

RV Backup Systems AND TPMS

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**NOT A VENDOR
NOTHING TO GAIN
JUST A REAL PERSON**

CELEBRATING 30 YEARS



GMCMI
GMC MOTORHOMES INTERNATIONAL

2012 Fall Convention
Amana Colonies, Iowa

Assumption

Presentation covers:

- After-market equipment only
- No in-dash systems
- Equipment appropriate for GMC motorhomes

Outline

- ◆ Backup camera and monitor systems
 - Varieties of cameras
 - Varieties of monitors
 - Functionality
 - Integration options
- ◆ Tire pressure monitoring systems

Why?

- ◆ To avoid arguments with co-pilot
- ◆ Just because you can
- ◆ Convenience
- ◆ Safety, reduce risk of injury or loss

What rationale will drive you?

Variations on a Theme

- ◆ Wired or wireless
 - Wired - no interference
 - Wireless - most use 2400 hz
 - Some lock into camera by ID
 - Most don't

Variations on a Theme

◆ Camera

- B/W or color
- Day or day/night (with LEDs or infrared)
- Low lux (low light; no LEDs)
- Some with built-in mic
- Few can switch angle – up or down
- Side mount

Variations on a Theme

◆ Camera

- Specifications tell the story
- Viewing angle: up/down, side-to-side
- The wider the angle, the greater the distortion from 1:1 (fish eye effect)
- Brand = quality of optics

Variations on a Theme

◆ Monitor

- B/W or color (tube or LCD)
- 4.5-inch, 7-inch, larger or smaller
- Mirror mount, dash stand, visor
- Single or multi-input
- Integration with GPS or DVD

Variations on a Theme

◆ Monitor

- Some adjust for day/night use
- For day use, a shade is helpful
- If camera has mic, monitor must have speaker
- Volume adjustment on monitor
- Multiple inputs \neq split screen; cycle through views

Brands

- ◆ Sony – cater to RV mfgs
 - ◆ Audiovox (Voyager) – market leader
 - ◆ Pyle
 - ◆ SafeSight
 - ◆ Boyo (Vision Tech)
 - ◆ And others, especially for autos
- You'll get what
you pay for**

Brands

- ◆ A turnkey solution is generally best
 - camera and monitor made for each other
 - you don't need to understand specs
- ◆ Rolling your own - avoid incompatibility in functionality
- ◆ Return policy
- ◆ Warranty

Wired or Wireless

◆ Wireless

- Relatively easy to install
- No cable to run
- Camera connected to backup lights
- Triggers monitor to come on in reverse
- No manual control

