CONTRACT SERVICES

Presented by
Contract Services

As part of the
Safety Pass Training Program for the Motion Picture and Television Industry

C2 FORKLIFT AND TELEHANDLER SAFETY

English:
If you do not comprehend English, and you require Safety Pass training in a language other than English, please send notification in writing to 2710 Winona Avenue, Burbank, CA 91504. Please provide your name, along with contact information, and specify the language you comprehend. Thank you.

Spanish:
Si usted no comprende inglés y requiere la capacitación Safety Pass en un idioma diferente al inglés, por favor envíe una notificación por escrito a 2710 Winona Avenue, Burbank, CA 91504. Por favor provea su nombre, junto con la información de contacto, y especifique el idioma que usted comprende. Gracias.

Korean:
영어를 이해하지 못하시고 영어가 아닌 다른 언어로 **Safety Pass** 훈련을 받으셔야 한다면, 서면 통지를 **2710 Winona Avenue, Burbank, CA 91504** 로 보내주시기 바랍니다. 귀하의 성함과 연락처를 기재하시고 이해하실 수 있는 언어를 명시해주십시오. 감사합니다.

Armenian:
Եթե դուք անգլերեն չեք հասկանում և ձեզ հարկավոր է **Safety Pass**-ի մարզում անգլերենից տարբեր լեզվով, խնդրում ենք գրավոր ծանուցագիր ուղարկել հետևյալ հասցեով՝ **2710 Winona Avenue, Burbank, CA 91504**: Խնդրում ենք ներկայացնել ձեր անունը, ինչպես նաև կապի տեղեկությունը, հատկապես նշելով ձեր հասկացած լեզուն: Շնորհակալություն:

Contract Services Administration Training Trust Fund
2710 Winona Avenue
Burbank, CA 91504

Safety Pass Training Program

The Entertainment Industry is committed to maintaining a safe and healthful working environment. To that end, all major studios have a safety representative on staff. In addition, all employers have a safety program in force. This Safety Pass Program has been designed to further promote safety and health and to prevent injuries, illnesses, and accidents on all productions, both on-lot and off-lot.

Studios and production companies may have more restrictive safety requirements than those mandated by local, state, or federal laws or regulations. They also may assign different duties or responsibilities to employees. Therefore, in addition to this Safety Pass training course, employees should refer to the safety manual and materials provided by their employers.

Employees must adhere to all safety rules and regulations. Failure of any employee to follow safety rules and regulations can lead to disciplinary action, up to and including discharge. However, no employee shall be discharged or otherwise disciplined for refusing to perform work that the individual reasonably believes is unsafe.

No safety training can comprehensively cover all possible unsafe work practices. Each production and its employees, therefore, should fully promote each employee's personal obligation to work safely in order to prevent accidents involving, and injuries to, the employee and to his/her fellow employees.

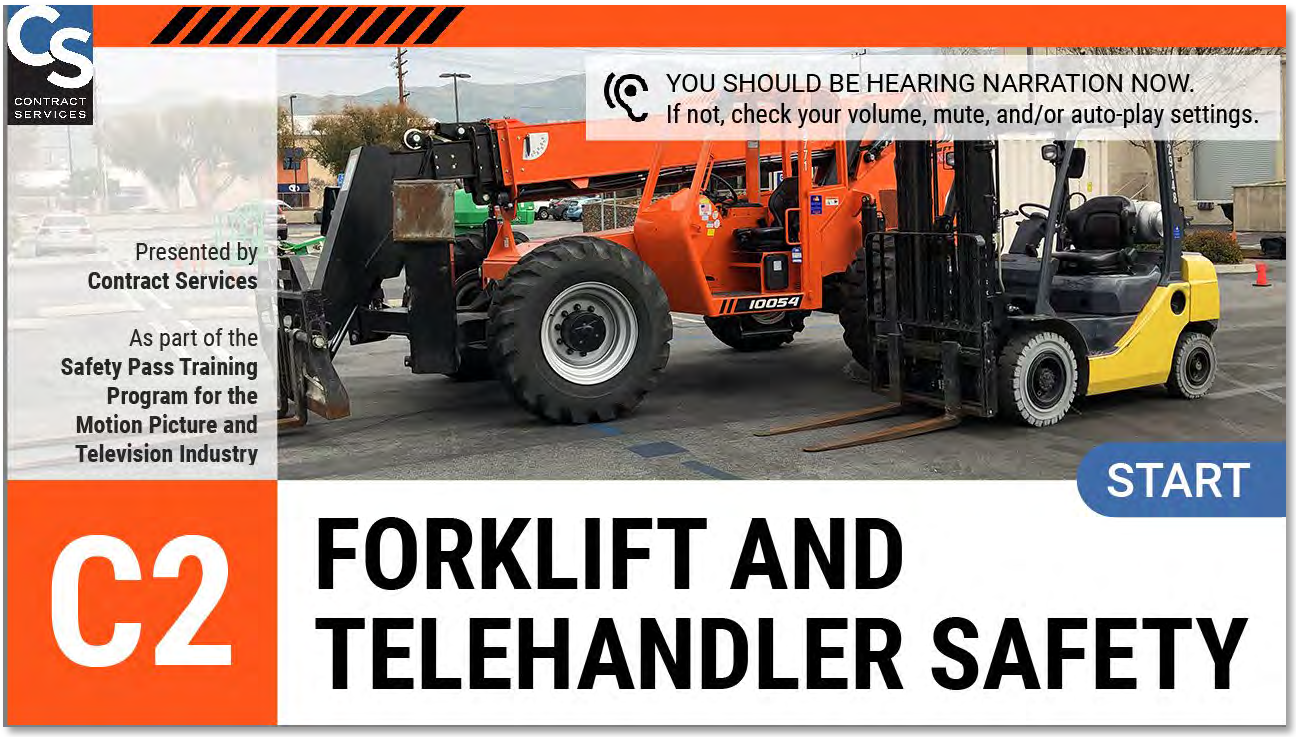
The Safety Pass Program derives from Federal and California Occupational Safety and Health Administration (OSHA) safety regulations. However, the material included in this workbook and its accompanying presentation should be used only as a general guideline. It is not intended as a legal interpretation of any federal, state, or local safety standard.

During the course of your employment, you may be acting as a supervisor or manager.In California, individuals with management authority and actual authority for the safety of a business practice could be convicted of a crime if they have actual knowledge of a serious concealed danger and fail to warn the affected employees and report the hazard. If a hazard exists, immediately notify the employer or studio safety department of the hazard and insure that potentially affected employees are informed of the danger and that steps are taken immediately to mitigate it.

Although the information contained in this training program has been compiled from sources believed to be reliable, the Alliance of Motion Picture and Television Producers, Contract Services Administration Trust Fund, Contract Services Administration Training Trust Fund, and the instructor make no guarantee nor warranty as to, and assume no responsibility for, the accuracy, sufficiency, or completeness of such information.

The Entertainment Industry is committed to maintaining a safe and healthful working environment.

Slide 1 - Welcome



Narration:
Hello, and welcome to course C2, *Forklift and Telehandler Safety*. This course is part of the Safety Pass training program for the motion picture and television industry, presented by Contract Services. Click START to begin.

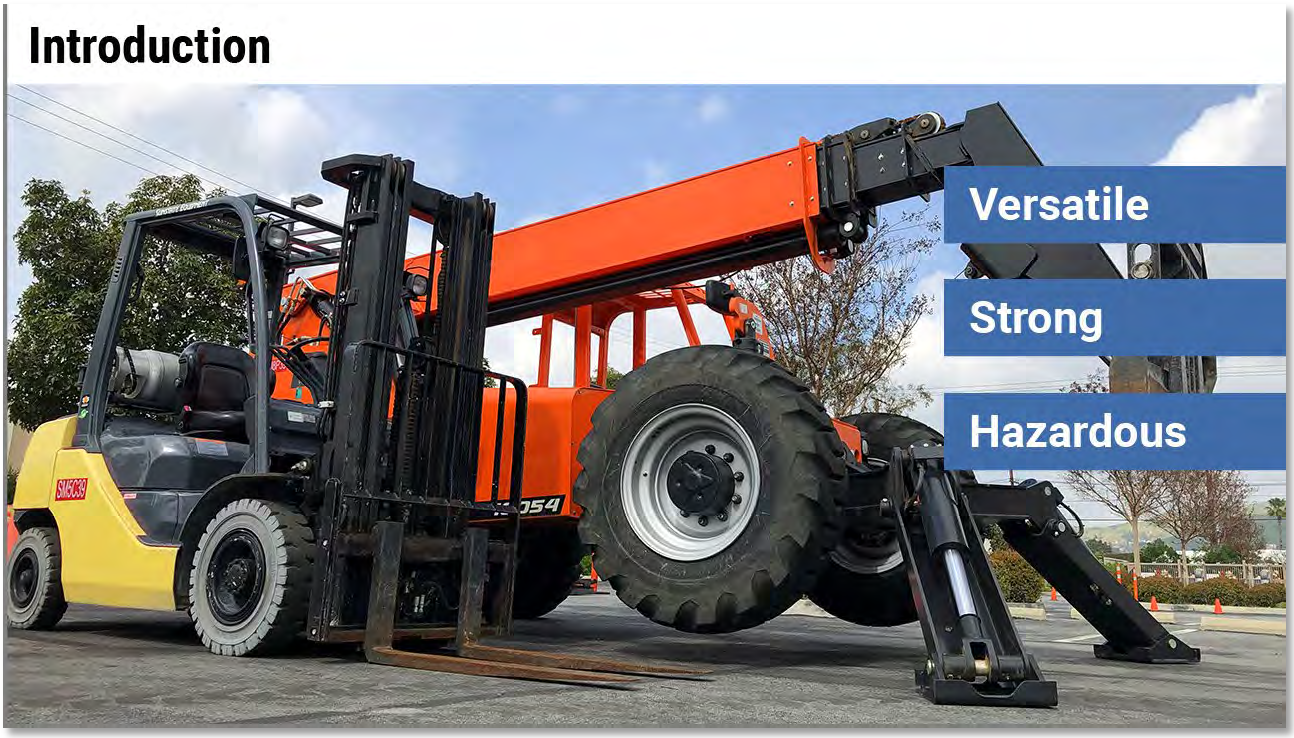
Slide 3 - Online and In-Person Training

Narration:
This course consists of two parts: a two-hour online presentation, including a test, and an in-person driving evaluation. To receive credit for the course, you must complete both parts. You must score at least 70 percent on the test to pass the online part of the course. After the test, return to the *Registration* page to enroll for the in-person evaluation.

Slide 4 - IIPP

Narration:
This course is part of your employer's safety program. In the state of California, this is known as the Injury and Illness Prevention Program (or IIPP). The IIPP and Safety Pass training courses are part of your employer's safety program. There are three reasons to get safety training. First, you are personally responsible for your safety. You owe it to yourself and your coworkers to avoid accidents and injuries. The way you make a living and your quality of life depend on it. Second, it is the law. Occupational safety and health standards guarantee the right to a safe workplace and require employers to train their employees in safety. And third, the industry requires it. This course is part of a cooperative commitment between major motion picture and television studios and industry labor unions to deliver safety training.

Slide 5 - Introduction

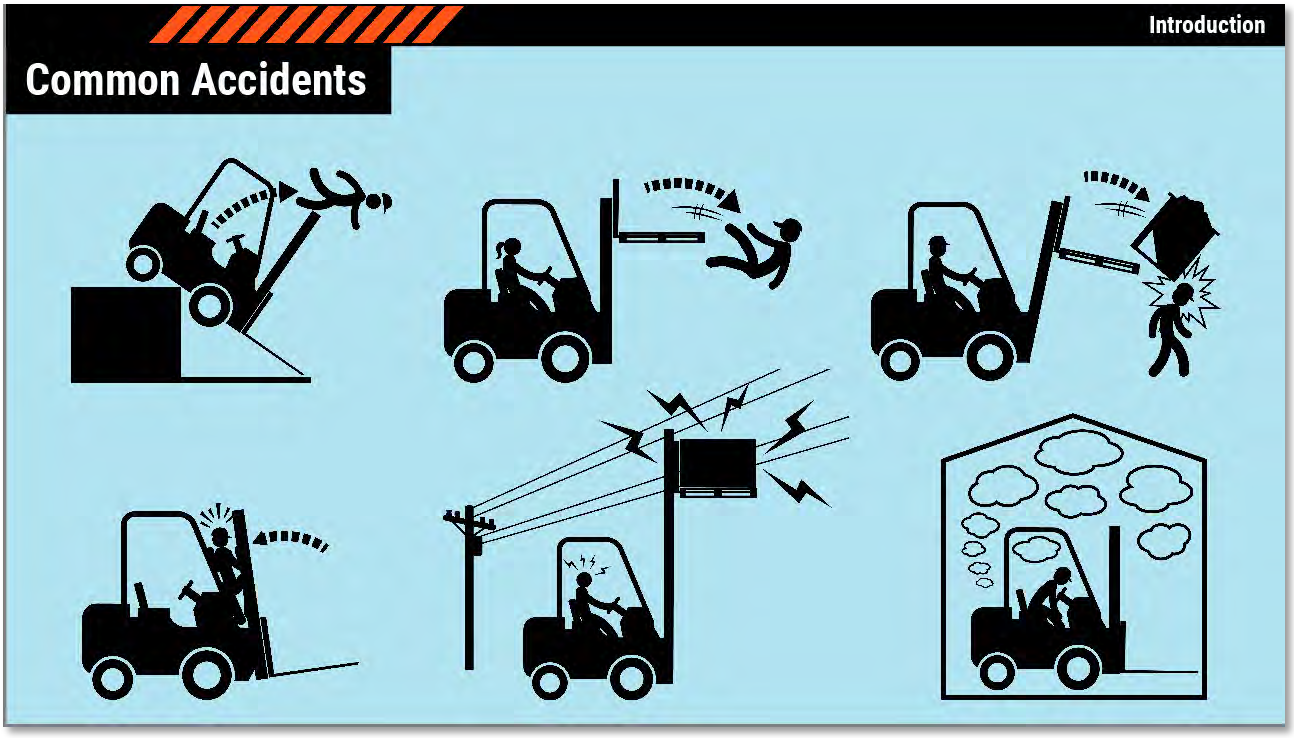


Narration:
Introduction. Forklifts and telehandlers are valuable to the motion picture and television industry in both versatility and strength. At the same time, they can be hazardous if regulations and safe work practices are not followed.

Slide 6 - Common Accidents 1

Narration:
The most common forklift accidents are collisions, falling loads, and tip-overs, all of which can result in injuries to a pedestrian, a worker, or the forklift operator, as well as damage to the load, the vehicle, or other property.

Slide 7 - Common Accidents 2



Narration:
Types of accidents that occur less frequently but are no less serious include ejection from a vehicle, a fall from height, a falling attachment, a pinching or crushing injury, shock or electrocution, and asphyxia. We'll talk about how to avoid these dangers and others as we move through the course.

Slide 8 - Course Purpose

Narration:
The purpose of this course is to prevent workplace accidents and injuries by promoting safe driving and operational practices and increasing awareness and understanding of Occupational Safety and Health Administration (OSHA) regulations. Please note that, in this course, “OSHA” will refer to both California OSHA (or Cal/OSHA) and federal OSHA regulations, unless otherwise specified.

Slide 9 - Course Terminology 1

Narration:
As the title indicates, this course focuses on two types of forklifts: the vertical mast forklift and the telehandler. For the sake of simplicity, the term forklift will be used throughout the course when talking about general information, principles, safe practices, and regulations. The term vertical mast forklift will be used when providing information specific to forklifts that move loads up and down. And the term telehandler will be used when providing information specific to forklifts with a telescoping boom.

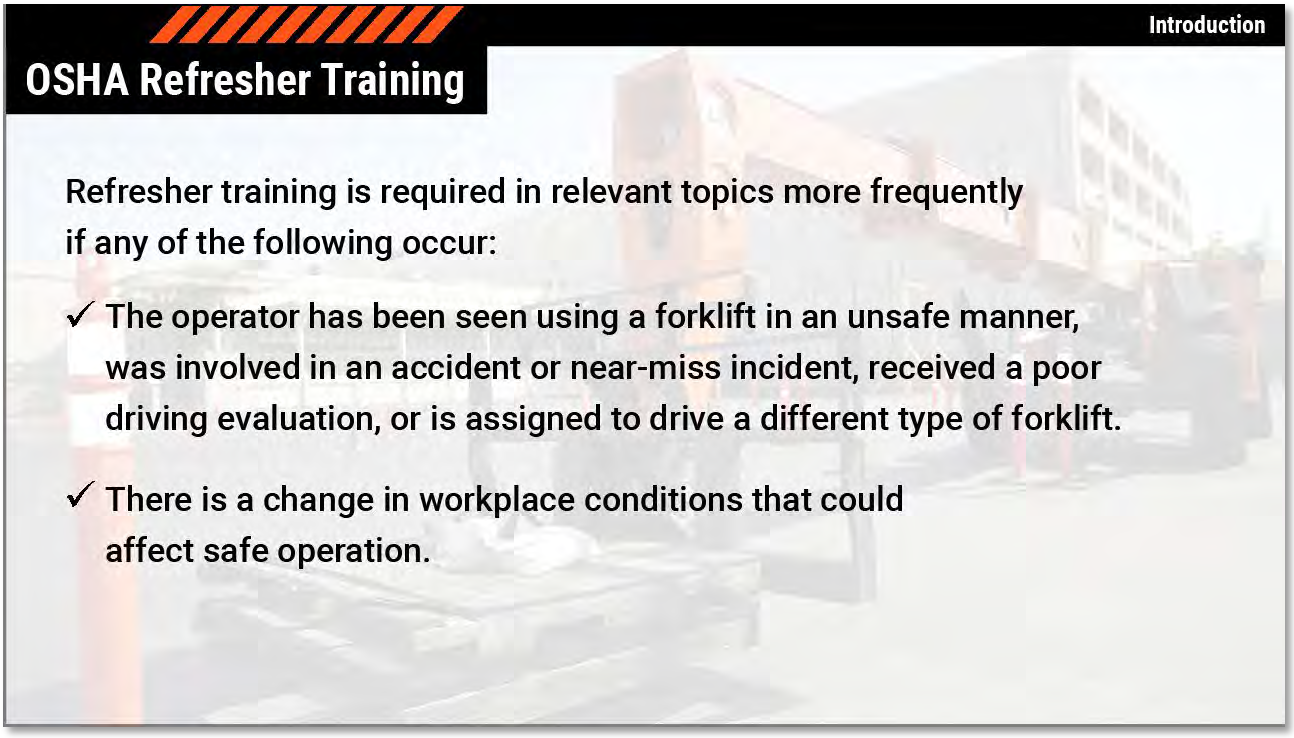
Slide 10 - Course Terminology 2

Narration:
In this course, the term **operator** refers to someone who has been authorized by the employer to operate forklifts and trained to use them safely. The term **worker** refers to someone who performs tasks involving forklifts such as loading and unloading cargo, holding the tethering device of suspended loads, or pointing out blind spots, traffic, or potential obstructions or who works in areas where forklifts are operated.

Slide 11 - Training and Evaluation

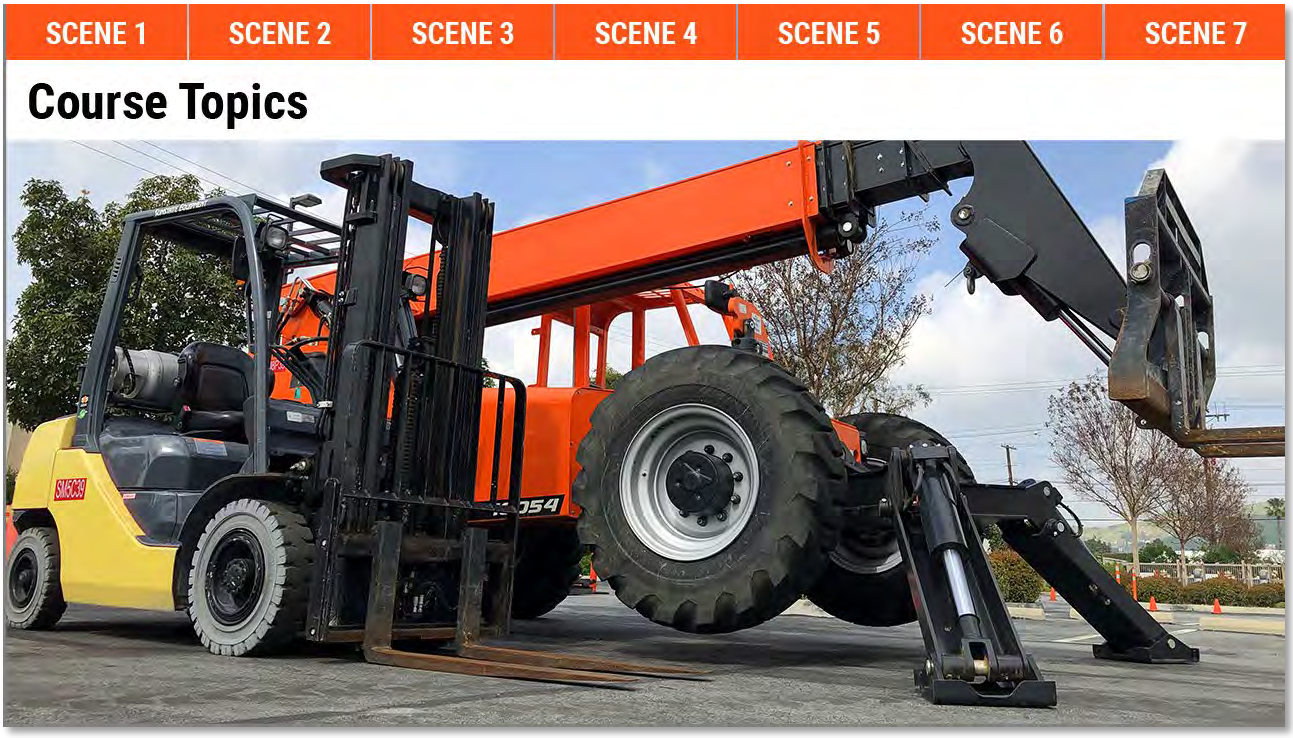
Narration:
You are here today because you are an operator or a worker. Every three years, you must take Safety Pass training and have an OSHA-mandated driving evaluation. The in-person portion of this training includes the evaluation required by OSHA.

Slide 12 - OSHA Refresher Training



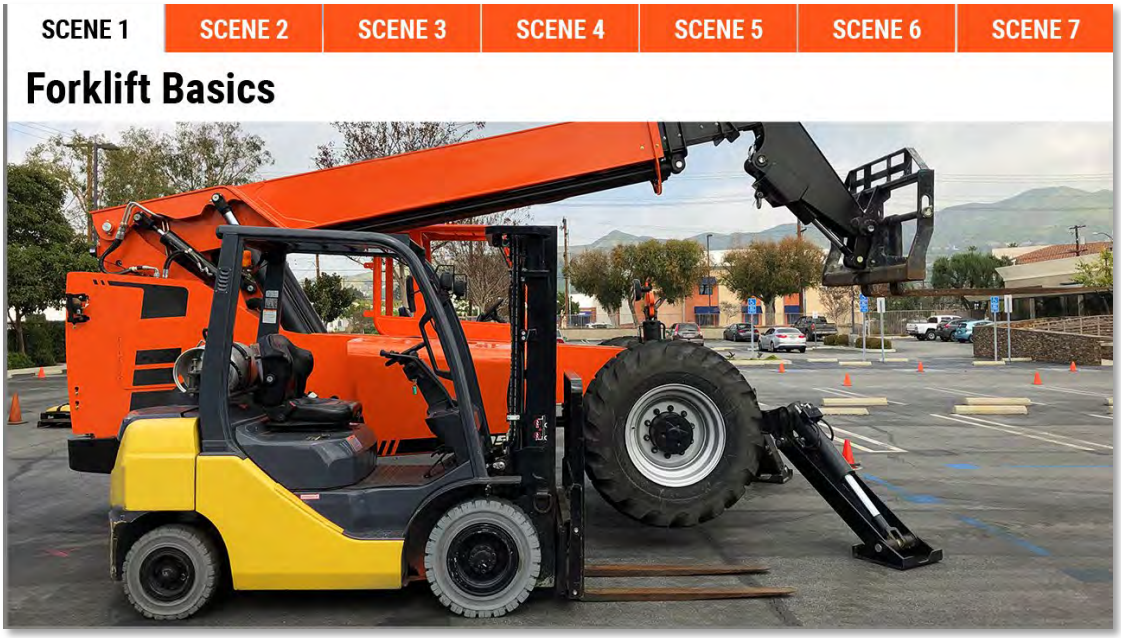
Narration:
OSHA also requires refresher training in relevant topics more frequently if any of the following occur: The operator has been seen using a forklift in an unsafe manner, was involved in an accident or near-miss incident, received a poor driving evaluation, or is assigned to drive a different type of forklift. Or, there is a change in workplace conditions that could affect safe operation of a forklift.

Slide 13 - Course Contents



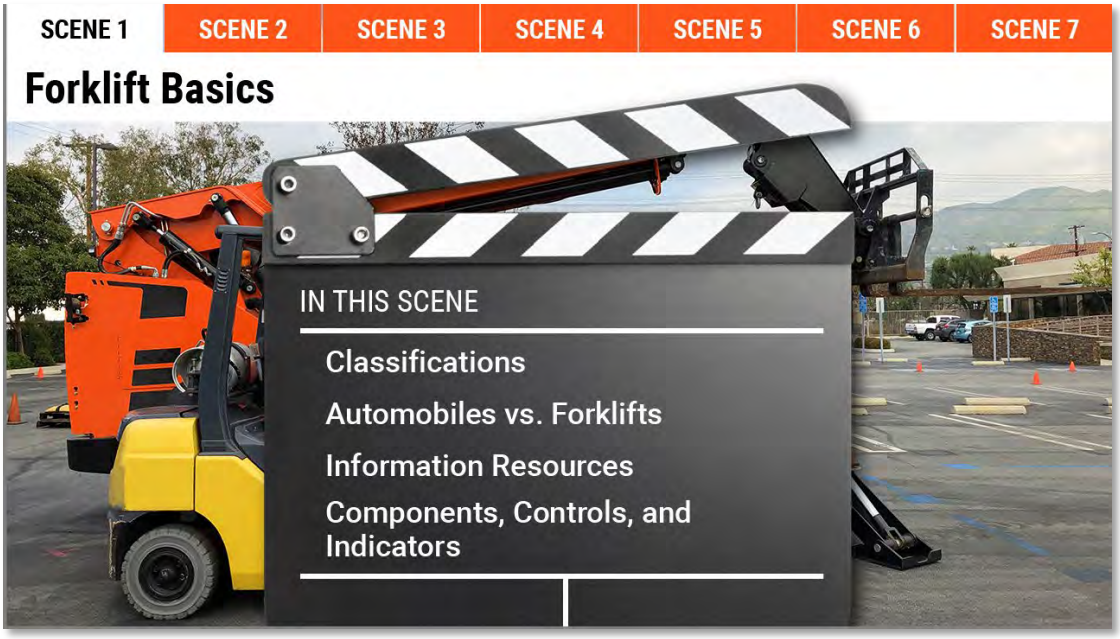
Narration:
Scene One, Forklift Basics. The topics we'll cover in this course are forklift basics, principles of forklift capacity and stability, safe operation and load-handling practices, attachments, operational procedures, pre-use inspections, and refueling and recharging. Ok, let's get started!

Slide 14 - Forklift Basics



Narration:
Scene One, Forklift Basics.

Slide 15 - In This Scene



Narration:
In this scene, we'll learn about forklift classifications and how automobiles and forklifts differ from each other. Then, we'll review where to find information about the make and model of vehicle you are operating and the names and functions of common forklift components, controls, and indicators.

Slide 16 - PIT Classifications 1

Narration:
Forklifts are categorized by OSHA as powered industrial trucks, or PITs. There are seven PIT classifications.

Slide 17 - PIT Classifications 2

Narration:
Class I forklifts are electric. Class II are electric and designed for narrow aisles. Class III are electric motor hand trucks or hand/rider trucks. Class IV forklifts have internal combustion engines and solid tires, also called cushion tires. Similarly, Class V forklifts have internal combustion engines, but the tires are pneumatic, or air-filled. Class VI are tractors and have electric or internal combustion engines. Note that Class VI PITs are not forklifts. And lastly, Class VII rough terrain forklifts have internal combustion engines and large, rugged tires. They are intended for use outdoors and can usually handle heavier loads than other classes of forklifts.

Slide 18 - PIT Classifications 3

Narration:
Within Class VII are three types of rough terrain forklifts (or RTFLs), each designed for a different purpose. A vertical mast RTFL lifts loads vertically. Essentially, it is a larger version of a Class V forklift. A variable reach RTFL, commonly referred to as a telehandler, has a telescoping boom, allowing operators to pick up and place loads at various heights and distances. A truck- or trailer-mounted RTFL is a portable vehicle designed to attach to a truck or trailer so it can travel with cargo to the job site. Click this icon to see the full list of PIT classifications. This list is also available through the *Resources* icon here.

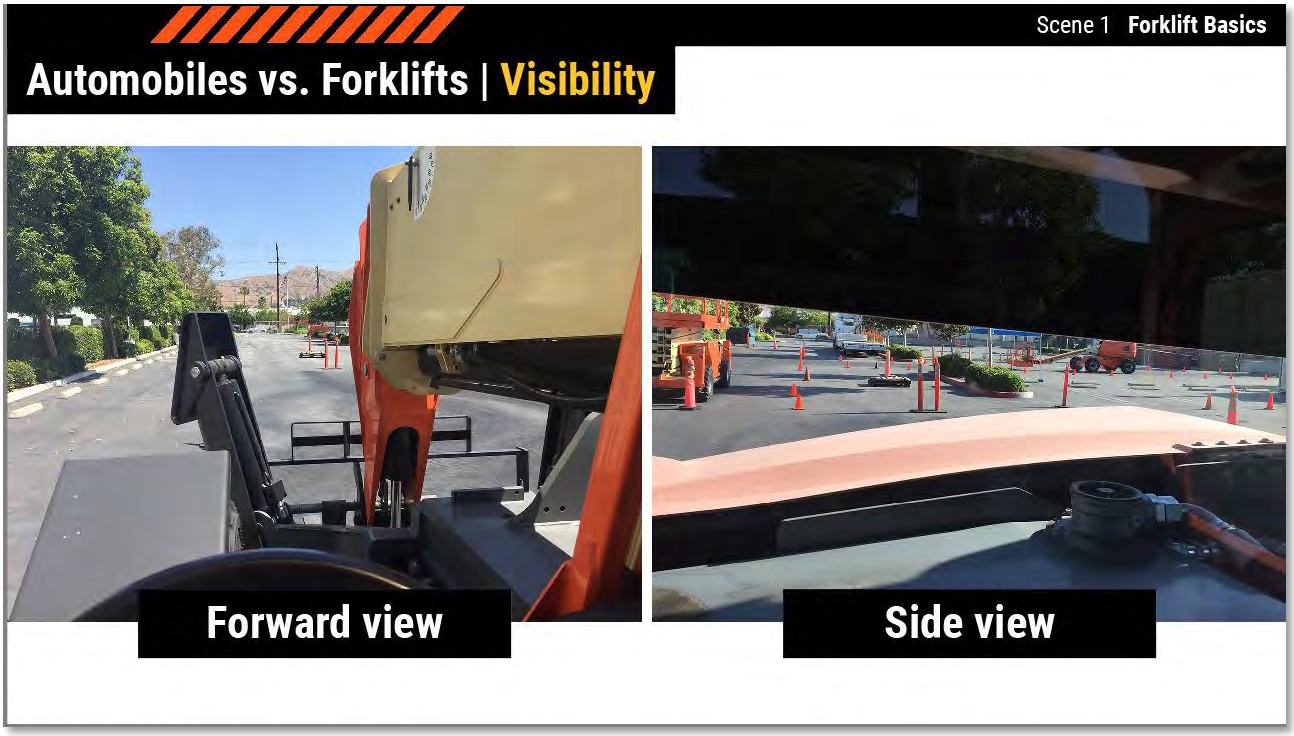
Slide 19 - Weight

Narration:
Now, let's look at some of the major differences between automobiles and forklifts, starting with weight. Automobiles are relatively light compared to forklifts. Even a smaller Class V forklift weighs approximately 6,000 pounds, making it almost twice as heavy as a mid-sized sedan. Telehandlers weigh upwards of 20,000 pounds. This extra weight means that operators must pay attention to the surfaces on which they are driving to ensure they are stable and can support the weight of the forklift and load. Forklifts also take more time to stop than automobiles and can cause considerable damage or injury if you have to slam on the brakes or if there is a collision.

Slide 20 - Visibility 1

Narration:
Visibility is another big difference. Automobiles have few blind spots; the driver has a wide field of vision in all directions. Forklifts, on the other hand, have blind spots created by the load being carried or by parts of the vehicle.

Slide 21 - Visibility 2

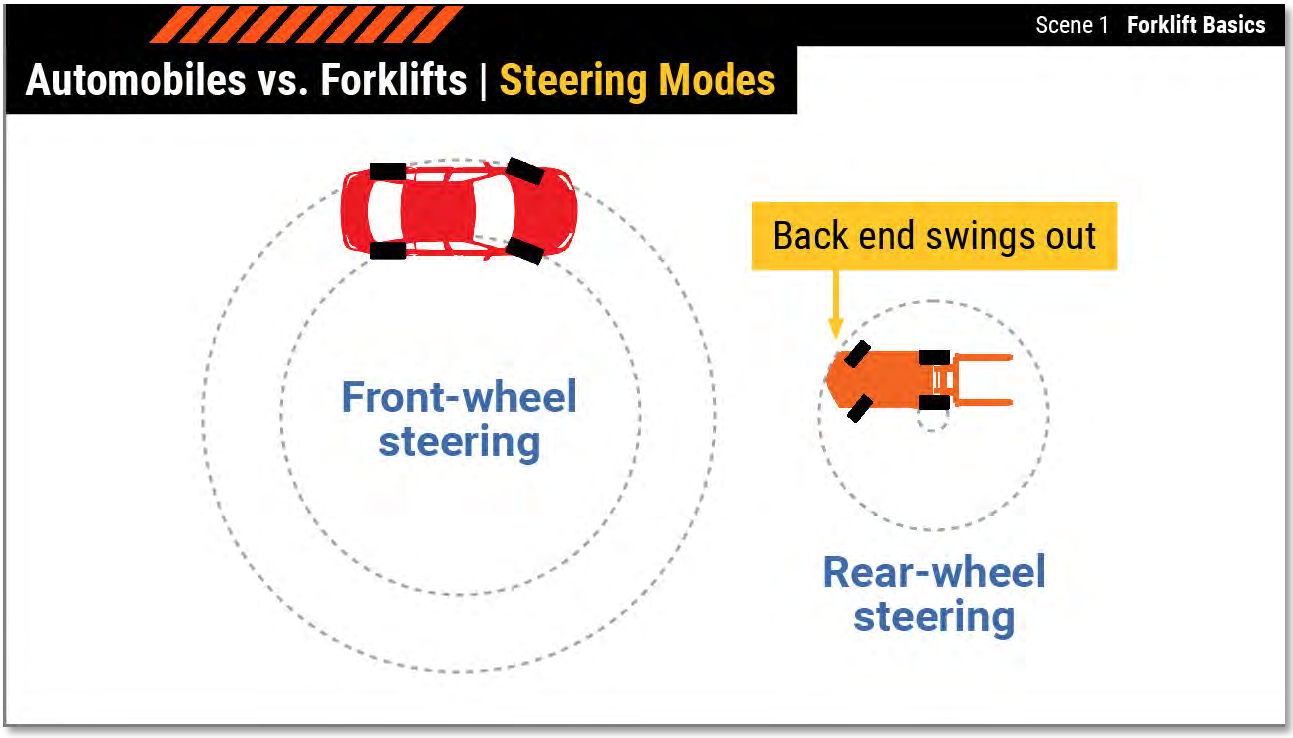


Narration:
Here, you can see the forward and side views from the driver's seat of a telehandler. Even unloaded, the boom, outriggers, and engine compartment reduce visibility.

Slide 22 - Stability

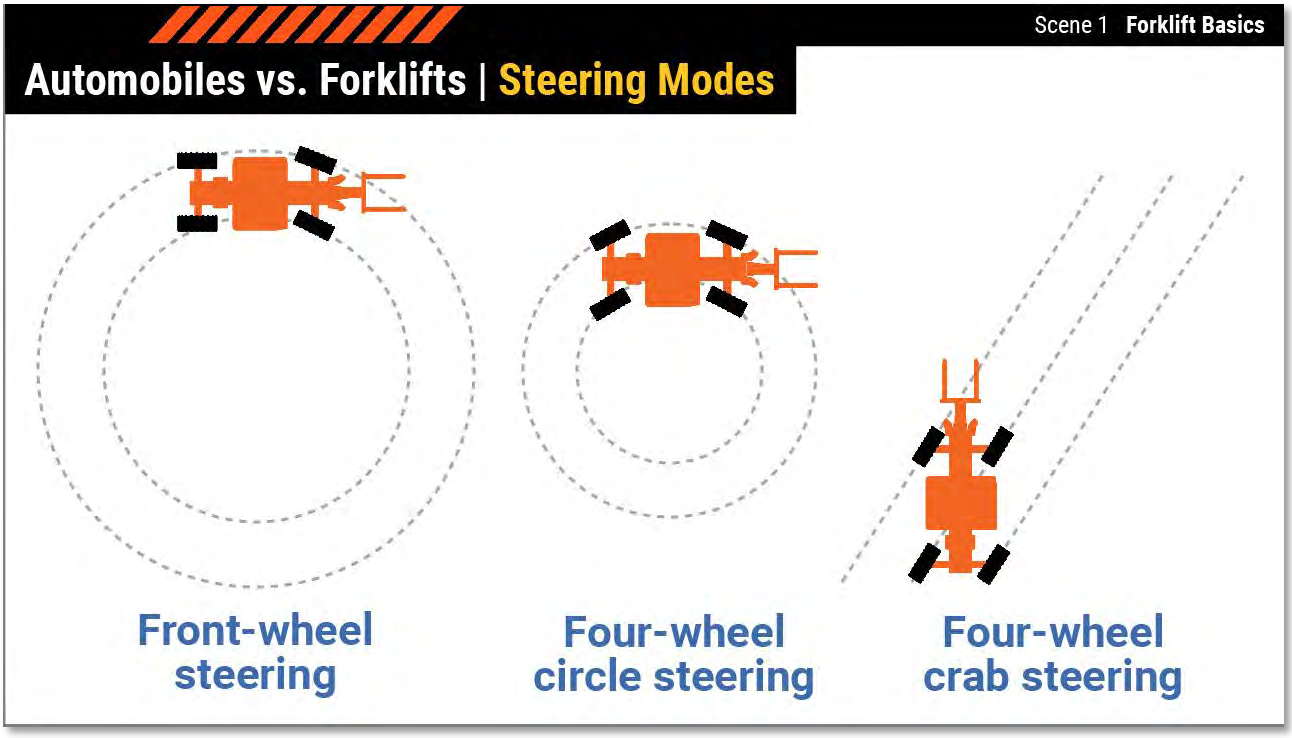
Narration:
An automobile is designed to drive at high speeds while fully loaded. Under normal circumstances, there is little chance of an automobile overturning. The stability of a forklift is affected by many factors: the load, mast or boom height, sharp turns, and work area conditions, to name just a few. As we mentioned earlier, tip-overs are one of the most common types of accidents.

Slide 23 - Steering Modes 1



Narration:
Most automobiles have front-wheel steering, which produces a rather large turning radius. Vertical mast forklifts have rear-wheel steering, giving them a small turning radius for greater maneuverability in tight spaces. With rear-wheel steering, the back end of the forklift swings out. This can be hazardous to nearby workers who may not be familiar with how forklifts move and to forklift operators who may be too close to an obstruction or an unprotected edge.

Slide 24 - Steering Modes 2



Narration:
Telehandlers have multiple steering modes. Front-wheel steering is required when traveling on public roads and can be used at worksites where there is adequate space. Four-wheel circle steering angles the front and back wheels in opposite directions, giving the telehandler its smallest turning radius. And, four-wheel crab steering points all wheels in the same direction, which allows the vehicle to move sideways, making it ideal for tight corners and proper positioning. It is unlikely that you'll encounter a telehandler with rear-wheel steering.

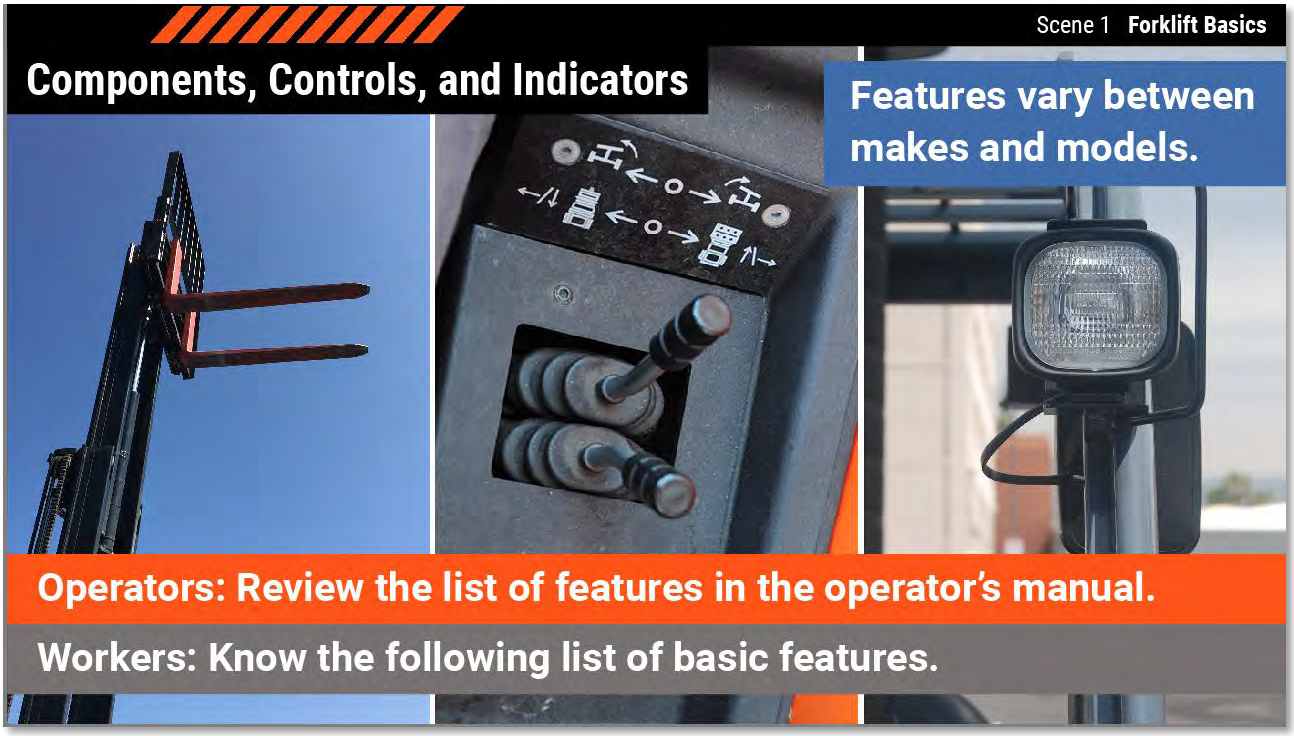
Slide 25 - Operator's Manual

Narration:
Each forklift has its own operator's manual, which must stay with the vehicle. Forklift operators should use it to familiarize themselves with that make and model's operation, safety, and emergency instructions. Do not operate a forklift that does not have its operator's manual on board. If the manual is missing, contact your transportation department or safety representative.

Slide 26 - Plates and Decals

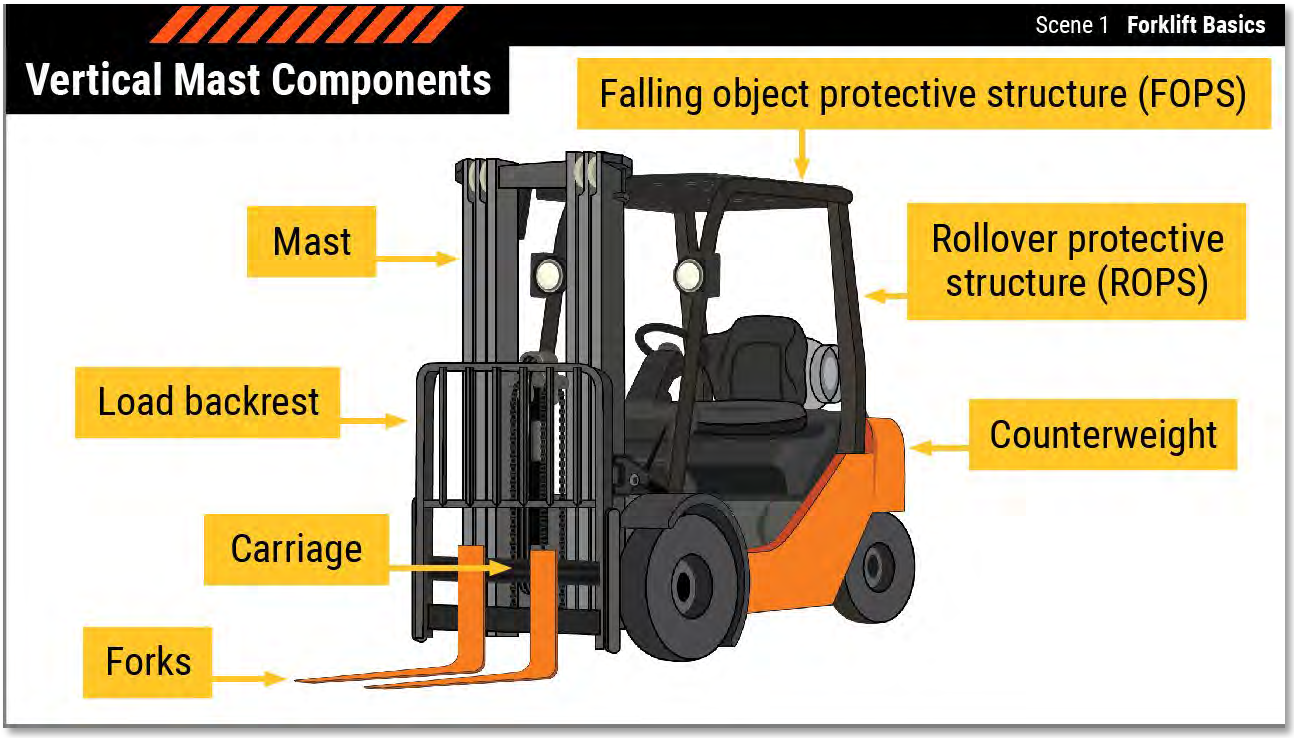
Narration:
Forklifts have multiple plates and decals that provide important information, instructions, and warnings. Check the operator's manual to see where each data plate and decal is located on the vehicle. Do not operate a forklift with illegible or missing plates or decals.

Slide 27 - Components, Controls, and Indicators



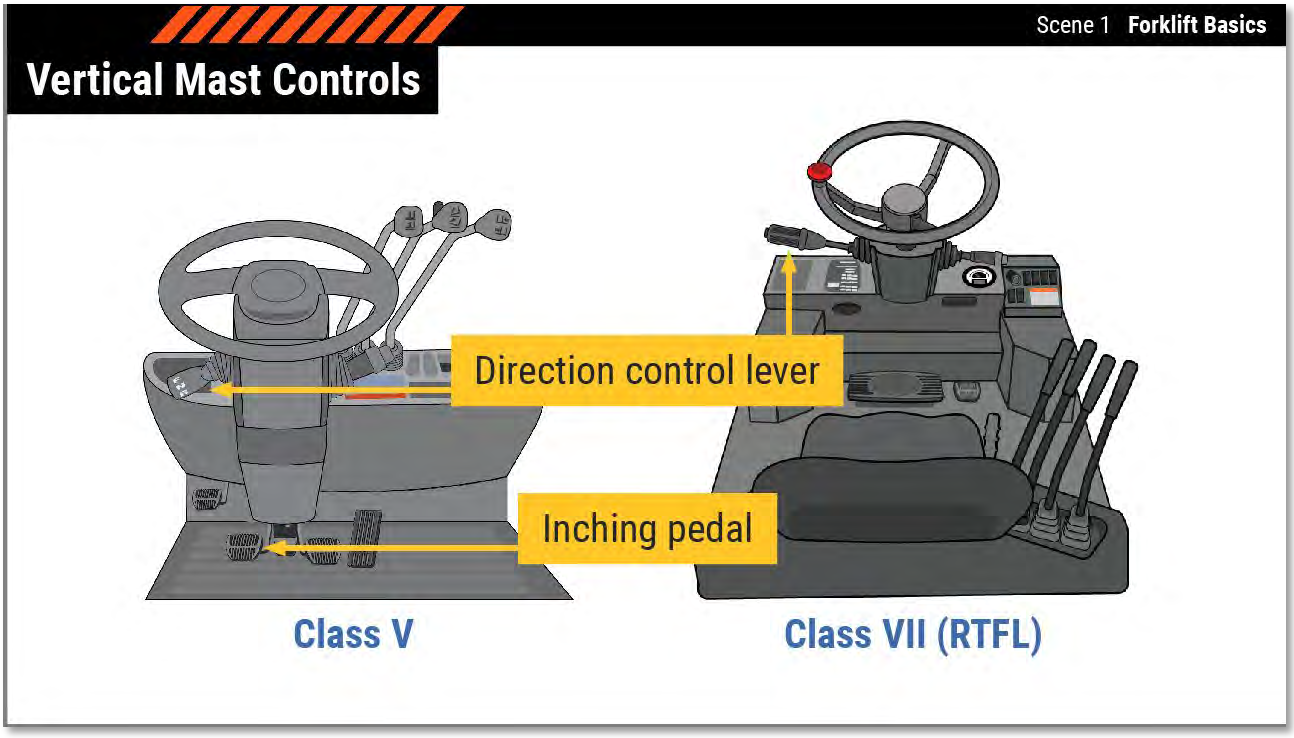
Narration:
In order to understand instructions, describe problems, and operate the vehicle properly, it's important to know the names, locations, and functionality of the components, controls, and indicators of the forklift in use. Features vary between makes and models; those shown in this course may not be present on the specific vehicle you operate. Forklift operators should review the complete list of features in the operator's manual. Those working with or near forklifts should know the following basic features:

Slide 28 - Vertical Mast Components



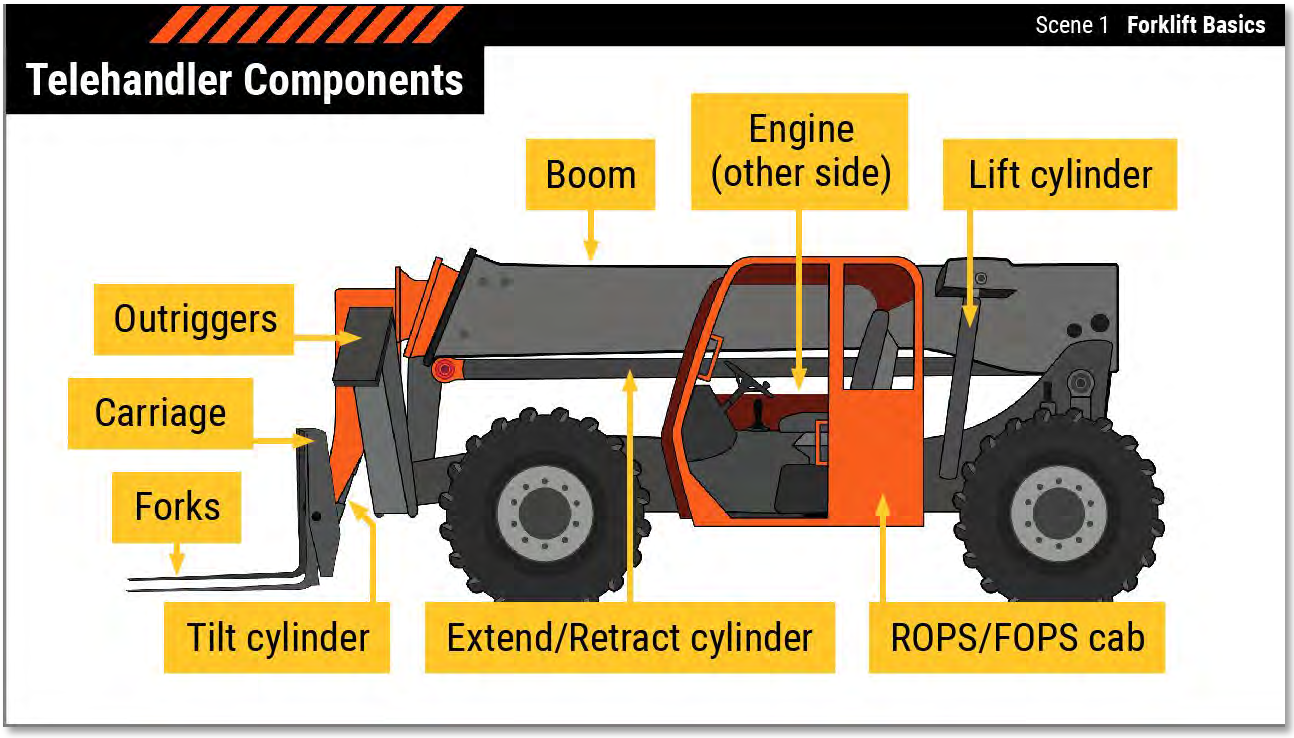
Narration:
Components on a vertical mast forklift include a counterweight, a rollover protective structure, or ROPS, a falling object protective structure, or FOPS (also called an overhead guard), a mast, a load backrest, a carriage, and forks. This vertical area of the forks is referred to as the face of the forks.

Slide 29 - Vertical Mast Controls



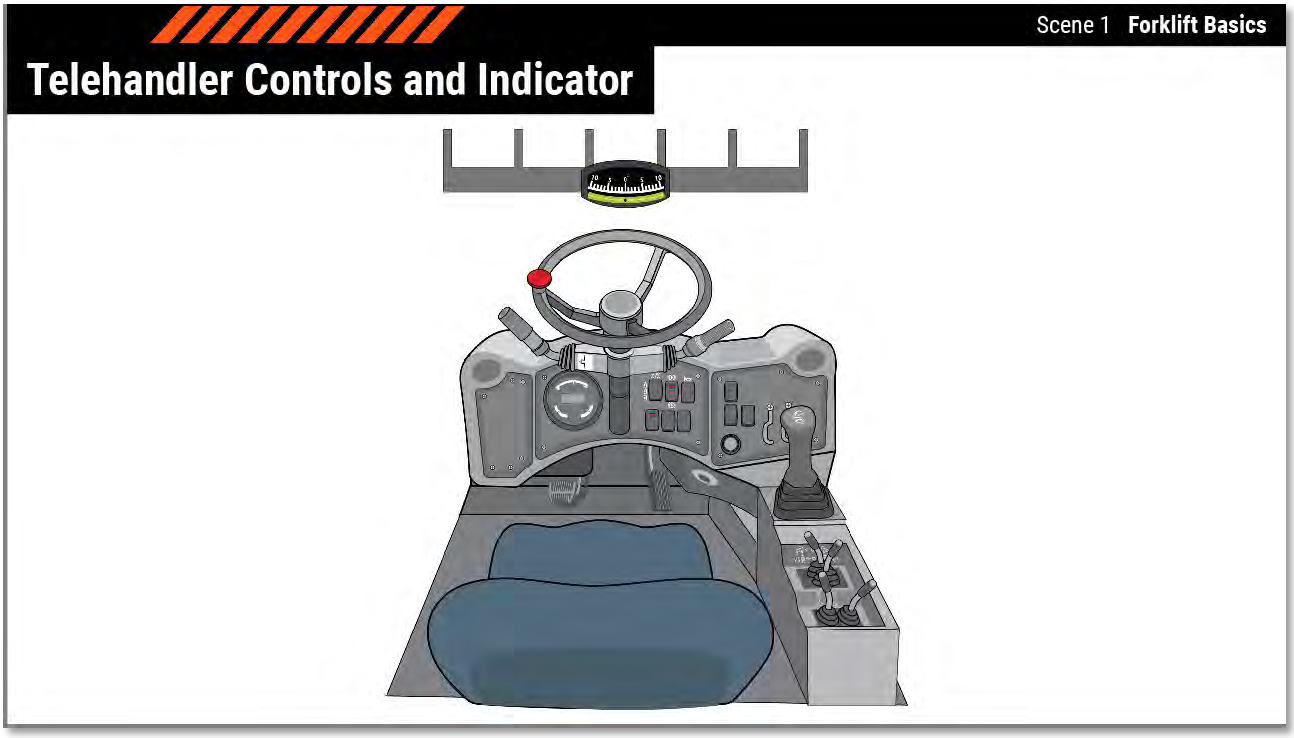
Narration:
In addition to familiar driving controls like the steering wheel and brakes, vertical mast forklifts will have a few controls you may not be accustomed to. The direction control lever is for shifting between forward, neutral, and reverse. When traveling in reverse, the backup alarm will sound. The parking brake may be a pedal, a lever, or a switch. Vertical mast forklifts have three or four hydraulic controls, which raise and lower the forks, tilt the mast, shift the forks to the left and right, and, if equipped, operate auxiliary attachment features. Some models may have an inching pedal, which acts as a brake and disengages the transmission, allowing the operator to increase engine speed, giving more power to the hydraulic lift.

Slide 30 - Telehandler Components



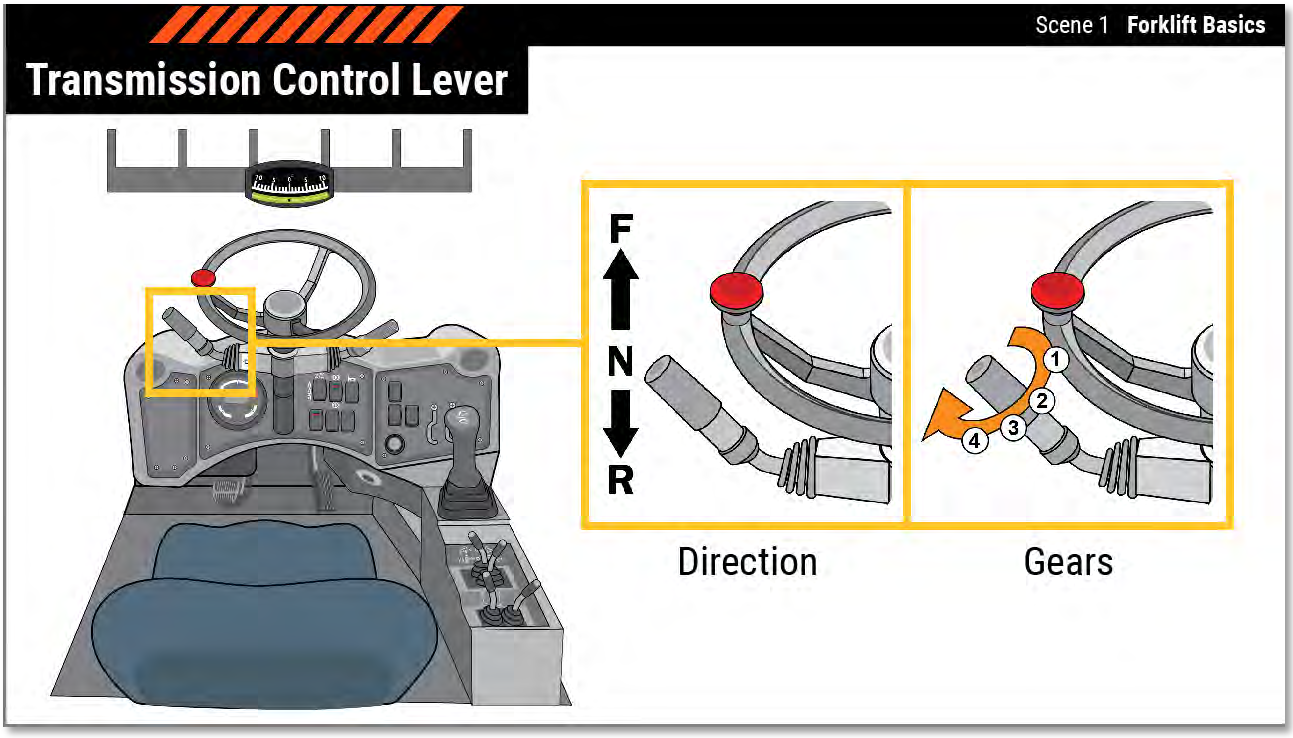
Narration:
Components on a telehandler include a boom, outriggers, a carriage, forks or another attachment, a carriage tilt cylinder, a boom extension and retraction cylinder, a ROPS and FOPS cab, a boom lift cylinder, and on the opposite side of the cab, the engine. Notice that this image does not show a load backrest, which can be part of the carriage or a separate component.

