

Map Reading Essentials for Commercial Motor Vehicle Drivers Script Storyboard



Produced by L-3/ D.P. Associates Inc.

L-3/DPA Point of Contact:
PM Name Redacted
Program Manager
L-3 Com / D.P. Associates
Office: 800-123-4567
Email: Redacted@L-3-Comms.com

Submitted to:
SME Name Redacted
Subject Matter Expert
Schneider National Carriers
Phone: 888-123-4567
Email: Redacted@Schneider.com

Presented By:



Table of Contents

INTRODUCTION	3
INTRODUCTION.....	3
LEARNING OBJECTIVES	4
ATLAS	5
TRUCKER’S ATLAS	5
COLOR-CODED SECTIONS	6
CONTENTS AND LEGEND.....	7
TABLE OF CONTENTS FOR MAPS	7
MAP LEGEND.....	8
US MAP.....	9
WHEN TO USE THE US MAP	9
TIME ZONES	9
INTERSTATE HIGHWAYS.....	10
ONE- AND TWO-DIGIT INTERSTATES - NUMBERING PATTERN	11
THREE-DIGIT INTERSTATES - NUMBERING PATTERN.....	12
IDENTIFYING A DIRECT ROUTE	12
US MAP INTERACTIVITY	13
STATE MAPS	14
STATE MAP – KEY COMPONENTS.....	14
STATE MAP – KEY COMPONENTS CONTINUED.....	14
INDEX.....	15
LOCATING A CITY – FROM MAP KEY CODE TO GRID	15
ADDITIONAL FEATURES	16
LOCATING A CITY INTERACTIVITY	17
SELECTING MY ROUTES.....	18
FACTORS TO CONSIDER	18
DESIGNATED HIGHWAYS	19
STATE ACCESS POLICIES.....	20
STATE/PROVINCIAL WEIGHT AND SIZE LIMITS	21
RESTRICTED ROUTES.....	22
LOW CLEARANCES.....	23
NEVER RELY COMPLETELY ON A SINGLE NAVIGATION TOOL.....	24
ENCOUNTERING AN UNEXPECTED LOW CLEARANCE	25
CALCULATING MILEAGE	26
WHY IS IT IMPORTANT TO BE ABLE TO CALCULATE MILEAGE?	26
TOOLS TO CALCULATE MILEAGE.....	26
TOOLS TO CALCULATE MILEAGE (CONTINUED).....	27
MILEAGE DIRECTORY.....	28
MILEAGE DIRECTORY.....	28
COURSE SUMMARY	29
COURSE SUMMARY	29

FINAL EXAM	30
CHECK FOR LEARNING 1	30
CHECK FOR LEARNING 2	31
CHECK FOR LEARNING 3	32
CHECK FOR LEARNING 4	34
CHECK FOR LEARNING 5	35
CHECK FOR LEARNING 6	36
CHECK FOR LEARNING 7	39
CHECK FOR LEARNING 8	40

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Introduction

Introduction

Audio Script

The ability to read maps is fundamental to a successful career as a professional driver.

Though using a GPS has many benefits, it's not failsafe. Navigation systems can lose their signal, provide inaccurate directions, or lead you down a road not meant for trucks.

Experienced drivers will advise you *not* to rely *solely* on a navigation system. ... And that it's best to plan out your route on paper using an atlas.

This course is designed to get you up to speed. Because when you've got the know-how, you become efficient at getting your freight *where* it needs to be, *when* it needs to be there.

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Learning Objectives

Audio Script

This course will teach you how to select the most direct, legal route between two specific points.

By the end of this course, you should be able to:

- Identify the time zone boundaries on a US map.
- Locate a specific city, rest area, and permanent weigh station on a state map.
- Identify routes that are restricted year-round for use by a motor carrier.
- Determine if a low clearance exists on a particular route.
- Identify designated routes for vehicles with STAA-authorized dimensions.
- Calculate total mileage between two specific points.

This course will take approximately 30 minutes to complete. There will be practice exercises throughout and an exam at the end to assess your understanding of the material.

