

# CURRICULUM GUIDE

## Water, Rails, Roads and Runways: New Modes of Transportation

*by Janet Brown*

*for the Indiana Historical Society Indiana Experience*

## You Are There 1924: *Tool Guys and Tin Lizzies*



INDIANA HISTORICAL SOCIETY

This is a publication of the Indiana Historical Society  
Eugene and Marilyn Glick Indiana History Center  
450 West Ohio Street  
Indianapolis, IN 46202-3269 USA  
Teacher Resource available online: [www.indianahistory.org](http://www.indianahistory.org)

Cover Image: “George Greenlee Ford Garage” (Indiana Historical Society, Digital Image Collection,  
Item ID P0114\_G\_AR12)

Copyright 2010  
Indiana Historical Society  
All rights reserved

Except for copying portions of the teacher resources by educators for classroom use, or for quoting of brief passages for reviews, no part of this publication may be reproduced, stored in or introduced into a retrieval system, or transmitted, in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), without written permission of the copyright owner. All inquiries should be addressed to the Public Programs Division, Indiana Historical Society.

This lesson coordinates with the You Are There 1924: *Tool Guys and Tin Lizzies* component of the *Indiana Experience* at the Eugene and Marilyn Glick Indiana History Center. In this experience, visitors are invited to step back in time to 1924 to visit the re-created Liniger brothers' plumbing, tinning, and roofing shop in Hartford City, Indiana. Auto mechanics from the George Greenlee Ford dealership next door worked in this space through an agreement Greenlee had with the Linigers. The Linigers conducted most of their work in homes and businesses around town, leaving the space available for use by Greenlee's mechanics. The curriculum is intended to provide historical context for life in Indiana and, in particular, life in Blackford County and Hartford City in the 1920s. The lesson may be used to prepare students for a visit to You Are There 1924: *Tool Guys and Tin Lizzies* or it may be used as a follow-up to a visit. In addition, the historical context and themes will be relevant to classroom instruction even if a visit is not possible. You Are There 1924: *Tool Guys and Tin Lizzies* opens March 20, 2010, and will remain open until February 27, 2011.

### Overview/Description

It is hard to imagine life without an automobile. This lesson explores the history of transportation focusing on the automobile in Indiana. Students will examine a transportation time line, read about difficulties in early road travel, and consider reasons for purchasing a particular automobile.

### Grade Level

Elementary (grades 4 and 5) and middle/intermediate school (grades 6, 7, and 8)

### Academic Standards

- **Indiana Standards**
  - Grade 4
    - Social Studies 4.1.11—Identify and describe important events and movements that changed life in Indiana in the early twentieth century.
- Language Arts 4.4.2—Select a focus, and organization, structure, and a point of view based upon purpose, audience, length, and format requirements for a piece of writing.
- Language Arts 4.4.4—Use logical organizational structures for providing information in writing, such as chronological order, cause and effect, similarity and differences, and posing and answering questions.
- Science 4.1.7—Discuss and give examples of how technology has improved the lives of many people, although benefits are not equally available to all.
- Science 4.1.8—Recognize and explain that any invention may lead to other inventions.
- Grade 5
  - Social Studies 5.4.4—Trace the development of technology and the impact of major inventions on business productivity during the early development of the United States.
  - Language Arts 5.4.4—Use logical organizational structures for providing information in writing, such as chronological order, cause and effect, similarity and differences, and posing and answering questions.
  - Science 5.1.6—Explain how the solution to one problem may create other problems.

- Grade 6
  - Social Studies 6.1.18—Create and compare time lines that identify major people, events, and developments in the history of individual civilizations and/or countries that comprise Europe and the Americas.
  - Language Arts 6.4.4—Use logical organizational structures for providing information in writing, such as chronological order, cause and effect, similarity and differences, and posing and answering questions.
- Grade 7
  - Language Arts 7.4.4—Use logical organizational structures for providing information in writing, such as chronological order, cause and effect, similarity and differences, and posing and answering questions.
  - Science 7.1.10—Identify ways that technology has strongly influenced the course of history and continues to do so.
- Grade 8
  - Social Studies 8.4.5—Analyze contributions of entrepreneurs and inventors in the development of the United States economy.
  - Language Arts 8.4.4—Use logical organizational structures for providing information in writing, such as chronological order, cause and effect, similarity and differences, and posing and answering questions.
  - Science 8.1.8—Explain that humans help shape the future by generating knowledge, developing new technologies, and communicating ideas to others.
- National Standards (National Council for the Social Studies)
  - II Time, Continuity, and Change
    - Identify and use key concepts such as chronology, causality, change, conflict, and complexity to explain, analyze, and show connections among patterns of historical change and continuity.
    - Identify and describe selected historical periods and patterns of change within and across cultures.
  - VII Production, Distribution, and Consumption
    - Explain and illustrate how values and beliefs influence different economic decisions.
    - Use economic concepts to help explain historical and current developments and issues in local, national, or global contexts.
  - VIII Science, Technology, and Society
    - Describe examples in which values, beliefs, and attitudes have been influenced by new scientific and technological knowledge.

### **Social Studies/Historical Concepts**

Transportation, automobile, economic choices, and time lines

### **Learning/Instructional Objectives**

#### **Students will:**

- Use primary source materials to understand difficulties in travel in the early 1900s.
- Explore and understand economic choices relating to choosing an automobile.
- Read and understand a transportation time line.
- Explain how one form of transportation affected history.

