Online Intermodal Inspection Program

Safety

Introduction

Components

Taking Exceptions

Inspection Tips

The first and most important part of any job in the intermodal industry is safety. The standard requirements for PPE (Personal Protective Equipment) on intermodal terminals are as follows:

-Hard Hat (Head protection from bumps and falling debris)
-Enhanced Visibility Workwear (Vest, Shirt, or Jacket to ensure you're visible to others)
-Safety Glasses (Eye protection from dust and debris)
-6" Lace-Up Steel Toe Boots (Rollover protection as well as dropped/falling debris)

PPE is not only meant to keep you safe were an accident to occur, it is also a preventative measure to help ensure accidents don't happen. While performing inspections within an intermodal terminal, proper PPE is only part of the equation to staying safe. While inspecting equipment parked in the facility it is important to take steps to alert others to your presence around that piece of equipment. Parking a yard vehicle and/or placing safety cones at the front and rear of the equipment lets other people in the facility know there is someone working in the vicinity and to take extra precautions around that area.

While moving through terminals it's important to be alert and pay close attention to all signs (Stop, Yield, Speed Limit, Rail Crossings, etc.) as well as keeping an eye out for other workers moving through the terminal, be it truck drivers, spotters, cranes or repair personnel. These larger pieces of equipment often have less visibility making it all the more important to be attentive and aware of your surroundings at all times.

The first thing you need to know in order to properly inspect intermodal equipment (containers, trailers, and chassis) is your location in relation to the unit, i.e. Left and Right. This is determined by standing at the rear facing the front of the equipment making the left side on your left, and the right side on your right. Conversely this means when standing at the front the sides are opposite, the left side will be on your right and the right side will be on your left.

Rear

L

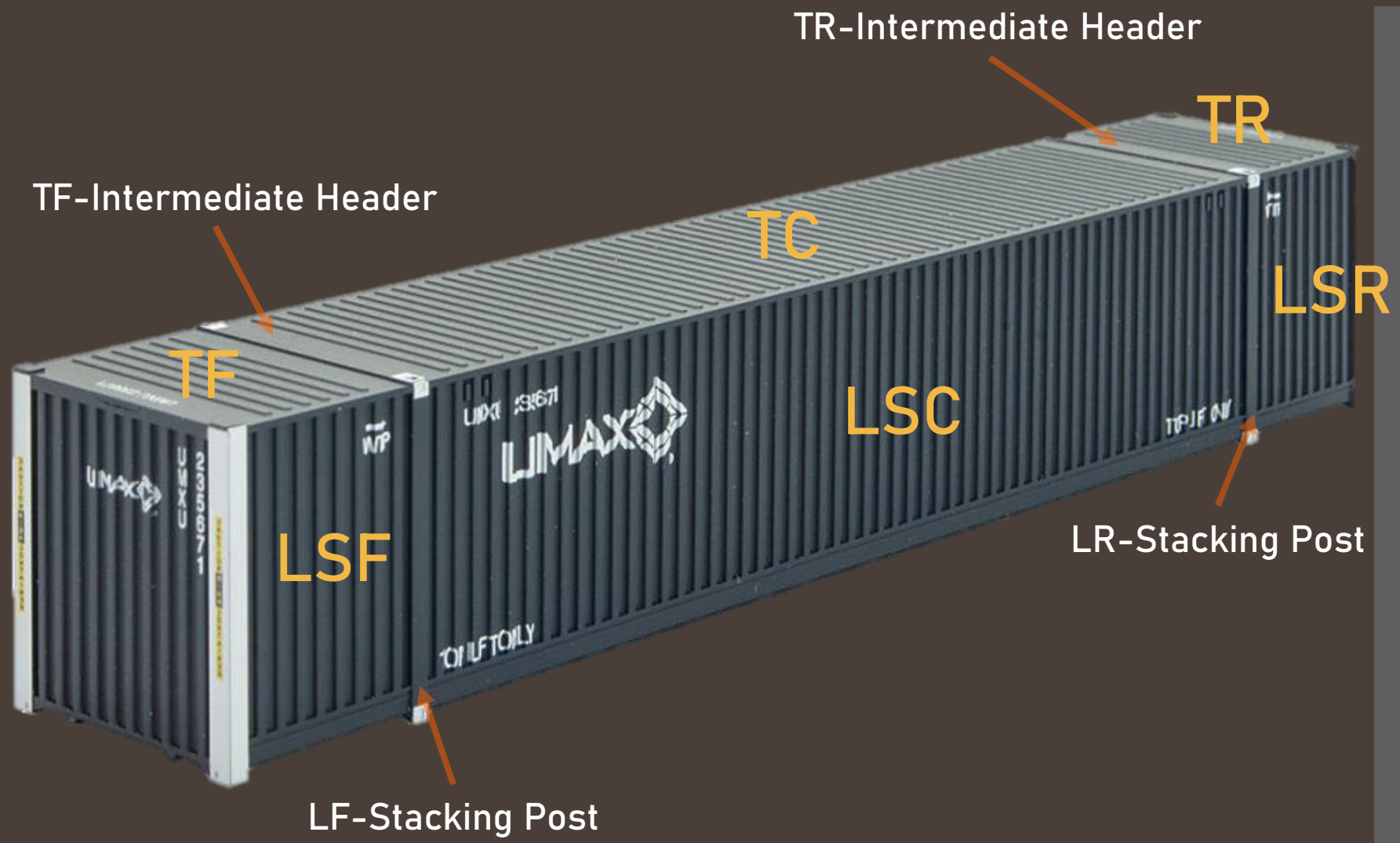
R

Front

R

L

Each side of a 53’ container has 3 distinct sections: Right Side Front (RSF), Right Side Center (RSC), Right Side Rear (RSR), Left Side Front (LSF), Left Side Center (LSC), and Left Side Rear (LSR). These locations are created by using the stacking posts as dividers between them. Similar locations are also used for the top/roof portion of a container: Top Front (TF), Top Center (TC), and Top Rear (TR). These sections are created by using the intermediate headers as the divider. These specific locations will need to be used when notating defects to many components of a unit so it is important to know them and be accurate when using them.