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Atlas

Trucker's Atlas

Audio Script

At Schneider, we use the Motor Carriers' Road Atlas by Rand McNally. It's meant for professional drivers and *loaded* with useful information, such as:

- Weigh stations
- Rest areas
- Point-to-point mileage
- Low clearance bridges and
- Restricted routes, just to name a few.

It's the *best* resource on the market today, and Schneider will provide you with a free copy.

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Color-Coded Sections

Audio Script

When you open to the first page of the Motor Carriers' Road Atlas, you'll find its Table of Contents. Notice how the atlas is divided into color-coded sections.

The orange section consists of relevant laws, regulations, policies, and procedures. ... As a professional driver, it is your responsibility to know these "rules of the road."

This section is also full of valuable resources from road conditions and construction to emergency phone numbers to contact information for various authorities and hotels and motels.

The red section provides crucial information pertaining to safety, such as low clearance locations, permanent weigh stations, and restricted routes.

The yellow section contains all of the maps and map-related information.

The green section contains the Mileage Directory.

As you can see, the Table of Contents and the color-coded sections make it easier to find what you're looking for.

And we'll revisit many of these sections in detail as we go through the lesson.

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Contents and Legend

Table of Contents for Maps

Audio Script

The map section, marked with yellow color-coded tabs, begins with the Contents and Legend page.

This page functions as a Table of Contents *just for maps* and map-related resources.

You can use the Contents and Legend to look up page numbers for:

- Country maps,
- State and province maps,
- And select city maps.

It also contains a Map Legend. Let's take a closer look.

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Map Legend

Audio Script

Each map page in the atlas is full of small symbols.

Symbols are used to represent features on a map, such as:

- time zones, boundaries, cities, and towns,
- road types, exits, and mileage between two points,
- low clearance locations, weigh stations, and rest areas,
- mountain peaks, forests, lakes, and rivers

The Map Legend spells out the meaning of each symbol used on a map.

Remember, it's a map resource, so it's on the first page of the map section.

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US Map

When to Use the US Map

Audio Script

There will be times when you need the big picture view that only a US map can provide.

With the US map, you can:

- See every state, its capital, and some of its major cities
- Factor in the time zones when planning your pickup and delivery times
- Identify major highways across the country, and
- Locate possible direct routes.

Let's take a closer look at what you can do with the US map.

Time Zones

Audio Script

When you first get your atlas, open it up to the US map, and highlight the time zone boundaries for the Continental United States and Canada.

... That way, they'll stand out and be easier to identify when planning your pickup and delivery times.

And remember, your work assignments *always* reflect the local time of the shipper and the consignee.

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Interstate Highways

Audio Script

The US map shows the interstate highway system along with other major US routes. These roads interconnect and link major cities and densely populated areas across the country, forming what is known as the "National Network."

But for now, we're going to focus solely on the interstate portion of the National Network.

So what *IS* an interstate? ... It's a major route that spans two or more states.

At first glance, all those routes on the US map may seem overwhelming, but interstate highways are actually laid out in a pattern that makes them easier to remember. Let's take a look.

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One- and Two-Digit Interstates - Numbering Pattern

Audio Script

First, we wipe the slate clean. There's a key that explains the Interstate Highway numbering system. You'll notice the interstate signs are red, white, and blue.

We'll start with the **one-** and **two-digit interstate signs**, and focus on the last digit.

If the route number is **even**, it's an **east-west route**.
East-west routes start with the lowest numbers in the south ...
and increase the farther north you go.

If the route number is **odd**, it's a **north-south route**.
North-south routes start with the lowest numbers in the west ...
and increase the farther east you go.

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Three-Digit Interstates - Numbering Pattern

Audio Script

Three-digit interstate signs pertain to cities, and you focus on the **FIRST** digit.

If the first digit is **even**, the route goes **through** or **around** the city.

And if the first digit is **odd**, the route goes **into the city** and ENDS there. That's what we call a "spur" into a city.

Keep in mind: These patterns do *not* apply to US and state routes.

