

## Chapter 3: Google Earth Exercise

### Exercise 1

#### Comparing distances, then and now: The acceleration of transport.

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Irrespective of which interpretation of globalization one adheres to, a key driver of global change in the twentieth century has been a rapidly diminishing friction of distance. In the past 100 years the speed of transport for people, goods, and information has increased dramatically and enabled the development of transnational corporations, increased global trade and migration, and new possibilities for participating in the global economy.

**The task:** Using Google Earth, compare the time–space convergence of Southampton, UK and New York City—key ports for migration flows during the early twentieth century. In 1900, the typical speed for steam liners making the passage would have been **24 knots, or about 45 kilometers per hour**. Modern jet airliners cruise at an average ground speed of **950km/h**, though an accessible price for transatlantic travel at this speed was not attained until 1978 with the introduction of large body planes and airline deregulation.

➤ **Question:** At what annual rate have these locations converged? Express this as minutes per year.

**Step 1:** Determine the distance between the cities using the path tool.

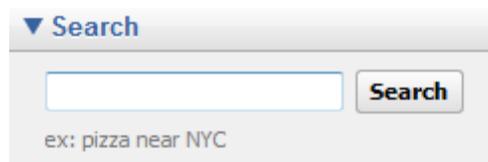


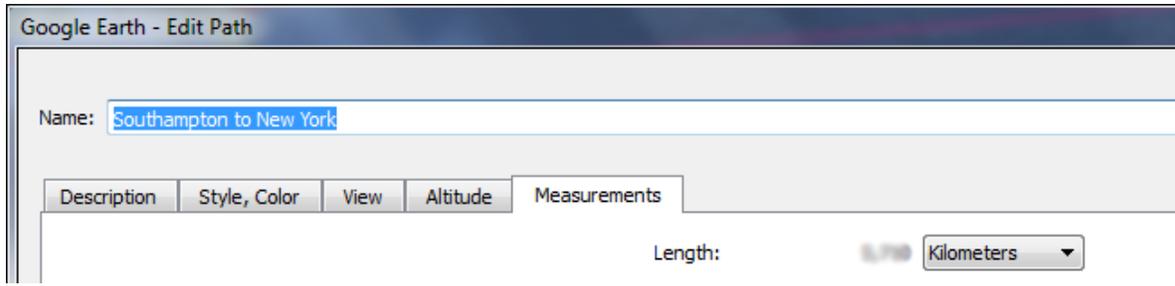
Figure 1: Search box

Locate the origin and destination using the search box (you can begin in either New York or Southampton), then connect the two using the path tool.



Figure 2: Path tool

The path tool window can be moved aside while you navigate across the Atlantic to create the shortest route. View controls on the left edge of the viewport can be used to pan, zoom and angle the view.



*Figure 3: Edit path window*

The left-most tab in the path tool dialogue box can be used to show the length of any path you draw in the viewport. Use this to calculate the time for passage circa 1900.

## Exercise 2

### Logistics of globalization: The global shipping trade

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The International Maritime Organization estimates that 90 per cent of the world's trade is moved around the planet by sea. Since the turn of the century, container ships have more than doubled in size, with canals being a critical component of global transportation networks. As noted in your textbook, a partnership between the Nicaraguan government and a Chinese consortium has set out to construct a canal in Nicaragua, cutting through Lake Nicaragua, the largest freshwater body in the region. Construction began in 2014, and if completed, will be able to handle vessels three times larger than the Panama Canal, currently the closest transit route. Currently, ships that are too large for the Panama Canal must use the Suez Canal in Egypt.

**The task:** Using Google Earth, locate and set place marks on the proposed sites of the two ports that will serve as entry and exit points for Nicaragua's proposed canal system (Port coordinates are given below). Next measure the distance a cargo vessel would travel from New York (USA) to Shanghai, (China) using the new canal. **Ships traveling between these two port cities typically use the Suez Canal, travelling approximate distance of 13 861 nautical miles.** Proponents of the Nicaragua Canal claim it will save a considerable amount of travel time (and thus costs) on such East/West routes.

<b>BRITO PORT</b> (Pacific Ocean)	<b>AGUILA PORT</b> (Caribbean Sea)
11°20'39.17"N	11°27'37.90"N
85°58'23.19"W	83°48'57.81"W

- **Question:** How many kilometres will cargo ships save taking the Nicaragua Canal rather than the Suez Canal?

**Step 1:** Determine the location of the entry/exit ports of Nicaragua's proposed canal by entering their coordinates (you can begin in either Brito on the Pacific side, or Aguila on the Caribbean side). Locate the port cities of New York (USA) and Shanghai (China).

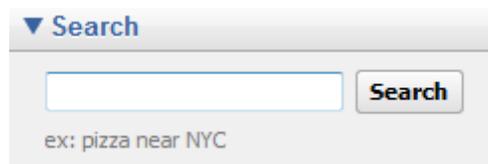


Figure 4: Search box

**Step 2:** Put place markers on the location of each port you have located (Brito, Aguila, New York and Shanghai).



Figure 2: Place name tool

**Step 3:** Use the ruler and path tools to draw a shipping route from the New York to Shanghai that uses the proposed Nicaragua Canal. Your route should enter through the Aguila port (on the Caribbean Sea), traverse the land westward, cutting through Lake Nicaragua to enter the Pacific Ocean through the Brito Port. From there your route should travel onward across the Pacific toward Shanghai. Try to avoid crossing major landmasses.



Figure 3: ruler tool

The ruler tool window can be moved aside while you navigate down the Atlantic and across the Pacific to create the most direct route. View controls on the left edge of the viewport can be used to pan, zoom and angle the view.

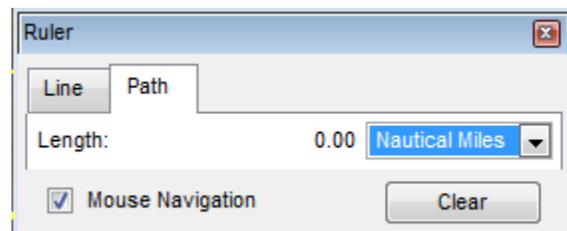


Figure 4: Ruler window

Use the ruler tool to calculate the distance travelled (in nautical miles) by a cargo ship moving from New York to Shanghai, using the Nicaragua canal.

## **Answers**

### **Exercise 1**

The distance from Southampton to New York City is approximately 5700 kilometers by ship. In 1900, at a speed of 45km/h the voyage would take 127 hours. In 1978 the same voyage would take exactly 6 hours by modern airliner. This represents a 121 hour convergence over a time span of 78 years or 93 minutes per year.

### **Exercise 2**

Using the proposed Nicaragua canal would save approximately 3170 nautical miles over the Suez Canal. The distance between the two cities using the Nicaragua canal would be 10,690 nautical miles, versus 13,861 nautical miles using the Suez Canal.