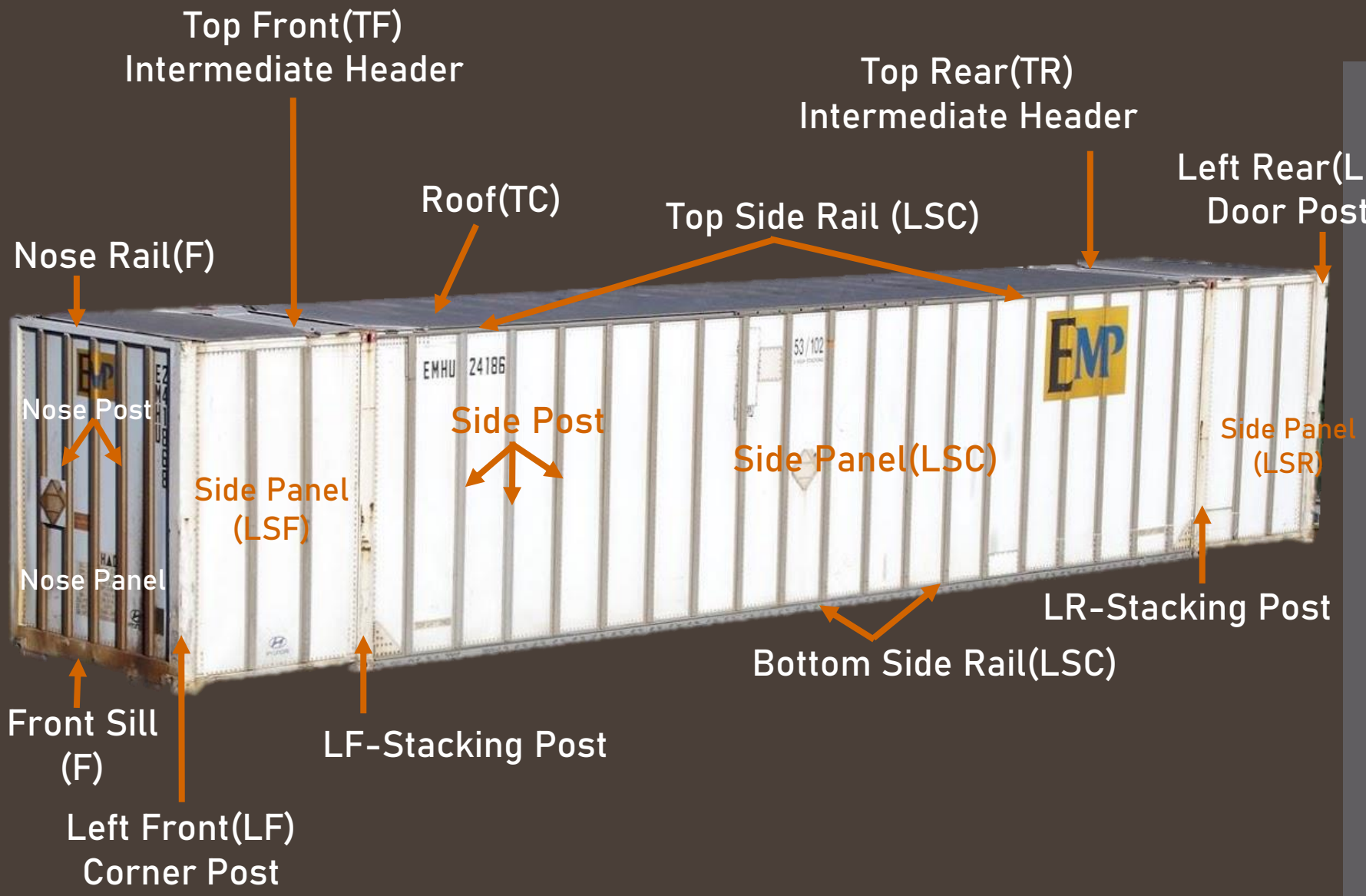


Similar to containers, trailers and chassis must also use the same location labels. The distinction comes with the method used to differentiate these areas. The left and right side front, center and rear are defined by the legs and tires. Everything from the legs to the front would be considered Left Side Front (LSF) and Right Side Front (RSF), from the front of the tires to the rear would be the Left Side Rear (LSR) and Right Side Rear (RSR), with everything between the legs and front of the tires being considered the Left Side Center (LSC) and Right Side Center (RSC).