Identifying a Direct Route

Audio Script

When your work assignment takes you across several states, you'll want to refer to the US map, since it can make a direct route more apparent.

Pinpoint your current location ... then your destination on the map. Lay a straight edge between the two points to see if you can identify a major route that connects them.

Though the US map works well for some tasks, it doesn't indicate which routes are suitable for commercial motor vehicles. To find out, ... you must check the map of each state you'll be traveling through ... to ensure the route you're selecting ... is **legal**.

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US Map Interactivity

Visual Elements

Show a mock US map (similar to the one in the Motor Carriers' Road Atlas). Include state names and time zone delineations via different colors, but don't label the time zones.

Audio Script

It's time for an exercise.

Your work assignment indicates you have a pickup in St. Louis, Missouri and a delivery in Salt Lake City, Utah. How many time zones will you cross?

- A.** Zero
- B. One**
- C.** Two
- D.** Three
- E.** Four

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State Maps

State Map – Key Components

Audio Script

As a professional driver, you'll come to rely on the close-up view that a state map provides when planning the details of your trip. Let's take a look at the type of information a state map provides.

Here's the map of Illinois. ... Some states are *large enough* to require *more than one* map page.

Since a map is a visual representation of a much larger area of land, it must be scaled down to a size that's practical to use, fitting inside an atlas.

Each map has its own scale, which measures the distance on that specific map.

State Map – Key Components Continued

Audio Script

In the main body of the map, you'll find the North arrow to help you determine the orientation of the map.

And the cities in the state and the routes that connect them. Those highlighted in bold orange represent routes designated for commercial motor vehicles ... with some exceptions. (We'll talk about designated routes in greater detail later on.)

Notice how the bold orange highlighting *ends* at the state border. And that everything beyond the border is grayed out. This is true of every state map. To find out if the highway is designated in the bordering state, you must turn to the individual map of that state.

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Index

Audio Script

In the back of the atlas, you'll find an index to help you locate a particular city on a state map.

Let's take a look at how the index is laid out.

States are highlighted in yellow and listed alphabetically. Each includes the page number where its map can be found.

Counties and cities are listed below the state. Notice how the counties appear in bold capital letters, and the cities appear below.

Next to each county and city is its population and map key code.

Knowing the population gives you a general idea of the amount of traffic to expect and can help you plan your estimated time of arrival more accurately.

The map key code indicates the exact location of a city on a state map.

We'll talk more about this in just a minute.

Locating a City – From Map Key Code to Grid

Audio Script

State maps in the atlas are laid out in a grid pattern, ... where rows are marked with letters,
... and columns with numbers.

Take Lincoln, Nebraska, for instance. Its map key code from the index is K-17. That means when I turn to the Nebraska state map, I'll find Lincoln where row K and column 17 intersect.

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Additional Features

Audio Script

We've covered the main components of a state map so far. Now it's time to take a look at some additional features.

Inset maps appear around the margin of the page, providing a close-up view of some of the state's principal cities. ... And take note that even the inset maps have their own scales.

At the top of the page, are some tools to help make your life a little easier:

- On-the-Road Resources includes page numbers to the state's low clearance locations, weigh stations, and restricted routes. It also provides phone numbers and websites for up-to-date information on construction and road conditions.
- The Mileage between Cities guide includes the distance between the state's principal cities;
- And a list indicating the total mileage through the state using the major routes.

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Locating a City Interactivity

Visual Elements	Onscreen Text
<p>Provide the ability for drivers to enlarge index and map, one at a time. Add a SUBMIT button. The map key code (for index) is E-18, so make sure that key code is visible/legible if showing a partial page. Also, make sure grid (from actual atlas) appears on state map.</p> <p>Note: Graphic artist will NOT be using the images currently shown above. These are temporary placeholders and are meant to show the page layout.</p>	
<p>Show Oklahoma state map with grid from Motor Carriers' Road Atlas (page 83 of yellow section).</p>	<p>Show scanned index page for Muskogee, Oklahoma in the Motor Carriers' Road Atlas (page 134). Make sure the map key code for Tulsa is visible if only showing a partial index page.</p>

Audio Script

Now it's time for an interactive exercise.

