

## ***SUBMARINES, SECRETS & A DARING RESCUE***

***By Robert J. Skead and Robert A. Skead***



### **Study Guide**

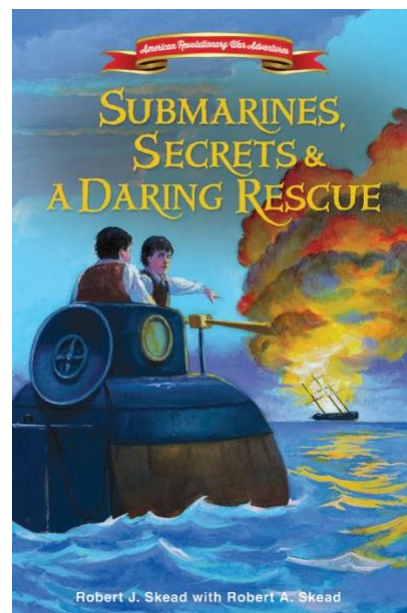
#### **About the Book**

**To George Washington they are patriots.**

**To loyalists they are traitors.**

**To their older brother ... they are his only hope.**

Fifteen-year-old twins, Ambrose and John Clark, once again find themselves in the thick of things in service of the newly forming United States of America. Their new mission: help transport much-needed gunpowder to the patriots. When they end up in an even more dangerous situation—manning one of the first submarines—it seems the worst is behind them. Until they have to attempt a prison break to rescue one of their older brothers. Follow these brave young patriots along the Hudson River Valley from New Jersey to Connecticut as they continue to follow in their father’s footsteps and take even bigger leaps of faith.



#### **About this Study Guide**

This Study Guide, based on the book *Submarines, Secrets and a Daring Rescue*, by Robert J. Skead and Robert A. Skead, published by Knox Press [www.knoxpress.com](http://www.knoxpress.com), provides educators with additional content, ideas, activities and resources to engage children (ages 9-13) with the American Revolution, and learn about the importance of gunpowder during the American Revolution, the significance of gunpowder and understanding the consequences of one’s decisions. Order additional copies from where ever books are sold, or from Simon & Schuster, (800) 223-2336, ISBN: 978-1682619605

#### **Classroom Activity: Pre Reading**

## Vocabulary & Terminology



1. Pre-teach vocabulary with a **Vocabulary Graffiti Wall**
2. Make inferences based on the characters and vocabulary acquired

3. The following terms and words from the colonial period may be unfamiliar to your students. Before reading the book, students can work alone or in pairs to define the words/terms, research them more in depth (as needed), and/or check for understanding with another student. quiz a fellow student on them.

### American Turtle

The **American Turtle** was the world's first submersible used in combat. David Bushnell built it in Old Saybrook, Connecticut, in 1775 as a means of attaching explosive charges to British Royal Navy vessels occupying North American harbors during the Revolutionary War. Connecticut Governor Jonathan Trumbull recommended the invention to George Washington. The commander-in-chief was skeptical, but he supported the development and testing of the vessel. In 1776, the *Turtle* made several attempts to attach explosives to the hulls of British warships in New York Harbor. All failed. The *Turtle's* transport ship was sunk later that year by the British with the submarine aboard. Bushnell said he recovered the machine, but its final fate is unknown.

### The Battle of Fort St. George

The Battle of Fort St. George was a raid on a fortified Loyalist outpost and storage depot on Long Island led by Major Benjamin Tallmadge on November 23, 1780. Tallmadge's raid was a success—the garrison was surprised, and provisions and prisoners were captured.

Many Loyalist refugees from Rhode Island lived at Fort St. George where they fortified the property, erecting a stockade twelve feet high in a triangular shape around the manor house. The stockade was lined with sharpened tree branches and a deep ditch.

Major Tallmadge led a force of about eighty men from his 2nd Continental Light Dragoons and ordered his men to leave their muskets unloaded and bayonets fixed. He divided his force into three, with each unit to attack one of the stockade's sides. Tallmadge's party was not spotted until it was within forty yards of the stockade. A sentry fired his weapon to raise the alarm, but there was not time for the British Tories to organize a proper defense. The group, led by Tallmadge, rushed the stockade and cut its way through, while two other units scaled the wall, and the main house was surrounded and surrendered in less than ten minutes. Some of the Loyalist garrison reached a fortified house that formed part of the stockade, but they surrendered after a brief firefight.



