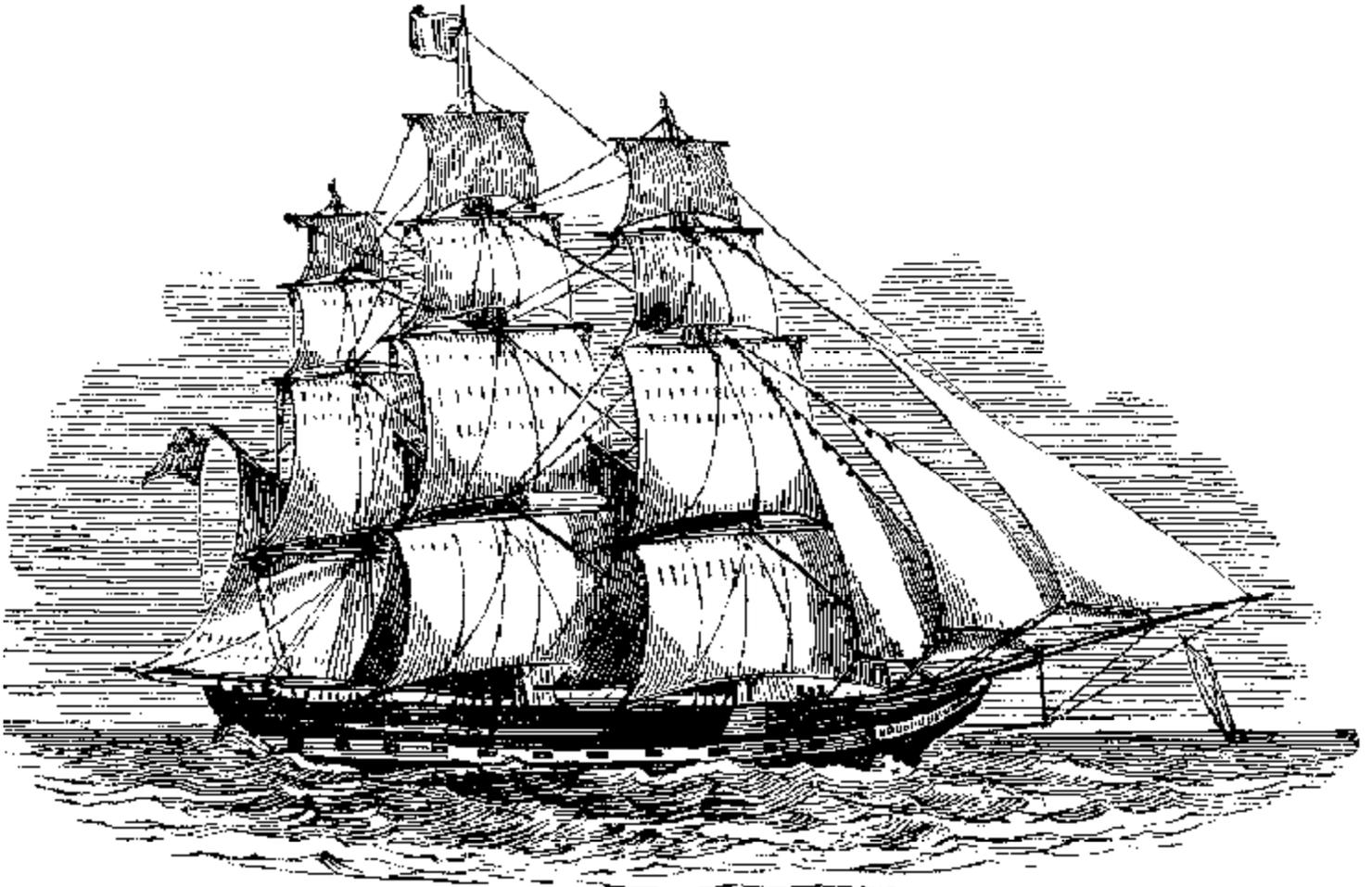


Mending an Era[®]
A SLAVE SHIP SPEAKS



*The Wreck of the
Henrietta Marie*

Sponsored by
Governor Cecil H. Underwood



*All-Aid
International,
Inc.*[®]



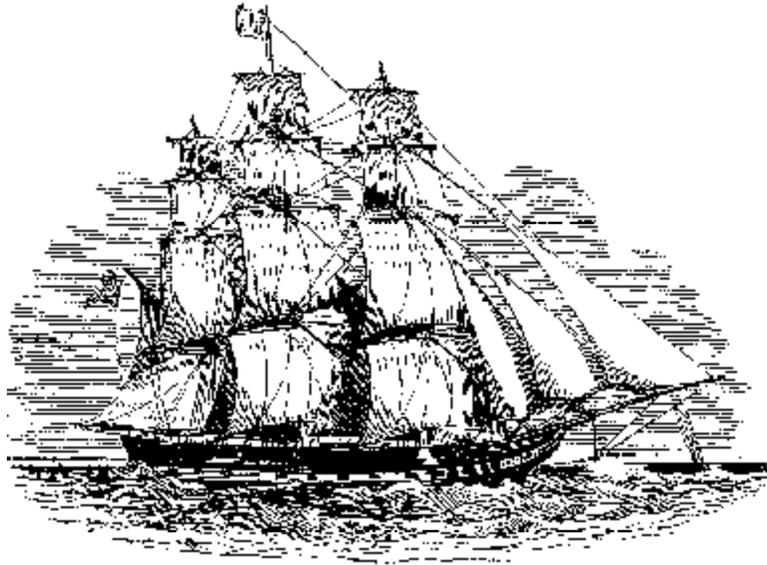
West Virginia Division
of Culture and History



General Motors.
National Tour Sponsor

Part of Governor Underwood's initiative, "One West Virginia for the 21st Century."