Your task is to locate Muskogee, Oklahoma on the map. Use the index as a resource then click on the map to indicate the city's location. Select SUBMIT to confirm your selection.

You may begin.

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Selecting My Routes

Factors to Consider

Audio Script

What factors must you consider when selecting your routes?

Well, your overall goal should be to find the most direct, legal route between your current location and your destination.

How do you do that? You start with the US map, find your current location and destination, then lay a straight edge between the two points to see if a direct route is apparent. ... Then you switch to the state maps to verify the route is legal.

So which roads can you use? Federal and state DOT agencies not only decide which roads Commercial Motor Vehicles can use, they also set the vehicle size and weight limits for them.

From designated routes and state access policies to low clearances and restricted routes, there's a lot to learn. And as a professional driver, it's your responsibility to stick to roads authorized for the size and weight of your vehicle.

So let's take a look at what you need to know.

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Designated Highways

Visuals	Onscreen Text
Synchronize onscreen text with narration.	Federal Law Says: <ul style="list-style-type: none"> • If Vehicle Meets STAA Dimensions • You Can Use Designated Highways
	Federal Law If Truck Meets STAA Dimensions <ul style="list-style-type: none"> • Measures <ul style="list-style-type: none"> ○ ≤ 48 Feet Long ○ ≤ 102 Inches Wide • Weighs ≤ 80,000 lbs GVCW
	You Can Use Designated Highways <ul style="list-style-type: none"> • Bold, Orange Routes on Each State Map • Also called the National Network
	CAUTION: Designated highways are not visible on the US map.

Audio Script

Federal law says:

- If your vehicle meets STAA dimensions
- Then you can use the designated highways.

What exactly does this mean? ... Federal law designates specific routes for commercial motor vehicles that meet STAA dimensions. If your truck measures no more than 48 feet in length and 102 inches in width, and if its gross vehicle combination weight does not exceed 80,000 pounds, you can operate on the designated highways.

What are designated highways?

Designated highways are the bold, orange routes on each state map in your atlas. They are part of a network of STAA-approved state highways and interstate freeways also known as the National Network.

Caution: Designated highways do not appear on the US map.

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State Access Policies

Visual Elements

Show a generic state with multiple bold orange routes (=National Network). Show an aerial view of a truck exiting the National Network and getting on a state road so he can get some fuel, food, etc. Yellow- highlight that one-mile portion of the state road that truckers are allowed to travel.

As he's exiting the National Network, show exit sign that says "State Road" along with other signs (symbols for food, fuel, rest, and repair).

Show a 1 Mile marker sign, and show that facilities providing food, fuel, rest, and repair are within one mile of the National Network. And yellow-highlight that one-mile portion of the state road that truckers are allowed to travel.

Show State Access Policies on page A12 in atlas. Focus in on several examples (from Maryland through Missouri) showing a variety of distances allowed.

The Federal Highway Administration issued rule requiring states to allow access between the National Network and terminals & service facilities.

Audio Script

States must allow drivers of vehicles that meet STAA dimensions access from the National Network (which are the bold orange highways) to state roads ... for a minimum of one mile ... to get to service facilities and Motor Carrier Terminals.

... In other words, there will be times when you need to exit off the National Network and onto state roads to get fuel, food, repair, and rest. Or even to get to a Motor Carrier's facility. And states must allow it for at least one road mile.

Signs are posted just before or at the exits on the National Network.

Your atlas includes the State Access Policies. Here you can see that states may allow more than one mile, but not less.

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State/Provincial Weight and Size Limits

Visual Elements

- A.** Show bold orange designated routes.
- B.** To scene A, add a state road branching off of an orange route. On that state road, show a one-mile marker with service facilities inside that one mile, and label the part of the state road that extends from that one-mile marker onwards – label that as “Non-Designated Highway.”
- C.** To Show a partial listing of states and provinces on page A-16 in atlas – State/Provincial Weight and Size Limits.