### **Bayonet**

A blade attached to the muzzle of a rifle and used for hand-to-hand combat

### **Continental Congress**

A meeting of representatives from the Thirteen Colonies during the American Revolutionary War that eventually became the governing body of the newly formed United States of America. The first continental congress met in 1774 in reaction to the Coercive Acts, measures the British imposed on the colonies in response to their resistance of new taxes. The Second Continental Congress met in 1775 after the Revolutionary War had begun and in 1776, it declared America's independence from Britain.

### **Culper Spy Ring**

British forces occupied New York in August 1776, and the city remained a British stronghold and a major naval base for the rest of the Revolutionary War. Though getting information from New York about British troop movements and other plans was critical to General George Washington, there was simply no reliable intelligence network that existed on the Patriot side. But that changed in 1778 when a young cavalry officer named Benjamin Tallmadge established a small group of trustworthy men and women from his hometown of Setauket, Long Island. Known as the Culper Spy Ring after the aliases of its

main members, Samuel Culper, Sr. and Samuel Culper, Jr., Tallmadge's network became the most effective of any intelligence-gathering operation on either side during the Revolutionary War.



### **Frigate**

During the Revolutionary War period, this is a warship built for speed and maneuverability. A frigate usually had guns mounted on deck and three masts. See here for more information: [Naval History Blog » Blog Archive » Frigates, Brigs, Sloops, Schooners, and the Early Continental Navy's Struggle for Success](#)

### **Lobsterback**

A slang term used by Americans for British soldiers because the red coats worn by the British resembled the red shells of cooked lobsters.

### **Loyalists**

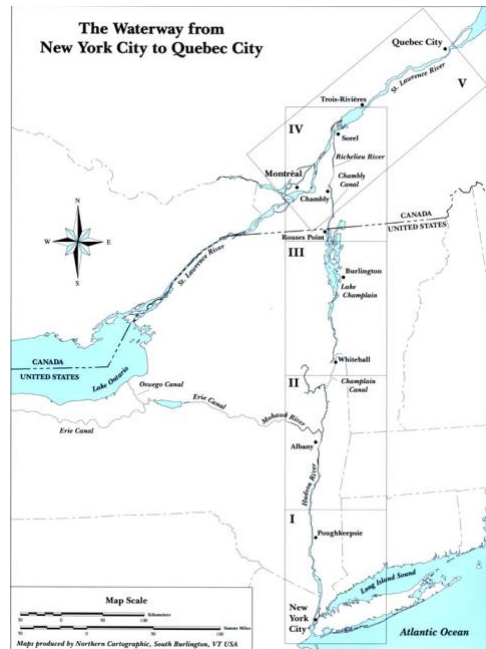
American colonists who remained loyal to Great Britain during the American Revolutionary War. They were also called Tories, Royalists, or King's Men. They were opposed by the Patriots, those who supported the Revolution. When their cause was defeated, about twenty percent of the Loyalists fled to other parts of the British Empire, many to Ontario and New Brunswick, Canada. It has been estimated that between fifteen and twenty percent of the European-American population of the colonies were Loyalists.

### **Musket**

A muzzle-loaded, smooth bore long gun, fired from the shoulder. Muskets were designed for use by infantry and included a bayonet.

### **North River**

The North River was also referred to as the Hudson River on some maps in the eighteenth century. It is commonly called the Hudson River today. Here's a terrific resource on the importance of the Hudson River in New England and access to Canada. [cruising-guide-to-the-hudson-river-lake-champlain-the-st-lawrence-river-7th-ed-29.jpg \(700x928\) \(yimg.com\)](#)



### **The Sons of Liberty**

A group made up of American patriots that originated in the pre-independence colonies. The group was formed to protect the rights of the colonists from the British government after 1766. They are best known for the Boston Tea Party in 1773, which led to the Intolerable Acts (an intense crackdown by the British government). The Patriots' counter-mobilization to these Acts led directly to the American Revolutionary War in 1775.

**Tory** See **Loyalists**

### **West Point**

West Point, in the state of New York, was a fortified site during the Revolutionary War. Founded by one of the best military men of the time, Polish General Tadeusz Kościuszko, the site was strategically chosen for the abnormal S-curve in the Hudson River. West Point was manned by a small garrison of Continental soldiers through the entirety of the war. A great iron chain was stretched across the Hudson at this point in order to impede British Navy vessels, but its usefulness was never tested. The site consisted of multiple fortifications, including Fort Putnam, which is still preserved in a Revolutionary-period design.

## Activity: The Big Interview

Before reading *Submarines, Secrets and a Daring Rescue*, students can work in pairs to create interview questions for one or more of the characters below, based on the information on the book.



After completing the story, students can finish the interview by creating answers.