Slide 31 - Telehandler Controls and Indicators



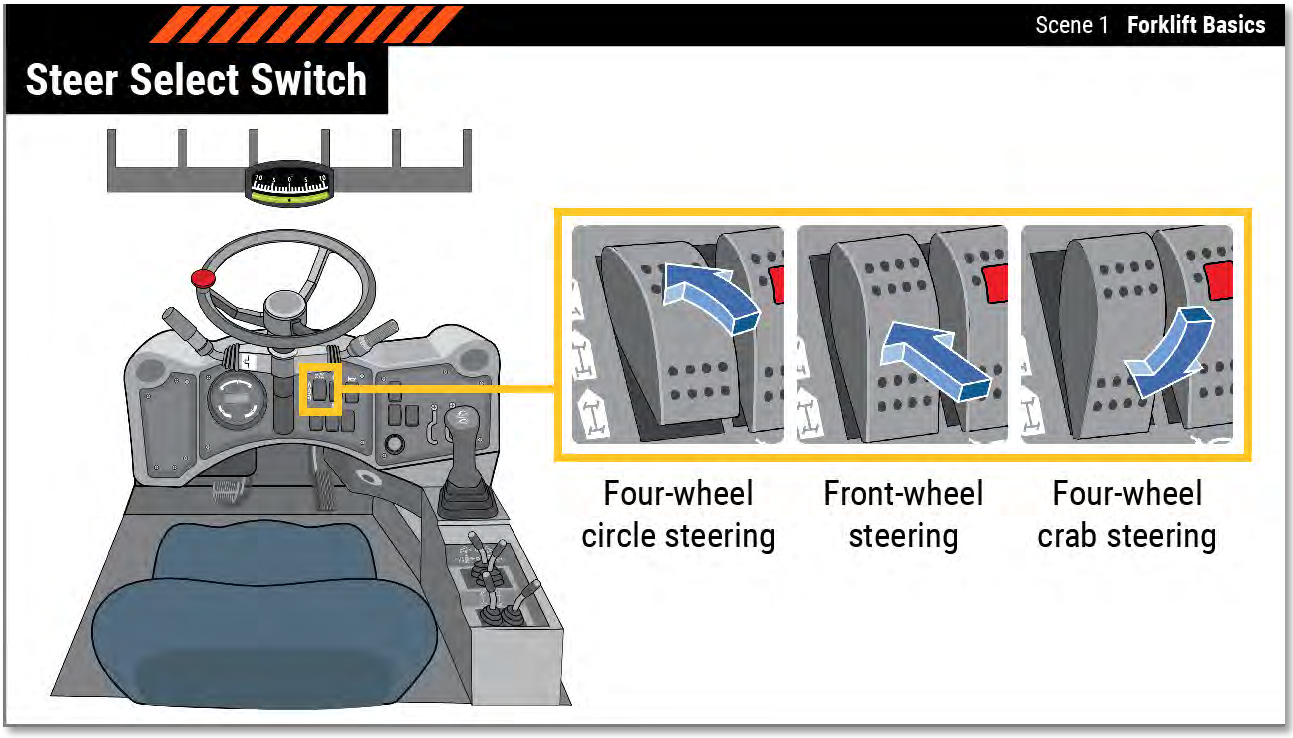
Narration:
Telehandlers are more complicated machines than vertical mast forklifts. Using one make and model as an example, let’s identify some important controls and indicators that will help us talk about telehandlers as we move through the course.

Slide 32 - Transmission Control Lever



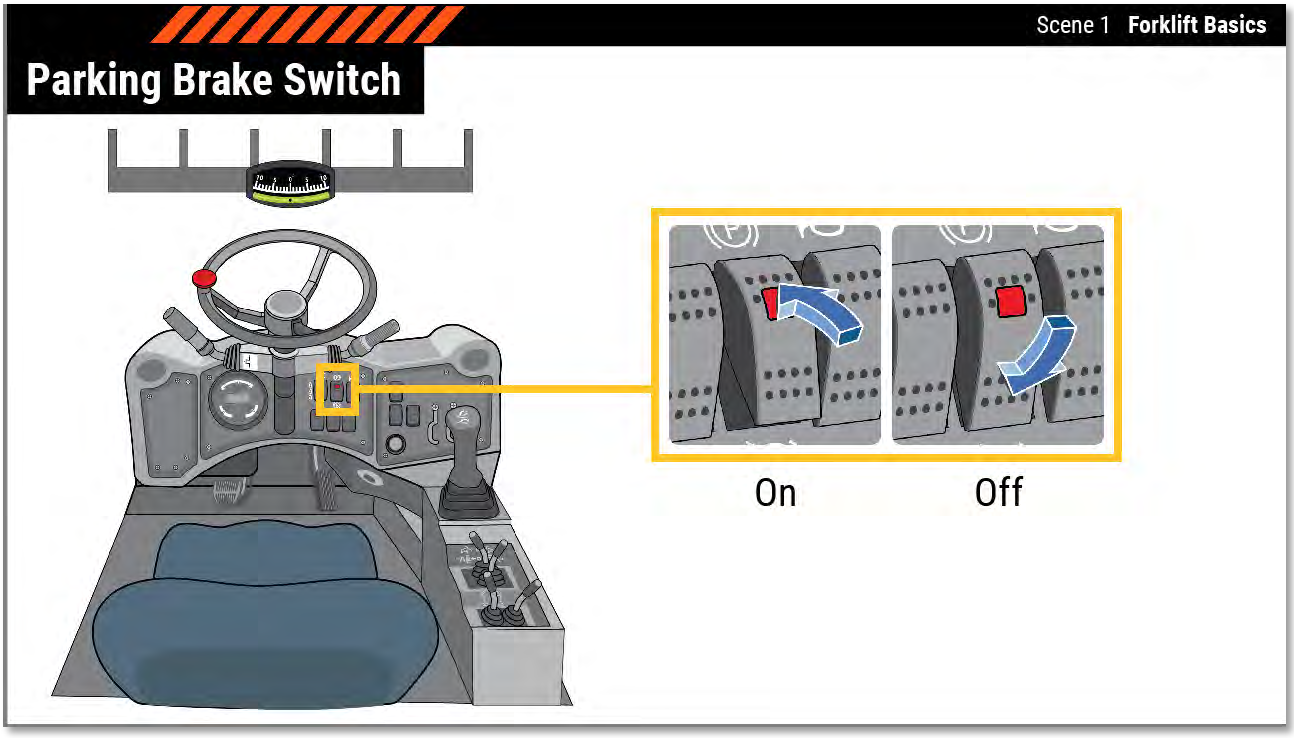
Narration:
The transmission control lever controls both direction and gear selection. Shift the lever up and down to move between forward, neutral, and reverse. Twist the lever to change gears.

Slide 33 - Steer Select Switch



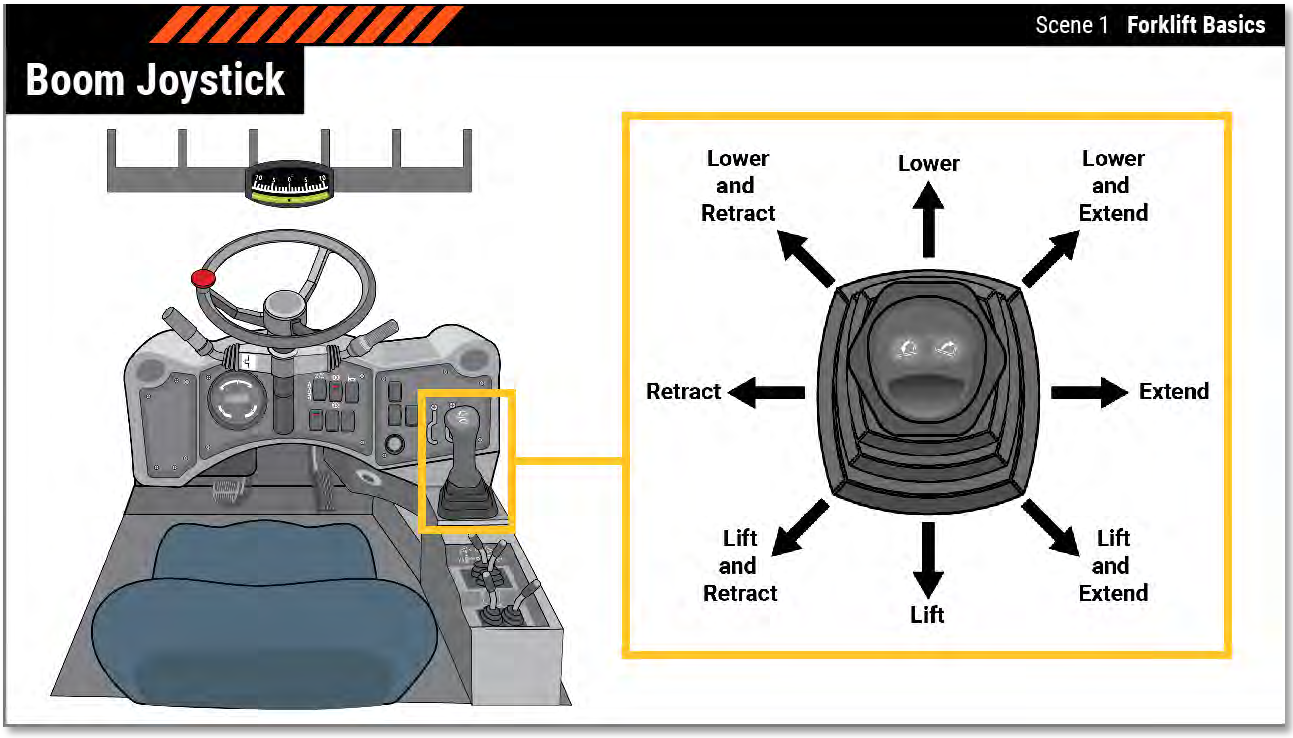
Narration:
The steer select switch on the instrument panel controls the steer modes. Check the operator's manual for specific directions on how to move between steer modes.

Slide 34 - Parking Brake Switch



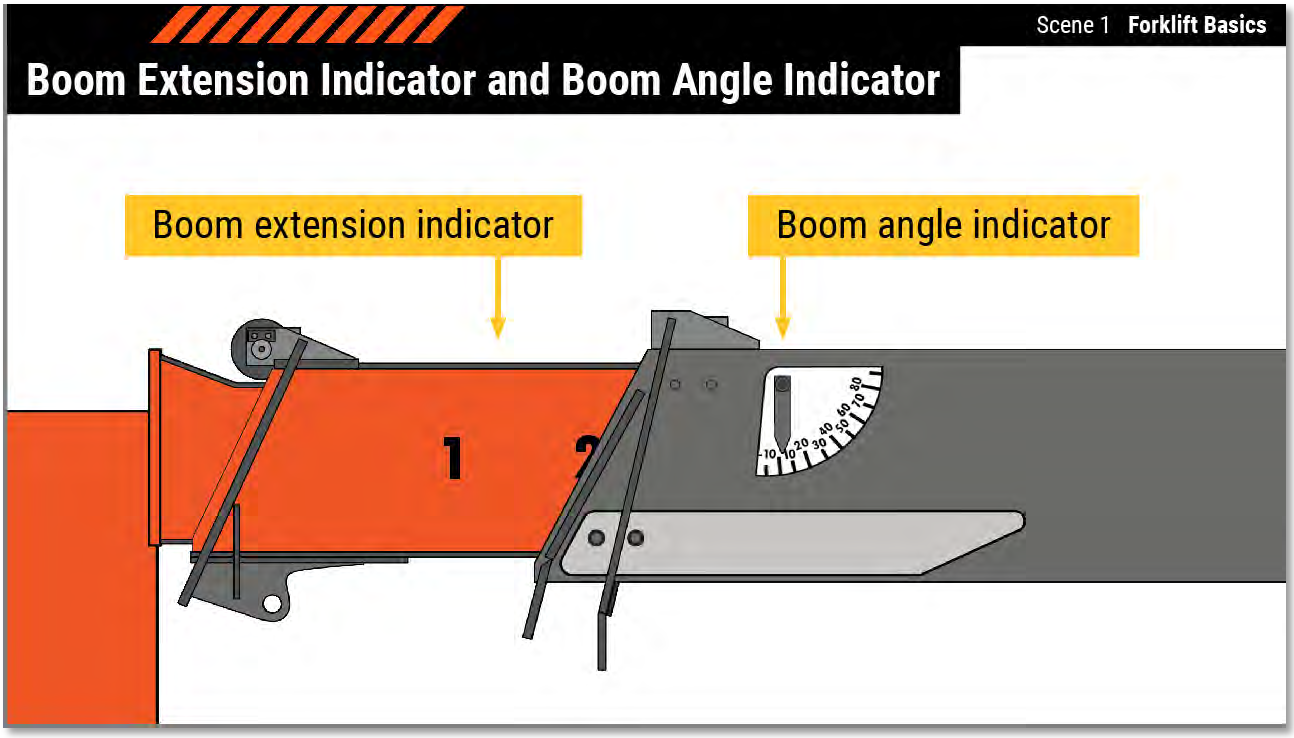
Narration:
The parking brake switch turns the parking brake on and off. Press the top of the switch to turn the parking brake on; press the bottom of the switch to turn it off.

Slide 35 - Boom Joystick



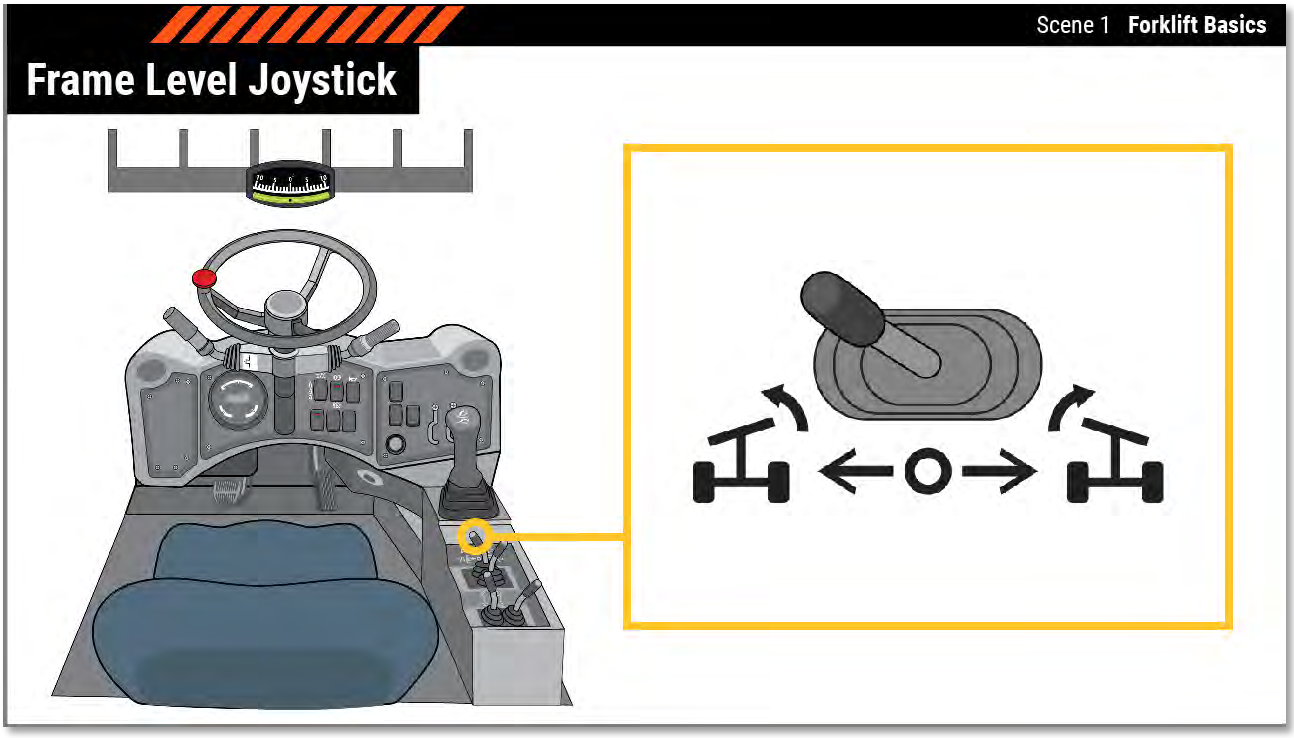
Narration:
The boom joystick controls boom movement: lifting, lowering, extending, and retracting. The number of buttons on a joystick vary based on model, but all joysticks have buttons that tilt the forks forward and backward. Check the operator's manual to see the specific functionality of the boom joystick you are using.

Slide 36 - Boom Extension/Angle Indicators



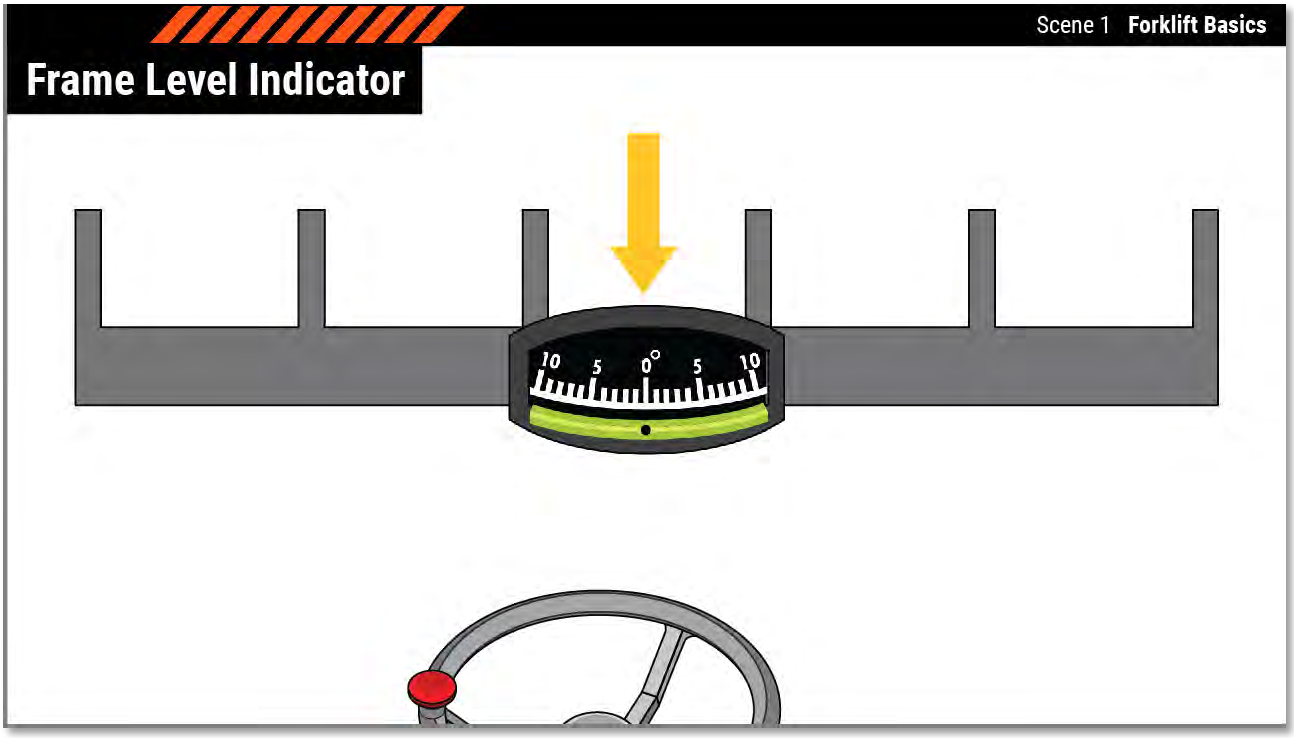
Narration:
The boom extension indicator and the boom angle indicator show boom position. Refer to these indicators to determine boom extension and boom angle when using the capacity chart. We'll talk about the capacity chart in the next scene.

Slide 37 - Frame Level Joystick 1



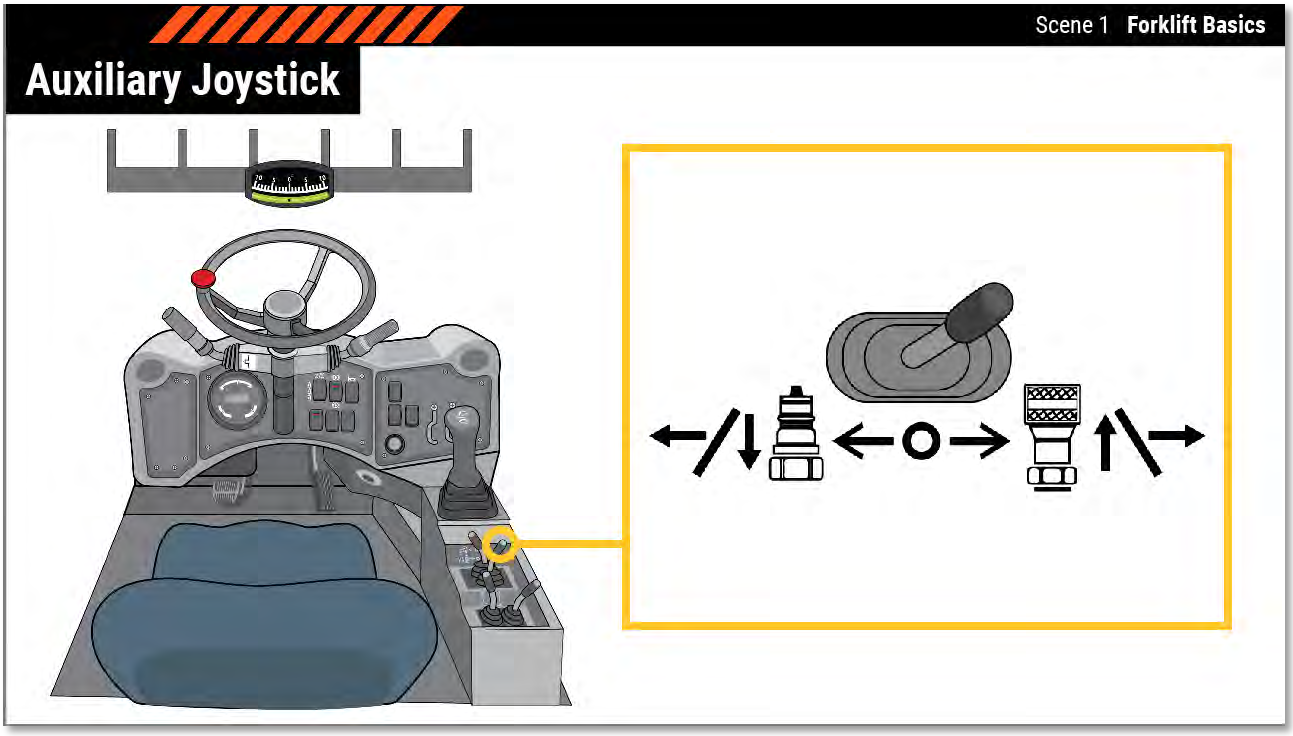
Narration:
The frame level joystick controls vehicle frame tilt, which rotates the vehicle body to compensate for a sloped work surface.

Slide 38 - Frame Level Indicator



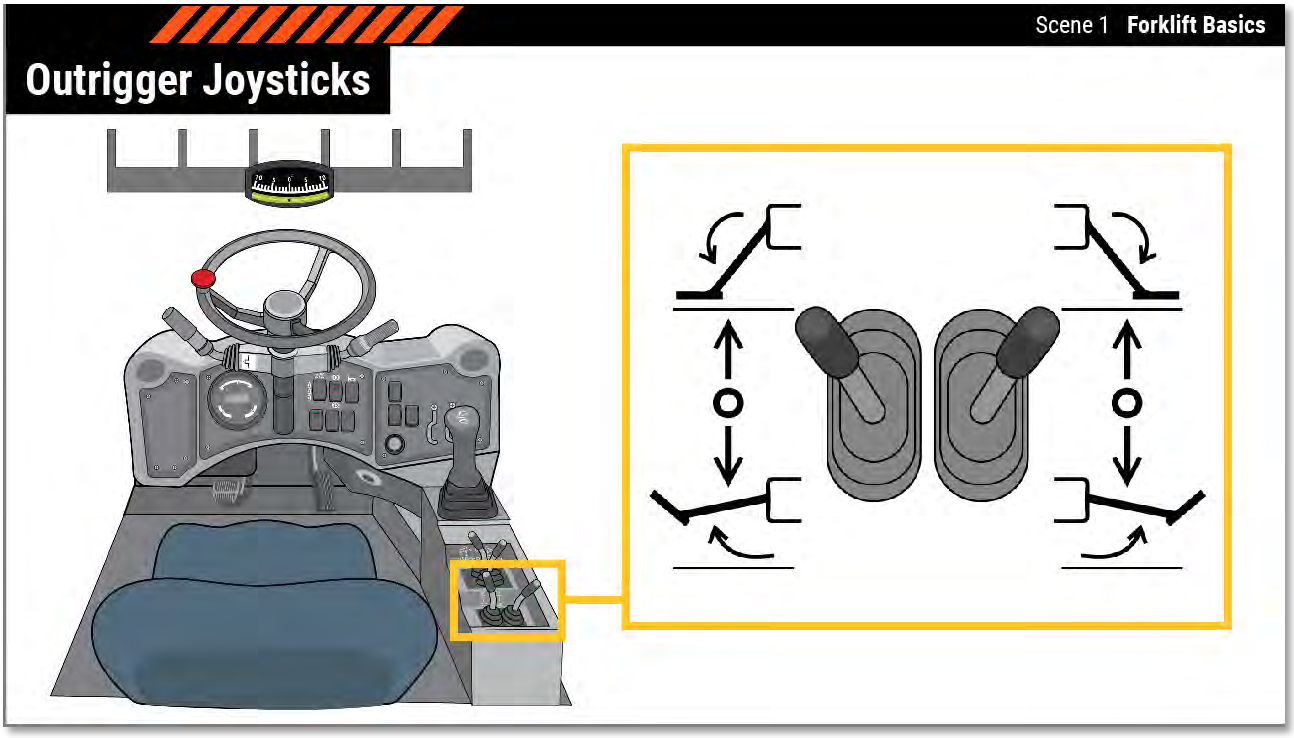
Narration:
The frame level indicator, located above the front window, shows the degree of frame tilt. Refer to this indicator to see if frame leveling is needed.

Slide 39 - Auxiliary Joystick



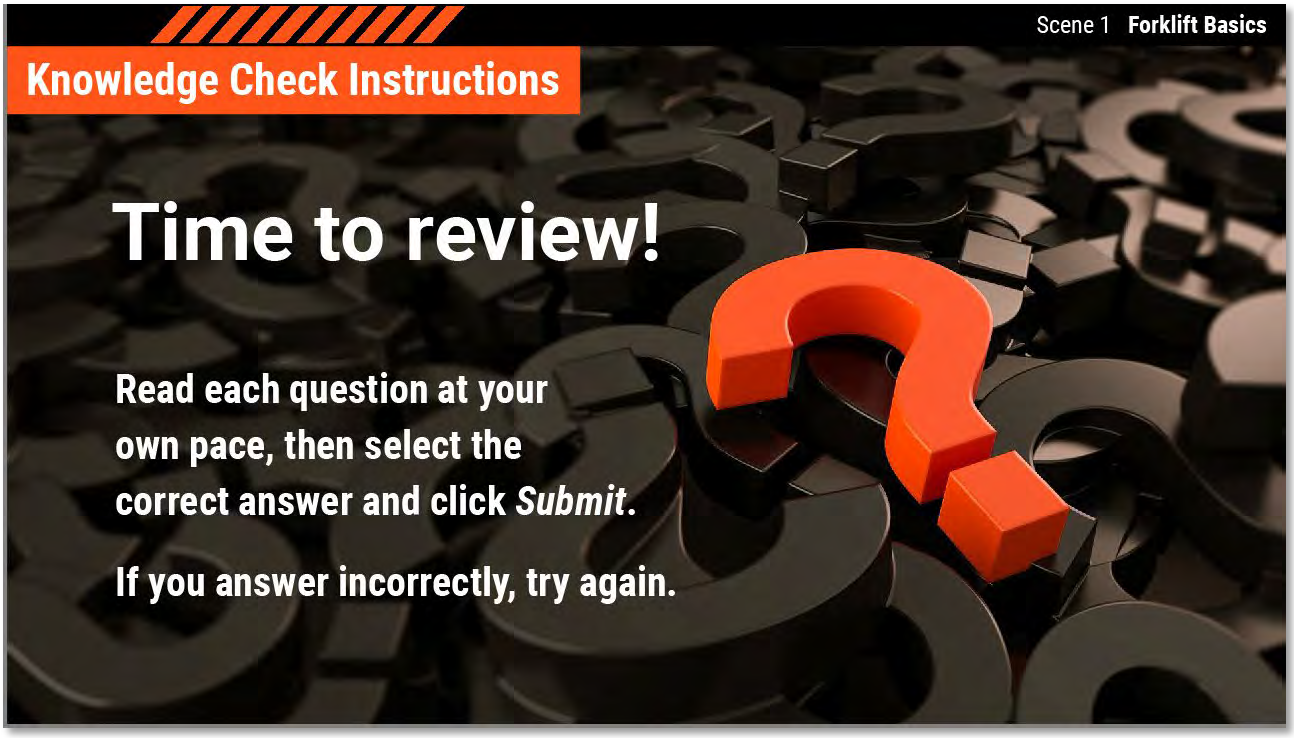
Narration:
The auxiliary joystick controls additional attachment functions. Attachments are covered later in the course.

Slide 40 - Outrigger Joysticks



Narration:
And, the outrigger joysticks control outrigger movement.

Slide 41 - Knowledge Check Instructions

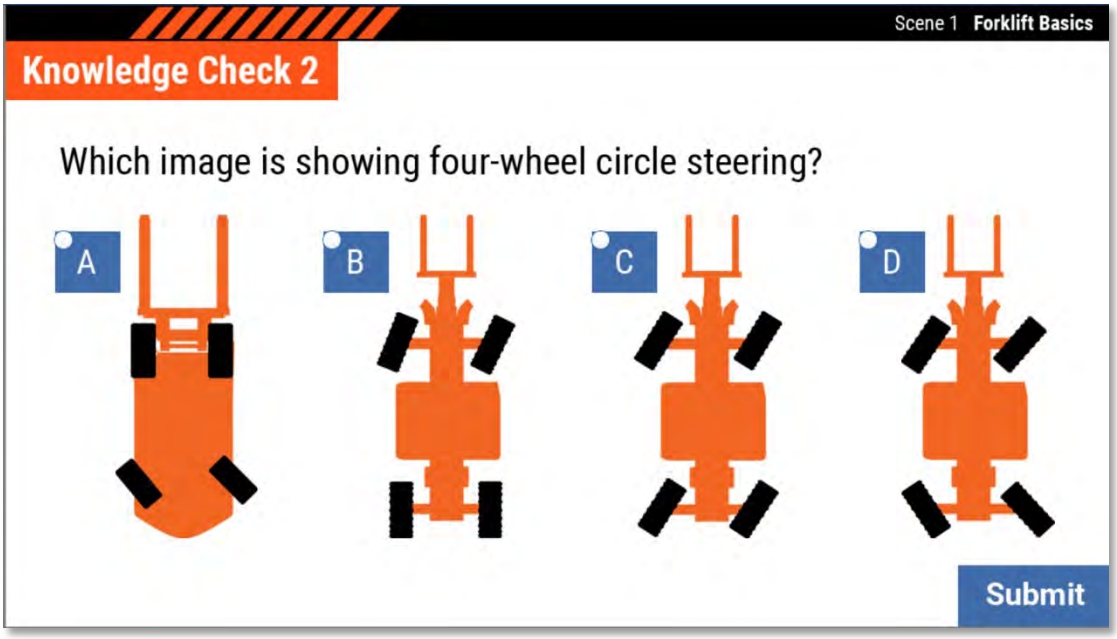


Narration:
Okay. We've reached our first set of knowledge checks. Read each question at your own pace, then select your answer and click the *Submit* button. If you answer incorrectly, try again.

Slide 42 - Knowledge Check 1

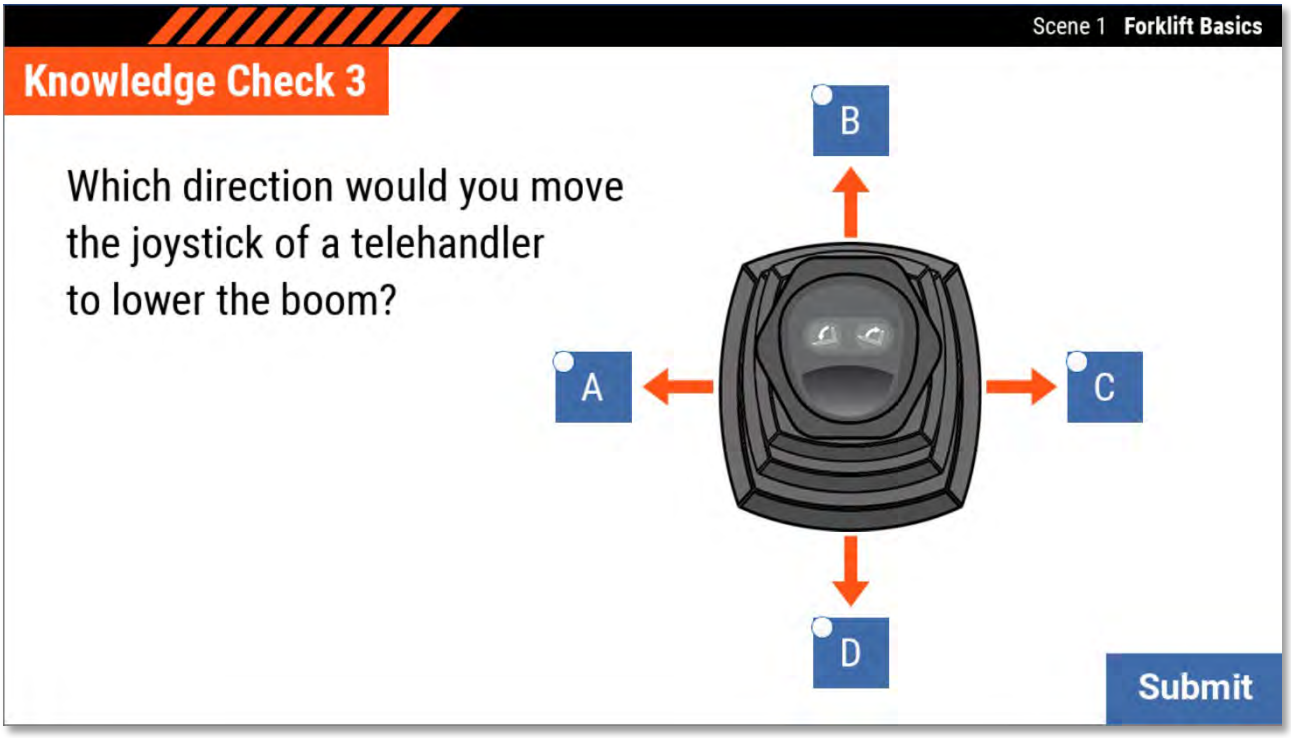
Question:
Which of these forklifts is NOT a vertical mast forklift?

Slide 43 - Knowledge Check 2



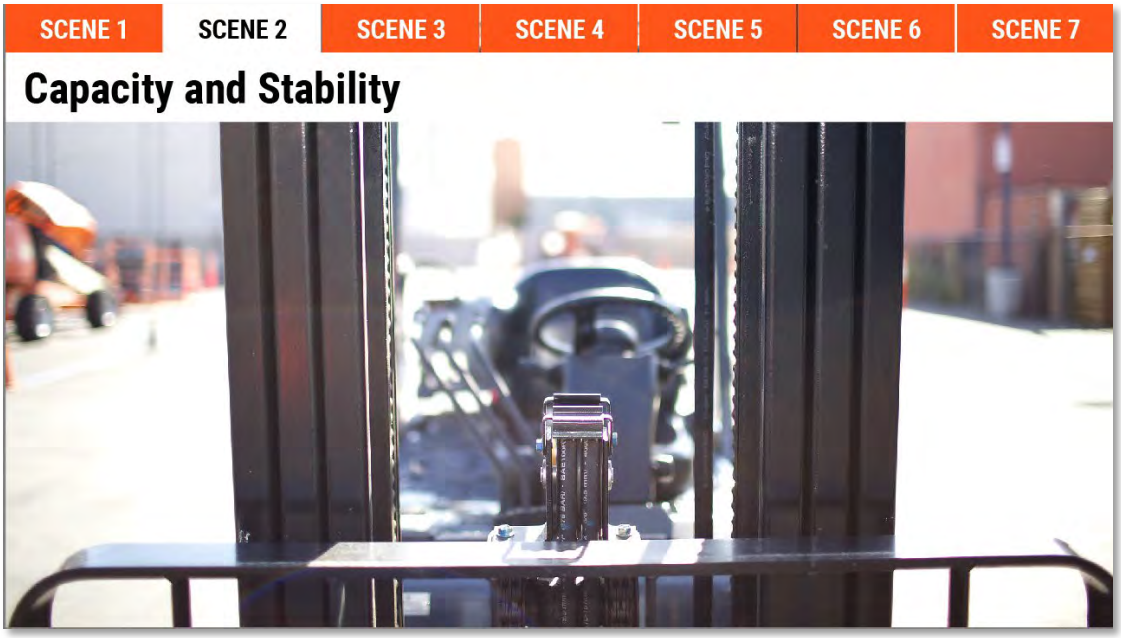
Question:
Which image is showing four-wheel circle steering?

Slide 44 - Knowledge Check 3



Question:
Which direction would you move the joystick of a telehandler to lower the boom?

Slide 45 - Capacity and Stability

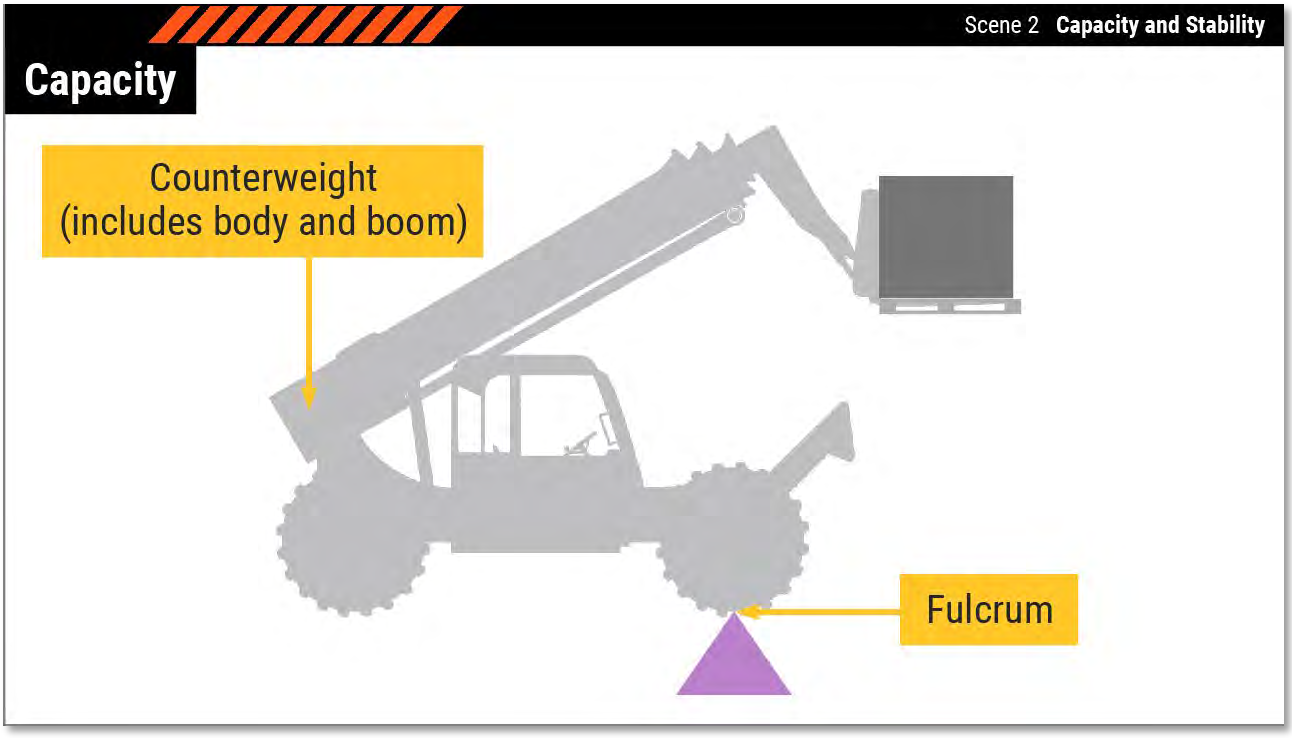


Narration:
Scene Two, Capacity and Stability.

Slide 46 - In This Scene

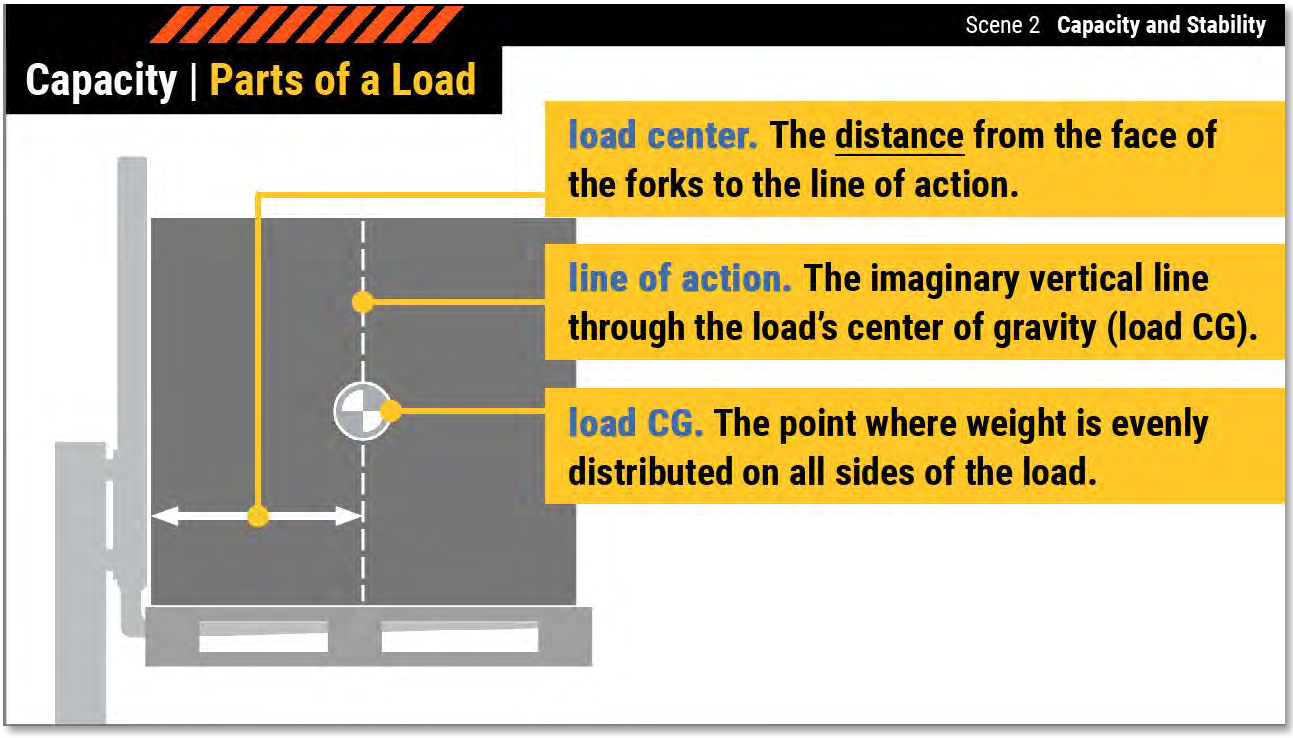
Narration:
In this scene, you'll learn about the principles of forklift capacity and stability. Understanding these two concepts is vital to operating a forklift safely. We'll start with capacity.

Slide 47 - Capacity



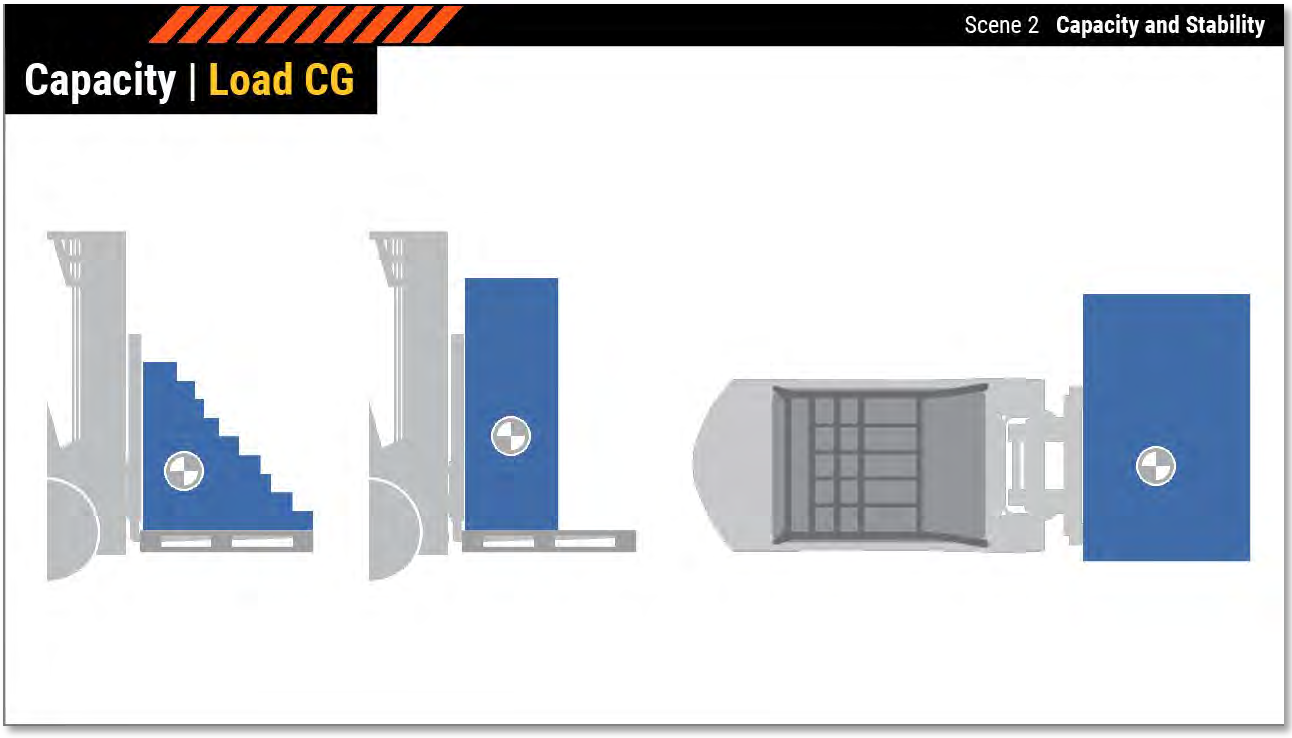
Narration:
Forklifts balance the weight of the load on the forks with the weight of the engine and heavy metal plates called the counterweight. On a telehandler, the counterweight is the body of the machine, the engine, and the boom. Think of a forklift as a seesaw, with the front wheels as the balance point, or fulcrum. As long as the force of the weight and height of the load remains less than the force of the counterweight, the forklift will not tip forward. Capacity is the maximum weight a forklift can safely carry at a specified load center and mast height, or for telehandlers, a specified load center and boom position. If capacity is exceeded, the forklift will tip forward.

Slide 48 - Parts of a Load



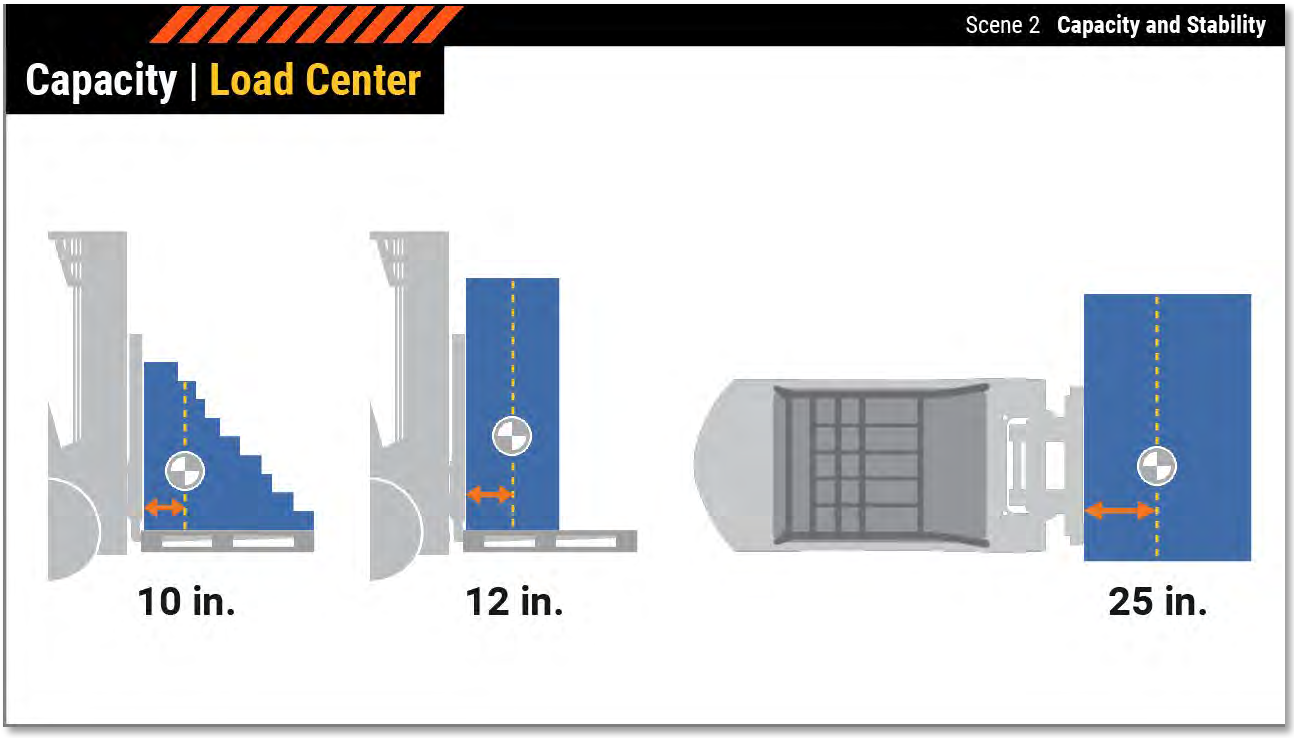
Narration:
As we just mentioned, an important part of staying within a forklift's capacity is knowing the **load center** of the load on the forks. The load center is the distance from the face of the forks to the line of action. The **line of action** is the imaginary vertical line through the **load's center of gravity** (or **load CG**). And, the load CG is the point where weight is evenly distributed on all sides of the load.

Slide 49 - Load CG



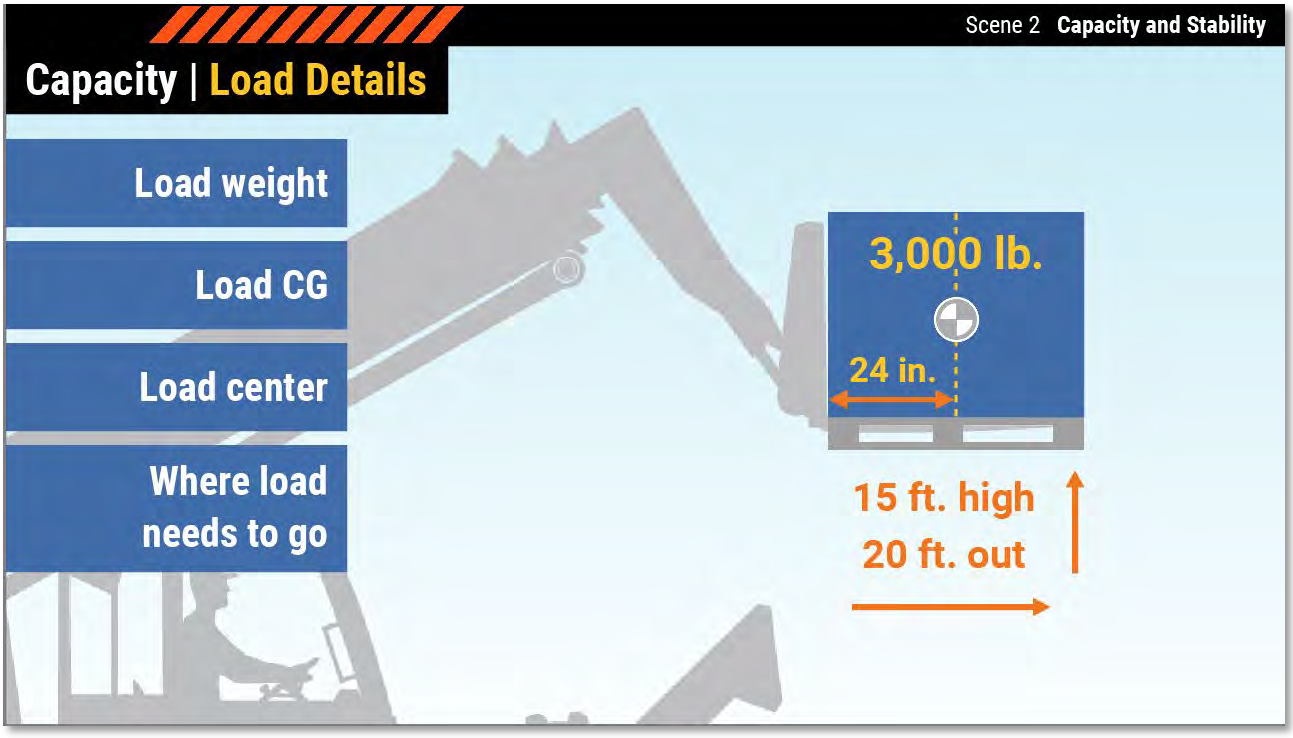
Narration:
Keep in mind that the load CG (again, that's center of gravity) is not always in the middle of the load. Its position can vary based on the load's weight distribution.

Slide 50 - Load Center



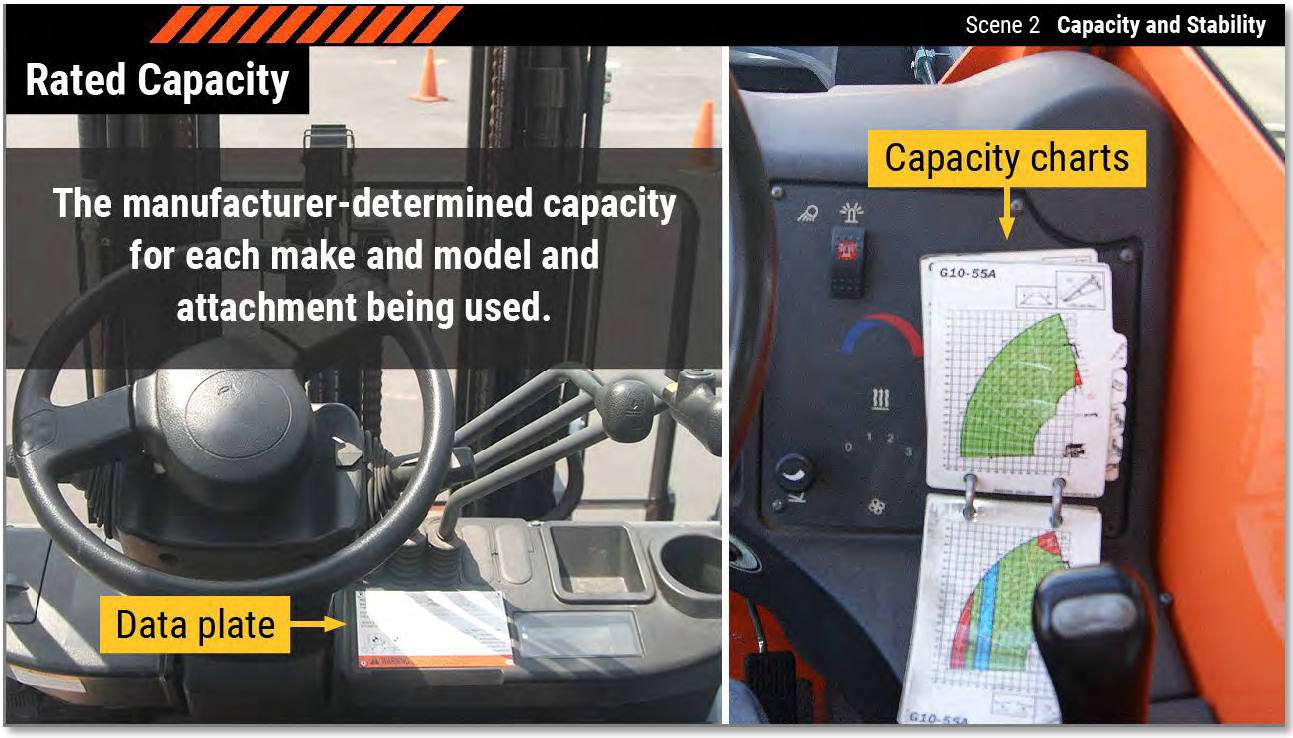
Narration:
That means that the load center (again, that's a distance) can also change from load to load.

Slide 51 - Load Details



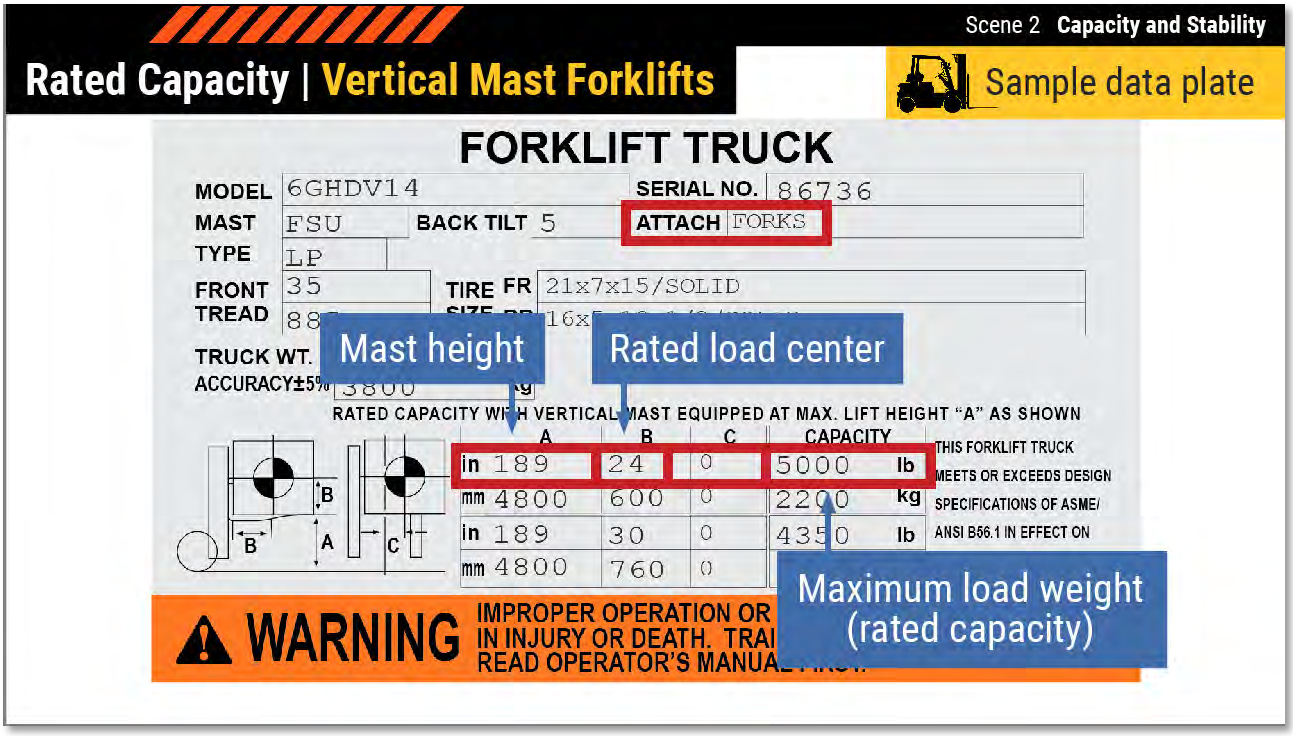
Narration:
Load weight, load CG, load center, and how high or how high *and* how far out the load needs to go: You must know these details in order to determine if the load is within the capacity of the forklift you are operating.

Slide 52 - Rated Capacity 1



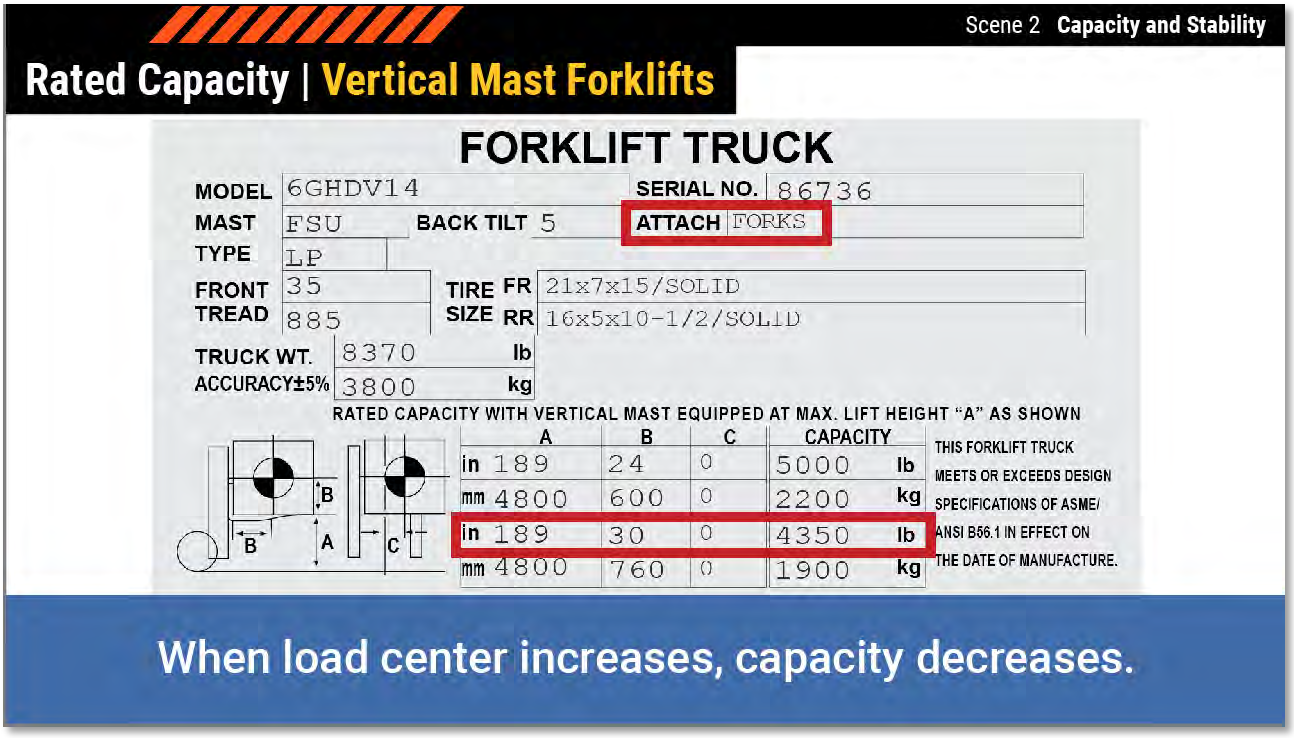
Narration:
Now, let's talk about **rated capacity**. Rated capacity is the manufacturer-determined capacity for each make and model of forklift and the attachment being used. On a vertical mast forklift, the rated capacity is shown on the data plate. On a telehandler, it's on capacity charts.

