



Railroading

Merit Badge Workbook

This workbook is not required but is designed to help you with this merit badge. No one can add or subtract from the Boy Scout Requirements #33215. Use page backs & add pages as needed. Please send comments to: craig@craiglincoln.com. Requirements revised: 2005, Workbook updated: January 2005.

Scout's Name: _____ Unit: _____

Counselor's Name: _____ Counselor's Ph #: _____

1. Do THREE of the following:

(a) Name three types of modern freight trains. _____

Explain why unit trains are more efficient than mixed freight trains. _____

(b) Name one class I or regional railroad. _____

Explain what major cities it serves, _____

the locations of major terminals, _____

service facilities _____

and crew change points, _____

and the major commodities it carries. _____

(c) *Using models or pictures*, identify 10 types of railroad freight or passenger cars. Explain the purpose of each type of car.

Type	Purpose
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(d) Explain how a modern diesel or electric locomotive develops power. _____

Explain the terms dynamic braking _____

and radial steering trucks. _____

2. Do the following:

(a) Explain the purpose _____

and formation of Amtrak. _____

Explain, by the use of a timetable, a plan for making a trip by rail between two cities at least 500 miles apart. List the times of departure and arrival at your destination, the train number and name, and the type of service you want.

Depart Location	Time	Arrival Location	Time	Train#	Service
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

(b) List and explain the various forms of public/mass transit using rail as the fixed-guide path. _____

3. Do ONE of the following:

(a) Name four departments of a railroad company. Describe what each department does.

Department	Describe what each department does.
_____	_____
_____	_____
_____	_____
_____	_____

-OR- (b) Tell about the opportunities in railroading that interest you most and why.

Job Opportunity	Why does this interest you?
_____	_____
_____	_____
_____	_____
_____	_____

-OR- (c) Name four rail support industries. Describe the function of each one.

Rail Support Industry

Describe the function of each one.

-OR- (d) With your parent's and counselor's approval, interview someone _____
 employed in the rail industry. (Note: Per National, "parent" means "parent or guardian".) Learn what that person does

and how this person became interested in railroading. _____

Find out what type of schooling and training are required for this position. _____

4. Explain the purpose of Operation Lifesaver and its mission. _____

5. Do THREE of the following:

(a) List five safety precautions that help make trains safer for workers and passengers.

(b) Explain to your merit badge counselor why railroad rights-of-way are important for safety. _____

(c) List 10 safety tips to remember when you are near a railroad track (either on the ground or on a station platform) or aboard a train.

(d) Tell your counselor about the guidelines for conduct that should be followed when you are near or on railroad property. _____

Explain the dangers of trespassing on railroad property. _____

(e) Tell what an automobile driver can do to safely operate a car at grade crossings, _____

and list three things an automobile driver should never do at a grade crossing.

(f) Tell how to report a malfunction of grade crossing warning devices. _____

(g) List safety precautions a pedestrian should follow at a public crossing. _____

6. Explain the appearance and meaning of the following warning signs and devices:

advance warning sign, _____

pavement markings, _____

crossbucks, _____

flashing red lights, _____

crossing gates. _____

7. Do EACH of the following:

(a) Explain how railroad signals operate and *show* two basic signal types using color or configuration. _____

(b) Explain the meaning of three whistle signals.