Audio Script

A. Now that you’re familiar with designated highways, **B.** let’s talk about non-designated highways.

States and provinces can set limits on the weight and size of commercial motor vehicles on their roads/highways systems, which are called “non-designated highways.”

C. On page A-16 of the Motor Carriers’ Road Atlas, you can find a complete list of the exact limits each state and province has chosen to enforce. States are listed alphabetically, then provinces.

These size and weight limits may vary between the state system and the National Network.

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Restricted Routes

Visual Elements	Onscreen Text
<p>A. Show scene of a snowy, icy, treacherous highway; bad snowstorm with cars pulled over to side (no trucks).</p> <p>B. Show restricted routes for Oklahoma on page A39 of atlas.</p> <p>C. Slide restricted routes atlas page over to left side of screen (still visible) and add onscreen text on right side of screen.</p> <p>D. Append onscreen text to bulleted list. Note: Scene D includes adding bullet.</p>	<p>C.</p> <p>Restricted Routes</p> <ul style="list-style-type: none"> • Banned for Year-Round Travel by CMVs <ul style="list-style-type: none"> ○ Because of <ul style="list-style-type: none"> ▪ Low Weight Bridges ▪ Tunnel Limitations or ▪ Extreme Weather Conditions • Do NOT Plan a Trip on a Restricted Route

Audio Script

A. Restricted routes are state roads that have been banned from use by Commercial Motor Vehicles year-round.

B. You'll find a list of these routes in your atlas, and it also includes the exact location along each route.

C. There are a number of reasons why a state would restrict a route:

- Some bridges can't hold the weight,
- Some tunnels have limitations, and
- Some routes are often subject to extreme weather conditions.

D. Do not plan a trip over a route that is listed as restricted.

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Low Clearances

Audio Script

Low clearances for each state and province are listed in your atlas.

The United States lists them in feet and inches, ... Canada, in meters.

Specific routes are included as well as the exact location along each route. ... The height and map key for each low clearance are also listed.

And you may want to jot down the Canadian-US equivalents. Four point one five meters equals thirteen feet, six inches.

Keep in mind that if a route is listed as **restricted**, a low clearance on that route will **not** be listed in the Low Clearance section.

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Never Rely Completely on a Single Navigation Tool

Visual Elements	Onscreen Text
<p>A. Show truck driver striking a bridge with his truck because bridge clearance is too low (and no sign is posted).</p> <p>B. Show truck driver reading/studying the atlas (state map page).</p> <p>C. To the above scene, add onscreen text as a caption.</p> <p>D. Show asphalt machine paving road surface, causing overpass clearance to decrease.</p> <p>E. Show a guarantee (document) with a Rand McNally letterhead. Put a red slash on it.</p>	<p>C. Atlas ≠ 100% Reliable</p>

Audio Script

A. Why would a professional driver strike a bridge with his truck?

B. ... *Before his trip*, he checked for low clearances along the route in the atlas, and none were listed! ... *So what went wrong?*

He placed 100% of his faith in the atlas, committed to the route, and didn't question it, even when his eyes told him a very different story.

C. Though the atlas is a wonderful tool and you should continue to use it, never rely on it completely. Or any tool, for that matter.

D. Roads change and new low clearance locations pop up. Changing road surfaces, snow and ice on roads, and new construction can all affect the height of an overpass. Rand McNally, our supplier of the Motor Carriers' Road Atlas, has done their best to list the low clearance locations throughout the US and Canada, **E.** but they will *not* guarantee they've accounted for the all of them.

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Encountering an Unexpected Low Clearance

Audio Script

No matter how rigorously you plan, you can still encounter an unexpected low clearance. Ultimately, you are responsible for determining that adequate clearance exists before proceeding along any route. Do not attempt to drive under an overpass that looks too low.

If you realize your truck won't make it through, pull over to side of the road. If that's not possible, stop the truck and call the state police to help you back up on the roadway. (You can find the phone number for each state in the orange section of your atlas.)

