

# AGRABILITY QUARTERLY

*Promoting Success in Agriculture for People with Disabilities and Their Families*

Summer 2001  
Vol. 1, No. 2

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## **Filer Uses Pilot Lift to Access Tractor**

David Filer, a 38-year-old Missouri farmer, uses a Life Essentials Pilot Lift to access his John Deere 5210 tractor. Filer sustained a T7 spinal cord injury in 1997 when a dead tree fell on him. His mother referred him to Missouri AgrAbility while he was still in the hospital following the incident. With the help of family and neighbors, he runs a 450-acre cow/calf operation.



*Dave Filer accesses his John Deere 5210 with a seated Pilot Lift from Life Essentials.*

*Photo courtesy of Missouri AgrAbility.*

### **Working with VR**

In 1998, state vocational rehabilitation (VR) staff worked with AgrAbility staff to determine the types of assistive technologies Filer needed to remain productive on the farm. Filer bought a John Deere 5210 and VR purchased a lift for it. He has logged about 500 hours a year on the tractor mowing, raking, baling hay, moving bales, blading roads, cleaning the cattle yard, hauling manure, and feeding and moving cattle.

### **Using the Lift**

He uses the tractor and Pilot lift six days a week. The lift has been very dependable and he feels safe and comfortable in it. Only two mechanical issues have surfaced since 1998: he has had to replace a small belt on the top of the lift four times and, occasionally, the weather has caused the switches to corrode.

Prior to getting the lift, he says he was getting in and out of the tractor in an unsafe way that took fifteen minutes and help from his wife. Since getting the lift, Filer has accessed his tractor without incident for three years with just one exception. He once tried, against the manufacturer's advice, to transfer into the lift seat directly from his pickup seat in order to save a little time. In the process, he fractured his ankle. He has followed recommended operating procedures ever since.

## Commercially Manufactured Person-Lifts For Tractors

*For agricultural workers who have disabilities that limit their mobility and strength, finding a way to stay on the tractor may mean the difference between continuing to live and work successfully in the environment they love or settling for a lifestyle they consider second-rate. Assistive technologies such as person lifts—both commercial and non-commercial— can be used to modify tractors, thereby making them accessible to operators who have disabilities.*

### **In this Issue**

*This issue of AgrAbility Quarterly provides information and client stories about the three commercially available lifts that AgrAbility staff most commonly recommends for their clients who need assistance accessing tractors and other farm machinery or vehicles. Manufacturers of each of these lifts—Pilot Lift, Freedom Lift, and Lectra Aid Lift—report that each has a good safety record. Information highlighted here includes the unique features that make these lifts effective and reliable. Additional detailed information on each is available on the manufacturer’s website (see Commercial Person-Lift Resources on this page). Information on the Pilot Lift and the Freedom Lift is also included on pages 1-4 of Breaking New Ground’s “The Toolbox.”*

*Commercial manufacturers of lifts may invest years in product design and testing before a lift is sold to the public. Furthermore, such manufacturers stand behind their lifts, ensuring quality and reliability. Although a commercially available lift may cost more than a non-commercial lift, producers and potential funding sources should be apprised of the importance and advantages of investing in reliable, quality-tested assistive technologies.*

### **Commercial Person- Lift Resources**

**For further information on the commercially manufactured person-lifts for tractors included in this newsletter, contact:**

#### **Life Essentials**

Address: 345 Burnett Road  
West Lafayette, IN 47906  
Telephone: 800-543-3740 or 765-742-6707  
Fax: 765-435-1017  
Web site: [www.life-essentials.net](http://www.life-essentials.net)  
E-mail: [Adam@life-essentials.net](mailto:Adam@life-essentials.net) or  
[Kathy@life-essentials.net](mailto:Kathy@life-essentials.net)

#### **Freedom Technologies Inc.**

Address: #3-2949 Miners Avenue  
Saskatoon, Saskatchewan S7K 4Z6  
Telephone: 306-244-1508  
Fax: 306-244-1931  
Web site: [www3.sk.sympatico.ca/freetech](http://www3.sk.sympatico.ca/freetech)  
E-mail: [freedomtech@sk.sympatico.ca](mailto:freedomtech@sk.sympatico.ca)