Mending an Era[®]
A SLAVE SHIP SPEAKS



*The Wreck of the
Henrietta Marie*

The exhibition will remain on display at the
West Virginia State Museum in the
Cultural Center, State Capitol Complex, Charleston
March 25 - June 20, 2000

For more information about the exhibition, see the following web pages:

www.wvculture.org • www.all-aid.org

Sponsored by
Governor Cecil H. Underwood



All-Aid
International,
Inc.[®]



West Virginia Division
of Culture and History



General Motors.
National Tour Sponsor

Part of Governor Underwood's initiative, "One West Virginia for the 21st Century."

A Slave Ship Speaks: The Wreck of the Henrietta Marie

Prepared by the Education Unit of the
West Virginia Division of Culture and History

Table of Contents

Part 1: Europe and the Slave Trade

Why the <i>Henrietta Marie</i> is Special	1
The <i>Henrietta Marie</i>	3
The Slave Trade	6

Part 2: Africa and the Middle Passage

How the African Slave Trade Began	9
The Trans-Atlantic Slave Trade	12
Conditions Aboard the Ships	15

Part 3: The New World

Conditions on the Plantations	18
The End of Slavery	20

Part 4: Learn More

Glossary	21
Why Do Boats Float?	22
Underwater Archaeology	24
Other Resources About Slavery	26

Why the *Henrietta Marie* is Special

History has a way of making ordinary, everyday things unique and special. Consider the place you live with your family. It is special because it is your home, but if you really think about it, it is a lot like all the other houses or apartments in your neighborhood, isn't it? It has walls, a roof, a bathroom, a kitchen, everything most other homes have. In 300 years, scientists will have lots of houses to look at to figure out pretty much everything there is to know about all other houses from the year 2000, and they will most likely not focus all of their studies on your home alone as it is one of many. But now imagine that every other house in the world was destroyed except yours. In 300 years, when *archaeologists* find your house, it will be the most special house of all time because it will be the only house available to help them figure out everything they want to know about houses in the year 2000. The archaeologists will turn your home into a museum and people from all over the world will come and stand in your bedroom and marvel at the wonder of your home. They will look at your dresser, in your closet, at your toys, CDs, pictures, video games, everything you left behind, and from your stuff alone they will come to know how we lived. (So you'd better straighten up those dresser drawers a little.)

The *Henrietta Marie* was not a special ship when it was built. It did not go on any world-famous voyages or discover any new lands. It was a common *merchant ship* just like lots of other merchant ships from the 1600s but it is special to us now because it is the only ship of its kind, a slave trading vessel, that *historians* have been able to find and identify in American waters. It is also special because the *Henrietta Marie* is our only link to *slave trading ships*, the people who sailed them, the cargo they carried, and the horrible conditions Africans were forced to endure in slave ships while crossing the Atlantic Ocean. Just as your home would be special if it were the only one left, so the *Henrietta Marie* is special because it is the only such ship scientists and historians have discovered.

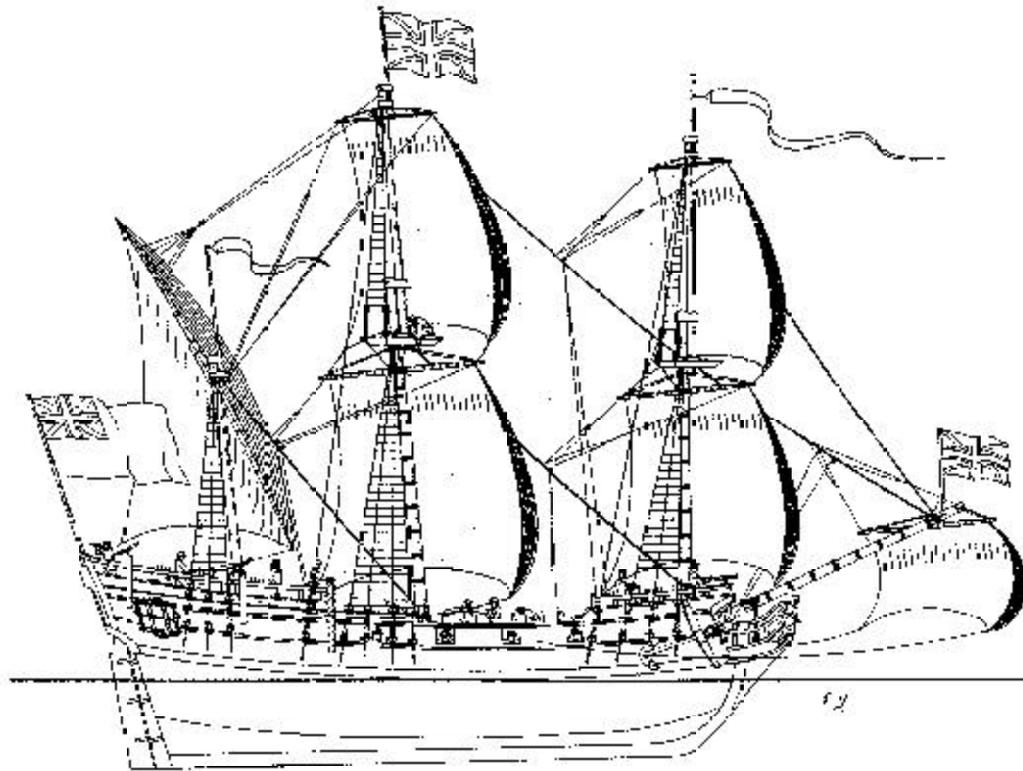
Define the following words:

Archaeologist

Historian

Merchant ship

Slave trading ship



An artist's rendering of the *Henrietta Marie*

The *Henrietta Marie*

Compared to the cargo and transport ships which sail the oceans today, the *Henrietta Marie* was a relatively small ship. It was constructed of wood and held together with iron spikes.¹ The ship was 60 feet long, weighed 120 tons and had a center mast 50 feet tall. In comparison, the *Titanic* was almost 900 feet long, weighed 45,000 tons and was 11 stories tall. Navy aircraft carriers can be longer than 1,000 feet and weigh 97,000 tons. In 1699 though, when the *Henrietta Marie* set out from England to sail to Africa and the Americas, she was typical in size and stature to other small merchant ships of the day.

The *Henrietta Marie* was an English-owned ship which originally belonged to the French. The French had used the ship, under a different name, during the Anglo-French War which ended in 1697. The ship was captured by the English Navy and then sold to English merchants. During the spring of 1697, workers *refitted* the ship, replacing tattered sails, fixing the ropes, adding an extra layer of *planking* to the hull, remodeling the interior and giving the ship a new coat of paint.² The new owners renamed their freshly reconditioned ship the *Henrietta Marie*.

Why the owners named the ship the *Henrietta Marie* is not known for sure. Dr. Madeleine Burnside, executive director of the Mel Fisher Maritime Heritage Society, thinks that the ship was named after a 17th century French princess who had married a king of England.³ But Michael Cottman, one of the scuba divers who helped uncover many of the secrets of the *Henrietta Marie*, thinks that the ship was probably named after one of the owners' wives, sisters or daughters.⁴

The *Henrietta Marie* made two voyages as a slave ship. Probably in November 1697, the ship left on its first voyage to Africa and the Americas. With its many cargo decks, the ship was able to carry many different kinds of freight for trade, including iron, beads, pewter, weapons and slaves. The *Henrietta Marie* could carry about 200 Africans in the cargo area.

After the *Henrietta Marie* returned to England in late 1698, the owners began to get her ready to set sail again. They had to round up a new crew, get investors and refit the ship again. It was not until September 1699 that the ship was ready to sail again, this time with John Taylor as captain. The *Henrietta Marie* arrived in Africa sometime in

December 1699 and Jamaica in May 1700. Soon after that, while returning to England on the last leg of the journey, the ***Henrietta Marie*** sank off the coast of Florida, where it lay quietly for almost 300 years before being discovered.

Probably the single most important key to unlocking the mysteries of the ***Henrietta Marie***, after all those years, was the discovery of the ship's bell among the debris. The ship had been made of wood and after 300 years under water, the wood had all deteriorated and therefore, the board on which the name ***Henrietta Marie*** had been carved no longer existed. There was no way to tell what ship the archaeologists had found. All they could tell from the artifacts was that it was a ship from the 1700s. In fact, the divers who first found the ***Henrietta Marie*** were actually looking for a Spanish merchant ship called the ***Atocha***. A few weeks after the initial find, they realized that the ship they had found was not the one they were looking for and moved on. Without a name, no specific research could be done on the ship's past.

For almost 10 more years, the unknown ship lay at the bottom of the sea. In 1983, a young graduate student named David Moore was working for Mel Fisher, a man interested in recovering underwater treasure from sunken ships, and went back to the unknown ship, hoping to gain some hands-on experience with underwater archaeology. Moore led a team of divers who soon discovered that the ship they were studying had been a British slave ship, but still they had no idea of which ship it was, or even when it had sailed. And then one day one of the divers found the ship's bell.

Ships often had the name and date the ship was built stamped on the bell. The divers were excited because they hoped the bell would reveal the identity of the ship. The bell had been under water for 300 years and was covered with marine growth. After removing some of the growth, Moore found the name "***Henrietta Marie***" and the date "1699" inscribed on the bell.

The bell became the key element to unlocking all the mysteries of the ***Henrietta Marie***. With the name of the ship, researchers could go to England and search through old shipping records to discover the vessel's history. This information included who owned the ***Henrietta Marie***, when it sailed, where it sailed, and what it carried. Had the divers not discovered the bell, the wreck off the coast would have remained just another anonymous ship.

Define the following words:

Planking

Refitted

¹Burnside, Madeleine and Robotham, Rosemarie. Spirits of the Passage. Simon & Schuster Editions, New York, NY. 1997. p. 45.

² Ibid. p. 45.

³ Ibid. p. 46.

⁴Cottman, Michael H. The Wreck of the Henrietta Marie. Harmony Books, New York. 1999. p. 48.



This photograph is taken from a color slide of the bell on the Henrietta Marie.

Photo 8 Mel Fisher Maritime Heritage Society

The Slave Trade

A *slave* is a person who is owned by another person, considered as property, and forced to work for his or her owner with little or no pay. *Slavery* has been around for thousands of years and has appeared in many forms and in many cultures. Sometimes soldiers captured in wars were forced to serve as slaves; other people were *enslaved* because they could not pay money they owed; and still others, like the slaves the ***Henrietta Marie*** carried, were captured or kidnapped for no other reason except to be sold as slaves.

Slaves, like those brought to the *New World* on the ***Henrietta Marie***, had no rights and were treated like property or like animals. The people who bought the slaves thought of them as nothing more than farm equipment that they could treat however they pleased. Because slaves were considered property, often they were treated poorly, overworked, underfed and punished by beatings for even small mistakes. Slave owners had the right to kill their slaves whenever they wanted and a slave could never leave his owner's lands.