Slide 53 - Rated Capacity 2



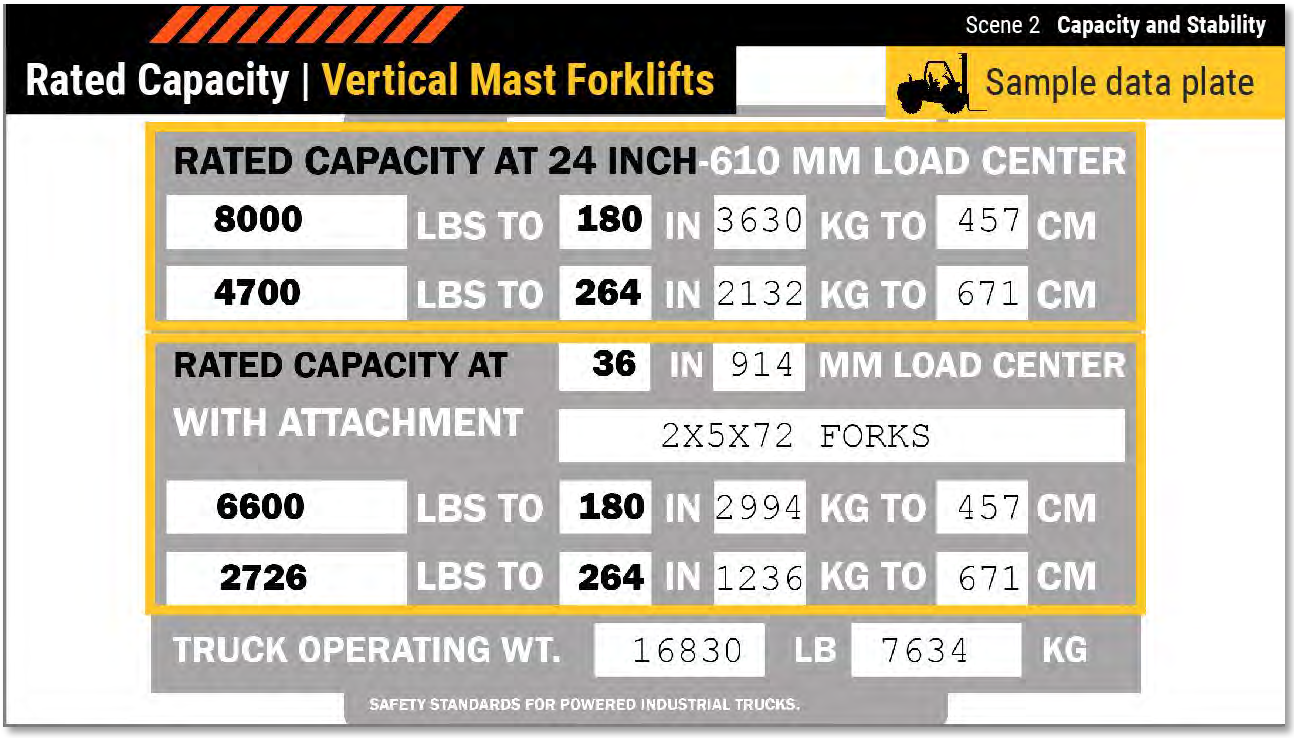
Narration:
We'll look at a sample data plate for a vertical mast forklift first. The data plate provides three pieces of information that define the rated capacity for that forklift: One, the maximum **mast height** to which a load can be raised, as long as the load does not exceed the rated load center or maximum load weight. Two, the **rated load center**, which is based on the length of the forks and tells you the maximum load center a load can have in order to lift it to the specified mast height, as long as it doesn't exceed the maximum load weight. Standard forks have a rated load center of 24 inches. And three, the **maximum load weight** that can be lifted to the specified mast height, as long as the load's load center is less than or equal to the rated load center. (Note that it's also common to say **rated capacity** when referring only to the maximum load weight listed on the data plate.) So, in this example, a load can be lifted with standard forks to a height of 189 inches if its load center is no greater than 24 inches and it weighs no more than 5,000 pounds.

Slide 54 - Rated Capacity 3



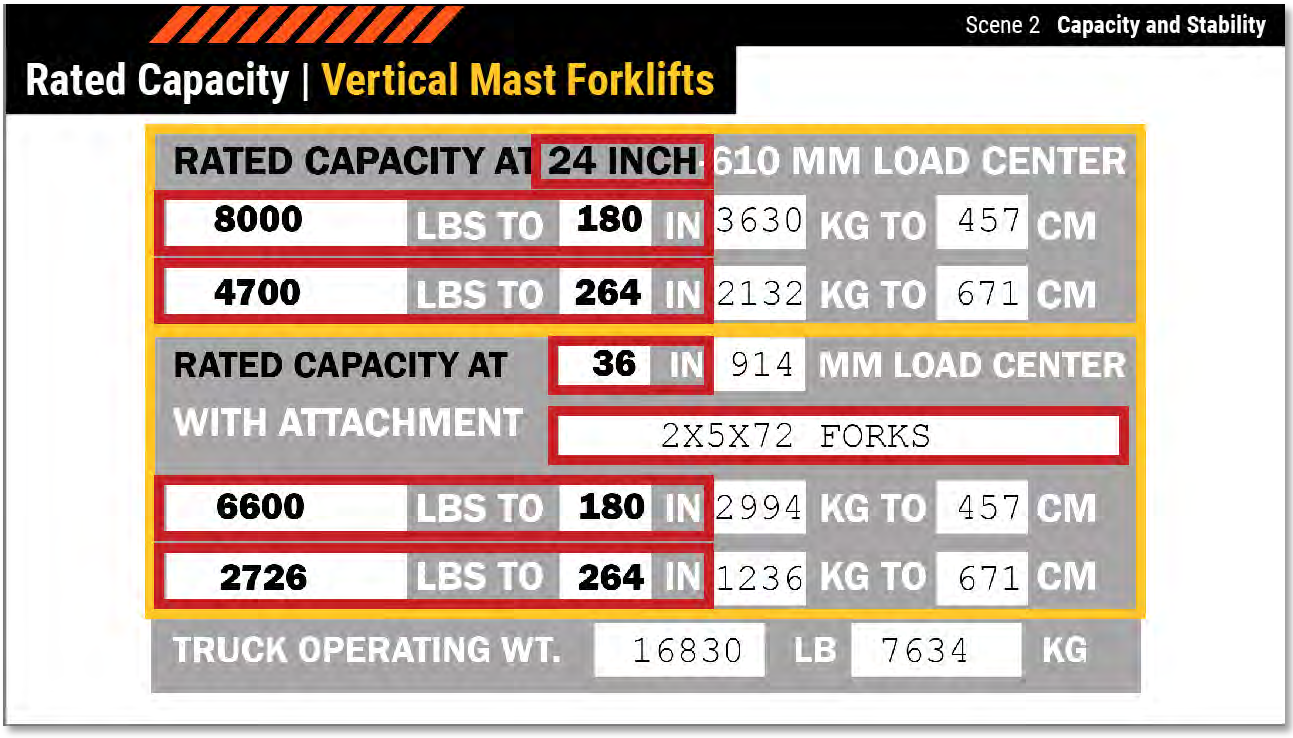
Narration:
For this forklift, the manufacturer provides a second rated capacity for the same standard forks. This tells us that a load can be lifted to a height of 189 inches if its load center is greater than 24 inches but less than or equal to 30 inches and it weighs no more than 4,350 pounds. Notice that when the load center increases, capacity decreases.

Slide 55 - Rated Capacity 4



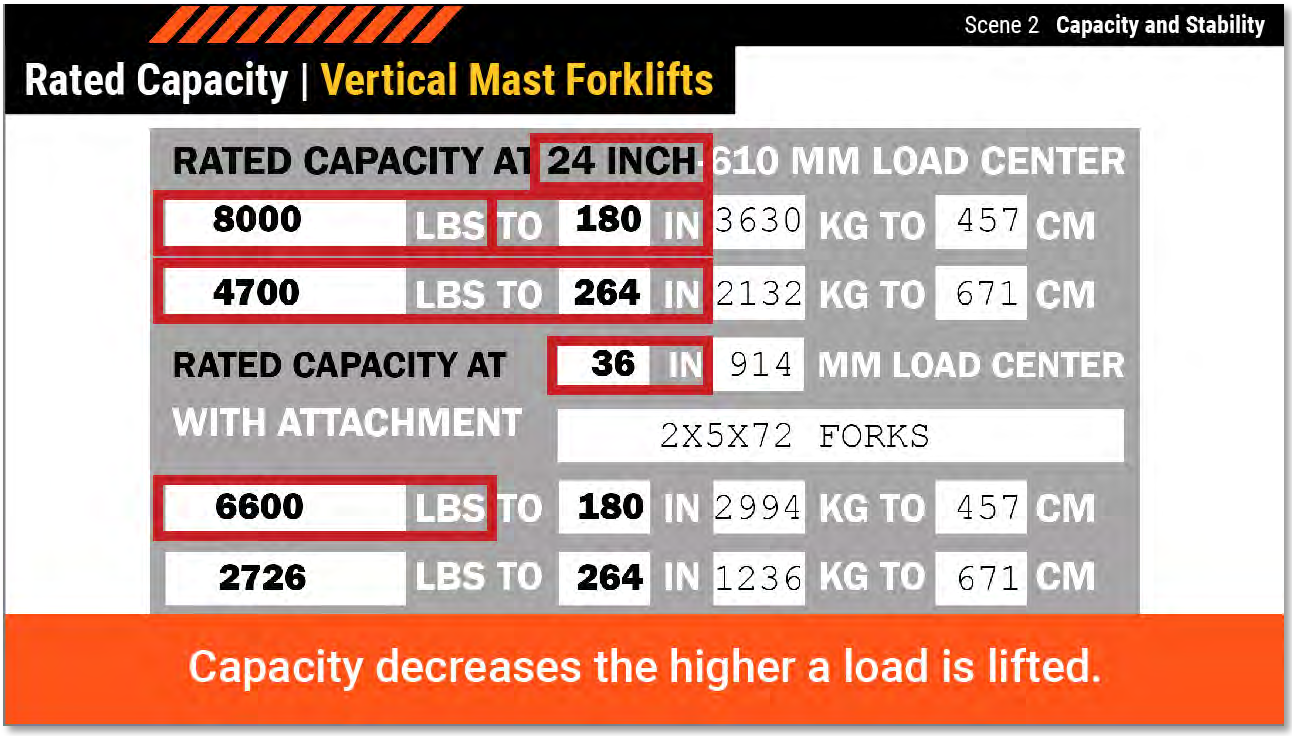
Narration:
This data plate for a vertical mast RTFL provides rated capacities for both standard forks and long forks.

Slide 56 - Rated Capacity 5



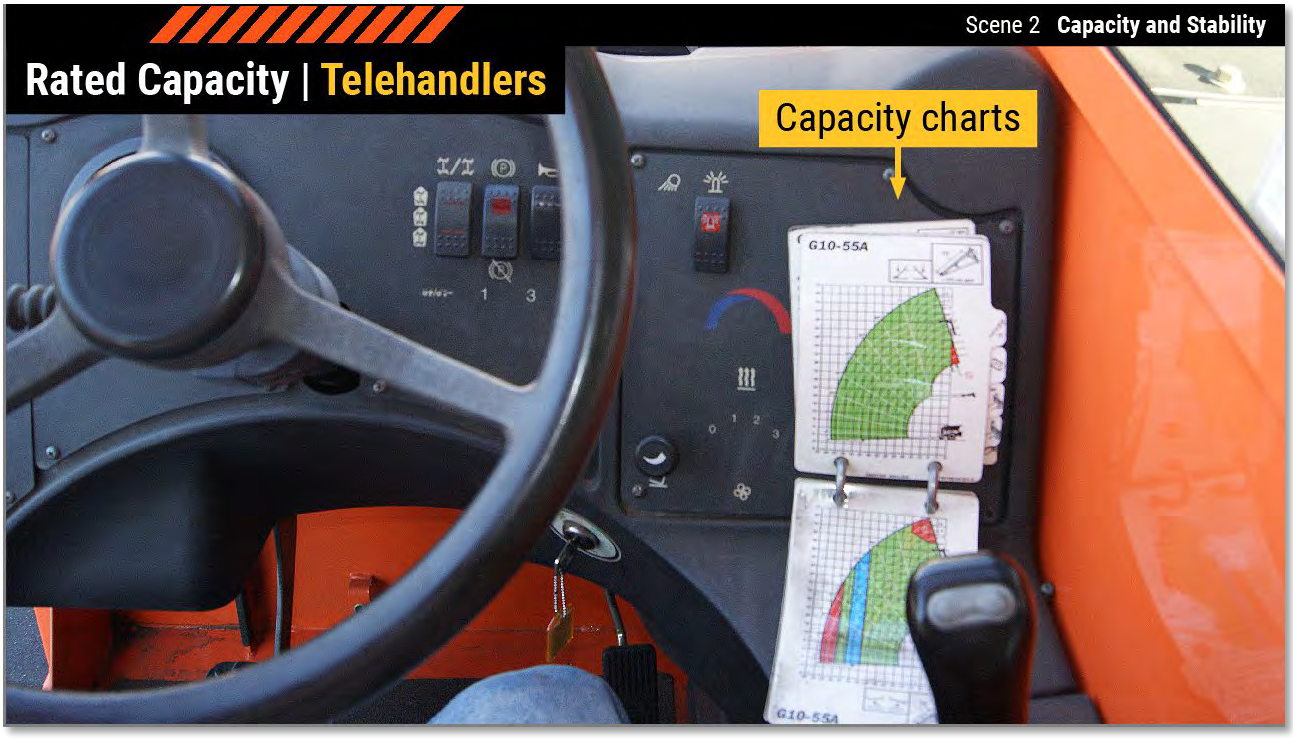
Narration:
With standard forks, a load with a load center of no more than 24 inches can be lifted to a height of 180 inches if it weighs no more than 8,000 pounds, or to a height of 264 inches if it weighs no more than 4,700 pounds. For 72-inch-long forks, the rated load center is 36 inches. Using these forks, a load with a load center of no more than 36 inches can be lifted to a height of 180 inches if it weighs no more than 6,600 pounds, or to a height of 264 inches if it weighs no more than 2,726 pounds.

Slide 57 - Rated Capacity 6



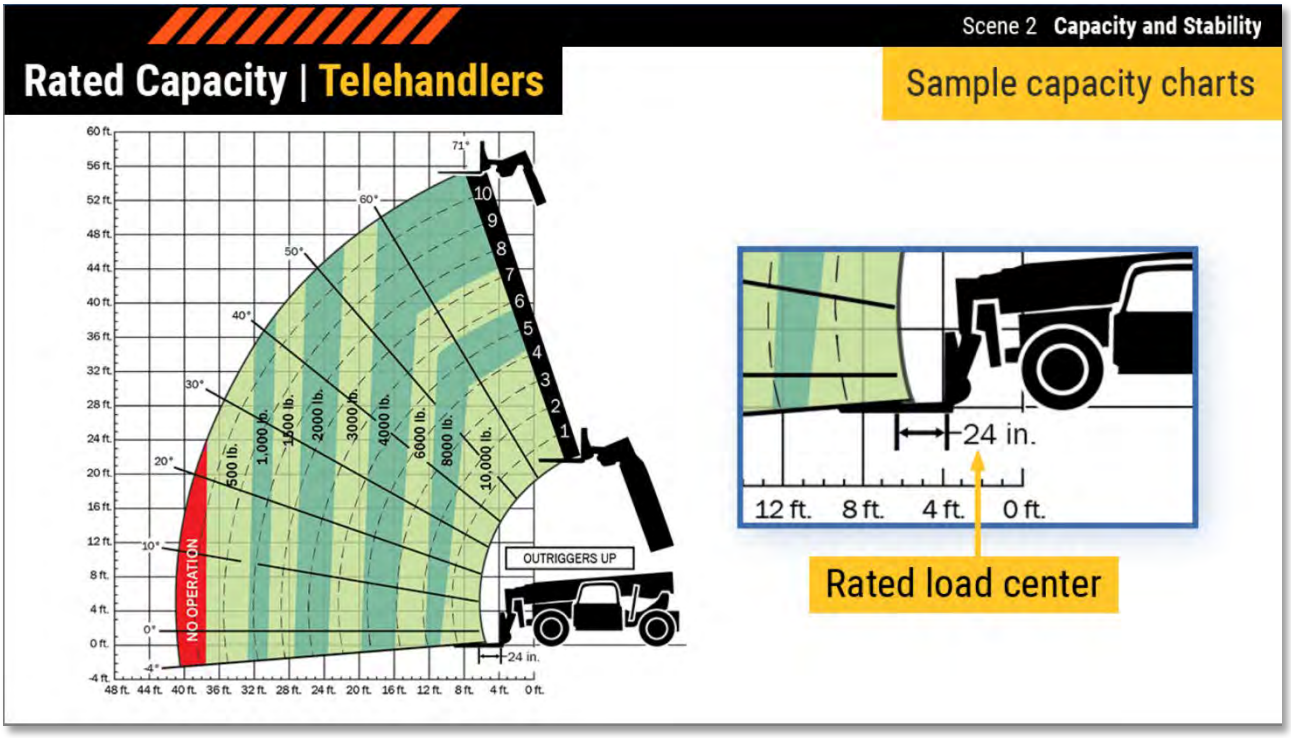
Narration:
Again, you can see that when the load center increases, capacity decreases. Additionally, this data plate shows us that capacity also decreases the higher a load is lifted.

Slide 58 - Rated Capacity for Telehandlers 1



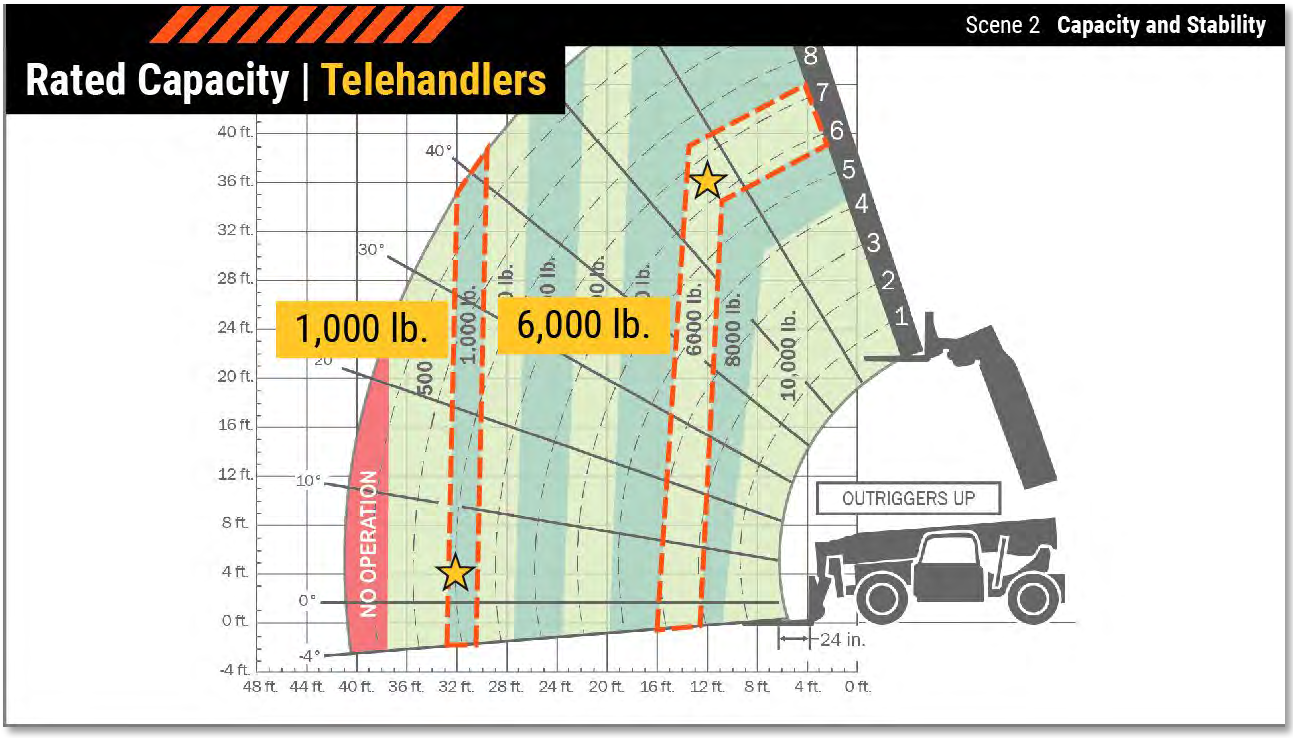
Narration:
Rated capacity for telehandlers is provided in a booklet of capacity charts for standard forks and common telehandler attachments.

Slide 59 - Rated Capacity for Telehandlers 2



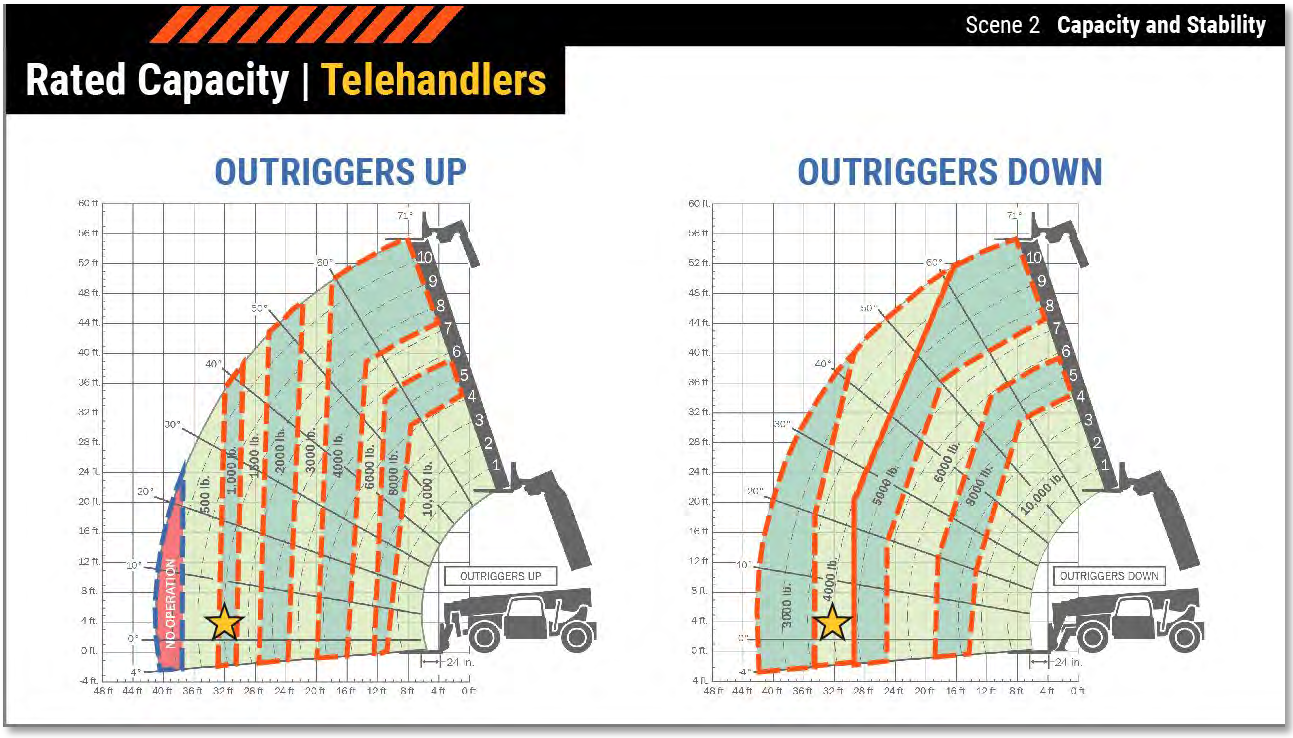
Narration:
Here's a sample telehandler capacity chart for standard forks with the outriggers up. It provides maximum weights for different boom extension and boom angle positions. The rated load center is shown here. Based on a load's intended placement position--the height and distance from the front tires--find the point on the chart where the corresponding height and distance lines intersect. The load you intend to lift can weigh no more than the weight listed in that zone, as long as the load's load center is less than or equal to the rated load center.

Slide 60 - Rated Capacity for Telehandlers 3



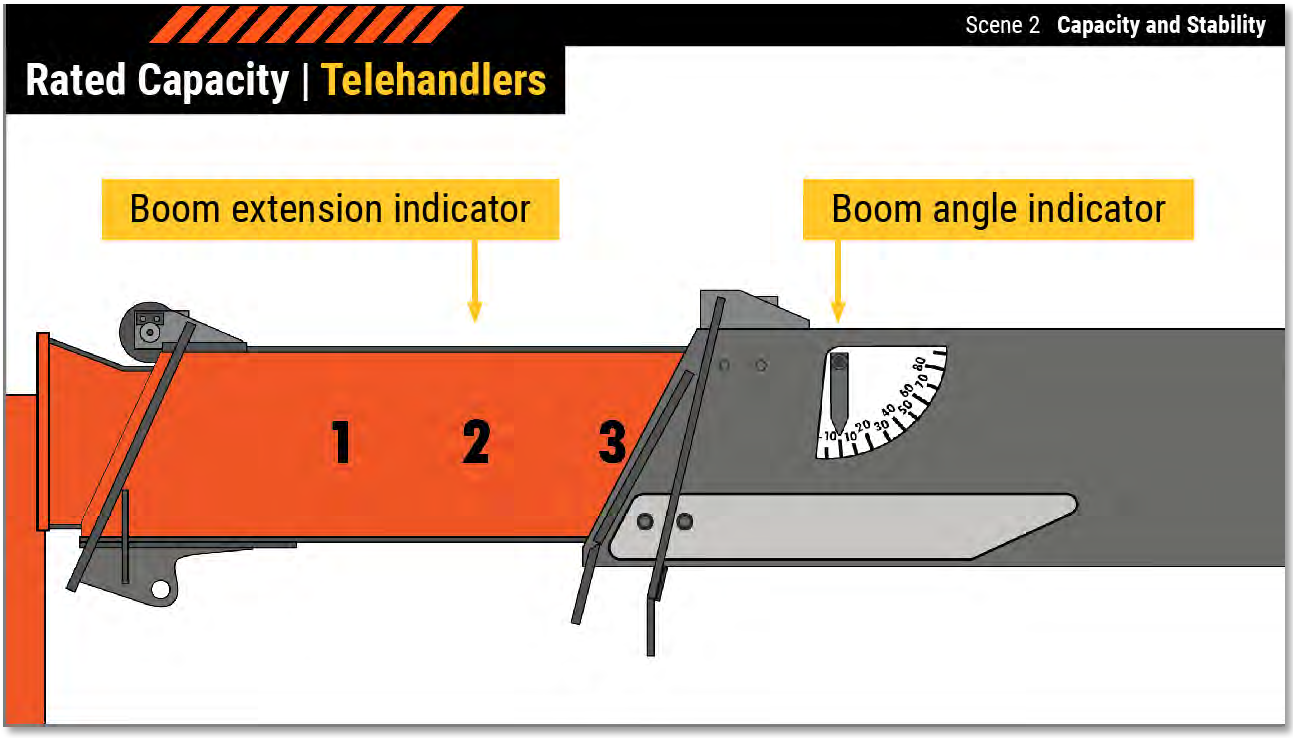
Narration:
For example, if a load needs to be placed 32 feet out and 4 feet high, it can weigh no more than 1,000 pounds. A load that needs to be placed 12 feet out and 36 feet high can weigh no more than 6,000 pounds.

Slide 61 - Rated Capacity for Telehandlers 4



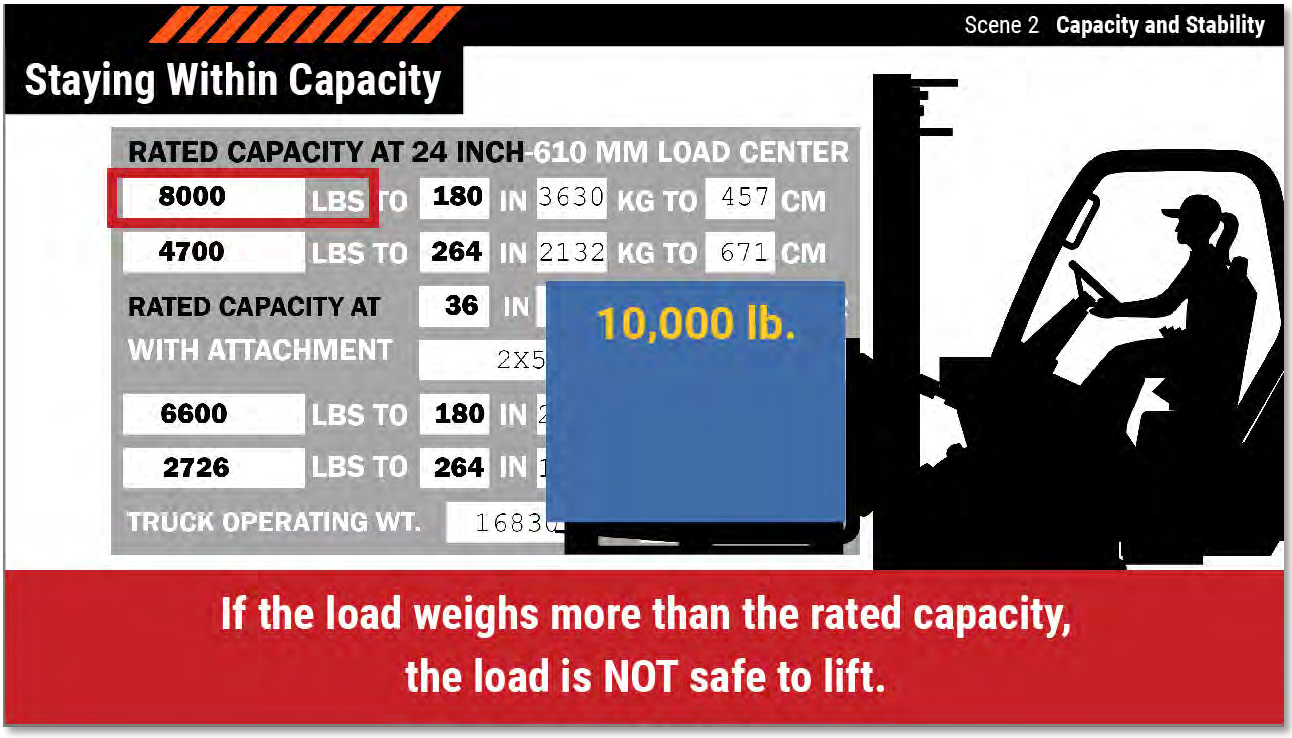
Narration:
You can increase capacity by using the outriggers. Notice on the Outriggers Down capacity chart for standard forks, there are fewer maximum weight zones, and when the boom is fully extended forward, the telehandler can handle 3,000 pounds, as opposed to being a “no operation” zone. Now, a load that needs to be placed 32 feet out and 4 feet high can weigh as much as 4,000 pounds.

Slide 62 - Rated Capacity for Telehandlers 5



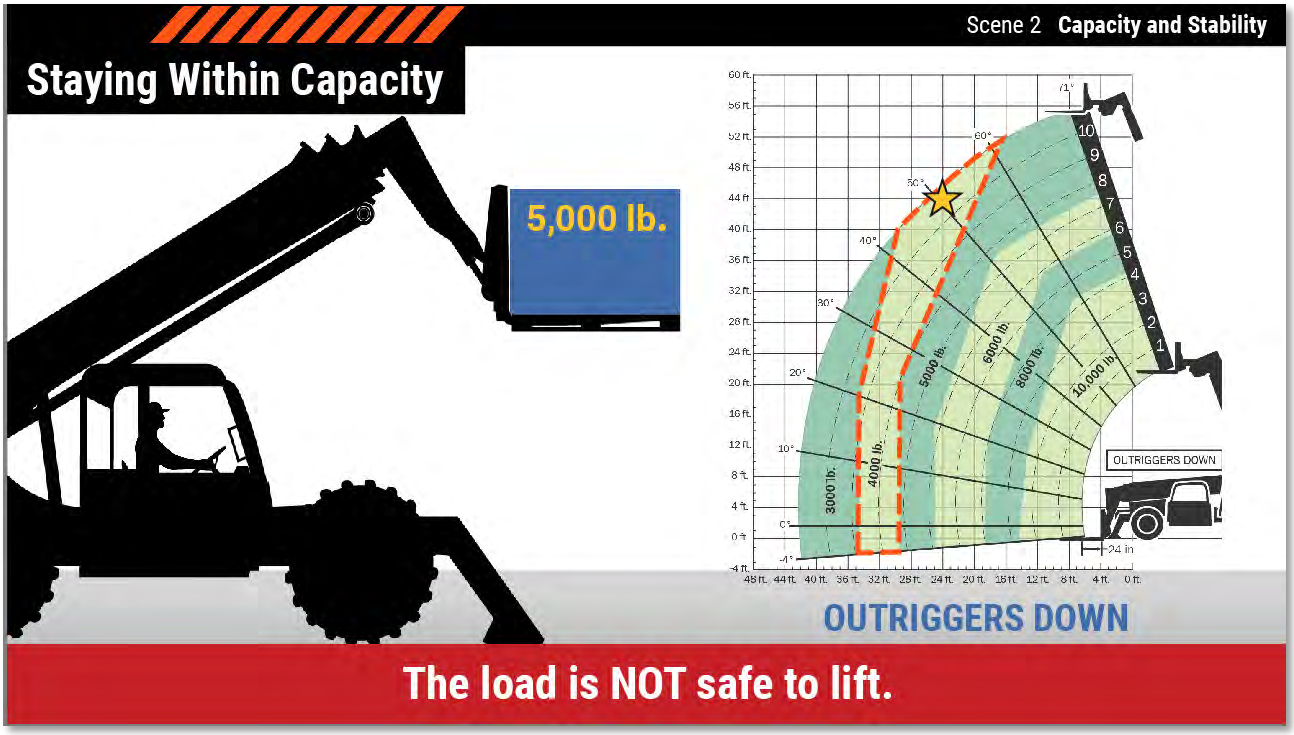
Narration:
Don't forget that you also have the boom extension indicator and the boom angle indicator to help you, one, determine the height and distance of the intended placement position of a load, and two, monitor the load being handled so that you don't exceed rated capacity. Keep an eye on these indicators when picking up or placing a load.

Slide 63 - Staying Within Capacity 1



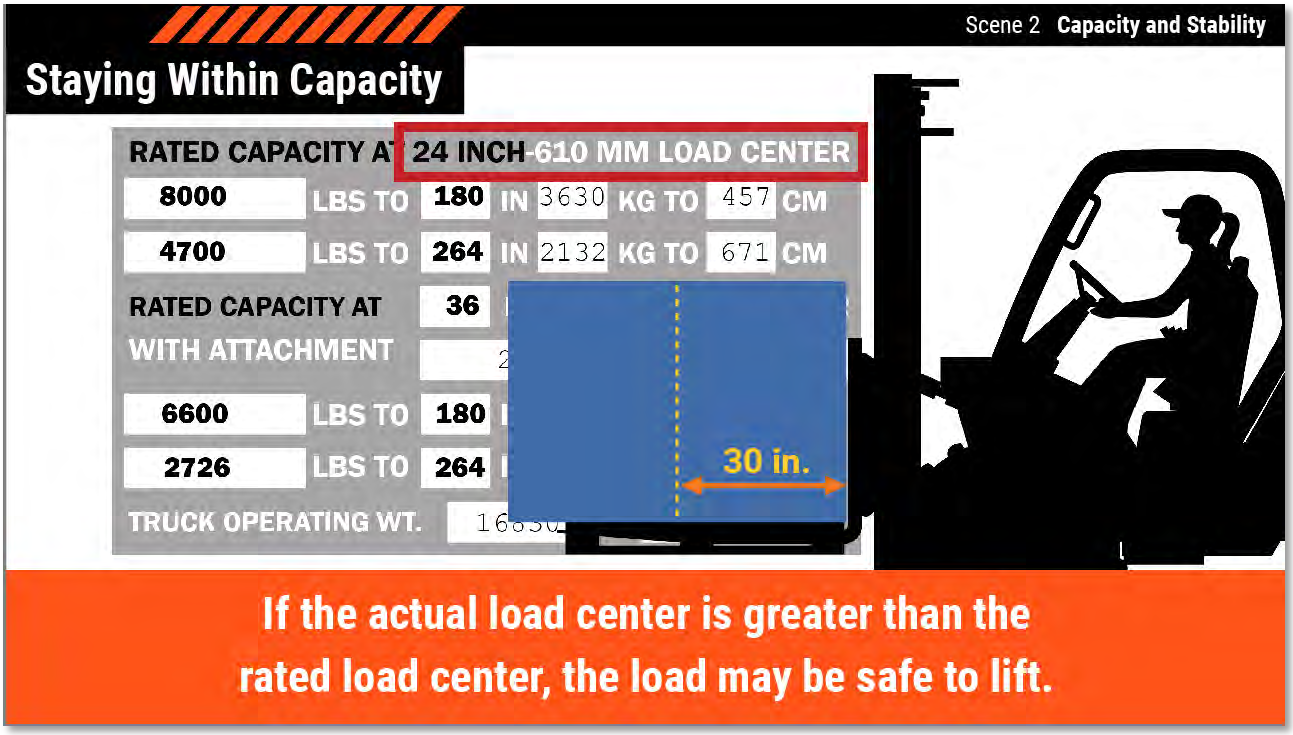
Narration:
So, how do you stay within capacity? You must compare the load you intend to lift with the rated capacity information on the data plate. If the load weighs more than the rated capacity, it is NOT SAFE to lift.

Slide 64 - Staying Within Capacity 2



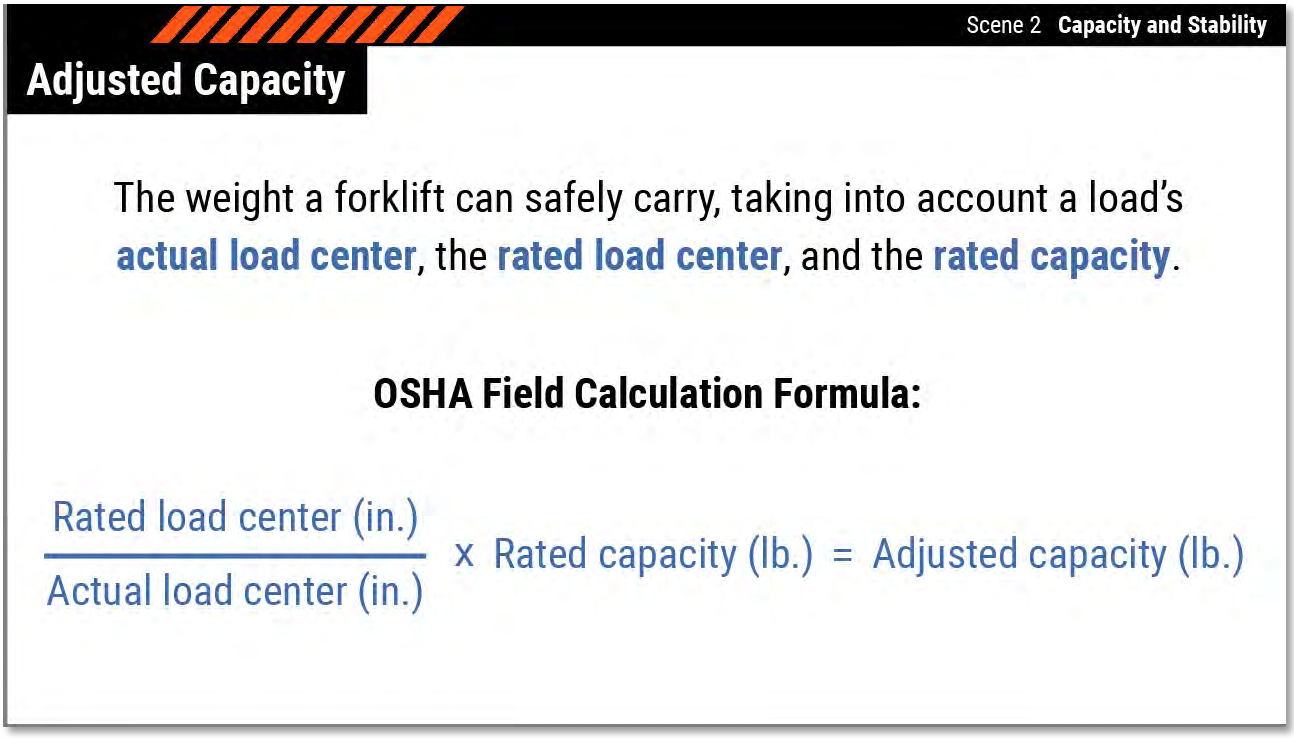
Narration:
Remember to take into account where the load needs to be placed. Here, a 5,000-pound load that needs to be placed 24 feet out and 44 feet high would exceed the rated capacity of 4,000 pounds. The load is NOT safe to lift.

Slide 65 - Staying Within Capacity 3



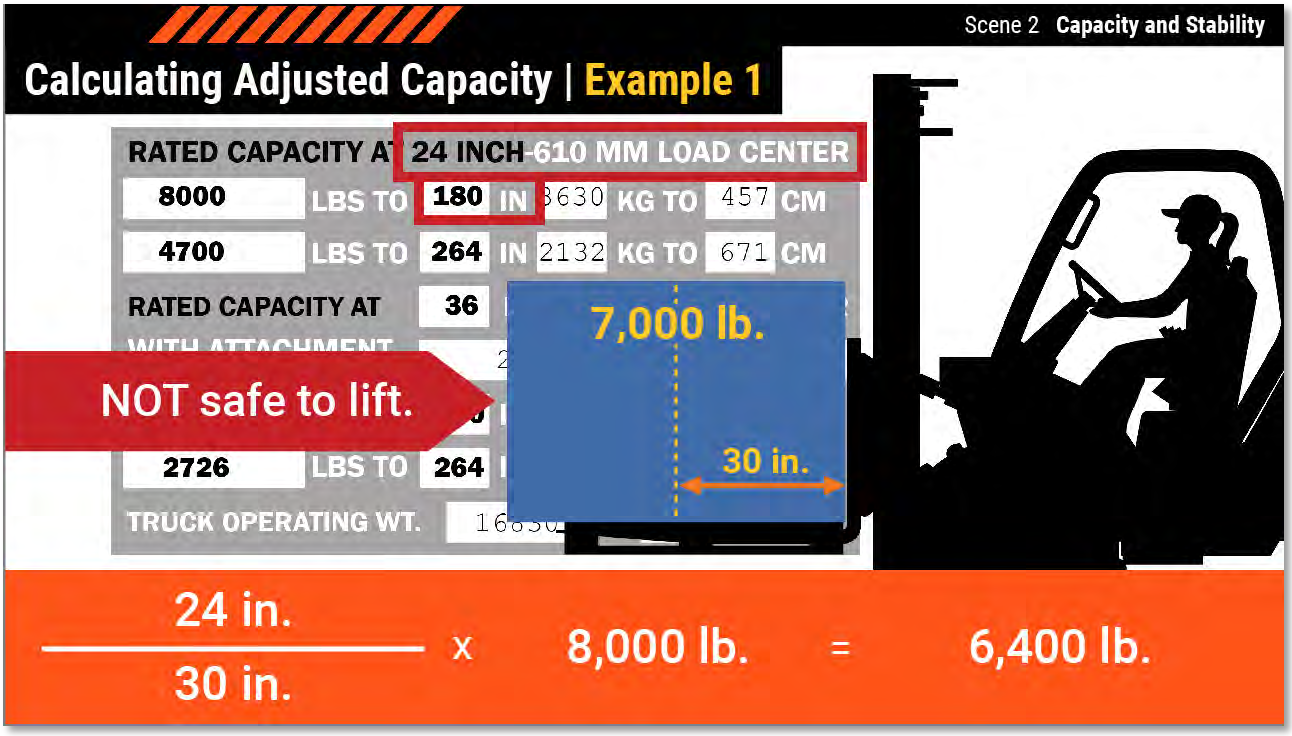
Narration:
What if the load you intend to lift has a load center greater than the rated load center for the forks you're using? You may still be able to lift this load safely.

Slide 66 - Adjusted Capacity



Narration:
To see if the load is safe to lift, you can calculate an adjusted capacity. **Adjusted capacity** is the weight a forklift can safely carry, taking into account a load's actual load center, the rated load center, and the rated capacity. Using OSHA's field calculation formula, divide the rated load center by the actual load center and multiply by the rated capacity. Let's look at some examples.

Slide 67 - Example 1



Narration:
Our first example is for a vertical mast forklift. Say you're using forks with a 24-inch load center, but the actual load center is 30 inches. And, a 7,000-pound load will need to be raised to 180 inches. Divide the rated load center (24) by the actual load center (30) and multiply by the rated capacity for a mast height of 180 inches (8,000). The adjusted capacity is 6,400 pounds. The 7,000-pound load exceeds adjusted capacity. The load is NOT SAFE to lift.

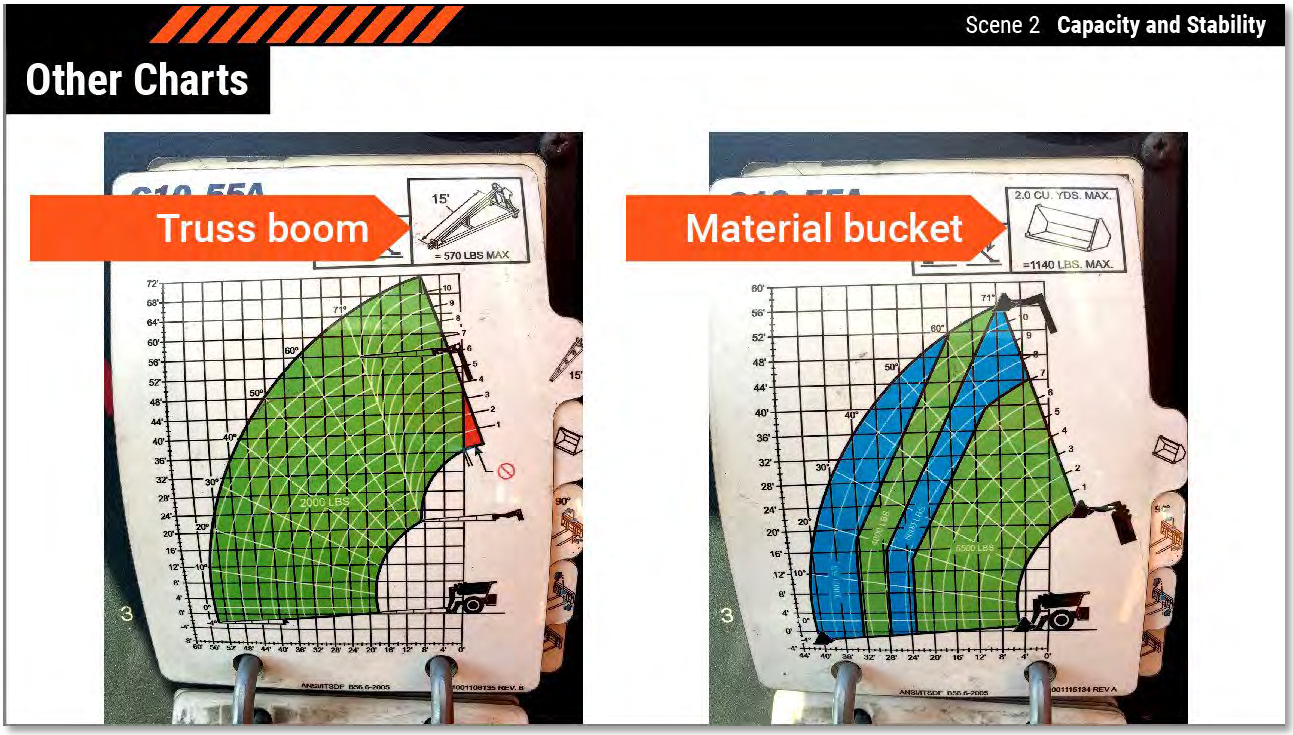
Slide 68 - Example 2

Narration:
Our next example is for a telehandler with the outriggers down and forks with a 24-inch rated load center. A 4,000-pound load with a 30-inch load center needs to be placed 20 feet out and 20 feet high. The rated capacity is 6,000 pounds. Again, divide the rated load center (24) by the actual load center (30) and multiply by the rated capacity for the boom position (6,000). The adjusted capacity is 4,800 pounds. Since this 4,000-pound load is less than the adjusted capacity, it is SAFE to lift to the needed position.

Slide 69 - Example 3

Narration:
However, if the load were 5,000 pounds, it would exceed the adjusted capacity, making it UNSAFE to lift.

Slide 70 - Other Charts

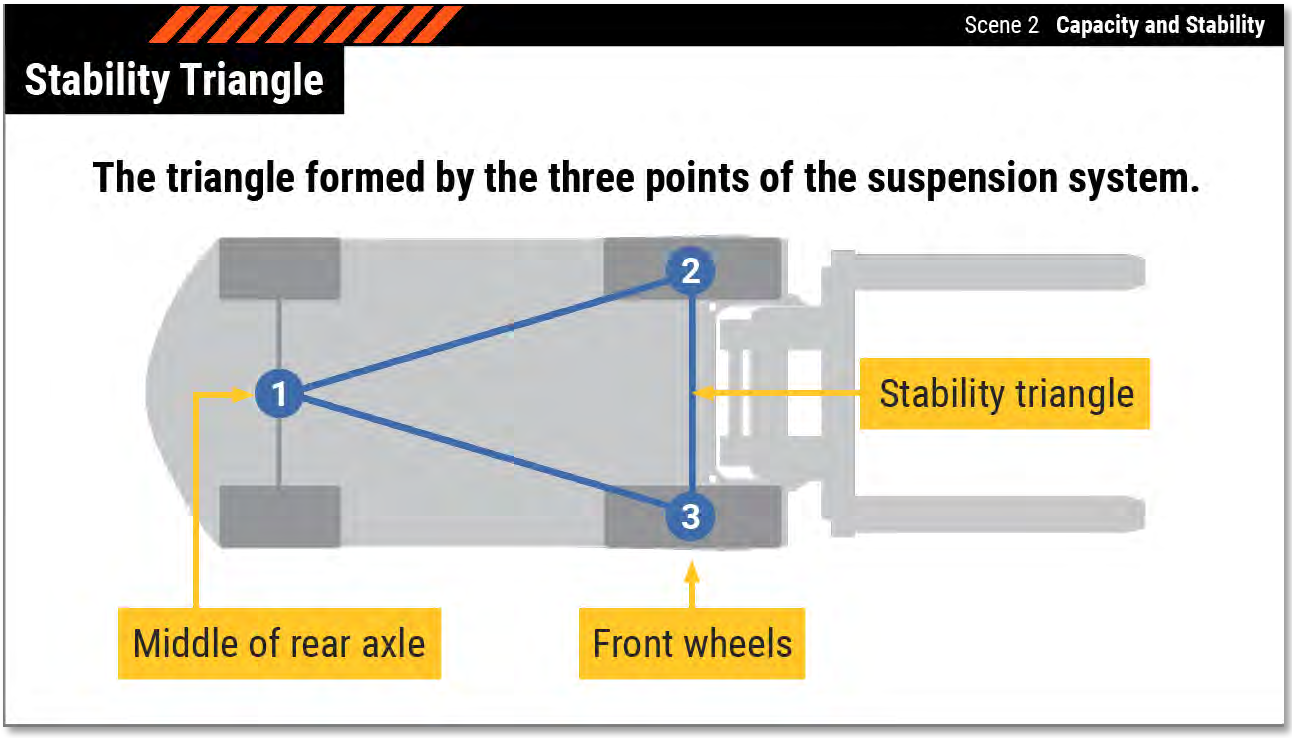


Narration:
Keep in mind that some attachments don’t have a rated load center. In these cases, if the weight of the load and its intended placement position do not fall within the safe operating range shown on the capacity chart, do not attempt to lift the load.

Slide 71 - Stability

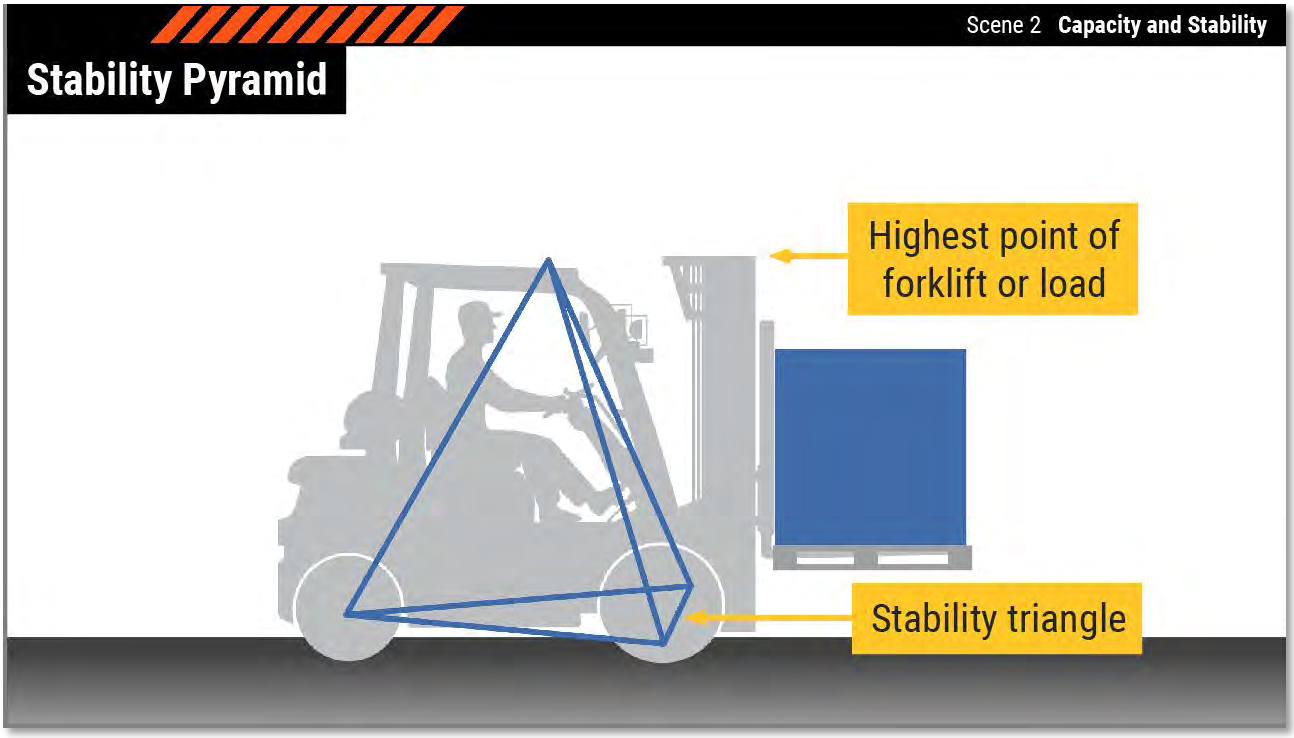
Narration:
Alright, let's move on to stability. Stability is a forklift's resistance to tipping to one side, forward, or backward. To understand how stability is maintained, you'll first need to know a few key terms.

Slide 72 - Stability Triangle



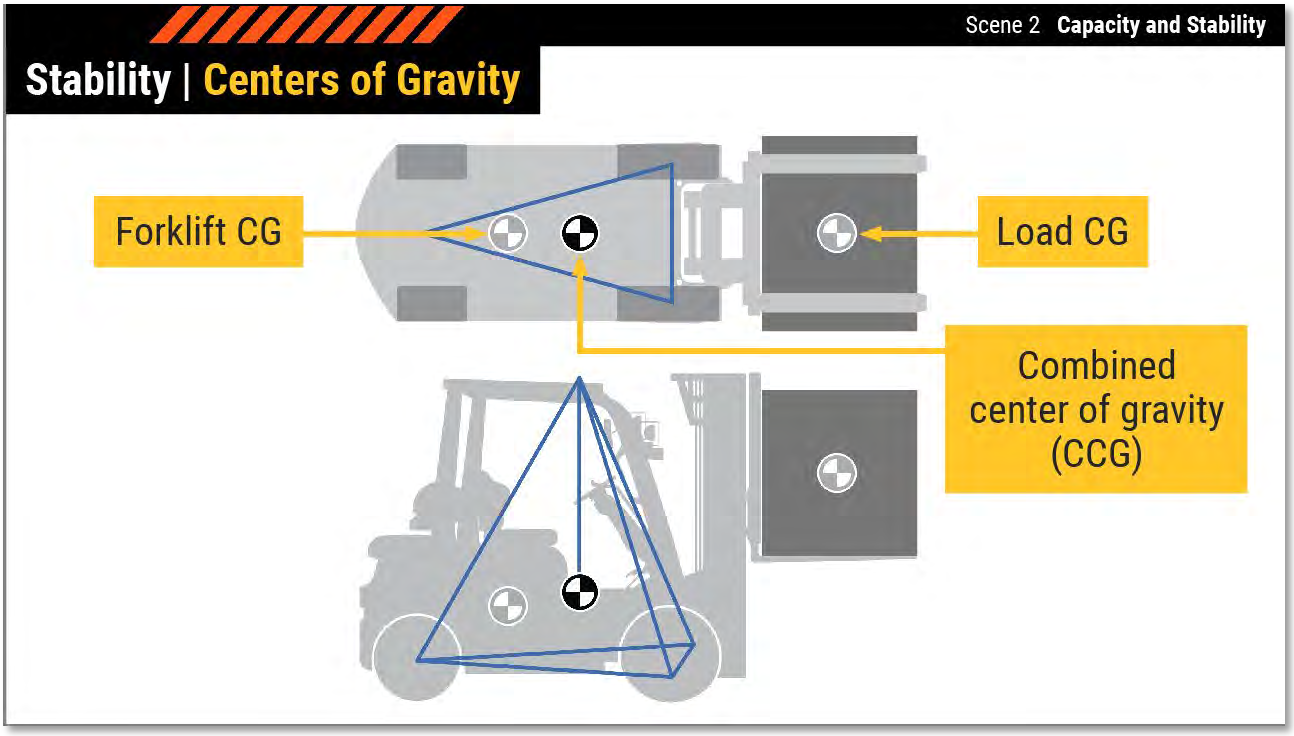
Narration:
Forklifts have a suspension system formed by three points: the middle of the rear axle and the two front wheels. When these points are connected with imaginary lines, they form a triangle called the **stability triangle**.

Slide 73 - Stability Pyramid



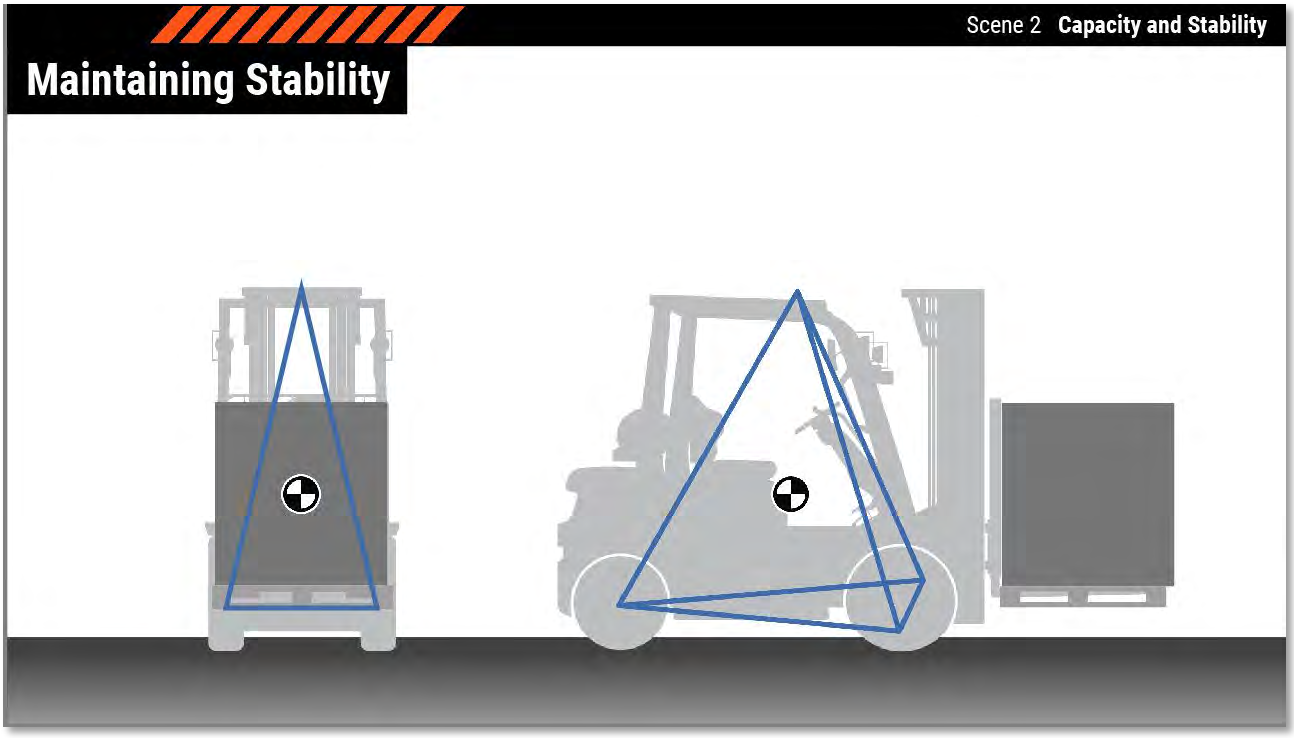
Narration:
The three-dimensional view of the stability triangle is called the **stability pyramid**. The stability pyramid is formed by the stability triangle and the highest point of either the forklift or the load. From this point on, this course will use the term **stability triangle** to refer to both the stability triangle and the stability pyramid.

