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Owners/Operators of Cascade West, Inc.

Second-Generation Loggers

OSU Forest Management Degree

Guyless Hydraulic Yarders with Grapple Carriages

Cascade West Equipment

- Tigercat 180 Hydraulic Swing Yarder

- Thunderbird TY90 Tower

- Thunderbird TSY255 Swing Yarder

- Thunderbird 6140 Swing Yarder

- Thunderbird 940 Yoder

- Layout Drone

- Tethers

- Leveling Shovel

- Leveling Hotsaws

- Leveling Barsaw

Guyless vs. Traditional

Tower Guyless Average Setup

- 1 Day +
- 7+ guyless anchors
 - Dig deadmen, anchor dozers
- 4 + hand crew personnel



Guyless vs. Traditional

Swing Yarder Guyline Average Setup

- 1 hour +
- 3-4 guyline anchors
 - Stumps, trees, deadmen, anchor dozers
- 3 + hand crew personnel



Guyless vs. Traditional

Guyless Hydraulic Yarder Setup

- **Minutes**
- **0 guyline anchors, 1 optional**
- **0 hand crew personnel**



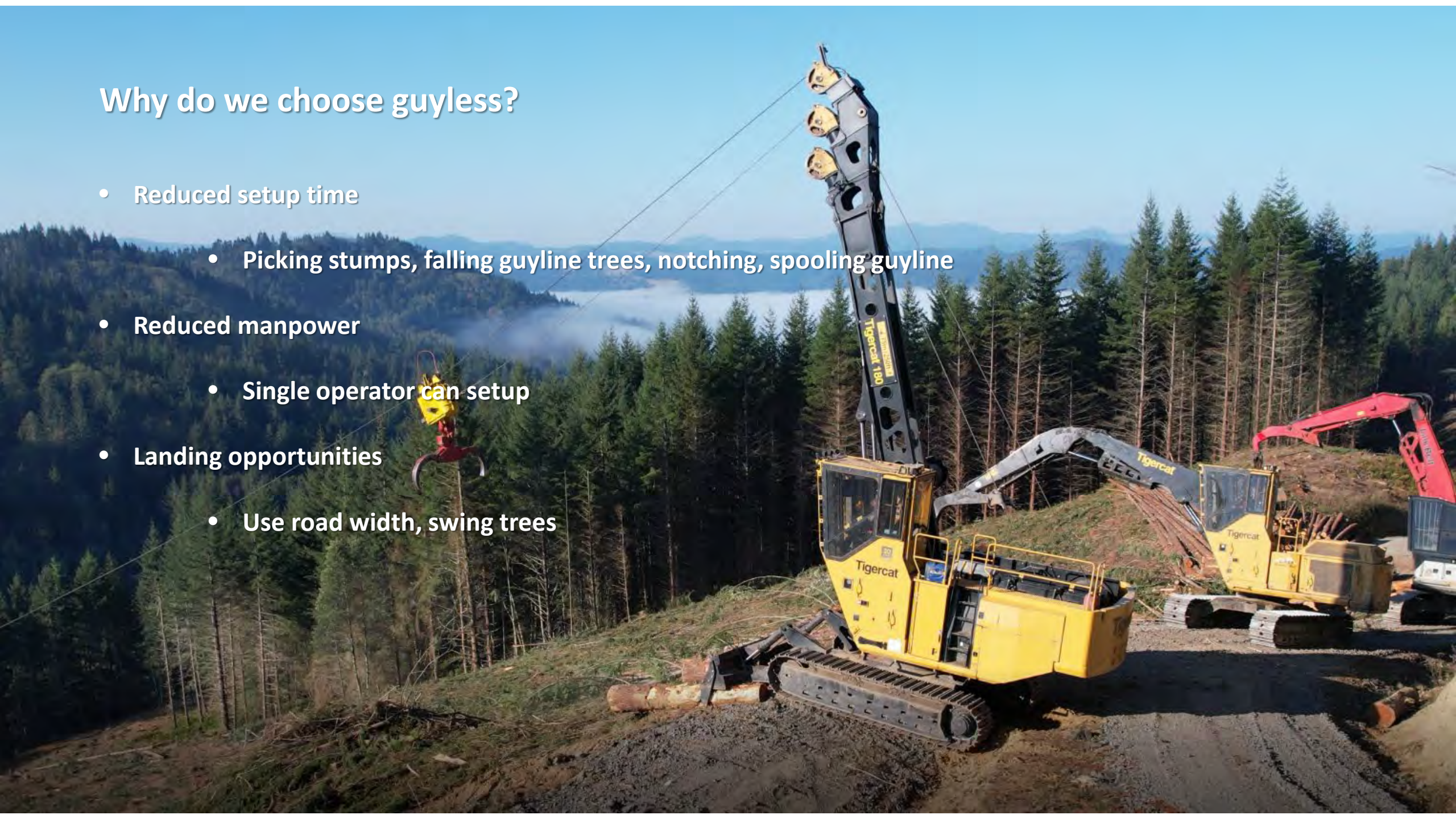
Why do we choose guyless?

