



Emergency Vehicle Load Ratings

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Objectives

- What are load ratings?
- Why emergency vehicles?
- What does this mean for me?



A worker in an orange safety suit and hard hat stands on a blue aerial lift bucket, working on a steel bridge structure. The background is a dense forest of evergreen trees. The image has a blue tint.

What is a load rating?

FHWA-mandated load ratings



- What is a load rating? Engineering analysis/safe carrying capacity
- Federal mandate for SHVs by Feb. 2023
 - Innovative work with FHWA
- Federal mandate for EVs by Dec. 2021
- Federally mandated short window: 30 days to post

This is about safety!

Why do load ratings?

- Compliance with federal law
- Bigger, heavier vehicles
 - Specialized Hauling Vehicles (SHVs)
 - FAST Act Emergency Vehicles
- More traffic
- Older bridge design and natural deterioration



Weight Restriction

- If a bridge can't safely carry legal vehicles, a weight restriction is necessary.
- If necessary, 30 days to post.
- ODOT is trying to get ahead of that window.

Are the bridges safe?

Yes!!

For vehicles in compliance with the posted weight limit.

Safety

- History does not guarantee future performance.
- Ratings now look at:
 - More and heavier vehicles.
 - New design and load rating philosophies.
 - More extensive analysis of parts and areas of bridges.
 - A better understanding of bridge failures.





Why emergency vehicles?

Emergency Vehicles

The FAST Act federal mandate:

- Evaluate all 1,175 bridges within one mile of an Oregon Interstate.



- Note: FAST Act emergency vehicle load ratings only affect emergency vehicles that exceed current legal axle weights.
 - Most emergency vehicles are within legal axle weights.

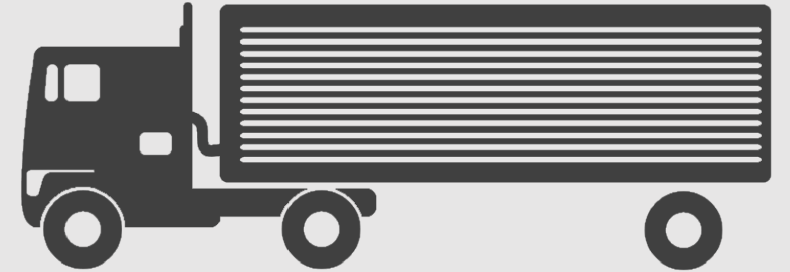
Why Emergency Vehicles?

Truck/Vehicle Design
Standards Used in Most
Existing Bridges

1930's - 1940's: H 15 (15 tons)

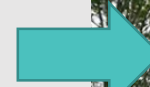


1940's - 1990's: HS 20 (36 tons)



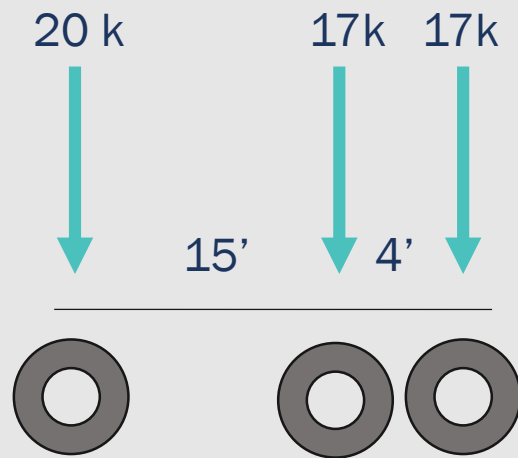
Modern Vehicles on
the Roads Today

Emergency Vehicle (EV) (43 tons)