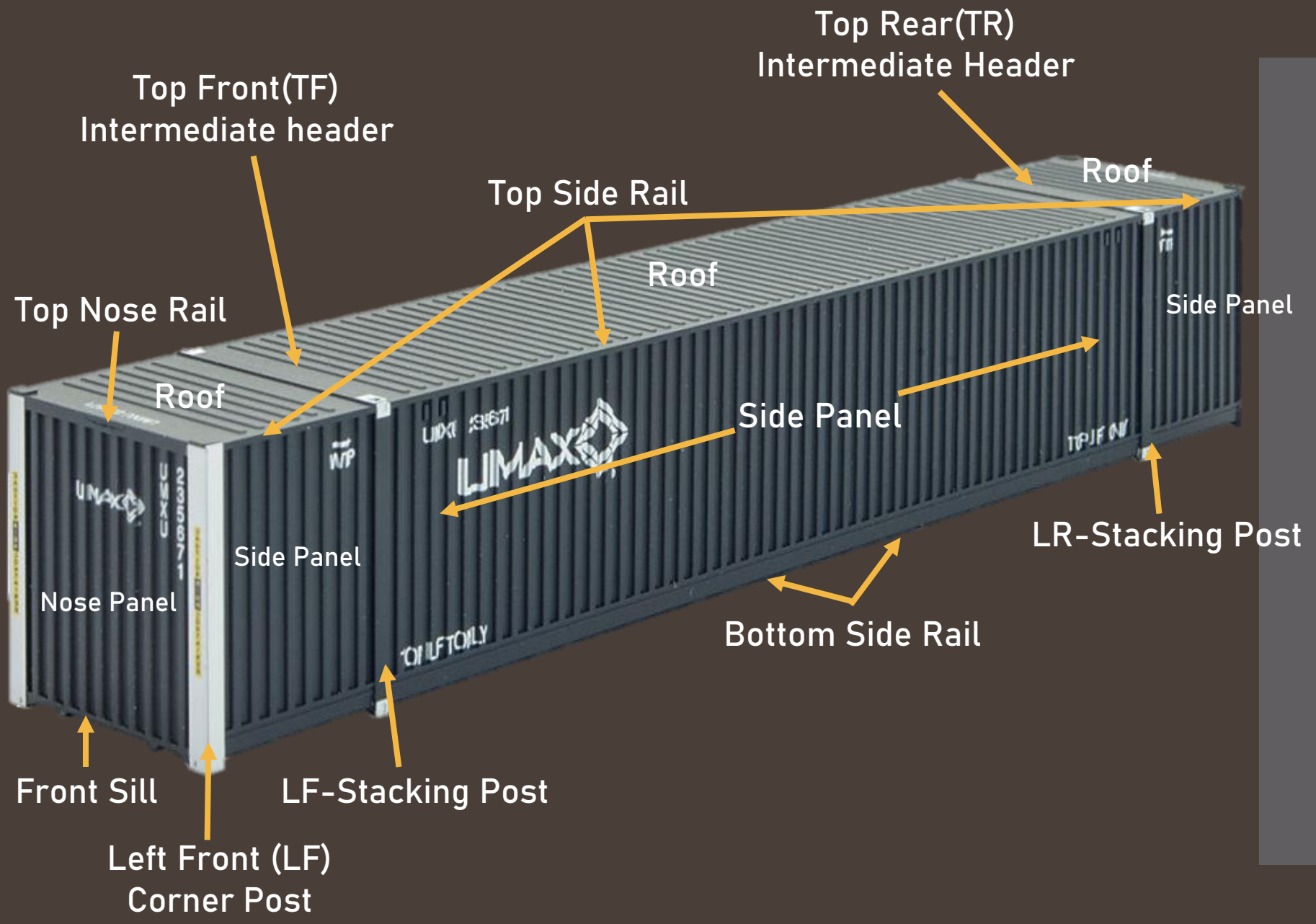
The following slides will cover the varying components of different types of intermodal equipment. Study the diagrams and note the proper names given for each component. Refer to the explanation for further details and clarification on some aspects of the equipment.

Components

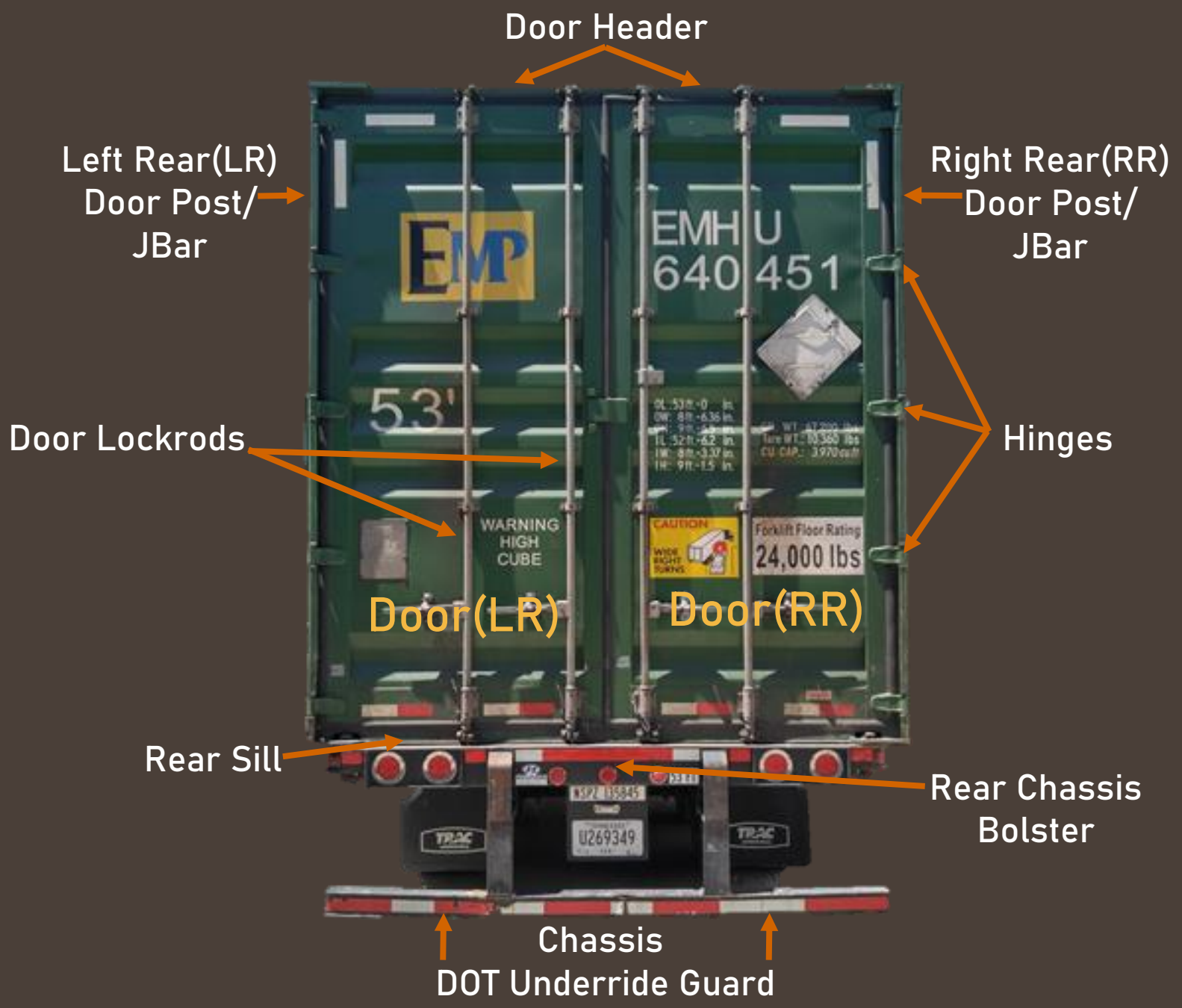
Components of a 53’ aluminum container: It’s important to note the differences between similar components such as nose posts, corner posts, side posts, and stacking posts. Even though they are all similar, they will require different repairs in order to fix defects so it is important to be accurate when noting any defects.