## Historical Context and Characters

**David Bushnell** (August 30, 1740 – August 30, 1824) David Bushnell was an American inventor and veteran of the Revolutionary War. While studying at Yale College in 1775, Bushnell created the first submarine ever used in combat. His idea to use water as ballast for submerging and raising his submarine, called the *Turtle*, is still in use today. While a student at Yale, Bushnell proved gunpowder could be exploded under water. He also invented the first timebomb. The *Turtle* combined these ideas to attack ships by attaching a time bomb to their hulls, while using a hand-powered drill and ship auger bit to penetrate the hulls.

Bushnell used the *Turtle* in attempts to attack British ships blockading New York Harbor in the summer of 1776. Unfortunately, his efforts failed every time because the *Turtle*'s boring device could not penetrate the copper sheathing lining the British ships' hulls, which was designed to protect them against parasites. The first *Turtle* sank while retreating from British observation, but a Bushnell family member who was serving as the sole commander was able to bail out and survive.

In 1781, Bushnell was commissioned as a captain in the Continental Army. He fought in the Siege of Yorktown. After the Revolutionary War, General George Washington presented a medal to David Bushnell. He died in Georgia in 1824.

**Caleb Gibbs** (February 28, 1748 – November 6, 1818) Caleb Gibbs was a captain in the Fourteenth Massachusetts Regiment. In 1776, General Washington picked Gibbs to

command his newly established personal guard, officially known as the “*Commander-in-Chief’s Guard*,” and unofficially called the “*Life Guards*.” It was a unique position. Gibbs was considered a member of General Washington’s family, but he was also an army officer with combat command. In addition to protecting the Commander-in-Chief and the headquarters, Gibbs was responsible for selecting defensible quarters for General Washington and his staff when the army was on the move. When the General was traveling, Major Gibbs often mounted a guard to accompany him.



**Nathan Hale** (June 6, 1755—September 22, 1776) Hale was a young but passionate soldier for the Continental Army. When he was twenty-one, Hale volunteered for an intelligence-gathering mission in New York City, but the British captured him. He is best remembered for his last words said before being hanged: “I only regret that I have but one life to give for my country.”

**Gold Silliman** (May 7, 1732 – July 21, 1790) A native of Fairfield, Connecticut, Gold Silliman graduated from Yale University and practiced law as a crown attorney before the Revolution. During the War for Independence, Silliman became a militia general. In May 1775, he was appointed as a colonel of the Fourth Regiment Connecticut Militia and became brigadier general in 1776. In 1779, Silliman and his son were captured in their home by Tories and held prisoner until an exchange could be arranged a year later.

**Benjamin Tallmadge** (February 25, 1754 – March 7, 1835) Benjamin Tallmadge was the son of a church leader. He graduated from Yale College in 1773, where he was a classmate of American Revolutionary War spy Nathan Hale. Tallmadge was a major in the Second Continental Light Dragoons, but eventually he was promoted to the rank of colonel and became the chief intelligence officer for George Washington. In this position, he organized the Culper Spy Ring based out of New York City and Long Island.



## Key Historical Educational Topics Found in the Story:

### The Importance of Gunpowder During the American Revolution

General George Washington knew the hopes of the American cause rested on imported gunpowder. With dwindling powder supplies and only three powder mills in operation in all of the colonies, Washington's army was in danger at the start of the war. For more information, visit: <https://www.revolutionarywarjournal.com/gunpowder/>

### Secret Factories

To keep the creation of Continental gun powder safe, General Washington relied on secret factories in the colonies. One secret gun powder factory was run by the Stocking family in Glastonbury, Connecticut, and supplies from this factory was often the only way nearby troops could find the supply of gunpowder to defend themselves. The Stocking factory, a main location in the story, blew up killing several family members and workers.

Discover more about the factory here:

<https://www.courant.com/community/glastonbury/hc-xpm-2013-09-11-hc-glastonbury-history-gunpowder-0911-20130911-story.html>