## Time Required

Two to three class periods

## Materials Required

- Paper
- Pencils
- Student Handout: Transportation Time Line
- Student Handout: It's Your Choice
- Images from the Indiana Historical Society collection. See pages 12 through 21 of this lesson.
  - “Marmon ‘41’ An Extraordinary Car” advertisement, no date  
(Indiana Historical Society, Digital Image Collection, Item ID P0143\_BOX1\_FOLDER3\_MARMON\_AD)
  - “Auburn Automobile Model 6-40 A Seven Passenger Touring Car”, 1916  
(Indiana Historical Society, Digital Image Collection, Item ID PAMF\_TL215\_A82\_A76\_1916\_002)
  - “Wright Brothers and Plane”, no date  
(Indiana Historical Society, Digital Image Collection, Item ID P0130\_P\_BOX2\_FOLDER9\_001\_UNNUMBERED)
  - “Wagon Train on the National Road”, no date  
(Indiana Historical Society, Digital Image Collection, Item ID P0130\_P\_BOX70\_FOLDER2\_91492)
  - “Business Street, Argos, Indiana”, 1905-1950  
(Indiana Historical Society, Digital Image Collection, Item ID P0391\_BOX1\_ARGOS.tif)
  - “Big Four Engine, 1910”  
(Indiana Historical Society, Digital Image Collection, Item ID P0130\_289077\_2P8)
  - “Electric Bus and Streetcar”, 1939  
(Indiana Historical Society, Digital Image Collection, Item ID P0130\_245151P8)
  - “Canal Bridge on West Street”, 1917  
(Indiana Historical Society, Digital Image Collection, Item ID P0130\_61054P8)
  - “B&O Interurban Crossing, Milford JC. Ind. 4”, 1915  
(Indiana Historical Society, Digital Image Collection, Item ID P0391\_BOX5\_INTERURBANS\_AND\_STATIONS\_004)
  - “Balloon Jupiter Preparing for First Air Mail Trip in the World”, 1859  
(Indiana Historical Society, Digital Image Collection, Item ID P0130\_P\_BOX26\_Folder7\_302321-F-4)
- Image from The Henry Ford Museum
  - “Make Pleasure Island a Treasure Island for the Whole Family” Ford advertisement, 1924

## Background/Historical Context

The development of methods and networks of transportation is an important sub-theme in United States history. The American Colonies offered limited modes of transportation to colonists, making travel difficult. The colonies focused on maritime transportation to move settlers about both domestically and internationally. Though Native American trails did exist in the colonies' interior, they were generally not wide enough to accommodate wheeled vehicles used by the colonists. Instead, they functioned as footpaths or trails for horse and rider. During the colonial era, America's rivers and coastal waterways provided a transportation network for boats powered by people or the wind.<sup>1</sup> Travel required much time and effort.

In 1807 a new invention, the steamboat, helped to speed travel. Invented by Robert Fulton with

<sup>1</sup> Post, Robert C., “History of Transportation Technologies,” The Franklin Institute, <http://www.fi.edu/learn/case-files/transportation.html>.

the backing of wealthy New York judge Robert R. Livingston, the steamboat increased water travel to four-and-a-half miles per hour.<sup>2</sup> Steamboats became common sights on American rivers, and steam-powered ocean “liners” were also used to transport people and goods between the United States and Europe. One problem remained, however, and that was that travel in the Pacific Ocean was still limited because the ocean “liners” could not carry enough fuel to power the steam engine for the entire trip across this vast space. Pacific “clippers” had to be equipped with sails to help move the ships through the ocean.<sup>3</sup>

In the early nineteenth century, Americans began to make improvements to travel networks into the country’s interior. By the early 1800s, a rudimentary road system had been established along the East Coast, and roads were beginning to extend into the country’s middle section.<sup>4</sup> The National Road, which stretched from Cumberland, Maryland, into Illinois, for example, reached Indiana in 1827 and had crossed the state by 1834.<sup>5</sup> It reached Vandalia, Illinois, in 1839.<sup>6</sup> Still, roads such as the National Road were generally just dirt paths cut through a swath of trees.

Water transport remained important and a system of canals was conceived to connect river systems, allowing ships and boats to make a continuous journey into the country’s interior and from port to port. Canals included lock systems that raised or lowered water levels in order to move ships from one elevation to another. By the 1840s, several states had canal systems, with the largest and most famous being the Erie Canal (completed in 1825) that connected New York City and the Hudson River to the Great Lakes through

---

<sup>2</sup> “The Invention of the Steamboat” in *Big Apple History: From New York to Your Town*, Thirteen/WNET New York: Educational Broadcasting Corporation, 2005, <http://pbskids.org/bigapplehistory/early/topic17.html>.

<sup>3</sup> Post.

<sup>4</sup> Post.

<sup>5</sup> “History of the Road,” Indiana National Road Association, <http://www.indiananationalroad.org/road.history.html>.

<sup>6</sup> “National Road History,” National Road Alliance of West Virginia, Inc., <http://www.historicnationalroad.org/history.htm>.

Buffalo, New York.<sup>7</sup> In 1836 Indiana governor Noah Noble signed the Mammoth Internal Improvements Act into law, providing for the construction of four canals in Indiana: the Central Canal, Whitewater Canal, Michigan and Erie Canal, and the Cross-Cut Canal. Only a portion of Indiana’s canals were ever constructed since funding ran out.<sup>8</sup> Though canals did improve interior transportation networks, travel remained limited to seasons when there was no ice blocking the water routes.

More and more, overland travel seemed to be the wave of the future. By the height of the canal era (1840s), development of a system of railways was well under way. Railroads often were able to use a more direct route than canals, shaving mileage and thus time, off of journeys. The first transcontinental railway system was completed in 1869. The railway stretched from Council Bluffs, Iowa, to Sacramento, California, and made “manifest destiny” a reality.<sup>9</sup> The power and influence of railroads was at a peak in the early 1900s, when 260,000 miles of tracks stretched across the nation’s interior. Local electric railway systems, known as “street railroads” or “interurbans,” provided a regional network that facilitated the growth of suburbs.<sup>10</sup>

In addition, another transportation technology emerged in the early 1900s. In 1901 brothers Wilbur and Orville Wright experimented with flying a glider at Kitty Hawk, North Carolina, and had several successful, though short, flights. On December 17, 1903, the brothers successfully flew a short distance in their engine-propelled airplane.<sup>11</sup> Air travel became important in the future, but it was another technology that truly eclipsed the “interurbans” and railroads themselves: the automobile.

---

<sup>7</sup> Post.

<sup>8</sup> Canal Society of Indiana, <http://www.indcanal.org/>.

<sup>9</sup> “Timeline: Transcontinental Railroad,” *American Experience*, Public Broadcasting Service, <http://www.pbs.org/wgbh/amex/tcrr/timeline/index.html>

<sup>10</sup> Post.

<sup>11</sup> “The Wilbur and Orville Wright Timeline, 1867–1948,” Library of Congress, <http://memory.loc.gov/ammem/wrighthtml/wrighttime2.html>.