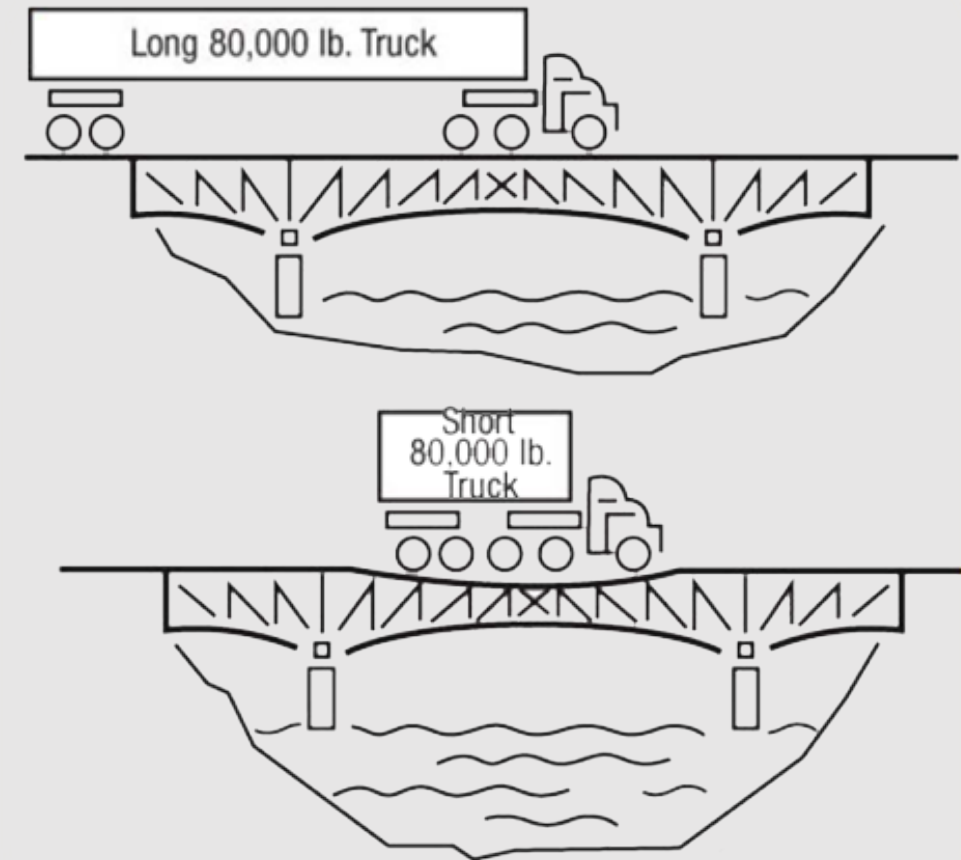
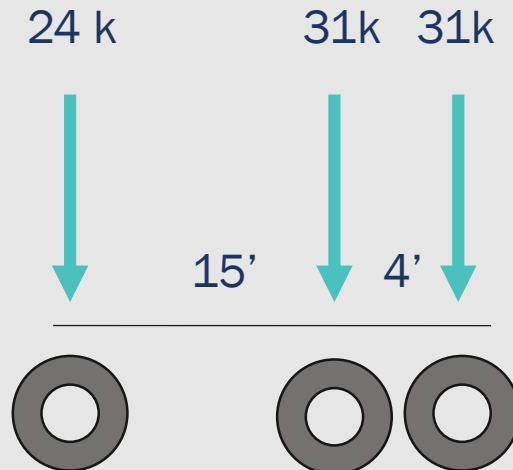


Different stress on the bridge!

Standard Legal Truck



Some Emergency Vehicles



Safety

- Safety is our primary concern
 - The laws of physics are the same
 - even in an emergency!



Los Altos, CA, April 2001: A 19-ton emergency vehicle on a bridge that had been rated for 18 tons in 1979.

A low-angle shot of a worker in an orange safety suit and hard hat standing on a blue aerial lift platform. The worker is positioned on a steel truss bridge, with the structure's beams and girders visible. The background is a dense forest of evergreen trees. The entire image has a blue tint.

What bridges?

Locations?