## The American Turtle Submarines Facts

- Invented by David Bushnell, a Yale Graduate, for use against British war ships.
- Bushnell first invented waterproof gunpowder, then created the submarine as a way to deliver it.
- Called the “Turtle” because of how it looks inside the water
- Made of oak and iron.
- The Turtle could hold one man as pilot and operated via pumps and hand-cranked propellers.
- Tar inside the grooves of the wooden structure made it waterproof.
- It could submerge for about 20-30 minutes.
- Glass built into its structure provided some light, but once submerged there would be darkness. That problem was solved by fungus that would glow in the dark and that was placed around instrumentation like gauges.
- On September 6, 1776, the *Turtle* attacked the HMS *Eagle* anchored in New York Harbor.
- Army volunteer Ezra Lee was first operator.
- Lee’s personal account details how he could not get the bomb to attach to the hull because he hit metal. He tried to connect with another part of the hull, but was not able to stay underneath due to the currents. He had to give up. He reported that the British did spot him and rowed out to investigate. He then released a charge (a floating bomb), which they saw and avoided in retreat. When it exploded, it did so “with tremendous violence, throwing large columns of water and pieces of wood that composed it high into the air.”
- The *Turtle* was exhausting to operate.
- Lee tried again a month later, but he was spotted so he abandoned the mission.
- The British sunk it as it sat on its holding device in Fort Lee.



## Not So Secret, After All

Despite best attempts to keep the *Turtle's* existence a secret, the British did learn about it, and they did not take its threat too seriously. It seems a Loyalist tavern keeper and postmaster had intercepted Bushnell's mail and learned of it, and a coded message was then sent to the British's attention. The message contained some inaccuracies stating it was ready to be used when in fact it was still being developed in the Connecticut River.



## George Washington to Thomas Jefferson on the American *Turtle* submarine and its inventor:

September 26, 1785 *“Bushnell is a man of great Mechanical powers—fertile of invention—and a master in execution—He came to me in 1776 recommended by Governor Trumbull (now dead) and other respectable characters who were proselites (means followers or believers) to his plan.—Although I wanted faith myself, I furnished him with money, and other aids to carry it into execution. . . I then thought, and still think, that it was an effort of genius . . .”*

[Extract] Mount Vernon, Sept. 26, 1785 Link to letter:

<https://founders.archives.gov/documents/Washington/04-03-02-0251>

## Washington on the Importance of One's Conscience

On page 56-57, Washington said in the story and in real life, *“Labor to keep alive in your breast that little spark of celestial fire called conscience.”* This is **Rule Number 110** of Washington's *Rules of Civility and Decent Behavior*. The complete listing of George Washington's mandates for successful interactions with others and how to best conduct one's self is interesting and full of advice that still works today.

## Oath of Allegiance

When people take a cause very seriously, and want others to know about their commitment to what they believe in, they often make a public promise called an oath. Very often, an oath is said aloud in front of others, such as a swearing in of new citizens to our country, joining a military service, when a person is promising to tell the truth in a court of law, or when a person is

entering public office, like the president of the United States. Each oath is different but the reason for an oath of any kind is the same—to let others know you are serious and sure about a decision and a commitment you are making. Colonial patriots took an oath of allegiance to the newly forming country that would be independent of Great Britain and King George.





## Student Activities:

### 1. Poster Creation

- A. Have students create a poster highlighting one of the **historical characters** above and trumpeting one of their major accomplishments during the American Revolution.
- Have the students create their own book cover, advertisement or social media post **about** *The Adventures of the American Turtle Submarine!*
- Draw the American Turtle Submarine. Then draw a submarine as they look today. Provide several facts about the design improvement.

### 2. Leadership Assignment – You are a Spy Master!

Have students imagine they are General Washington. He has two special secrets he needs kept—the location of the secret gunpowder factories and the invention of the American Turtle submarine. What rules would they create to help keep enemy spies from knowing about these secrets?

### 3. Creative Writing

*“Labor to keep alive in your breast that little spark of celestial fire called conscience.”* What do you think Washington meant by this quote? Explain your thinking. How does your conscience help you in your life? How can you keep the spark of conscience alive? What benefit will this have?

### 4. Create an Oath of Allegiance Certificate:

Place your name (or the name of your favorite historical patriot) in the blank in the oath below. Add the appropriate role like courier, soldier, fife and drummer, or spy in the space provided as well.

#### *Oath of Allegiance*

*I, \_\_\_\_\_, do acknowledge the United States of America, to be Free, Independent and Sovereign States, and declare that the people thereof owe no allegiance or obedience to George the Third, King of Great-Britain, and I renounce, refute and abjure any*

*allegiance or obedience to him; and I will, to the utmost of my power, support, maintain and defend the said United States, against the said King George the Third, his heirs and successors and his or their abettors, affiliates and adherents, and will serve the said United States in the office of \_\_\_\_\_, which I now hold, with fidelity, according to the best of my skill and understanding.*



**Note: Printable Oath of Allegiance certificates can be found on the author's website under Resources:**

<https://robertskead.com/resources/>

### **5. Complex Issues**

At various parts of the story, create a Knowledge Map.