Indiana has always been closely linked to the automobile industry. Hoosier automobile manufacturers grew out of the wooden carriage industry that had developed in the state during the mid to late 1800s due to a large supply of lumber and skilled workers.<sup>12</sup>

Elwood Haynes was Indiana's automobile pioneer. In 1889 Haynes partnered with brothers Elmer and Edgar Apperson to open the Riverside Machine Works and produced a self-propelled, gasoline-powered vehicle that he successfully tested on Pumpkinvine Pike in Kokomo in 1894. The partnership dissolved in 1901 and Haynes began his own company, the Haynes Automobile Company. The firm went out of business in 1925.<sup>13</sup>

Haynes and other Indiana automobile manufacturers, including Auburn, Stutz, Cord, Duesenberg, Marmon, Cole, Studebaker, and more, saw themselves as craftsmen. They were independent inventors and entrepreneurs and generally produced their vehicles in limited quantities, enabling them to focus on details and to make various "extras" standard.<sup>14</sup> For example, in 1910 Haynes was the first to equip open cars with a top, windshield, head lamps, and a speedometer as standard equipment.<sup>15</sup> Some Indiana manufacturers produced luxury vehicles using a labor-intensive process where the workers took parts to the frame of the automobile and each worker had more than one job.<sup>16</sup> This process proved inefficient in comparison with the assembly-line process pioneered by Henry Ford in his production of the Model T. In Ford's plants, Model Ts moved along the assembly line while workers remained in place. Each worker had a specialized task, thus speeding the production process.

The assembly-line method of production enabled Ford to sell quality vehicles at a lower cost, and

<sup>12</sup> Dennis E. and Terri Horvath, *Cruise IN: A guide to Indiana's Automotive Past and Present*, Indianapolis, IN: Publishing Resources, 1997, pp. iv and vi.

<sup>13</sup> "Every Hoosier is Justly Proud" in *The Indiana Junior Historian*, April, 1993, Indiana Historical Bureau, <http://www.in.gov/history/files/7017.pdf>.

<sup>14</sup> Horvath, iv.

<sup>15</sup> "Every Hoosier Justly Proud," p. 4.

<sup>16</sup> "Every Hoosier Justly Proud," p. 6.

the Model T became the vehicle for the masses. Indiana-made luxury vehicles were too expensive for the average citizen to buy. Many companies in Indiana could not compete with the Ford model and went out of business. Competition became even stiffer when Ford introduced a credit plan in the late 1920s, allowing customers to buy vehicles on installment.<sup>17</sup> Studebaker was the only Indiana car company to survive the Great Depression.

Though Indiana auto manufacturers fell by the wayside, it was clear that the automobile itself was here to stay. By the 1920s, the automobile craze had already created lasting effects on the landscape. Improved roads, street signs, auto-related businesses such as gas stations and tire shops, and businesses catering to motorists (motels, roadside restaurants, etc.) are all lasting effects of the automobile age.

Automobile manufacturing experienced a revival in Indiana in the 1980s and 1990s. While Indiana may no longer be the seat of entrepreneurial automobile manufacturers such as Studebaker, the state does produce automobiles and auto parts, components, and electronics for companies based out of state. A sampling of some of Indiana's automotive industry connections includes: the Subaru Isuzu Automotive plant in Lafayette, the General Motors Truck and Bus Group plant in Fort Wayne, and the AM General Corporation military vehicle plant in Mishawaka.<sup>18</sup>

## Teacher's Instructional Plan

### Introduction

Introduce the lesson by showing students the image of the Auburn automobile. Ask students if they think Americans have a romance with the automobile. Briefly discuss with students how the automobile has affected our lives. Ask students to name other methods of transportation, and as students list modes of transportation, share with them the approximate date it was invented or commonly in use.

<sup>17</sup> Robert Casey, *The Model T: A Centennial History*, Baltimore, MD: The Johns Hopkins University Press, 2008, p. 85.

<sup>18</sup> Horvath, vi.

## Procedure

- Distribute copies of the Student Handout: Transportation Time Line.
  - Show students the Indiana Historical Society images picturing different modes of transportation and ask students to mark on their time lines where each mode of transportation would fit. Students should be ready to explain why they placed each image where they did.
  - Ask students to place the images on the dates when the pictured modes of transportation were invented or popular and not the date that the image was made.
  - The following list delineates where the images would be placed on the time line.
    - “Balloon Jupiter Preparing for First Air Mail Trip in the World”—1783 (Hot-air balloon invention)
    - “Wagon Train on the National Road”—1811–1839 (dates of construction)
    - “Big Four Engine”—1840s
    - “Canal Bridge on West Street”—1836 (for the Canal) or 1890 (for the streetcar)
    - “Electric Bus and Streetcar”—1890 (for the streetcar) and 1908 (for the electric bus)
    - “B&O Interurban Crossing, Milford JC. Ind. 4”—1900
    - “Wright Brothers and Plane”—1903
    - “Business Street, Argos, Indiana”—1920s (Americans own 20 million cars)
- Direct students to study the images again and to choose one.
  - Students will research and write a newspaper article explaining what led to the discovery of the form of transportation pictured. Students should also include the following information in their article:

What is important about this method of transportation? What effect did it have on America? Who was (were) the inventor(s)? Where was the method of transportation invented or used? When was the method of transportation invented or popular? Why was the method of transportation popular?

- Define the terms “corduroy road” and “macadamized road” for the students. Corduroy roads were early roads constructed of logs laid side by side with gaps filled in by sand or gravel.
  - A description of corduroy roads and their successor, plank roads, is available online as a primary source document at [http://memory.loc.gov/cgi-bin/ampage?collId=icufaw&fileName=bbf0091/icufawbbf0091.db&recNum=0&itemLink=D?fawbib:1:/temp/~ammem\\_FLTL](http://memory.loc.gov/cgi-bin/ampage?collId=icufaw&fileName=bbf0091/icufawbbf0091.db&recNum=0&itemLink=D?fawbib:1:/temp/~ammem_FLTL) (Information about corduroy roads is found in image 2).
  - In “A Traveler’s Impression of Indiana in 1851” (available online as digitized text at [http://www.archive.org/stream/travelersimpres00best/travelersimpres00best\\_djvu.txt](http://www.archive.org/stream/travelersimpres00best/travelersimpres00best_djvu.txt)), traveler J. Richard Beste describes corduroy roads in the following way: “A corduroy road is made of the unhewn trunks of trees laid side-by-side on the earth. A strip is nailed across each end to keep the logs in their places. The wheels, whether of carriage or wagon, fall from trunk to trunk with the regularity of the thumps and stops with which the cogs in the wheels of a watch fit between and arrest one another. Sometimes the ruts between the prostrate trunks of the trees are partially filled with earth; then, of course, the jolts are less severe.” (pp. 14–16.)



