Aeronautical/Flight Maps and Early Aviation

Even before the Wright Brothers had their legendary flight at Kitty Hawk in 1903, humans had successfully experimented with taking to the sky. In many of these instances, the dream of being airborne quickly shifted from fantasy to civil and military use. For example, during the American Civil War, balloons were used to gain aerial perspectives of battlefields, and during World War One, fighter planes and bombers were first introduced.

One of the greatest challenges faced with early aviators was accurately calculating the distances and routes necessary to accomplish missions while using minimal amounts of fuel. Today, this problem still factors into military and commercial flight plans.

I. Aeronautical Maps

Examine the aeronautical maps from 1924 http:/www.loc.gov/item/2009582531/. Next, examine a modern, digital and interactive map at http://skyvector.com/.

What are some of the similarities and differences in the maps?

How is the vocabulary different? Similar?

Now, using the map given (http://www.loc.gov/resource/g3701pm.gct00064/?sp=5), calculate two routes from New York to Pittsburgh (using the red trails).
Assume your plane only gets 20mpg (miles/gallon) and carries 15 gallons of fuel. Which route must you use to reach Pittsburgh without crashing? Where must you refuel?

What factors might change your calculations?

II. Civil versus Military

The Federal Aviation Administration was established in 1958 to oversee civil aviation, one year after the United States Air Force was established. By that time, flight had moved out of being simply a fanciful idea and into a complex reality. Examine the sources and answer the following questions:

For images 1 & 2: Why would aeronautical maps be part of a geological survey?

For image 3: How might flight planning be different today than in 1928?

For image 4 & 5: What do you think the role of a “Ferrying Group” was?

For image 6: Why was the Air Force originally the “Army Air Service” and “Army Air Corps?” Do you think there is also a relationship to NASA?

For image 7, 8, & 9: How much of aviation was science and sport by the 1920s?

For image 10: What are some of the necessary tools to fly an airplane in the 1900s? Today?

For document 11: What role did the Wright Brothers play in military flight? (Link)

For document 12: Who would have been able to afford their own ‘aeroplane’ in 1911? (Link)

Using the previous documents and your knowledge of the 20th Century, answer the following question (think DBQ):
To what extent did the military and warfare influence civilian aviation/aeronautical technology?