

### Requirement 1

You have been given four options for this requirement. Select and complete TWO of them.

+ If you have selected *Option A*:

Name three types of modern freight trains:

\_\_\_\_\_

Explain why unit trains are more efficient than mixed freight trains: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

+ If you have selected *Option B*:

Name one Class 1 or regional railroad: \_\_\_\_\_

What cities does it serve? \_\_\_\_\_

What are the locations of major terminals? \_\_\_\_\_

Where are the service facilities located? \_\_\_\_\_

Where is the crew change point? \_\_\_\_\_

What are the major commodities it carries? \_\_\_\_\_

+ If you selected *Option C*:

Using models or pictures, identify 10 types of railroad freight or passenger cars. List them below and explain the purpose of each type of car. Place an "M" by the cars you identified by a model and place a "P" by the cars you identified by picture.

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Car Identified: \_\_\_\_\_ Purpose of Car: \_\_\_\_\_

Scout Name: \_\_\_\_\_ Unit #: \_\_\_\_\_ Date: \_\_\_\_\_

+ If you selected *Option D*:

Explain how a modern diesel or electric locomotive develops power: \_\_\_\_\_

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Explain the term "dynamic braking": \_\_\_\_\_

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Explain the term "radial steering trucks": \_\_\_\_\_

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+ **Requirement 2**

Explain the purpose and formation of Amtrak: \_\_\_\_\_

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Use the space below to explain the use of a timetable by making a written plan for a trip by rail between two cities at least 500 miles apart.

Departure Time: \_\_\_\_\_ Arrival Time: \_\_\_\_\_ Train #: \_\_\_\_\_ Service: \_\_\_\_\_

Written Plan: \_\_\_\_\_

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List and explain the various forms of public/mass transit using rail as the fixed guide path: \_\_\_\_\_

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### Requirement 3

You have been given four options for this requirement. Select and complete ONE of them.

† If you have selected *Option A*:

Name four departments of a railroad company and what each department does.

Department: \_\_\_\_\_

Responsibilities: \_\_\_\_\_  
\_\_\_\_\_

Department: \_\_\_\_\_

Responsibilities: \_\_\_\_\_  
\_\_\_\_\_

Department: \_\_\_\_\_

Responsibilities: \_\_\_\_\_  
\_\_\_\_\_

Department: \_\_\_\_\_

Responsibilities: \_\_\_\_\_  
\_\_\_\_\_

† If you selected *Option B*:

Tell about the opportunities in railroading that interest you most and why: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

† If you selected *Option C*:

Name four rail support industries and describe the function of each one.

Support Industry: \_\_\_\_\_

Function: \_\_\_\_\_  
\_\_\_\_\_

Support Industry: \_\_\_\_\_

Function: \_\_\_\_\_  
\_\_\_\_\_

Scout Name: \_\_\_\_\_ Unit #: \_\_\_\_\_ Date: \_\_\_\_\_

Support Industry: \_\_\_\_\_

Function: \_\_\_\_\_  
\_\_\_\_\_

Support Industry: \_\_\_\_\_

Function: \_\_\_\_\_  
\_\_\_\_\_

If you selected *Option D*:

With your parents and counselors approval, interview someone employed in the rail industry.

Who did you interview? \_\_\_\_\_

What does this person do? \_\_\_\_\_

How did they become interested in railroading? \_\_\_\_\_

What type of schooling and training is required for this position? \_\_\_\_\_

**+ Requirement 4**

Explain the purpose of Operation Lifesaver and its mission: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**+ Requirement 5**

You have been given seven options for this requirement. Select and complete THREE of them.

If you have selected *Option A*:

List five safety precautions that help make trains safer for workers and passengers:

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_

Scout Name: \_\_\_\_\_ Unit #: \_\_\_\_\_ Date: \_\_\_\_\_

#5 If you selected *Option B*:

Explain why railroad rights-of-way are important for safety: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If you selected *Option 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.