#### **SFH Products Inc.**

Address: 1801 E. Medlock Dr.  
Phoenix, AZ 85016  
Telephone: 888-224-1425 or 602-265-7370  
Web site: [www.lectraaid.com](http://www.lectraaid.com)  
E-mail: [lecaid@qwest.net](mailto:lecaid@qwest.net)

*NOTE: Mention or display of a trademark, proprietary product, or firm in text or figures does not constitute an endorsement by the U.S. Department of Agriculture, Easter Seals, the University of Wisconsin, or the AgrAbility Project, and does not imply approval to the exclusion of other suitable products or firms.*

**Assistive Technology Notes**

**Commercial Lifts**

**Life Essentials Lifts**

*Life Essentials (LE)* staff has over 37 years of hands-on experience in the rehabilitation and automotive equipment technology industries. The company uses the latest innovations in mobility equipment and products to build lifts for combines, tractors, and trucks. Each lift is tailored to fit the ability and needs of the specific customer. Because LE specializes in producing lifts, it can offer “off the shelf” solutions to farmers with disabilities that other companies do not.

LE staff reports that most tractors built in the last five to six years have cab door openings and cabs that are large enough to accommodate the modifications necessary to install a Seated Pilot or a Standing Platform Lift. Despite older models’ small cabs and cab-door openings, to date, LE has been able to manufacture a lift to fit any tractor.

**Specifications & Costs**

A Seated Pilot Lift weighs approximately 550 pounds and is powered by the equipment’s 12-volt battery. It has two sets of controls (a) a hand held switch box connected by a cable to the lift operator’s location or a radio frequency switch box that can be worn around the operator’s neck on a lanyard and (b) a control mounted at the machine operator’s location. The Pilot Lift has a vertical mast that raises a 2-axis motorized arm and seat that allows the operator to move in three directions while seated. This maneuverability enables an operator to transfer from a wheelchair onto the lift seat and then onto the tractor seat. Movement is achieved with a six-function pendant, enabling users with good upper-body strength to position themselves in the operator’s compartment without the help of others.

The current price of a tractor lift is approximately \$8990.00 and a combine lift is approximately \$9250.00. LE technicians travel across the U.S. and into Canada to install lifts. Basic installation fees are \$900 plus the travel and shipping fees. With proper care and basic maintenance, LE lifts are still working after 18 years.



*Life Essentials “new” truck mounted lift.  
Photo courtesy of Life Essentials.*

**Truck Mounted Lift**

In early 2001, LE staff manufactured and installed their first lift that mounts into the bed of any pick-up truck. The lift is bolted into the truck frame with 4 bolts and has an eight-foot reach. A person can back the truck up close to the equipment, transfer from the truck onto his or her wheelchair, then onto the lift seat, and then be lifted up and into the tractor or other equipment. The mast tilts over the top of the cab for transport and it has two hydraulic stabilizers that level and stabilize the truck while the lift is in use. This lift is powered the 12-volt truck battery and uses radio frequency remote control for the lift and arm motion. The switches for the stabilizers and the mast are mounted on the back end of the truck.

The lift cable can be installed on the truck either at the farm or at the LE shop. The lift takes up just over half of the truck bed leaving the remainder open for hauling. After unscrewing the four bolts and disconnecting the wire harness from the battery, the lift can be removed with a hoist or front loader and stored until needed. This unit costs \$14,300.

**Life Essentials Lifts, con't.**

**Safety Considerations**

Although LE builds a standing platform and a seated lift, the staff report that, “we do offer a Platform Lift, but we find that most customers, for the price, prefer the Pilot lift.” The seated lift is more adaptable and gets the person into the cab. It includes a seatbelt that goes around the person, making his/her position on the lift more secure than on the standing lift. People who have used the lift report that they feel safer and more secure with a seatbelt around them. In addition, if later the person should not be able to stand, the platform lift would have to be changed to a seated lift.

In the study conducted at the University of Pittsburgh (Willkomm, 1997), of 21 tractor lifts, the LE Seated Pilot Lift was reported to have the lowest number of ergonomic risk factors when compared to the lifts made by farm families themselves or by local machine shops. During the past 16 years, no falls have occurred from the over 300 LE lifts that have been manufactured and delivered to farmers and ranchers. Because the truck-mounted lift is brand new, no report on its ergonomic risk factors is yet available.

Reference: Wilkomm, T. (1997). Risks in using modified tractors by operators with spinal cord injuries and their co-workers. University of Pittsburgh, Doctoral Dissertation.