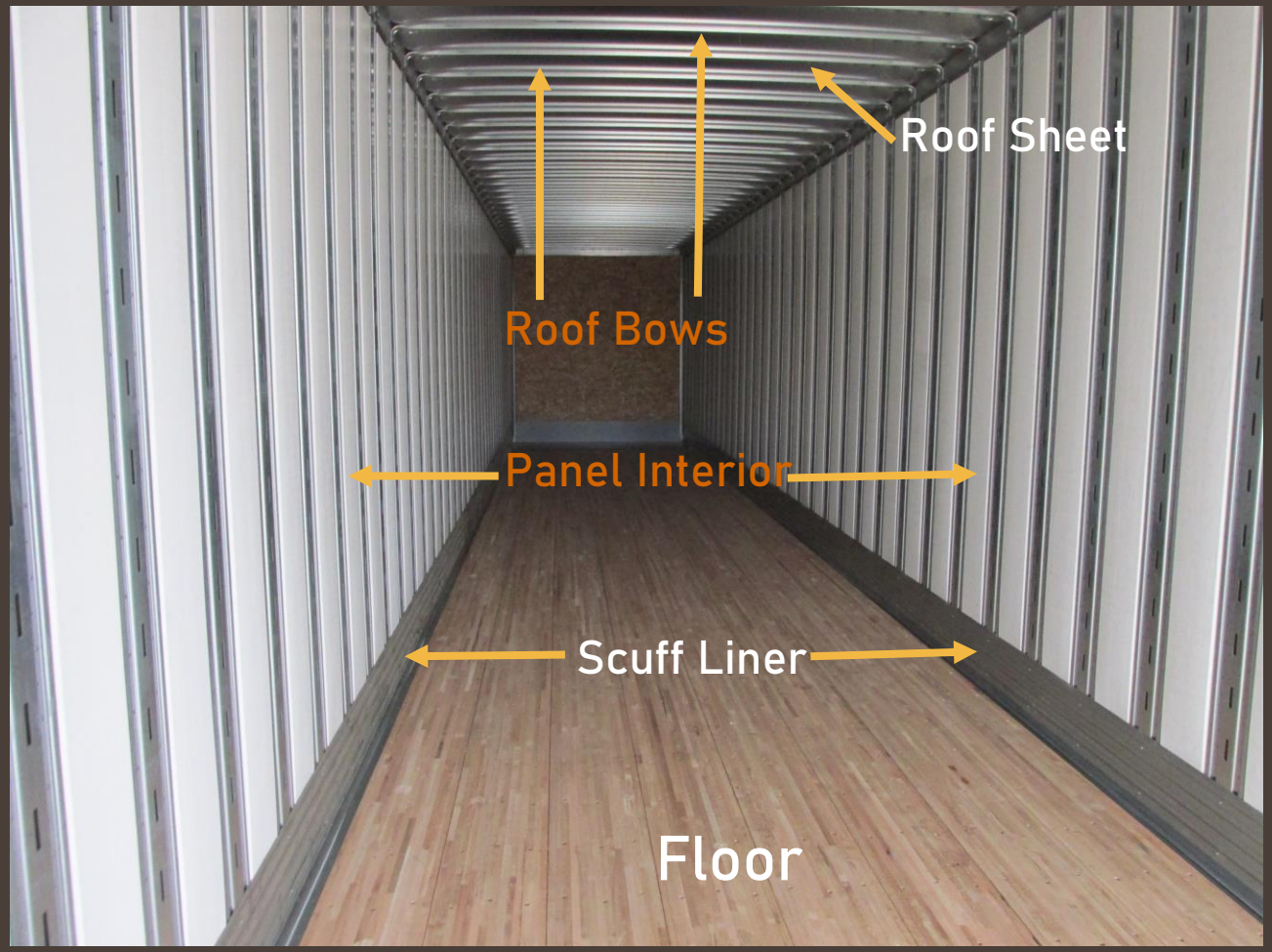
Components of a steel container: Steel containers differ from aluminum in the fact that they do not have the side and nose posts that were shown on the aluminum container. They primarily consist of nose panel, side panels, corner posts, stacking posts, top rail, bottom rail, and roof. Note the differences in the diagram.



Rear of a container: It's important to inspect the rear for damage/defective components as it is the only portion of the container with moving parts. Proper function is absolutely necessary. Aluminum and steel containers have the same components at the rear.

