

YANKEE FLYING MACHINE

No this is not an April's Fools Day prank! Some of you may recall an article from Volume 2, Issue 5, February 2013 of the *Swamp Angel* newsletter where I mentioned Colonel Edward Wellman Serrell. He was a prominent civilian engineer in New York prior to the Civil War. He organized and offered to President Lincoln, the 1st New York Volunteer Engineer Regiment, of which he was elected its Colonel, he was chief assistant engineer to Major-General Quincy for the duration of the siege of Charleston and was the architect of the Marsh Battery/Swamp Angel. But he is also known for something far different. He conceptualized a heavier-than-air flying machine.



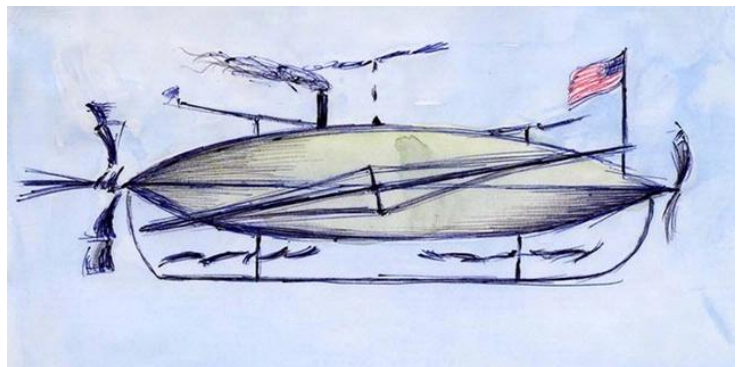
Colonel Edward W. Serrell

While at Port Royal in 1862, Colonel Serrell became intrigued with a toy flying top that one of the other engineering officers had in his possession. This toy with a circular tin fan-screw shaped blade was wound up with a string and a handle and spun like a humming top. It would fly up into the air a hundred feet or more, dependent upon the force applied to it. It could carry a lead bullet or two if the string were pulled hard enough.

While in camp Serrell and several of the engineers engaged in lively discussions on topics such as astronomy and navigating the air. It was Serrell's contention, that a mechanical flying machine could be designed, that would have its own power to raise and lower itself as well as to propel itself through the air. He took the toy along with his ideas and presented them to the commander of the Tenth Army Corps, General Ormsby Mitchell who, himself, was an astronomer, mechanic and mathematician. Mitchell concluded that it would be well to consider the problem of air navigation without the use of gas bags. Before anything further could be accomplished towards that end, General Mitchell succumbed to yellow fever.

Discussions continued throughout the next year during the investment of Charleston. The Tenth Army Corps was then transferred to Petersburg, Virginia. Now the question of what the enemy was up to became very important to the engineers. Colonel Serrell took his toy top, sketches and explanation to Major-General Benjamin Butler, commander of the Army of the James, who immediately expressed a belief that the machine could be constructed and would provide valuable information as well as drop high explosives upon the enemy. Butler ordered construction to begin immediately and placed Colonel Serrell in charge of the project, interjecting that no funds would be made available to cover the costs. Serrell went to Philadelphia and New York to raise funds and begin the work.

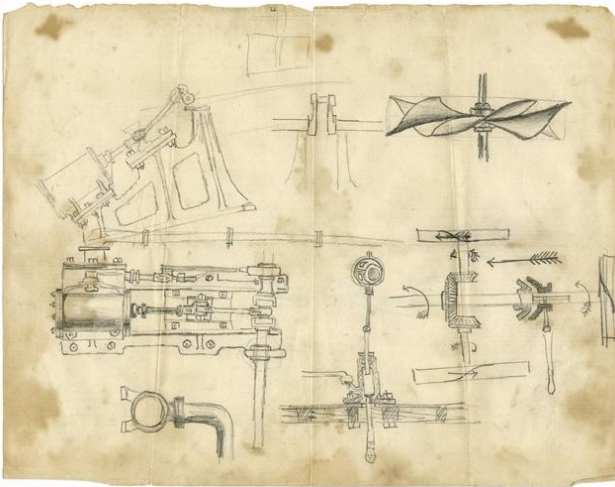
The machine, which he called the *Reconoitere* would be lifted into the air by twin sets of rotary blades above and below the body or shell and driven forward by propellers in the front and rear. The cigar-shaped body was to have a copper shell measuring 52 feet in length with landing runners on the underside. Two large copper plates, each measuring nine feet in span and 45 feet, 8 inches long, were to be positioned on either side of the shell.



Edward Serrell's Flying Machine *Reconoitere*

The two plates or wings, were connected to a crank running through the body so that the crew could incline or depress the wings up to six degrees above or below the horizontal.

A chamber at the bottom, inside the shell would serve as a reservoir for the boiler water, with an additional chamber directly above this for the coal. A light-weight high pressure vertical steam engine with a vertical



Serrell's Sketches of the Steam Engine and Gearing

boiler was to be housed in the rear of the shell. A series of moveable balls were to be used to balance the *Reconiterer*. The total estimated weight at take-off, including a crew of three and enough water and coal for an eight hour flight was 8 ½ tons.

Meanwhile, back at the war, General Butler was replaced with General Ord, who then demanded to know where Serrell was and what he was doing. Colonel Serrell responded claiming to be on recruiting duty, but when Ord had learned what the real reason was, Edward Serrell had already resigned his commission to save his reputation.

Unlike other flying machine designers during the war, Serrell was the only one to conduct serious engineering tests and he had what he believed to be the suitable power plant as well as large sections of the under construction when the war ended. Serrell continued with his efforts for a time, finally abandoning the project when it became apparent that steam propulsion was inadequate.