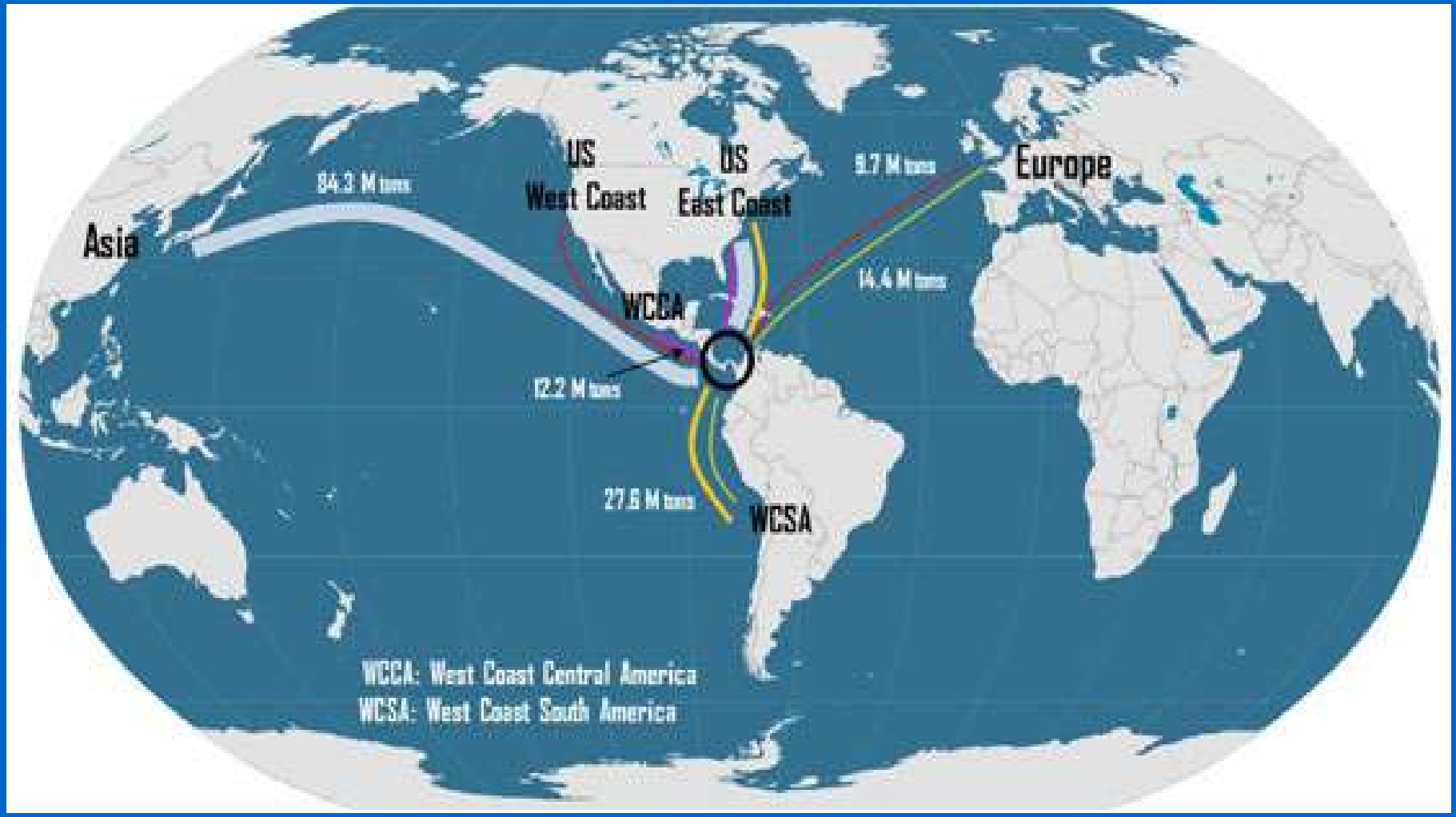
Question of the Day

What is the purpose of the Panama Canal and how is it important to international trade?