List in your chart three different strategies to win the war or a sequence of events (cause and effect) within the story.

### **6. Multiple Perspectives**

Students can look at the story from the British point of view.

Create a diary entry from the perspective of a British soldier on a ship in New York Harbor or at Fort St. George.

See Example: Journal of a British officer During the American Revolution

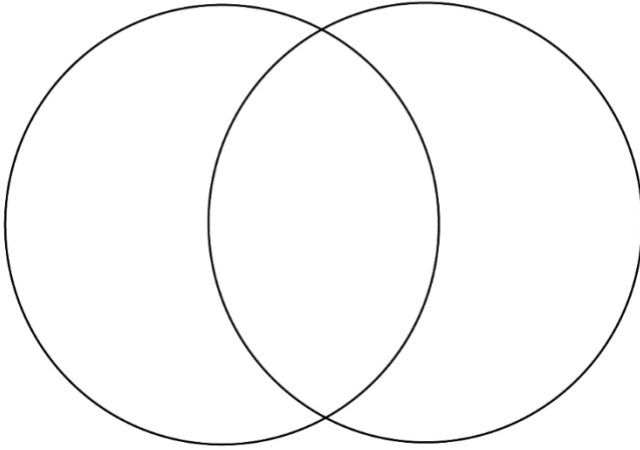
<https://www.jstor.org/stable/pdf/1886571.pdf>

### **7. Put students back in history. No one is all good or bad.**

Venn Diagram for the twins and the British soldiers.

Surprisingly for the students, there are details in common!

## Venn Diagram



### 8. Video Producer

Have students make a video (3 minutes) relating to a press conference with George Washington after the failure of the *Turtle* in New York Harbor, or the search for gunpowder. One student (or person (i.e. parent) can ask the press conference questions and the other provide the answers.

## Student Writing Prompts

1. Write a headline for a British newspaper about the British discovering the American's secret *Turtle* submarine, or craft a Twitter post of 25 words or 144 characters about an ad for colonial gun powder, or an entry in the diary of someone who is hired to operate the American *Turtle* submarine with a mission to blow up a British frigate.
2. Analyze Ambrose and John Clark's decision to operate the American *Turtle* submarine in their brother Bert's place. Do you think it was best for the situation? What would you have done in that same time period? Create an alternate solution and hypothesize the outcomes—short-term and long-term for the twins and General Washington.
2. Write a letter to John and Ambrose Clark that agrees or disagrees with one of their decisions (like operating the American *Turtle* submarine or trying to rescue their brother Bert from the British at Fort St. George).
3. Write a report of the captain of the British warship that the *Turtle* tried to attach explosives to in New York Harbor.
4. With partners, create a cost-benefit analysis for one of Ambrose Clark's decisions. Itemize the list with costs or benefits to help evaluate the decisions made. Individually, write an essay response with several reasons why you agree or disagree with Ambrose's decision. Once completed, create a poster that would persuade John or Ambrose Clark to agree with you.
5. Create an alternative ending to the story using proper historical themes of time and place.
6. Create a children's picture book of *Submarines, Secrets and a Daring Rescue*. Choose a few important events to illustrate their exciting journey. Make sure the pictures use at least half a page and the content is age appropriate for grades 3 to 8.

\*All prompts tied to the below ELA Standards

English Language Arts Standards

CCSS.ELA-LITERACY.RH.9-10.1

Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.



CCSS.ELA-LITERACY.W.9-10.1

Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

### Classroom Discussion Questions

#### Story-focused:

1. If you were Ambrose, would you have volunteered to pilot the *Turtle*? Why or why not?
2. How did fear affect Ambrose's decisions? What are some things that might make you feel real fear? What helps you overcome fear?
3. Ambrose had a talent for sailing (among many other things). John was an expert marksman and planner. What are your talents? Where do your talents come from? How can you use them for a fulfilled life?
4. When Ambrose thought twice about going into battle at the fort, John encouraged him and reminded his brother that he "had his back." Have you ever been in a situation when you reconsidered something you felt committed to or had to encourage someone else to take a risk? Describe the situation.
5. What does bravery mean to you? Is it better to demonstrate bravery or be cautious in times of danger? Were the signers of the Declaration of Independence demonstrating bravery when they voted to declare independence from Britain?
6. In the story, Berty endured great physical pain and still did not give the enemy any secrets in order to save his brothers and the colonists' gunpowder. Would you be willing to suffer for something to that level?
7. Sergeant Evans was considered an enemy in the story. As part of the British army, he fought against the patriots and probably hurt or killed many men. In your opinion, was he just as brave



as the Clarks? Does standing up for a cause you believe in, no matter what the cause is, make you brave?