Slide 74 - Centers of Gravity



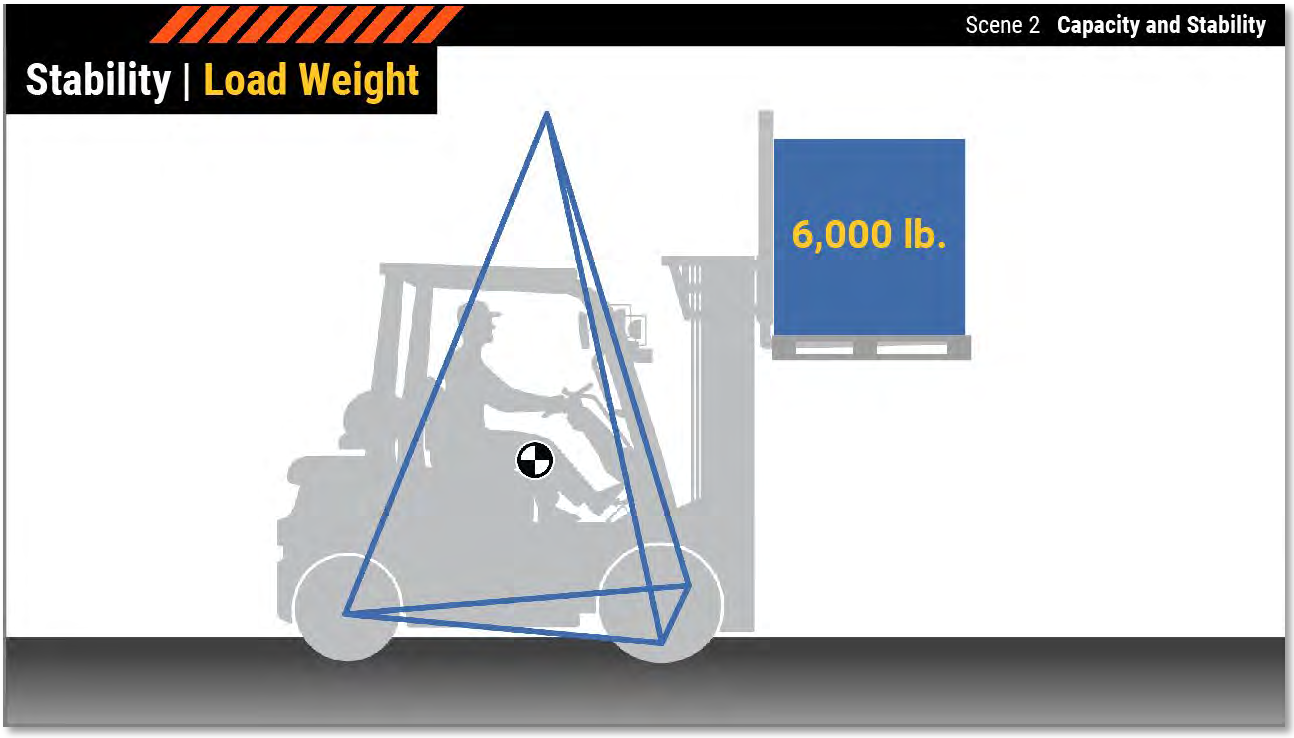
Narration:
At the beginning of this scene, we defined **load CG**. It is the center of gravity of a load. A forklift also has its own center of gravity, called the **forklift CG**. When a load is being carried, the combination of the load CG and the forklift CG create a **combined center of gravity**, or **CCG**.

Slide 75 - Maintaining Stability



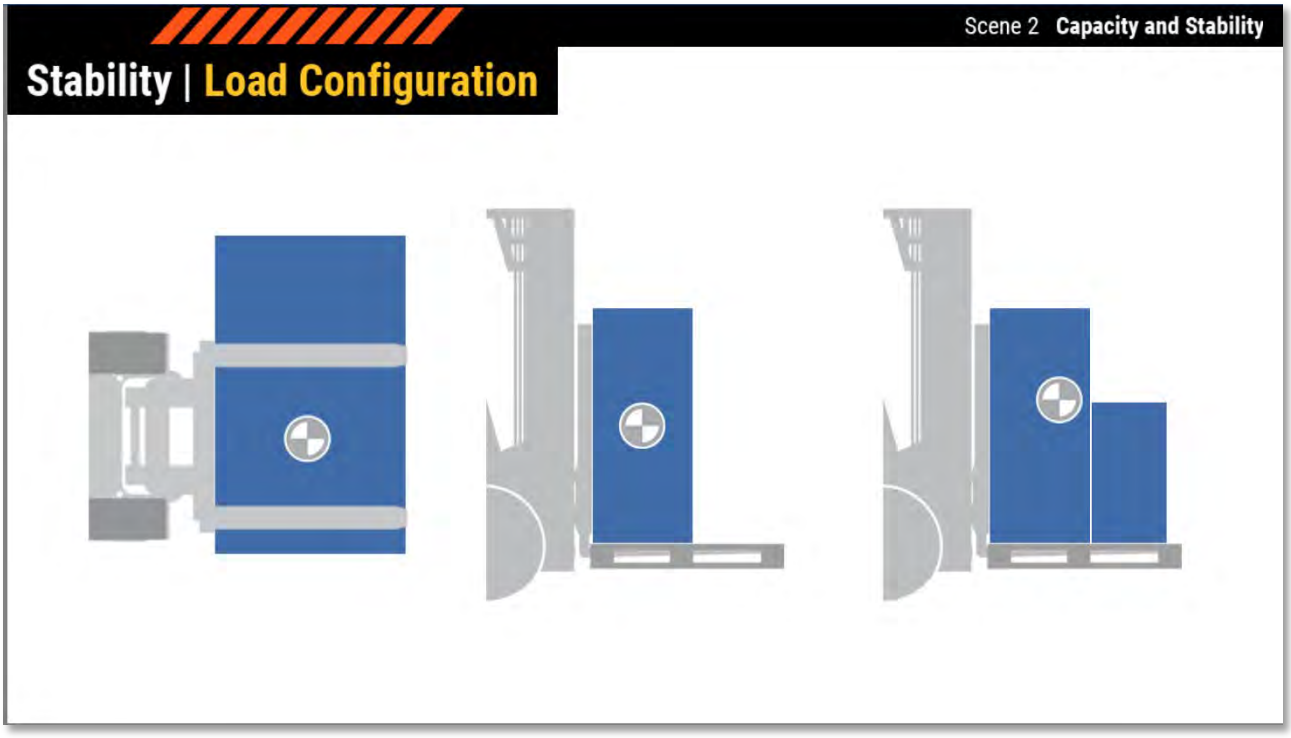
Narration:
To maintain stability, the CCG must stay within the bounds of the stability triangle. It can move up and down, forward and back, and side-to-side. But, if it moves outside this area of safe operation, the forklift will tip over. Several factors affect the position of the CCG.

Slide 76 - Load Weight



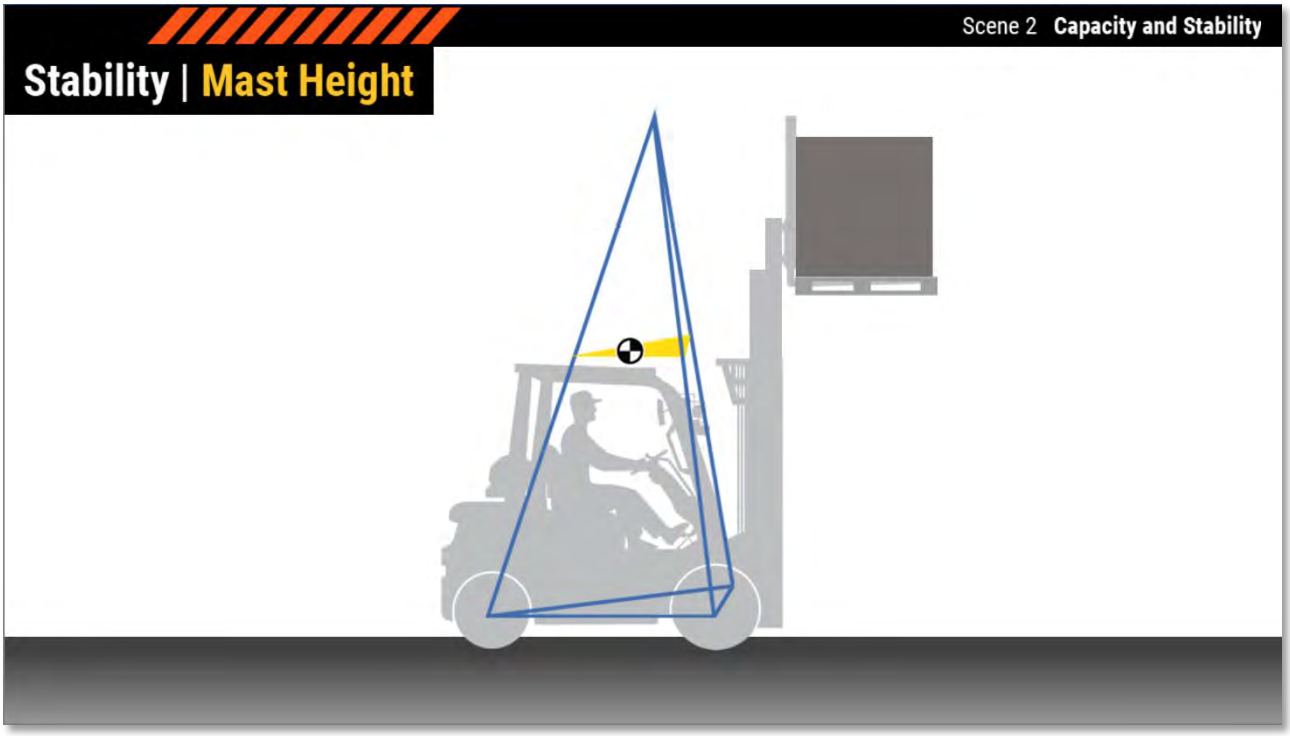
Narration:
The first is load weight, which we talked about earlier when discussing capacity. As load weight increases, the CCG moves forward, toward the load. If the load weight exceeds the forklift's capacity, the CCG will move outside the stability triangle and the forklift will tip forward.

Slide 77 - Load Configuration



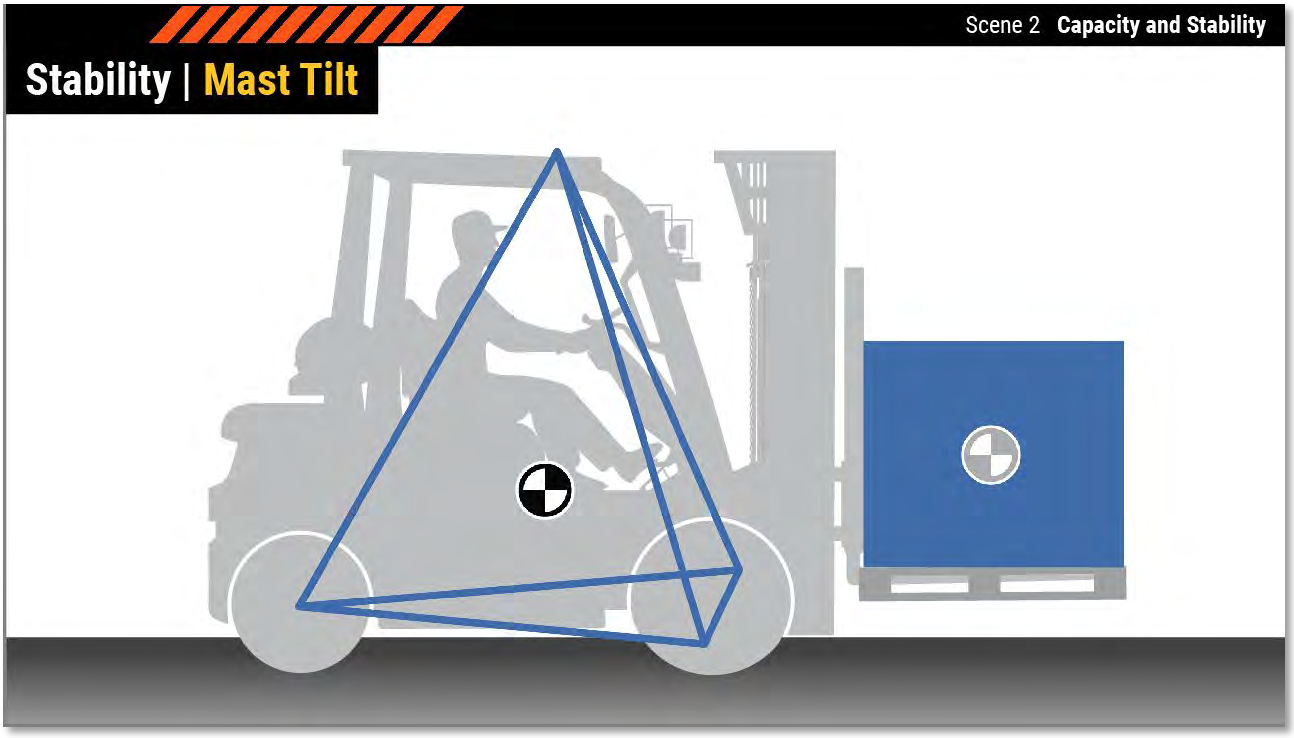
Narration:
The next factor is how a load is configured on the forks. The goal is to keep the load CG centered between the forks and as close to the mast as possible. If the load is made up of multiple items, the heaviest item should be placed closest to the mast. Positioning the load properly on the forks will keep the CCG as centered as possible within the stability triangle.

Slide 78 - Mast Height



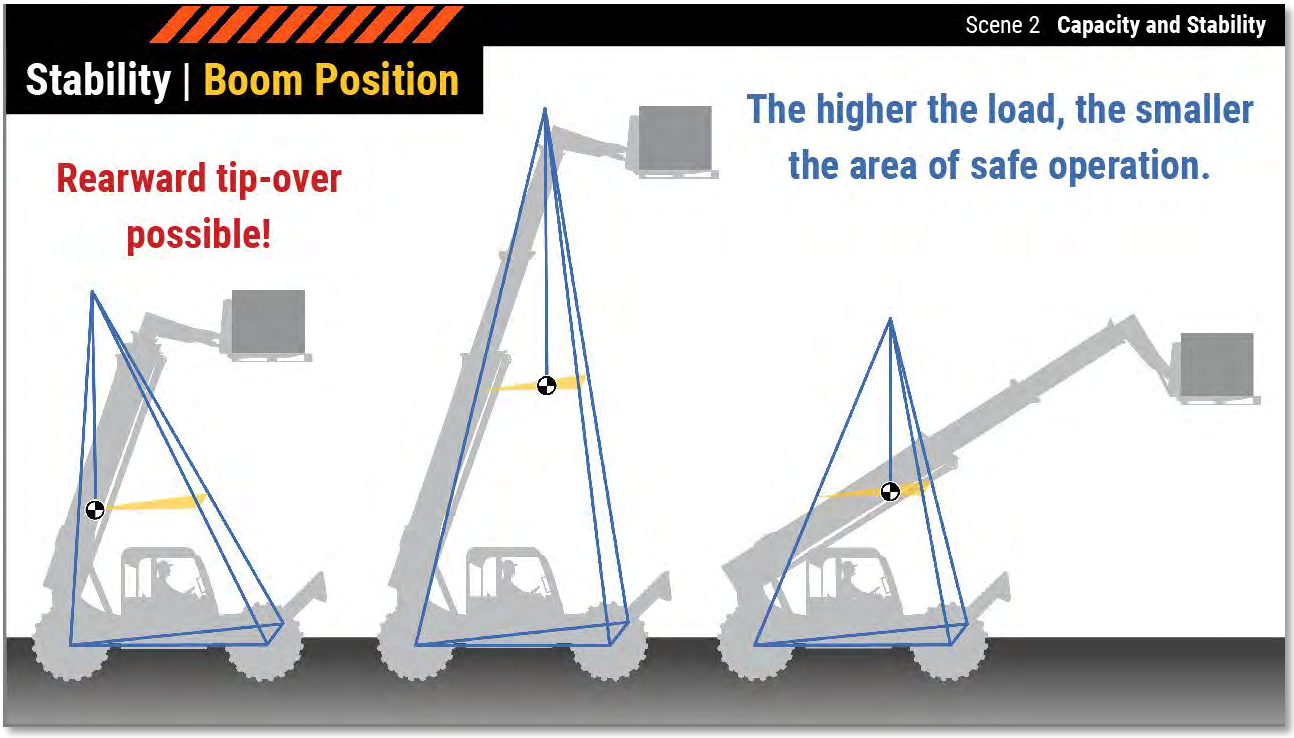
Narration:
Another factor that affects stability is mast height. On a vertical mast forklift, as the mast is raised, the area of safe operation is reduced. The CCG moves upward where the stability triangle narrows. The higher the load is lifted, the less stable the forklift becomes.

Slide 79 - Mast Tilt



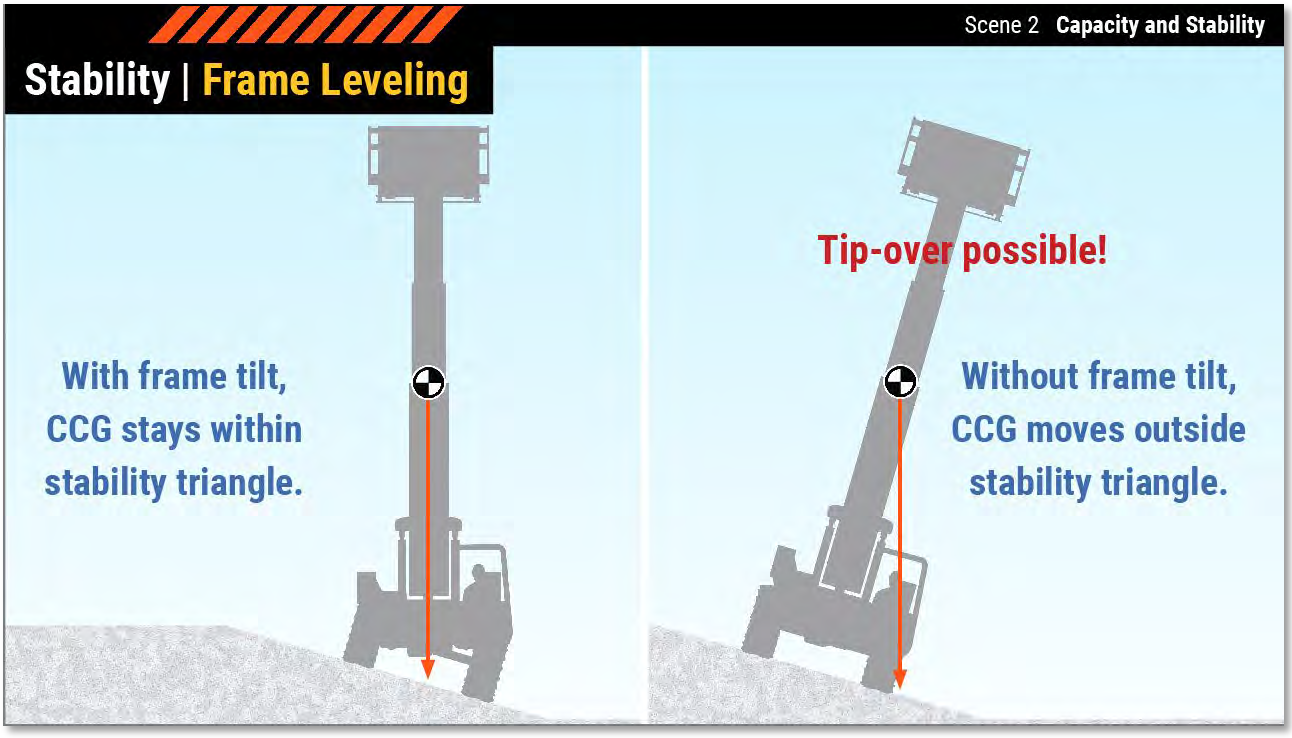
Narration:
Tilting the mast back increases vehicle stability by moving the load CG closer to the fulcrum, which helps keep the CCG as centered as possible within the stability triangle.

Slide 80 - Boom Position



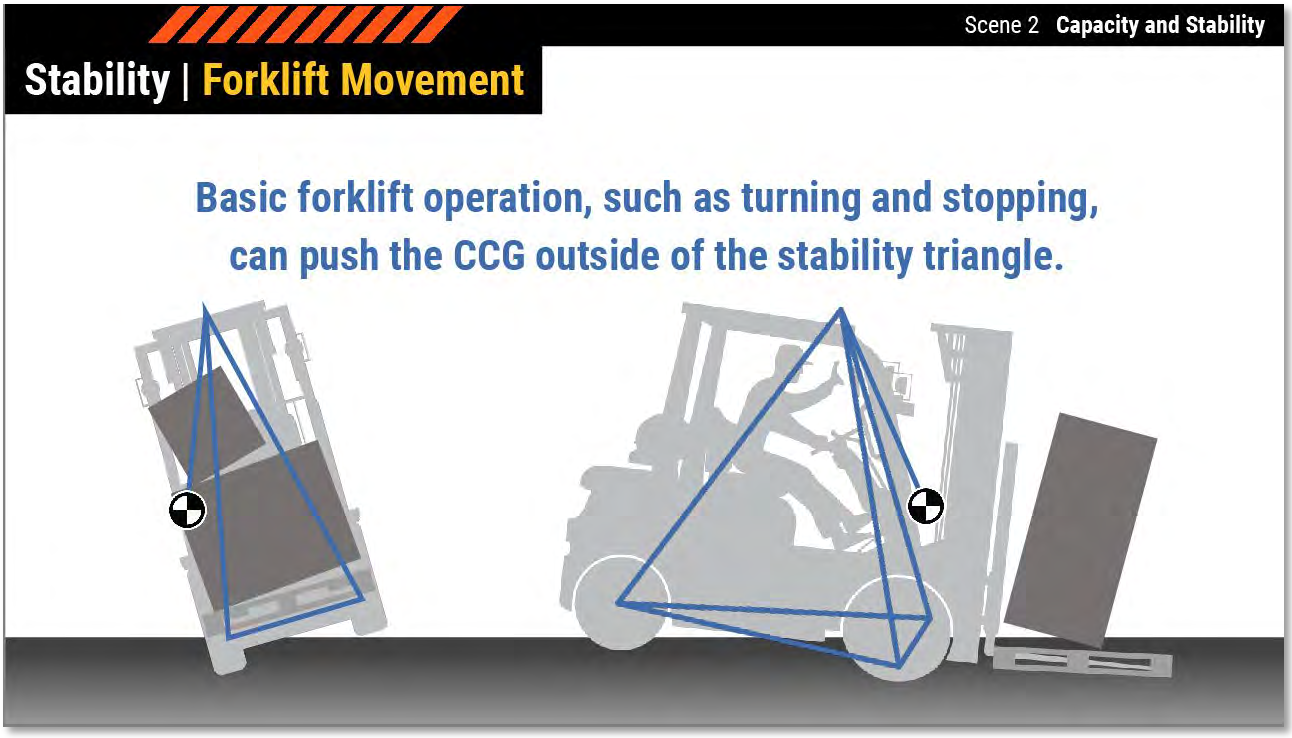
Narration:
Stability on a telehandler works differently than it does on a vertical mast forklift. Because the boom is part of the counterweight, raising a load without extending the boom moves the CCG up and to the rear of the machine, making a rearward tip-over possible. Extending the boom moves the CCG up and forward. And, lowering the boom moves the CCG down and forward. However, like a vertical mast forklift, the higher the load, the smaller the area of safe operation.

Slide 81 - Frame Leveling



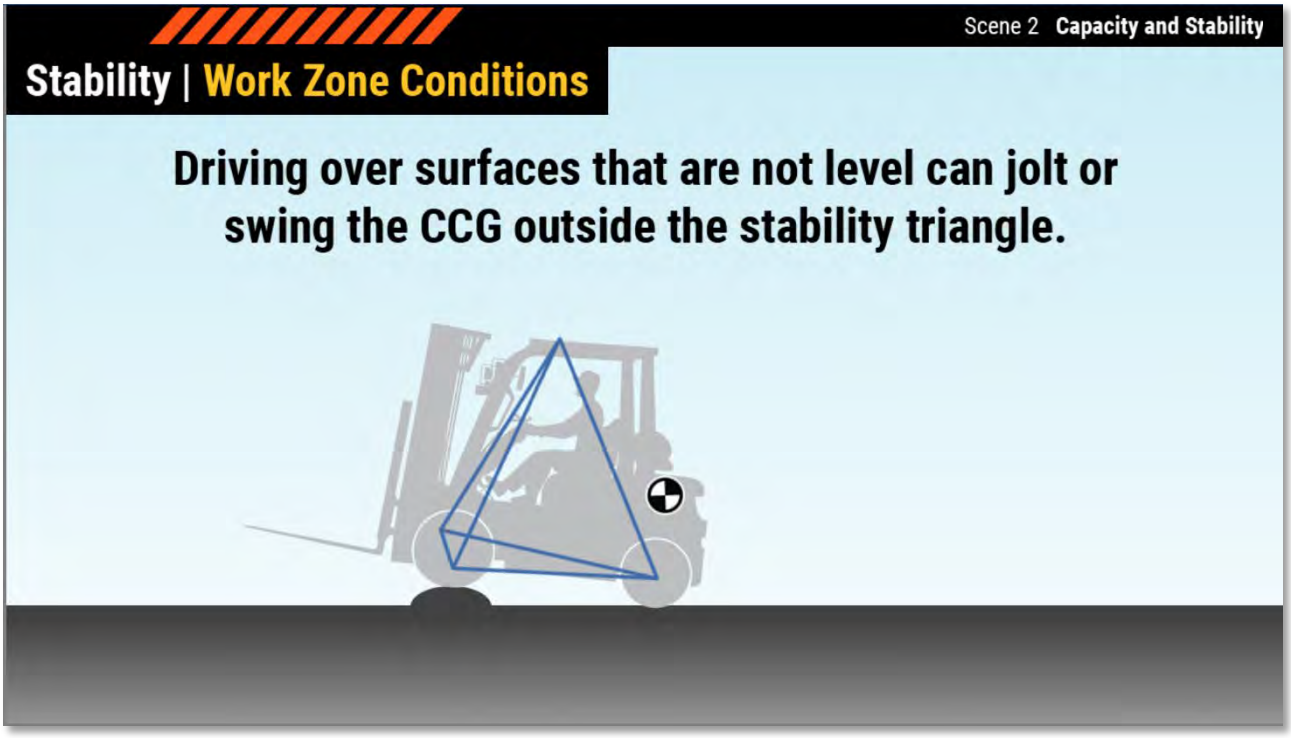
Narration:
A telehandler's frame tilt feature helps maintain stability by rotating the vehicle body to compensate for a sloped surface. Proper use of frame tilt keeps the CCG between the wheels, near the center of the stability triangle. Without frame tilt, the CCG can fall outside the boundaries of the stability triangle, resulting in a tip-over.

Slide 82 - Forklift Movement



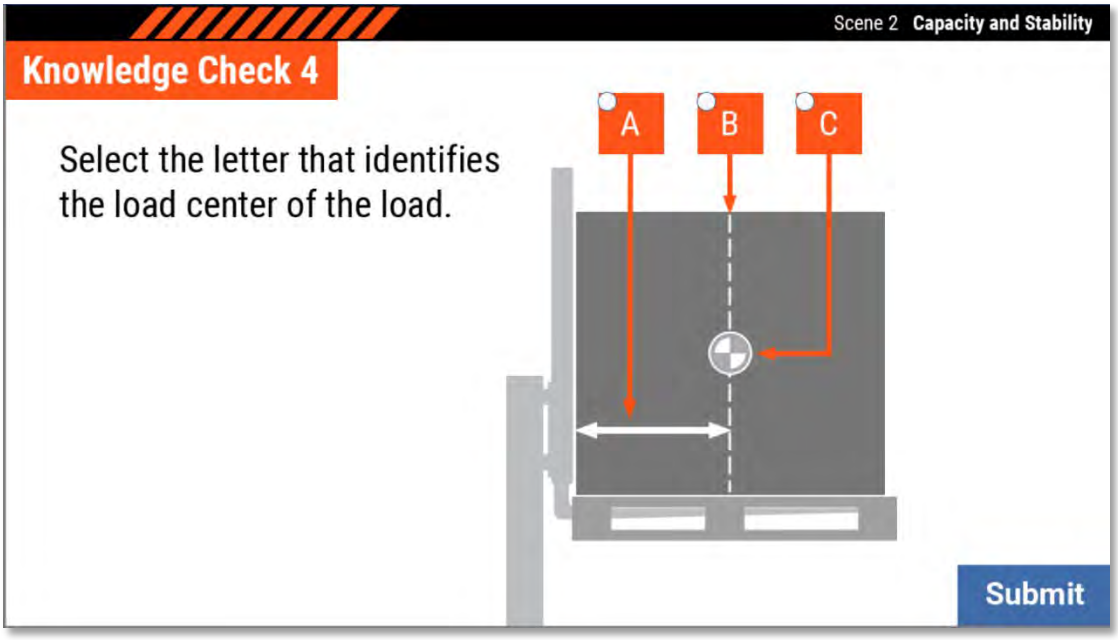
Narration:
Once a forklift is in motion, basic operation, such as turning and stopping, applies force on the CCG. If the force is strong enough, the CCG can be pushed outside the stability triangle, resulting in a tip-over.

Slide 83 - Work Zone Conditions



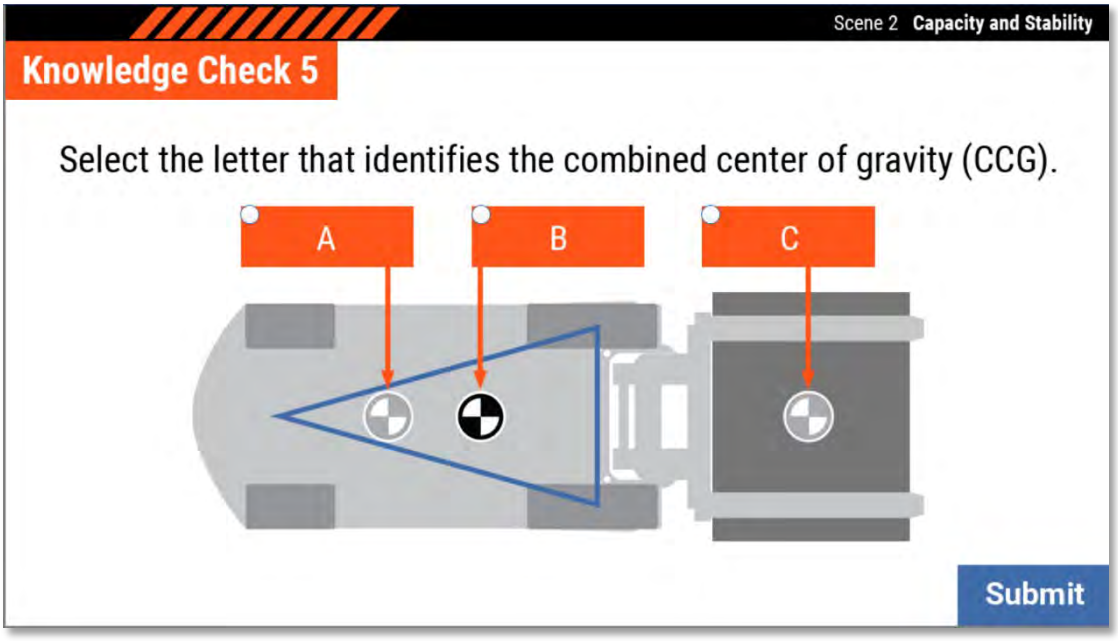
Narration:
Work zone conditions can also impact stability. Uneven surfaces, unstable ground, or ground obstructions can jolt the CCG outside the stability triangle. Likewise, driving on an incline can cause the CCG to swing outside the stability triangle. That brings us to the end of this scene. Let's see if you can correctly answer some review questions.

Slide 84 - Knowledge Check 4



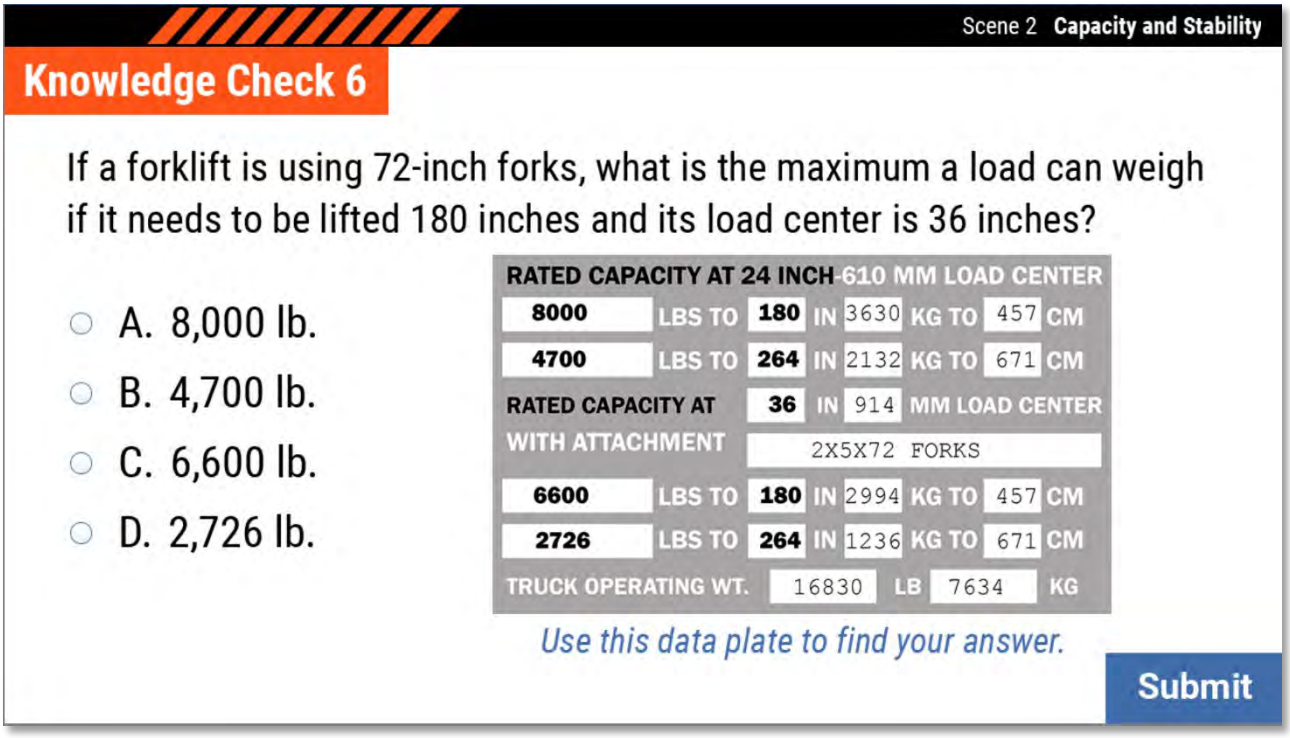
Question:
Select the letter that identifies the load center of the load.

Slide 85 - Knowledge Check 5



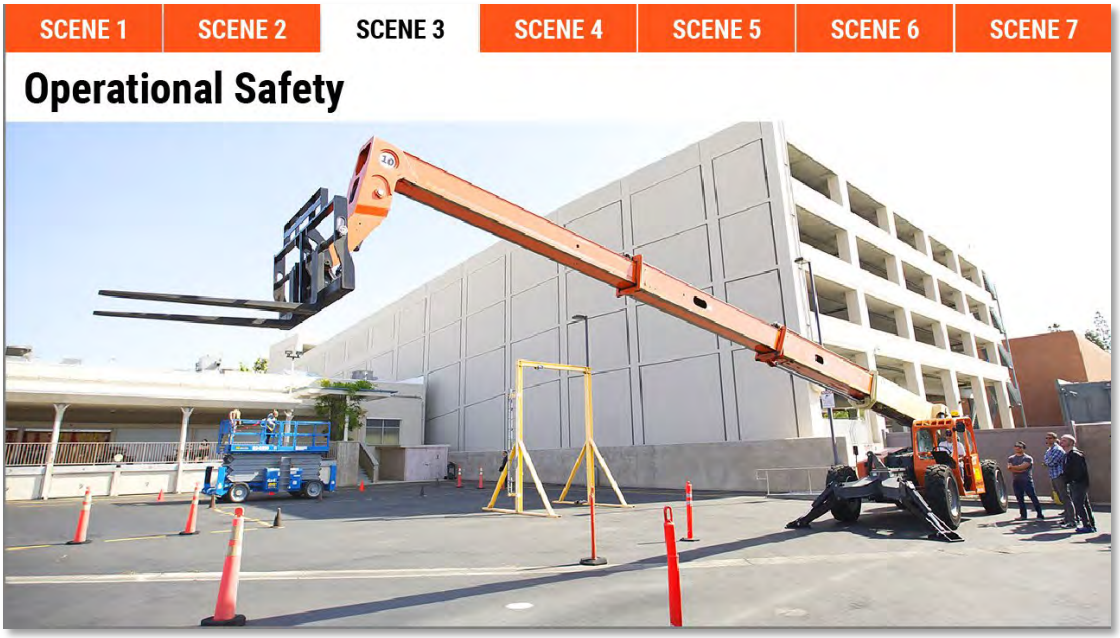
Question:
Select the letter that identifies the combined center of gravity (CCG).

Slide 86 - Knowledge Check 6



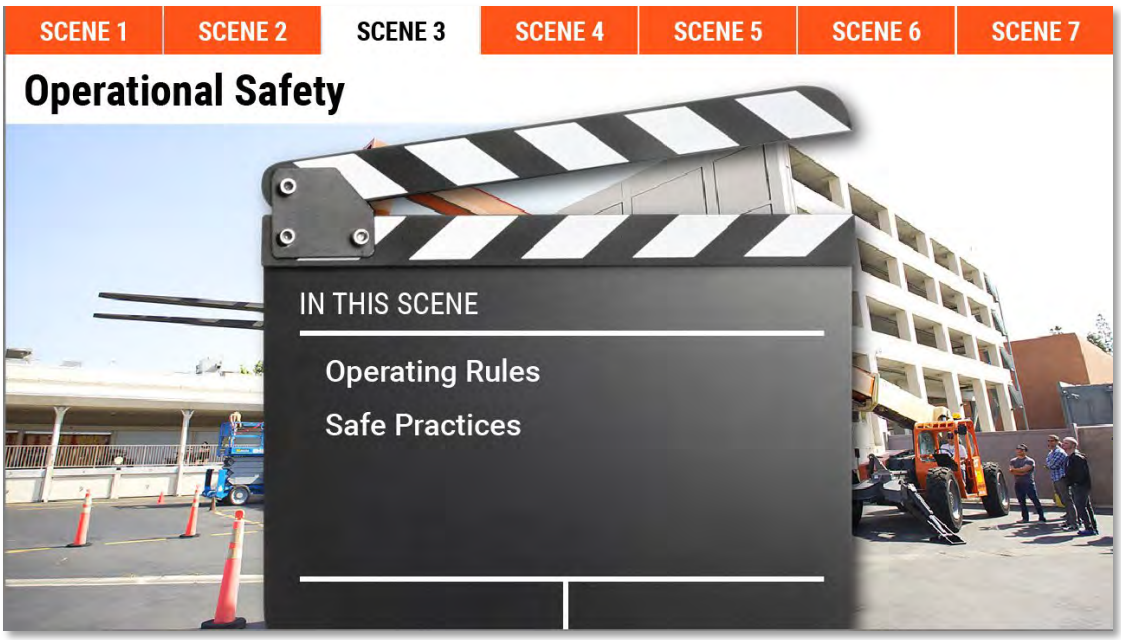
Question:
If a forklift is using 72-inch forks, what is the maximum a load can weigh if it needs to be lifted 180 inches and its load center is 36 inches?

Slide 87 - Operational Safety



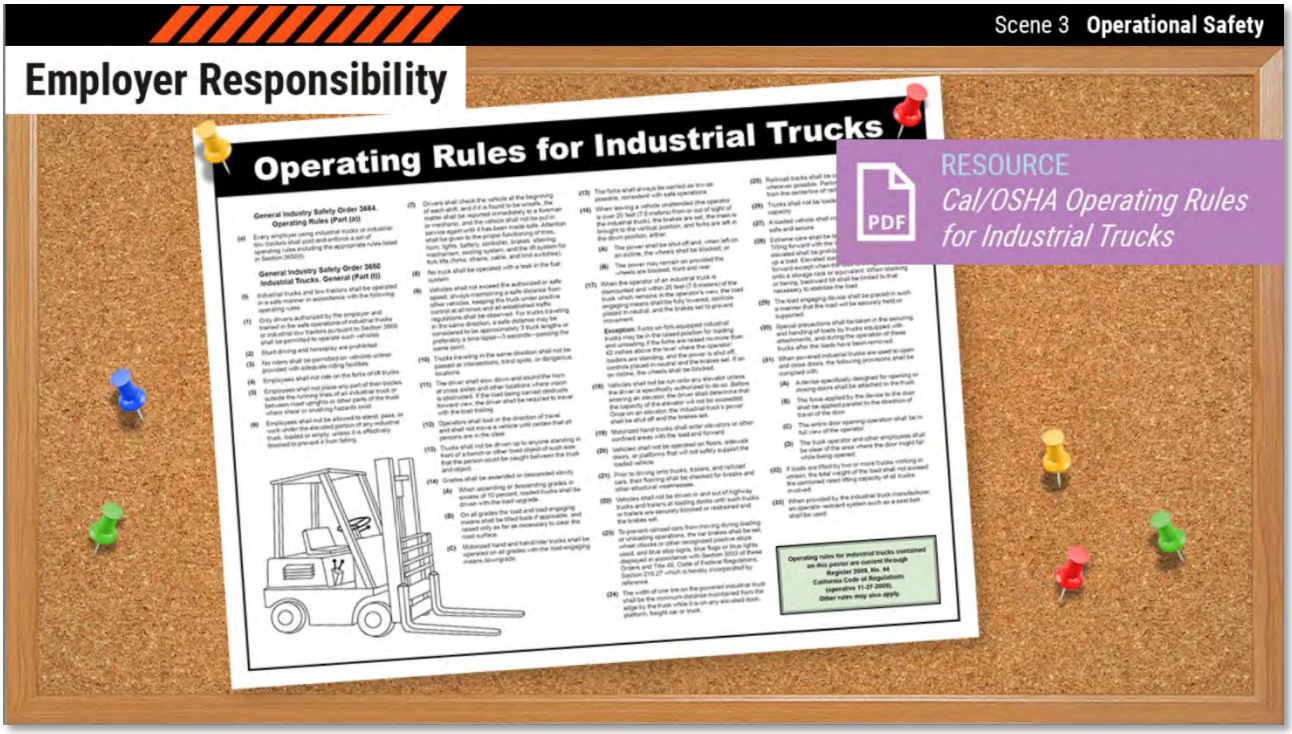
Narration:
Scene Three, Operational Safety.

Slide 88 - In This Scene



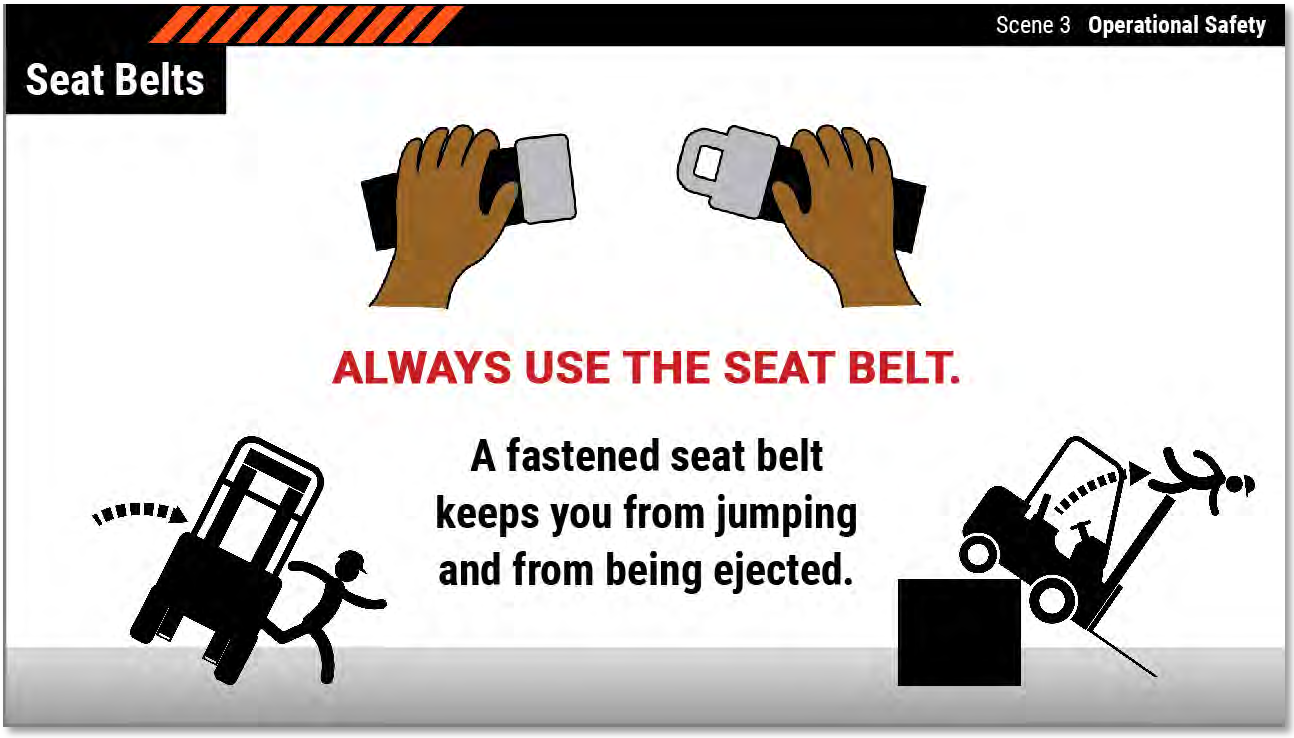
Narration:
In this scene, we'll talk about the operating rules and safe practices that will help you avoid hazards.

Slide 89 - Employer Responsibility



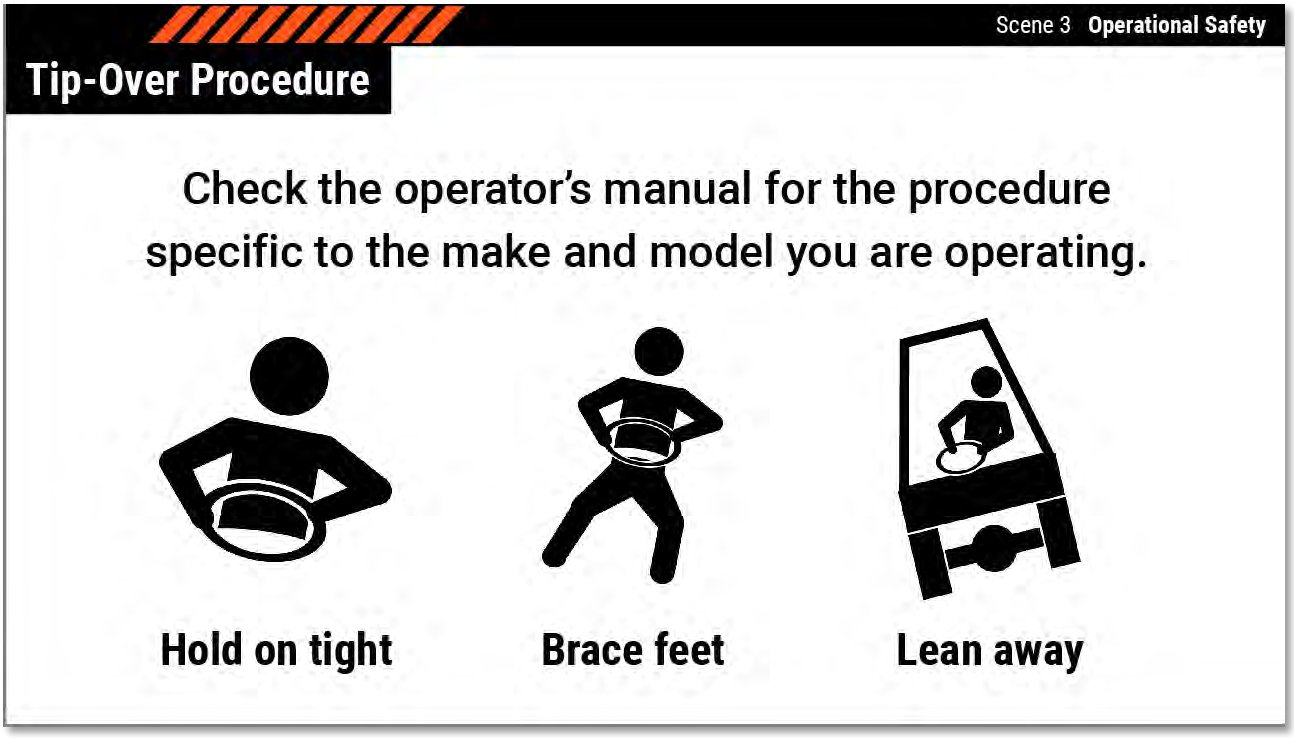
Narration:
In California, Cal/OSHA requires employers who use forklifts to post and enforce a set of operating rules specific to the work site as well as the applicable rules from “Operating Rules for Industrial Trucks.” Click here to see this list in its entirety. It is also available through the *Resources* icon. If working outside California, check with your safety representative regarding applicable regulations.

Slide 90 - Seat Belts



Narration:
Let's start with one of the most important and basic safety requirements--wearing the seat belt. Always wear your seat belt when operating a forklift, even if the ride is short or you get on and off the vehicle frequently. During a tip-over, a fastened seat belt keeps you from jumping from the vehicle and being crushed. A seat belt also keeps you from being ejected during a collision.

Slide 91 - Tip-Over Procedure



Narration:
Before operation begins, check the operator's manual for the tip-over procedure for the make and model you are operating. For sit-down vehicles, the general tip-over procedure is to hold on tightly to the steering wheel, brace your feet, and lean in the opposite direction of the tip-over.

Slide 92 - Pedestrians 1

Narration:
Unfortunately, crushing injuries to workers and other pedestrians from collisions and falling loads is an all-too-common occurrence. It is the operator's responsibility to watch out for and yield to pedestrian traffic, to drive slowly so that there is no need to stop abruptly, and to never drive a forklift up to anyone standing in front of a fixed object.

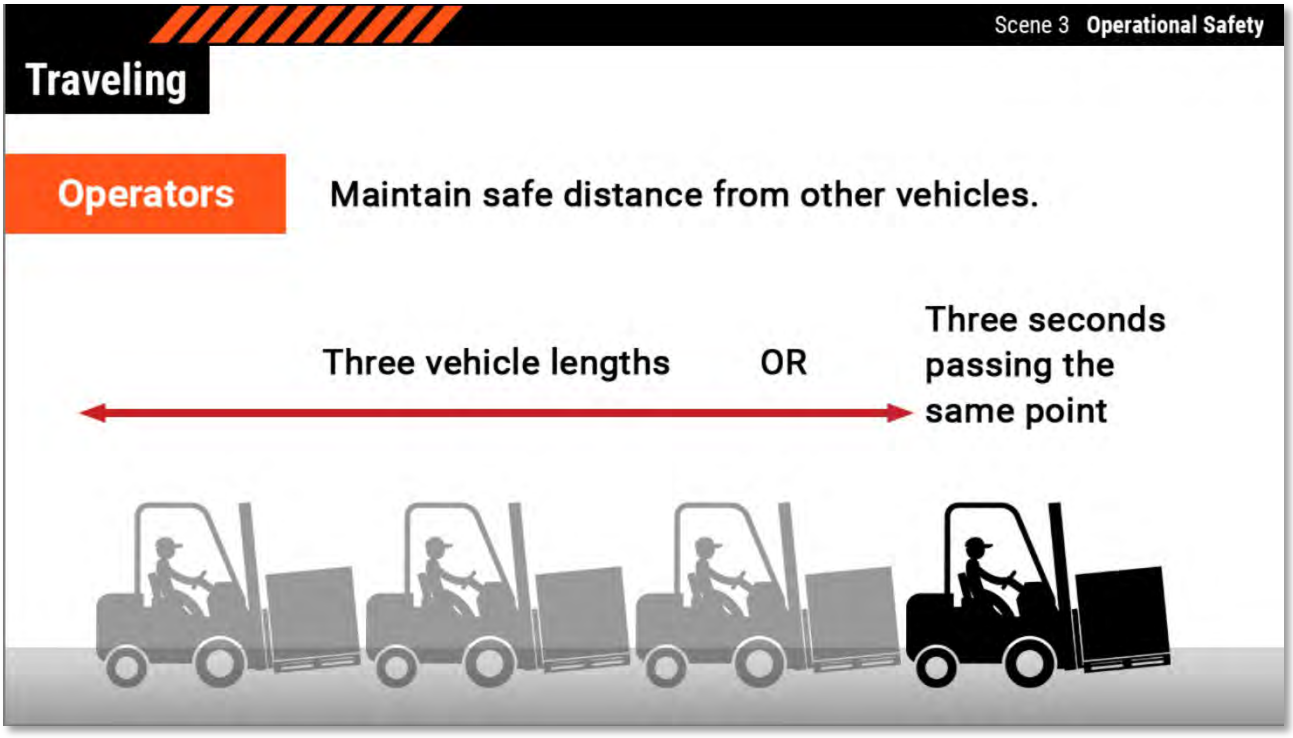
Slide 93 - Pedestrians 2

Narration:
Workers can do their part to keep themselves safe by following these safe practices: Use pedestrian walkways when possible. Stop, look, and listen for traffic. Look for back-up lights and listen for back-up alarms. Don't wear so much hearing protection that you can't hear activity around you. Stand clear of forklifts when in operation. Remember that the rear of the vehicle will swing out when turning. Finally, try to make eye contact with the operator to confirm they see you.

Slide 94 - Traveling 1

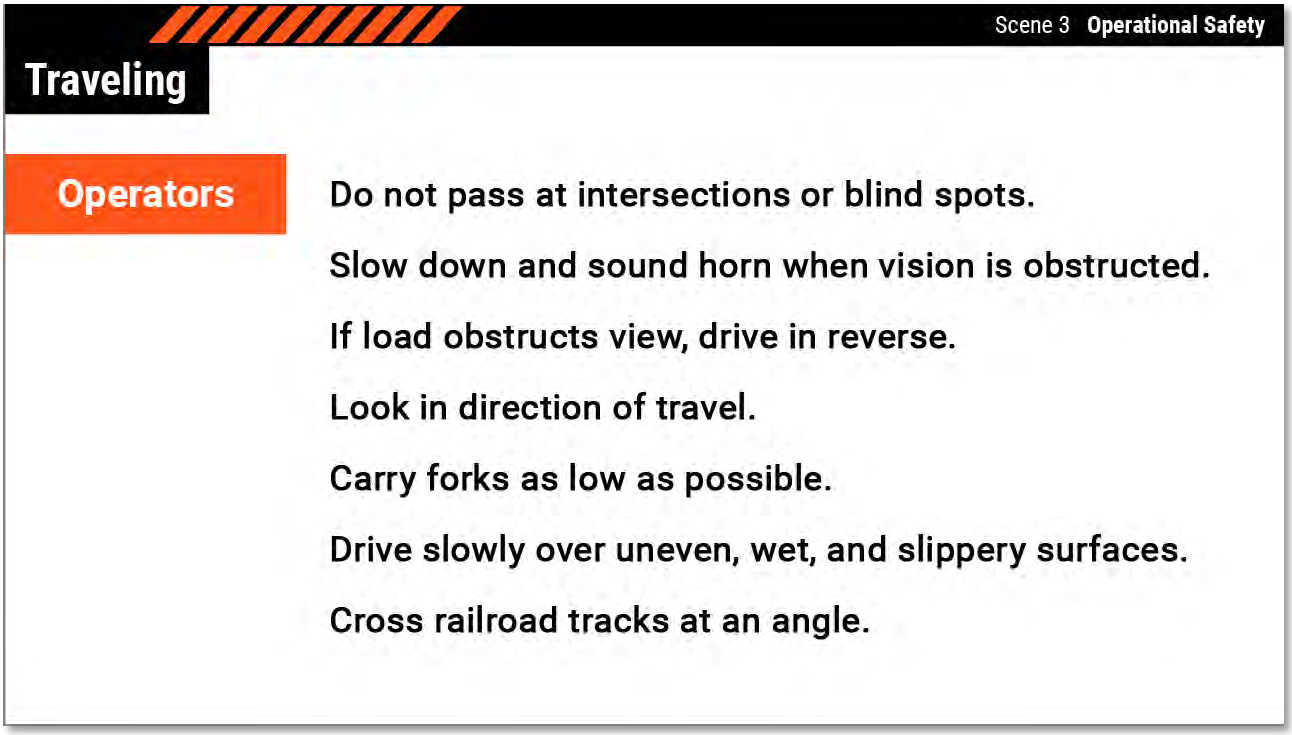
Narration:
The main hazards when traveling are collisions with pedestrians or objects, falling loads, and tip-overs. Operators: Do not engage in stunt driving or horseplay or exceed the authorized safe speed. Follow all traffic regulations and signs. It is your job to keep the vehicle under control.

Slide 95 - Traveling 2



Narration:
Maintain a safe distance from other vehicles. A safe distance is considered three vehicle lengths or a time lapse of three seconds passing the same point.

Slide 96 - Traveling 3

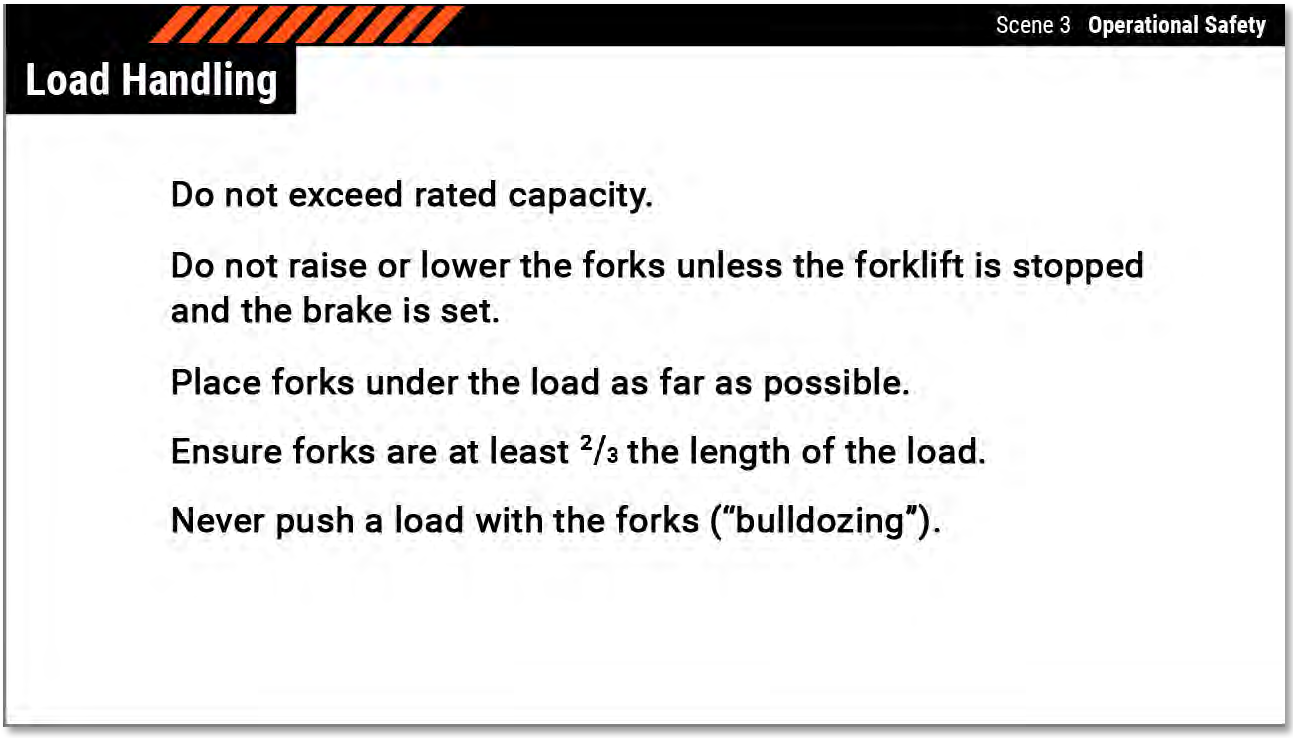


Narration:
Do not pass another forklift traveling in the same direction at intersections, blind spots, or other dangerous locations. Slow down and sound the horn at intersections or where vision is obstructed. If a load obstructs the view, drive in reverse. Look in the direction of travel, and keep a clear view of the path of travel. Carry the forks as low as possible. This will usually be a few inches off the ground. Drive slowly over uneven, wet, and slippery surfaces. And, cross railroad tracks at an angle.