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

Tip: \_\_\_\_\_  
\_\_\_\_\_

If you Selected *Option D*:

Tell 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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Scout Name: \_\_\_\_\_ Unit #: \_\_\_\_\_ Date: \_\_\_\_\_

If you selected *Option E*:

Tell what an automobile driver can do to safely operate a car at grade crossing: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List three things an automobile driver should never do at a grade crossing:

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_

If you selected *Option F*:

Tell how to report a malfunction of grade crossing warning devices: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If you selected *Option G*:

List safety precautions a pedestrian should follow at a public crossing: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### ~~†~~ Requirement 6

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

Advance Warning Sign: \_\_\_\_\_  
\_\_\_\_\_

Pavement Markings: \_\_\_\_\_  
\_\_\_\_\_

Crossbucks: \_\_\_\_\_  
\_\_\_\_\_

Flashing Red Lights: \_\_\_\_\_  
\_\_\_\_\_

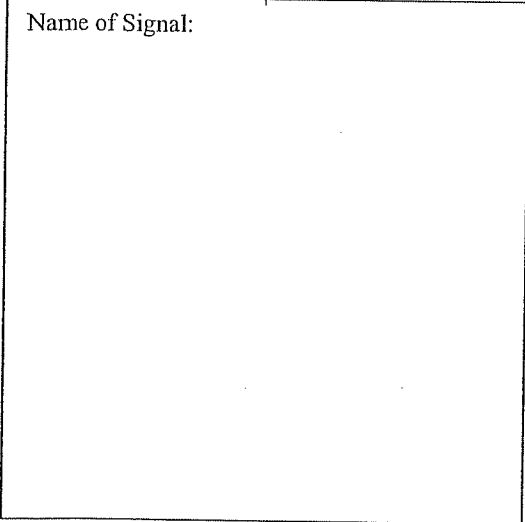
Crossing Gates: \_\_\_\_\_  
\_\_\_\_\_

### + Requirement 7

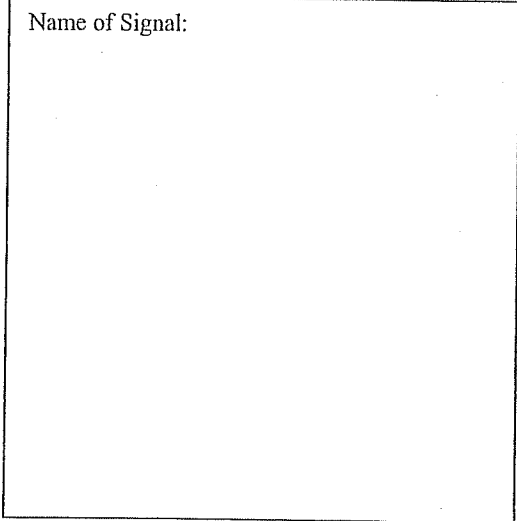
Explain how railroad signals operate: \_\_\_\_\_  
\_\_\_\_\_

In the spaces below show two basic signals types using color and configuration:

Name of Signal:



Name of Signal:



Describe a way to signal a train for an emergency stop: \_\_\_\_\_  
\_\_\_\_\_

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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Requirement 8

You have been given two options for this requirement. Select and complete ONE of them.

If you have selected *Option A – Model Railroading*:

There are 7 different requirements within Option A. Select and complete TWO of them.

\* If you have selected *Option A1*:

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.

Once you have completed your drawing attach it to this worksheet and show it to your merit badge counselor. *DRAW ON BACK PAGE*

Scout Name: \_\_\_\_\_ Unit #: \_\_\_\_\_ Date: \_\_\_\_\_

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If you have selected *Option A2*:

Build one model railroad car kit or one locomotive kit.

BRING TO SHOW TO COUNSELOR

Give a brief description of your model(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_ Show your model or photos of your model to your counselor.

~~+~~ If you have selected *Option A3*:

Name the scale of four popular model railroad gauges:

Scale Name: \_\_\_\_\_

Gauge: \_\_\_\_\_

Scale Name: \_\_\_\_\_

Gauge: \_\_\_\_\_

Scale Name: \_\_\_\_\_

Gauge: \_\_\_\_\_

Scale Name: \_\_\_\_\_

Gauge: \_\_\_\_\_

Identify the scale of four model cars or locomotives:

Scale Name: \_\_\_\_\_

Car/Locomotive: \_\_\_\_\_

Scale Name: \_\_\_\_\_

Car/Locomotive: \_\_\_\_\_

Scale Name: \_\_\_\_\_

Car/Locomotive: \_\_\_\_\_

Scale Name: \_\_\_\_\_

Car/Locomotive: \_\_\_\_\_

If you have selected *Option A4*:

Locate the Web site for four model railroad-related manufactures or magazine publishers.

Name: \_\_\_\_\_

Web site: \_\_\_\_\_

Name: \_\_\_\_\_

Web site: \_\_\_\_\_

Name: \_\_\_\_\_

Web site: \_\_\_\_\_

Name: \_\_\_\_\_

Web site: \_\_\_\_\_

Print information on their products and services. Attach the information to this worksheet. Discuss the information with your merit badge counselor.