When we talk about the *Slave Trade* here, we mean specifically the trade of slaves from Africa to the New World in the 17th century. Most of these slaves came to the New World as part of the *Middle Passage* trade route. The Middle Passage was the second part of a course that ships sailed from Europe to the West Coast of Africa and then to the New World. Because this route forms a triangle it is sometimes called the *Triangular Trade Route*.

The Triangular Trade Route started in England where goods such as farm products, brass, pewter, weapons, textiles, spirits and beads were packed onto ships. The ships would then sail to Africa where the crew would trade these goods to African chieftains for ivory, gold, pepper and Africans to be sold as slaves. Loaded with human cargo and other goods, the ships would sail to such places as Jamaica, Barbados, South Carolina and Virginia where the Africans and goods would be sold or traded for sugar, tobacco, hardwoods, cotton and other items available only in the New World and much desired in Europe. After taking on this cargo, the ships would return to England, completing the triangle.

Define the following words:

Enslaved

Middle Passage

New World

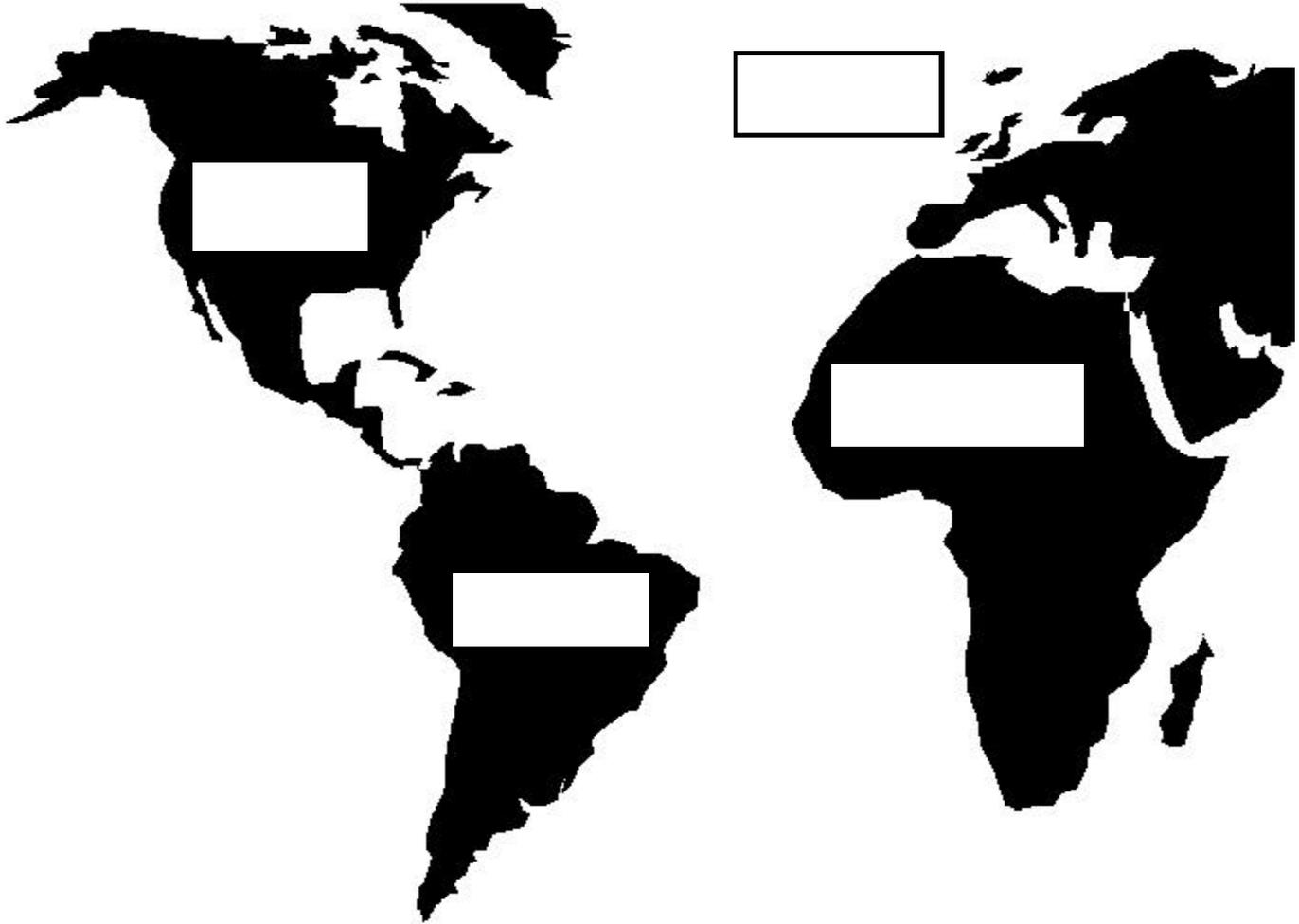
Slave

Slave Trade

Slavery

Triangular Trade Route

Locate England, Africa, South America and North America on the map below. Write the names in the boxes. Now, draw in the lines of the Triangular Trade Route.



How the African Slave Trade Began

Before the late 1400s, most European trading was done with far-eastern countries such as India and China through established trade routes in the Middle East and from the Mediterranean and Black Seas. Goods were carried by land or sea and traded from town to town or port to port. You have to remember that this was long before cars, planes or even engines were invented. Because most countries were small, they did not have the money or the resources to trade with distant peoples directly. There was just no way to transport lots of cargo at one time from place to place. Because so many people were involved all along the trade routes, goods were often very expensive.