Wired or Wireless

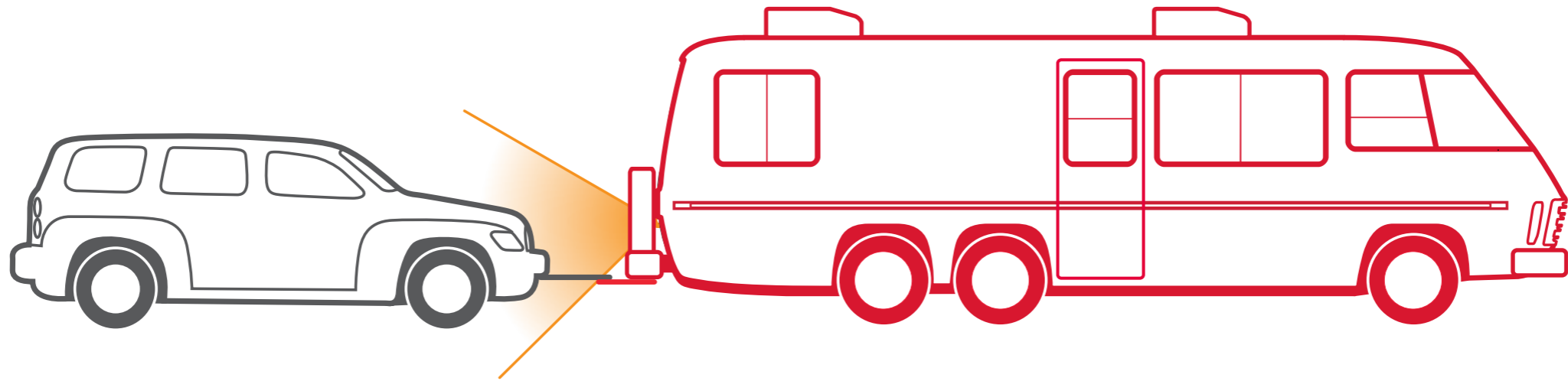
◆ Wired

- More involved installation
- Cable required
- Camera connected to backup lights
- Triggers monitor to come on
- Manual control; camera and monitor on in addition to reverse only

Analysis Time

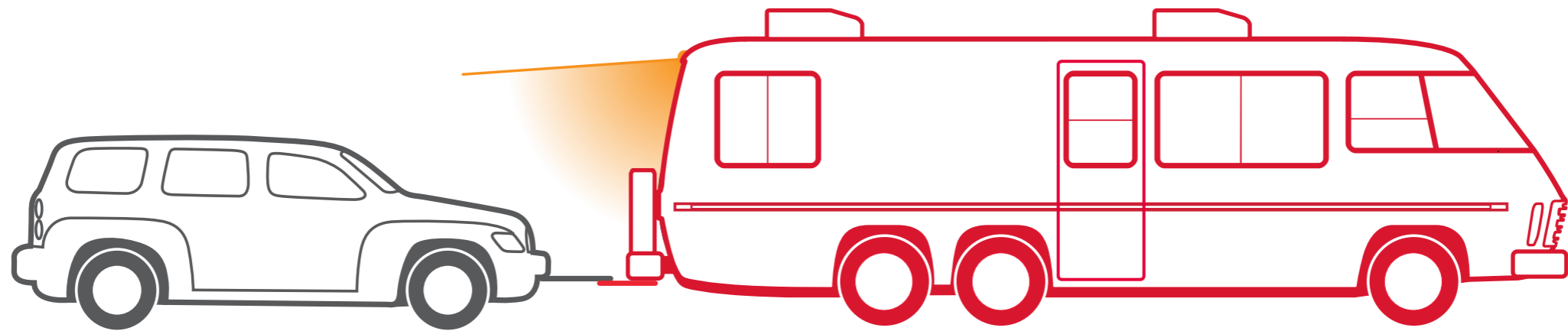
Toward a Functional System - Reality Check

License Plate Mount



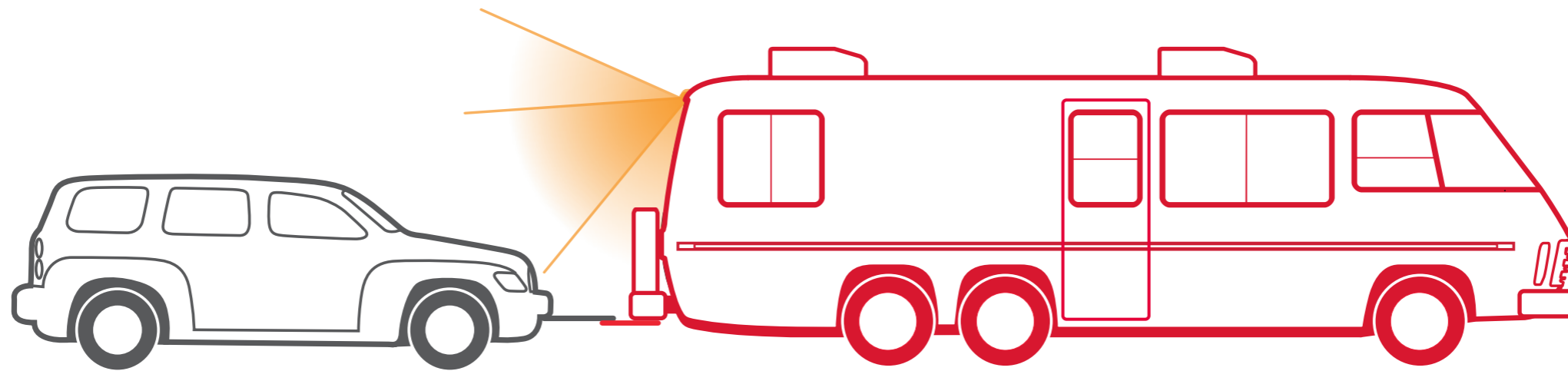
- ◆ Least expensive
- ◆ Meets basic need
- ◆ Somewhat ineffective if you tow
- ◆ Lowest focal range

