

# Railroading

## Merit Badge Workbook



This workbook can help you but you still need to read the merit badge pamphlet. This Workbook can help you organize your thoughts as you prepare to meet with your merit badge counselor

Yo	You still must satisfy your co u should use the work space pro and to make notes for discu If a requirement sa "tell", "exp No one may ac	ounselor that you can demor vided for each requirement t ssing the item with your cour ys that you must take an acti- lain", "demonstrate", "identif Id or subtract from the officia	<ul> <li>e use of this or any similar workbooks.</li> <li>nstrate each skill and have learned the information.</li> <li>to keep track of which requirements have been completed,</li> <li>nselor, not for providing full and complete answers.</li> <li>on using words such as "discuss", "show",</li> <li>fy", etc, that is what you must do.</li> <li>Il requirements found on Scouting.org.</li> <li>This workbook was updated in <u>November 2023</u>.</li> </ul>
Scout's Name	:	Unit	Date Started
Counselor's N	lame:	Phone No.:	Email:
Comn	nents or suggestions for changes	s to the <b>requirements</b> for the	about this <u>workbook</u> to: <u>Workbooks@USScouts.Org</u> e <u>merit badge</u> should be sent to: <u>Merit.Badge@Scouting.Org</u>
□ 1. Do	THREE of the following:		
<b>a</b> .	Name three types of modern	n freight trains.	
	1.		
	2.		
	3.		
	Explain why unit trains are n	nore efficient than mixed fr	reight trains.
□ b.	Name one class I or regiona	l railroad	
	•	erves, the locations of ma	ajor terminals, service facilities and crew change points, and

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

Explain the terms dynamic braking and radial steering trucks.

Dynamic braking:	
Radial steering trucks:	

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#### 2. Do the following:

### a. Explain the purpose and formation of Amtrak.

• •	•
Purpose:	
Formation:	
	N

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 for	orms of public/mass transit using rail.
<b>ر</b> ا			
] 3. ]		of the following:	ailroad company. Describe what each department does.
	a. Nan	Department	What the department does.
	1.	Department	What the department does.
	1.		
	0		
	2.		
	3.		
	4.		

b.	Tell abo	out the opportunities	s in railroading that interest you most and why.
0	Nama f		ustrias Describe the function of each one
C.		Industry	ustries. Describe the function of each one. Function
	1.	,	
	2.		
	3.		
	4.		

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	d.	With what	your parent or guardian's and counselor's approval, interview someone employed in the rail industry. Learn 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.	Dot	he fo	llowing:
$\square$			ain the purpose of Operation Lifesaver and its mission.
_		<u> </u>	
	b.	List 9	e track basic safety tips to remember when you are around a railroad track.
	-	1.	
		ł	
		2.	
		3.	
		4.	
		5.	
		-	
		6.	
		7.	
		8.	
		9.	

	C.	List 9 safety considerations that should be followed when w	valking near a railroad track.
		1.	
		2.	
		3.	
		4.	
		5.	
		6.	
		7.	
		8.	
		9.	
	d.	Tell your counselor what a driver can do to safely operate	near tracks.
	•	Eveloin sofety pressutions when using a light roll or some	uter train
	e.	Explain safety precautions when using a light rail or comm	
5.	Exp	Lain the appearance and meaning of the following rail signs	and signals:
	а.	Passive signs and active signs.	C C C C C C C C C C C C C C C C C C C
		Appearance	Meaning

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b. Devices at the crossing (flashing red lights — with or without bells, flashing red lights and gates, and cantilever flashing lights)

Appearance	Meaning

#### c. Markings on the road (pavement markings and stop bars)

Appearance	Meaning

# d. Signs before the crossing (advance warning sign, advance warning sign for side streets, no train horn sign, and low ground clearance grade crossing sign)

Appearance	Meaning

#### e. Signs along the railroad property (no trespassing sign)

Appearance	Meaning

f. Signs at the crossing (crossbuck sign, emergency notification system sign, multiple track sign, stop sign, and yield sign).

Appearance	Meaning

## Railroading

6.	Do		CH of the following:	
	а.	Expla	plain how railroad signals operate and show two basic signal types	using color or configuration.
	b.	Expla	plain the meaning of three horn signals.	
		1.		
		2.		
		3.		
	C.	Desc	scribe a way to signal a train for an emergency stop.	

	d.	Exp car	olain of n							on	of t	he	EC	)TD	) (e	nd-	of-	trai	n d	evi	ce)	or	FR	EC	) (fl:	ash	ing	rea	ar e	nd	dev	/ice	e) u	sec	1 or	1 the	e la:	st
□ 7.	Sel	lect C	ONE	of	the	fol	low	/ing	sp	eci	al-iı	nte	res	t ar	ea	s a	nd	cor	npl	ete	the	re	equi	rer	ner	its.												
	a.	Мо	del	Rai	ilro	adi	ing	-	-										-				-				ino											
		<ol> <li>With your parent or guardian's and counselor's approval, do TWO of the following:</li> <li>Draw a layout of your own model railroad or one that could be built in your home. Design a p or loop with different routings. Include one of the following: turnaround or terminal or yard or set the following:</li> </ol>																oint	trac	ck																		
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		2.	Bu	ild (	one	e m	ode	el ra	ailro	bad	ca	ki	t or	on	e lo	000	mc	tive	e ki	t.																		
		3.	Build one model railroad car kit or one locomotive kit. Name the scale of four popular model railroad gauges.																																			
							Ga	aug	e							Na	am	Э	-			Scale										Track Gauge						
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			2																																			
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- 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.
- 8. Explain the difference between powering and controlling a model railroad by using direct current, and powering and controlling a model railroad using digital command control.

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With your parent or guardian'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, digitally record, or sketch items of interest. Explain what you saw and describe your photos, sketches, or video.

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Railroading		Scout's Name:
	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 website 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.

When working on merit badges, Scouts and Scouters should be aware of some vital information in the current edition of the Guide to Advancement (BSA publication 33088).Important excerpts from that publication can be downloaded from http://usscouts.org/advance/docs/GTA-Excerpts-meritbadges.pdf.

You can download a complete copy of the Guide to Advancement from http://www.scouting.org/filestore/pdf/33088.pdf.