ACTIVITY:

Pretend you live in England in 1455 and you want to buy a pound of tea from China. Let's say a pound of tea costs \$3 in China. Because you cannot just order the tea by telephone, on the Internet, or even by mail, you need to send someone to go buy the tea. You find a man who says he knows where he can buy Chinese tea at a port in Italy, but it will cost him \$100 to travel there and get it. He also tells you that he knows for a fact that it cost the owner of the tea store \$15 to have the tea shipped from China to Italy by land and then by ship. The store owner also wants to make a profit so he adds \$5 to the total cost. Therefore, to get a pound of tea that cost \$3 in China what will you end up paying? (Add the original cost of the tea, plus the cost of the man you hired to go get it, plus the fee the store owner paid to have it shipped to his store, and finally the profit the store owner added to reach the total cost.)

As countries grew in power, they also grew richer. The more money they had, the more they could spend on armies and navies. As their militaries grew, the bigger countries took over the smaller countries and eventually there were a few very powerful countries in Europe, rather than lots and lots of tiny countries. Because goods were so expensive by the time they finally got to Europe the big countries set out to discover

cheaper ways of getting the goods. The larger, more powerful countries attempted to establish direct trade routes with far-away places. If they could trade directly with China, India and Africa, for example, then the merchants would have to pay less for the goods they purchased. A lot of people thought that there must be a way to sail around Africa and straight to the Far East, load up with goods, and sail back.

Portugal, a small country on the western edge of Spain, was not very powerful. It did not have a big army or a giant fleet of war ships. It realized that it would never be powerful unless it could gain some sort of foothold in the political world. Since Portugal is close to Africa, and because the Portugese had strong religious ties with Africa, scholars believe the Portugese thought they could set up a sea-trade route between Europe and Africa and become the *middlemen*. As middlemen they would gain wealth and political power because the rest of Europe would depend on them for cheap goods.

The Portugese already had African slaves in their country due to a long conflict with the *Moors*. The Moors were a religious group from Africa who had come to Portugal earlier in history. Both the Moors and the Portugese used prisoners of war as slave labor. As the Portugese began exploring the African coast and continent for gold, ivory, grain and other valuable goods, it occurred to them that they might be able to trade or sell African people in Europe as easily as gold and ivory. Historians report that in 1441, two Portuguese ships were cruising the coasts of West Africa looking for ways to make easy money by stealing gold and valuables from the African people. African villagers, curious about the ships and their white crews, came out to see what was going on. The seamen overpowered about a dozen Africans, loaded them into their boats and sailed away.⁵ This event eventually gave way to much more routine and organized trading expeditions in order to capture Africans to sell as slaves in Europe.⁶ Before long, other European countries were coming to West Africa on their own to trade for Africans destined to spend the rest of their lives as slaves.

Africans taken by Europeans as slaves were often already living as prisoners or as slaves when the slave ships arrived. Powerful African rulers wanted the goods the Europeans had to trade. They had a ready supply of slaves waiting to be traded. African kings, chieftains and businessmen had many ways of gathering people to be traded as slaves. Sometimes condemned criminals were traded and some Africans were traded because they were in debt. Some African slave traders went on special missions just to

kidnap other Africans to trade. The traders would walk into a village and, because they were stronger and better armed, just grab people out of houses. Because of this, families would often kidnap their own slaves from someone else so that they could trade away that person instead of losing a family member when the slave raids occurred. Most areas of West Africa suffered from the slave trade. If a person were lucky enough not to be captured and traded, he or she lived in constant fear that they or their family members would be kidnapped and sold at any time, never to be seen again.

ACTIVITY:

Pretend that you live in an African village in the 1500s. A group of slave traders has just come through your village and kidnapped someone you love, perhaps your mother or father, or even your sister or brother. You know you will never see that person again but you are allowed to write one letter to that person. Write a letter and tell them how much you will miss them, what you will miss about them, and how you feel about the slave trade.

Define the following words:

Middlemen

Moors

⁵Cottman, Michael H. The Wreck of the Henrietta Marie. Harmony Books, New York. 1999. pp. 2-3.

⁶Ibid. p. 3.

The Trans-Atlantic Slave Trade

In 1492, as the song goes, Columbus sailed the ocean blue. Traditionally, we hold this date as the “discovery” of America, though many people already lived in this part of the world. But Columbus’ voyage is significant because in a very real sense his trip changed the way people thought about the world and opened new doors for trade, conquest and exploration. Explorers from Europe soon discovered that the New World held much wealth in gold, silver, agricultural products and fertile farm land. Soon after the explorers began mapping the New World, businessmen started flocking in.

The businessmen realized that they could buy huge areas of land and turn them into giant farms. Sugarcane was easy to grow in the tropical regions of the Americas and sugar was in high demand in Europe. Tobacco was also introduced in Europe through the New World and very soon Europeans were craving tobacco as much as any other product.

It did not take long for the farmers in the New World to realize that they could greatly increase their profits if they could import free slave labor from Africa. This combination of events merged with the already established African slave trade to create the notorious Trans-Atlantic Trade Route.

By 1515, the Spanish were fairly well-established in what would later come to be known as South America and the Caribbean islands. Though the Spanish had come to the area initially to mine gold, they soon realized that sugarcane grew well in the region. Sugar experts were brought in to start farms and plantations. Soon after, African slaves were brought in to do most of the labor on these farms.

The more sugar that was grown, the more slaves were needed. On the island of Barbados, rich farmers forced smaller farmers out of business and shipped tons of sugar back to Europe.