# AMTRAK®

## Southwest Chief

Fall/Winter 1999/2000 Effective October 31

Chicago...Albuquerque...  
Los Angeles

3		Train Number		4	
Daily		Days of Operation		Daily	
ReadDown	Mile	Symbol	Station	Symbol	Read Up
3 20P	0	Dp	Chicago, IL—Union Sta. * (CT) Madison—Call 1-800-USA-RAIL	Ar	4 05P
R 4 17P	28	↓	Naperville, IL	↑	D 2 28P
R 5 07P	83	↓	Mendota, IL	↑	1 34P
R 5 29P	104	↓	Princeton, IL	↑	1 12P
R 6 19P	162	Ar	Galesburg, IL—S. Seminary St.	Dp	12 21P
R 6 25P	220	↓	Fort Madison, IA (Keokuk)	↑	12 15P
7 26P	220	↓	Fort Madison, IA (Keokuk)	↑	11 21A
8 29P	298	↓	La Plata, MO (Kirksville)	↑	10 17A
11 05P	437	Ar	Kansas City, MO *	Dp	8 05A
303		Connecting Train Number		306	
3 30P	0	Dp	St. Louis, MO * (CT)	Ar	9 10P
9 10P	282	↓	Kansas City, MO *	Dp	3 30P
11 20P	437	Dp	Kansas City, MO *	Ar	7 24A
1 06A	477	↓	Lawrence, KS	↑	5 45A
1 39A	503	↓	Topeka, KS	↑	5 14A
3 47A	638	↓	Newton, KS (Wichita)	↑	3 03A
4 24A	671	↓	Hutchinson, KS	↑	2 24A
6 13A	791	↓	Dodge City, KS	↑	12 39A
6 59A	841	↓	Garden City, KS (CT)	↑	11 48P
7 19A	941	↓	Lamar, CO (MT)	↑	9 27P
8 38A	993	↓	La Junta, CO	↑	8 39P
9 52A	1074	↓	Trinidad, CO	↑	6 51P
10 56A	1098	↓	Raton, NM Denver—see other side	↑	5 51P
12 39P	1209	↓	Las Vegas, NM	↑	4 04P
2 36P	1274	Dp	Lamy, NM Santa Fe—see other side	Dp	2 25P
4 08P	1341	Ar	Albuquerque, NM *	Dp	1 20P
4 38P	1341	Dp	Albuquerque, NM *	Ar	12 55P
7 00P	1514	↓	Gallup, NM (MT)	↑	9 55A
8 40P	1641	↓	Winslow, AZ (MST)	↑	7 51A
9 53P	1699	Ar	Flagstaff, AZ *	Dp	6 52A
9 59P	1699	Dp	Flagstaff, AZ *	Ar	6 46A
10 34P	1730	↓	Williams Jct., AZ (Gr. Cyn. Ry. 40)	↑	6 00A
12 53A	1873	↓	Kingman, AZ (MST)	↑	3 57A
12 51A	1940	↓	Needles, CA (PT) Las Vegas, Laughlin, Lake Havasu City—see other side	↑	1 47A
4 20A	2109	↓	Barstow, CA	↑	11 19P
4 56A	2146	↓	Victorville, CA	↑	10 24P
6 21A	2193	↓	San Bernardino, CA	↑	9 18P
D 7 26A	2239	↓	Fullerton, CA	↑	8 16P
8 40A	2265	Ar	Los Angeles, CA * (PT)	Dp	7 15P

### Services on the Southwest Chief

**Sleeping Cars**—Reservations required. Superliner® standard, deluxe, accessible and family bedrooms. First Class Service includes complimentary meals, bedtime sweet, morning wake-up service with a newspaper, and coffee, tea and orange juice served between 6:30 AM and 9:30 AM. Amtrak's Metropolitan Lounge® is available in Chicago for first class passengers.

**Coaches**—Reservations required.

**Dining Car**—Complete meals.

**Sightseer Lounge Car**—Sandwiches, snacks and beverages.

**Entertainment**—Feature movies and hospitality hour.

**On-Board Guide Program**—Native American Guide provides commentary in the Lounge between Albuquerque and Gallup.

**Smoking**—Cigarette smoking is permitted only in a designated smoking area on the lower level of one of the coaches. No smoking in all other areas of coaches, nor in sleepers, lounges or dining cars.

For reservations and information  
call toll-free in the U.S.A. and Canada  
**1-800-USA-RAIL**  
**1-800-872-7245**  
or call your travel agent

Or visit  
**www.amtrak.com**  
on the Internet

### THRUWAY MOTORCOACH AND RAIL CONNECTIONS

#### Denver...Colorado Springs...Pueblo...Raton

TMN&O Coaches Inc.