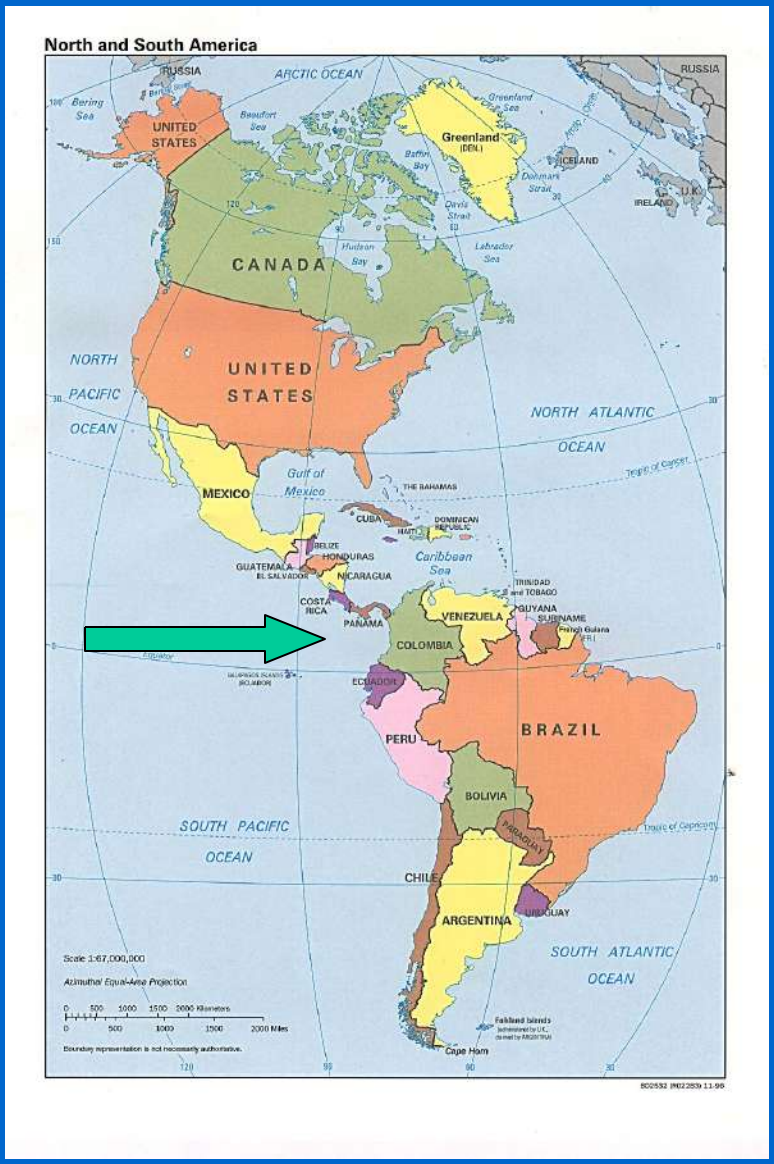
The Panama Canal

The World's Most Important Shortcut

Where is Panama?



Where is Panama?



What is an isthmus?

Panama is an isthmus. An isthmus is a narrow strip of land which has water on each side and connects two larger bodies of land.

What is a canal?

An area of water that is dug out across land. Canals connect bodies of water so that ships can travel through them.

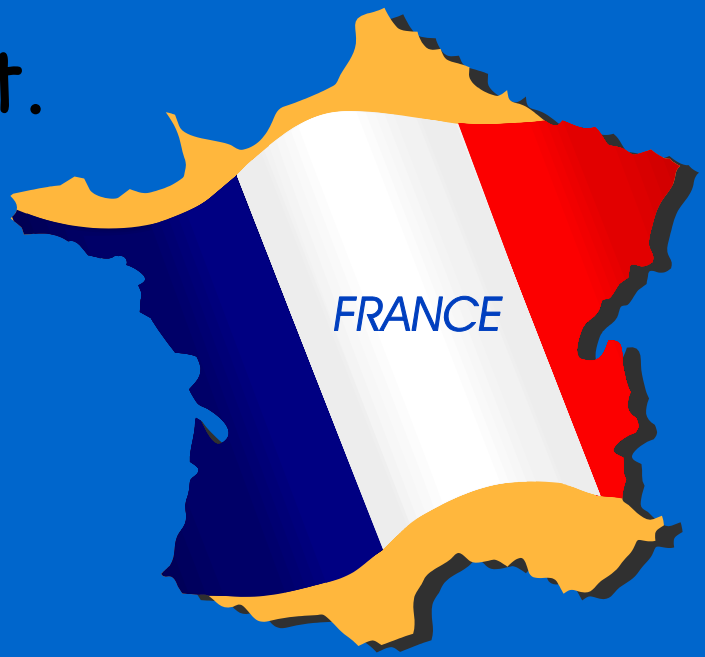
Early History

- 1513--Vasco Nunez de Balboa crosses the isthmus of Panama and becomes the first European to see the Pacific side of Panama.
- 1524--Spanish explorer Hernan Cortes suggests that a path across the isthmus of Panama would be a great idea
- 1534--The King of Spain wants to build a canal through Panama.
  - Although these people knew how wonderful it would be to create this, they didn't have the ability to do it.

The 1800s

1835-- France is given a permit to build a canal across Panama. However, they must first come up with a plan to build the canal.

1881-- They finally start.



Building the Canal

The next few pictures show what the area looked like when the French started building the canal. What challenges do you think they faced building a canal in this type of area?


© Print Collector/Getty Images


CULEBRA CUT. PANAMA CANAL. LAST VIEW BEFORE FLOODING.

After looking at these pictures, what do you think would be the challenges of trying to build a canal through a tropical jungle and mountains?