From about 1643 to 1684, there was a massive effort to bring slaves to the New World. In 1645, according to historians, there were about 5,680 African slaves in Barbados; by 1684 there were close to 60,000 African slaves. Slave ships coming to the Americas rarely carried more than 300 slaves and usually the number of slaves on a ship was closer to 150. That means that at least 400 slave ships carried slaves to Barbados alone during that one 40 year period. Most of those slaves were brought by the Portuguese

and Dutch from the areas of Africa that are now Sierra Leone, Guinea, Ghana, the Ivory Coast, Nigeria and the Cameroons.⁷ Sailing the slave ships from Europe to Africa and then to the Americas was dangerous work. However, there was so much money to be made trading slaves and sugar that many businessmen risked lots of money, and their lives, to get in on the profits.

⁷Cottman, Michael H. The Wreck of the Henrietta Marie. Harmony Books, New York. 1999. p. 60.



This is a photograph taken of the plaque placed at the wreck site by the National Association of Black Scuba Divers.

ACTIVITY:

Find Sierra Leone, Guinea, Ghana, the Ivory Coast (Cote D'Ivoire), Nigeria and the Camerouns on the map below.

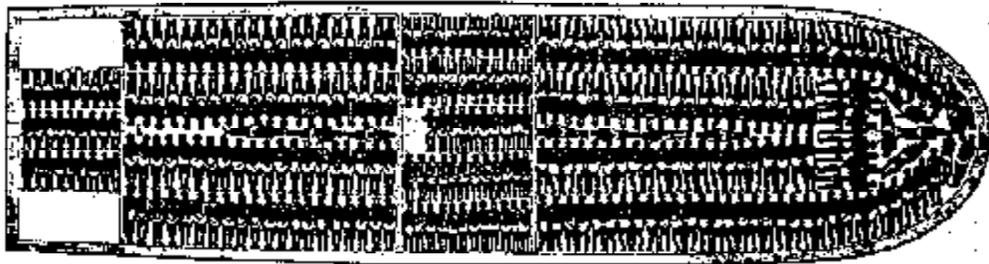


Conditions Aboard the Ships

Traveling on the high seas was dangerous business. Captains sailing the Triangular Trade Route usually expected about half their crew and half the slaves to die during the trip. It took, after all, about one year to make the complete journey from England to Africa to the Americas and then back to England. Death was expected. Captains often doubled up on crew members knowing that many of them would die during the trip.⁸

Once a ship like the *Henrietta Marie* reached Africa, the long process of trading began. The crews sailed ships up rivers into the heart of Africa looking for villages, chieftains and traders who had Africans ready to be traded. Iron bars, glass beads, pewter, weapons and other manufactured goods were then *bartered* by the Europeans for the Africans. As the supply of goods in the ship's hold dwindled, the crew would begin the process of going into the jungles and forests to cut timbers to build the *half decks* on which the Africans would lie during their journey across the sea.

The half decks were basically nothing more than rough shelves designed to fit as many Africans as possible. The sailors did not worry about how comfortable or roomy the half decks were, only how many people could be jammed onto them.



Traders could buy as many slaves as they wished and packed them in as tightly as they desired. The intention, of course, was not to kill the slaves. After all, the sole purpose for purchasing them was to sell them at a profit.

Michael Cottman, in his book ***The Wreck of the Henrietta Marie***, relates:

The ***Henrietta Marie's*** crew built shelves that would hold about 300 slaves. Space per slave was usually about sixteen inches wide and five and half feet long. The half decks were stacked two high and were about three feet apart. There was no room for the Africans to stand and little room for them to sit up straight. Sometimes they were even forced to lie on their sides for months at a time. There was hardly any fresh air to breathe. It was not uncommon for a man to wake, choking from the iron collar around his neck, to find a limp, lifeless body next to him, perhaps a friend or a brother, or a son. Later, when the stench of the dead became too overwhelming, the crew would unchain the [dead] bodies and carry them topside, and throw them over the side.⁹

Captured Africans who refused to eat had long poles jammed into their mouths so that crew members could pry their mouths open to force food down, or they would burn the lips of the slave's mouth so that he would open his mouth to scream and then food could be forced down. The slaves were not allowed such common decencies as a private place to use the bathroom and or even latrine buckets.

Because conditions were so miserable, the Africans tried, at times, to overthrow the crew and take over the ships carrying them to slavery. To keep the Africans from launching successful revolts, the crew carried whips, clubs, swords and even pistols to stop any slave from taking over the ship.

⁸Cottman, Michael H. *The Wreck of the Henrietta Marie*. Harmony Books, New York. 1999. p. 50.

⁹Cottman, Michael H. *The Wreck of the Henrietta Marie*. Harmony Books, New York. 1999. pp. 50ff.



These shackles, used to bind slaves, were found in the wreckage of the ***Henrietta Marie***.

Photo 8 Mel Fisher Maritime Heritage Society

ACTIVITY:

With a ruler or yard stick measure out a space on the floor 16 inches wide and five and a half feet long. Mark the area with tape and then lie down in it. This is roughly how much space each slave had for the months-long journey. See how long you can lie there without moving, sitting up or rolling over. If you can, have your classmates lie down beside you. Imagine being chained in that position, in 100 degree heat, with no fresh air, no light and with no place to use the bathroom for two months. Could you do it? This how the slaves were brought to the Americas.

Define the following words:

Bartered

Half decks

Conditions on the Plantations

Once the slaves arrived in the New World, they were auctioned off to the highest bidder. Plantation owners would buy the Africans who seemed strongest and best fit to work in the fields. The people buying the Africans did not worry about splitting up families. If they wanted to buy just the father and brother of a family, then the mother and other children could be sold to someone else. These families rarely, if ever, saw each other again.