6 00A	0	Dp	Denver, CO—Union Sta. * (MT)	Ar	5 00P	10 35P
7 30A	70	↓	Colorado Springs, CO	↑	3 10P	9 15P
8 20A	112	↓	Pueblo, CO	↑	2 05P	8 25P
9 45A	198	↓	Trinidad, CO—Amtrak Sta.	↑		7 00P
10 15A	220	Ar	Raton, NM—Amtrak Sta. (MT)	Dp	11 57A	6 25P

#### El Paso...Albuquerque

TMN&O Coaches Inc.

8 45A	0	Dp	El Paso, TX—Greyhound Sta. * (MT)	Ar	9 00P	
9 45A	44	Ar	Las Cruces, NM	↑	7 55P	
10 30A	81	↓	Hatch, NM	↑	7 15P	
11 15A	119	↓	Truth or Consequences, NM	↑	6 30P	
12 55P	191	↓	Socorro, NM	↑	5 10P	
1 40P	234	↓	Belen, NM	↑	4 10P	
2 30P	268	Ar	Albuquerque, NM—Amtrak Sta. * (MT)	Dp	3 35P	

#### Lamy...Santa Fe

Lamy Shuttle Service

Lamy Shuttle Service van meets Trains 3 and 4 daily. From Lamy to Santa Fe, advance reservations required; call 1-800-USA-RAIL or (505) 982-8829. From Santa Fe to Lamy, shuttle will pick up at your hotel; call (505) 982-8829 the day prior to departure to arrange pickup.

#### Grand Canyon...Flagstaff/Williams

Grand Canyon Rwy.	Nava-Hopi						Grand Canyon Rwy.
3 15P	4 30P	0	Dp	Grand Canyon, AZ (MT)	Ar	10 35A	11 45A
5 30P	6 4	64	Ar	Williams, AZ	↑	9 30A	9 30A
6 25P	7 9	79	Ar	Flagstaff, AZ (MT)	Dp	8 40A	

#### Flagstaff...Phoenix

Nava-Hopi Tours

7 00A	11 55A	0	Dp	Flagstaff, AZ (MT)	Ar	3 30P	7 30P
9 35A	2 35P	143	↓	Phoenix, AZ —Hampton Inn	↑	12 50P	4 50P
10 00A	3 00P	145	Ar	—Sky Harbor Airport (MT)	Dp	12 10P	4 10P

#### Needles...Las Vegas/Lake Havasu City

Commuter Carrier

2 15A	0	Dp	Needles, CA	Ar	12 15A	
3 00A	31	Ar	Laughlin, NV—Ramada Express	↑	11 30P	
4 45A	124	Ar	Las Vegas—McCarran Int'l Airport, NV	Dp	9 45P	
2 15A	0	Dp	Needles, CA	Ar	12 15A	
4 00A	43	Ar	Lake Havasu City, AZ —Ramada Inn (MT)	Dp	12 30A	

Call Amtrak for information about connecting Thruway services for Madison, WI and Omaha, NE.

### Symbols and Reference Marks

- A Time Symbol for A.M.
- CT Central Time
- D Stops only to discharge passengers; train or bus may leave ahead of schedule when station work is completed.
- MST Mountain Standard Time
- MT Mountain Time
- P Time Symbol for P.M.
- PT Pacific Time
- ☒ Amtrak Express® Shipping and Checked Baggage Service available at stations indicated—Baggage checked to/from St. Louis is handled via Chicago and is subject to delay.
- ☒ Checked Baggage Service available at stations indicated.
- ☒ Thruway Motorcoach Connection. Coordinated train/motorcoach service with guaranteed connections and through fares/ticketing. Passengers traveling on Thruway connections must be ticketed before boarding coaches in order to obtain through fares. Motorcoaches are normally not accessible to passengers who use wheelchairs.
- Tickets cannot be purchased at this location. You may purchase your tickets on the train (without penalty) or from any Amtrak appointed travel agency. Please call 1-800-USA-RAIL to make special arrangements when boarding/detraining assistance is required.
- ♿ All station facilities are fully accessible to persons who use wheelchairs.
- ♿ Barrier-free access between street, platform and trains; however, not all facilities within the station are fully accessible.
- \* Amtrak Vacations package(s) available at this destination. Book your hotel and/or tour by calling 1-800-321-8684.
- 40 Free shuttle service between Williams Grand Canyon Railway station and Amtrak Williams Junction station.
- 40 This location does not observe Daylight Saving Time. Local time will be one hour earlier from the first Sunday in April to the last Saturday in October.

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