Slide 97 - Traveling 4

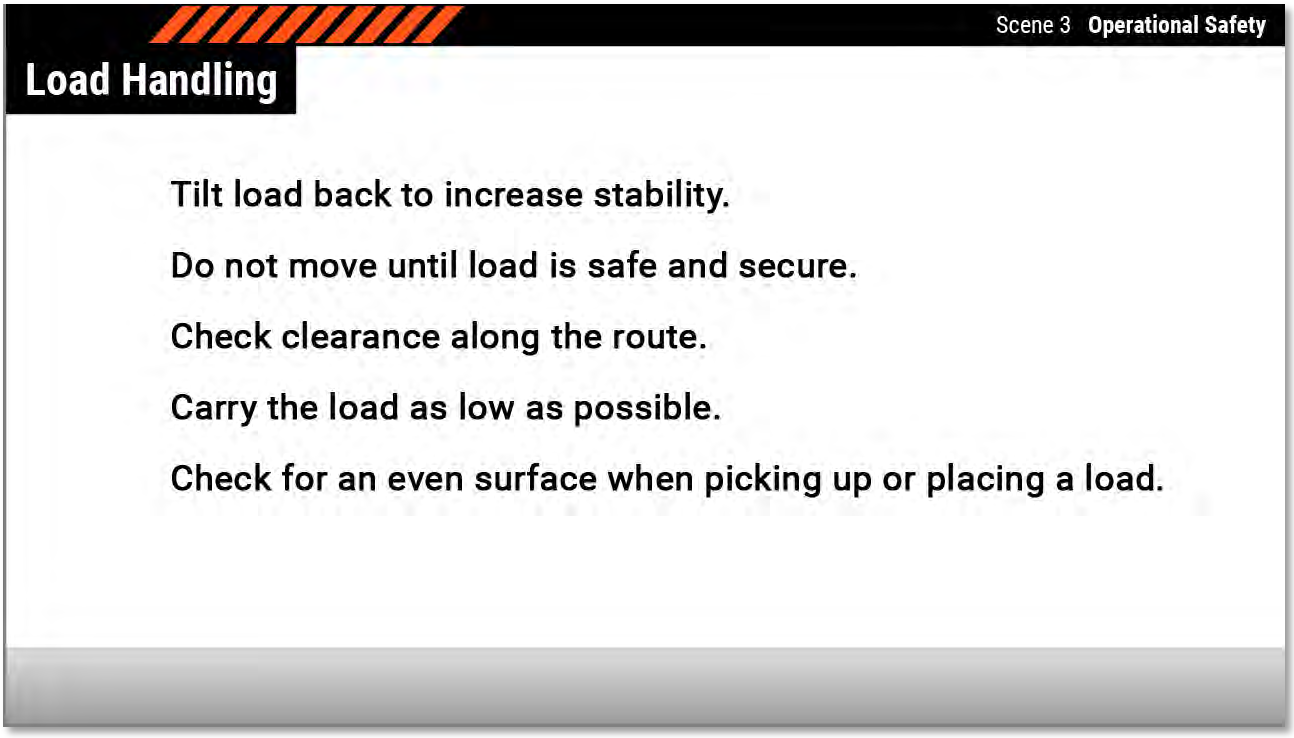
Narration:
Workers: Do not assume that the forklift operator can see you. Try to make eye contact. Remember, forklifts are heavy, and a sudden stop can cause it to tip forward or the load to fall. If you're working as a spotter, point out dangers like traffic and road obstructions including hoses, cords, and scraps of wood.

Slide 98 - Load Handling 1



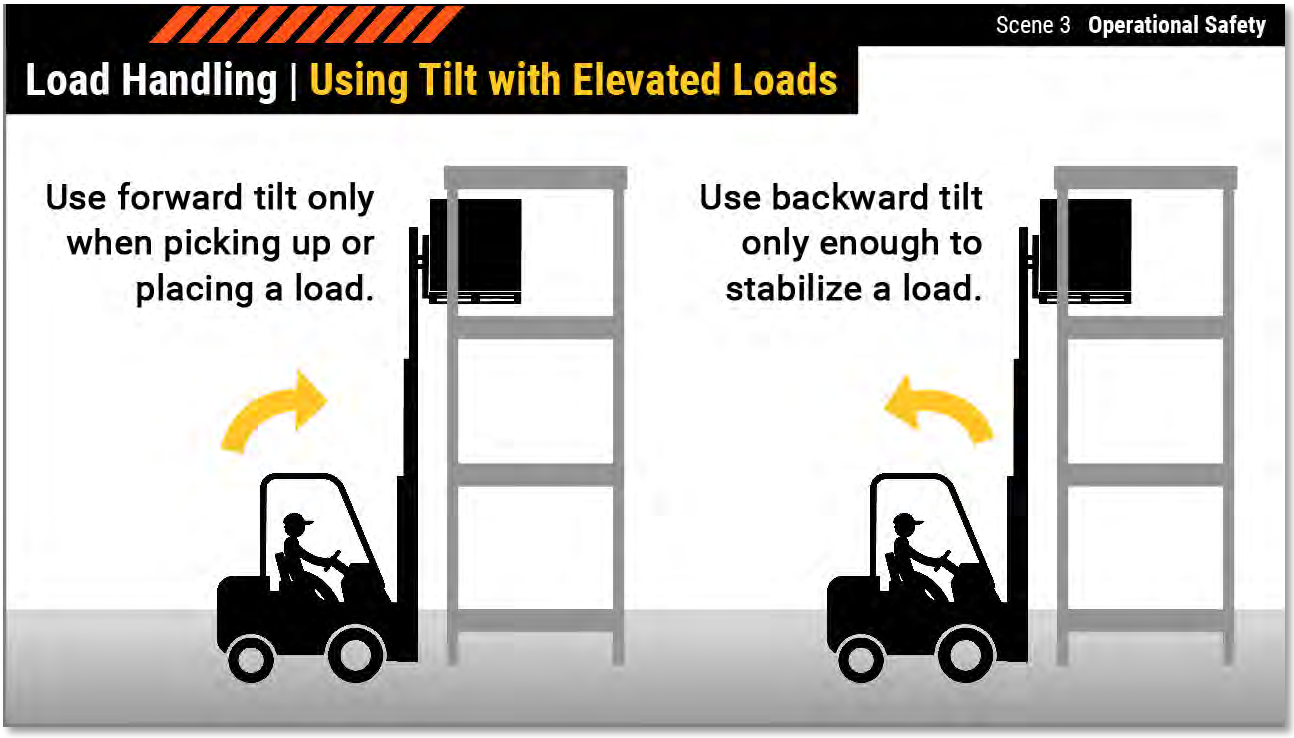
Narration:
Here are some general ways operators can prevent load-handling hazards like falling loads, tip-overs, and crushing injuries. Do not load a forklift in excess of its rated capacity. Do not raise or lower the forks unless the forklift is stopped and the brake is set. Be sure to place the forks under the load as far as possible. The load should be up against the face of the forks. The forks must be at least two-thirds the length of the load. If they are not, a different forklift or attachment must be used. Do not push a load with the forks. This is called “bulldozing” and should never be done.

Slide 99 - Load Handling 2



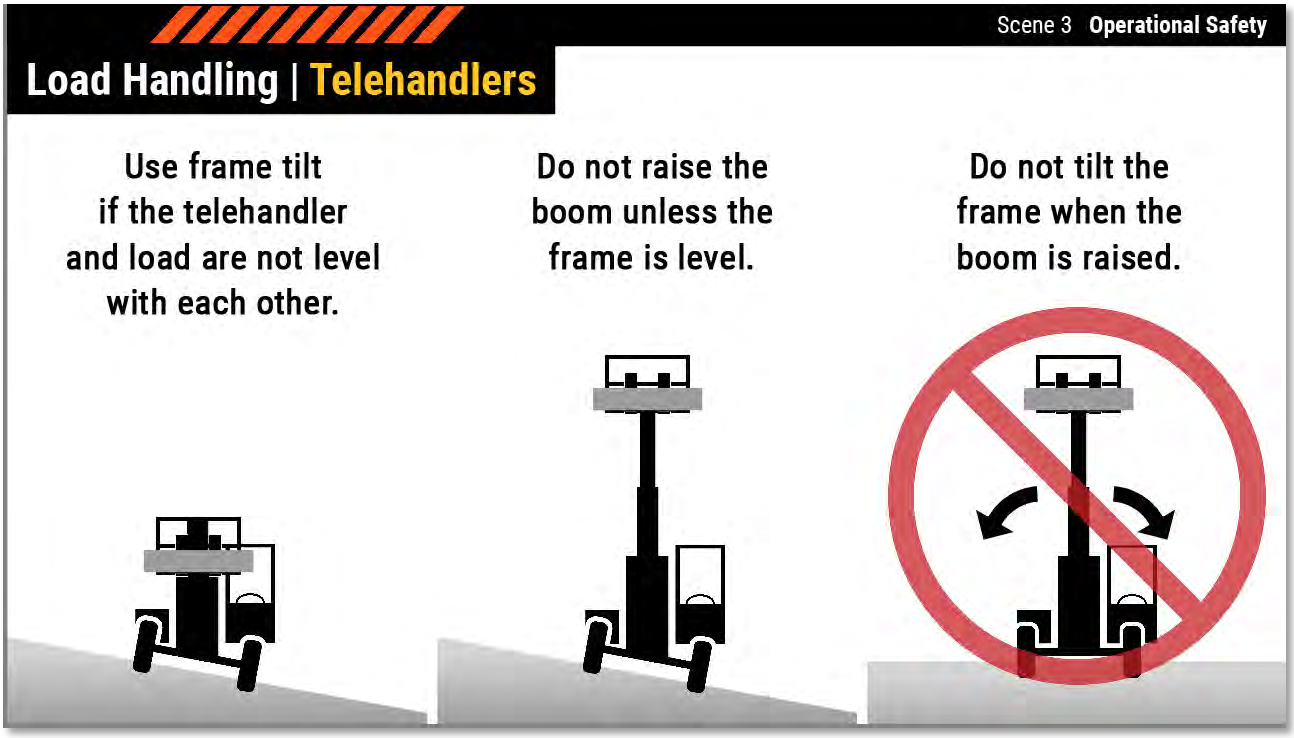
Narration:
Tilt the load back to increase stability. Do not move the vehicle until the load is safe and secure on the forks. Check the route for sufficient clearance for both the forklift and the load. Carry the load as low as possible. And, when inserting or removing forks, check that the forklift is on an even surface. Bumps or potholes can cause the forks to inadvertently hit the pallet or load.

Slide 100 - Using Tilt with Elevated Loads



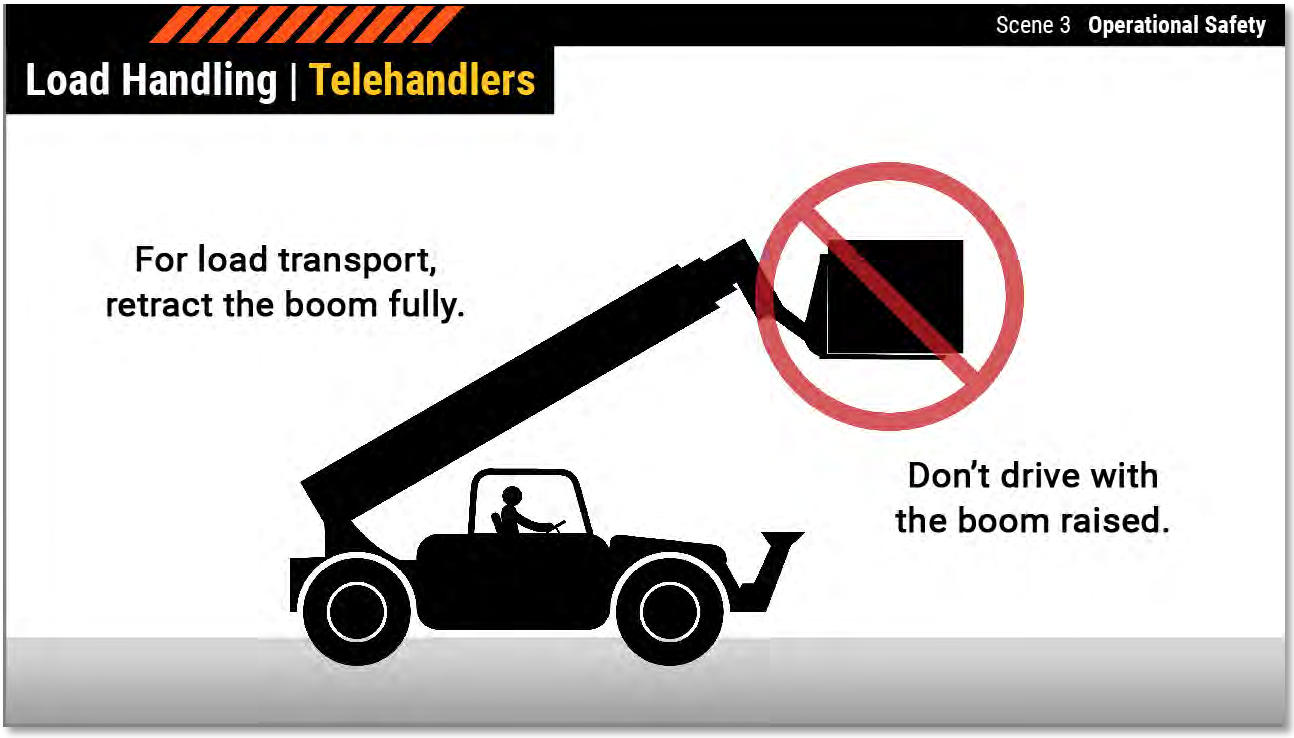
Narration:
While backward tilt is recommended for stability when transporting a load, using tilt when a load is elevated can result in a falling load or a tip-over. When a load is elevated, use forward tilt only when picking up or placing the load, and use backward tilt only enough to stabilize the load. Do not let anyone stand under or near an elevated load.

Slide 101 - Telehandlers 1



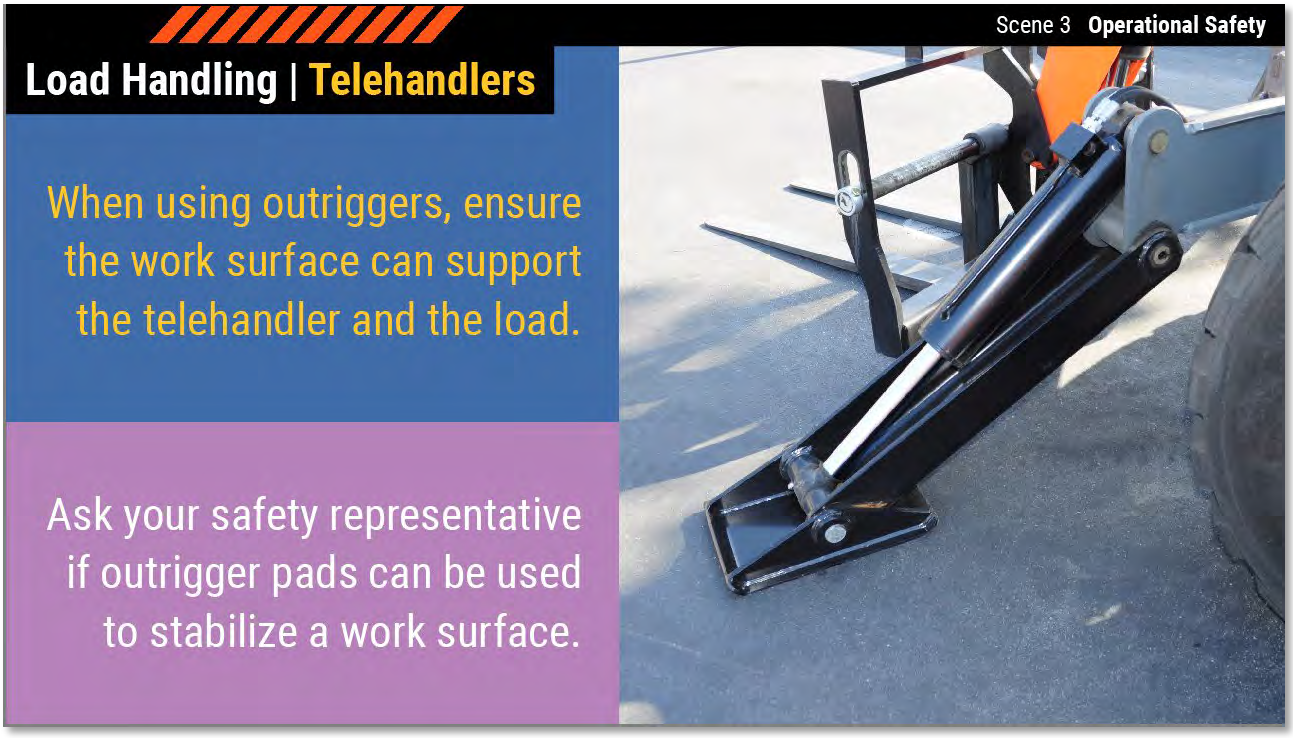
Narration:
Before picking up a load with a telehandler, check that the telehandler and the load are level with each other. If not, use the frame tilt feature. Do not raise the boom unless the frame is level. And, do not tilt the frame when the boom is raised.

Slide 102 - Telehandlers 2



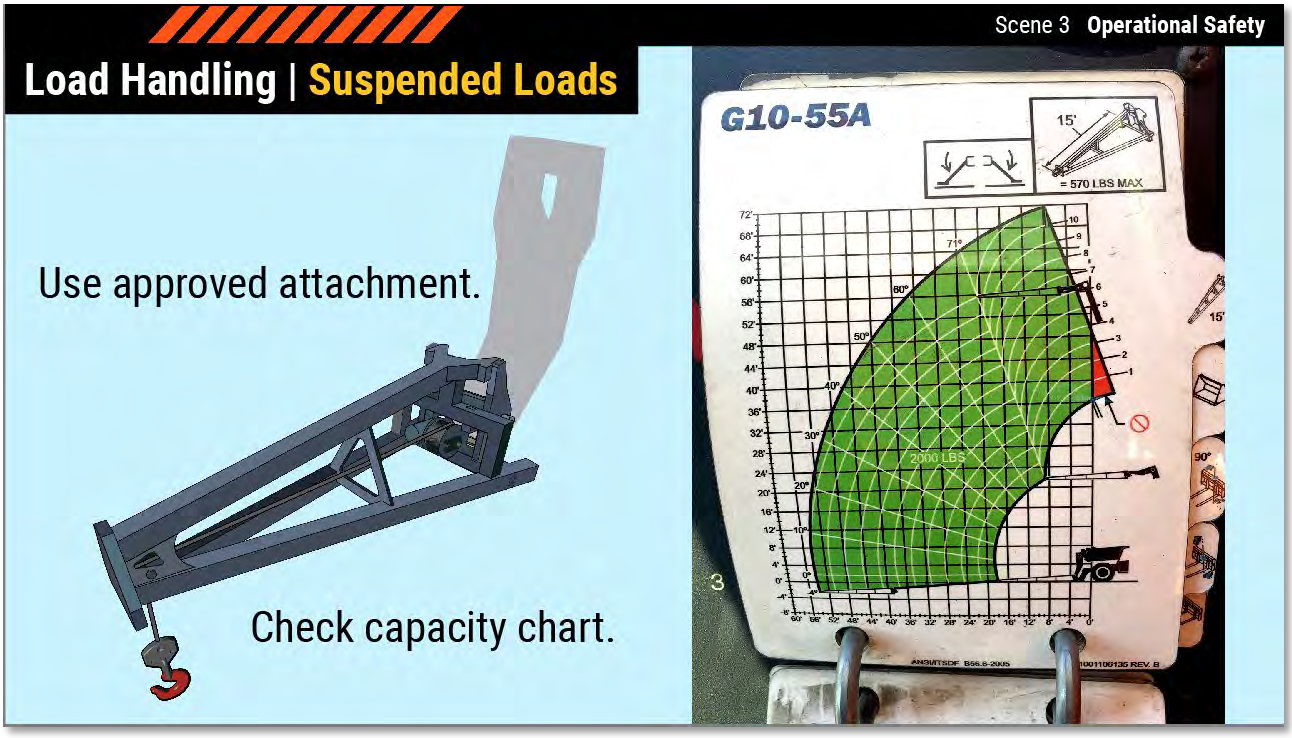
Narration:
For load transport, retract the boom fully, and don't drive with the boom raised.

Slide 103 - Telehandlers 3



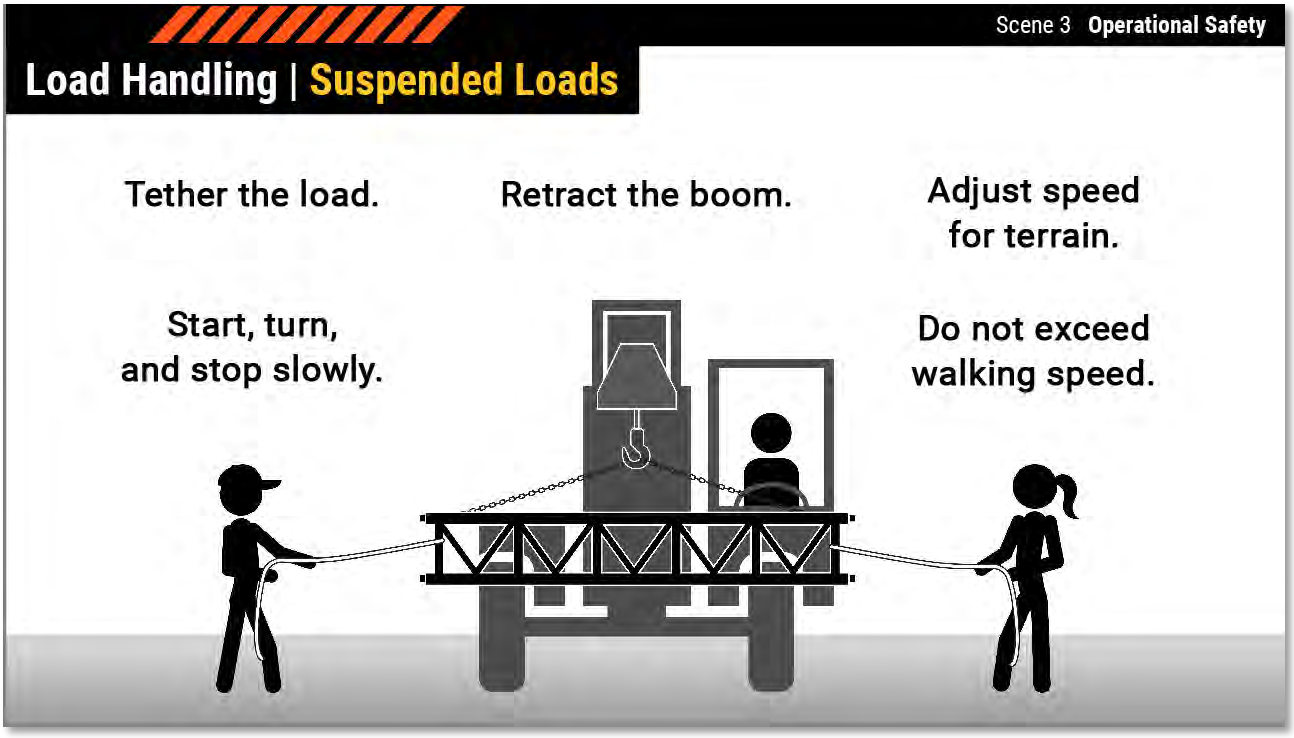
Narration:
When using outriggers, ensure the work surface can support the telehandler and the load. Soft surfaces may shift or sink under the weight of the vehicle, resulting in a tip-over. Check with your safety representative to see if outrigger pads, made of plastic, plywood, or steel, can be used to stabilize a work surface.

Slide 104 - Suspended Loads 1



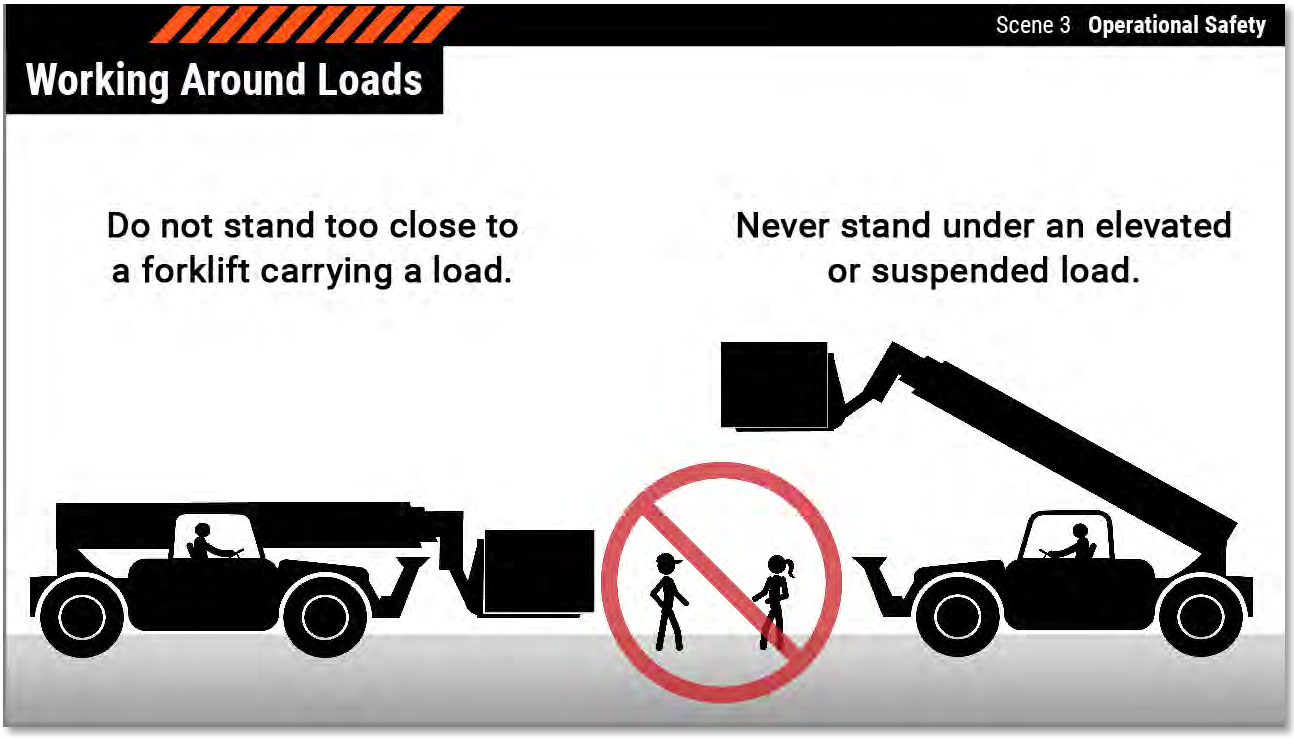
Narration:
A suspended load requires additional precautionary measures. Use only attachments approved for suspended loads, such as a truss boom or lifting hook. Check the capacity chart for proper lifting guidelines.

Slide 105 - Suspended Loads 2



Narration:
Tether the load to restrict movement. If the load swings, the CCG could be pushed outside the boundaries of the stability triangle. If you're using a telehandler, retract the boom. Inspect the conditions of the terrain, and adjust your speed accordingly. Any bump or pothole could cause the load to swing. Start, turn, and stop slowly. Do not exceed walking speed. And, do not let anyone stand under a suspended load.

Slide 106 - Working Around Loads 1

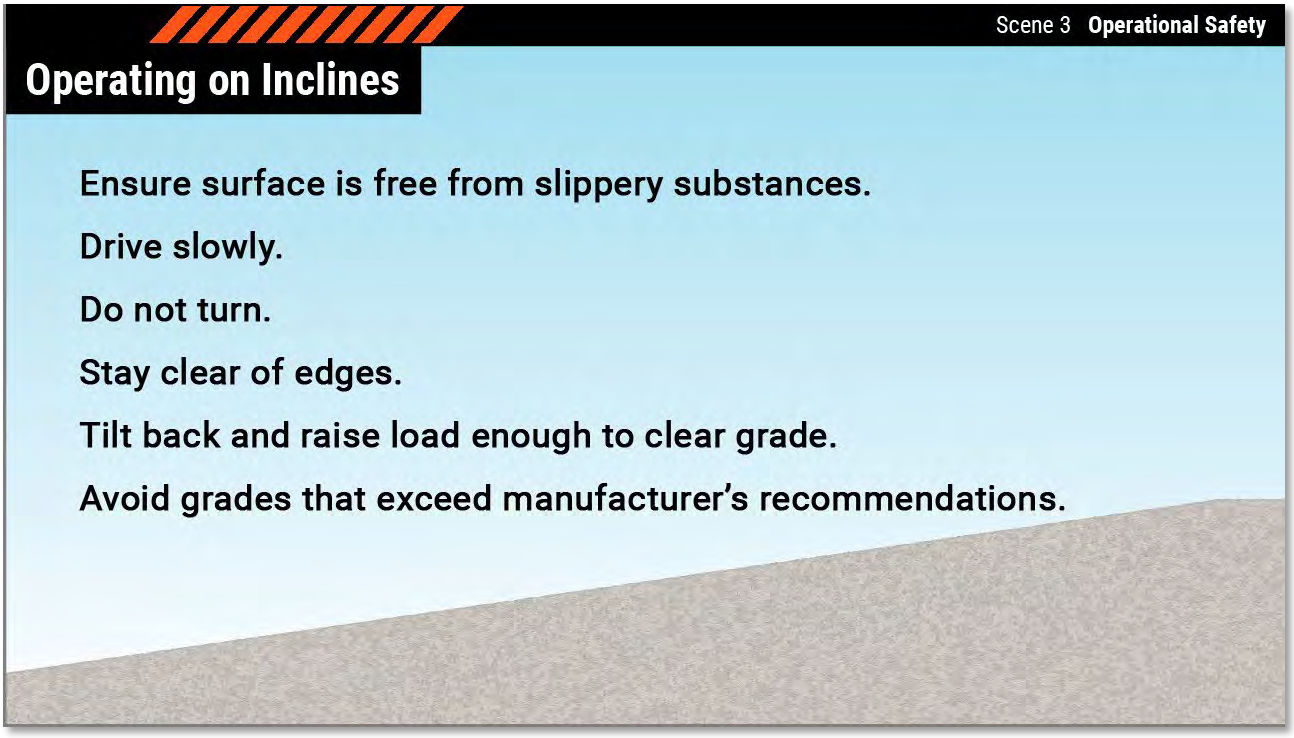


Narration:
Workers: Do not stand too close to a forklift carrying a load, and never stand under an elevated or a suspended load.

Slide 107 - Working Around Loads 2

Narration:
When helping with a load, be in communication with the operator. When helping tether a suspended load, keep a safe distance from the load. And, never adjust any load with your hands. This can result in crushing injuries.

Slide 108 - Operating on Inclines

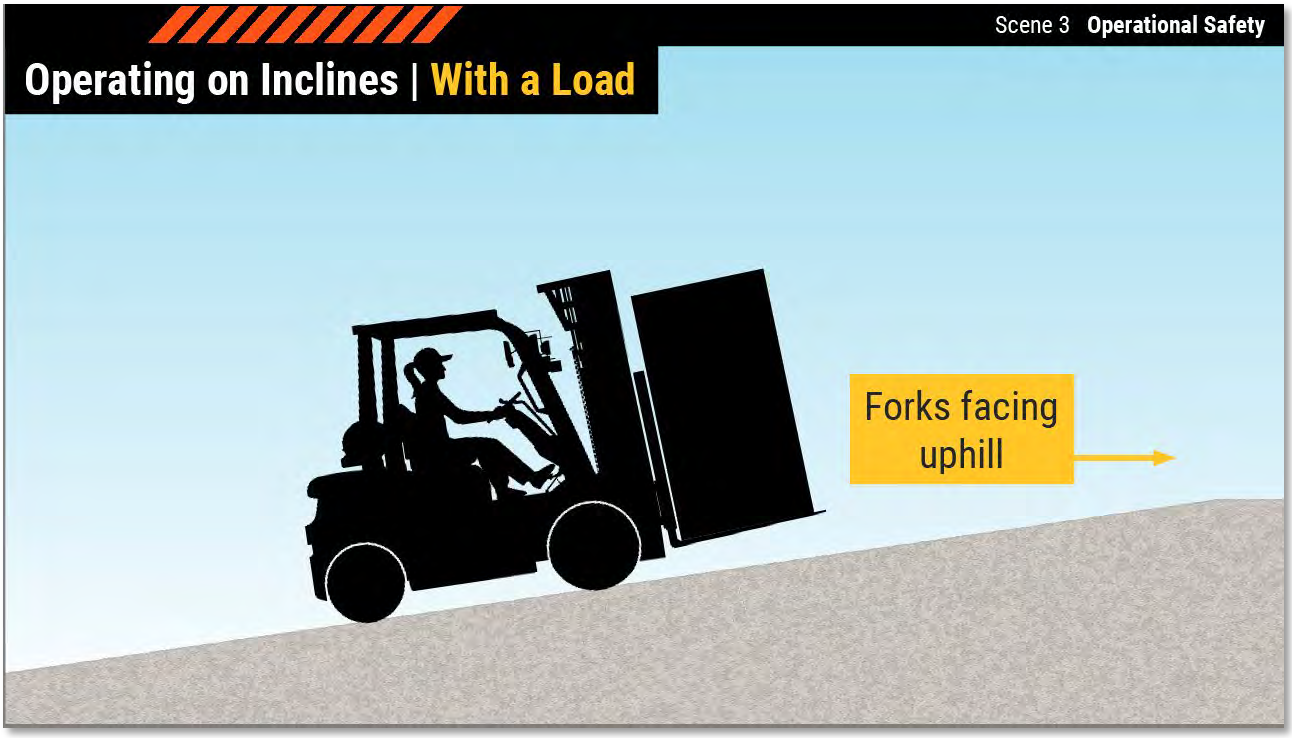


Narration:
When inclines are part of your work environment, there's a greater risk of falling loads and tip-overs. Before driving on an incline, make sure the driving surface is free from slippery substances like grease, sand, and gravel. Drive slowly. Do not turn while on an incline. Stay clear of edges. Tilt the load back and raise the forks only as much as is necessary to clear the grade. And, avoid grades that exceed the manufacturer's recommendations.

Slide 109 - Without a Load

Narration:
When traveling on an incline *without* a load, keep the forks on the downhill side of the vehicle. Otherwise, a rearward tip-over is possible. Drive forward when going downhill. Drive in reverse and look in the direction of travel when going uphill.

Slide 110 - With a Load

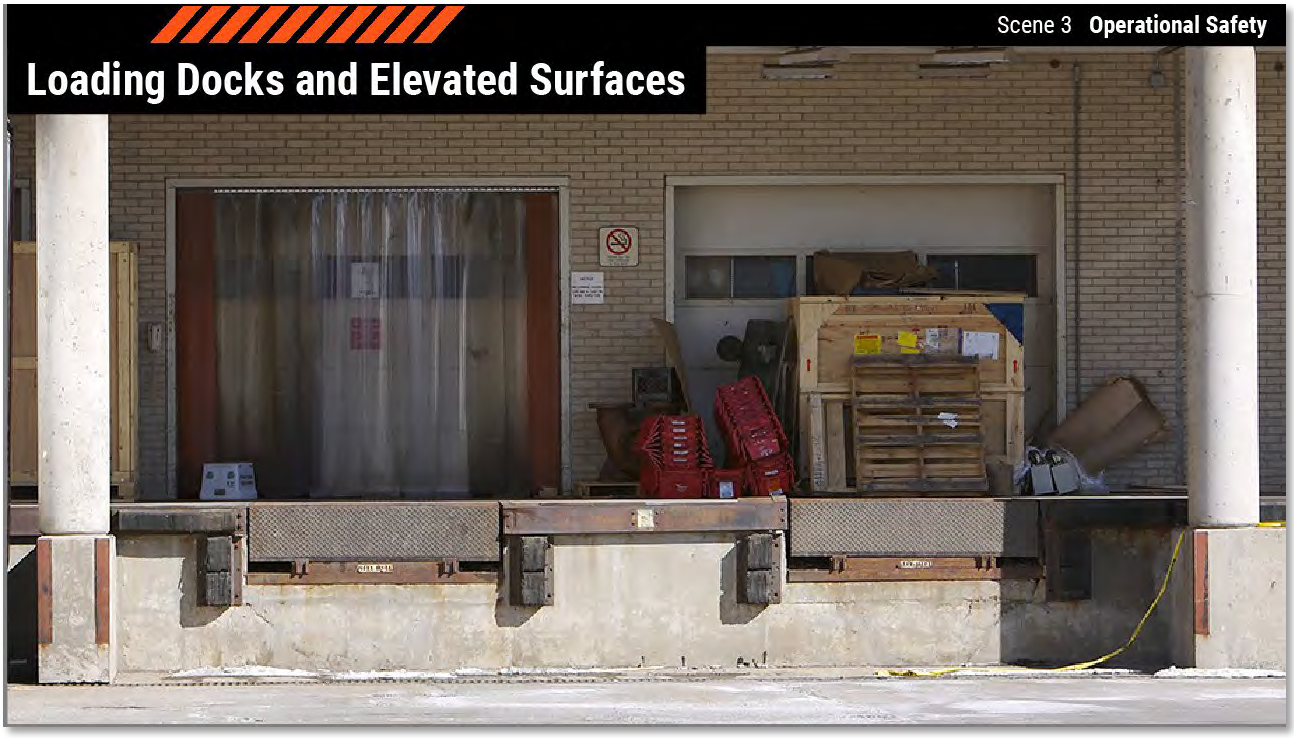


Narration:
When traveling on an incline *with* a load, keep the forks on the uphill side of the vehicle. Otherwise, the load may fall off the forks. Drive forward when going uphill. Use a spotter if the view is obstructed. Drive in reverse and look in the direction of travel when going downhill.

Slide 111 - With a Pallet Jack

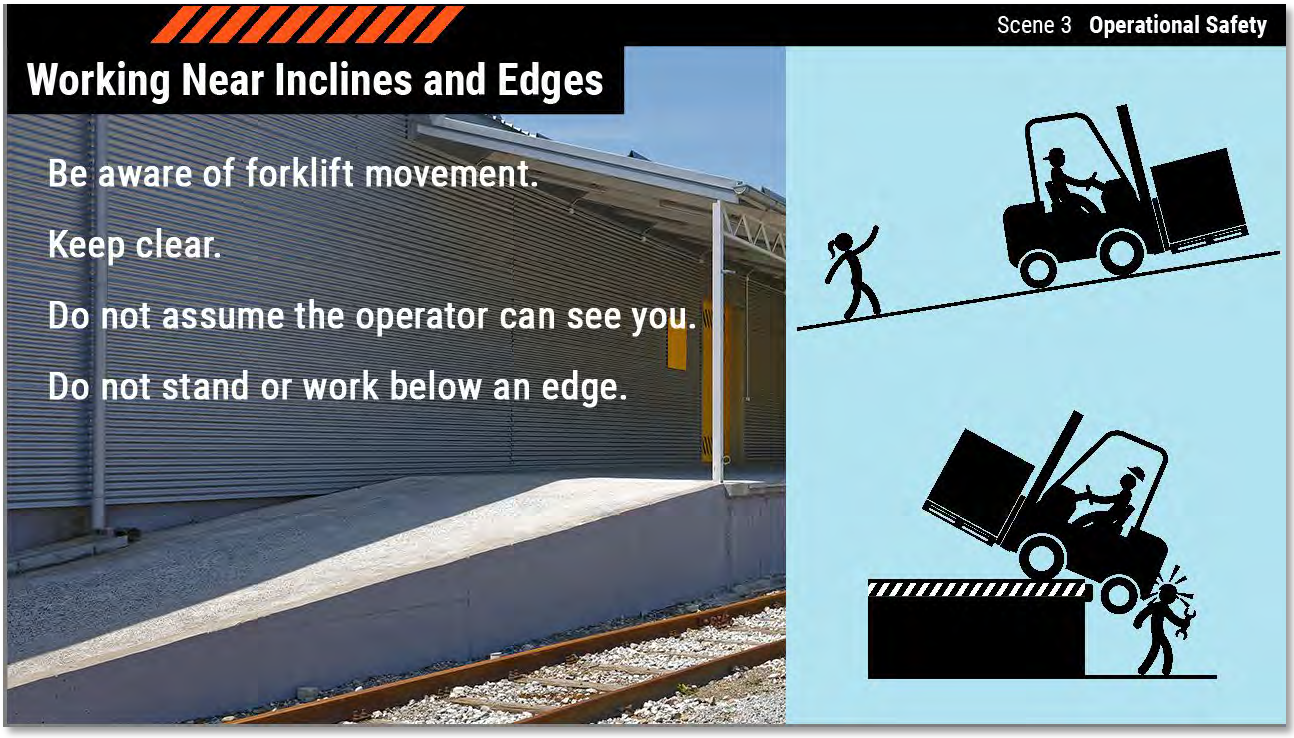
Narration:
To keep a motorized or hand pallet jack from rolling into you, keep the forks pointed downhill regardless of whether there is a load on the forks or not.

Slide 112 - Loading Docks and Elevated Surfaces



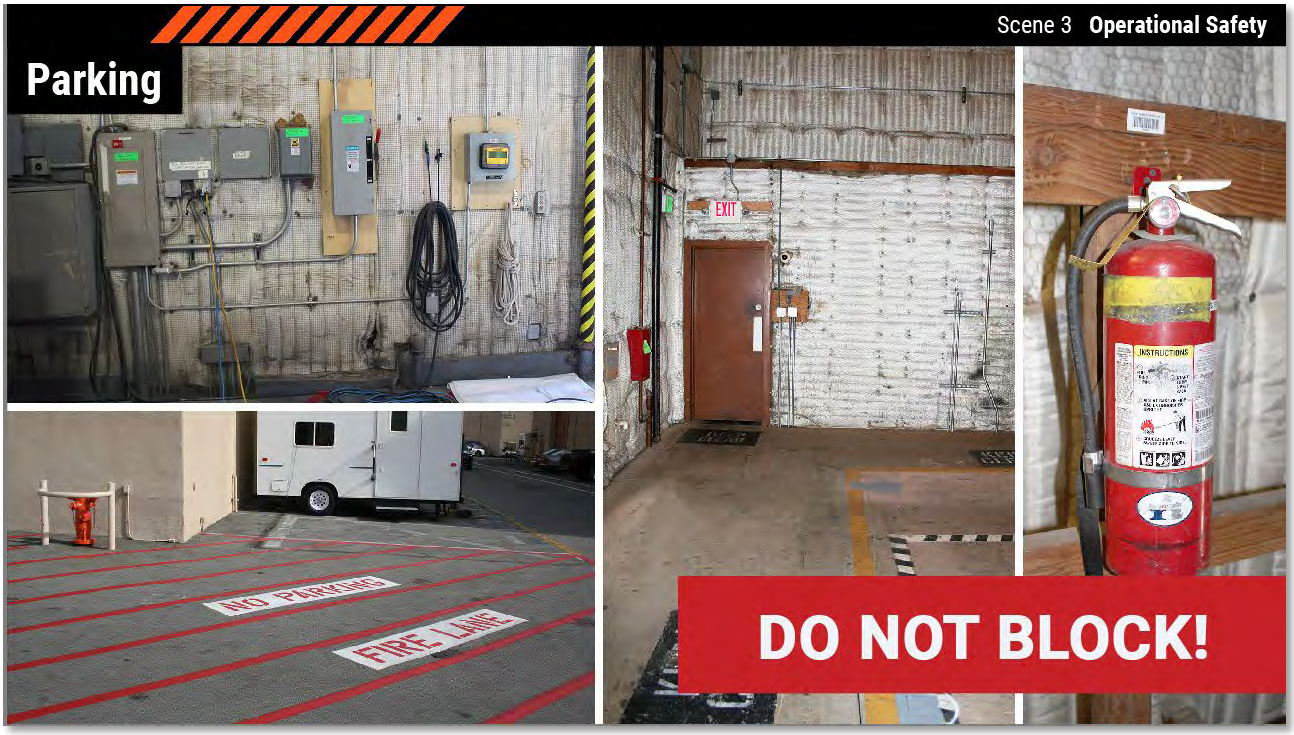
Narration:
When operating on a loading dock or another elevated driving surface, a major safety issue is driving off the edge. This type of tip-over can cause serious crushing injuries. Maintain a distance of at least one tire width from any edge. And, it is especially important on loading docks to be careful of the rear swing of the vehicle when turning.

Slide 113 - Working Near Inclines and Edges



Narration:
If you are working near a forklift on an incline or edge, be aware of the vehicle's movement and keep clear. Do not assume that the operator can see you. Also, do not stand or work below an edge where a forklift is in operation.

Slide 114 - Parking

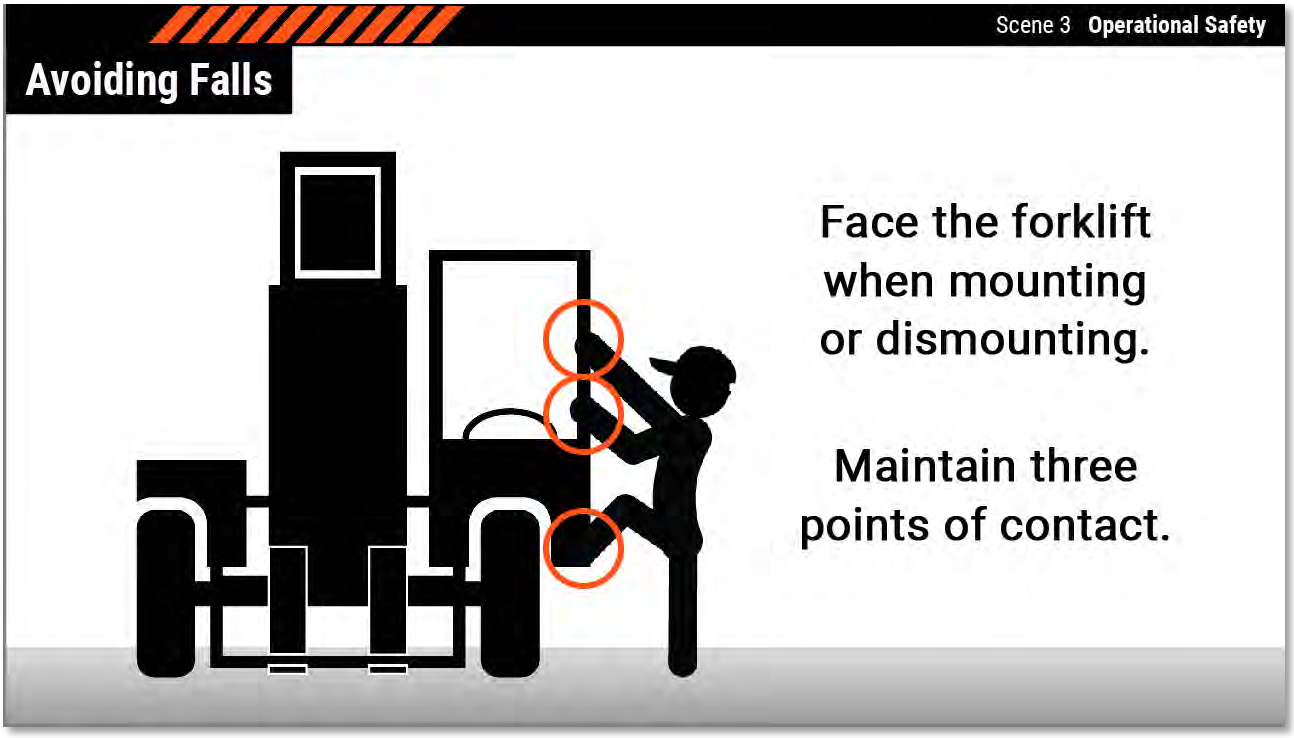


Narration:
Improper parking can cause collisions and crushing injuries. Park only in designated areas and away from heat sources. Do not park closer than eight and a half feet from the centerline of railroad tracks. Employers and railroad companies may require a greater distance, so be sure to follow their guidelines. Improper parking can also impede firefighting efforts. Never block electrical controls, exits, fire lanes, fire extinguishers, or other emergency equipment.

Slide 115 - Parked Forklifts

Narration:
Parked forklifts can move unexpectedly, causing collisions and crushing injuries. Be aware of the parked forklifts around you. Do not sit against or next to a parked forklift or between a parked forklift and another object.

Slide 116 - Avoiding Falls 1



Narration:
A fall is another serious hazard for forklift operators and other workers. To avoid being injured when mounting or dismounting a forklift, face the vehicle and always maintain three points of contact.

Slide 117 - Avoiding Falls 2

Narration:
To keep your coworkers safe, DO NOT allow anyone to ride on the forklift or the forks, use only manufacturer-approved attachments to elevate workers to work positions, and ensure that any worker who is being lifted is wearing the required personal fall protection equipment (abbreviated as PFPE). We'll talk more about elevating workers in the next scene.

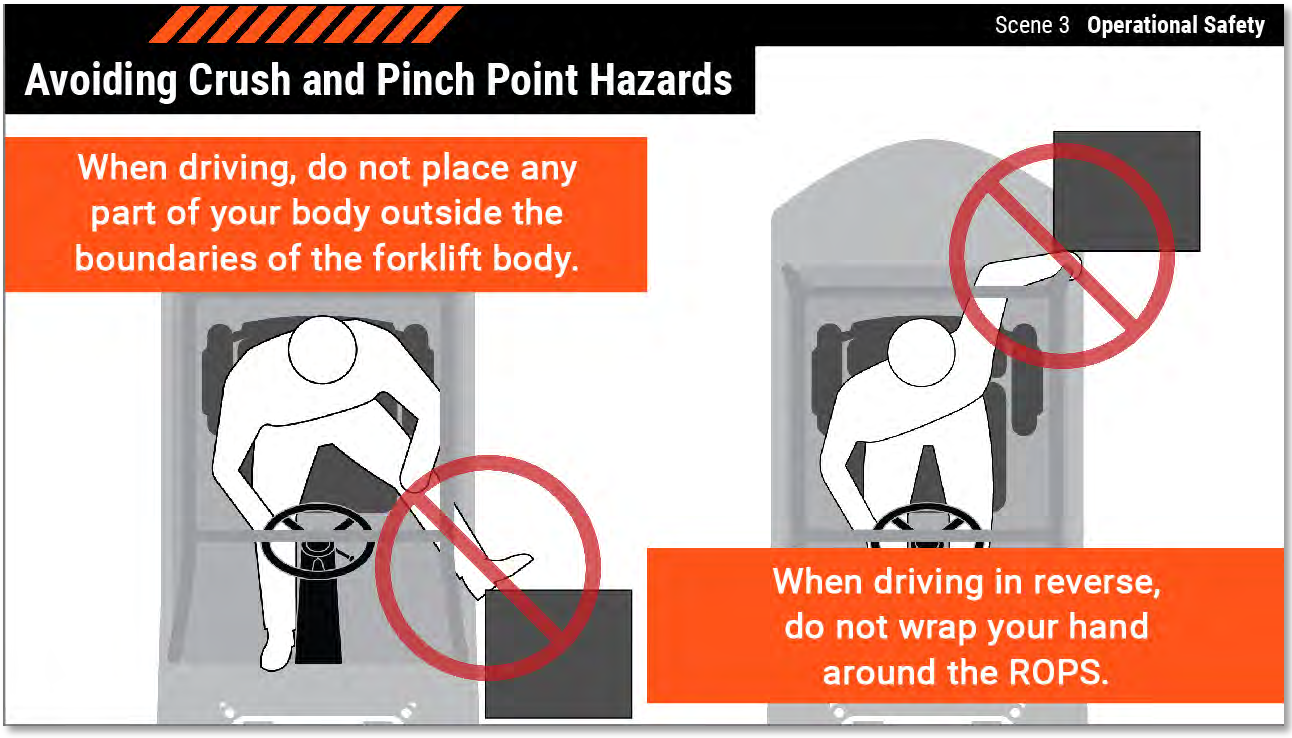
Slide 118 - Avoiding Crush and Pinch Point Hazards 1

Narration:
Crush and pinch point hazards are dangerous areas on or around a forklift where one's body or a body part could get caught, resulting in potentially serious injuries. Do not place any part of your body through the mast or mast chains, between the mast and cab, between a wheel and the forklift, or near any other moving parts of the vehicle. Wind has the potential to blow clothing and long hair into moving parts of the mast. Do not wear loose-fitting clothing or scarves and tie back long hair.

Slide 119 - Avoiding Crush and Pinch Point Hazards 2

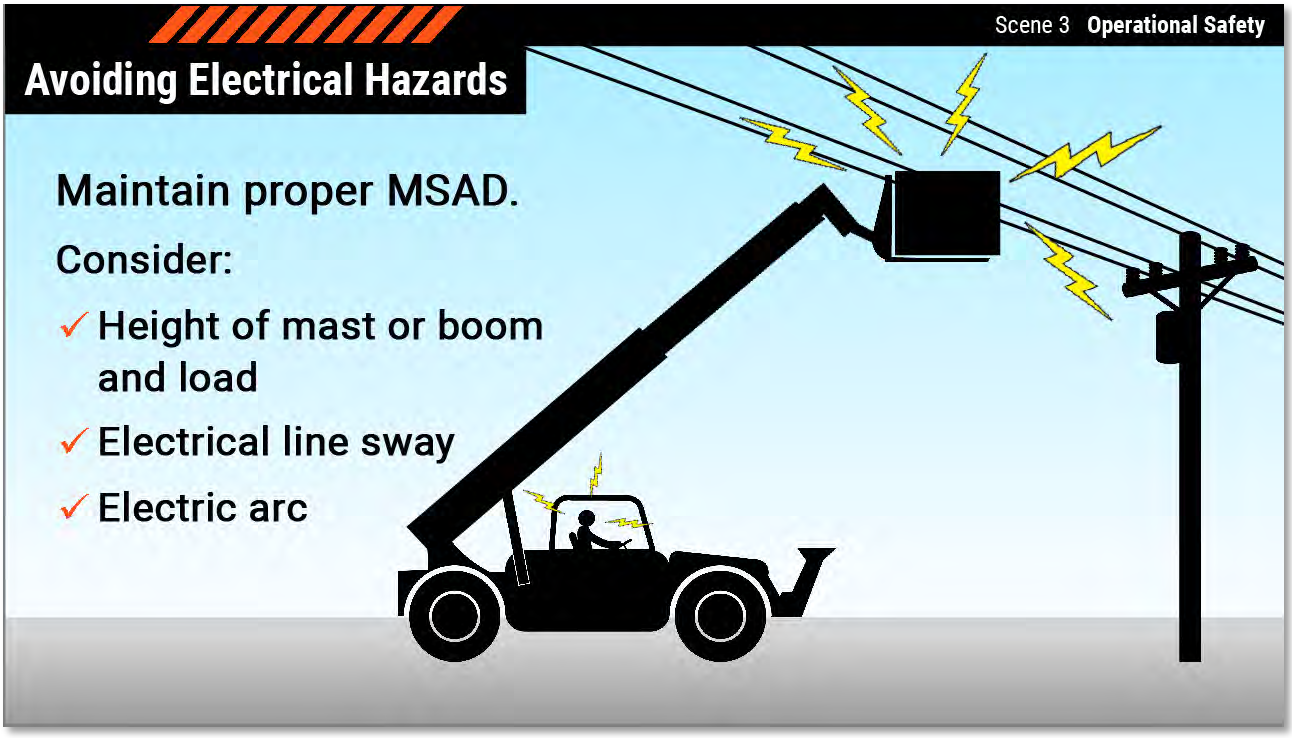
Narration:
Do not stand, pass, or work under raised forks. Although unlikely, in the event that the hydraulics fail, even empty forks can crash down hard. Do not adjust a load with your hands or try to stop a load from falling.

Slide 120 - Avoiding Crush and Pinch Point Hazards 3



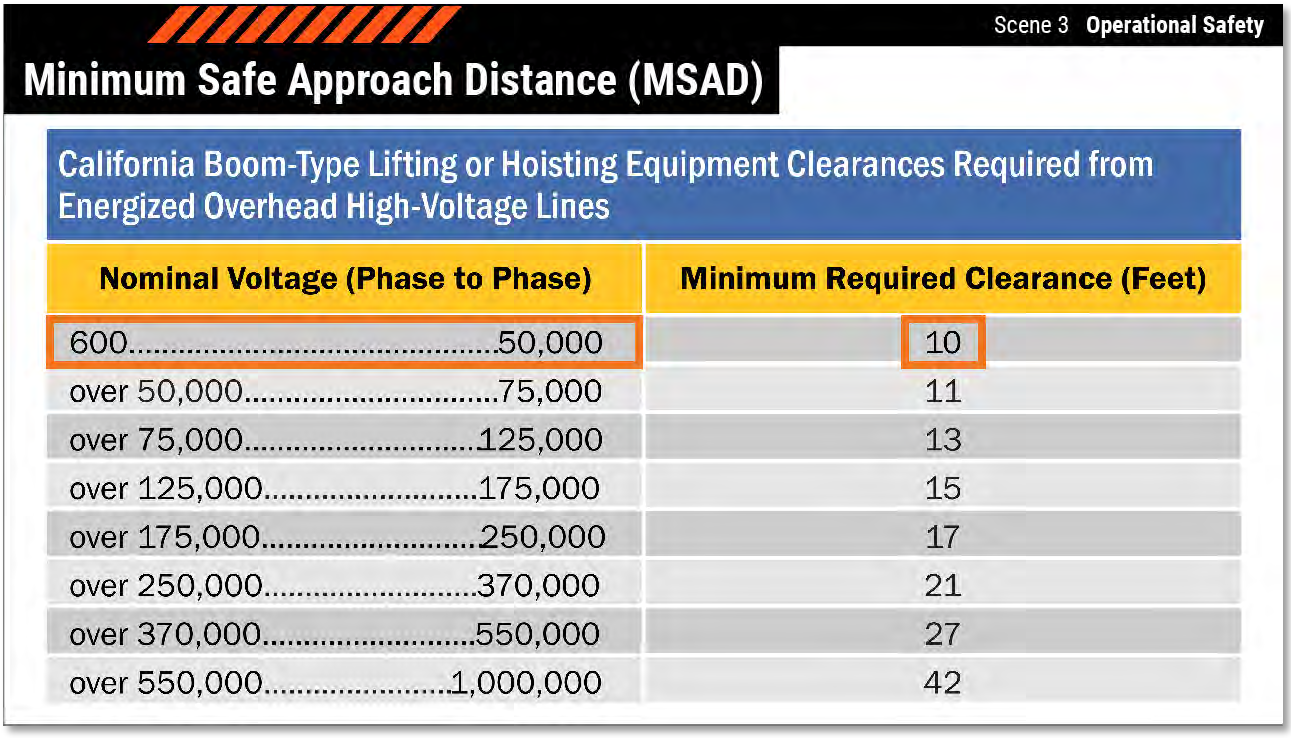
Narration:
Operators, watch your hands and feet. When driving, do not place any part of your body outside the boundaries of the forklift body. And, when driving in reverse, do not wrap your hand around the rollover protective structure.

Slide 121 - Avoiding Electrical Hazards



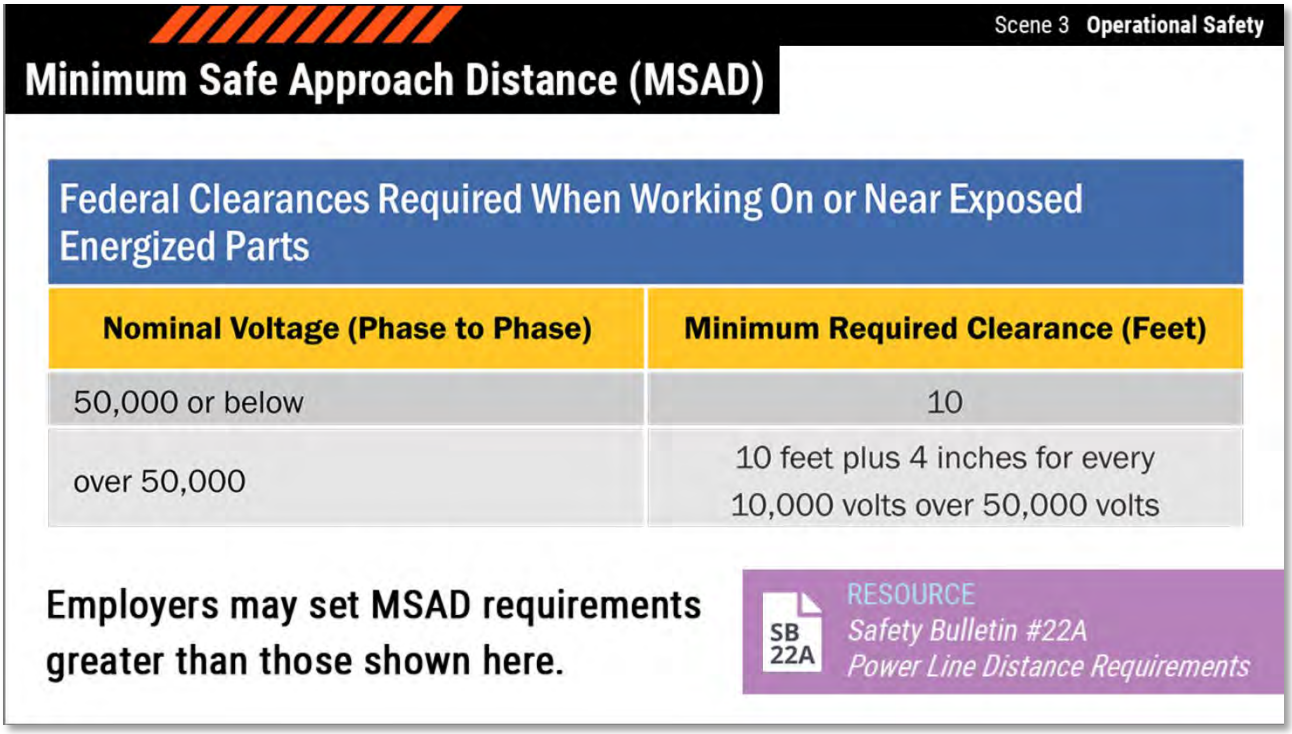
Narration:
Shock and electrocution are potential hazards when working outside. To avoid electrical hazards, maintain the proper minimum safe approach distance, or MSAD, from energized overhead lines. To determine a safe distance, take into account the maximum height of the mast or boom and the load being carried, electrical line sway, and electric arc, where electricity can jump from a line to another object. An energized line does not need to be touched to cause damage or injury.