The French Give Up

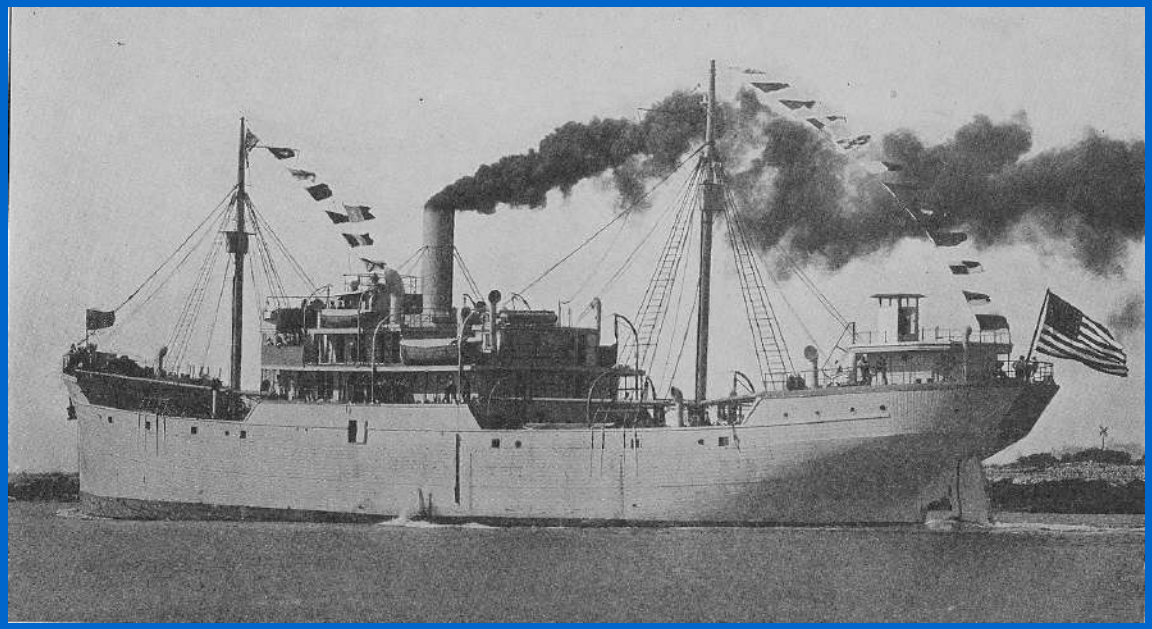
- 1881--A French company begins construction on the canal.
- 1890--After eight years France gives up on the project.
  - Over 20,000 construction workers die working on the project for France.
  - The company trying to build the canal goes bankrupt.

Why was it so important to build a canal?

- It is 1904. Theodore Roosevelt is president, and the United States is fast becoming one of the most powerful nations in the world. Such recent inventions as the telephone and the automobile make the 3,000 mile-wide country seem a lot smaller.

Imagine you are living on the East Coast. Your family is in the clothing business and wants to sell clothes to new stores in San Francisco. Of course, the clothes can't be loaded on a plane-there aren't any planes, and trains are expensive for shipping goods.

So your family decides to send the clothes by ship around the tip of South America. The trip can easily take well over a month, and many ships are destroyed by terrible storms.



But, what if a canal were built where the land between North America and South America is narrowest-across Panama? That could shorten the trip by nearly 8,000 miles!

That's just what President Theodore (Teddy) Roosevelt is determined to do. He wants to build a canal across Panama to help families like yours expand their trade. He knows that the canal will also help the United States defend itself.

How would building the Panama Canal help the U.S. defend itself?

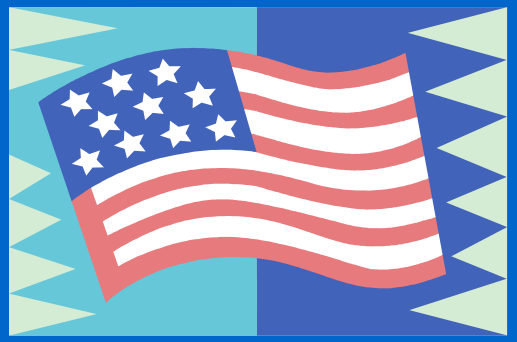
With the canal, the United States could quickly move its warships from one ocean to the other if they were needed to protect United States interests.

So the United States is ready to do what seemed impossible… join the Atlantic and Pacific Oceans!

But a major decision had to be made. Should the canal be built at sea level like the Suez Canal?

Or should it follow the natural rise of the land? This would mean building locks (enclosed chambers with gates at each end) to raise and lower ships as they pass through the canal. Locks this big had never been made before. The decision was made in favor of having locks. Now they just had to figure out how to build them.