Hitch View



- ◆ Moderately priced
- ◆ Improved view of hitch and rear bumper
- ◆ In reverse mode only or constant on for checking tow

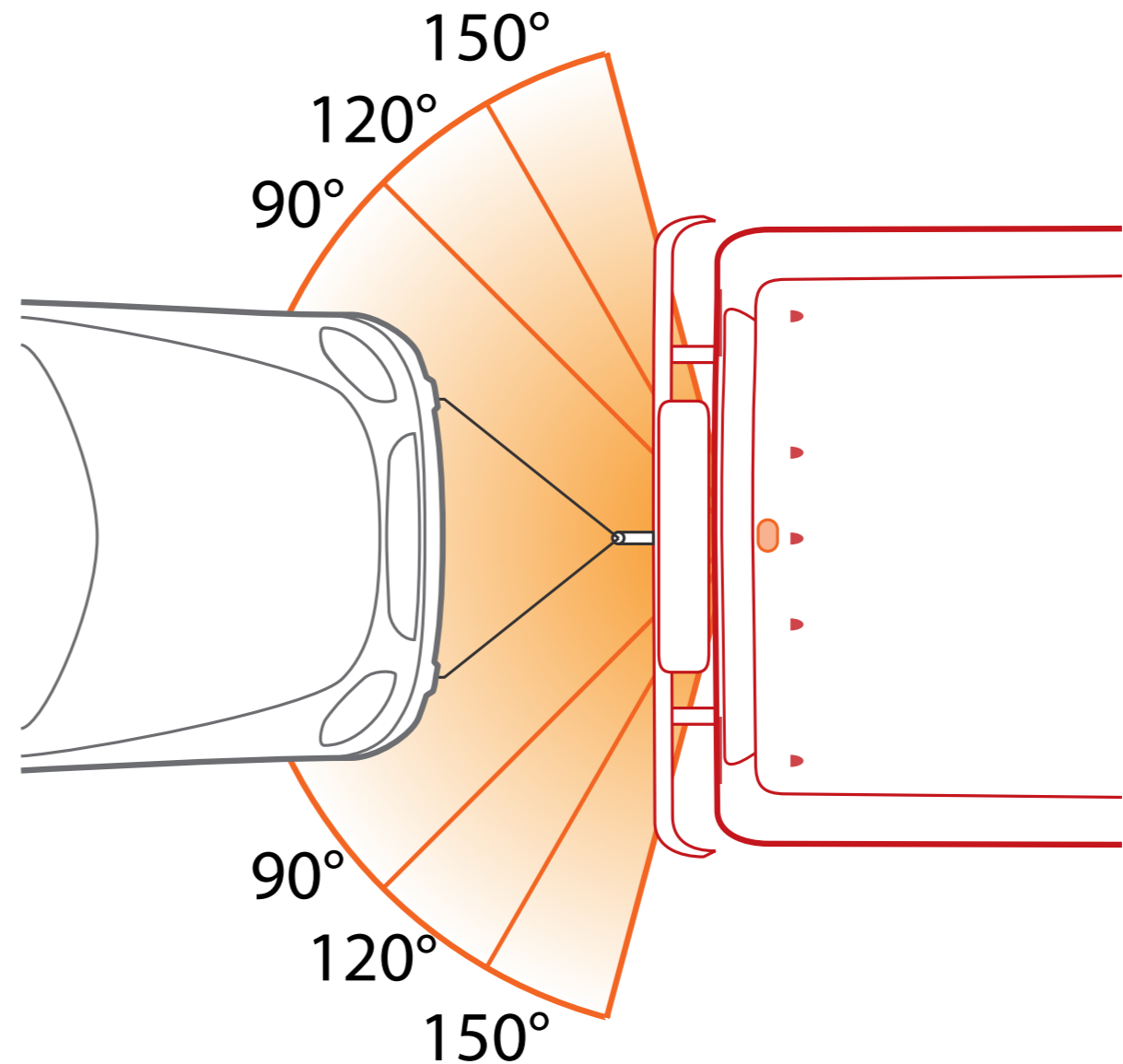
Horizon and Hitch View



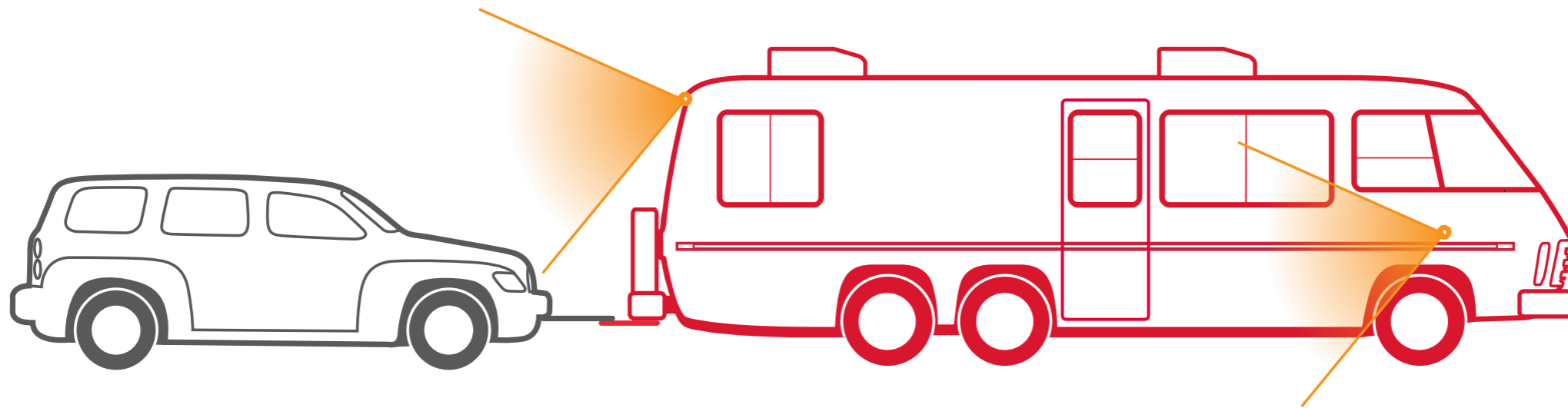
- ◆ Switchable camera; up or down
- ◆ Moderately priced
- ◆ View of tow and traffic to rear
- ◆ Overcomes issues with rearview mirror

Lateral Viewing Angle

- ◆ Viewing angles vary by camera
- ◆ Wider warps aspect ratio but increases view
- ◆ Common angles shown