... *Never* attempt to back up on a roadway without law enforcement assistance!

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Calculating Mileage

Why Is It Important to Be Able to Calculate Mileage?

Audio Script

Being able to calculate the mileage between your pick-up location and your destination is critical.

Professionals are able to continually calculate when they expect to arrive at the customer's site, so they can update the motor carrier as to when they will be empty and ready for the next load. They can only do this by knowing how far it is to their destination.

Tools to Calculate Mileage

Audio Script

The Motor Carriers' Road Atlas provides several tools to help you calculate mileage.

The Mileage between Cities Guide is found at the top of each state map. Use this guide only when there is just one practical route between the cities listed.

Scale ... Each map has its own scale. Use it only for short distances and when more accurate measurements are not available.

Mileage along a particular route can be calculated using the black numbers and the red numbers.

The black numbers represent the mileage between intersections and places. The red numbers represent the mileage between red arrowheads.

Although using these numbers is the most accurate way to calculate mileage, it's still not exact. ... Exact mileage can only be determined *after* the trip.

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Tools to Calculate Mileage (continued)

Audio Script

Numbers in the green boxes are exit numbers. And the small white boxes are the corresponding exits.

Most states number the exit according to the corresponding mile marker on the highway.

On east-west interstate highways, the mile markers start at zero on the state's western border and increase as you travel east.

When you enter the bordering state to the east, the mile markers start over at zero.

A similar pattern exists for north-south interstate highways. Mile markers start at zero on the state's southern border and increase as you travel north. When you enter the bordering state to the north, the mile markers start over at zero.

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Mileage Directory

Audio Script

There's a Mileage Directory in the back of your atlas that lists the mileage between three hundred select cities.

Though the directory is a handy tool, it provides the overall mileage but *not* the mileage along a *specific route*. So you can only use it to compare with the mileage you've already calculated along the route you plan to travel.

Mileage Directory

Audio Script

Let's take a look at how the mileage directory is laid out.

Columns run across the top of the page, listing the cities in alphabetical order ... starting with Abilene, Texas and ending several pages later with Youngstown, Ohio.

Rows run down the left side of the page, listing the cities alphabetically as well. ... As you can see, it runs out of room at the bottom of the page before all the cities can be listed. ... No need to worry, the rows continue **AFTER** the columns finish listing all of the cities several pages later.

To use the Mileage Directory, locate the selected city across the top then locate the other city down the left side. Draw an imaginary line down from the city on the top and another line across from the city on the left side. You'll find the estimate mileage between the two cities where the two lines intersect.

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Course Summary

Course Summary

Audio Script

Your overall goal as a professional driver is to find the most direct, legal route between your current location and your destination.

To identify a direct route, refer to the US map. And lay a straight edge between your current location and destination to see if one becomes apparent. At that point, switch to the individual maps of each state you'll be traveling through to verify the routes are legal.

Designated routes are state highways and interstate freeways authorized for vehicles that don't exceed STAA dimensions. You'll find these routes highlighted in bold, orange on each state map in your atlas. Be sure to check each route you plan to follow to ensure it does not contain restrictions or low clearances. As a professional driver, you are ultimately responsible for selecting roads that are authorized for the size and weight of your vehicle.

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Final Exam

Check for Learning 1

Objective Tested	Use a straight edge to select the most direct route between two specific points.
Question Type	Multiple Choice
<p>Visual Elements Show a mock US map (similar to the one in the Motor Carriers' Road Atlas). Include state names and major routes. Make sure the following routes are visible/included: 24, 36, 40, 70, 80, 135, and 335.</p> <p>Feedback:</p> <ul style="list-style-type: none"> A. Incorrect. US 24 won't get you from Strasburg to Limon in Colorado. Try again. B. Incorrect. US 36 will get you close, but it does not connect with Topeka. Try again. C. Incorrect. I-40 doesn't go through Colorado or Kansas. However, US 40 does, but it's not the route with the straightest line. Try again. D. Correct! I-70 is the most direct route from Strasburg, Colorado to Topeka, Kansas. <Graphic artist to show (highlight I-70 in bright orange) on map showing only Colorado and Kansas in a continuous map.> 	

Question: Your work assignment states you have a pickup in Strasburg, Colorado and a delivery in Topeka, Kansas. Identify a direct route.