- A description of macadamized roads is found online at <http://www.connerprairie.org/Learn-And-Do/Indiana-History/America-1800-1860/The-National-Road.aspx> in this document about the National Road in Indiana, part of which was macadamized.
- Read the following passage to students.
  - Ask students to listen for things in this diary entry about a 1913 cross-country road trip to Indiana that surprise them. (From *Overland by Auto in 1913: Diary of a Family Tour From California to Indiana*, by Estella M. Copeland, vol. 26, no. 2, p. 77. Indianapolis: Indiana Historical Society, 1981.)
    - “July 20. Started out at 7 A.M. everything went well till 9 A.M. when engine stopped and would not go with all kinds of coaxing, so a Mr. Walker came along in his machine and Guy went home with him and telephoned to Keys & Blosser Garage at Maxwell Mo. 10 miles away to come pull us in, (which they did at noon), got in and found a machinest [sic.] he cleaned the breaker box by soaking it in gasoline then adjusted its points put it all together and it went off all right (eighteen miles we came to the little old time village of Arrow Rock here was an old fashioned Inst.) its 38 miles to Boonville where we take the ferry across the Missouri River but it doesn’t make a trip after 6 P. M. so we were fifteen minutes too late went up a hill at edge of town and camped. Boonville is a river town of about 6000 population.
    - “July 21 First ferry leaves at 7 A.M. we are on hand, the trip across was nice just cost \$1.00 we found the road hilly, culberts [sic.] in bad shape had a flat tire about two miles out of Truscendale right in front of a lovely home got to talking with the man....
    - “July 22 Started at 6:30 A.M. when we got to St. Charles here we cross the Missouri river again but on a toll bridge this time, cost 45 cts reached outskirts of St. Louis about 10:30 A.M. at 3:15 were out to edge of Troy about 21 miles out when broke our same old spring were 4 miles from interurban line so put a block of wood under and run back but its too late to get into the city before the stores close so we get to camp on a farmer’s orchard very fine people
    - “July 23 Guy left on the 5:30 A.M. car for St Louis got back put the new leaf on the spring and we left at 11 A.M. (This is the old National Road some of the old ‘corduroy’ is visible yet, not much road work being done)
    - “July 24 started out at 5:30 A.M. roads are not very good till came to the Indiana state line then its gravel or macadam greater part macadam, about noontime are at Brazil, In Auto refuses to go right on Main St. Guy cleaned the breaker box with gasoline and we were O.K. again got into Indianapolis about 5 P.M.
- Discuss with students the things that surprised them about travel in the selection. Students may notice that nearly every day the automobile had at least one problem and that the family camped wherever they stopped. They may note the use of ferries and toll bridges, the scarcity of telephones, and the low prices. They may also find it unusual that the family did not know the schedules for stores or the ferry in advance of their journey.

- Remind students of the statement discussed at the beginning of the lesson: “Americans have a romance with the automobile.” Assign students to locate advertisements for cars in newspapers and magazines and bring them in to class.
- Review with students that Indiana was known for luxury automobiles produced in small quantities during the early years of the automobile age. Indiana auto manufacturers did not mass produce their vehicles on an assembly line like Henry Ford did. Direct students to examine the Ford and Marmon advertisements to determine the audience to whom each vehicle is being marketed. Is the audience wealthy, poor, families, individuals, younger, or older persons, etc.? In a class discussion, compare these historic advertisements to the contemporary ones students brought to class.
- Have students complete the “It’s Your Choice” student handout. Students will discuss their answers in small groups. Note that some of the statements can be true for both cars.
- Have the students pretend that they are car salesmen/saleswomen. Students should prepare a presentation about the features of the car (either the Marmon or the Ford) they are selling and try to persuade classmates to choose their product.

### Assessment

Use a teacher-developed rubric to check students’ newspaper articles for understanding. Evaluate the articles for complete and historically accurate information, organization, and quality of writing.

### Suggested Modifications

- Have students interview an older relative or friend about his or her memories of the following:
  - A first car
  - First airplane flight
  - Train trip
  - Neil Armstrong walking on the moon
  - Riding on Indiana’s interurban rail system

Students may record their interviews if equipment is available.

- Students may research the interurban railway system in Indiana to find if it passed near their home.
- Create artwork that communicates the idea that “America has a romance with the automobile.”

### Additional Resources

#### Publications

Kalman, Bobbie. *Early Travel*. Boston: Crabtree Publishing Company, 1992.

From the Early Settlers Life series, this book shows travel from the past with photographs and drawings.

Kornely, MaryAnn. *On the Move*. New York: Bulfinch Press Books, 2000.

Journey through twentieth-century transportation as documented by *Life* magazine.

Levy, Janey. *The Erie Canal: a Primary Source History of the Canal that Changed America*. New York: Rosen Central Primary Source, 2003.

A look at how difficult travel was at the beginning of the twentieth century.

Leuzzi, Linda. *Transportation*. New York: Chelsea House, 1995.

Looks at how America’s love of travel was fueled by the steam and gasoline engines.

Meltzer, Milton. *Hear That Whistle Blow: How the Railroad Changed the World*. New York: Random House, 2004.

From the first trains to modern trains, the railroad is a force in history.

Provinsen, Alice and Martin. *The Glorious Flight: Across the Channel with Louis Bleriot*. New York: Puffin Books, 1983.

This picture book shows early attempts at flight.

Spier, Peter. *The Erie Canal*. New York: Doubleday, 1970.

Beautiful illustrations show the effects of the Erie Canal.