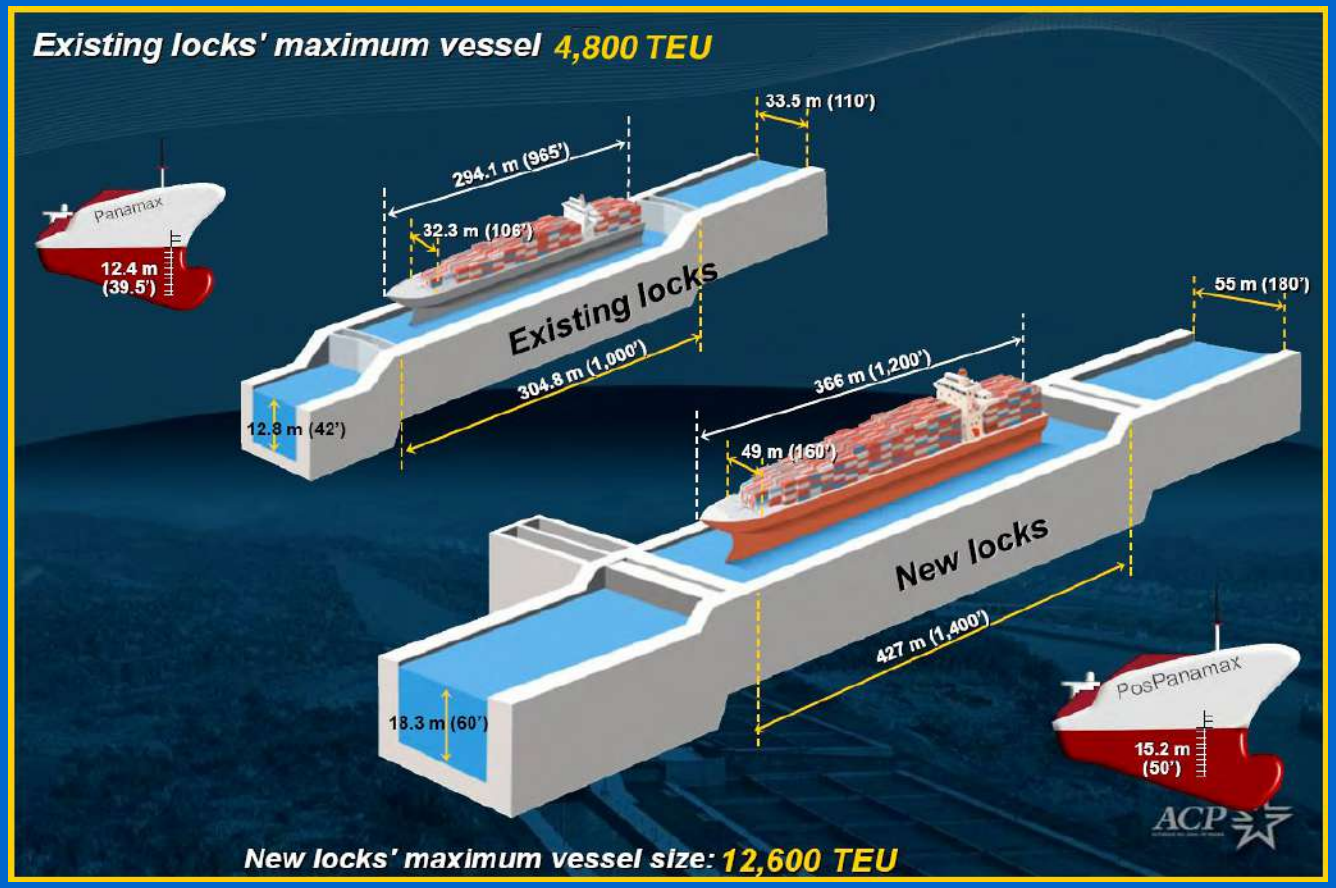
The United States

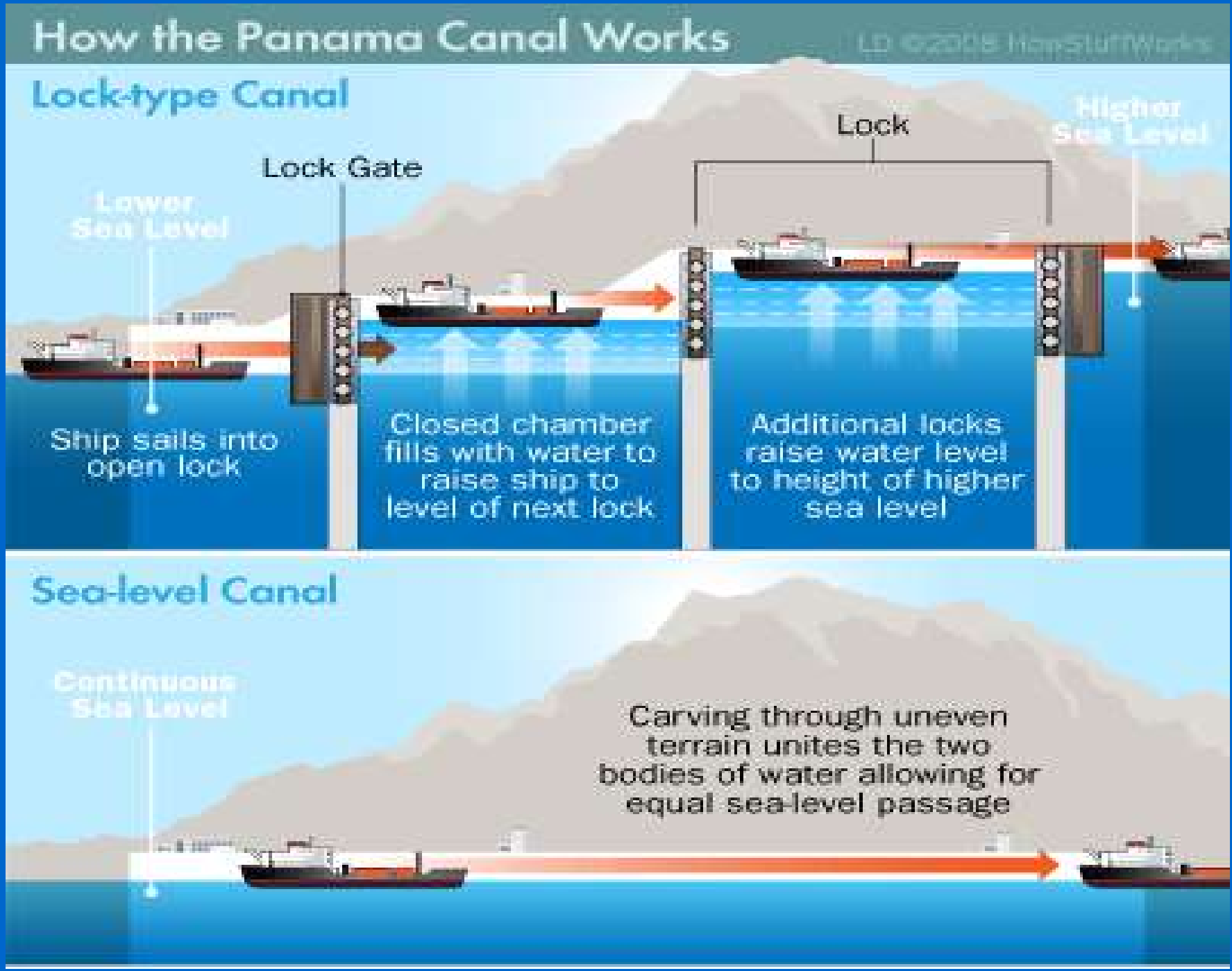


- 1904 The United States begins working on the Canal.
- 1914 The canal is completed.
- 1977 The United States signs a treaty with Panama and agrees to give Panama control of the canal in 1999.

What are locks?

A lock is a part of a canal with gates at each end where boats are raised or lowered to different water levels.




How the Panama Canal Works
Lock-type Canal
Lock
Higher Sea Level
Lock Gate
Lower Sea Level
Ship sails into open lock
Closed chamber fills with water to raise ship to level of next lock
Additional locks raise water level to height of higher sea level
Sea-level Canal
Continuous Sea Level