- A. US 24
- B. US 36
- C. I-40
- D. I-70**

Check for Learning 2

Objective Tested	Identify the time zone boundaries on a US map.
Question Type	Multiple Choice Interactivity
<p>GA Instructions: Show US map with state and province abbreviations (no color coding, no boundary demarcations). Place time zone labels in a vertical stack on right side of map as shown in the sketch below.</p> <p>Only show one question at a time with its corresponding set of answers. The answer set shown depends on the question, so hide/remove the other answer set that doesn't apply to that particular question. Lock step the questions.</p> <p>Question 1 Feedback: "Correct!" or "Incorrect time zone. Try again." Question 2 Feedback: "Correct!" or "Incorrect time. Try again."</p>	

 <p>From Deer Trail, Colorado to Topeka, Kansas</p> <p>SUBMIT</p>	Mountain	1:00
	Eastern	2:00
	Central	3:00
	Pacific	4:00
		5:00

Questions: While traveling from Strasburg, Colorado to Topeka, Kansas:

- Which time zone(s) will you travel through? Select SUBMIT once you have made your choice(s). **Mountain and Central**
- If it is 3:00 in Strasburg, Colorado, what time is it in Topeka, Kansas? **4:00**

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Check for Learning 3

Objective Tested	Locate a specific city on a state map.
Question Type	Interactivity
<p>GA Instructions: Interactivity. In this interactivity, each question appears separately (lock-step).</p> <p>For each question:</p> <ul style="list-style-type: none"> • Show clickable and enlargeable Index onscreen (show an abbreviated portion of the index page (in back of Motor Carriers’ Road Atlas) that includes city and state mentioned in the question along with page number of state map and the city’s map key code). Make sure the map key code is legible when enlarged. (Clicking on the Index toggles its size from small to large and back to small.) <ul style="list-style-type: none"> ○ <i>Note:</i> For Strasburg, Colorado, make sure it’s included in the index along with its Map Key Code of E-15. ○ <i>Note:</i> For Topeka, Kansas, do not bold the city on the index page. Do show D-16 for its Map Key Code. • Show the state map (from Rand McNally’s Motor Carriers’ Road Atlas) large enough as is that it doesn’t need to be enlarged. Replace the generic label “State Map” with name of the state in the question. Be sure to include the grid (numbers and letters) and that the grid layout matches the Map Key Code mentioned. Hot Spot the city so that clicking on it provides correct feedback. • Feedback: “Correct!” or “Incorrect location. Try again.” 	

* See next page for graphic ideas, question, and distractors.



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State Map



Index

Questions:

1. You are in Strasburg, Colorado. Find it on the map and click on it. You may use the index as a resource – Click to enlarge.
2. Find Topeka, Kansas, your destination, on the map and click on it. You may use the index as a resource – Click to enlarge.

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Check for Learning 4

Objective Tested	Determine if the direct route selected is a designated route.
Question Type	Scenario-based exercise
<p>GA Instructions: Interactivity. In this interactivity, questions appear one at a time, after the previous one has been answered correctly (lock step). Show Colorado and Kansas state maps in a layout similar to what's shown below. Kansas state map (from atlas) includes two pages (pages 40 & 41) and one for Colorado (page 21). When user selects a thumbnail, it enlarges and takes up most of the screen (only allow one graphic to be enlarged at a time). Feedback: "Correct! Route 70 is a designated route." or "Incorrect. Route 70 is not a designated route." <i><Use Radio buttons for answer choices.></i></p>	
 Colorado	 1st Page  2nd Page Kansas

Question: Earlier, you identified I-70 as a direct route between Strasburg, Colorado and Topeka, Kansas. Now it's time to make sure the route is safe and legal. Your task is to determine if I-70 is a designated route for vehicles with STAA-authorized dimensions. You may use each map as a resource. Click to enlarge.

