New and Improved Methods of Accessing Large Off-road Machinery

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AgrAbility Webinar Series
Thursday, October 11, 2018
3:00 p.m. ET
Basic Webinar Instructions

- Audio available through computer or phone.
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Basic Webinar Instructions

❖ Please let me know if more than one person is viewing at your computer

❖ 4 quick survey questions + opportunity to share comments

❖ Session recorded and archived with PowerPoint files at www.agrability.org/Online-Training

❖ Problems: use chat window or email jonesp@purdue.edu
AgrAbility: USDA–sponsored program that assists farmers, ranchers, and other agricultural workers with disabilities.

- Partners land–grant universities with disability services organizations. Currently 20 state projects
- National AgrAbility Project: Led by Purdue’s Breaking New Ground Resource Center. Partners include:
  - Goodwill of the Finger Lakes
  - APRIL (Association of Programs for Rural Independent Living)
  - Colorado State University
  - Washington State University
- More information available at www.agrability.org
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The Need

- Farm-related injuries affect 1 out of 9 farm families annually.
- When an injury occurs, farm families are often unaware of services available.
- Approximately 19% of active farm operators can no longer perform essentials tasks due to a disability.
- Farming has one of the highest fatality rates of any industry.
Homemade lift
Ag Machinery Access Lifts

- Early research
- Access style and mounting type
- Lift selection
- Key safety issues
- Recent technology improvements

http://www.agrability.org/resources/technical/
Began in early 1980’s, with support of Deere & Co. and NIHR, BNG began to explore various solutions

Early designs were operator and machine specific

Standardized designs were later adopted and evolved to the lifts of today
Ideal Lift Characteristics

All lifts discussed in this presentation possessed the following attributes:

1) Provided safe method of "handling" the operator
2) Allowed for successful access of the operator station
3) Were reliable and robust in design
4) Allowed for independent use of the operator
Lift Style and Mounting Type

Styles
❖ Chair Lift
❖ Platform Lift
❖ Sling Lift

Mounting Types
❖ Dedicated
❖ Independent
Style: Chair

- Most common lift type
- User transfers from wheelchair or vehicle on ground level, and again to the operators station seat

*(exceptions apply where seat doubles as operator seat)*
Style: Platform

- Accommodates operator in standing position, flip down seat or in wheelchair
- Best for situations where operator can navigate on level ground, but has difficulty using traditional stairs/steps
Lift Style: Platform Cont.
Style: Sling

- Transports operator in a mesh, fabric, or woven sling suspended from a specialized hanger
- Used when space is limited our transfer is difficult (equine, zero-turn-mowers, Skid steer loaders)
Mounting Type: Dedicated

- Mounts directly on and used to access only one piece of equipment
- Powered by host machine
- Allows user to enter/exit machine at any time
- Universal design mast with machine specific brackets directly attaches to machine frame
Mounting Type: Independent

- Mounts to pickup or trailer
- Allows access to multiple pieces of equipment
- Beyond access to machine, operator can perform maintenance from lift seat
- Telescopic arm positions operator for near transfer
Independent Trailer Lift

- Trailer style lifts can be used for temporary assistance (broken leg, surgery/incident recovery)
- Must be mounted to vehicle or stationary object for operation
Recommendations for Selecting a Lift

- Seat, Platform, or sling to lift user from ground level into the cab that will facilitate an easy transfer to operator’s seat
- Minimal alterations to original equipment
Recommendations for Selecting a Lift

- Lift speed of 10-15 ft/min. with load capacity of at least 300 lbs.
- Fail-safe device in event of power of drive-mechanism failure
- Unobstructed path to operating position
Recommendations for Selecting a Lift

- Safe exit alternatives
- Flexibility for any user
- Moderate cost
Key Safety Issues

- Approved for human lifting
- Stabilizer support(s)
- Operator seatbelt
- Power limiting clutches
- Fail-Safe
Modern Lift Advancements

- Wireless transmitter
- Pre-set positions
- Robust drive mechanism (electric direct drive or electric powered hydraulics)
Skid Steer Loader (SSL) / CTL
UTVs

- Ease of access around farmstead
- Fold up passenger seat for storage of walker/wheelchair
- Optional heat/AC (enclosed cab)
Modify the “right” equipment
Additional AgrAbility Resources

- AgrAbility.org
  - Archived and upcoming **webinars** addressing a wide range of topics related to disabilities in agriculture
- PlowShares Technical Articles
- The Toolbox
- Beginning Farmers
- Veterans in Agriculture
- Annual National Training Workshops (NTW), Lincoln, Nebraska, March 2019
Questions

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