Carving through uneven terrain unites the two bodies of water allowing for equal sea-level passage

How do locks work?

The ship goes through a set of gates into a lock chamber. The water in the chamber is still at sea level. Then more water comes pouring into the chamber through valves.

The ship rises like a toy boat in a bathtub filling with water. When the water rises high enough, the ship passes through a second set of gates and enters a small lake. It goes to the next lock and the water is raised again.

Click this link to see how a lock works

- How a lock works

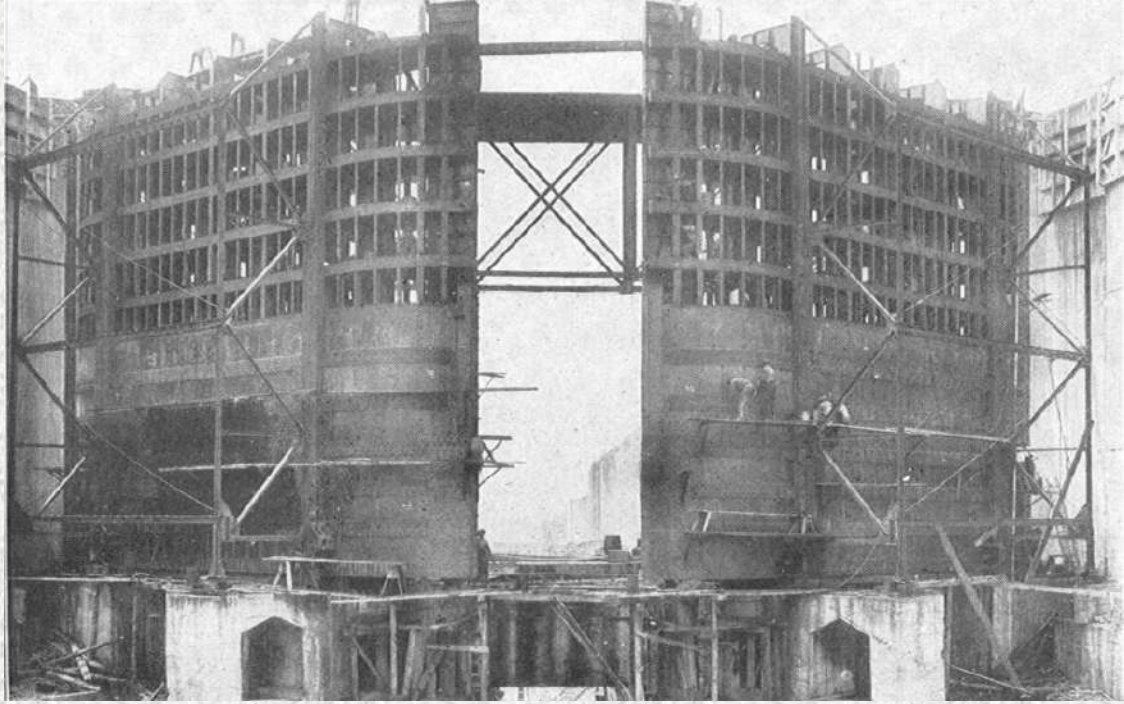
- http://www.pancanal.com/eng/general/howitworks/index.html

Here are the giant locks.