Signal: _____ Meaning _____

Signal: _____ Meaning _____

Signal: _____ Meaning _____

(c) Describe a way to signal a train for an emergency stop. _____

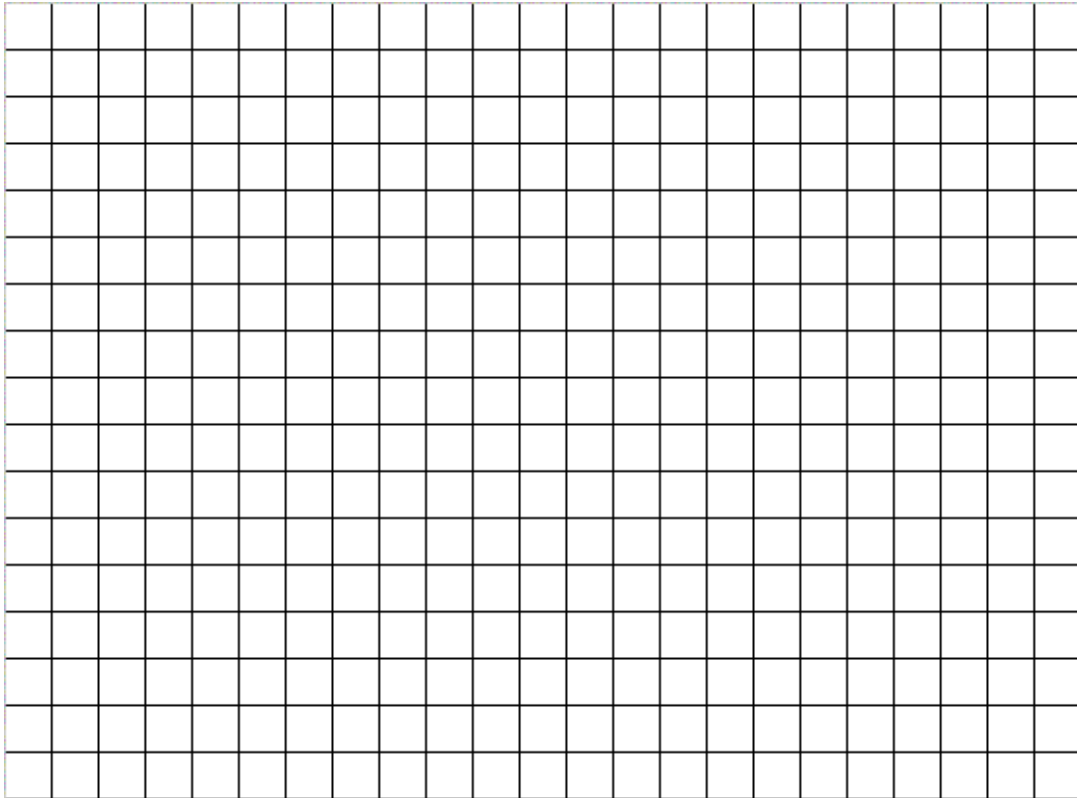
(d) Explain the use and function of the EOTD (end-of-train device) or FRED (flashing rear end device) used on the last car of most trains. _____

8. Select ONE of the following special-interest areas and complete the requirements.

(a) Model Railroading (Per National, "parent" means "parent or guardian".)

With your parent's and counselor's approval, do TWO of the following:

(1) Draw a layout of your own model railroad or one that could be built in your home. Design a point-to-point track or loop with different routings. Include one of the following: turnaround or terminal or yard or siding. *(This grid is 1/4"= 1/2')*



(2) Build one model railroad car kit or one locomotive kit.

(3) Name the scale of four popular model railroad gauges. Identify the scale of four model cars or locomotives. *Show the correct way to clean and oil model train equipment.*

Gauge	Name	Scale	Track Gauge	Gauge	Name	Scale	Track Gauge
1 _____	_____	_____	_____	3 _____	_____	_____	_____
2 _____	_____	_____	_____	4 _____	_____	_____	_____

(4) Locate the Web site of four model railroad-related manufacturers or magazine publishers. Print information on their products and services and discuss the information with your counselor.

(5) Build one railroad structure (from scratch or using a kit), paint and weather the structure, mount it on your layout or diorama, and make the surrounding area on the diorama scenic.

(6) Alone or with others, build a model railroad or modular layout including ballast and scenery. Make electrical connections and operate a train. Describe what you enjoyed most.

(7) Participate in a switching contest on a timesaver layout and record your time.

(b) Railfanning (Note: Per National, "parent" means "parent or guardian".)

With your parent's and counselor's approval, do TWO of the following:

(1) Visit a railroad museum, historical display, or a prototype railroad-sponsored public event. With permission, photograph, videotape, or sketch items of interest. Explain what you saw and describe your photos, sketches, or videotape.

(2) Purchase tickets and ride a scenic or historic railroad. Under supervision, photograph the equipment and discuss with your counselor the historic significance of the operation.

(3) Locate the Web site of four rail historical groups, then find information on the history of the rail preservation operations and purpose of each group. Talk with a member of one of the groups and find out how you might help.

(4) Plan a trip by rail between two points. Obtain a schedule and explain when the train should arrive at two intermediate points. Purchase the tickets and make the trip. Explain to your counselor what you saw.