- Significantly reduced setup time
 - Picking stumps, falling guyle trees, notching stumps, spooling guylines
- Reduced manpower
 - Single operator can setup



Why do we choose guyless?

- Reduced setup time
 - Picking stumps, falling guyline trees, notching, spooling guyline
- Reduced manpower
 - Single operator can setup
- Landing opportunities
 - Use road width, swing trees



Why do we choose guyless?

- **Reduced setup time**
 - **Picking stumps, falling guyle trees, notching, spooling guyle**
- **Reduced manpower**
 - **Single operator can setup**
- **Landing opportunities**
 - **Use road width, swing trees**
- **Decreased guyle stumps/trees available**
- **Easier to setup in right place for maximum productivity.**
 - **Not limited by guyle stumps, spots to get dozers, deadmen**



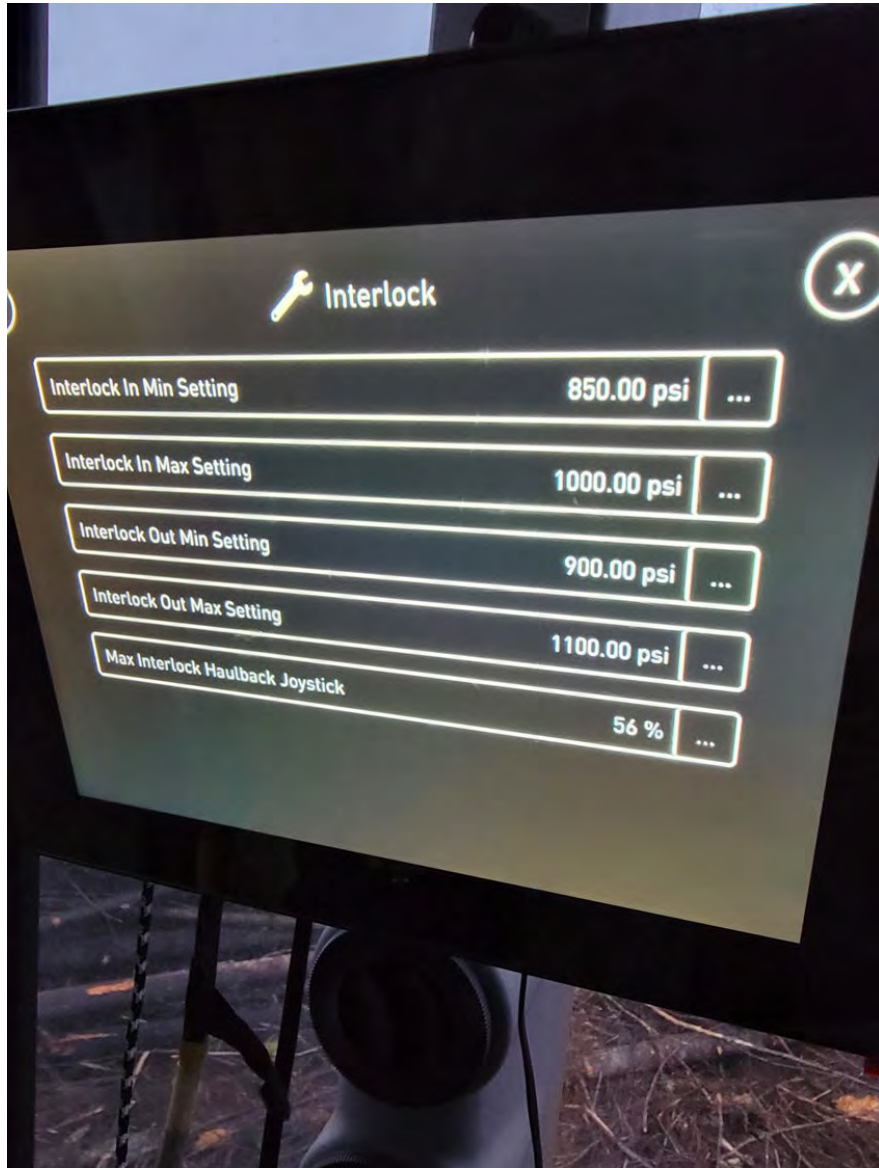
Traditional Swing Yarder



Hydraulic Yarder

- Updated machine
 - Sealed cab, temperature control, quieter, communication
 - Better sustained operator comfortability
- Less time specialized training
 - Easier transition from other machines
- Hydraulics with Software integration
 - Auto-retrieve
 - X,Y Plot





Limitations

- Tipping when running haulback
- Road width
- Weight of machine
 - Transportation
 - Longevity of undercarriage, blade cylinders, rotec
- Cost of yarder and supporting machines
- Speed. 1400 ft/min vs traditional 2000 ft/min
- Speed over distance. Yarding 2000 ft+ could be slow
- New technology, unforeseeable downtime