8. At the end of the story, on page 175-180, the twins received a commendation from the Continental Congress. Why is it important to recognize the efforts people make? What have you been recognized for? How did the recognition make you feel? Are there others in the story who should also receive a “Commendation?”

#### Period-focused:

1. Why did the colonists call themselves patriots?
2. Why did Bushnell invent the original *Turtle*?
3. Why was the *Turtle* impressive for its time?
4. If you lived during 1770 to 1783 or 1776-1781, would you support British or Patriots if you were living in one of the 13 colonies?
5. Would you enlist in the Continental Army as a 16 year old?
6. How did the war affect people living in your area or your state?
7. Why did African Americans enlist in Washington’s army?
8. What risks were there from disease? (smallpox, cholera, etc.)

#### Person Reflections:

1. Have you ever invented something? Where did the idea come from? If you actually developed the invention, how did it make you feel to have a finished product?
2. What issues are worth fighting, arguing, or dying for, in your opinion?
3. Why is freedom not free?
4. Do you think your own life been impacted by the outcome of the American Revolution? If yes, give some examples.

## Primary Sources

**Author Note: The below letters reflect the spelling and punctuation of the time, which may be different from what we today find correct.**



### Letter from George Washington to Thomas Jefferson

[Extract]

Mount Vernon 26th Sept. 1785

I am sorry I cannot give you full information respecting Captn. Bushnals projects for the destruction of shipping. No interesting experiment having been made, and my memory being treacherous, I may, in some measure, be mistaken in what I am about to relate.

Bushnel is a man of great Mechanical powers—fertile of invention—and a master in execution—He came to me in 1776 recommended by Governor Trumbull (now dead) and other respectable characters who were proselites to his plan.—Although I wanted faith myself, I furnished him with money, and other aids to carry it into execution.—He laboured for some time ineffectually, & though the advocates for his scheme continued sanguine he never did succeed—One accident or another was always intervening.—I then thought, and still think, that it was an effort of genius; but that a combination of too many things were requisite, to expect much success from the enterprise against an enemy, who are always upon guard.

That he had a machine which was so contrived as to carry a man under water at any depth he chose, and for a considerable time & distance, with an apparatus charged with Powder which he could fasten to a ship's bottom or side & give fire to in any given time (sufft. for him to retire) by means whereof a ship could be blown up, or sunk, are facts which I believe admit of little doubt—but then, where it was to operate against an enemy, it is no easy matter to get a person hardy enough to encounter the variety of dangers to which he must be exposed. 1 from the novelty 2 from the difficulty of conducting the machine, and governing it under water on acct. of the Currents &ca. 3 the consequent

uncertainty of hitting the object of destination, without rising frequently above water for fresh observation, wch., when near the Vessel, would expose the adventurer to a discovery, & almost to certain death.



To these causes I always ascribed the non-performance of his plan, as he wanted nothing that I could furnish to secure the success of it.—This to the best of my recollection is a true state of the case— But Humphreys, if I mistake not, being one of the proselites, will be able to give you a more perfect acct. of it than I have done.

**Source:** Papers of Thomas Jefferson, vol. 13, Library of Congress, Washington, DC. Printed in Thomas Jefferson, *The Papers of Thomas Jefferson*, ed. by Julian Boyd, et al., 34 vols. to date. Princeton: Princeton University Press, 1950-, 8: 555–57.

## Letter from Ezra Lee (first captain of the *Turtle*) to David Humphreys

Lyme 20th Feb. 1815.



Dr. Sir,

Judge Griswold, & Charles Griswold Esq. both informed me that you wished to have an account of a machine invented by David Bushnell of Saybrook, at the commencement of our Revolutionary war. In the summer of 1776, he went to New York with it to try the *Asia* man of war:—his brother being acquainted with the working of the machine, was to try the first experiment with it, but having spent until the middle of August, he gave out, in consequence of indisposition.—Mr. Bushnell then came to General Parsons (of Lyme) to get someone to go, and learn the ways & mystery of this new machine, and to make a trial of it.