Slaves were then taken to the *plantations* and given small huts to live in. They had no rights to property or freedom. Most slaves worked from sunrise to sunset, up to 18 hours a day, sometimes getting only four hours of sleep each night. In the fields, they had to plant, tend and harvest crops such as sugarcane, tobacco and later, cotton. The slaves were given very little food to eat each day, probably less than you eat for lunch. If slaves were too slow, or stopped working for any reason, they were beaten and whipped. Slaves often died while they worked and their bodies were simply pushed aside.

As many as 30 percent of the Africans arriving in the New World died before they were in their new country very long. That's one person out of every three. If you add that number to the 50 percent that died during the voyage, you will find out that as many as eight out ten Africans forced into slavery died shortly after being captured. The death rate was so high because of disease, the change in *climate*, the working conditions, the beatings, and the lack of proper *diet*.

For the most part, slave owners did not let the Africans participate in their own religions and customs. They were not allowed to sing spiritual songs, and sometimes they were not even allowed to talk to each other. Slaves were forced to stay with the plantation owners until they were either sold or died.

Define the following words:

Climate

Diet

Plantation

The End of Slavery

Slavery continued in the Americas until the mid-1800s. By that time, the southern regions of the United States depended on slave labor to do most of the work on cotton and other agricultural plantations. The economy of the South was based on the free labor of enslaved Africans. But as time went on, more and more people were fighting to end slavery.

Slaves themselves often banded together to rebel against their owners. Armed with whatever weapons they could find, they killed their owners and sought freedom. Other slaves tried to escape to the North where slavery was already illegal. The Underground Railroad became an important route for slaves heading North. The Underground Railroad was not actually a railroad, or underground, but rather a secret path to freedom. People who wanted to help slaves escape put out signals, like a candle in the window, to show escaping slaves that they could stop at that house to hide, rest, get a decent meal or receive medical help.

By 1861, the issue of making slavery illegal in the United States had become such a hot political debate that Congress was passing more and laws to end slavery. The United States was so divided over slavery that it became one of the main issues that sparked the Civil War. The southern states wanted the right to make their own laws concerning slavery, while other Americans wanted the government to ban slavery outright. In an effort to protect their rights, many southern states left the United States to form the Confederate States of America. This act finally touched off the Civil War.

During the Civil War, President Lincoln freed all slaves with his Emancipation Proclamation and when the Confederate States of America surrendered at the end of the war, slavery was finally brought to an end. The slaves in the United States were freed from their owners and people like the *Henrietta Marie* never sailed into America again.



Glossary

- Archaeologist**--a person who studies the life and culture of past civilizations by excavation (digging) of cities, buildings, relics and artifacts such as arrowheads, pottery and weapons
- Barter**--to trade by exchange of goods and commodities rather than by the use of money
- Climate**--the average weather conditions of a region including temperature, precipitation, and environmental factors
- Diet**--the kind and amount of food regularly provided or available to a person
- Enslave**--to be forced into slavery by someone
- Half deck**--small cargo shelves added between existing decks of a ship to hold slaves
- Historian**--a person who studies history
- Merchant ship**--a ship used for trading and commerce, also called a merchantman
- Middle Passage**--the middle stretch of the triangular trade route going from Africa to the New World
- Middleman**--a merchant handling goods between the producer and the buyer
- Moors**--Arab and/or Berber conquerors of Spain
- New World**--the Continental land mass of North and South America, so named because it was "new" to the Europeans who explored and settled here
- Planking**--the act or process of covering a boat with planks (heavy boards)
- Plantation**--a place that is planted or under cultivation: an agricultural estate usually worked by resident laborers, such as slaves
- Refitted**--the renovation of a ship and supplying of a ship
- Slave**--a human being who is owned by another
- Slavery**--the state of a person who is owned by another; the practice of slaveholding
- Slave trade**--the buying and selling of Africans before the American Civil War
- Slave trading ship**--a merchant ship used for transporting Africans to be traded and sold as slaves
- Triangular Trade Route**--the route taken by trade ships from Europe to Africa, to the New World, and then back to Europe

Why Do Boats Float?

The principle behind why boats float is based on a theory thought up by a guy named Archimedes (Ark-i'-meed-eez). His principle, named the Archimedes' Principle, explains how things float.

If you fill your bathtub with water, what happens when you get in? The water rises, right? That is because you “displaced” some of the water with your body and it had to go somewhere. The key to floating is that the object must displace an amount of water equal to its own weight.

For example, suppose you had a block of wood that was 1 foot square. Let's say that this block of wood weighs about 50 pounds. Now say we lower that wood into the water. The wood will move down into the water until it has displaced 50 pounds of water. That means that fifty pounds of water are pushing back up on the block and making it float. The *Henrietta Marie* weighed about 120 tons; that means it had to displace 120 tons of water to stay afloat!

In the old days, before there were engines, all boats were displacement boats. A displacement boat is designed to glide through the water smoothly with a minimum of power (like a canoe with oars or a sailboat under sail). Generally, these boats are very stable and ride smoothly.

The displacement boat has smooth lines and curves that gently move water out of its way, both sideways and down. Because the water moves gradually, there is less resistance against the boat. If a boat, or any other object, cannot displace water equal to its weight, it sinks. A piece of wood, or any substance lighter than water, floats because it both displaces water and because lighter objects naturally stay on top of heavier objects.

Which weighs more? Oil or water? Pour one cup of oil into a glass container. Into that same container pour a cup of water. Let the mixture sit for a few hours and see which substance rises to the top. Which is heavier?