Sutton, Richard. *Car*. London: Dorling Kindersley Publishers, 2005.

A look at the world of cars past and present.

Whitman, Sylvia. *Get Up and Go: a History of American Road Travel*. New York: Lerner Publishing Company.

Looks at travel from Indian trails to interstate highways and discusses the importance of transportation to American society.

Wilson, Anthony. *Visual Time Line of Transportation*. London: Dorling Kindersley Publishers, 1995.

Shows more than five hundred forms of transportation.

## Web Sites

Horvath, Dennis. "The Place for Indiana Automotive History." <http://www.cruise-in.com/> (accessed September 3, 2009).

Indiana automobile history, resources, museums, and events.

National Museum of American History. "Transportation History Videos." Smithsonian Institution: National Museum of American History, Bering Center. [http://americanhistory.si.edu/ONTHEMOVE/themes/story\\_48\\_1.html](http://americanhistory.si.edu/ONTHEMOVE/themes/story_48_1.html) (accessed September 3, 2009).

Videos, interactive maps, artifacts, time line about transportation.

National Museum of American History. "History Explorer." Smithsonian Institution: National Museum of American History, Bering Center. <http://historyexplorer.americanhistory.si.edu> (accessed September 3, 2009).

Lesson and activities using primary sources.

Northern Indiana Center for History. "Indiana History Part 9: Indiana Through Change (1920-1940): The Growth of Cities." Northern Indiana Center for History. [http://www.centerforhistory.org/indiana\\_history\\_main9.html](http://www.centerforhistory.org/indiana_history_main9.html) (accessed September 3, 2009).

Information on Indiana automobile manufacturers and the Indianapolis Motor Speedway.

Studebaker National Museum. "The History of the Studebaker National Museum." <http://www.sil.si.edu/ondisplay/studebaker> (accessed Sept. 3, 2009).

Studebaker story and artifacts.

The Henry Ford. "Model T Road Trip." The Henry Ford. <http://www.thehenryford.org/exhibits/smartfun/welcome.html> (accessed September 3, 2009).

Online exhibits, collections, and tours of the Henry Ford Museum.

## DVDs

Ames, Andrew. *Americans on the Move* DVD. New York: A and E Television Network, 2003.

Tour of the National Museum of American History exhibit, America on the Move.

## Bibliography for “Background/Historical Context” Section and “Student Handout: Transportation Time line”

- “Aviation in Indiana Timeline.” Indiana Historical Bureau. <http://www.in.gov/history/2499.htm> (accessed November 23, 2009).
- Canal Society of Indiana. <http://www.indcanal.org/> (accessed November 23, 2009).
- Casey, Robert. *The Model T: A Centennial History*. Baltimore, MD: The Johns Hopkins University Press, 2008.
- City of Indianapolis Economic Development Portal. “History – Transportation.” City of Indianapolis. [http://imaps.indygov.org/ed\\_portal/template.asp?page=history\\_trans](http://imaps.indygov.org/ed_portal/template.asp?page=history_trans) (accessed November 19, 2009).
- “Clinton’s Big Ditch.” The Erie Canal. <http://www.eriecanal.org> (accessed November 18, 2009).
- “Energy Timelines: Transportation.” Energy Information Administration. <http://eia.doe.gov/kids/history/timelines/transportation.html> (accessed November 23, 2009).
- “ . . . Every Hoosier is Justly Proud” in *The Indiana Junior Historian*, April, 1993. Indiana Historical Bureau. <http://www.in.gov/history/files/7017.pdf> (accessed November 23, 2009).
- “George B. Selden, Auto Pioneer, Dies at 77.” *New York Times*, January 18, 1922. <http://query.nytimes.com/gst/abstract.html?res=9A05E3DE1130EE-3ABC4052DFB7668389639EDE> (accessed November 23, 2009).
- “History of the Road.” Indiana National Road Association. <http://www.indiananationalroad.org/road.history.html> (accessed November 18, 2009).
- Horvath, Dennis E. and Terri. *Cruise IN: A Guide to Indiana’s Automotive Past and Present*. Indianapolis, IN: Publishing Resources, 1997, pp. iv and vi.
- “IRT: The First Subway.” New York City Subway. <http://www.nycsubway.org/irtsubway.html> (accessed November 23, 2009).
- “National Road History.” National Road Alliance of West Virginia, Inc. <http://www.historicnationalroad.org/history.htm> (accessed November 23, 2009).
- Post, Robert C. “History of Transportation Technologies.” The Franklin Institute. <http://www.fi.edu/learn/case-files/transportation.html> (accessed November 13, 2009).
- “The 1896 Duryea” in *The Showroom of Automotive History*. The Henry Ford. <http://www.hfmgv.org/exhibits/showroom/1896d/duryea.html> (accessed November 23, 2009).
- “The History of Hot Air Ballooning.” Eballoon.org. <http://www.eballoon.org/history/history-of-ballooning.html> (accessed November 19, 2009).
- “The Invention of the Steamboat” in *Big Apple History: From New York to Your Town*. Thirteen/WNET New York: Educational Broadcasting Corporation, 2005. <http://pbskids.org/bigapplehistory/early/topic17.html> (accessed November 18, 2009).
- “The Wilbur and Orville Wright Timeline, 1867–1948.” Library of Congress. <http://memory.loc.gov/ammem/wrighthtml/wrighttime2.html> (accessed November 23, 2009).
- “Timeline: History of the Electric Car.” Public Broadcasting Service, October 30, 2009. <http://www.pbs.org/now/shows/233/electric-car-timeline.html> (accessed November 23, 2009).
- “Timeline: Transcontinental Railroad.” American Experience, Public Broadcasting Service. <http://www.pbs.org/wgbh/amex/tcrr/timeline/index.html> (accessed November 18, 2009).

“Transportation Timeline” in *From the Seaport to Silicon Alley: A History of Technology in New York City, 1820-2000*. Archivists Round Table of Metropolitan New York. <http://www.nycarchivists.org/exhibit/trtime.html> (accessed November 23, 2009).

Twist, Jo. “Steam Engines Could be Eco Hope.” BBC News, December 28, 2004. <http://news.bbc.co.uk/2/hi/4076811.stm> (accessed November 23, 2009)



## MARMON "41" An Extraordinary Car

You should be interested in the printed description of this New Marmon "Forty-One."