General Parsons, sent for me, & two others, who had given in our names to go in a fire ship if wanted, to see if we would undertake the enterprize:—we agreed to it, but first returned with the machine down Sound, and on our way practised with it in several harbours.—we returned as far back as Say-Brook with Mr Bushnell, where some little alterations were made in it—in the course of which time, (it being 8 or 10 days) the British had got possession of Long Island & Governor’s Island—We went back as far as New Rochelle and had it carted over by land to the North River.—

Before I proceed further, I will endeavour to give you some idea of the construction of this machine, *turtle* or torpedo, as it has since been called.—(1) Its shape was most like a round clam, but longer, and set up on its square side—it was high enough to stand in or sit as you had occasion, with a (2) composition head hanging on hinges.—it had six glasses, inserted in the head, and made water tight, each the size of a half Dollar piece, to admit light—in a clear day, a person might see to read in three fathoms of water—The machine was steered by a rudder having a crooked tiller, which led in by your side, through a water joint.—(3) then sitting on the seat, the navigator rows with one hand, & steers with the other—it had two oars, of about 12 inches in length, & 4 or 5 in width, shaped like the arms of a windmill, which led also inside through water joints, in front of the person steering, and were worked by means of a wench (or crank) and with hard labour, the machine might be impelled at the rate of 3 knots

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an hour for a short time—Seven hundred pounds of lead were fixed on the bottom for ballast, and two hundred weight of it was so contrived, as to let it go in case the pumps choaked, so that you could rise at the surface of the water.—It was sunk by letting in water by a spring near the bottom, by placing your foot against which, the water would rush in and when sinking take off your foot & it would cease to come in & you would sink no further, but if you had sunk too far, pump out water until you got the necessary depth—these pumps forced the water out at the bottom, one being on each side of you as you rowed—A pocket compass was fixed in the side, with a piece of light (4) wood on the north side, thus +, and another on the east side thus, to steer by while under water—Three round doors were cut in the head, (each 3 inches diameter) to let in fresh air, untill you wished to sink, and then they were shut down & fastened—There was also a glass tube (5) 12 inches long and 1 inch diameter, with a cork in it, with a peice of light wood, fixed to it, and another peice at the bottom of the tube, to tell the depth of discent,—one inch rise of the cork in the tube gave about one fathom water,—It had a screw, that peirced through the top of the machine, with a water joint, which was so very sharp that it would enter wood, with very little force, and this was turned with a wench, or crank, and when entered fast in the bottom of the ship, the screw is then left, and the machine is disengaged, by unscrewing another one inside that held the other.

From the screw now fixed on the bottom of the ship, a line—led to & fastened to the magazine, to prevent its escape either side of the ship—the magazine was directly behind you on the outside, and that was faced from you by unscrewing a screw inside—Inside the magazine was a clock machinery, which immediately sets a going after it is disengaged & a gun lock is fixed to strike fire to the powder, at the set time after the Clock should rundown—The clock might be set to go longer or shorter—20 or 30 minutes was the usual time, to let the navigator escape—This magazine was shaped like an egg, & made of oak dug out in two peices, bound together with bands of iron, corked & paid over with tar so as to be perfectly tight, and the clock was bound so as not to run untill this magazine was unscrewed ....

I will now endeavour to give you a short account of my voyage in this machine.—The first night after we got down to New York with it, that was favourable, (for the time for a trial, must be, when it is slack water, & calm, as it is unmanagable in a swell or a strong tide) the British Fleet lay a little above

Staten Island We set off from the City—the Whale boats towed me as nigh the ships, as they dared to go, and then cast me off—I soon found that it was too early in the tide, as it carried me down by the ships—I however hove about, and rowed for 5 glasses, by the ships' bells, before the tide slacked so that I, could get along side of the man of war, which lay above the transports—



The Moon was about 2 hours high, and the daylight about one—when I rowed under the stern of the ship, could see the men on deck, & hear them talk—I then shut down all the doors, sunk down, and came under the bottom of the ship, up with the screw against the bottom but found that it would not enter—(6) I pulled along to try another place, but deviated a little one side, and immediately rode with great velocity, and come above the surface 2 or 3 feet between the ship and the daylight—then sunk again like a porpoise I hove partly about to try again, but on further thought I gave out, knowing that as soon as it was light the ships boats would be rowing in all directions, and I thought the best generalship, was to retreat, as fast as I could as I had 4 miles to go, before passing Governor's Island.—

So I jogg'd on as fast as I could, and my compass being then of no use to me, I was obliged to rise up every few minutes to see that I sailed in the right direction, and for this purpose keeping the machine on the surface of the water, and the doors open—I was much afraid of getting aground on the island as the Tide of the flood set on the north point While on my passage up to the City, my course owing to the above circumstances, was very crooked & zig zag, and the enemy's attention was drawn towards me, from Governors Island—

