run it down the York River Railroad to any point at which we desired to send it up. One day it was on a steamer down the James River when the tide went out and left vessel and balloon high and dry on a bar. The Federals gathered it in, and with it the last silk dress in the Confederacy. This capture was the meanest trick of the war and one I have never yet forgiven."]