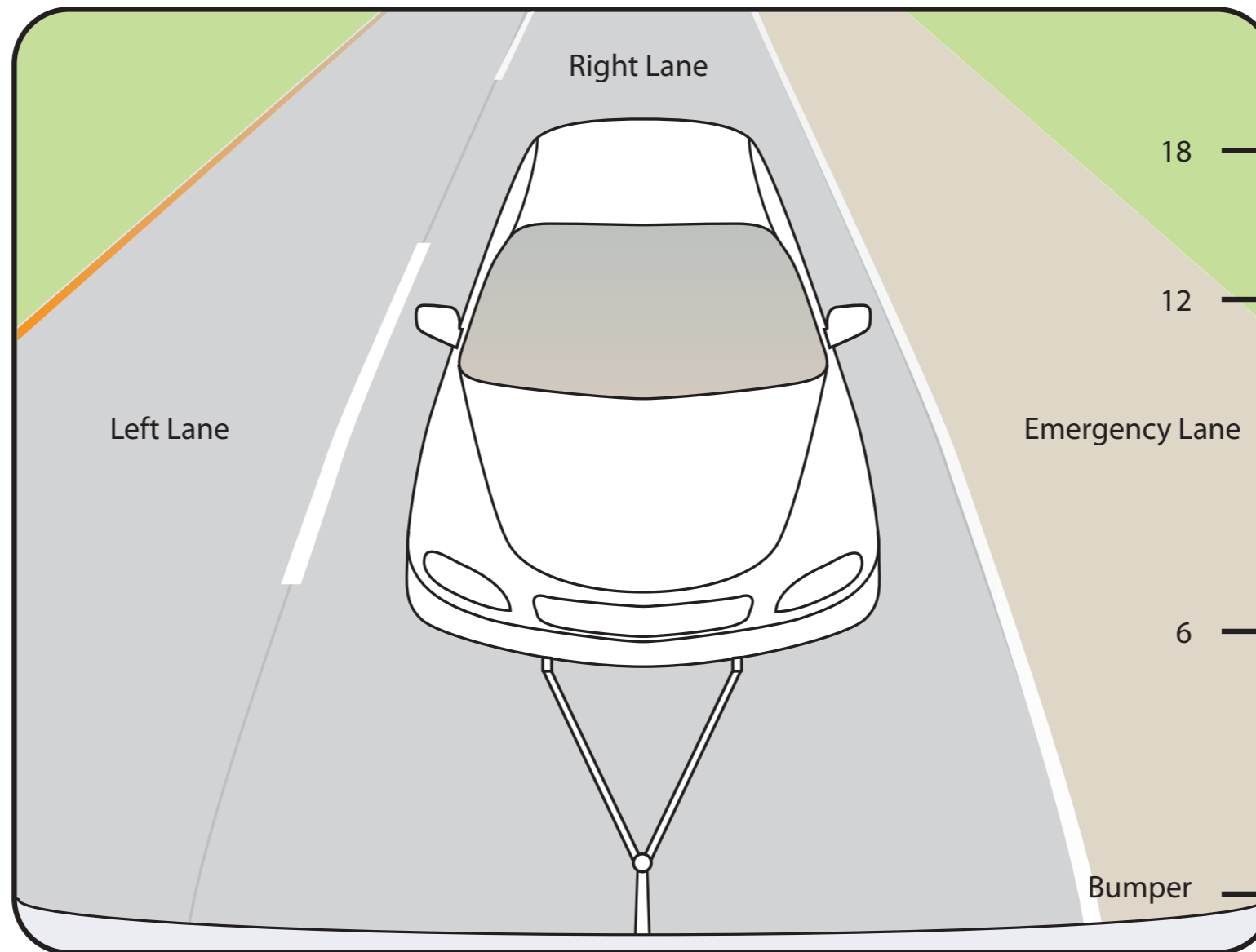


Three Cameras



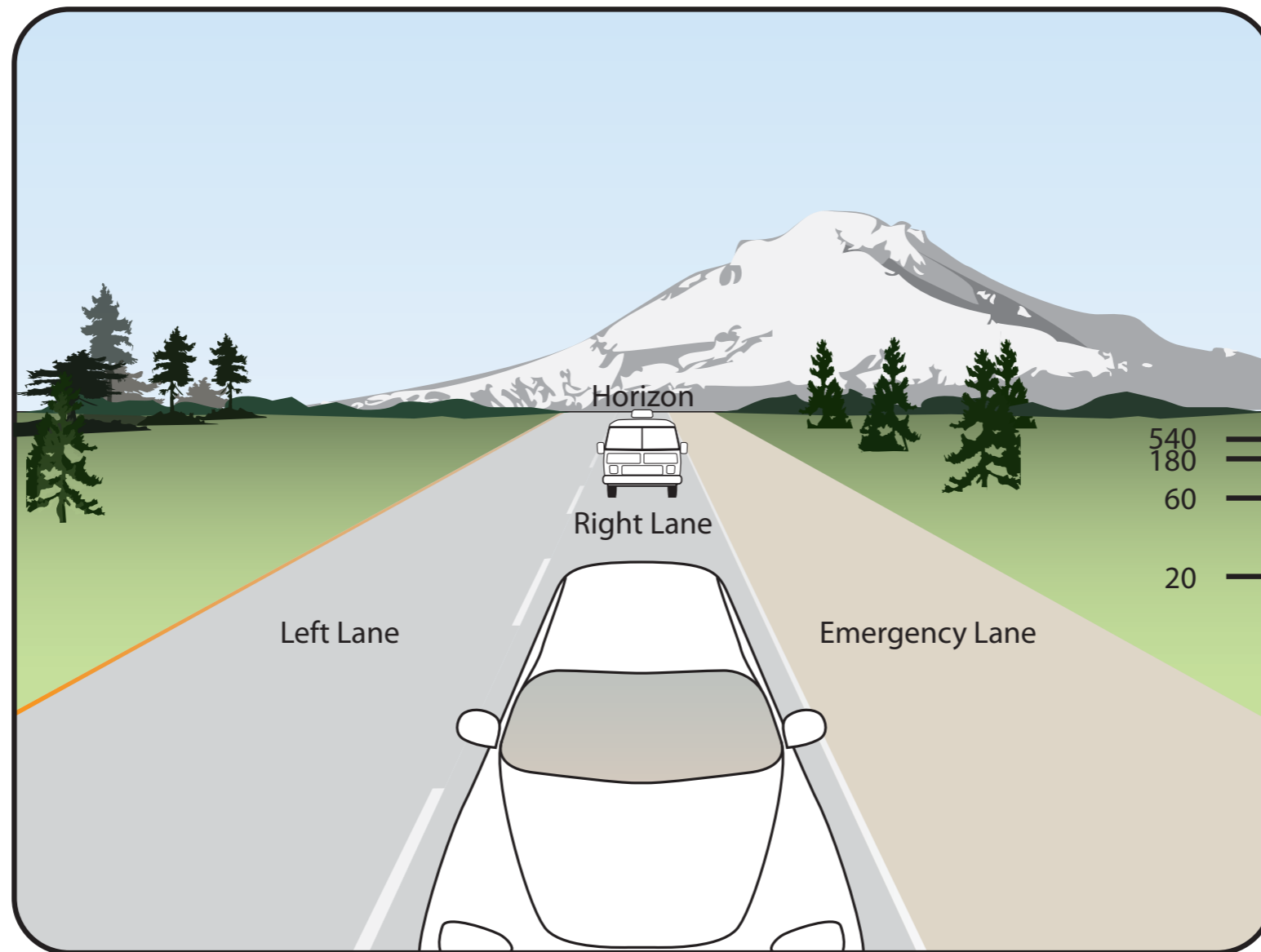
- ◆ Most expensive setup
- ◆ Not wireless
- ◆ Most functional, switch between views
- ◆ Switch activated for turn or reverse

In the Monitor - Hitch



Vehicle bumper to immediate rear of tow

In the Monitor - Horizon



Distance is a judgement call

Review



- ◆ Rear View Safety
 - rearviewsafety.com
- ◆ Inexpensive
- ◆ Have received descent reviews (no independent verification)
- ◆ Variety of systems
- ◆ Resellers on Amazon