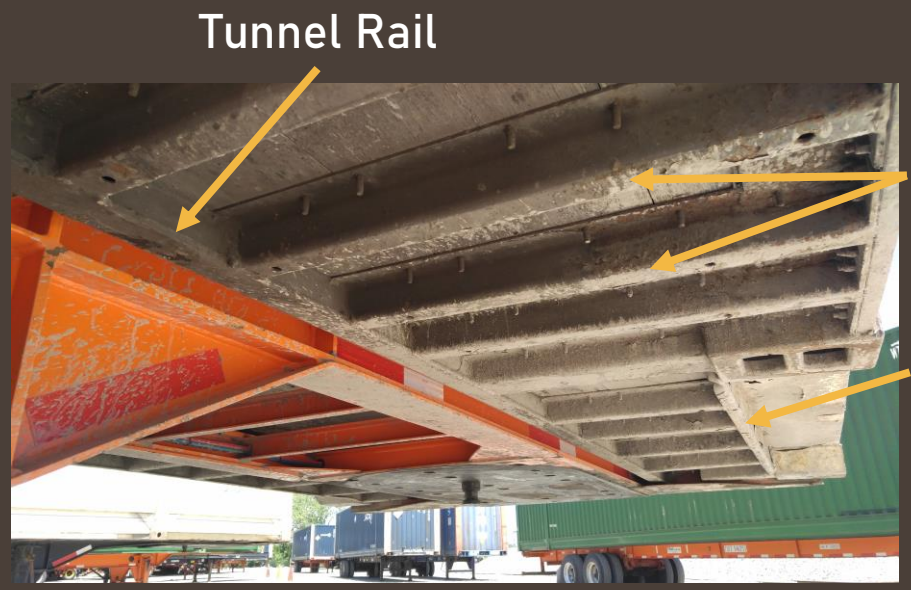


Interior: The interior of a container consists of a wood floor, a scuff liner to help prevent damage while loading/unloading, roof sheet, and roof bows (aluminum container only). If the unit is empty and an interior inspection is possible, also look for any debris left behind. If the unit requires cleaning before it can be loaded again, then that is considered a defect and would need to be reported.

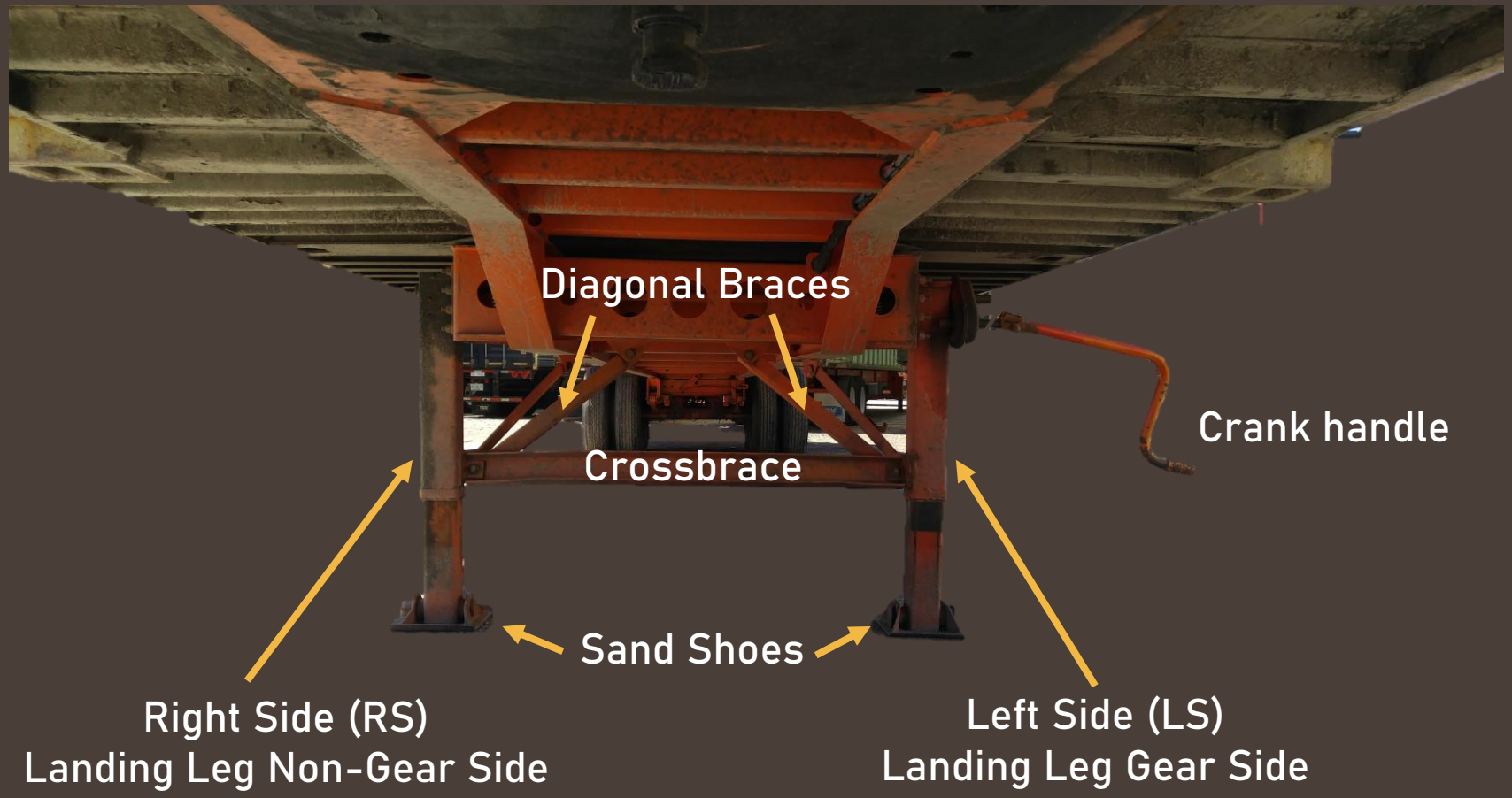


Underframe of the front of a container: Outriggers that span from the bottom rail to the tunnel rail. There is a tunnel rail on the left and right of the container that allows the chassis to sit between them.

