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 is 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: ________________________

Requirements Last Revised: 1/1/05
If you selected Option D:
Explain how a modern diesel or electric locomotive develops power:

Explain the term “dynamic braking”:

Explain the term “radial steering trucks”:

Requirement 2
Explain the purpose and formation of Amtrak:

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:

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

Requirements Last Revised: 1/1/05
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: ____________________________

Requirements Last Revised: 1/1/05
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) _____________________________________________

Requirements Last Revised: 1/1/05
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: _______________________________________________________________  

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

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:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
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.

Requirements Last Revised: 1/1/05
If you have selected **Option A2:**

Build one model railroad car kit or one locomotive kit. **Bring to Scout 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:

<table>
<thead>
<tr>
<th>Scale Name:</th>
<th>Gauge:</th>
</tr>
</thead>
<tbody>
<tr>
<td>________________</td>
<td>________________</td>
</tr>
<tr>
<td>________________</td>
<td>________________</td>
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<tr>
<td>________________</td>
<td>________________</td>
</tr>
<tr>
<td>________________</td>
<td>________________</td>
</tr>
</tbody>
</table>

Identify the scale of four model cars or locomotives:

<table>
<thead>
<tr>
<th>Scale Name:</th>
<th>Car/Locomotive:</th>
</tr>
</thead>
<tbody>
<tr>
<td>________________</td>
<td>________________</td>
</tr>
<tr>
<td>________________</td>
<td>________________</td>
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<tr>
<td>________________</td>
<td>________________</td>
</tr>
<tr>
<td>________________</td>
<td>________________</td>
</tr>
</tbody>
</table>

If you have selected **Option A4:**

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

<table>
<thead>
<tr>
<th>Name:</th>
<th>Web site:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Web site:</td>
</tr>
<tr>
<td>Name:</td>
<td>Web site:</td>
</tr>
<tr>
<td>Name:</td>
<td>Web site:</td>
</tr>
</tbody>
</table>

Print information on their products and services. Attach the information to this worksheet. Discuss the information with your merit badge counselor.
If you selected Option B – Railfanning:

There are 4 different requirements within Option B. Select and complete TWO of them.

If you selected Option B1:

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

Use this area to give your report. Attach your photos/sketches/video to this worksheet and show it to your merit badge counselor.

If you selected Option B2:

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.
## Services on the Southwest Chief

Sleeping Cars—Reservations required. Superliner® standard, deluxe, accessible and family bedrooms. First Class Service includes complimentary meals, bedtime service, 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.


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 lounges, lounges or dining cars.

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### For reservations and information call toll-free in the U.S. and Canada

1-800-USA-RAIL
1-800-872-7245

or call your travel agent

www.amtrak.com on the Internet

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### 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 and Rail Connections

### Amtrak® Coach

- Denver, CO—Union Sta.
- Colorado Springs, CO
- Pueblo, CO
- Trinidad, CO—Amtrak Sta.
- Raton, NM—Amtrak Sta.
- El Paso, TX—Grayhound Stn.
- Los Angeles, CA—Amtrak Sta.
- Albuquerque, NM—Amtrak Sta.

### 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) 882-8829. From Santa Fe to Lamy, shuttle will pick up at your hotel, call (505) 882-8829 the day prior to departure to arrive.

### Grand Canyon...Flagstaff/Williams

<table>
<thead>
<tr>
<th>Grand Canyon Rey.</th>
<th>Navajo Hop</th>
<th>Grand Canyon Rey.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ar 10:34A</td>
<td>11:54A</td>
<td>Ar 10:34A</td>
</tr>
</tbody>
</table>

### Flagstaff...Phoenix

<table>
<thead>
<tr>
<th>Flagstaff, AZ</th>
<th>Hop</th>
<th>Phoenix, AZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ar 3:30P</td>
<td>4:50P</td>
<td>Ar 3:30P</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Needles, CA</th>
<th>Hop</th>
<th>Las Vegas, NV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ar 12:15A</td>
<td>11:30A</td>
<td>Ar 12:15A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Needles, CA</th>
<th>Hop</th>
<th>Lake Havasu City, AZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ar 4:45P</td>
<td>4:50P</td>
<td>Ar 4:45P</td>
</tr>
</tbody>
</table>

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