Rocks and chunks of iron sink in water because they are so much heavier than water. Wood floats because it is lighter. But a piece of wood will not float if you put too much weight on top of it.

Fill up a sink or a bucket with water. Find a flat piece of wood, roughly a foot square, and about 10 rocks the size of your fist. The wood will be your “ship.” The rocks will be your “cargo.” Even though your ship displaces enough water to float it can still only carry so much weight, or cargo, before it sinks. Weigh your ship. Put it in the water. You now know that your ship is displacing the same amount of water as it weighs. Start adding your cargo, piece by piece. You should notice your ship sinking further and further into the water. When you have added enough rocks that your ship sinks, take the rocks and the wood out of the water. Take away the last rock you put on your ship. Now weigh the rest of the rocks you placed on your ship as cargo. This weight is the maximum amount of cargo your ship can carry.

Underwater Archaeology

Archaeology is the study of past peoples and cultures. Some archaeologists spend a lot of their time at historic sites, maybe where they think Native Americans might have lived hundreds of years ago, and then digging in those areas for artifacts such as arrowheads and weapons that will help them figure out how those people lived. Archaeologists also spend a lot of time in laboratories doing scientific tests on what they find in order to discover how old artifacts are, what they are made of and how they were used.

Some archaeologists do not work on land though. Some work under water! Underwater archaeologists look for and study, among other things, historical shipwrecks. Shipwrecks tell scientists and historians what life was like on ships hundreds of years ago. Underwater archaeology is a tricky business though because the archaeologists also have to be scuba divers.

Scuba divers can stay underwater for long periods of time because they wear tanks full of oxygen on their backs and breathe through special hoses. The word "SCUBA" is actually an acronym that comes from the words **S**elf **C**ontained **U**nderwater **B**reathing **A**pparatus. An acronym is a word that is made by combining shortened forms of a name or title to make a new word. Scuba divers can stay underwater for hours if the conditions are right and so underwater archaeologists use scuba gear to study historical sites beneath the surface.

As long as 300 years ago, people were diving down into shallow waters to search for sunken ships and lost treasure, but it was not until the 1960s that scuba gear was safe and easy enough to use for serious underwater exploration. During the 60s, George Bass headed up what might have been the first true scientific exploration of an underwater site. Bass lead a team of archaeologists in an effort to learn everything possible about a 3,000-year-old Roman shipwreck off the coast of Turkey.



Just like their land-bound counterparts, underwater archaeologists have to do a lot of work simply to find sites to study. First, they pick a ship they would like to search for

and then try and figure out where it might have sunk. To find a lost ship the archaeologists go to the area where they think the ship might have sunk and sail around the site with tools such as magnetometers and sonars. A magnetometer is a device that detects metal on the sea floor using powerful magnets. “SONAR” is another acronym that stands for **SOund NAVigation Ranging**. A sonar sends out sound waves that bounce off objects on the sea floor. When the sound waves bounce back, the sonar machine figures out how long the sound took to go the object and then back to the sonar. With that knowledge, the archaeologist can figure out how far away it is, and with more study, what the object is.

After locating a sunken ship, the archaeologists put on their scuba gear and swim down. If the object is too deep, they can use submarines and robots to explore the wreck. Divers photograph the wreck area before they ever start digging and exploring so that they can reconstruct what happened to the ship. Then they map the area, marking where each artifact is laying. After they have done that, they section the area into grids using string, pipe or steel bars. Each section of the grid is searched. Then the artifacts that are found are labeled, numbered, placed in a bag and taken to the surface for further study.

Sometimes wrecked ships have been buried under the sand and mud at the bottom of the ocean. If that is the case, then the underwater archaeologists can bring in a device they call a “mud sucker.” A mud sucker is like a huge vacuum cleaner that sucks away all the dirt, sand and mud surrounding an artifact or ship wreck.

Once they have removed the artifacts from under the water, the archaeologists take them to a laboratory. At the lab the archaeologists analyze, measure, describe, draw, photograph and attempt to discover what each object is and what it would have been used for. If they can, the archaeologists date each artifact.

When all that work is done, the archaeologists write a study about the site so that other people can learn from their work. Often, as is the case with the ***Henrietta Marie***, the archaeologists display what they have found in museum exhibitions.

Other Resources about Slavery

Books

Burnside, Madeleine. Spirits of the Passage, ed. by Rosemarie Robotham. New York: Simon & Schuster Editions, 1997. Tells the story of the transatlantic slave trade in the 17th century with special references to the *Henrietta Marie*.

Cottman, Michael H. The Wreck of the Henrietta Marie. New York: Harmony Books, 1999. Mr. Cottman was one of the divers who help excavate the *Henrietta Marie* and did much of the research on the ship itself.

Forkner, Ben and Samway, Patrick, S.J., eds. A New Reader for the Old South. Atlanta, Ga., 1991. This book contains stories, tales, essays, journal entries, poetry and songs from the American South.

Stampp, Kenneth M. The Peculiar Institution. New York: Vintage Books Edition, 1989. A book about slavery in America.

Web Sites

A guide to underwater archaeology resources on the Internet
<http://www.pophaus.com/underwater>

The Henrietta Marie
<http://www.historical-museum.org/exhibits/hm/perspect.htm>

A Slave Ship Speaks
<http://www.historical-museum.org/exhibits/hm/sss.htm>

African-American Resistance to Slavery
<http://www.afroam.org/history/slavery/main.html>

The Trans-Atlantic Slave Trade
<http://library.advanced.org/13406/ta/2.htm>