It tells of its distinctive engine, clutch, and oiling system, and many other Chassis details. It explains the new Bosch starting and lighting system and other refinements of equipment. The beauties of the new bodies are illustrated from photographs.

But no printed or spoken words will give you an adequate idea of why we term this "an extraordinary car."

Performance, the pleasure of a demonstration, brings the realization that this car really does things that make it extraordinary. Its operation, at any speed, under any road condition, will open your eyes to a new meaning of motoring ability and value.

Marmon "41" is sold on **proof** of value. May we prove it to you?

Marmon "41"  
Five-passenger Car  
\$3250

Marmon "41"  
Seven-passenger Car  
\$3350

Marmon "48"  
Seven-passenger Car  
\$5000

*Detailed Information on Request.*

### Nordyke & Marmon Company

(ESTABLISHED 1851)

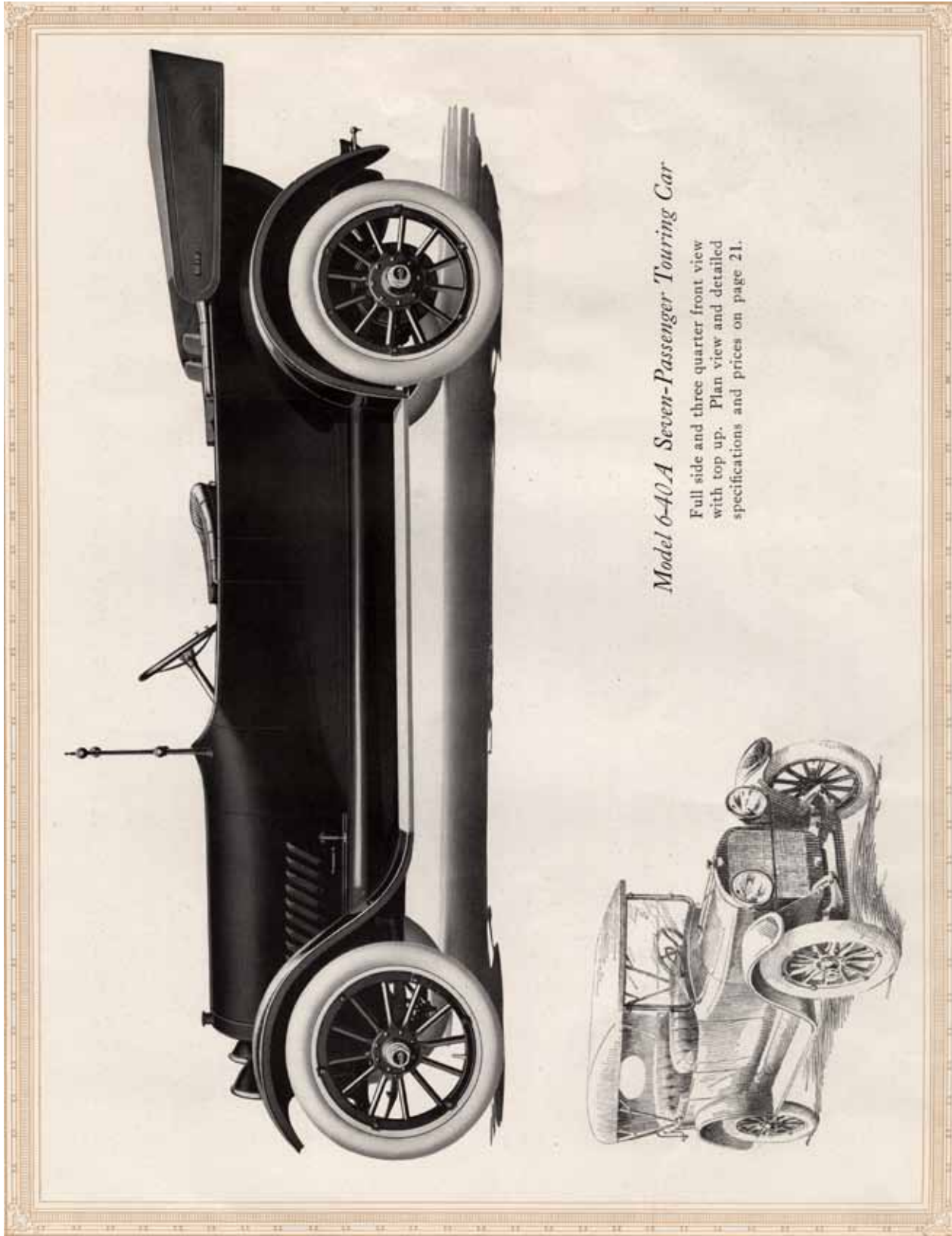
INDIANAPOLIS,

INDIANA

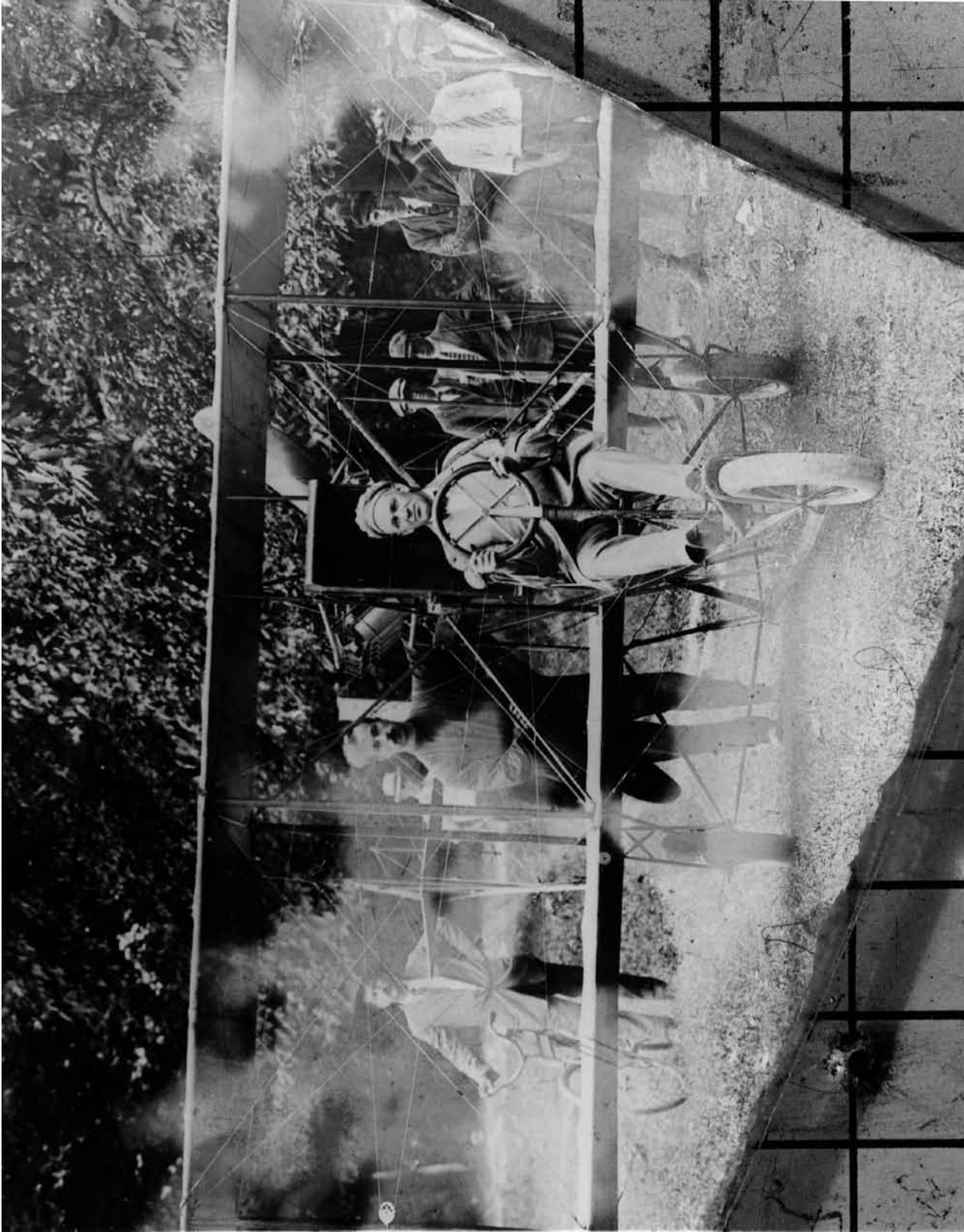
"Over Sixty Years of Successful Manufacturing"

"Mention the Geographic—It identifies you."

"Marmon '41' An Extraordinary Car" advertisement, no date (Indiana Historical Society, Digital Image Collection Item ID P0143\_BOX1\_FOLDER3\_MARMON\_AD)

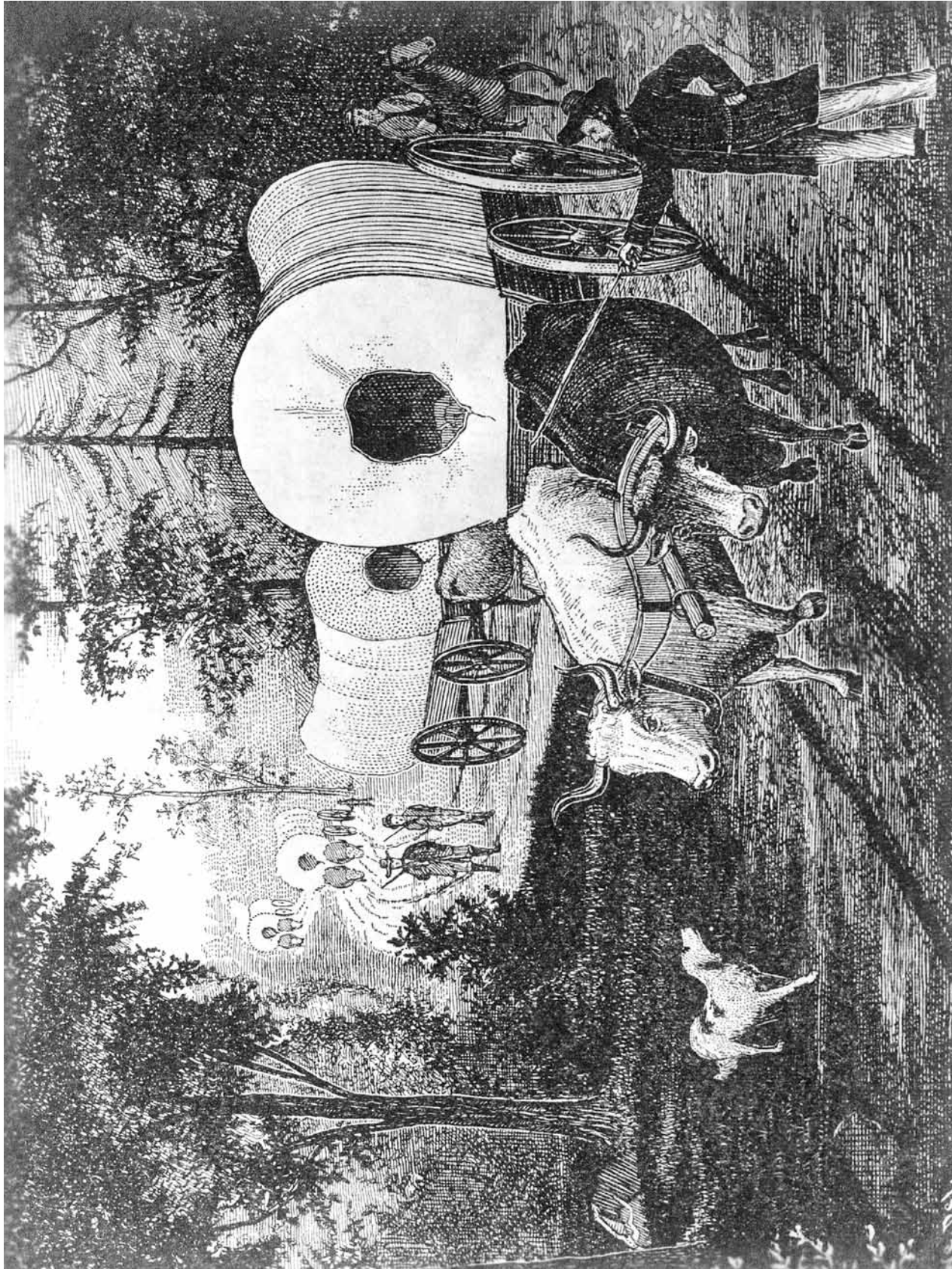


“Auburn Automobile Model 6-40 A Seven Passenger Touring Car,” 1916 (Indiana Historical Society, Digital Image Collection  
Item PAMF\_TL215\_A82\_A76\_1916\_002)