When I was abreast of the fort on the island 3 or 400 men got upon the parapet to observe me,—at leangth a number came down to the shore, shoved off a 12 oar'd barge, with 5 or 6 sitters, and pulled for me—I eyed them, and when they had got within 50 or 60 yards of me, I let loose the magazine, in hopes, that if they should take me, they would likewise pick up the magazine, and then we should all be blown up together, but as kind Providence would have it, they took fright, and returned to the island, to my infinite joy.—I then weathered the Island, and our people seeing me, came off with a

whaleboat, and towed me in—The Magazine after getting a little past the Island, went off with a tremendous explosion, throwing up large bodies of water to an immense height.  
(7)



Before we had another opportunity to try an experiment our army evacuated New York, and we retreated up the North River as far as fort Lee—A Frigate came up and anchored off Bloomingdale. I now made another attempt upon a new plan—my intention was to have gone under the ship’s stern, and screwed on the magazine close to the water’s edge, but I was discovered by the Watch and was obliged to abandon this scheme, then shutting my doors, I dove under her, but my cork in the tube, (by which I ascertained my depth) got obstructed, and deceived me, and I descended too deep & did not track the ship, and I then left her—Soon after the Frigate came up the river, drove our Crane galley on shore, and sunk our Sloop, from which we escaped to the shore—

I am &c. E. Lee.

For General David Humphreys –

- (1) This machine was built of oak, in the strongest manner possible, corked and tarred, and though its sides were at least six inches thick, the writer of the forgoing, told me that the pressure of the water, against it, at the depth of two fathoms was so great, that it oozed quite through, as mercury will by means of the air pump. Mr. Bushnell’s machine was no larger than just to admit one person to navigate:—its extreme length was not more than 7 feet.—When lying in the water, in its ordinary state without ballasts, its upper works did not rise more than 6 or 7 inches out of water—
- (2) This composition head, means of composition of Metals—something like bell metal, and was fixed on the top of the machine, and which afforded the only admission to the inside—



- (3) The steering of this machine was done on the same principles, with ordinary vessels, but the rowing her through the water, was on a very different plan— These oars, were fixed on the end of a shaft like windmill arms, projected out, forward, and turned at right angles with the course of the machine, and upon the same principles that windmill arms are turned, by the wind these oars, when put in motion as the writer describes, draws the machine slowly after it—this moving power is small, and every attendant circumstance, must cooperate with it, to answer the purpose, calm waters & no current—
- (4) This light wood is what we sometimes call fox fire, and is the dry wood that shines in the dark:—this was necessary as the points of the compass could not readily be seen without—
- (5) The glass tube here mentioned, which was a sort of thermometer, to ascertain the depth of water the machine descended, is the only part that is without explanation—the writer of the forgoing, could not recollect the principles on which such an effect, was produced, nor the mechanical contrivance of it—He only knows that it was so contrived that the cork & light wood rose or fell in the tubes, by the ascent or descent of the machine—
- (6) The reason why the screw would not enter, was that the ship's bottom being coppered it would have been difficult under any circumstances to have peirced through it—but on attempting to bore with the auger, the force necessary to be used in pressing against the ships bottom, caused the machine to rebound off this difficulty defeated the whole.—the screw could not enter the bottom, and of course the magazine could not be kept there in the mode desired—
- (7) When the explosion took place, General Putnam was vastly pleased, and cried out in his piculiar way—"God's curse 'em, that'll do it for 'em." <sup>1</sup>

<sup>1</sup> These explanatory notes were apparently added by Humphreys.



**Source:** Yale University Library. A slightly modified version of the letter was published in *The Magazine of American History*, vol. 29 (January-June 1893).



## About the Storytellers

The Skeads are a father-son writing team and members of Sons of the American Revolution. Their ancestor, Lamberton Clark, one of the main characters in the story, served in the Revolutionary War as a member of the Connecticut Militia and the Continental Army. The tales in the American Revolutionary War Adventures series were crafted to inspire readers to do great things, nurture patriotism, and celebrate the courage and creativity of colonial patriots and General George Washington. Discover more at [www.robertskead.com](http://www.robertskead.com).



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Additional Resources:

- [The Turtle Submarine](#)
- [Ezra Lee – Turtle Operator](#)
- [The Gunpowder Shortage](#)
- [Gunpowder and the American Revolution](#)
- [George Washington's Character Certificate](#)
- [Continental Army Oath of Allegiance](#)
- [TeachingHistory.org](#)
- [Why Historical Fiction Belongs in the Classroom](#)
- [Teaching Historical Fiction: Using Time Periods to Support Understanding, Grades 3–8](#)
- [Washington's Letters](#)

- [Museum of the American Revolution](#)