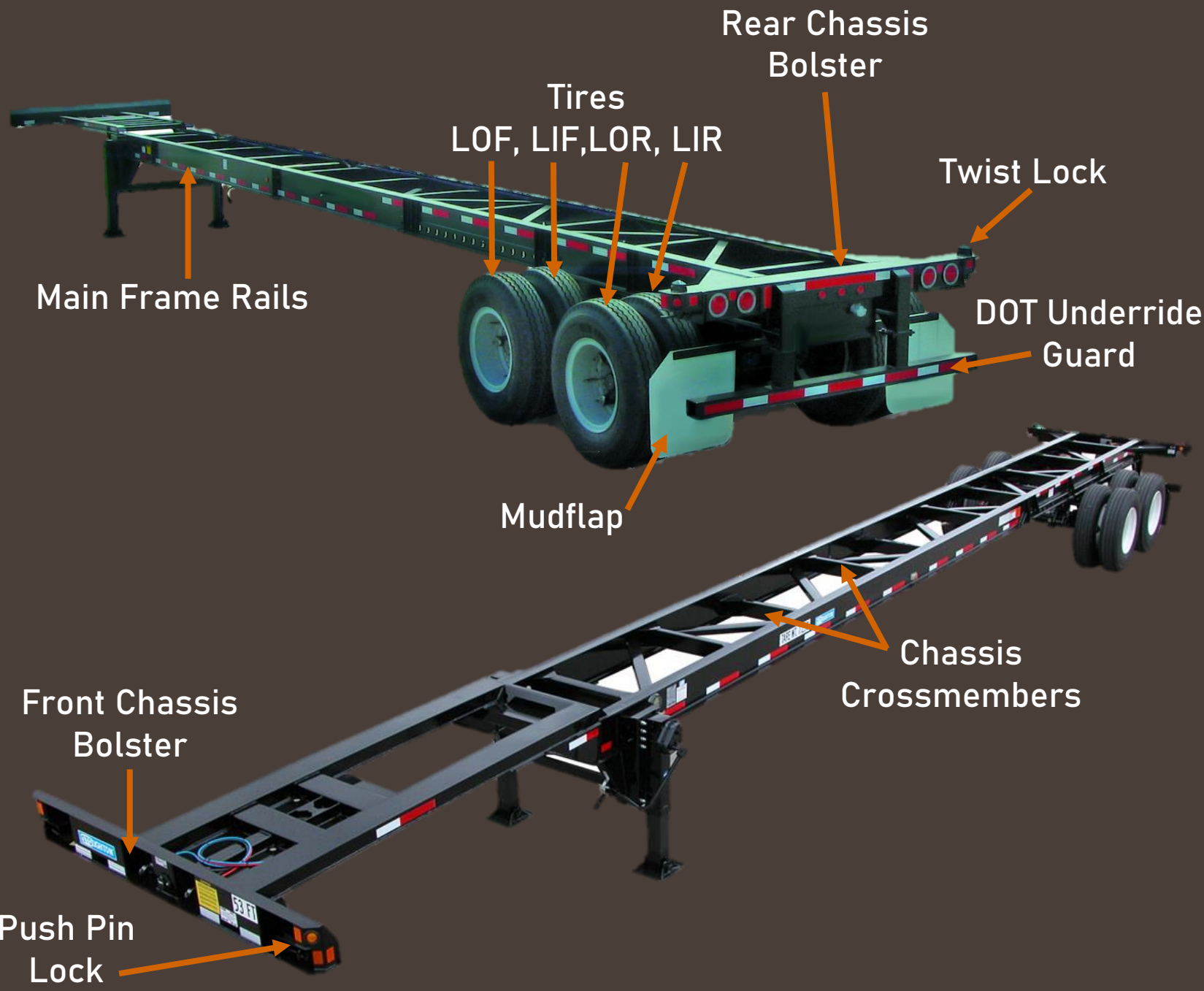
Underframe of the center and rear of a container: There is no tunnel rail in the center or rear of a container so instead of outriggers there are cross members that span from the left bottom rail to the right bottom rail to provide support.



Chassis legs: An important aspect to keep in mind when inspecting the legs is which leg is the gear side (the side with the crank handle to raise and lower the legs). The gear side changes from manufacturer to manufacturer as well as build series. Gear and non-gear legs have different repair costs associated with them so it's important to be accurate about which is damaged/defective. Ensure that the legs are straight and perpendicular to the ground so when parked they will safely support the unit.



Chassis: Similar to containers, chassis have a left and right side that needs to be noted when taking exceptions to damage. Also remember proper tire locations the left and right sides will both have: inner front (LIF, RIF), outer front (LOF, ROF), inner rear (LIR, RIR), outer rear (LOR, ROR). While at the rear of the unit also make sure that the DOT underride guard is in good condition. As a major safety component it should not be bent in excess of 3 inches in any direction (to be illustrated later).



When inspecting Intermodal equipment for defects there are 3 key words to use: bent, broken, and cut. It's important to use these words only and avoid other descriptive words such as dent, scrape, gouge, etc. As simple as these words seem some explanation is needed. For a component to be considered bent, it must be bent to the extent that it impedes or interferes with proper use of the equipment, meaning small dings, dents or scrapes do not qualify as damage thus would not need to be reported. Cut and broken items refer to items that have been torn through the full thickness of the material (if you can shine a light from one side and see it through to the other). It is common to see silver tar tape or caulk stuck to a unit. If you see either of these consider there to be a cut underneath and be sure to document the defect.




Scrapes, Scratches, Dents

Not Damage

Damage

Bent, Broken, Cut



To properly take exceptions to defects these 4 steps will help ensure you include all the required information for coverage. Know your location in relation to the unit, be accurate naming the defective item, use the proper words to describe the defect, and when possible include a dimension in inches (2,12,48, etc.). When taking exceptions to defects you must also be sure to list each component individually. Defects and damage can often affect multiple components for example: the Left Front corner post is bent inward causing the Left Side Front panel to bend as well. Listing just one of these will NOT cover the repair to both items despite their defects being related. Being thorough is extremely important when inspecting equipment.

Location-Right Side Front
Item-Panel
Defect-Cut
Dimension-6

Location-Right Side Front
Item-Panel
Defect-Bent
Dimension-18

Location-Right Front
Item-Corner Post
Defect-Bent
Dimension-18

Location-Right Front
Item-Corner Post
Defect-Cut
Dimension-4

It is important to remember that these are the defects visible from this angle. It is very likely that with a more thorough inspection other defects will be found. The way the top rail is bent will likely mean the roof is also bent. The same applies to the left side front side panel in conjunction with the left front corner post.