Slide 122 - MSAD 1



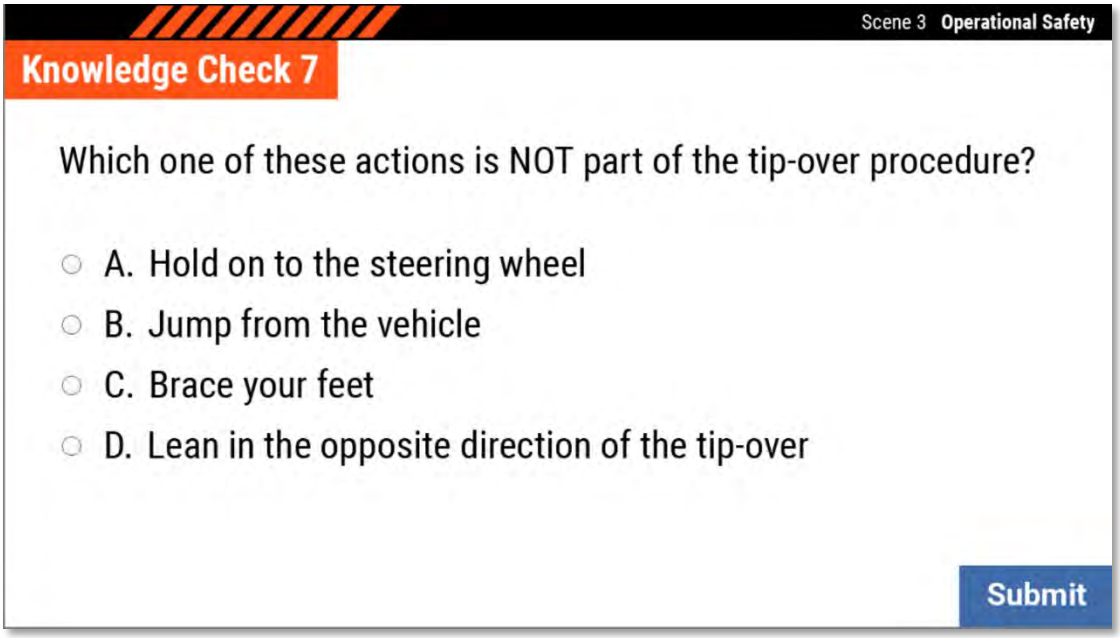
Narration:
This table shows the MSAD requirements when working under California regulations. If the voltage of a power line is between 600 and 50,000 volts, all parts of the forklift and the load must be at least 10 feet away. As the voltage increases, so does the required clearance distance.

Slide 123 - MSAD 2



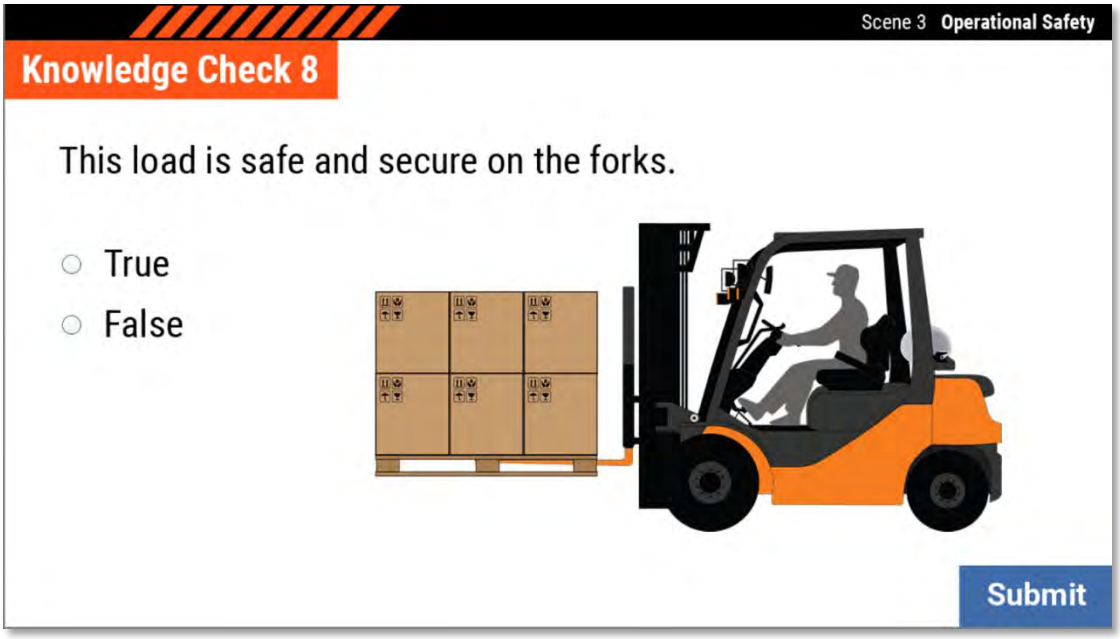
Narration:
Follow the federal MSAD requirements when working under federal regulations. Click here to view these tables in Safety Bulletin #22A, *Power Line Distance Requirements*. Be aware that your employer may set greater MSAD requirements than either state or federal OSHA. Let's wrap up this scene with some knowledge checks.

Slide 124 - Knowledge Check 7



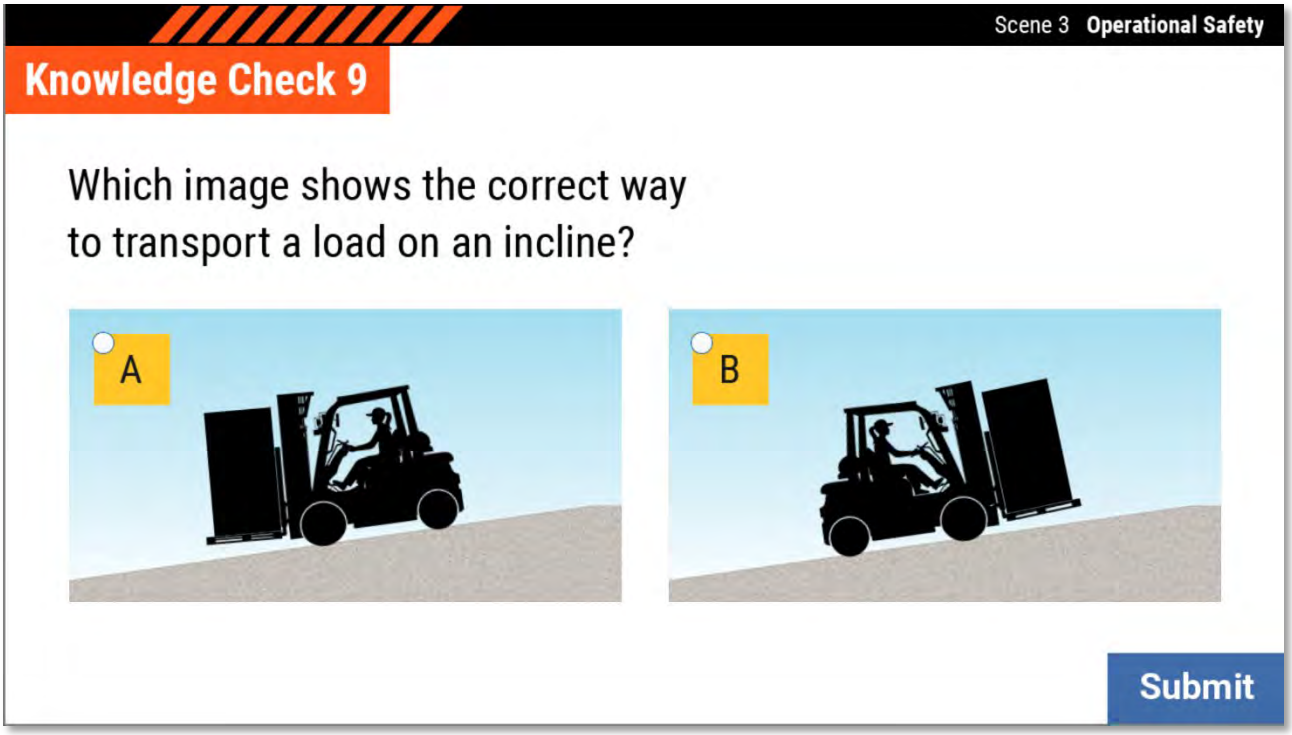
Question:
Which one of these actions is NOT part of the tip-over procedure?

Slide 125 - Knowledge Check 8



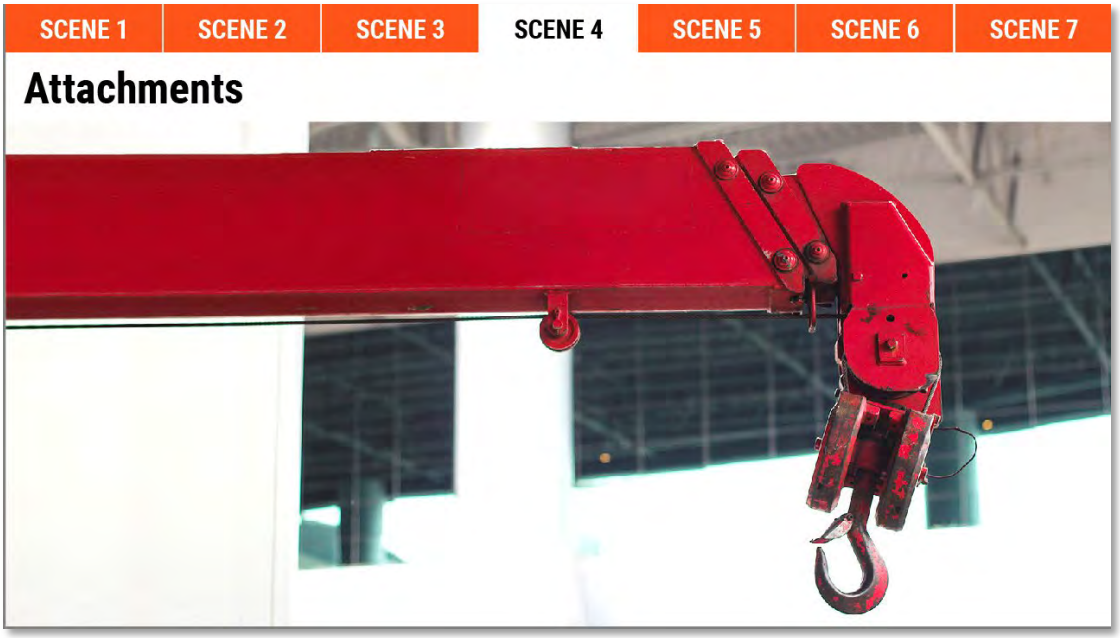
Question:
This load is safe and secure on the forks.

Slide 126 - Knowledge Check 9



Question:
Which image shows the correct way to transport a load on an incline?

Slide 127 - Attachments

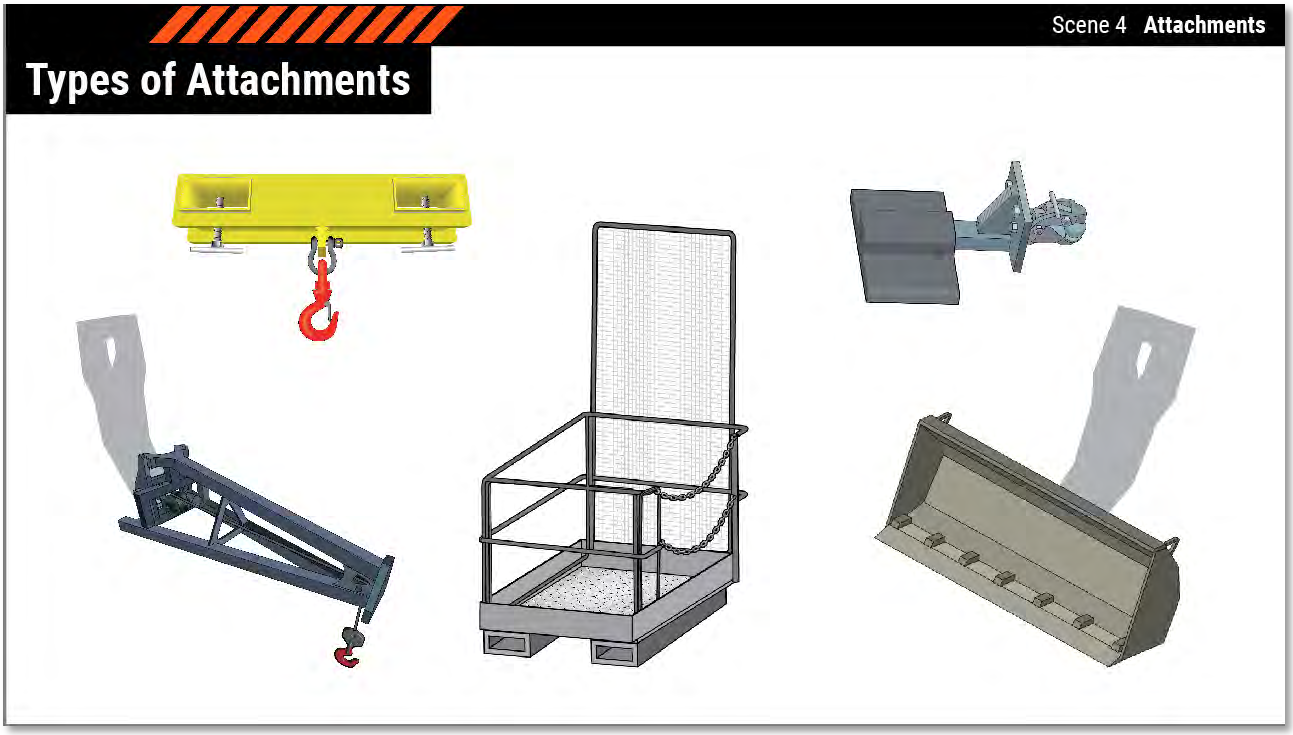


Narration:
Scene Four, Attachments.

Slide 128 - In This Scene

Narration:
In this scene, we'll discuss the impact of forklift attachments on capacity and stability, approved attachments, modifications to attachments, and precautions to follow when changing attachments.

Slide 129 - Types of Attachments

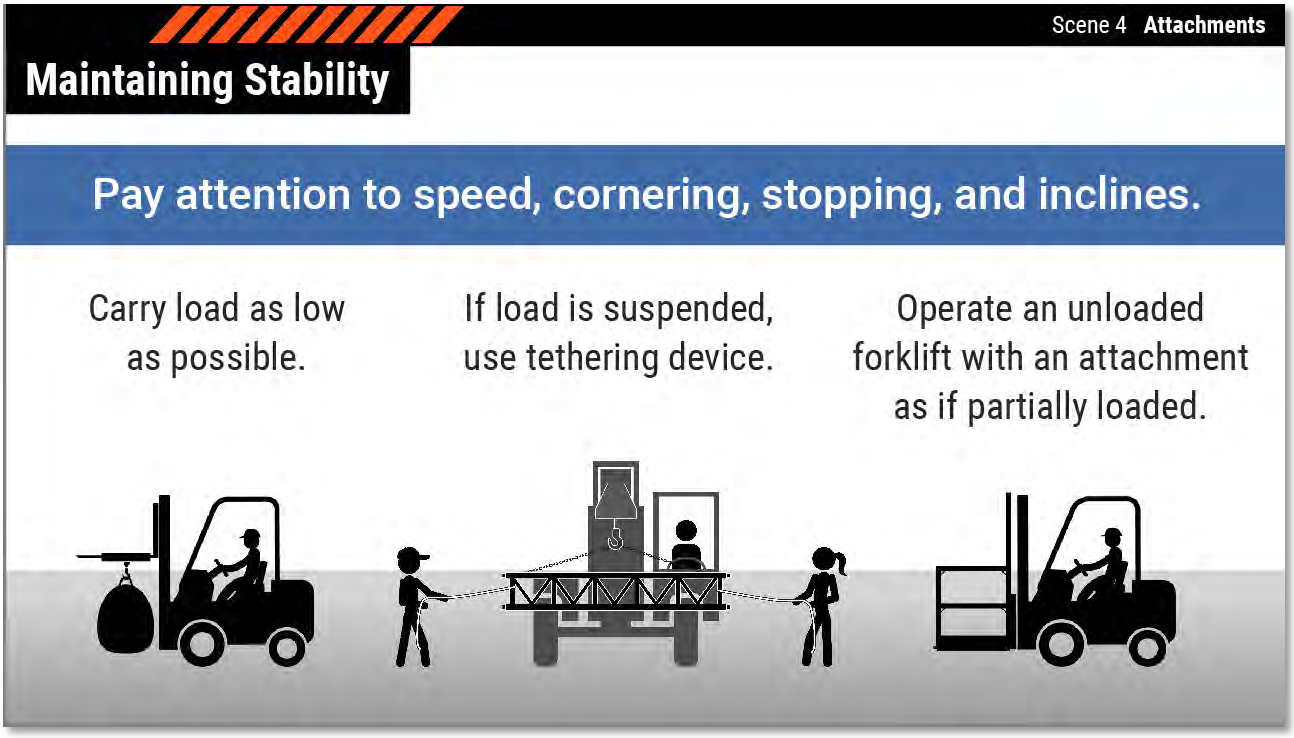


Narration:
Attachments are job-specific tools designed to extend the capabilities of forklifts. They allow forklifts to tow trailers, hoist props, lift personnel, carry and dump loose debris, and more. Attachments are affixed to a vehicle's forks, carriage, mast, or boom. Some examples are: the multiple-load pallet handler, the fork-mounted ball hitch, the material bucket, the truss boom, the fork-mounted personnel platform, and the boom-attached personnel platform.

Slide 130 - Capacity and Stability

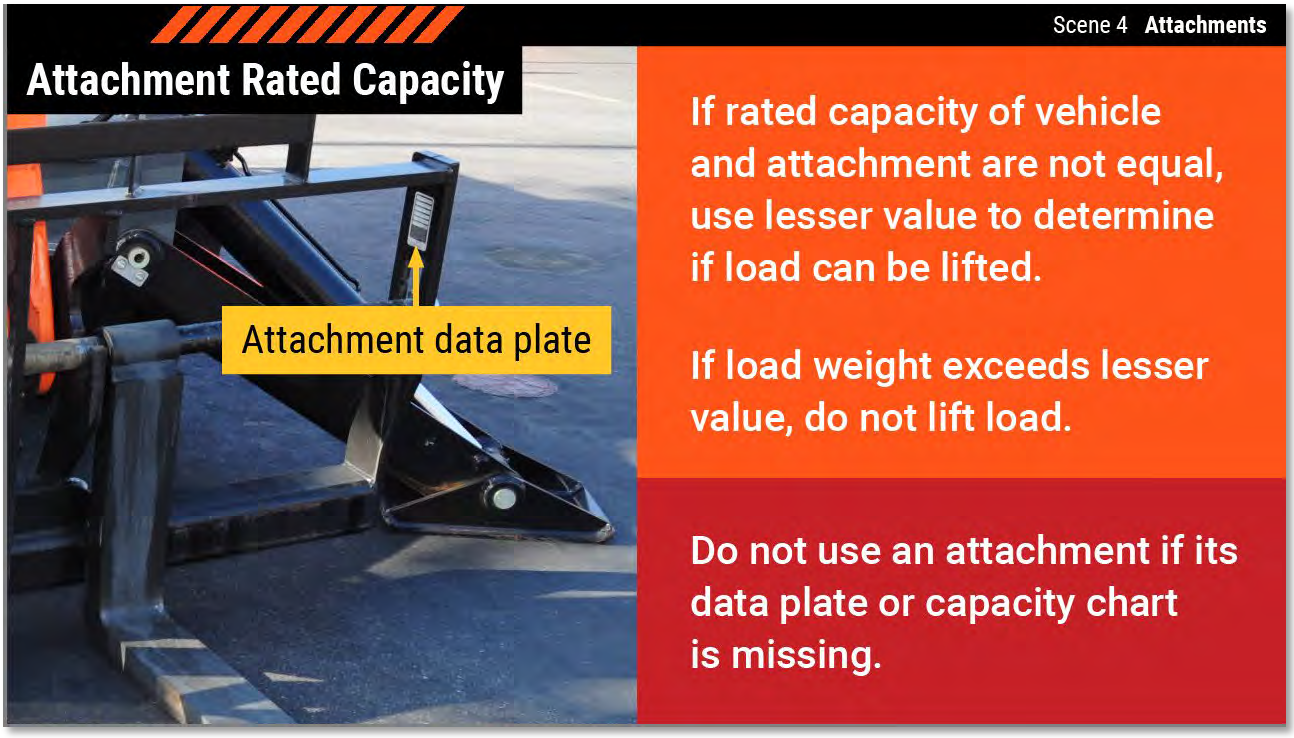
Narration:
Forklift operators must be trained on how to use each type of attachment. The weight and type of attachment may reduce capacity and make the vehicle less stable, increasing the chance of a tip-over.

Slide 131 - Maintaining Stability



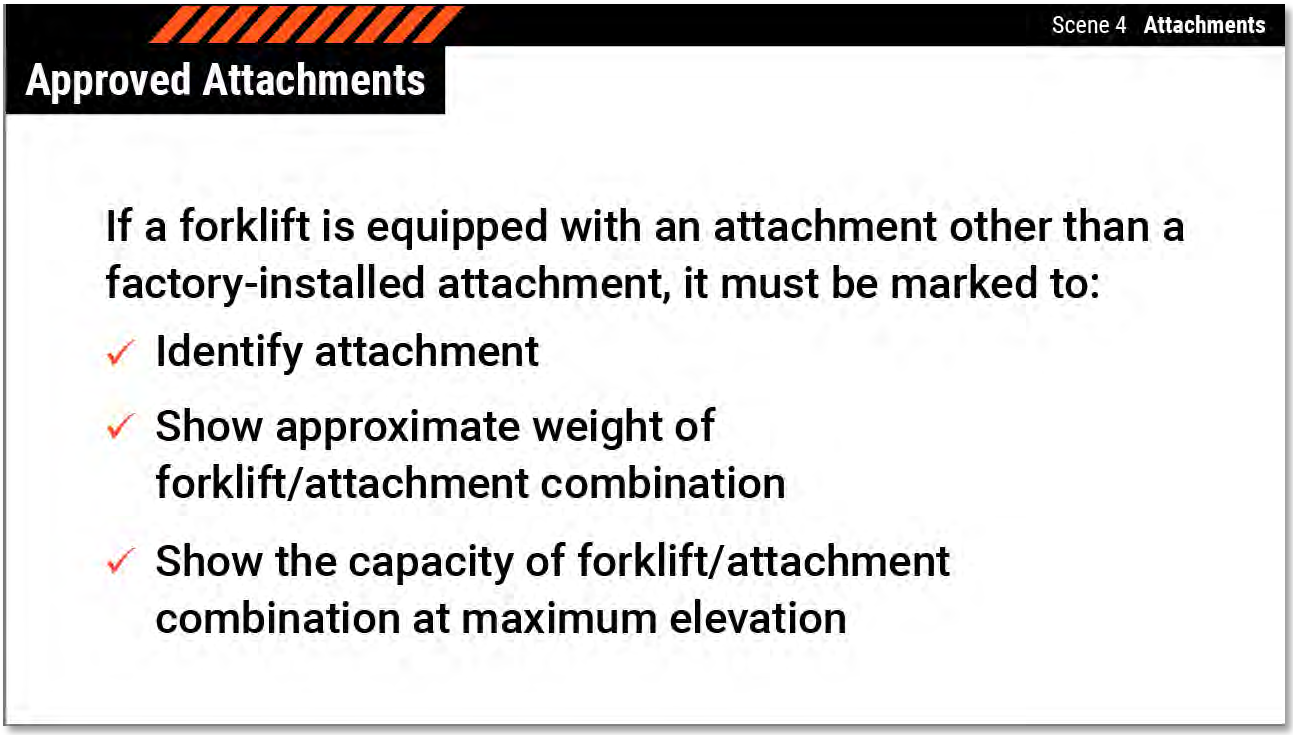
Narration:
To help maintain stability, operate a forklift with an attachment with heightened attention to speed, cornering, stopping, and inclines; carry the load as low as possible; and if the attachment suspends the load, use a tethering device to restrict sway. Even if there is no load, a forklift with an attachment must be operated as if partially loaded.

Slide 132 - Attachment Rated Capacity



Narration:
Each attachment has its own rated capacity, listed in the attachment manual and on a data plate mounted to the attachment itself. If the rated capacity of the vehicle and the rated capacity of the attachment are not equal, use the lesser value to determine if a load can be lifted. If the load weight exceeds the lesser value, do not lift the load. Do not use an attachment if its data plate or capacity chart is missing.

Slide 133 - Approved Attachments



Narration:
Use only manufacturer-approved attachments and ensure that they are properly secured to the forks, carriage, mast, or boom. Even an approved attachment can cause harm if not properly secured. If a forklift is equipped with an attachment other than a factory-installed attachment, it must be marked to identify the attachment and show the approximate weight of the forklift/attachment combination and the capacity of the forklift/attachment combination at maximum elevation.

Slide 134 - Tow Attachments

Narration:
A commonly used attachment in our industry is the hitch-type attachment used to move small trailers and generators into place. These towing attachments require the driver to drive in reverse, looking in the direction of travel.

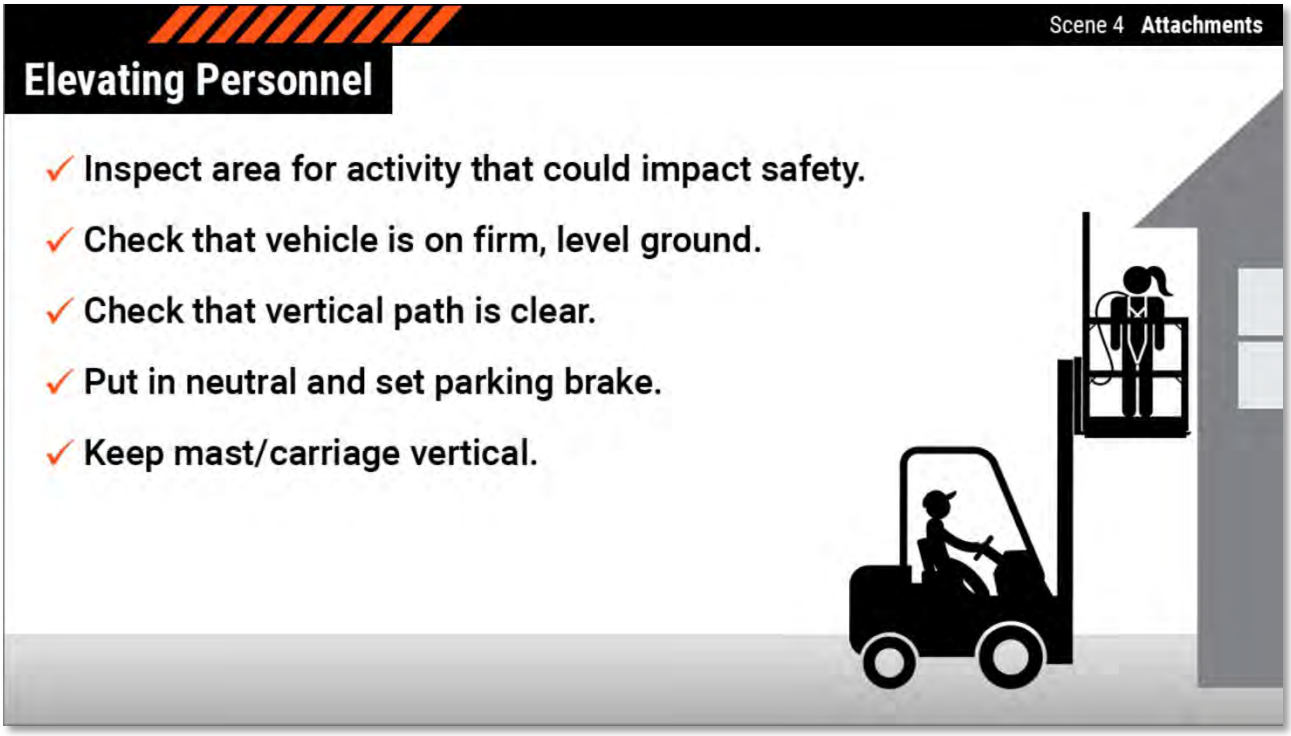
Slide 135 - Elevating Personnel 1

Narration:
A personnel platform approved by the manufacturer can be used to lift workers to work positions if there is no other practical option available, such as a scissor lift or boom lift, the operator's manual does not prohibit it, the operator is familiar with safety instructions and is properly trained in its use, and it is securely attached. When elevating workers, the forklift operator's first priority is the safety of the worker being lifted.

Slide 136 - Elevating Personnel 2

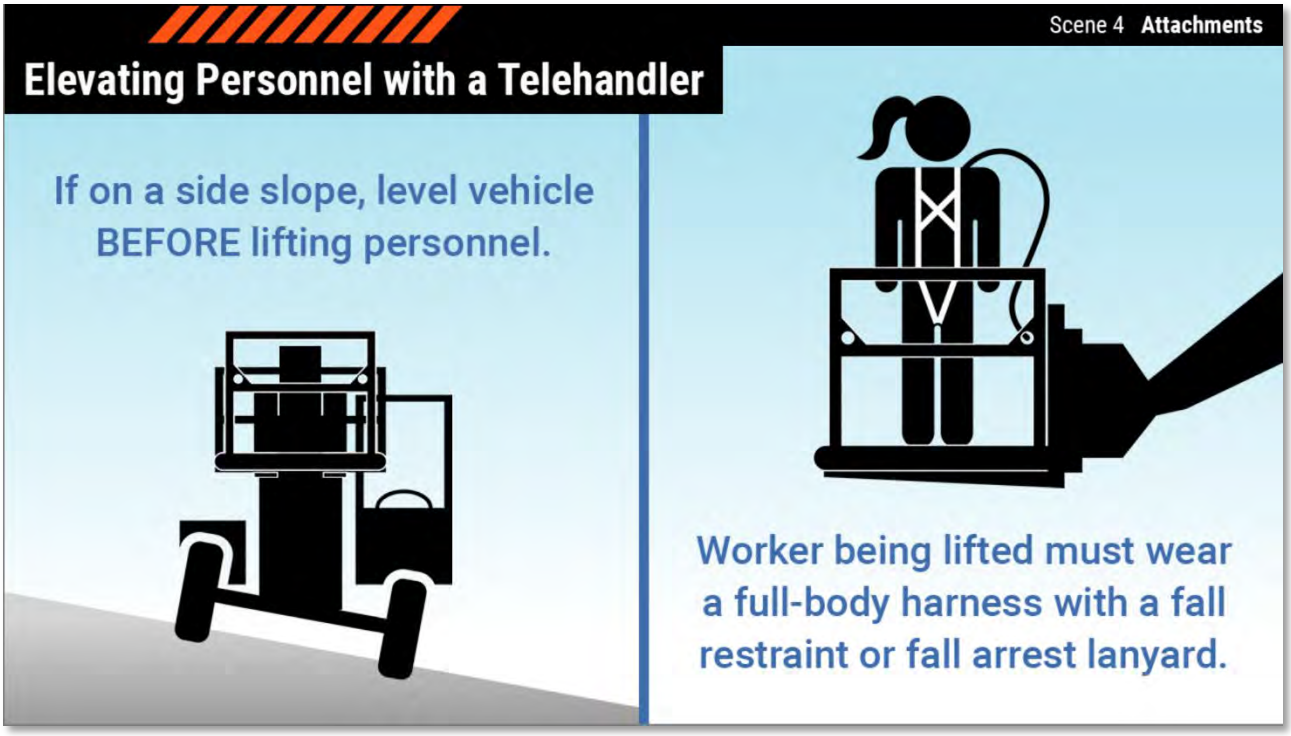
Narration:
Keep in mind that a pallet is not an approved attachment and should never be used to elevate workers.

Slide 137 - Elevating Personnel 3



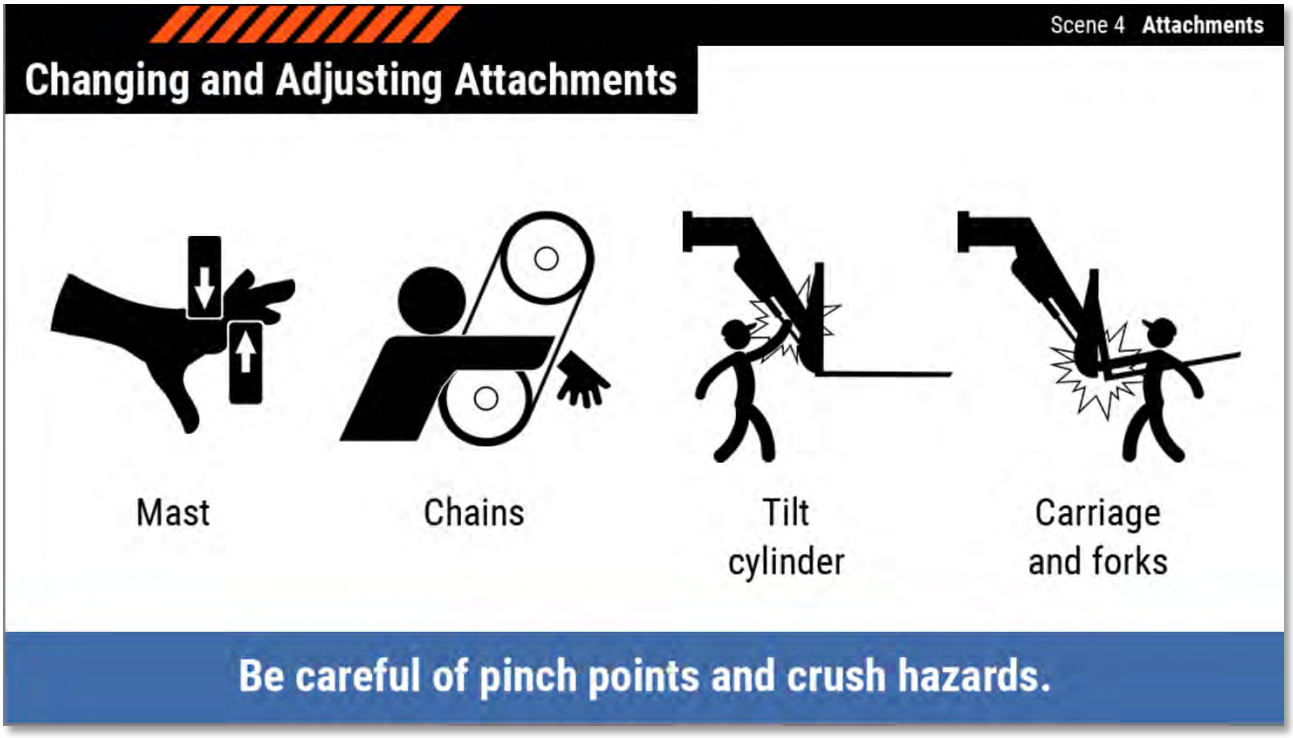
Narration:
Inspect the area to ensure there is no moving equipment, personnel, or other activity that could impact the safety of the lifting/lowering procedure. Check that the vehicle is on firm, level ground and the path of the personnel platform is clear of vertical hazards, such as roof eaves and power lines. Put the directional lever in neutral, and set the parking brake. Keep the mast or carriage in a vertical position. Never tilt the mast or carriage when elevating workers. Lift and lower smoothly and with caution. Maintain visual contact with the platform when raising or lowering it. Stay seated at the controls while anyone is on the elevated platform. And never move the forklift with anyone on the platform, except for minor movements required for final positioning.

Slide 138 - Elevating Personnel 4



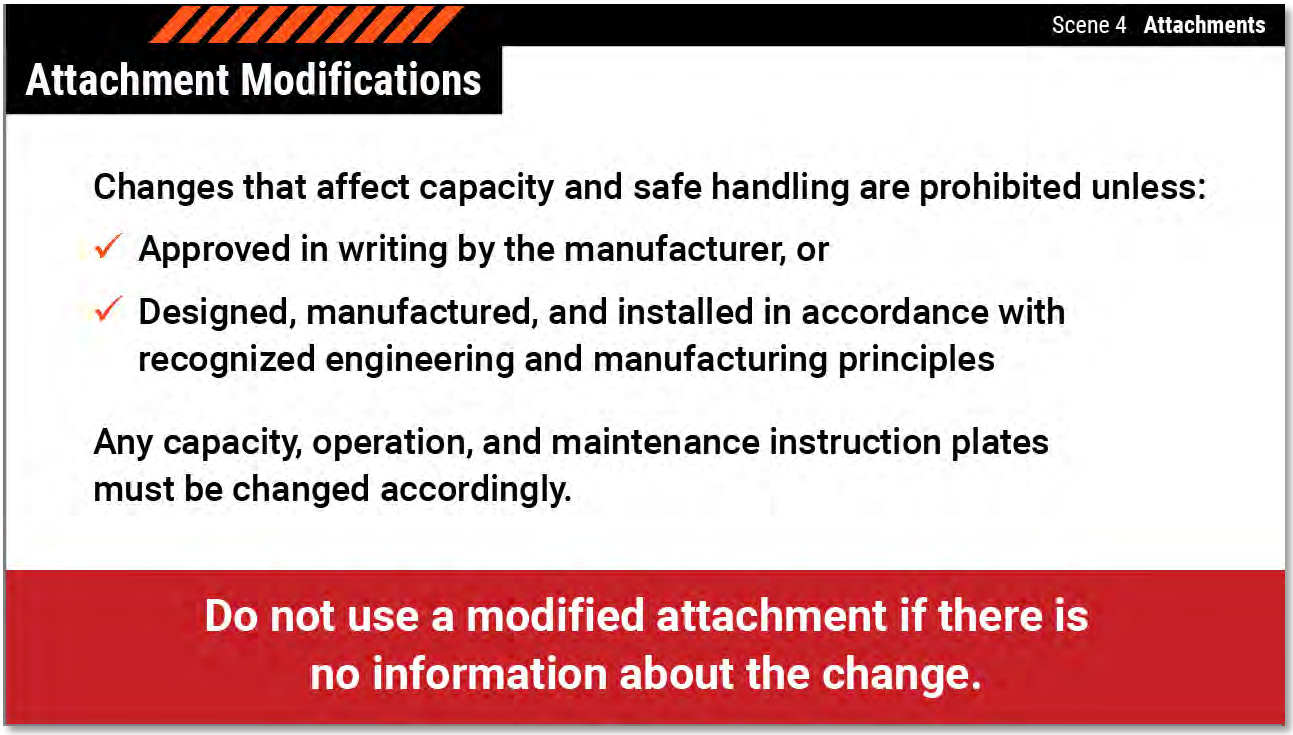
Narration:
When using a telehandler to elevate workers, ensure the outriggers are placed on a solid surface. If operating on a side slope, level the vehicle before lifting personnel. Each worker being lifted must wear the required PFPE--a full-body harness with a fall restraint or fall arrest lanyard of the appropriate length, connected to an authorized anchor point.

Slide 139 - Changing and Adjusting Attachments



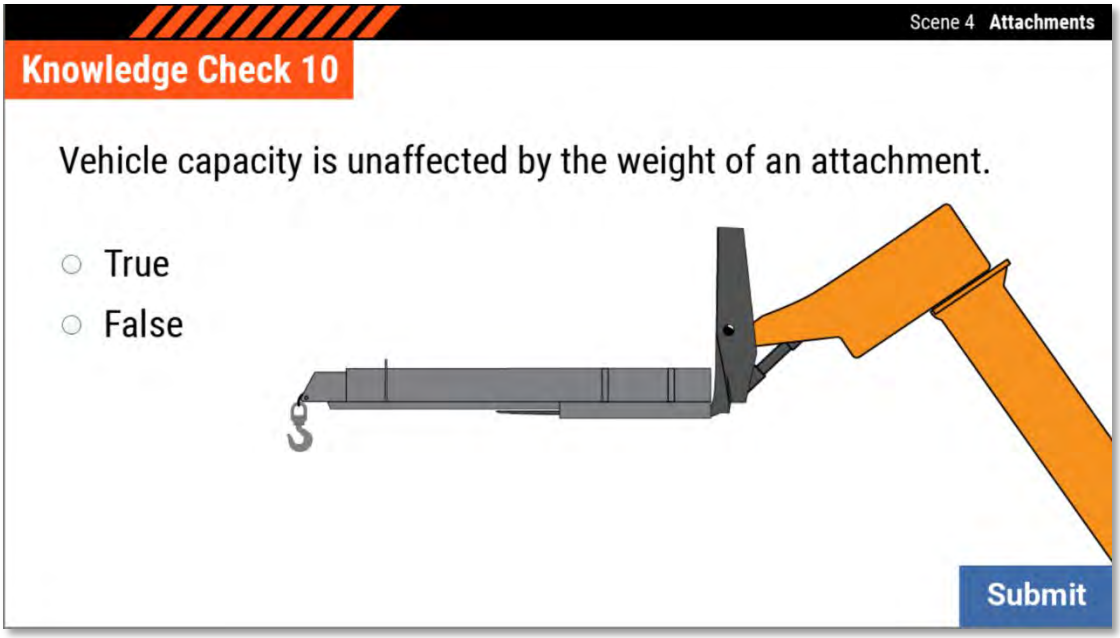
Narration:
When changing attachments or adjusting forks, be careful of pinch points and crush hazards: the mast, the chains, the tilt cylinder, and between the carriage and the forks. Use the right tools for the job, and wear the appropriate personal protective equipment (or PPE), such as gloves, safety shoes, and eye protection. For specific instructions on changing or adjusting each type of attachment, refer to the operator's manual or attachment manual.

Slide 140 - Attachment Modifications



Narration:
Modifications and structural changes to attachments that affect capacity and safe handling are prohibited unless approved in writing by the manufacturer, or designed, manufactured, and installed in accordance with recognized engineering and manufacturing principles. Any capacity, operation, and maintenance instruction plates must be changed accordingly. If you see that an attachment has been modified but there is no other information about this change, do not use it. That concludes our discussion on forklift attachments. Let's apply your knowledge with a couple of review questions.

Slide 141 - Knowledge Check 10

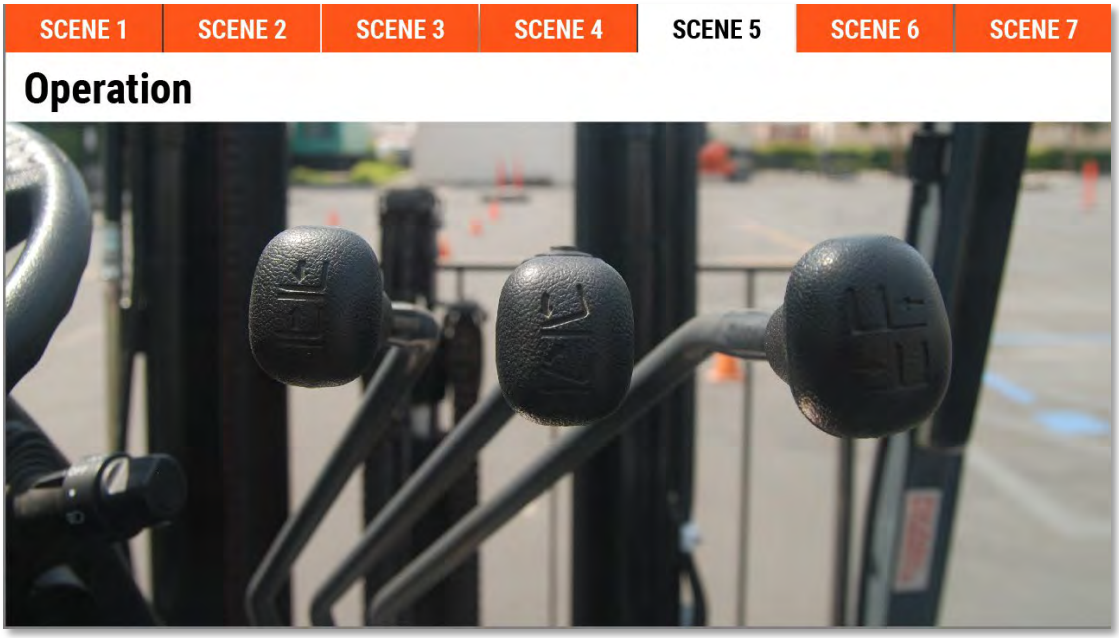


Question:
Vehicle capacity is unaffected by the weight of an attachment.

Slide 142 - Knowledge Check 11

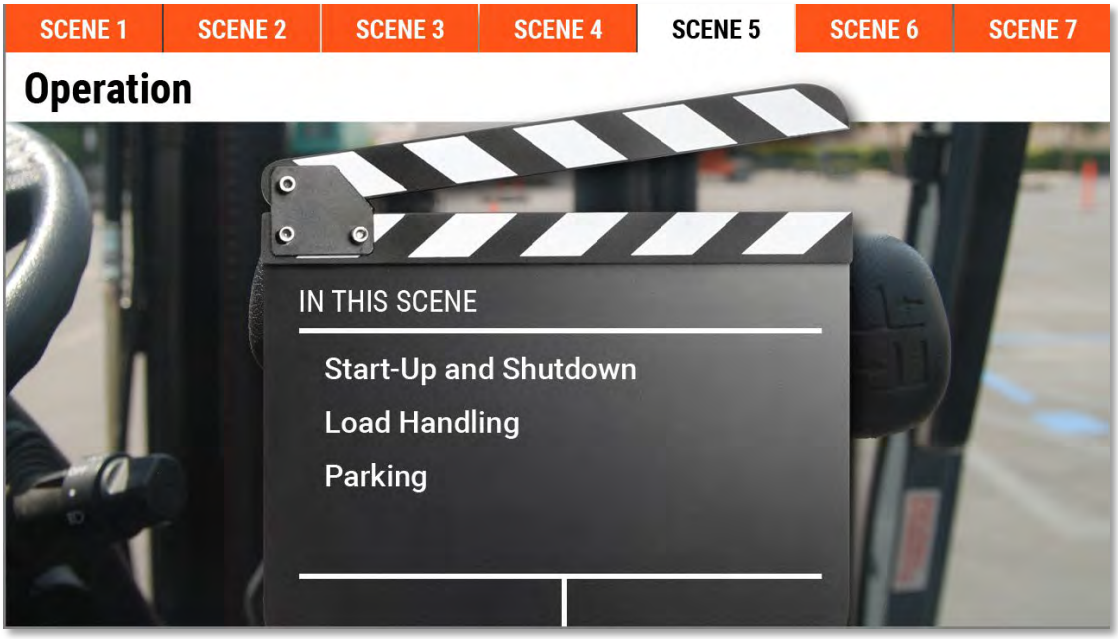
Question:
Which of these items is NOT an approved attachment for elevating workers?

Slide 143 - Operation



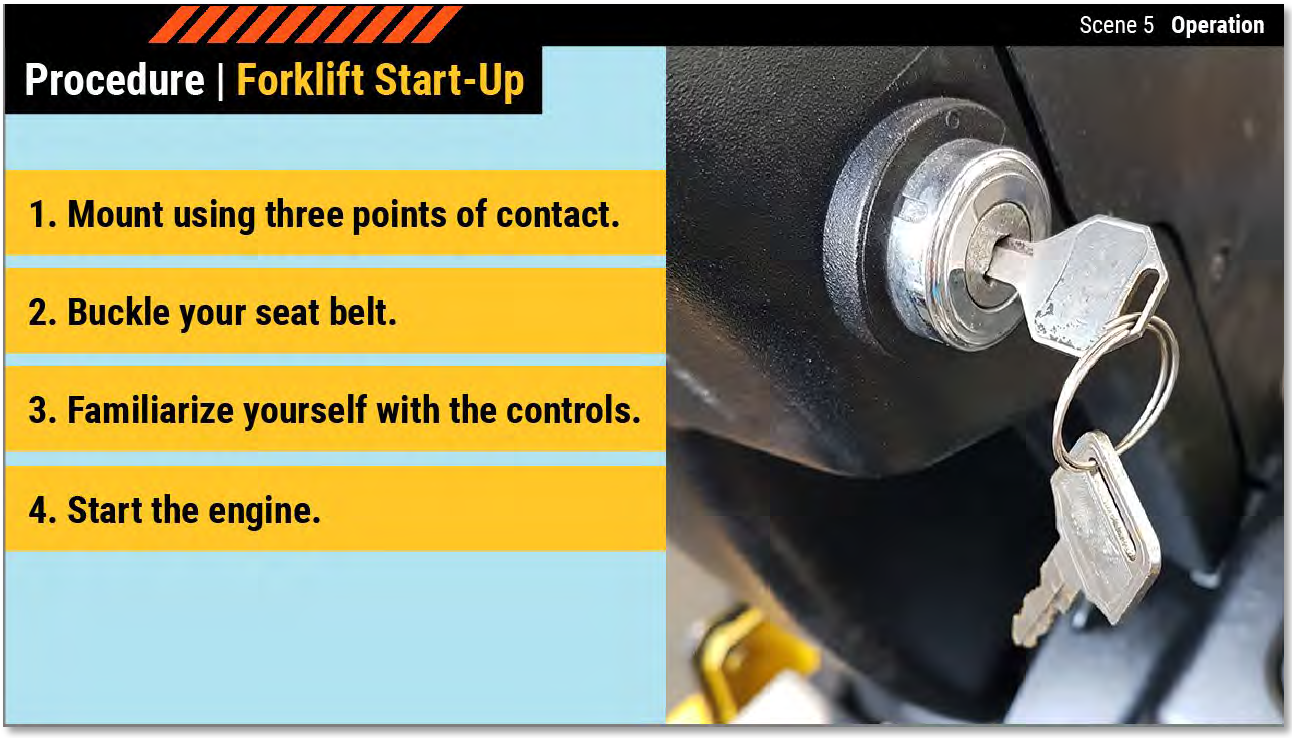
Narration:
Scene Five, Operation.

Slide 144 - In This Scene



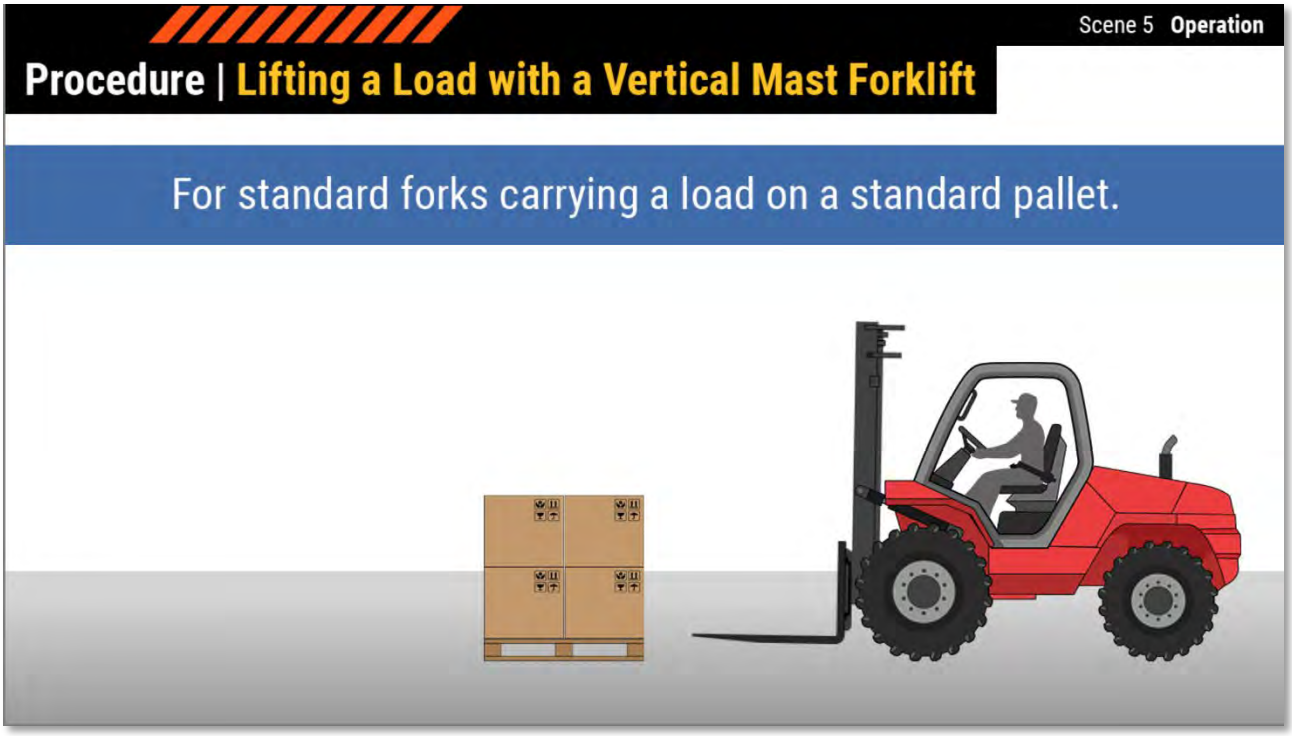
Narration:
This scene reviews common forklift operating procedures: start-up and shutdown, load handling, and parking. You will be performing most of these procedures during the hands-on portion of this course. Note that the following information does not take the place of thorough review and understanding of the operator's manual, specific processes required at your work site, or employer instructions.

Slide 145 - Forklift Start-Up



Narration:
Let’s begin with vehicle start-up. Mount the forklift using three points of contact. Buckle your seat belt. Familiarize yourself with the controls and indicators. And, when you’re ready, start the engine.

Slide 146 - Lifting a Load with a Vertical Mast Forklift



Narration:
The following load-handling procedures are for standard forks carrying a load on a standard pallet. You may need to make adjustments if you are carrying a non-standard load or using an attachment. First up--lifting a load with a vertical mast forklift. Approach the load slowly and carefully. Square the forklift to the load. Level the mast, if necessary, so that there is no tilt. Adjust the width of the forks so that they are as wide as possible for the width of the load. Position the forks to the necessary height and drive the forks fully under the load. Be careful that the forks do not hit anything on the other side of the load like a wall or another load. Then, lift the load to a height for safe travel, and tilt it back for added stability.

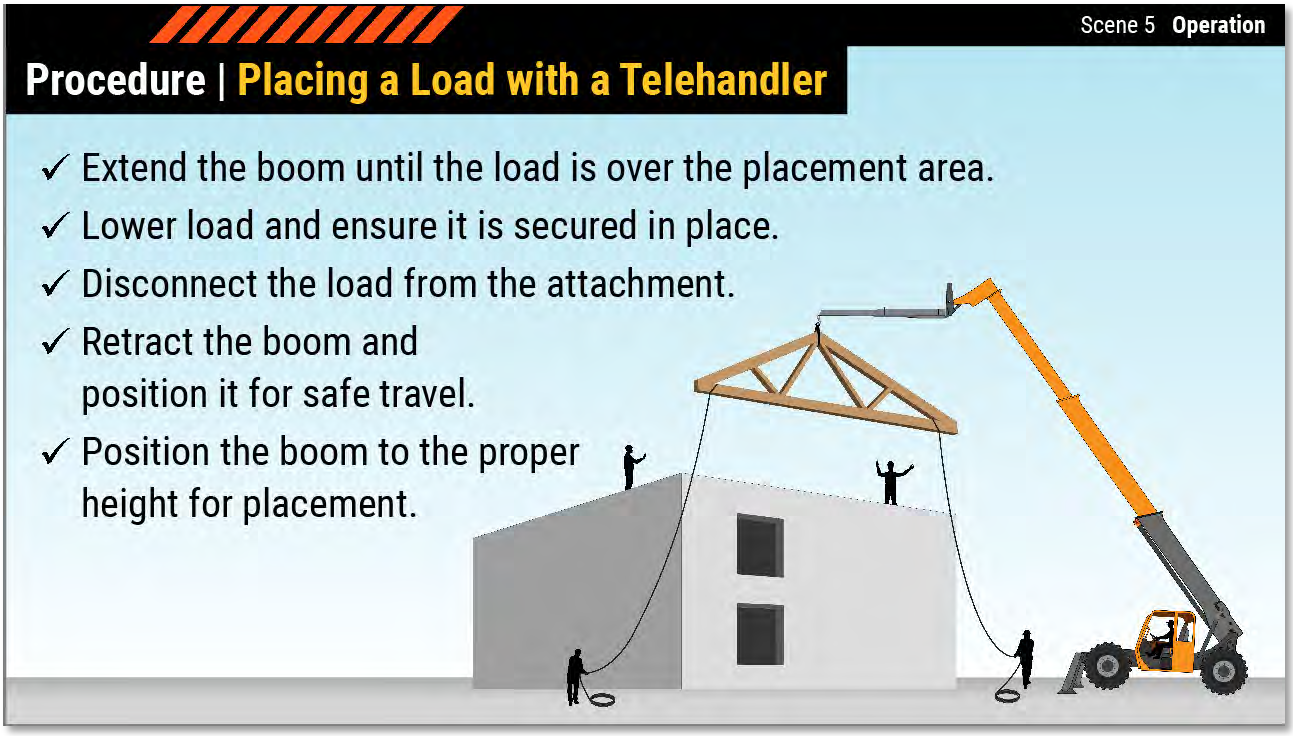
Slide 147 - Lifting a Load with a Telehandler

Narration:
Lifting a load with a telehandler is a bit different than using a vertical mast forklift. First, you'll level the carriage, not the mast. Next, insert the forks under the load by driving forward or extending the boom, depending on where the load is placed. Then, lift the load and tilt it back for added stability. Finally, retract the boom fully and position it for safe travel.

Slide 148 - Placing a Load with a Vertical Mast Forklift

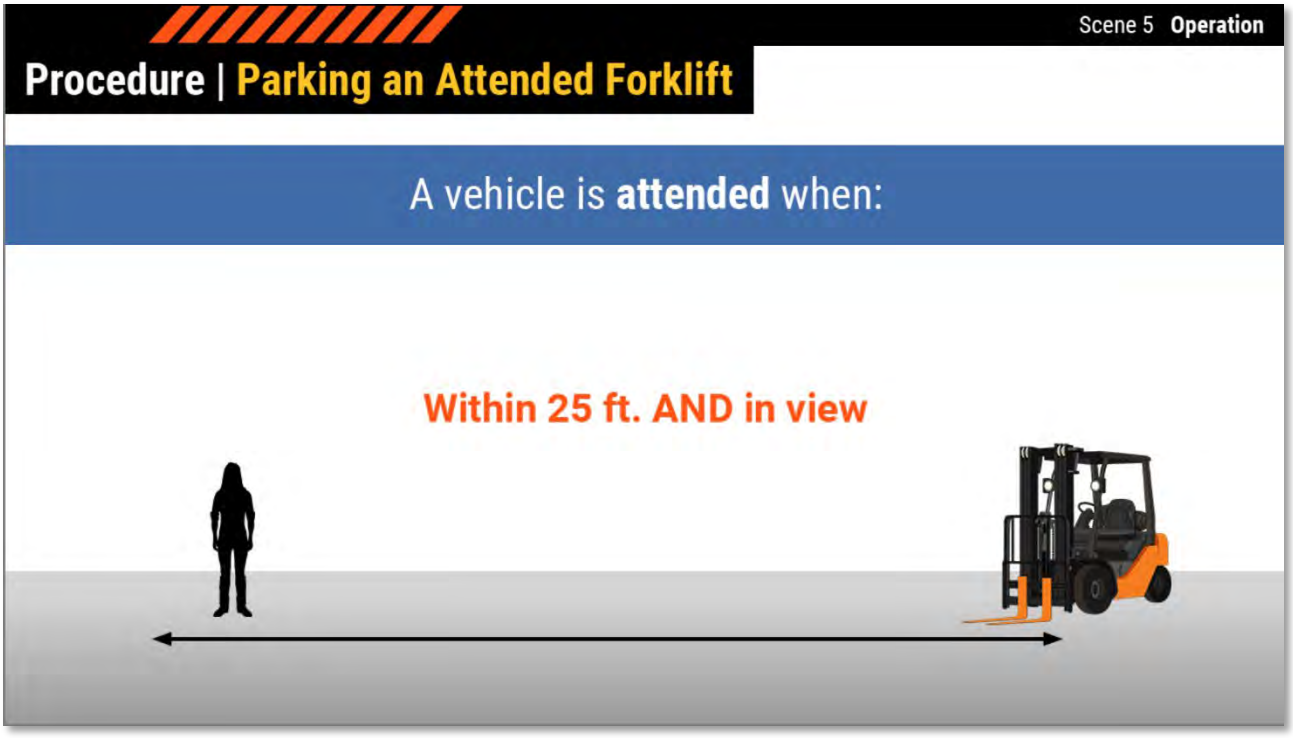
Narration:
Now, we'll place a load using a vertical mast forklift. Square the forklift to the placement area. Level the mast so that there is no tilt. Position the load to the necessary height, and drive forward slowly and carefully. Lower the load until it is securely placed. Continue to lower the forks until the load is disengaged. Back away slowly, looking in the direction of travel, and be careful that the forks do not hit the load or pallet. Adjust the fork height for safe travel.

Slide 149 - Placing a Load with a Telehandler



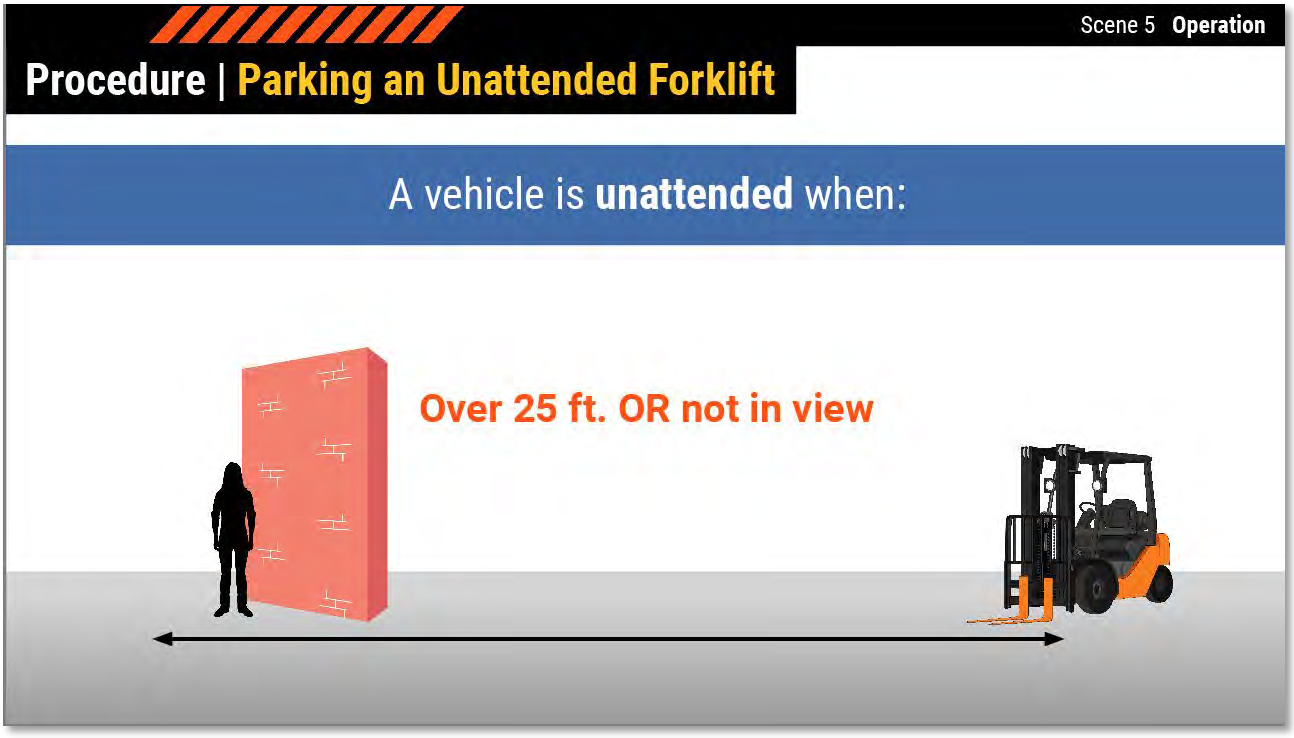
Narration:
When placing a suspended load with a telehandler, first check the capacity chart for safe boom extension range for the attachment being used. Then, check that the placement position is level and strong enough to support the load. Position the telehandler so that the boom can reach the placement area and remain within capacity. You may need to lower the outriggers for increased capacity. Position the boom to the proper height for load placement. Extend the boom until the load is over the placement area. Lower the load onto the placement area and, after it is secured in place, disconnect it from the attachment. Retract the boom and position it for safe travel.