“Wright Brothers and Plane,” no date (Indiana Historical Society, Digital Image Collection Item P0130\_P\_BOX2\_FOLDER9\_001\_UNNUMBERED)





“Wagon Train on the National Road,” no date (Indiana Historical Society, Digital Image Collection Item P0130\_P\_BOX70\_FOLDER2\_91492)



“Business Street, Argos, Indiana,” 1905-1950 (Indiana Historical Society, Digital Image Collection  
Item ID P0391\_BOX1\_ARGOS.tif)



“Big Four Engine, 1910” (Indiana Historical Society, Digital Image Collection Item ID P0130\_289077\_2P8)



“Electric Bus and Streetcar,” 1939 (Indiana Historical Society, Digital Image Collection Item ID # P0130\_245151P8)



610514 - CANAL BRIDGE ON WEST ST.  
LOOKING S. OF E.

“Canal Bridge on West Street,” 1917 (Indiana Historical Society, Digital Image Collection Item ID # P0130\_61054P8)



B & O . . AND INTERURBAN CROSSING . MILFORD J C . IND . 4 .

‘B&O Interurban Crossing, Milford J.C. Ind. 4,’ 1915 (Indiana Historical Society, Digital Image Collection Item P0391\_BOX5\_INTERURBANS\_AND\_STATIONS\_004)



View at La Fayette, Indiana, August 16, 1859, of balloon Jupiter preparatory to its Air-Mail trip - the first in the world. Ascension and flight deferred by accident until next day, August 17, 1859.

"Balloon Jupiter Preparing for First Air Mail Trip in the World," 1859 (Indiana Historical Society, Digital Image Collection Item ID P0130\_P\_BOX26\_Folder7\_302321-F-4)

**Ford**  
TOURING CAR  
**\$295**  
F.O.B. DETROIT  
*Spacer and Dismountable Rims*  
\$3500 Extra

**Make Pleasure Island a Treasure Island  
for the Whole Family**

Get out the old fish pole, the lunch basket, your camping outfit and camera—you'll need them now that Spring is here again.

Neither stream, nor field, nor mountain park can hide their beauty from you—it's all yours with a Ford.

Dependable, convenient, sturdy and comfortable, the Ford Car represents the lowest first cost, the lowest upkeep, and the highest resale value of any motor car ever built.

Because of the several easy ways through which you may buy a Ford—including the Ford Weekly Purchase Plan—why deprive your family and yourself of the many pleasures and conveniences the ownership of a Ford Car brings to you?

See any Authorized Ford Dealer, who will gladly give you complete information regarding prices and terms. To place your order **NOW**, insures reasonably prompt delivery.

All prices subject to slight adjustments and subject to Dealer's Tax Extra.

Image from The Collection of The Henry Ford, "Make Pleasure Island a Treasure Island for the Whole Family" Ford advertisement, 1924



<b>Student Handout: Transportation Time Line</b>			
		1903	Wilber and Orville Wright (born in Indiana) successfully fly the first airplane
1769	First self-propelled vehicle runs on steam	1904	New York City's first subway line begins operation
1783	Europeans develop hot-air balloons	1908	Henry Ford produces the first Model T car
1807	Robert Fulton launches the first steamboat	1908	Cities begin switching from streetcars to buses for public transportation
1811–1839	Federal government constructs the National Road from Cumberland, Maryland, to Vandalia, Illinois. The road reaches Indiana in 1827 and is completed to Terre Haute in 1834. The National Road is now U. S. 40.	1909	First car races at the Indianapolis Motor Speedway
1832–1839	Robert Anderson builds the first electric car	1920	Americans own eight million cars
1836	Construction of Whitewater Canal begins in Brookville, Indiana. The canal was to extend to Lawrenceberg, Indiana, on the Ohio River.	1944	Rail travel grows during World War II, breaking previous passenger records
1840s	Development of a nationwide network of railroads underway	1950	Americans own fifty million cars
1878	George B. Selden invents first gasoline-powered vehicle	1955	More Americans travel by air than train
1890	Indianapolis begins operating electric streetcar system	1956	President Dwight D. Eisenhower signs the Federal-Aid Highway Act to provide for the construction of a network of highways across the United States
1895	Charles and Frank Duryea start America's first gasoline-powered automobile company	1958	Airlines begin replacing propeller planes with jet planes
1900	Interurban train service begins in Indianapolis	1961	Alan B. Shepherd Jr. becomes the first American astronaut to journey into space
			Neil Armstrong, a graduate of Purdue University, West Lafayette, Indiana, is the first human to stand on the moon

## Student Handout: It's Your Choice

The wealth and many new products of the 1920s gave Hoosiers many choices of what automobiles they might purchase. People had to decide what was important to their family. Look at the advertisements for the Ford and the Marmon automobiles. Decide which vehicle would meet the needs described.

Which would you purchase if . . .

\_\_\_\_\_ 1. You want to pay as little as possible?

\_\_\_\_\_ 2. You want to support Indiana companies?

\_\_\_\_\_ 3. You want a car for business and family use?

\_\_\_\_\_ 4. You want a car that is inexpensive to operate?

\_\_\_\_\_ 5. You want a car that is distinctive?

\_\_\_\_\_ 6. You need a sturdy car right away?

\_\_\_\_\_ 7. You need to be able to get service easily?

\_\_\_\_\_ 8. You want a car that has a good resale value?

\_\_\_\_\_ 9. You want to support individual craftsmanship?

\_\_\_\_\_ 10. You want a car that reliable and convenient?

Be ready to defend your answers!