Location-Front
Item-Nose Rail
Defect-Bent
Dimension-36

Location-Left Front
Item-Corner Post
Defect-Bent
Dimension-96

Location-Front
Item-Nose Panel
Defect-Bent
Dimension-96

Location-Left Side Center(LSC)
Item-Steel Side Panel
Defect-Cut
Dimension-48 inches

Location-Left Side Rear(LSR)
Item-Side Posts(2)
Defect-Broken
Dimension-N/A

Location-Left Side Front(LSF)
Item-Steel Side Panel
Defect-Bent
Dimension-96”

Location-Right Rear(RR)
Item-Door
Defect-Bent
Dimension-24”

Refer to these examples showing what a bent DOT underride guard may look like. Remember that the bumper may be bent in any way, however the key is whether or not it exceeds 3 inches from its original position. The description below can be applied to each of the examples.

Location-Rear(R)
Item-DOT Underride Guard
Defect-Bent
Dimension-4”

When a chassis comes in with damage to the landing legs it is extremely important that when notating the defect you accurately describe the location of the damaged leg as well as if it is the GEAR or NON-GEAR leg. The gear side can be recognized by either and external gear box mounted to the leg or the presence of the crank handle .

Location-Right Side(RS)
Item-Landing Leg(Non-Gear)
Defect-Bent
Dimension-N/A

Location-Left Side(LS)
Item-Landing Leg(Gear)
Defect-Bent
Dimension-N/A

Location-Right Side(RS)
Item-Landing Leg(Non-Gear)
Defect-Bent
Dimension-N/A

Tires

One of the easiest ways to avoid unnecessary maintenance costs and more importantly ensure the safe operation of intermodal equipment is to perform regular tire inspections. There are a variety of circumstances and situations where tire inspections will need to be performed. The following section will cover everything from general information of intermodal tires to the inspection and identification of defects. Whether you are a gate clerk, driver, or mechanic; the following information will help give you a better understanding of tires and the importance of thorough inspections.

Tire Basics

Identifying tire type

Before inspecting tires for damage, it is important to first understand some basic information about them. There are two types of tires used on intermodal chassis, Bias (Job Code Matrix number 1115) and Radial (Job Code Matrix number 1116), with each chassis being equipped with ONE of the two types.

Tire Basics

Identifying tire type

BIAS

RADIAL

The first and easiest way to identify the tire type is to inspect the sidewall of the tire for the identification code. A bias tire will be marked as 10.00-20, and a radial tire will be marked as 11R22.5.

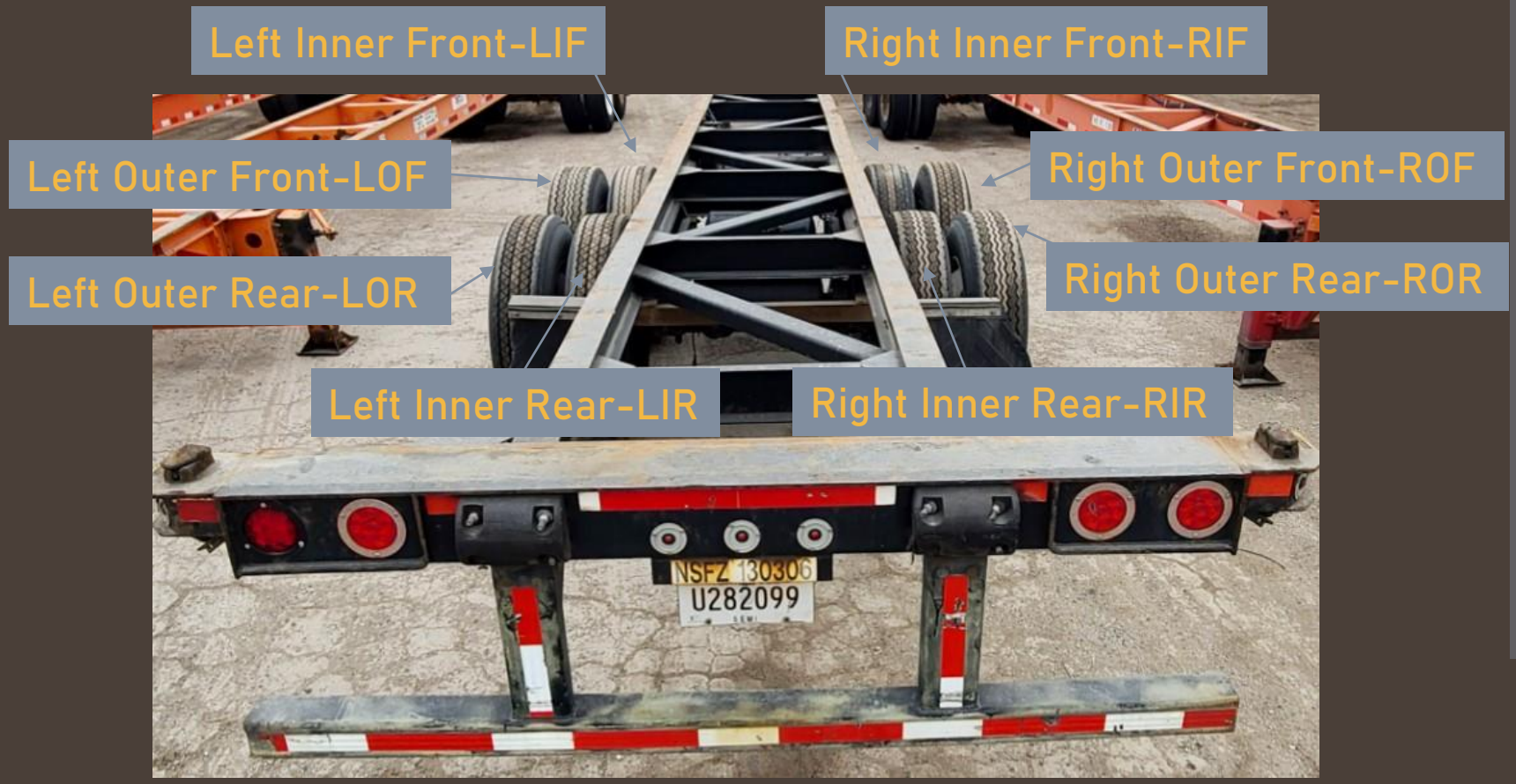
Another way to identify the tire type is by the rim. A bias tire will be mounted on a rim that is flat around the inside, while a radial tire will be mounted on a rim that is rounded around the center.