Slide 150 - Parking an Attended Forklift



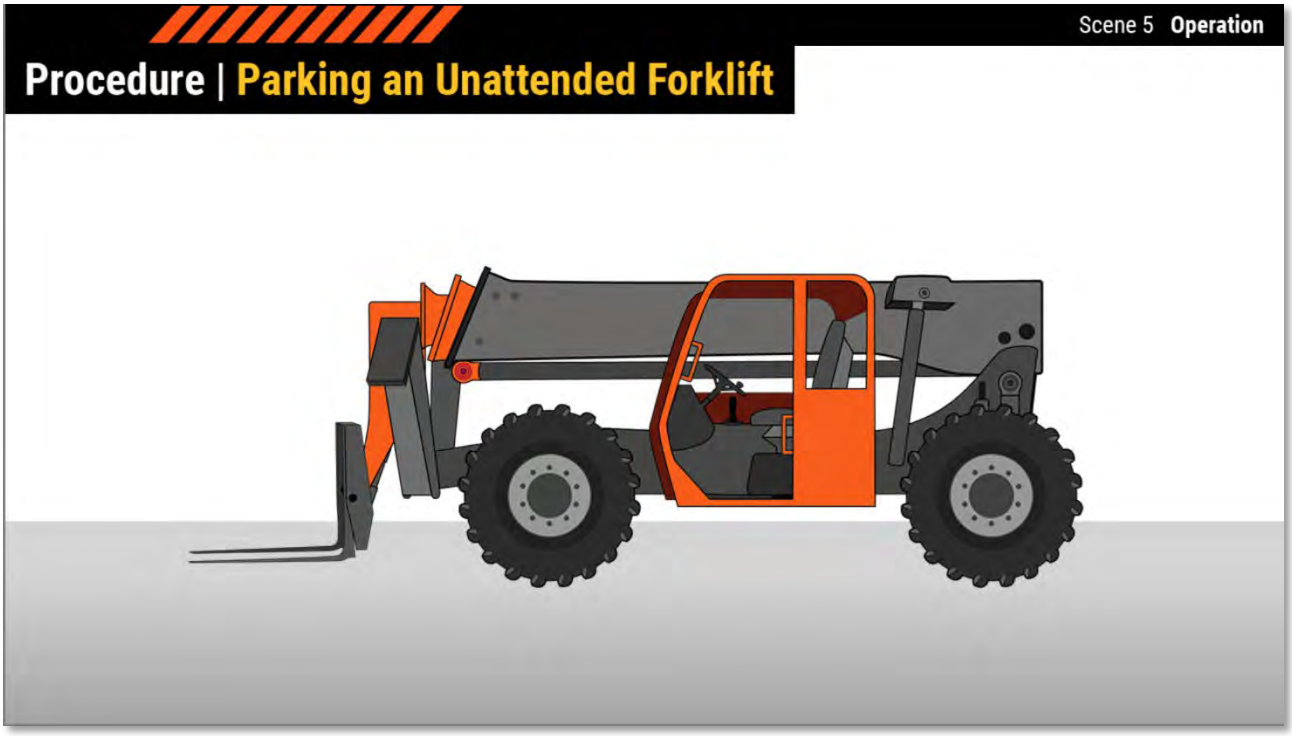
Narration:
Ok, let's look at a couple of parking procedures. When parking a forklift that will be attended, fully lower the forks or other attachment, put the vehicle in neutral, and set the parking brake. A vehicle is **attended** when the operator is within 25 feet of the forklift, and it remains in view.

Slide 151 - Parking an Unattended Forklift 1



Narration:
A vehicle is **unattended** when the operator is over 25 feet from the forklift, or it is not in their view.

Slide 152 - Parking an Unattended Forklift 2

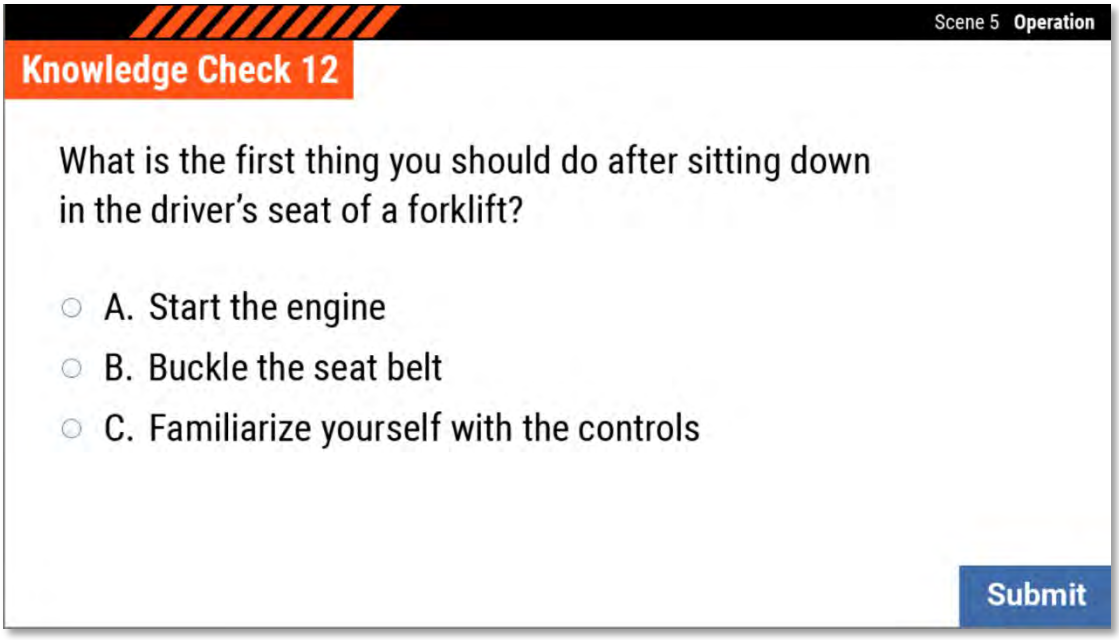


Narration:
When parking a vehicle that will be unattended, put the mast or carriage in a vertical position. Fully retract the boom if using a telehandler. Lower the forks or attachment to the ground. Put the vehicle in neutral, set the parking brake, and turn off the engine. However, if you're working in California, Cal/OSHA allows the power to remain on if the driving surface is level and the front and rear wheels are blocked. If the vehicle is left on an incline, block the wheels. And if you've turned the engine off, remember to remove the key from the ignition and take it with you.

Slide 153 - Forklift Shutdown

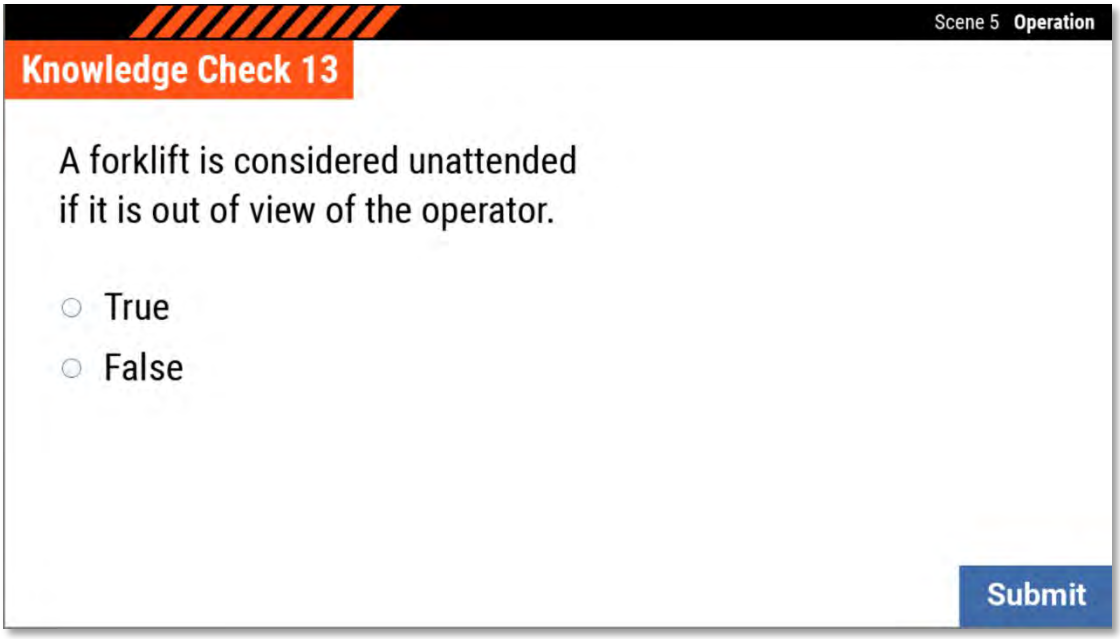
Narration:
The vehicle shutdown procedure is similar to parking an unattended forklift. When parking a forklift at the end of your shift, do so in a designated parking area. You'll put the mast or carriage in a vertical position, fully retract the boom if using a telehandler, lower the forks or attachment to the ground, put the vehicle in neutral, and set the parking brake just as you would when parking a forklift that will be unattended. Then, turn off the engine and remove the key from the ignition. Shut off the propane tank if operating a forklift that has one. And, block the wheels for added safety, if necessary. To finish up this scene, try a couple of review questions.

Slide 154 - Knowledge Check 12



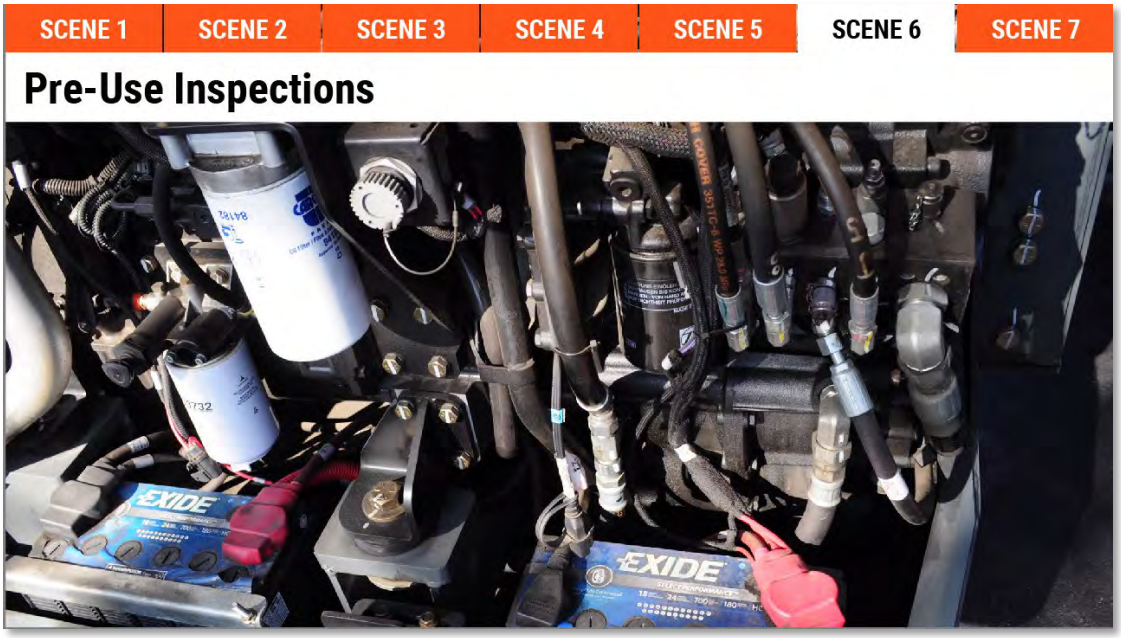
Question:
What is the first thing you should do after sitting down in the driver's seat of a forklift?

Slide 155 - Knowledge Check 13



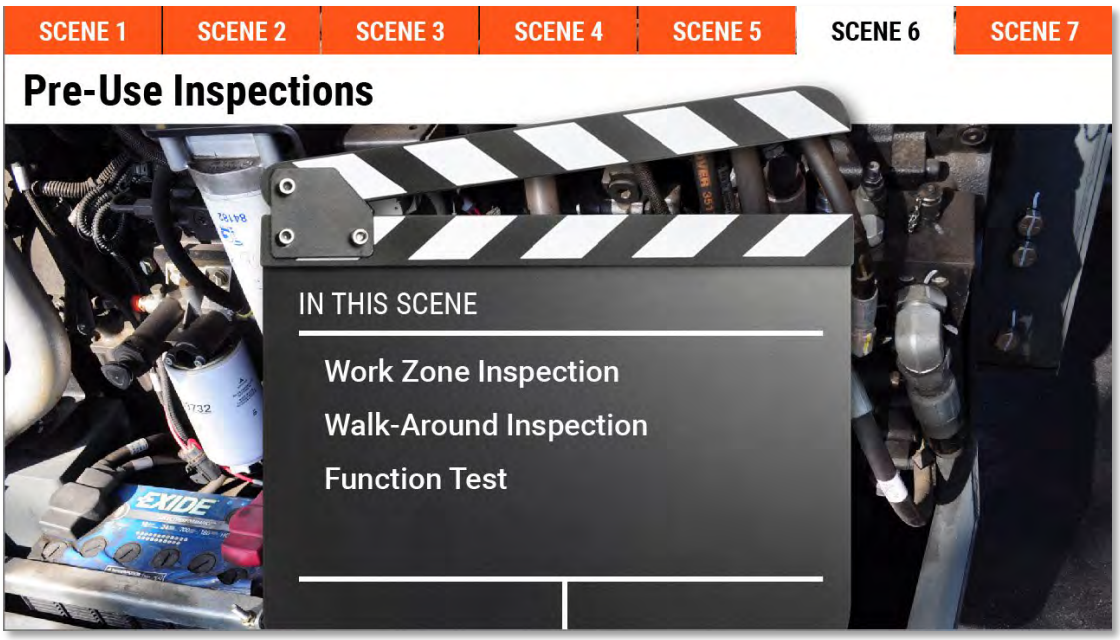
Question:
A forklift is considered unattended if it is out of view of the operator.

Slide 156 - Pre-Use Inspections



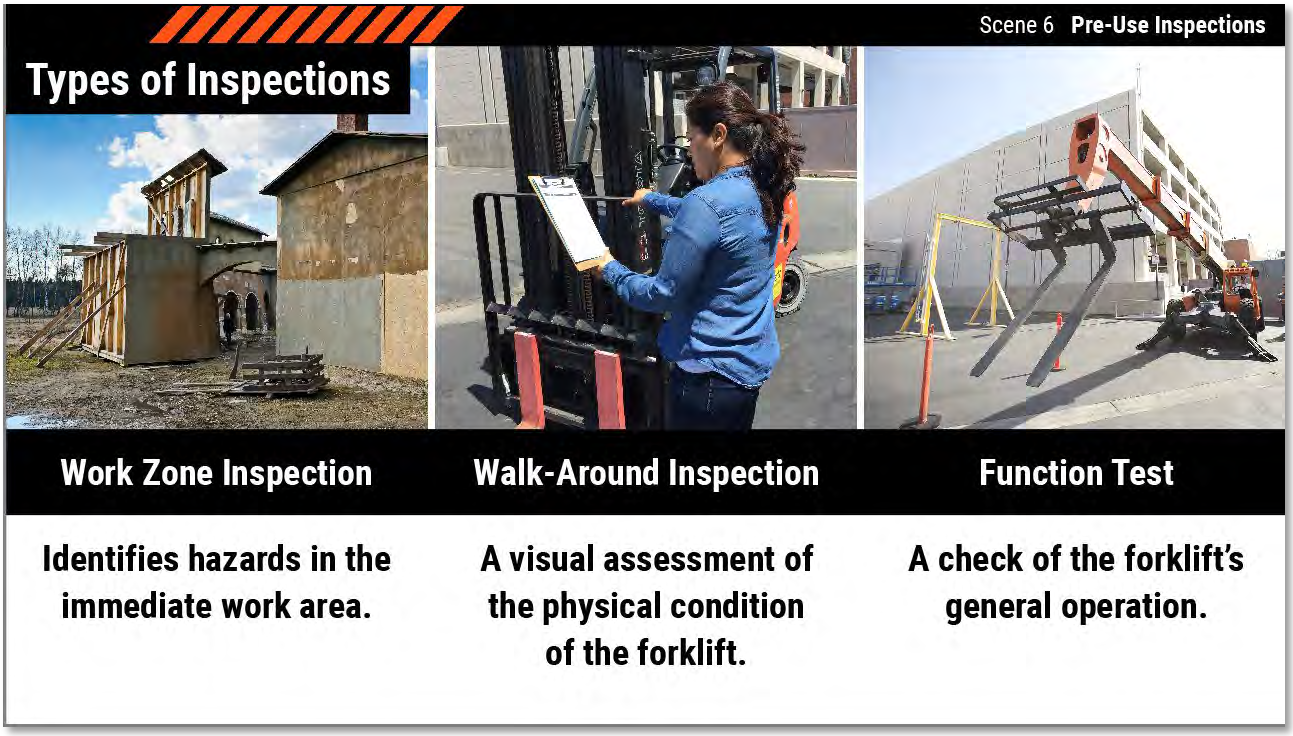
Narration:
Scene Six, Pre-Use Inspections.

Slide 157 - In This Scene



Narration:
In this scene, we'll review the basics of the pre-use inspections and function test that must be performed at the beginning of a work shift or when there is a change in operators.

Slide 158 - Types of Inspections

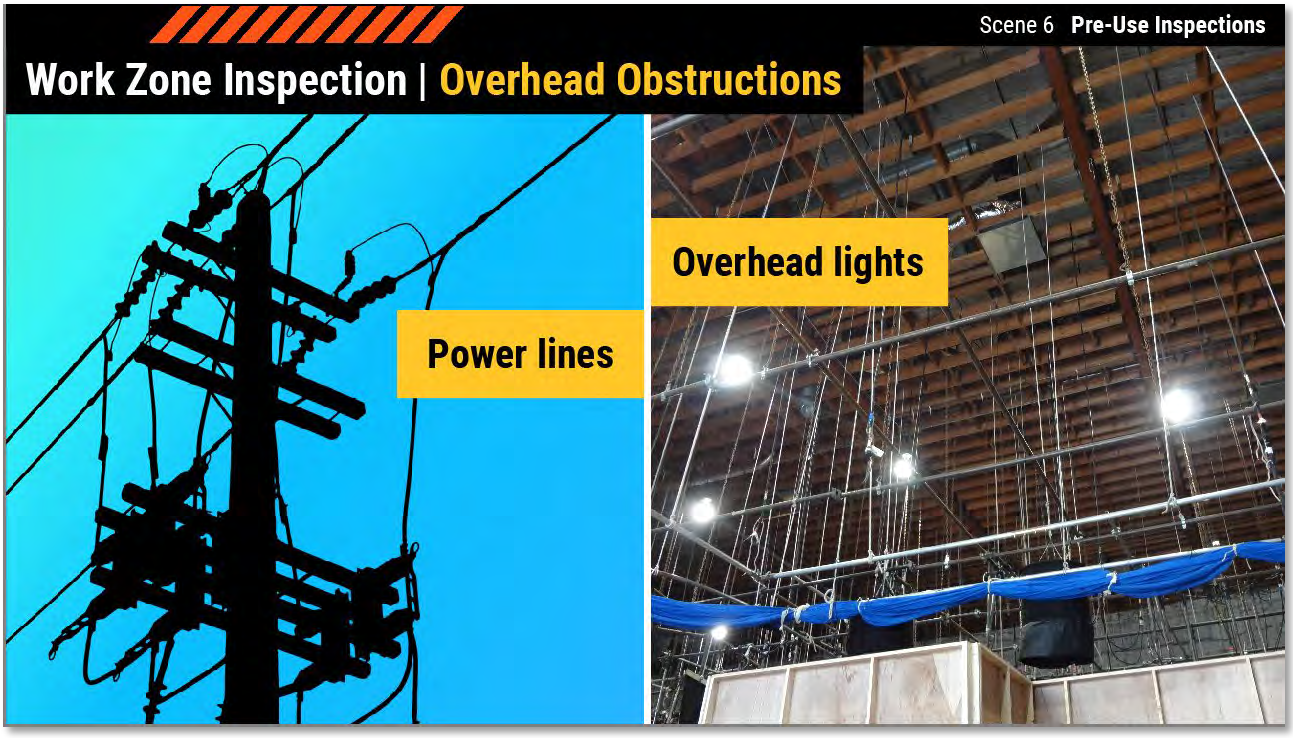


Narration:
A **work zone inspection** identifies hazards in the immediate work area to help determine if the area should be avoided or if other precautions should be taken. A **walk-around inspection** is a visual assessment of the physical condition of the forklift. And, a **function test** checks that all controls and components are working properly. If a defect is noticed during an inspection or while driving, park the vehicle, report the issue, and get assistance. Never operate a defective machine.

Slide 159 - Traffic

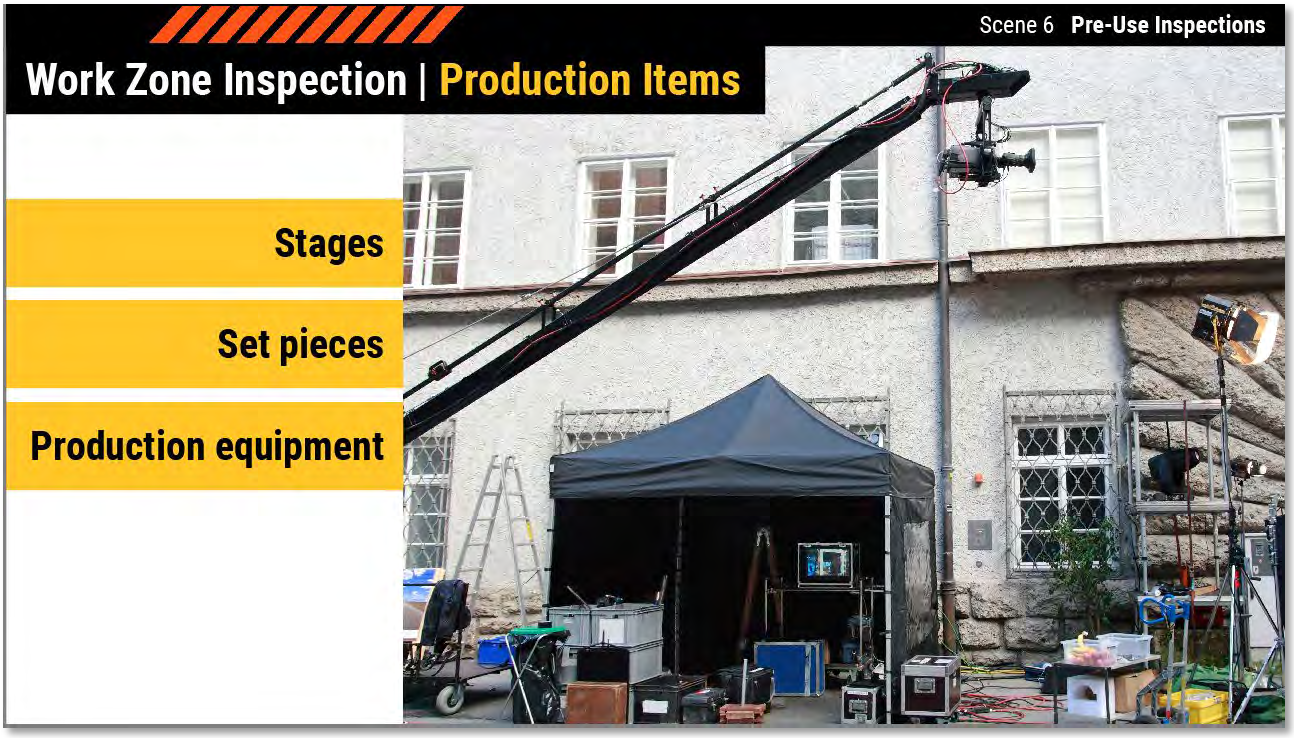
Narration:
When inspecting the work zone, take note of pedestrian and vehicle traffic;

Slide 160 - Overhead Obstructions



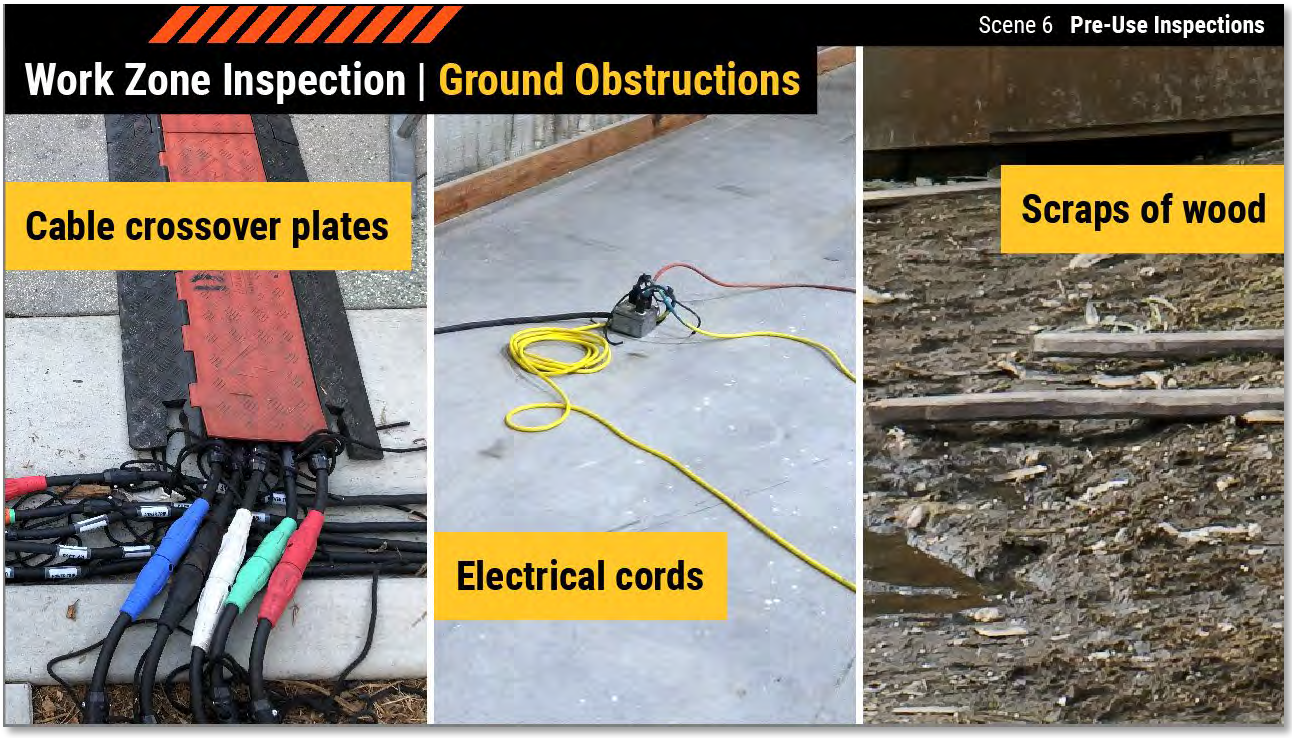
Narration:
power lines and other overhead obstructions such as lights, sprinklers, pipes, air ducts, and door frames;

Slide 161 - Production Items



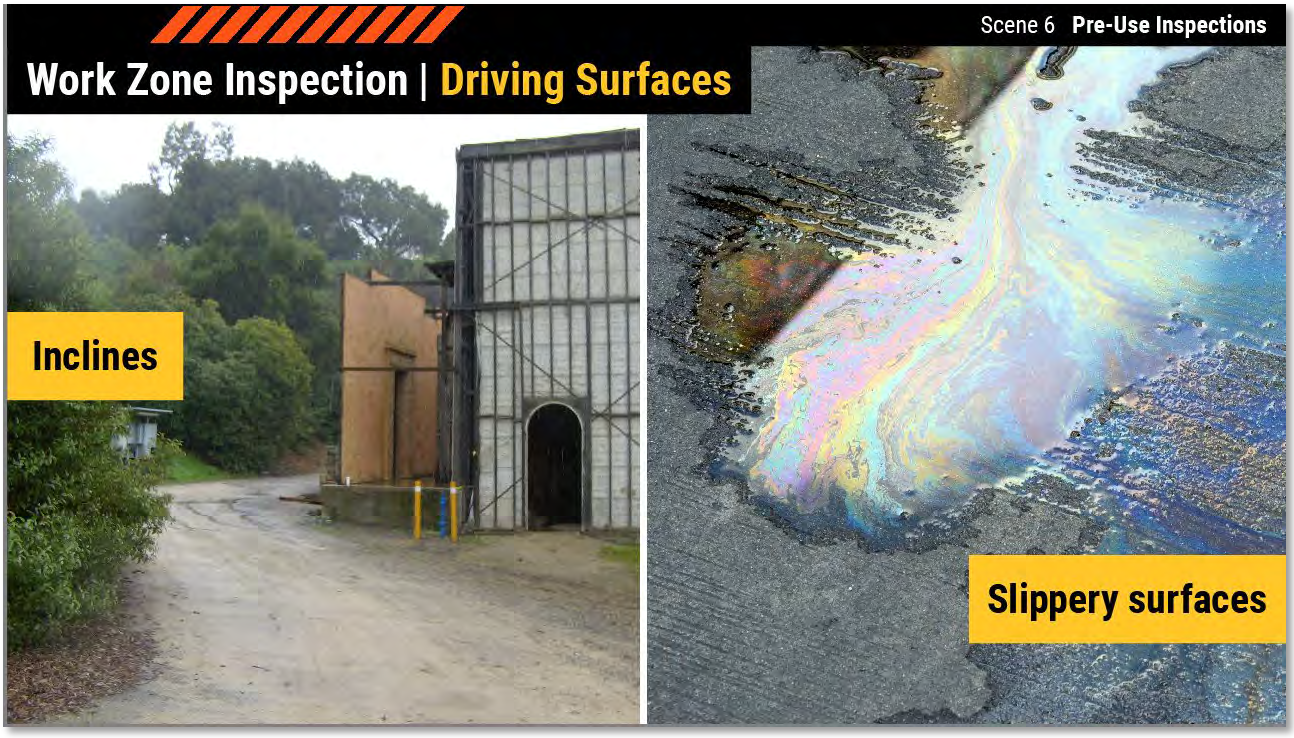
Narration:
and stages, set pieces, and production equipment.

Slide 162 - Ground Obstructions



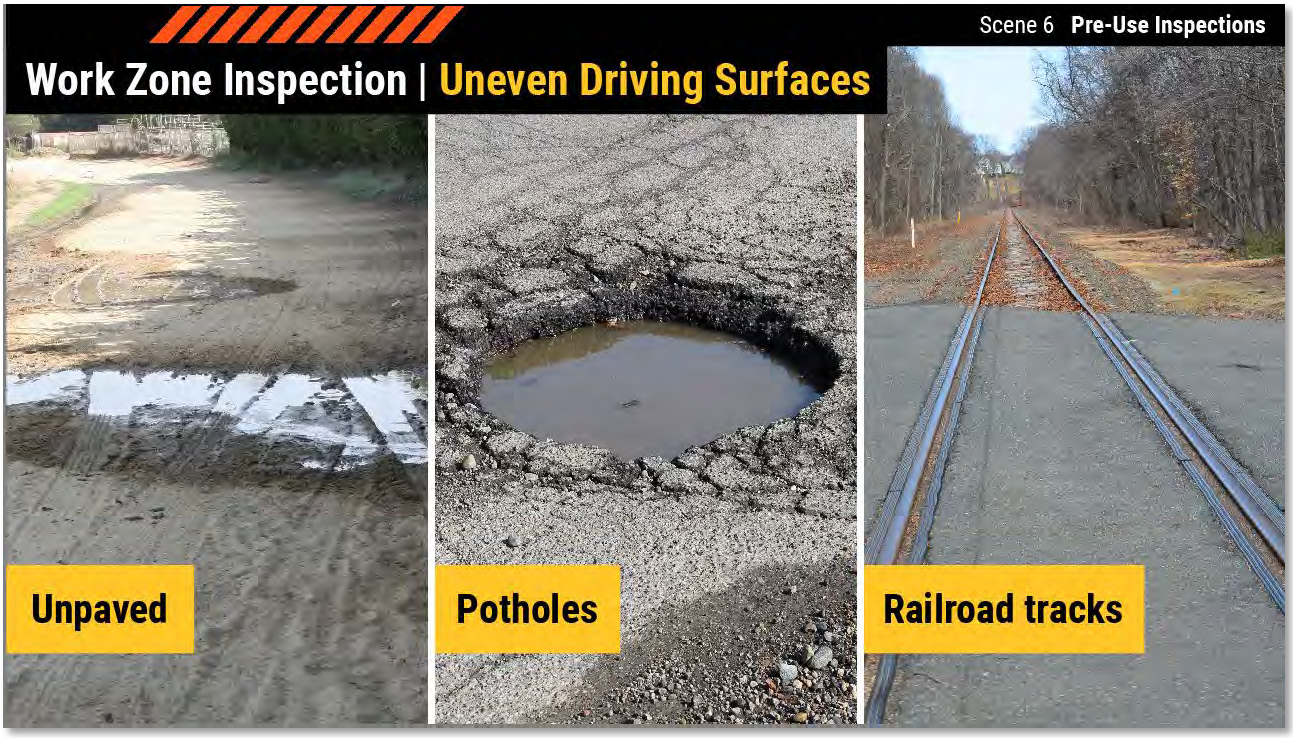
Narration:
Look for obstructions and debris on the ground like crossover plates, electrical cords, and even scraps of wood.

Slide 163 - Driving Surfaces



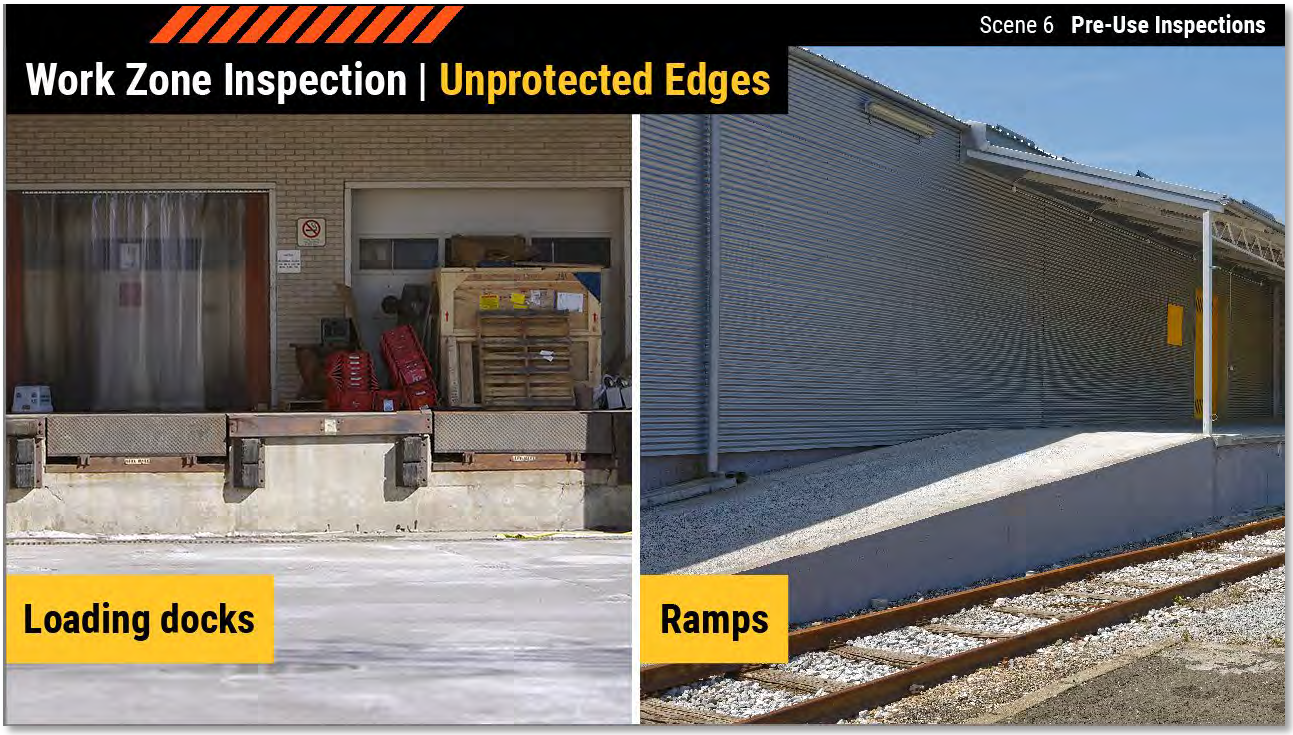
Narration:
Be aware of inclines and slippery driving surfaces;

Slide 164 - Uneven Driving Surfaces



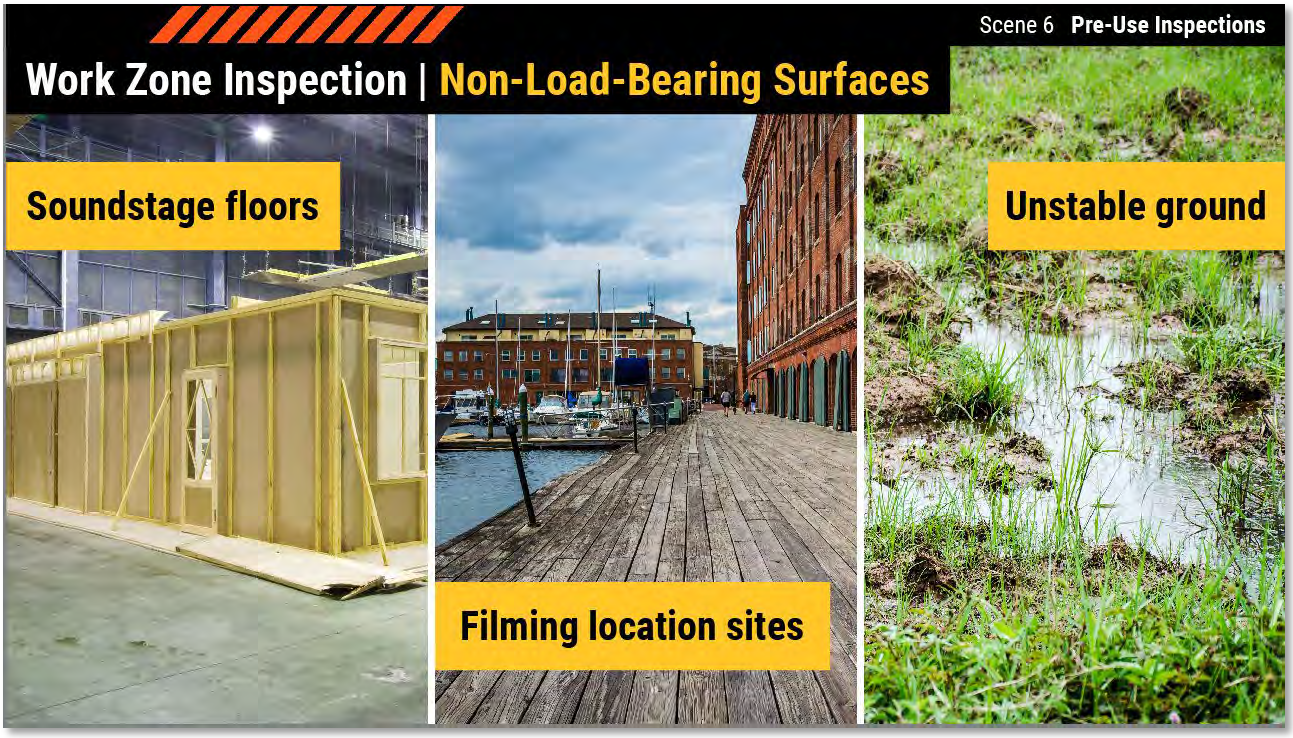
Narration:
uneven roads that are unpaved, have potholes, or are bisected by railroad tracks;

Slide 165 - Unprotected Edges



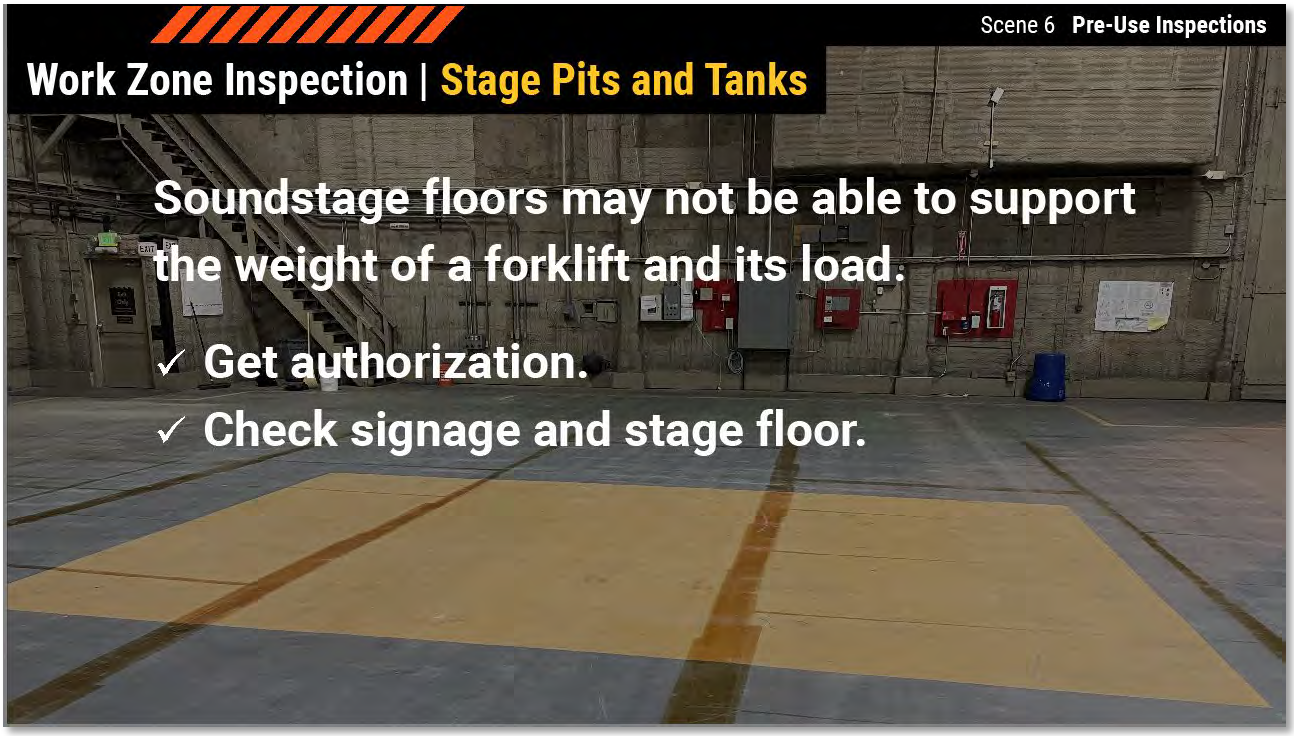
Narration:
and loading docks and ramps with unprotected edges.

Slide 166 - Non-Load-Bearing Surfaces



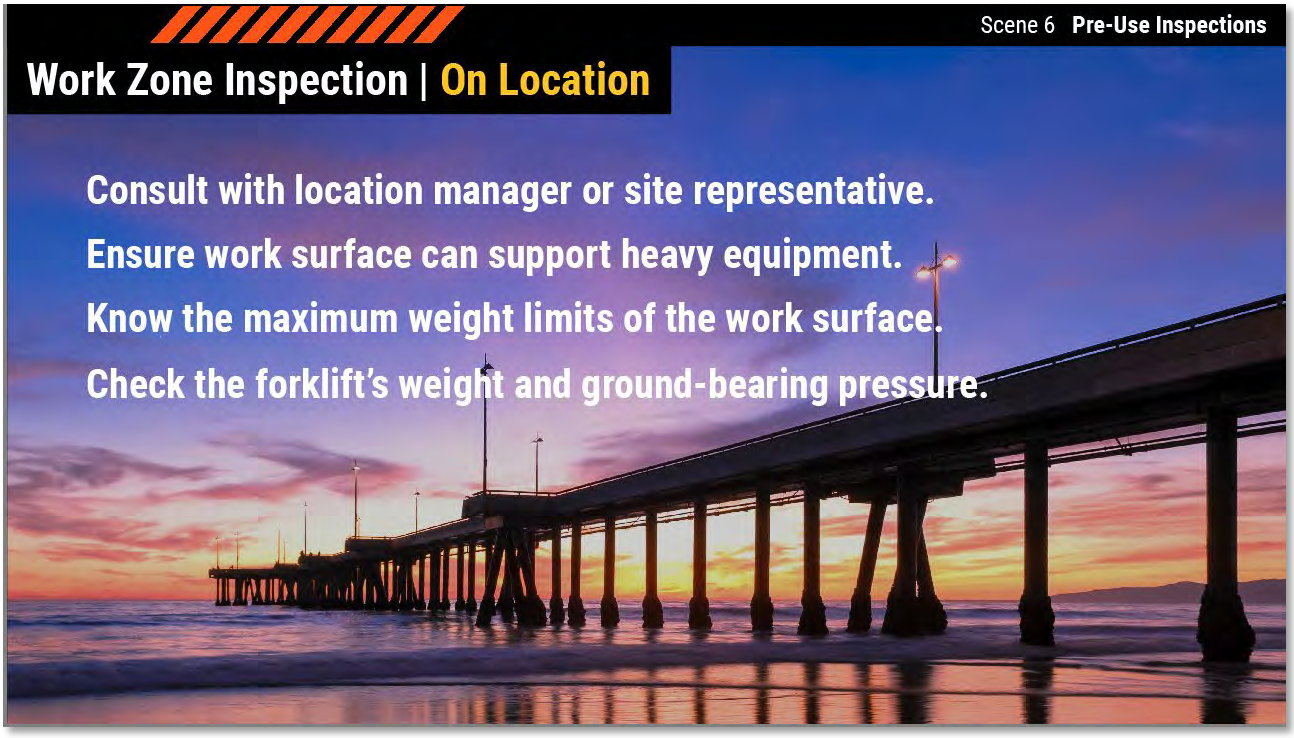
Narration:
Identify potentially non-load-bearing surfaces such as soundstage floors, filming location sites, and spots with unstable ground. Let’s look at these situations in more detail.

Slide 167 - Stage Pits and Tanks



Narration:
Many soundstages have pits and tanks located under the flooring that may not be able to support the weight of a forklift and its load. Contact Backlot Operations or Studio Safety to get authorization to take a forklift onto a soundstage. Check posted signage and the stage floor itself for weight limits and markings indicating pits and tanks.

Slide 168 - On Location

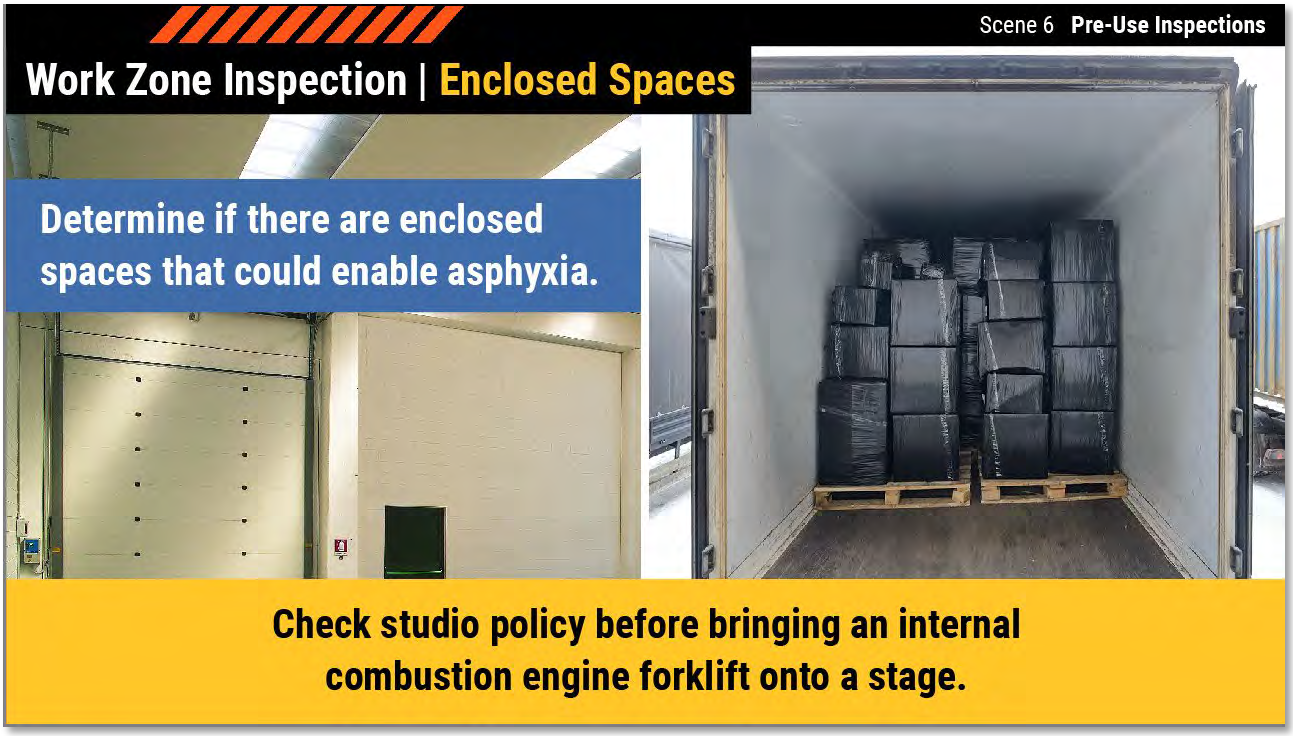


Narration:
When on location, consult with the location manager or a site representative to ensure that the work surface can support the forklift and its load. Know the maximum weight limits of the work surface, and check the forklift's weight and ground-bearing pressure in the operator's manual.

Slide 169 - Unstable Ground

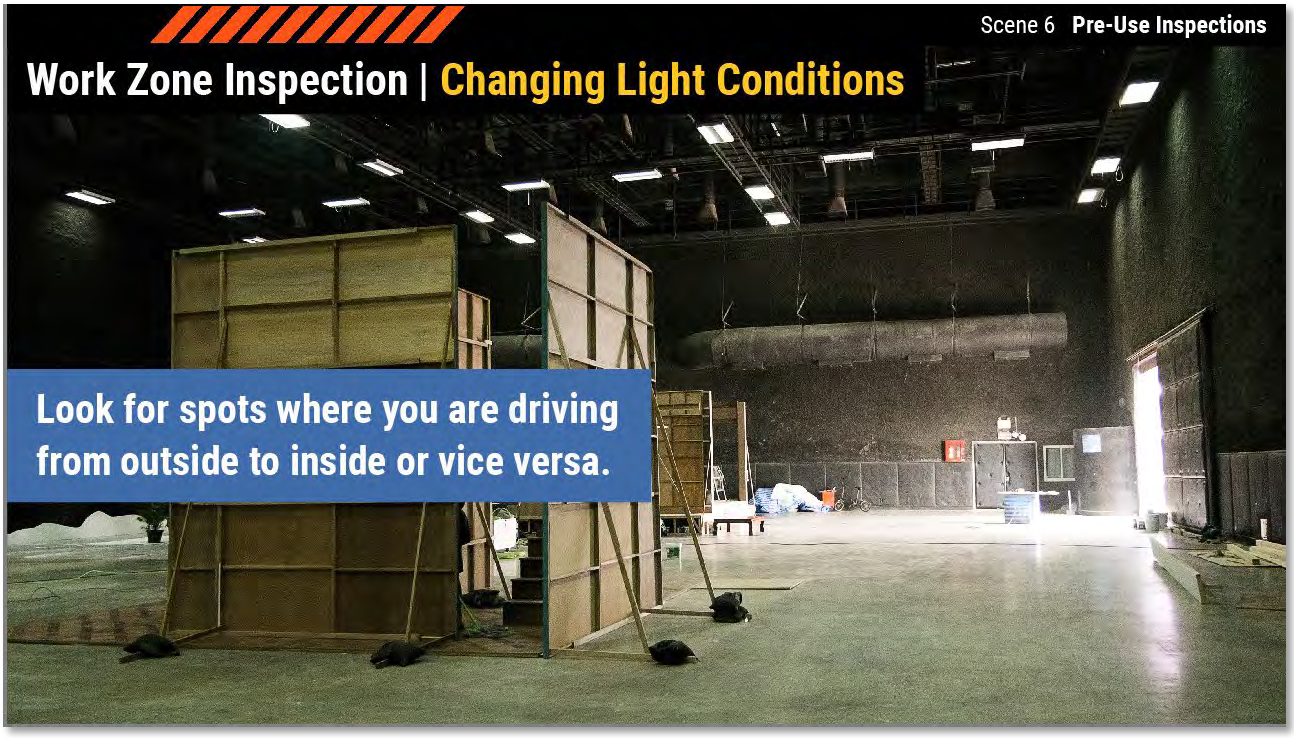
Narration:
When working on location or on a backlot, there may be unstable ground such as mud, grass, gravel, and sand. These types of surfaces can shift or sink under the weight of the forklift or the outriggers, leading to falling loads or tip-overs. Check for surfaces that are soft or pliable, and ask your safety representative if outrigger pads can be used to stabilize a work surface.

Slide 170 - Enclosed Spaces



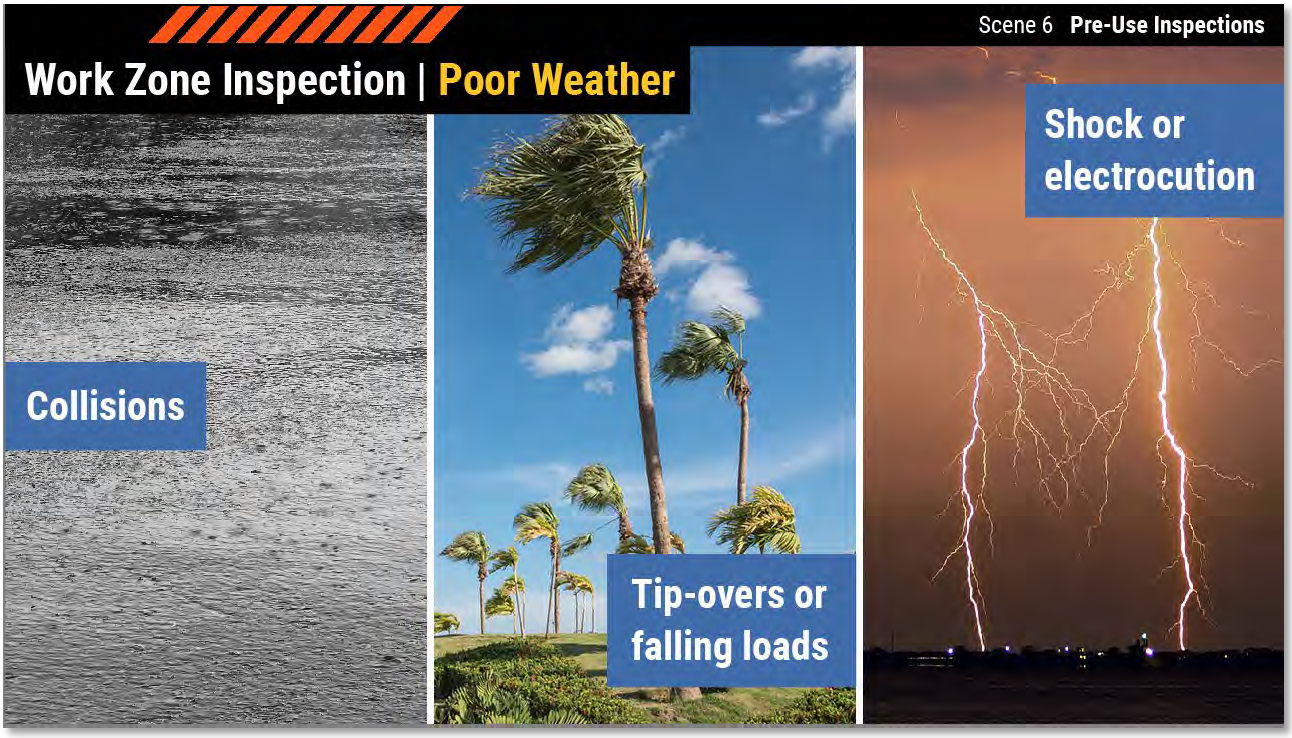
Narration:
A few more items for your work zone inspection. Determine if the work zone has enclosed spaces that could contain or enable a hazardous atmosphere. This could be a stage with all the doors and windows closed, or even a trailer where forklift exhaust can get trapped. To avoid asphyxiation, do not operate in a space where there is inadequate ventilation. If available, use an electric forklift in these environments. Be sure to check studio policy before bringing a forklift with an internal combustion engine indoors.

Slide 171 - Changing Light Conditions



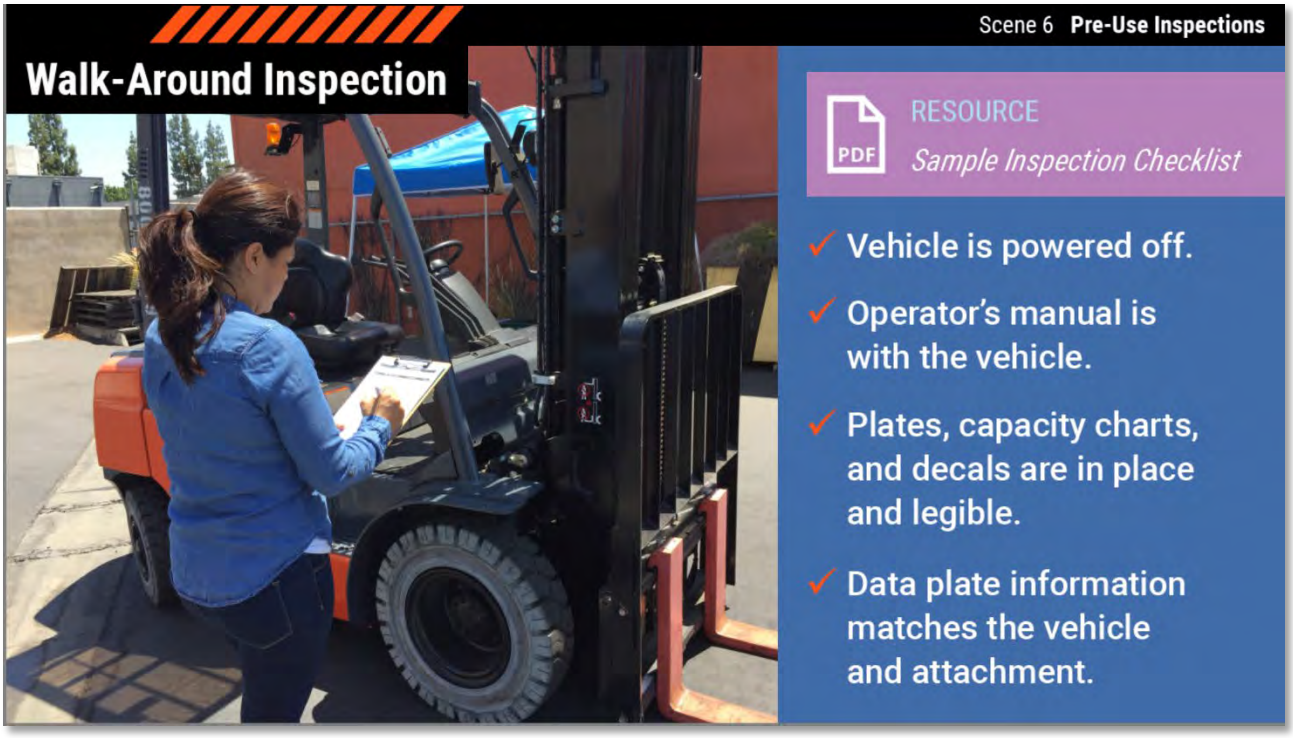
Narration:
Next, are there any spots where you are driving from outside to inside or vice versa? If so, your eyes will need time to adjust to the changing light conditions.