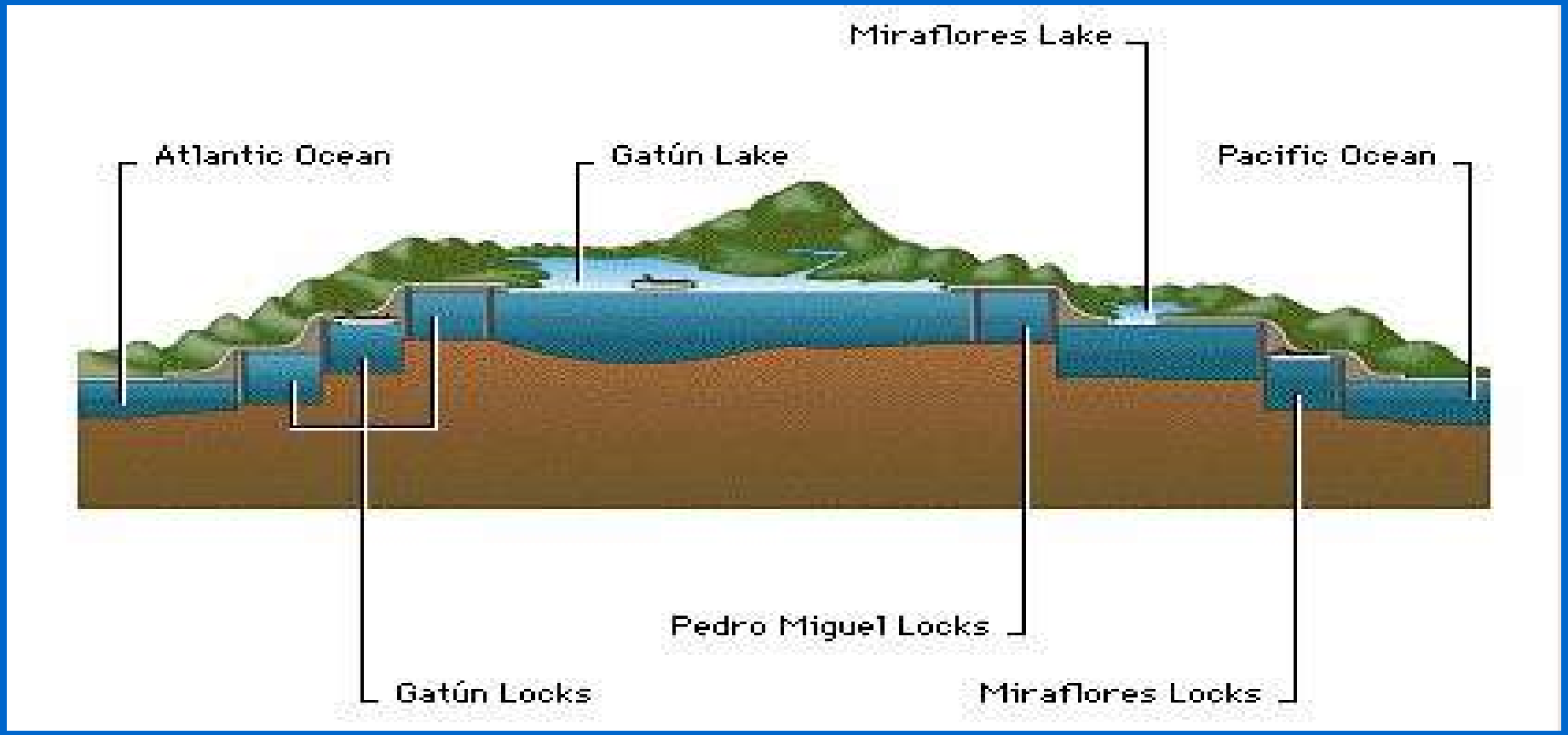
Here are the giant locks being built.

Photo from the Canal Zone Brats www.czbrats.com

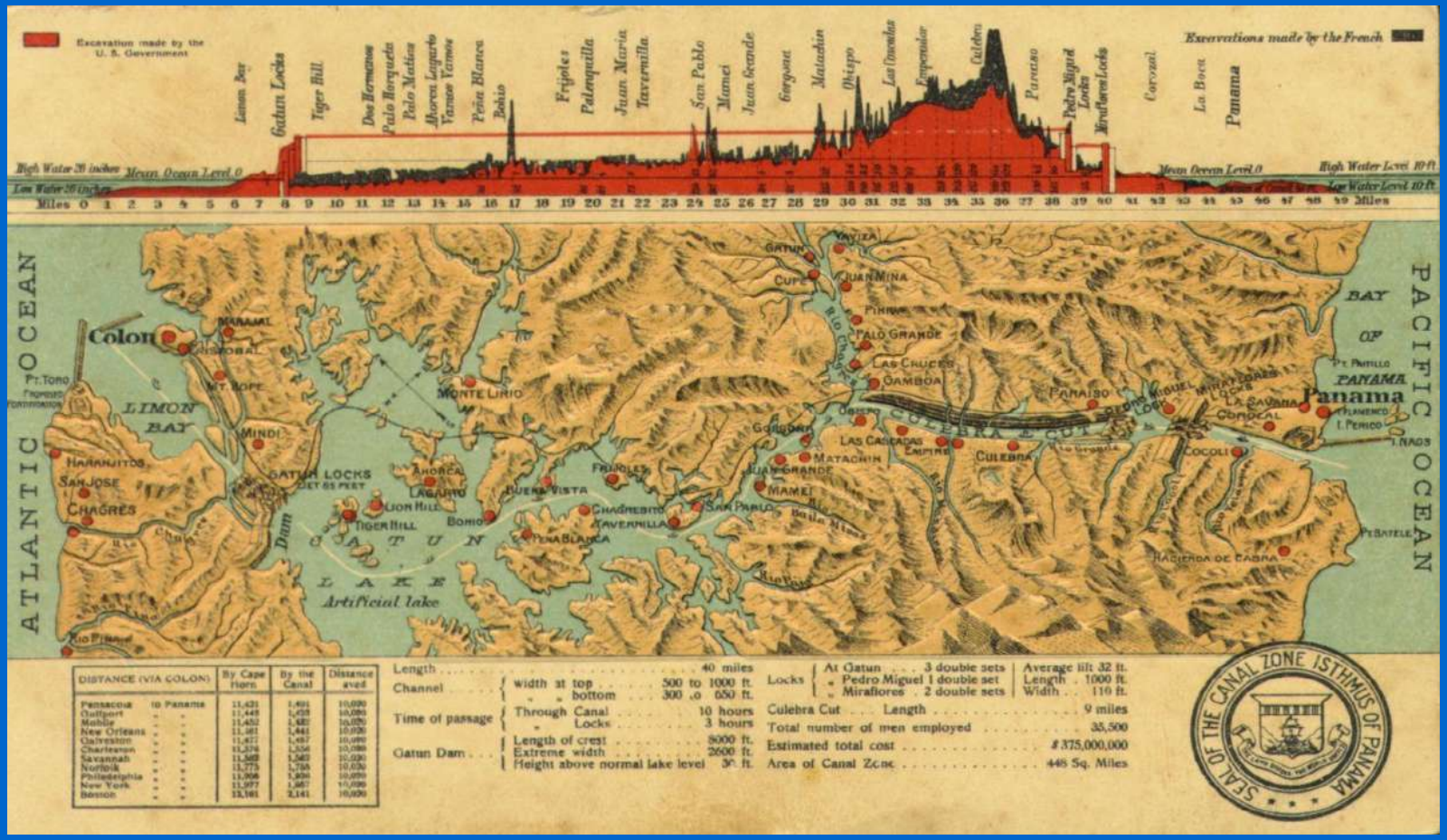
Here are the giant locks being built.