Review



- ◆ Integrator, customize what you want
 - www.tadibrothers.com
- ◆ Variety of systems
- ◆ Off-shore suppliers
- ◆ Founded in 2003

Review



- ◆ Voyager (Audiovox)
 - www.jensenrvdirect.com
 - www.rvcams.com
- ◆ Significant market in new and after market equipment
- ◆ Reputable
- ◆ Camping World, PPL and resellers on Amazon

GPS Integration

- ◆ Requires touch screen monitor
- ◆ Not designed to be portable
 - Updating maps an issue
- ◆ Monitor needs multiple inputs
 - Camera
 - GPS receiver

GPS Receivers

- ◆ Receivers must be resolution independent (not fixed to specific screen size); WVGA
- ◆ Requires cabling since unit is “under dash”
- ◆ Signal is best with open sky, antenna recommended
- ◆ The technology is expensive

GPS Integration...

- ◆ In a word – \$\$\$ compared to \$
- ◆ Most current GPS systems are resolution dependent (fixed for monitor); buy a mated system
- ◆ Though space-hogging and socket-robbing, separate GPS and backup systems are least expensive by 65% to 110%

However...

- ◆ GPS with alternate video in for camera
- ◆ Available from Magellan and Garmin
- ◆ Get 4.5-inch screen or larger
- ◆ Geared for autos (license plate)
 - Consider alternate mounting position instead of license plate
 - Magellan camera designed to pivot

If interested

- ◆ Check out the following GPS with camera and 7-inch screen, speakers, Bluetooth



<http://www.backingsafety.com/product/GPS7D-9901>

If interested

- ◆ Check out the following Voyager system, wired with mic and speaker in monitor



<http://www.campingworld.com/shopping/item/lcd-color-rear-vision/20750>

TPMS

Tire Pressure Monitor Systems

Know before you blow

The Value

- ◆ What does a blowout cost?
 - Replacement tire
 - Damage to coach body
- ◆ A blowout can be instantaneous
 - Most loose pressure or
 - Build temperature over time
 - If you watch, you can avoid

TPMS

- ◆ Up-to-the-minute feedback
 - Tire pressures
 - Temperatures
- ◆ Alarm threshold, you determine
- ◆ Input/display - up to 18 wheels
- ◆ Know before it blows

TPMS

- ◆ Wireless
- ◆ Transmits when rotating
- ◆ Long battery life
- ◆ Handheld or velcro mount monitor

TPMS

◆ Scalable

- 6-wheel
- 10-wheel (coach and tow)



Why?

- ◆ Safety factor
- ◆ Real-time temp and psi of each tire
- ◆ Early warning to possible blow out or flat
- ◆ Cheap insurance (compared to cost of tire and body damage)
- ◆ Economy (right pressure yields better fuel mileage)

Brands

- ◆ Schrader (AirAware) on new equip from vehicle mfgs
- ◆ Truck System Technologies
- ◆ Doran
- ◆ Pressure Pro
- ◆ HawksHead/Minder Research
 - Others - OEMs offshore

The Basics

- ◆ Battery operated monitor
- ◆ Battery operated sensor
- ◆ One per tire
 - Sensors with pass-through
- ◆ Experience the difference
- ◆ Priced around \$300 US

My Experience

- ◆ Rapid change indicates a problem
- ◆ Temperature effected by surface type and condition, results in change
- ◆ Tire pressure varies with ambient temperature and sun
- ◆ Check pressures/temps hourly
- ◆ 15 or 20 lbs over cold PSI = time to cool

Other Thoughts

- ◆ You see the outside of the tire
- ◆ TPMS indicates conditions inside the tire
- ◆ Except for punctures, tire failures are developed internally
- ◆ The situation is manageable

Q&A

and comments, of course