Slide 172 - Poor Weather



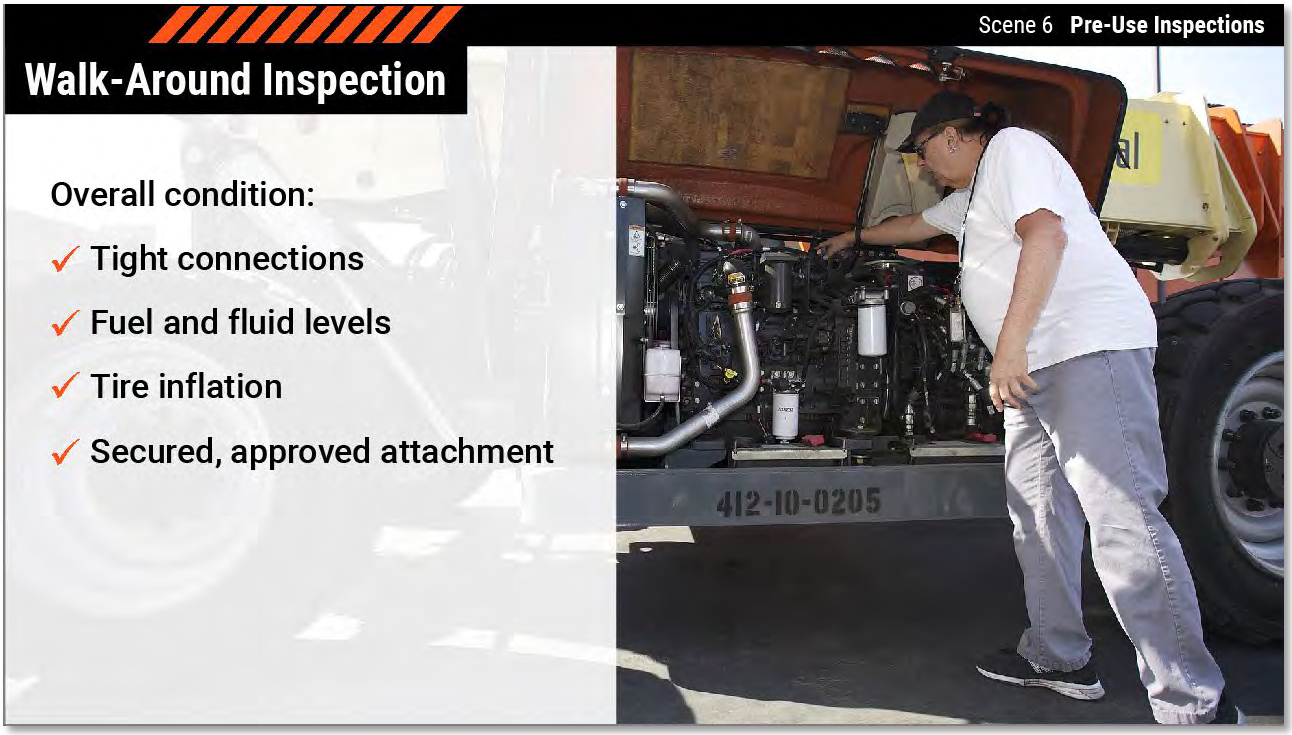
Narration:
Lastly, is there a possibility of poor weather? Operating a forklift when it's raining, windy, or there's a chance of lightning can put you or others at risk of being injured by collisions, tip-overs, falling loads, shock, or electrocution.

Slide 173 - Walk-Around Inspection 1



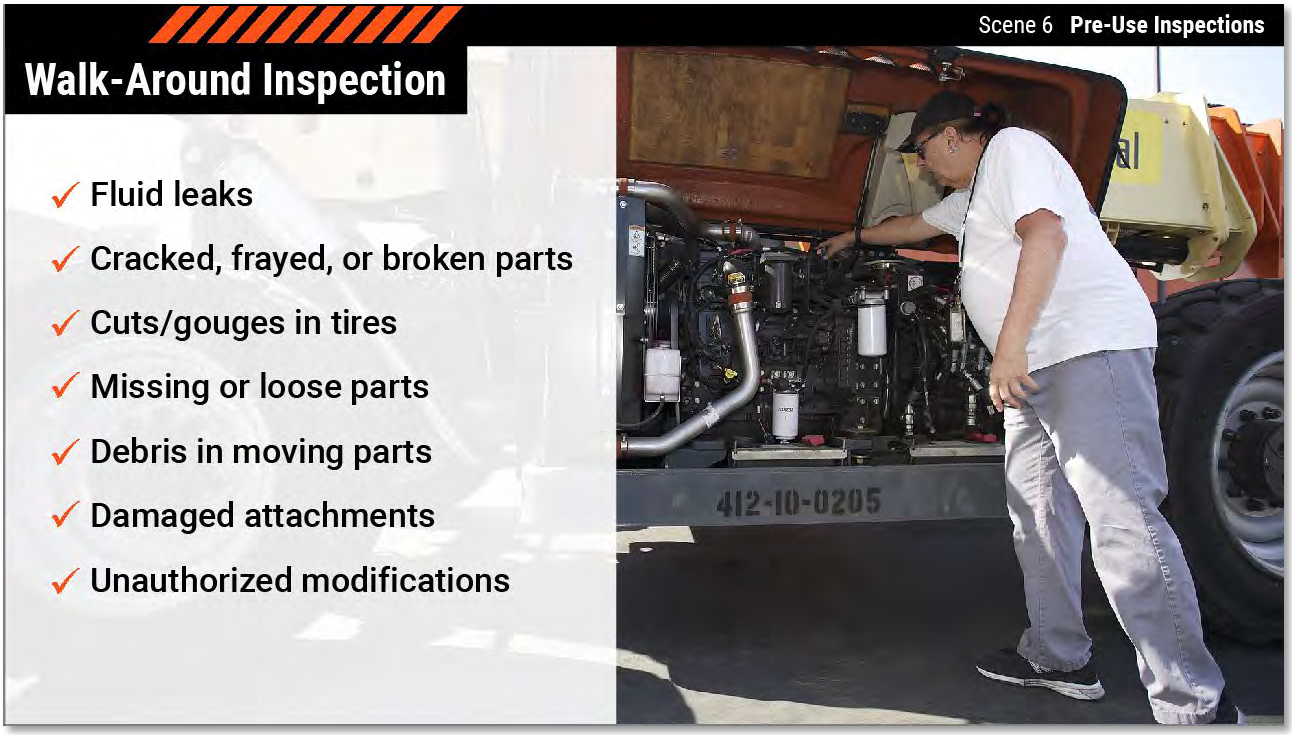
Narration:
Now it's time to check the physical condition of the forklift with the walk-around inspection. When doing the actual inspection, follow the checklist in that vehicle's operator's manual. Click here to see a sample checklist. Before you begin, make sure that the vehicle is powered off. Start by confirming that the operator's manual is on board; plates, capacity charts, and decals are in place and legible; and the information on the data plate matches the vehicle and forks or other attachment.

Slide 174 - Walk-Around Inspection 2



Narration:
The walk-around inspection requires you to verify the overall good condition of the vehicle. Check for tight connections, proper fuel and fluid levels, proper tire inflation, and that the forks or the approved attachment is properly secured.

Slide 175 - Walk-Around Inspection 3



Narration:
Look for signs of damage like fluid leaks; cracked, frayed, or broken parts; and cuts or gouges in tires. And, ensure there are no missing or loose parts, debris in moving parts, damaged attachments, or unauthorized attachment modifications.

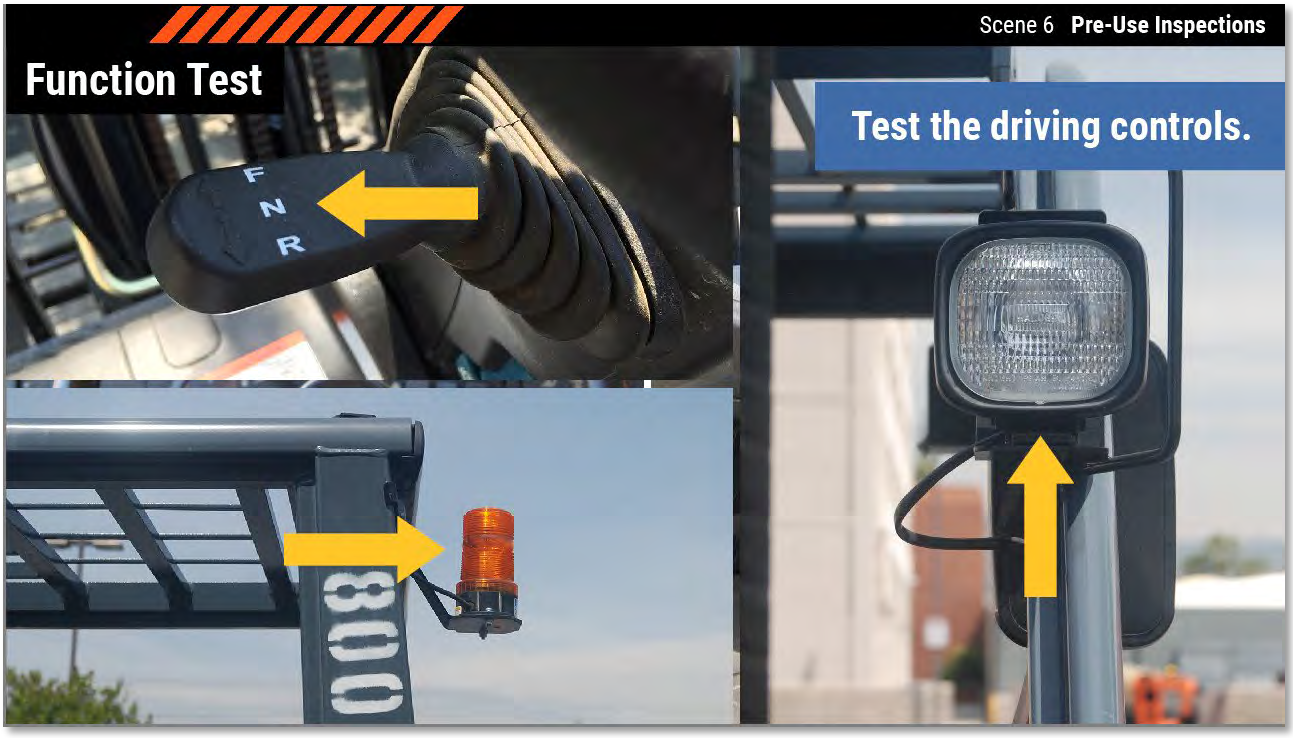
Slide 176 - Walk-Around Inspection 4

Narration:
When operating a forklift that runs on liquefied petroleum gas, also known as LPG or propane, check that the propane tank and fuel line are in good condition. Check that the tank is properly positioned, with the pressure relief valve at the top of the tank and the positioning pin properly engaged. Confirm that the fuel line is securely connected to the tank, and that the tank valve is open no more than one and a half turns to allow adequate propane to the engine and quick closure if a problem arises. If propane is seen, heard, or smelled, close the valve immediately and report the problem to your supervisor.

Slide 177 - Function Test 1

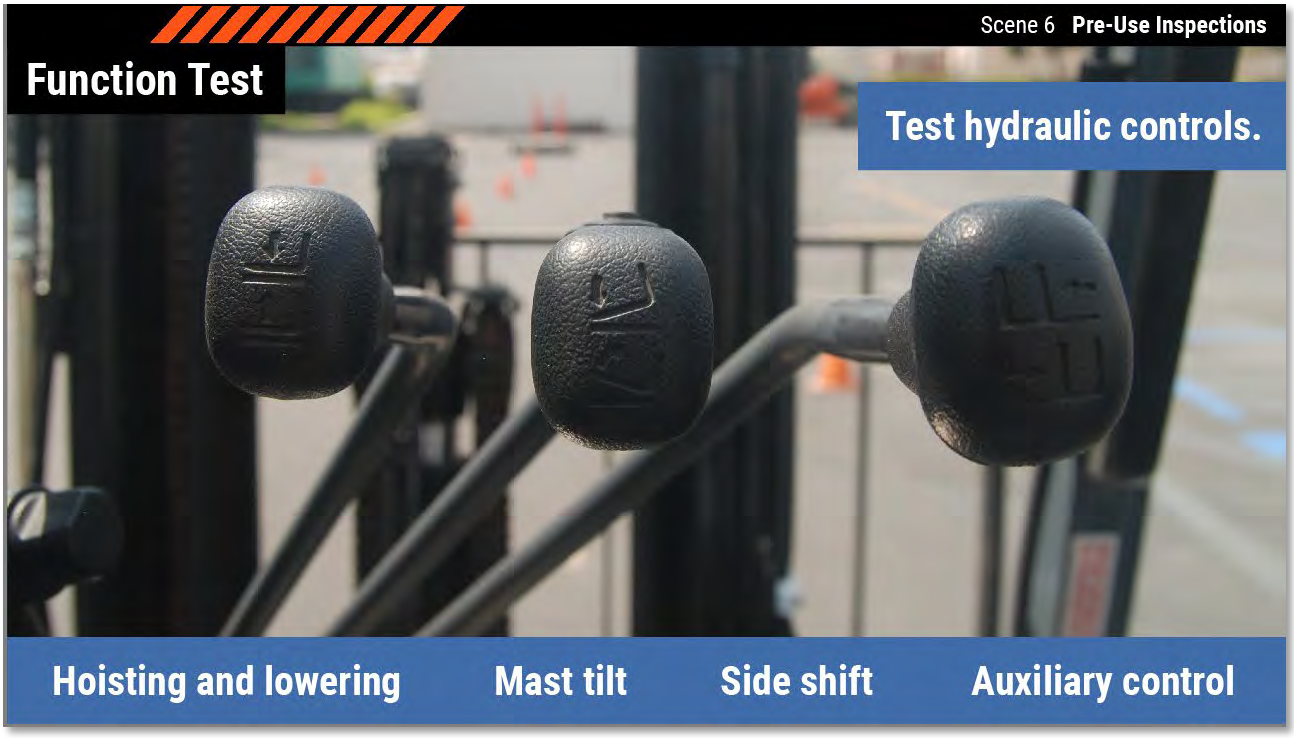
Narration:
After the walk-around inspection is finished, you'll move on to the function test. First, follow the vehicle start-up procedure. Don't forget to fasten the seat belt.

Slide 178 - Function Test 2



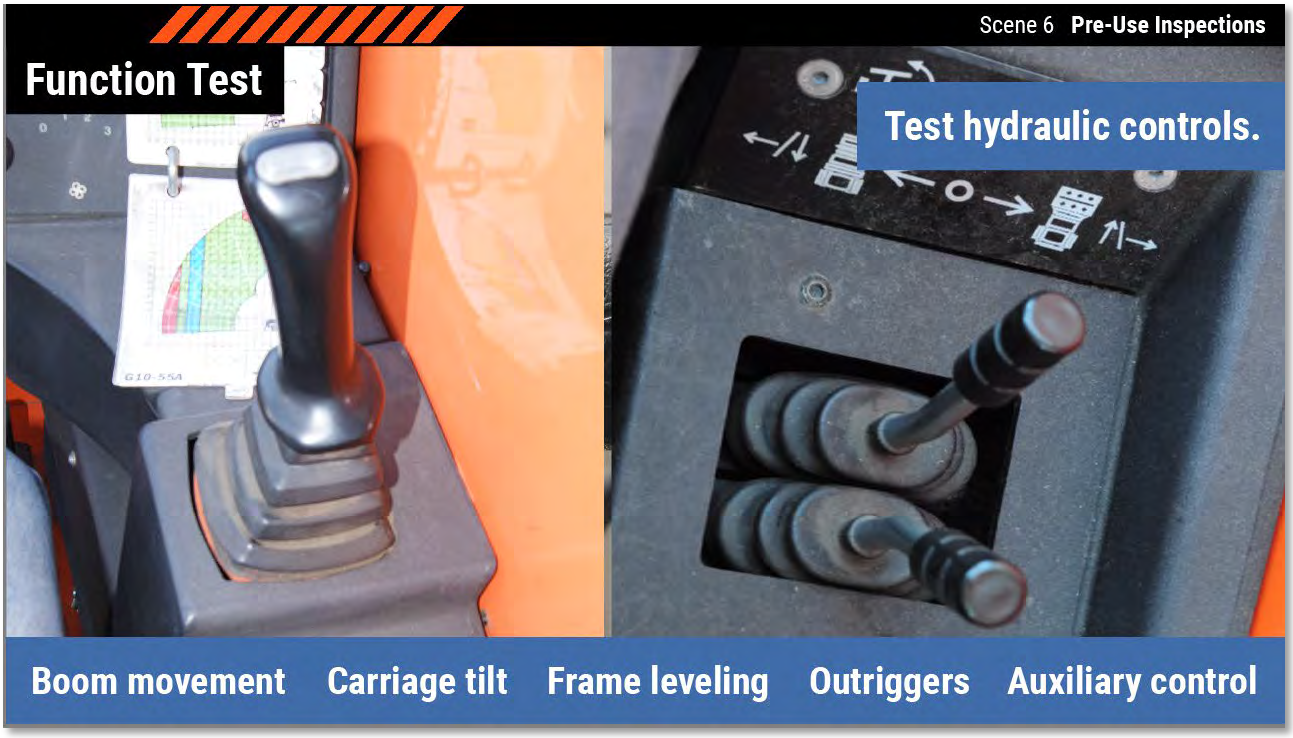
Narration:
Then, test the driving controls: the steering and horn, the brakes and the inch control (if the vehicle is equipped with it), forward and reverse directional control, the lights, and the back-up alarm.

Slide 179 - Function Test 3



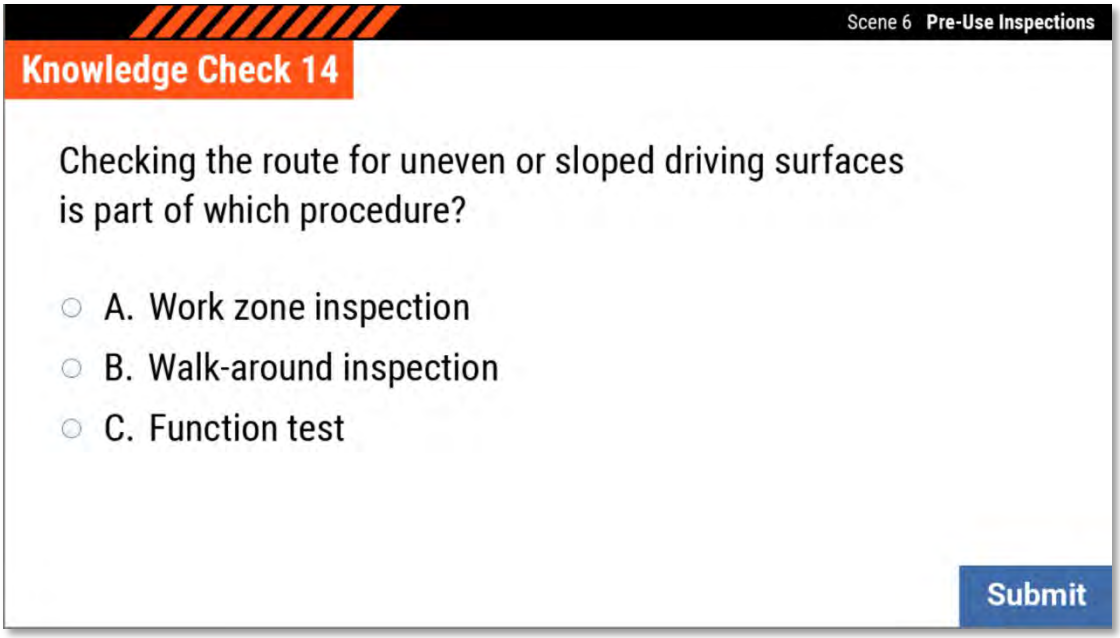
Narration:
Test the hydraulic levers. On a vertical mast forklift, you'll hoist and lower the forks, tilt the mast, shift the forks from side to side, and use the auxiliary control if the forks or attachment has this capability.

Slide 180 - Function Test 4



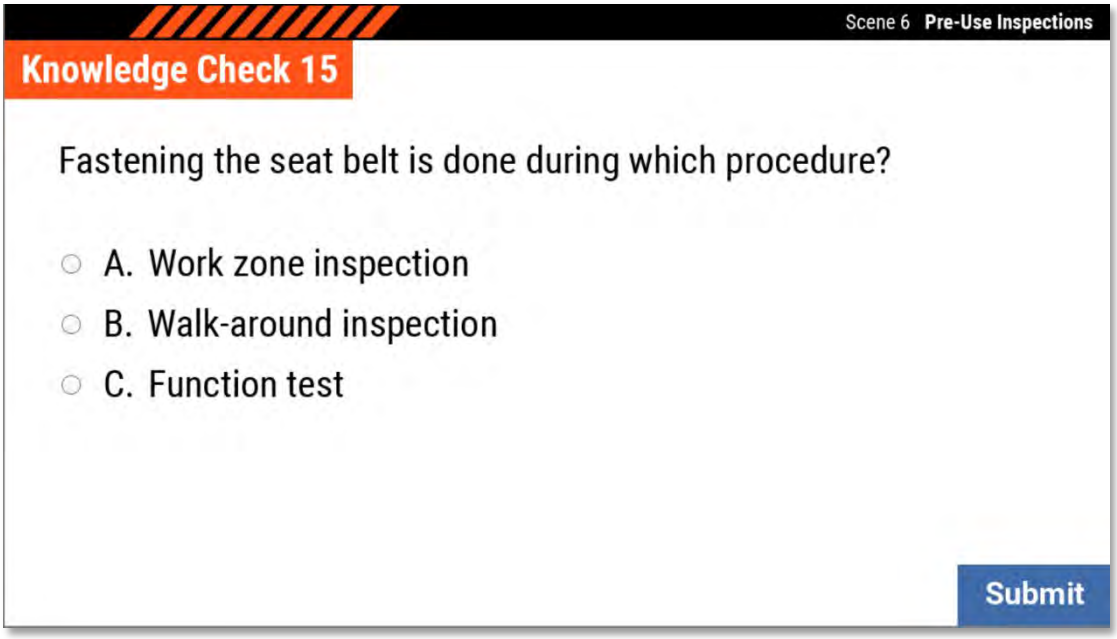
Narration:
On a telehandler, check boom movement, carriage tilt, frame leveling, the outriggers, and the auxiliary control if the forks or attachment has this capability. That brings us to the end of this scene. Try a couple of knowledge checks.

Slide 181 - Knowledge Check 14



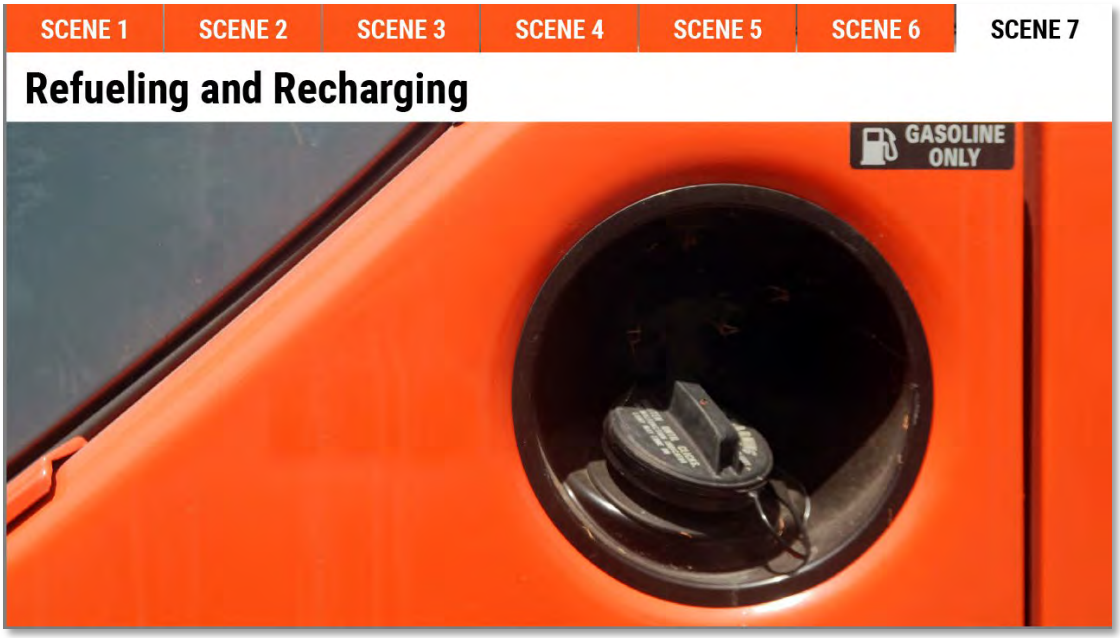
Question:
Checking the route for uneven or sloped driving surfaces is part of which procedure?

Slide 182 - Knowledge Check 15



Question:
Fastening the seat belt is done during which procedure?

Slide 183 - Refueling and Recharging

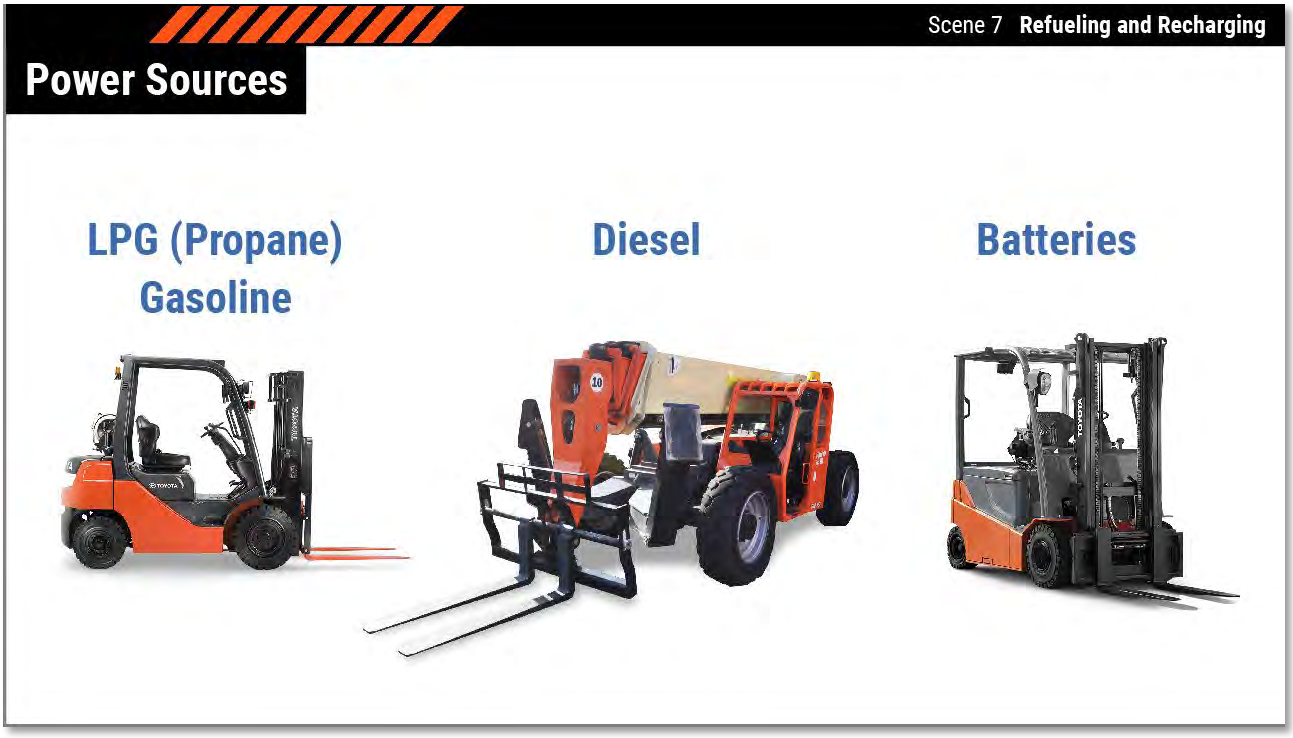


Narration:
Scene Seven, Refueling and Recharging.

Slide 184 - In This Scene

Narration:
In our final scene, we'll be discussing how to avoid hazards while refueling a forklift, changing a propane tank, or changing and charging batteries.

Slide 185 - Power Sources

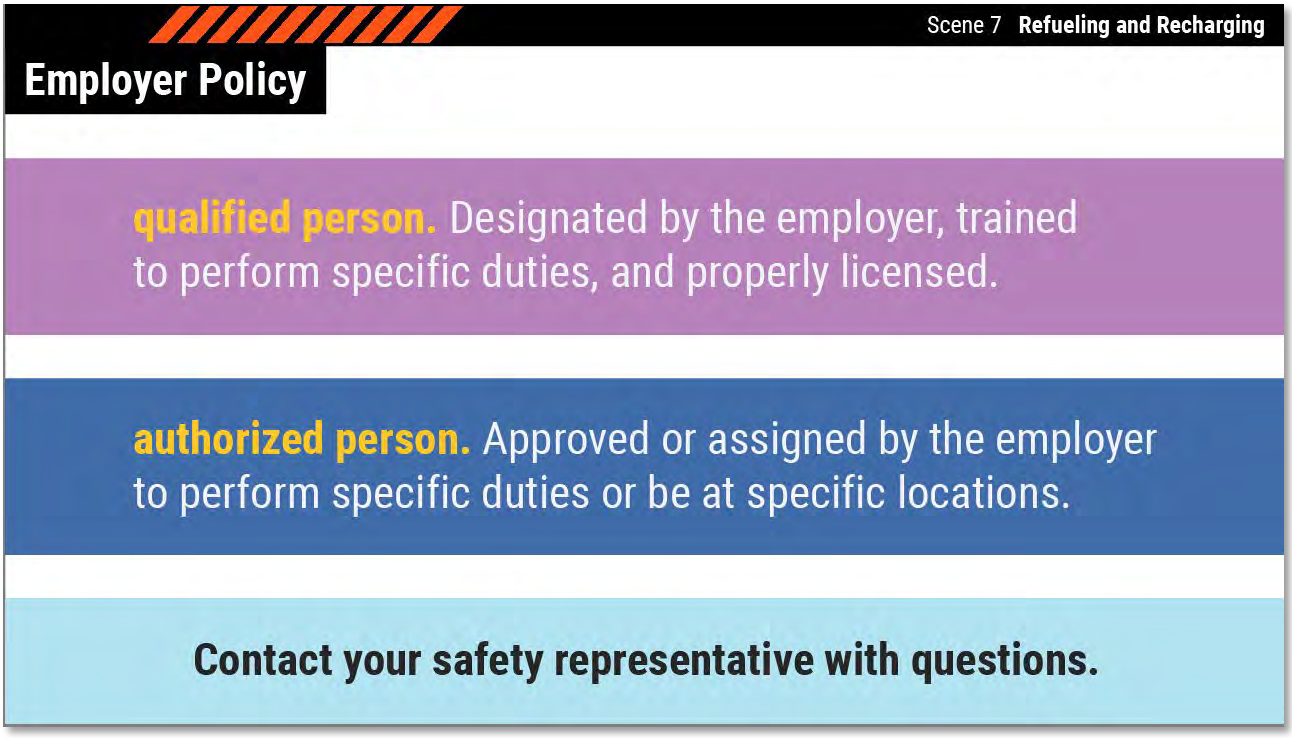


Narration:
Forklifts are powered by internal combustion or electric engines. Those with internal combustion engines run on propane, gasoline, or diesel fuel. And, of course, vehicles with electric engines run on batteries.

Slide 186 - Employer Policy 1

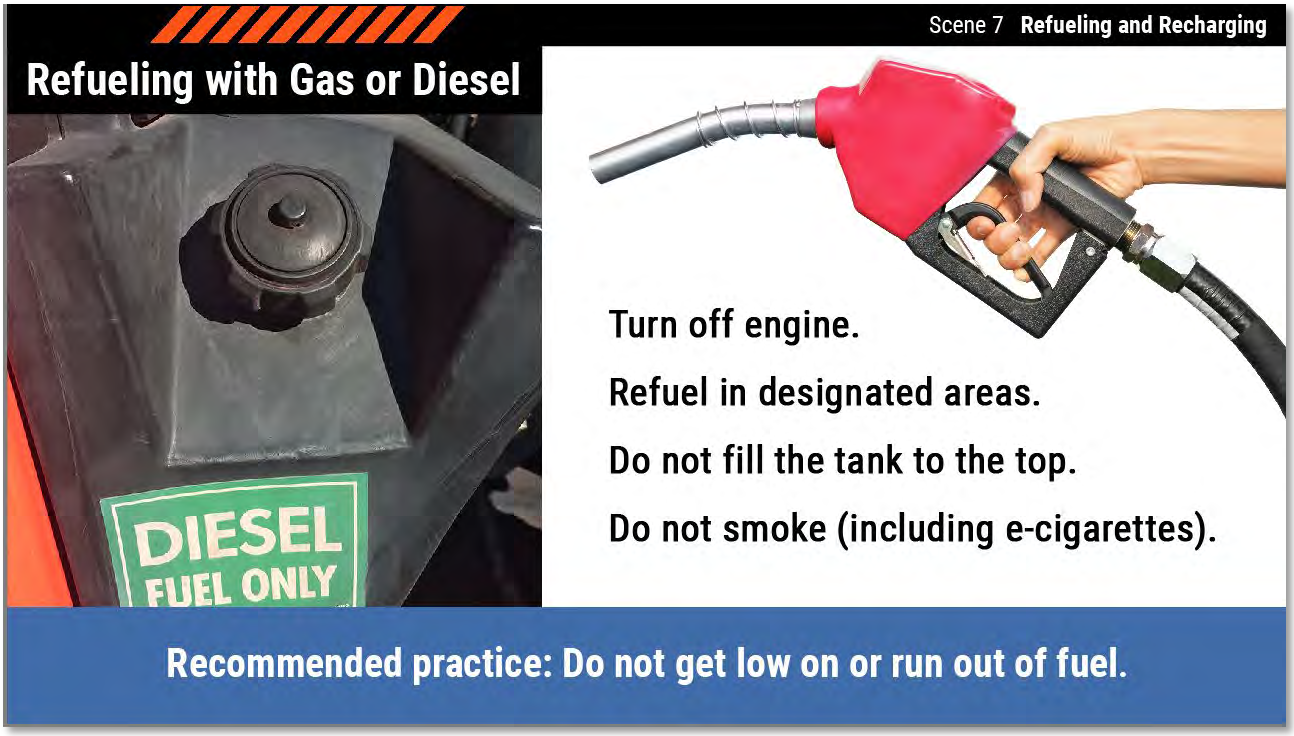
Narration:
Depending on employer policy, you may be allowed to change propane tanks and refuel forklifts that use gasoline or diesel fuel. However, only qualified and authorized persons may refill propane tanks and change and recharge batteries.

Slide 187 - Employer Policy 2



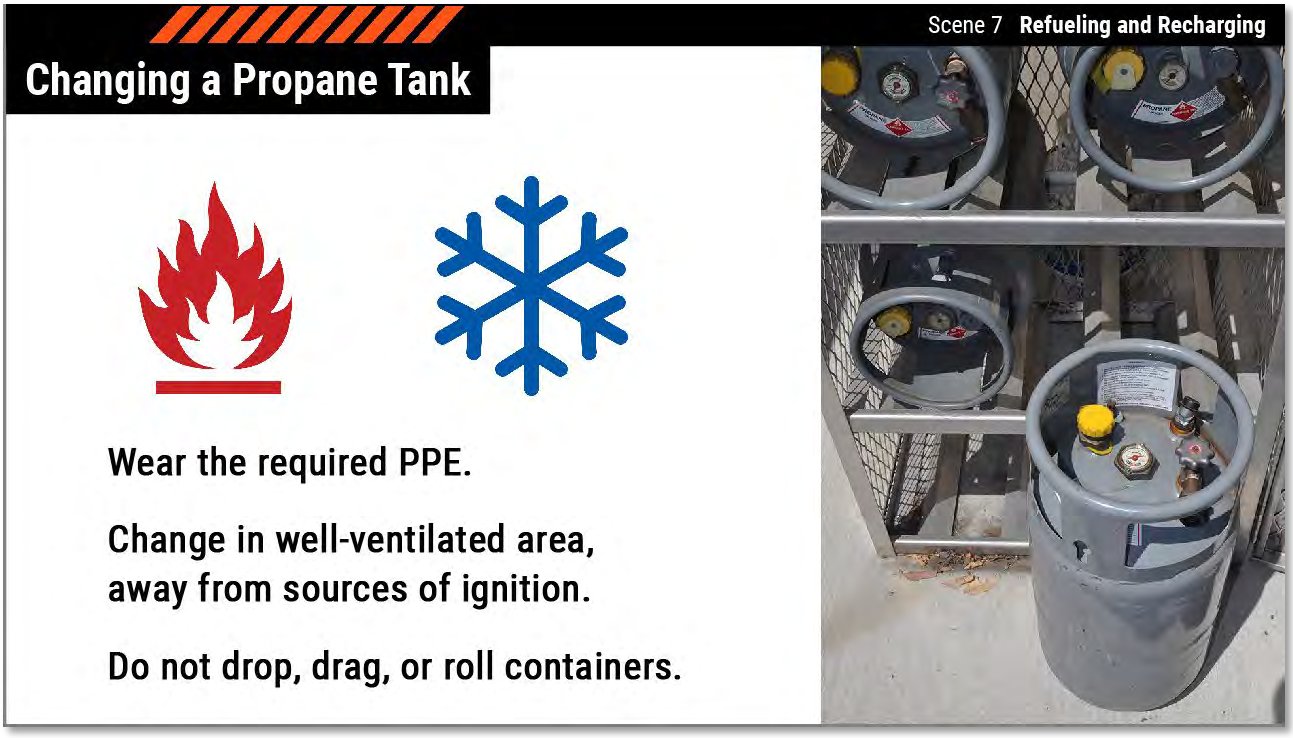
Narration:
A qualified person is designated by the employer, has the training and experience to safely perform their duties, and is properly licensed in accordance with federal, state, or local laws and regulations. An authorized person is approved or assigned by the employer to perform a specific type of duty or duties, or to be at a specific location or locations at the jobsite. Contact your safety representative for specifics on the procedures you are allowed to perform.

Slide 188 - Refueling with Gas or Diesel



Narration:
When refueling forklifts that are powered by gasoline or diesel fuel, explosive vapors are the main hazard. Stay safe by following these precautions. Turn off the engine. Refuel in designated locations with proper ventilation and away from heat sources and people. Do not fill the tank to the top, as it may overflow if the fuel expands from heat. And, do not smoke, which includes e-cigarettes. To keep the vehicle in good working order, do not allow the forklift to become low on fuel or run out of fuel.

Slide 189 - Changing a Propane Tank 1

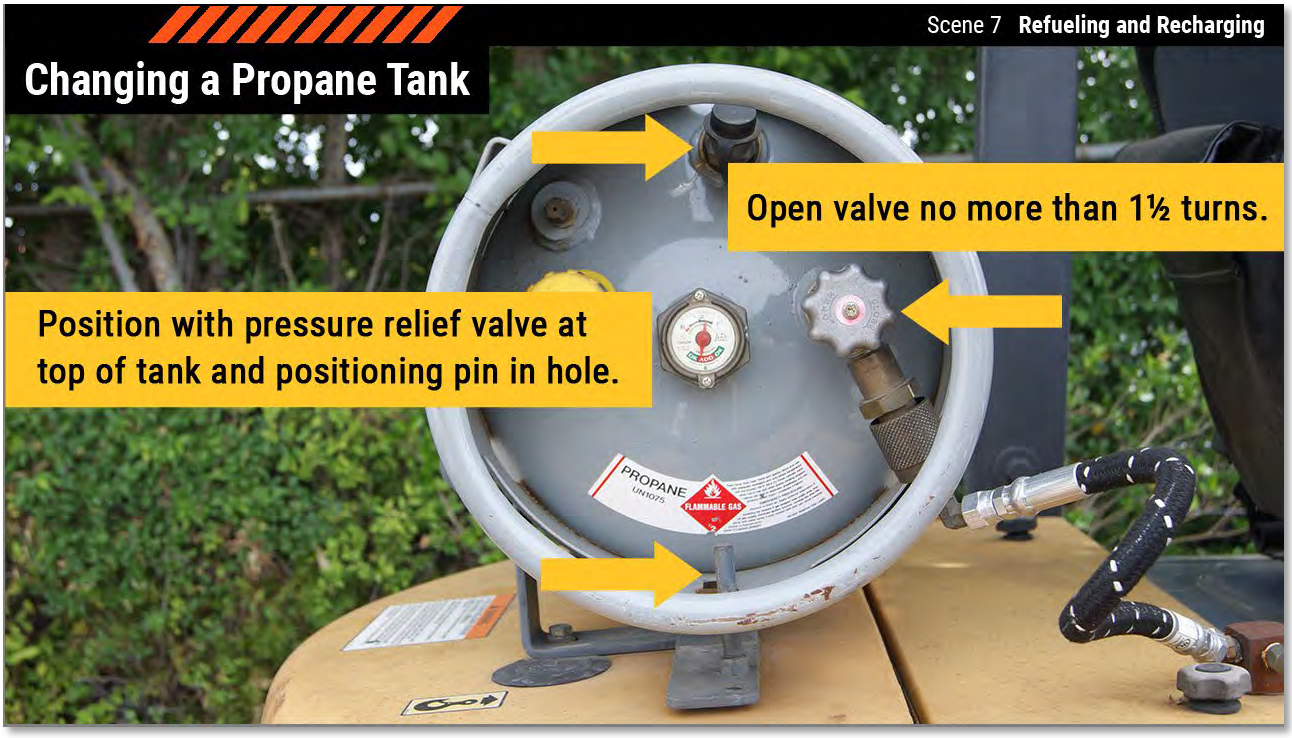


Narration:
Propane vapor is heavy and flammable. If not adequately dissipated, it can collect in low-lying areas, including pockets and pant cuffs, and ignite if exposed to a heat source. Liquid propane is extremely cold and may cause freeze burns if it comes in contact with your skin. When changing a propane tank, wear the required PPE, which could include eye protection and insulated, loose-fitting gloves made of leather or neoprene. Change cylinders in a well-ventilated area, away from sources of ignition. Do not drop, drag, or roll containers.

Slide 190 - Changing a Propane Tank 2

Narration:
Close the tank valve and run the engine until it stops to ensure that the fuel line is empty. Carefully disconnect the fuel line and holding strap. Remove the empty cylinder and inspect it for damage. Then, inspect the replacement cylinder. Remove any damaged cylinder from service.

Slide 191 - Changing a Propane Tank 3

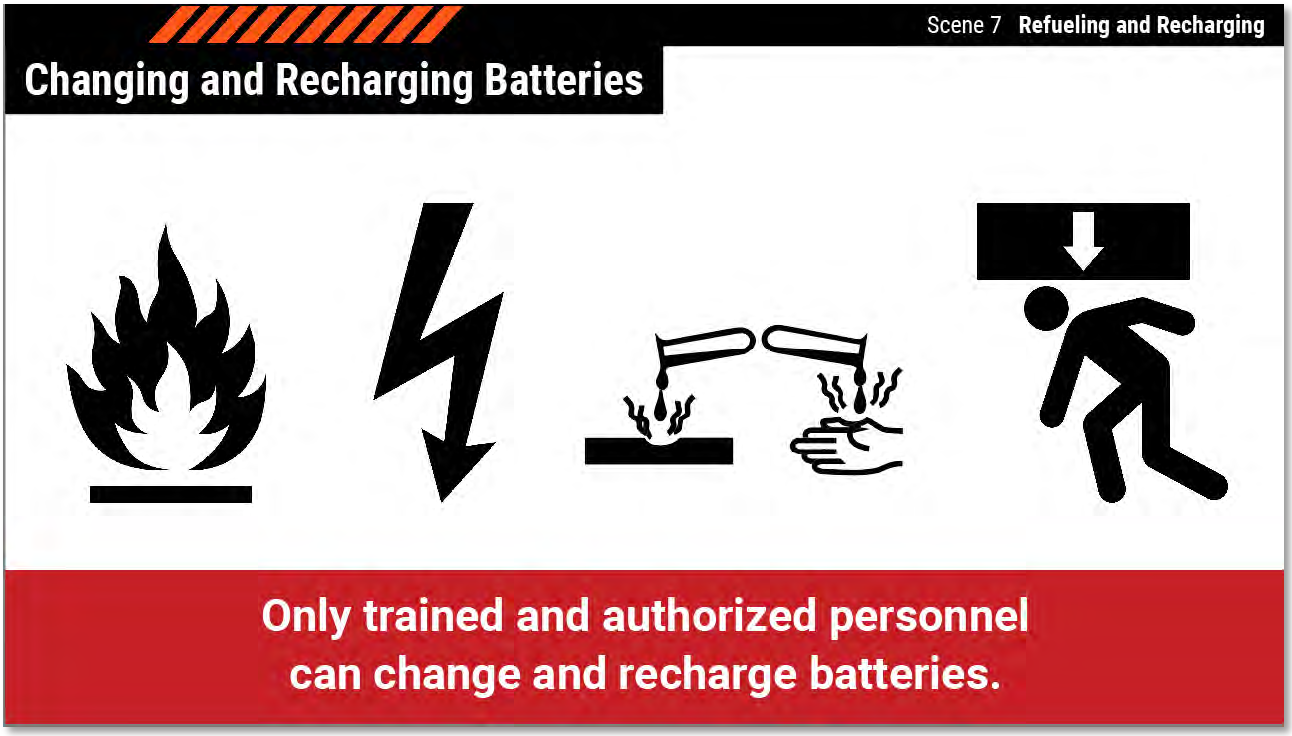


Narration:
Position the replacement cylinder so that the pressure relief valve is at the top of the tank and the positioning pin is in the positioning hole. Open the valve no more than one and a half turns to allow adequate propane to the engine and quick closure if a problem arises.

Slide 192 - Propane Leaks

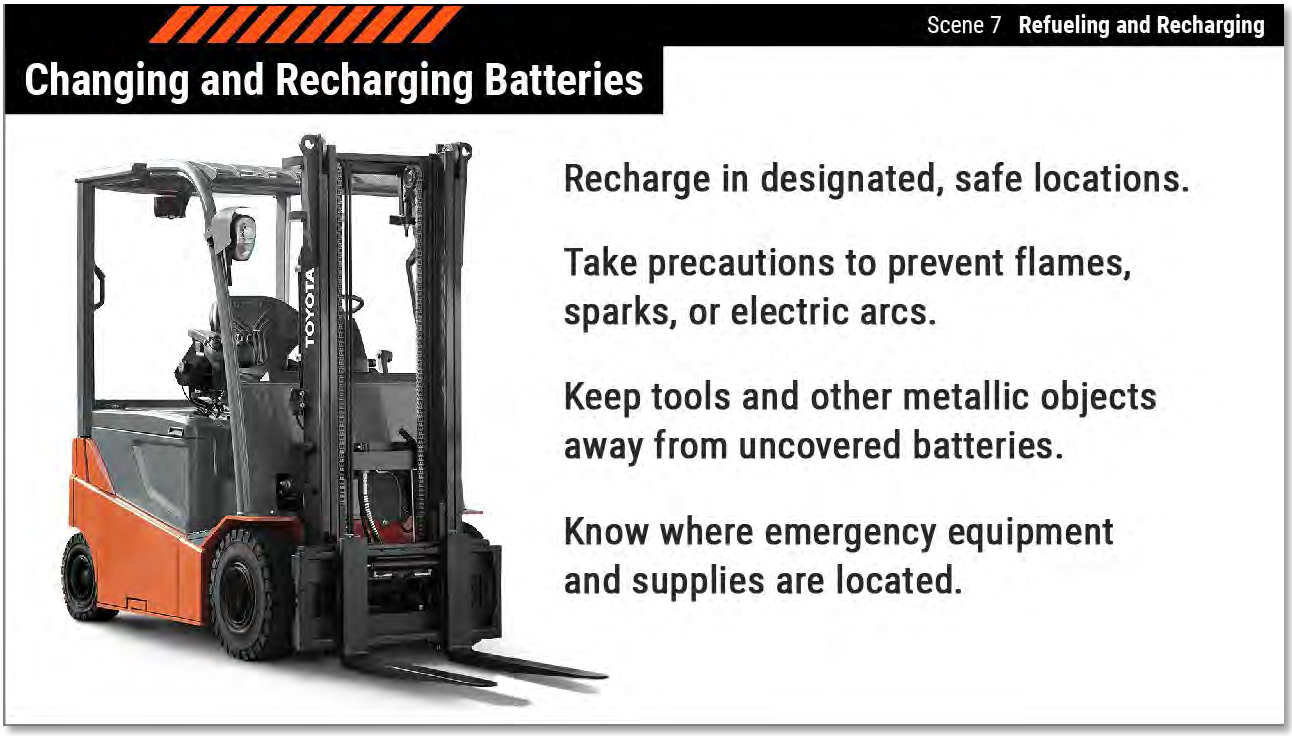
Narration:
If, at any time, propane is seen, heard, or smelled, close the valve immediately. This is an indication that the tank, a connection point, or the fuel line is leaking. To check for leaks, apply soapy water to the tank valve, the fuel line, and the fuel line's connection points. Turn the valve back on, and look for bubbles. If the leak cannot be stopped, do not use the vehicle. Close the valve, and report the problem to your supervisor.

Slide 193 - Changing and Recharging Batteries 1



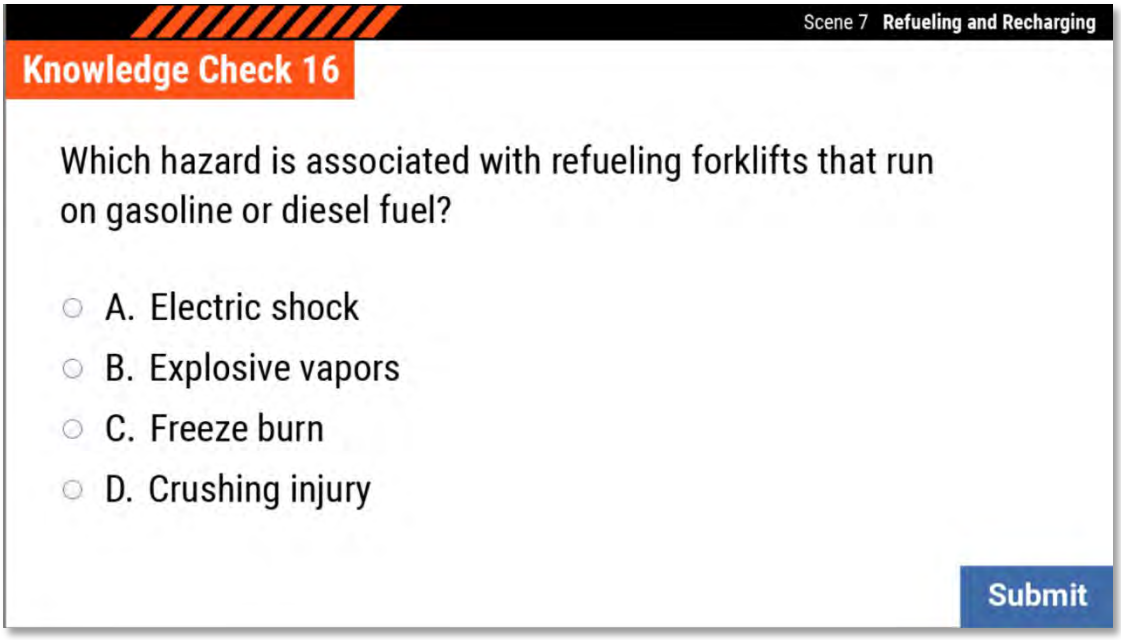
Narration:
Potential hazards when changing and recharging batteries include fire, electric shock, acid burns and spills, and crushing injuries. Only trained and authorized personnel are permitted to change and recharge forklift batteries.

Slide 194 - Changing and Recharging Batteries 2



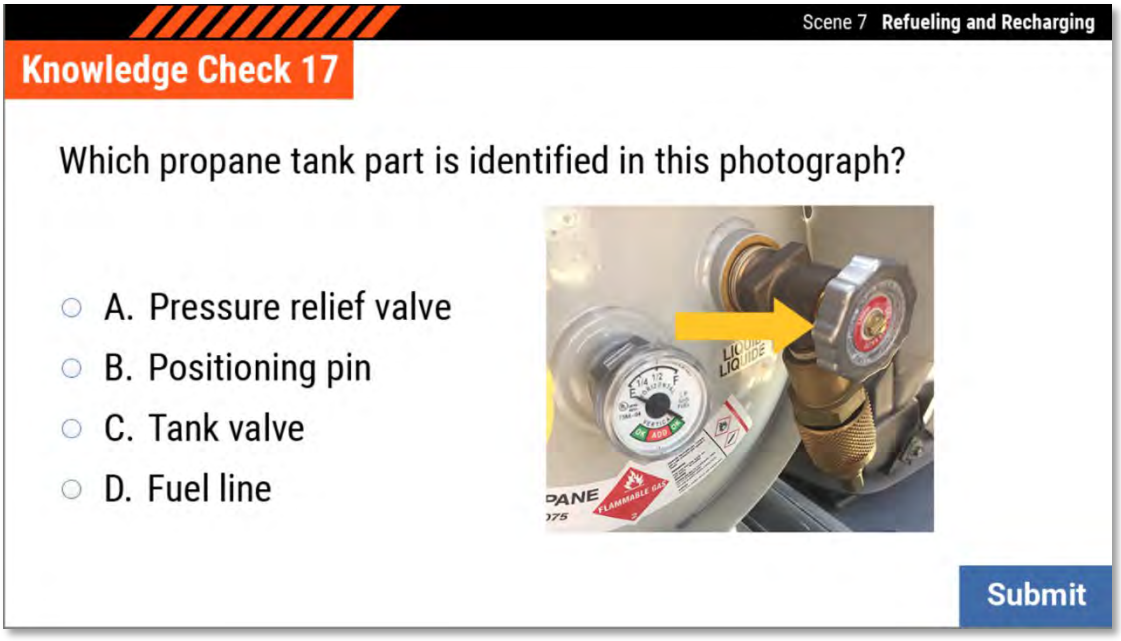
Narration:
If you have been trained and authorized by your employer to perform these tasks, follow these basic safety practices. Recharge only in designated, safe locations. Take precautions to prevent flames, sparks, or electric arcs. Keep tools and other metallic objects away from uncovered batteries. And, know where emergency equipment and supplies--like the eye-washing station and neutralizing solutions--are located. We're at our last couple of knowledge checks. Let's see how you do.

Slide 195 - Knowledge Check 16



Question:
Which hazard is associated with refueling forklifts that run on gasoline or diesel fuel?

Slide 196 - Knowledge Check 17



Question:
Which propane tank part is identified in this photograph?

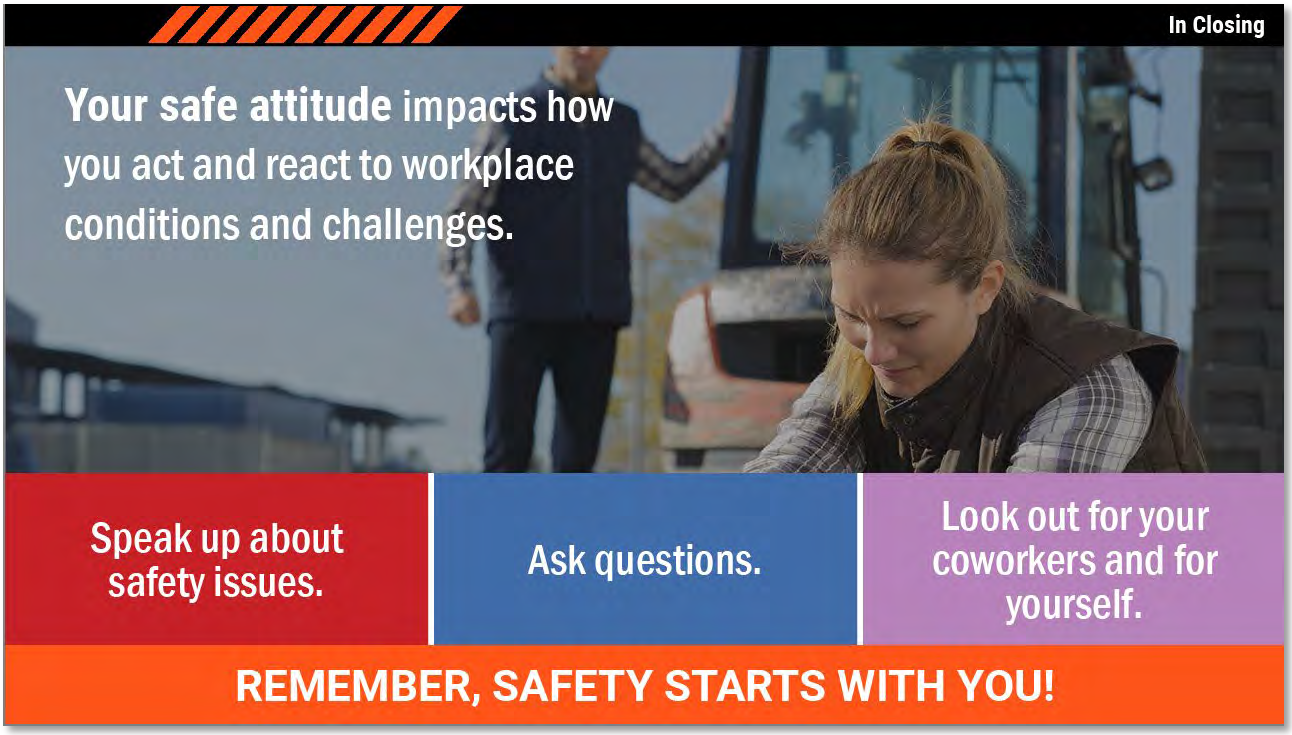
Slide 197 - In Closing

Narration:
Okay, we've reached the end of the presentation. Before you are directed to the test, let's go over some important takeaways.

Slide 198 - Important Takeaways

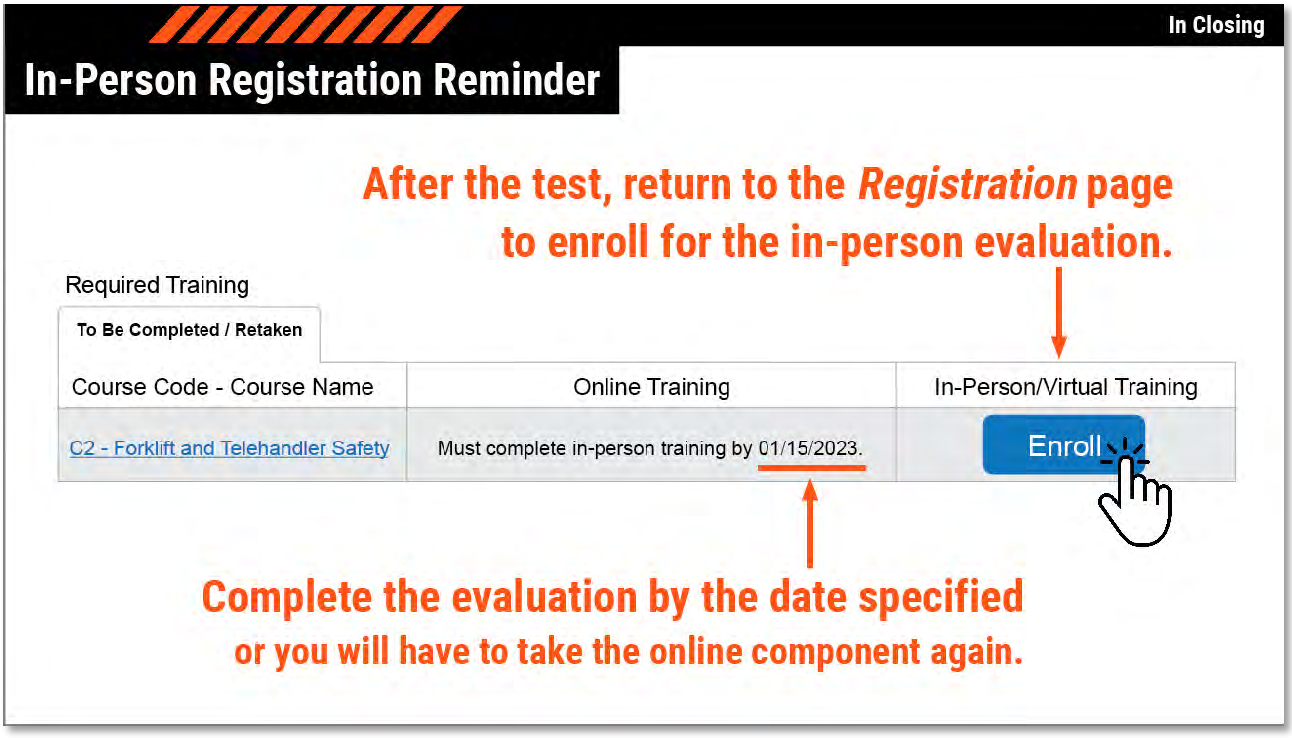
Narration:
If you are an operator, familiarize yourself with the operator's manual before operating any forklift. Drive and handle loads with caution to avoid common hazards like collisions, tip-overs, and falling loads. Assess forklift capacity for each new load and attachment. And, use only approved attachments. If you are a worker, pay attention to the forklift activity around you and keep a safe distance from a forklift and its load.

Slide 199 - A Safe Attitude



Narration:
Your safe attitude impacts how you act and react to workplace conditions and challenges. Speak up about safety issues. Ask questions. Look out for your coworkers and for yourself. Remember, safety starts with you.

Slide 200 - In-Person Registration Reminder



Narration:
Remember, after you pass the test, return to the *Registration* page immediately to enroll for the in-person driving evaluation. Complete this evaluation by the date specified or you will be required to take the online component again. This date does not extend your training deadline.

Slide 201 - To the Test

Narration:
You're almost done. Please click the *Continue* button in the upper right of the browser to proceed to the test, and receive credit for the course.

Industry Safety Resources

Safety Bulletins

Safety bulletins are researched, written, and distributed by the Industry Wide Labor-Management Safety Committee for use by the motion picture and television industry. The Industry Wide Labor-Management Safety Committee is composed of guild, union, and management representatives active in industry safety and health programs.

These safety bulletins are guidelines recommended by the safety committee. They are not binding laws or regulations. State, federal, and/or local regulations, where applicable, override these guidelines. Modifications in these guidelines should be made, as circumstances warrant, to ensure the safety of the cast and crew.

The committee and these safety bulletins are representative of the commitment of both labor and management to safe practices in the motion picture and television industry. The members of the committee and all those who contributed to its work have devoted a great deal of time and effort to these guidelines because of the importance of safety to our industry.

Current safety bulletins are available on the CSATF website:

https://www.csatf.org/production-affairs-safety/safety-bulletins/

24-Hour Industry Safety Hotline

The 24-hour industry safety hotline number directs callers to an automated system that will assist them in reaching the desired Studio Safety Hotline.

888-7-SAFELY

A list of the Studio Safety Hotlines can also be found on the CSATF website:

https://www.csatf.org/production-affairs-safety/studio-safety-hotlines/

Safety is everyone's responsibility.