Here is how the Panama Canal works.



Here is one of the maps used when making the canal.



DISTANCE (VIA COLON)		By Cape Horn	By the Canal	Distance saved
Pensacola	to Panama	11,421	1,491	10,000
Gulfport	" "	11,448	1,458	10,000
Mobile	" "	11,452	1,482	10,000
New Orleans	" "	11,481	1,461	10,000
Galveston	" "	11,477	1,457	10,000
Charleston	" "	11,376	1,356	10,000
Savannah	" "	11,368	1,368	10,000
Norfolk	" "	12,273	2,208	10,000
Philadelphia	" "	11,908	1,908	10,000
New York	" "	11,977	1,987	10,000
Boston	" "	12,141	2,141	10,000

Length		40 miles
Channel	width at top	500 to 1000 ft.
	" " bottom	300 to 650 ft.
Time of passage	Through Canal	10 hours
	" Locks	3 hours
Gatun Dam	Length of crest	8000 ft.
	Extreme width	2600 ft.
	Height above normal lake level	30 ft.

Locks	At Gatun	3 double sets
	" Pedro Miguel	1 double set
	" Miraflores	2 double sets
	Average lift	32 ft.
	Length	1000 ft.
	Width	110 ft.
Culebra Cut	Length	9 miles
Total number of men employed		35,500
Estimated total cost		$375,000,000
Area of Canal Zone		448 Sq. Miles

Challenges of Building the canal

Just like when the French had tried to build the canal, the builders of the canal had to figure out how to cut a 51 mile path through a tropical jungle and an area of mountains!

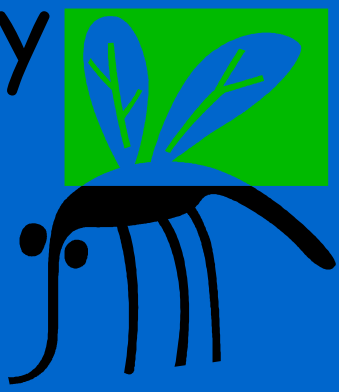
How do you think the building of the Panama Canal was a challenge to the people who built it?

Working Conditions

Imagine working on the Panama Canal. By noon the temperature is about 100 degrees. It's humid-so humid that after it rains steam rises from the ground and your clothes become soaking wet. There is no shade, no air-conditioning, and no place to get cool.

Working Conditions

The average yearly rainfall is about 80 inches. Flooding makes the ground like pudding, and you can sink up to your knees in mud. Tropical diseases, such as yellow fever and malaria are spread easily by mosquitoes.



Working Conditions

A tropical jungle may be a fascinating place for scientists to work, but for workers trying to build a canal, it's a nightmare. Imagine trying to dig out tons of dirt in a jungle like this. And there was no insect repellent to keep the bugs from biting.

Working conditions

As one worker said, "There was no shelter from the sun or the rain. There were no trees, and when the sun shines, you get it. When the rain falls you get it."

The building of the canal

The building of the canal

Photo courtesy of:
www.canalmuseum.com

1914 The Canal Opens

Image Courtesy of:
http://www.canalmuseum.com/photos/panamacanalphoto042.htm

The Panama Canal Today

Today the canal is a busy place. Ships get stuck in traffic jams because there are so many of them and often have to wait in line for up to 20 hours just to get up to the canal! Then the trip through the canal takes another **eight** hours!