- **Yes, I-70 is a designated route.**
- No, I-70 is not a designated route.

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Check for Learning 5

Objective Tested	Determine if the direct route selected is a restricted route.
Question Type	Yes/No
GA Instructions: Reuse graphics from question 5.	

Questions:

1. Is I-70 a restricted route?
 - A. Yes
 - B. No**

2. Are there low clearances along any portion of I-70 you're planning to travel?
 - A. Yes
 - B. No**

Check for Learning 6

Objective Tested	Identify the permanent weigh stations along a route.
Question Type	Multiple Choice Interactivity
<p>GA Instructions: In this interactivity, there are three questions. Questions appear one at a time, after the previous one has been answered correctly (lock-step).</p> <p>For question 1, show the Permanent Weigh Station charts for Colorado and Kansas. Make them clickable so they can be enlarged.</p>	

 <p>Colorado</p>	 <p>Kansas</p>
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1. Are there any permanent weigh stations along I-70? You may click on each chart to enlarge it.

- A. Yes**
- B. No**



Replace with Colorado state map.



Replace graphic with permanent weigh station list for Colorado.

Colorado

2. Identify a permanent weigh station along the portion of I-70 you will travel.

- A. Timnath <Incorrect. Timnath is not on I-70.>
- B. Trinidad <Incorrect. Trinidad is not on your route.>
- C. **Limon** <Correct!>
- D. Loma <Incorrect. Loma is for west-bound vehicles.>

 <i>Replace with Kansas state map.</i>	 <i>Replace graphic with permanent weigh station list for Kansas.</i>
Kansas	

3. Where are the permanent weigh stations along your route on I-70 in Kansas?

- A. Kanorado (C-1) and Wabaunsee (D-15)**
- B. Olathe (E-18) and South Haven (J-13)**
- C. Wabaunsee (D-15) and Belleville (B-12)**
- D. There are none along this route.**

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Check for Learning 7

Objective Tested	Identify, on a state map, the location of a rest area.
Question Type	Interactivity
GA Instructions Show page 40 of the Kansas map (and not page 41). Feedback: "Correct!" or "Incorrect. Try again." The correct answer is the blue house symbol at C-2, Ruleton. Note: When showing the "Correct" feedback, highlight the correct place on the map.	 Kansas

Question: As you plan your trip from Strasburg to Topeka, you want to scout out the available rest areas. You figure you will need one as you cross the Kansas border. Click on the first rest area on the map along your route.

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Check for Learning 8

Objective Tested	Calculate total mileage between two specific points.
Question Type	Scenario-based calculation exercise Multiple choice answers
GA Instructions Show all three clickable/enlargeable thumbnails for Colorado and Kansas state maps. (Remember, there are two for Kansas.) Be sure all black numbers, red numbers, red arrowheads, and mile markers are visible along Route 70.	
Feedback: <ul style="list-style-type: none"> • Correct! Total Mileage = 503 miles. Select the DETAILS button to view the step-by-step calculations. • Incorrect. Try again. 	
Details <ul style="list-style-type: none"> • Using green mile markers from Strasburg (310) to Burlington (437): $437-310=127$ • Using the red arrows, from Burlington to the Kansas border = 13 • From the state border to Kanorado = 2 • From mile marker 1 in Kanorado to mile marker 353 in Kiro = 353 • From mile marker 353 in Kiro to Topeka, there are three intersections with black numbers between each: $2 + 3 + 3 = 8$ • Add up the miles: $127 + 13 + 2 + 353 + 8 = 503$ total miles 	

Scenario: Calculate the mileage between Strasburg, Colorado and Topeka, Kansas on I-70, assuming you are going to the capital. Use the black numbers, red numbers, red arrowheads, and mile markers to help you. Then select the correct answer below.

- A. 487 miles
- B. 503 miles**
- C. 540 miles
- D. 576 miles