The last way to identify the tire type is based on the shoulder and tread construction. Bias tires have a scalloped “crowned” shoulder, radial tires have a rounded square profile.

Tire Basics

Locations

Once the type of tire is correctly identified it is important to know the correct location descriptions for each tire. There are eight tires on a standard domestic chassis; this means there are eight corresponding locations used to identify each tire. These locations must be used correctly and accurately so that the J1/J2/Work Order/Bill all include the same information. This will ensure that the correct tire(s) are repaired and can then be properly billed to the responsible party.



Tire Basics

Defects

Tire defects fall into one of two categories, owner's responsibility and handling line responsibility. As the name suggests, owner's defects are defects that will be billed to the owner of the chassis upon repair, and handling line defects are defects that will be billed to whoever was in control of the chassis. It is important to know which type of defect is identified to ensure the appropriate party is billed for the repairs.

The following slides will examine and explain the variety of possible tire defects. Carefully read the descriptions as you review the photos.

Tires

Considering that all chassis and vans have at least 8 tires on them, keeping tire costs down is extremely important. Although a tire seems pretty basic, it is the equipment component that can have the widest range of defects. Tire defects fall under two categories, Handling Line responsibility and Owners responsibility.

Starting with Handling Line defects: slid flat, run flat, and cut.

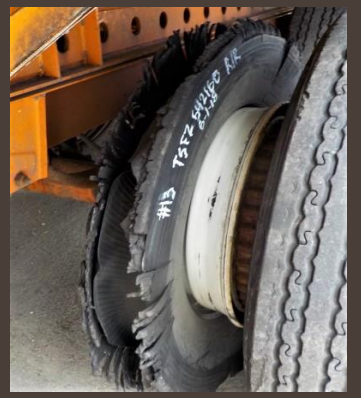
Slid Flat tires occur when the brakes of the unit lock and the tires are dragged without rolling, causing the rubber to wear down creating a flat spot. Similar to a lot of tire conditions, for a tire to be considered slid flat it must meet the following criteria: the flat spot must remove tread or rubber down to 2/32 in. or less of remaining tread in the affected area, while the unaffected tread of the tire remains more than 4/32 in. While Inspecting to slid flats look for sections of tread that appear to be worn more than the tread on the rest of the tire.

Run Flat tires occur when the tire is low on air or flat while being driven resulting in excessive heating of the rubber which then creates a vacuum affect collapsing/sucking the tire in on itself. If the tire is a tube type tire, often times the tube valve stem maybe also be sucked into the tire and if run long enough can result in the metal valve stem shredding the tire from the inside. When checking for run flats look for any of the following: the side walls sucked inward, concave tread, torn or shredded casing, and missing valve stem.

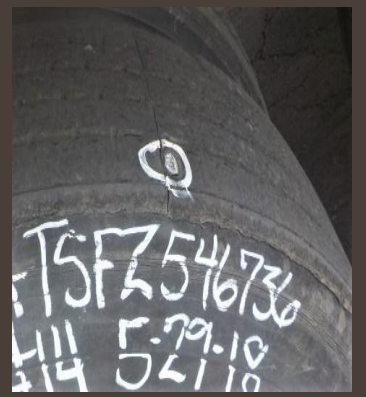
Cut tires may seem to be more obvious however there are criteria necessary for a cut to be considered damage. Slicing cuts on a tire must be deep enough to expose the belt material within the rubber, any shallower cuts are not to the extent necessary to be considered damage. Cuts from nails, screws, bolts, etc., typically found on the tread of a tire, must create a hole that is at least ¼ of an inch or larger to be considered damage. While looking for the criteria for cut tires listed above, listening for air leaks can also help discover cuts

Slid Flat

Run Flat



Cut



Tires

Owner's conditions consist of tires that are simply worn out or bald, peeled and separated caps, weather checking, and channel cracking.

Tires are considered worn out when the entire tread depth of the tire is at 2/32 in. or less.

Peeled and separated caps happen when sections of the tire tread have separated from the casing, causing the tread to either flap while moving or simply be ripped from the tire and left on the road.

Weather checking and channel cracking are similar in that they are both cracks created in the tire typically due to the rubber drying out.

- -Weather checking is when the cracking occurs on the shoulder or sidewall.
- -Channel cracking refers to cracks occurring in the tread of the tire.

Owner's Conditions

Worn

Separated Cap

Weather Checking

Channel Cracking

Inspection Tips

These are some key things to remember when inspecting intermodal equipment in order to ensure your inspection is thorough.

- Be sure to start and finish your inspection at the same location. This ensures that you have covered the entire unit.
- Do your best to view the equipment from all angles meaning to look high and low checking for defects at the top, bottom.
- Inspect the underframe for defects. Are the legs straight? Are the main rails damaged? Is the DOT underride guard in good condition?
- Inspect the roof. While this can be difficult with loaded containers, terminals often have cameras or mirrors to help find roof damage. However simply opening the doors of an empty unit makes it easy to check if there are any light leaks to signal a cut in the roof.
- Check all tires. This means a visual as well as auditory inspection (listen for air leaks). There are many different defects that may appear on tires, so a thorough inspection is important.
- Verify the initials and number of the unit match.
- If the unit is loaded, check to make sure the seal number is correct.
- Make sure that the doors seal properly. If they don't and are defective in some way, cargo will be at risk of theft as well as damage from adverse weather.
- Be sure to check for any tape or caulk. As previously stated anytime tape or caulk is used, consider that component to be cut and denote it as such (no need to scrape or try and peel it off)
- Denote any and ALL defects. Remember that even when defective items are related, they must be individually noted to cover the cost of repairs.
- If you are unsure that an item meets the damage criteria, cover yourself and report the item, its better to be safe than sorry.

You have completed the study portion of this program.
Please follow the link for the Inspection Program Quiz found on
www.theccib.com