https://www.youtube.com/watch?v=T9es-i5i4Zc

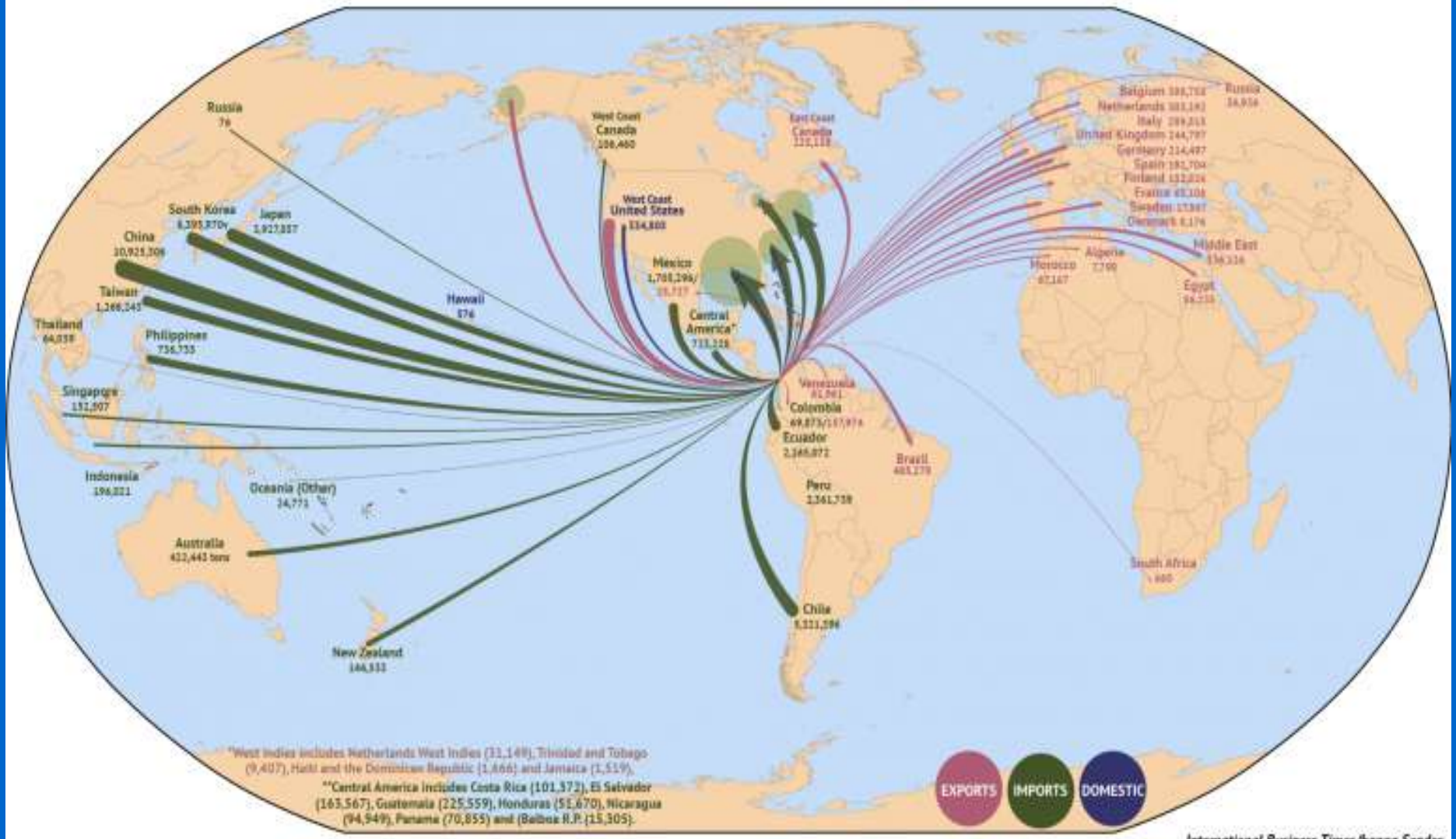
https://www.youtube.com/watch?v=-vi19z4LEi0

https://www.youtube.com/watch?v=dmEiwOQRb28

https://www.youtube.com/watch?v=ALVF3BlZV8I

The Panama Canal is an important landmark and is considered by some to be the 8th Wonder of the World.

U.S. TRADE ROUTED THROUGH THE PANAMA CANAL



*West Indies includes Netherlands West Indies (31,149), Trinidad and Tobago (9,407), Haiti and the Dominican Republic (1,866) and Jamaica (1,519).

**Central America includes Costa Rica (101,372), El Salvador (163,567), Guatemala (225,559), Honduras (51,670), Nicaragua (94,949), Panama (70,855) and Balboa H.P. (15,305).

International Business Times/Ivanna Sender


CANAL AREA
See large pull-out map at back of book for more detail.
0
25
Miles
N
©OCEAN CRUISE GUIDES LTD.
Nombre de Dios
Portobelo
Colon
New3-Step Locks (2014 est.)
Fort San Lorenzo
Chagres River
Gatun Dam
Gatun Locks
Gatun
Chagres River
Gatun Lake
Bohio
Soberania Nat'l Park
Chepo
Gamboa
Barro Colorado Is.
Tabernilla
Miraflores Locks
Summit Park
Culebra Cut
Gold Hill
Centennial Bridge
Conbtractors Hill
Pedro Miguel Locks
Panama City
Old Panama
Balboa
New3-Step Locks (2014 est.)
Fort Amador
CONTINENTAL DIVIDE
La Chorrera
Bridge of the Americas
Taboga Island Wildlife Preserve

The New and Improved Panama Canal

- The new locks are wider than the old ones, 180 feet vs. 110 feet, and are deeper, too, at 60 feet vs. 42 feet.
- Officials say the larger locks and new lane will double the waterway's cargo capacity.

- https://www.youtube.com/user/PanamaCanalOnline