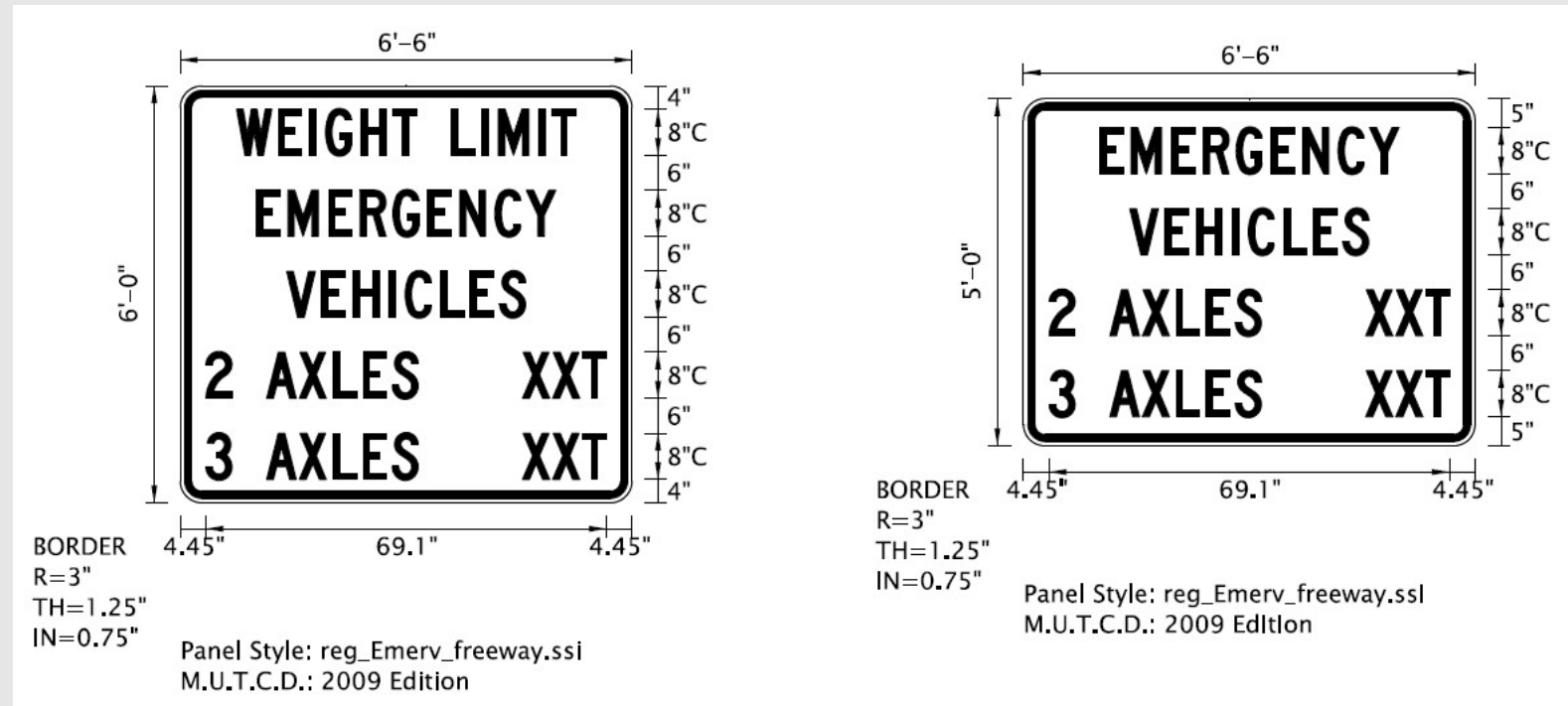
Owners?



County	# of Bridges	Owned by?
Baker	1	ODOT
Clackamas	3	2 ODOT, Wilsonville
Douglas	11	7 ODOT, 4 county
Hood River	4	ODOT, county, 2 other
Jackson	4	2 ODOT, Talent, county
Josephine	2	County
Lane	5	4 ODOT, Creswell
Linn	4	ODOT, 2 Albany, county
Marion	4	3 ODOT, 1 county
Multnomah	34	12 ODOT, 13 PDX, 9 county
Sherman	2	ODOT, Rufus
Umatilla	1	ODOT
Union	3	ODOT
Wasco	6	5 ODOT, The Dalles
Total	84	

Posting

- New signs
- New advanced warning signs





What's next?

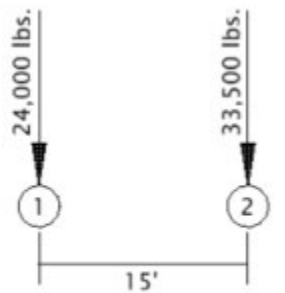


What's Next?

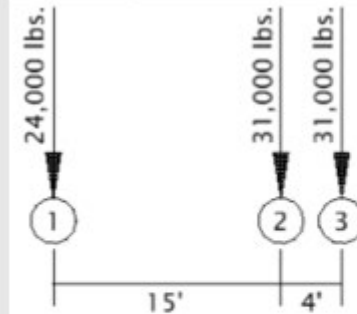
- What does this mean for you?

Do you have these vehicles?

- Emergency Vehicle EV2
- Emergency Vehicle EV3



Type EV2
GVW = 57,500 lbs.
(28.75 tons)



Type EV3
GVW = 86,000 lbs.
(43 tons)



Is there a legal requirement for bridge owners to make their bridges accommodate larger loads?

- No.
- Bridge owners must simply post the restriction.
- Vehicle owners must comply with the limits and not illegally cross.



Are bridge repairs possible?

- Sometimes.
- It's a case-by-case situation.
- Any repairs are responsibility of bridge owner.



Questions?



A worker wearing an orange safety suit and a hard hat is standing on a blue aerial lift platform. The worker is positioned on a steel bridge structure, possibly performing maintenance or construction. The background is a dense forest of green trees. The image has a blue tint.

Further questions?

Contact Jason Lawrence at jason.lawrence@odot.state.or.us