**Illinois Grain Farmer uses Pilot Lift**

Mark Newell is a 42-year-old Illinois grain farmer. Newell has debilitating arthritis that has seriously affected his spine. To treat the disease he underwent five surgical laminectomies. During the fifth surgery, his spinal cord was damaged at T11, which resulted in paraplegia.

He describes himself as “a big guy” and says he still has good upper body strength and strong arms. None-the-less, to preserve his strength, he uses a Jazzy 1170XL Pride electric wheelchair. With the help of Illinois AgrAbility Project staff, Newell contacted the state division of vocational rehabilitation (VR) to request assistance with securing lifts for his tractors and combine.

In August 1997, he purchased his first lift, a Life Essentials Pilot Lift for his 1996 John Deere 7800. In July 1998, VR agreed to cover the cost of purchase and installation of the same type of lift on both his John Deere 4020 tractor and 9500 combine.

Newell reports that he has been using the lifts regularly since they were installed nearly four years ago and has had no trouble with any of them. He says that the first few times he used them it was “a little scary being that high off the ground” but he quickly gained confidence and now feels quite secure when using them. He feels that they move at the right speed to be safe and are very reliable.

A feature that he finds especially helpful is that the lifts can be moved out of the way of operators who do not need to use them. The one thing that he would like to see changed on the lift is the seat. A ridge around the outside edge keeps the operator from slipping off the seat while the lift is moving, but in Newell’s case, it also makes it difficult for him to slide off onto the tractor seat. Having to slide up and over that ridge is a problem for him because he has difficulties with pressure sores and they are aggravated during the transfer.



A Life Essentials Pilot Lift puts Mark Newell in the operator’s seat.

*Photo courtesy of AgrAbility Unlimited - Illinois*

## Assistive Technology Notes

## Commercial Lifts

### Freedom Technologies Lift

The Freedom Lift, from Freedom Technologies Incorporated, helps restore independence to people with disabilities and gives them access to many hard-to-reach places around the home and the workplace. Using the hydraulic powered Freedom Lift, farmers who use wheelchairs can move, unassisted, between the ground and operating compartments of their pick-ups, tractors, self-propelled swathers, combines, and other implements. With the Freedom Lift's extended reach, it can also be used to help someone making a wheelchair transfer to many other settings, such as airplanes, boats, motor homes, and hunting blinds.

Members of the Saskatchewan Handicapped Farmers Association, Saskatchewan Abilities Council, and the Canadian Paraplegic Association helped make the Freedom Lift user-friendly by providing critical analysis from a user's perspective.

### Specifications & Costs

The Freedom Lift (FL) is a pickup-mounted lift with a boom-style arm that terminates in a platform. The platform can accommodate an operator who uses a wheelchair or who sits on a flip-down lift seat for an operator who does not use a wheelchair. The lift fits in the bed of a standard ½ or ¾-ton pickup truck.

An operator can control the FL without assistance. It has two sets of controls, (a) toggle switches mounted on the wheelchair platform and (b) a radio remote carried by the lift user. The FL has an electric hydraulic pump that is powered by a 12-volt battery installed and connected to the pickup's own 12-volt battery.

Maneuverable up to a height of 7'8" and a lateral distance of 10'11", this lift provides free access to a wide range of vehicles and machinery. All moving parts have been designed for long-term service and reliability.

The average cost of the lift installed is \$23,000.

### Safety Considerations

The Freedom Lift is professionally designed and constructed according to Canadian Standard Association and the Canadian National Research Council standards. One safety consideration is the fact that the lift platform cannot always be maneuvered into the cab of a tractor or combine, which means the operator must have enough strength to transfer from the wheelchair sitting on the lift to the seat of the equipment.

### Wosoba Uses Freedom Lift to Access Farm Equipment

Floyd Wosoba, a 34 year-old Missouri farmer got his leg caught in an auger when he was seven years old and it was amputated at the knee. At age 31, he sustained a spinal cord injury at the T5-T6 level when he was hit in the back by a falling limb as he cut down a tree. Neither incident stopped him from farming. The Wosobas farm about 1500 acres where they raise beans, milo, and hay, and run a cow-calf operation. They also do a lot of custom baling.

Following his spinal cord injury Wosoba attended a seminar on spinal cord injury and the staff referred him to Brad Marsh at Missouri AgrAbility. He says that Marsh did most of the paper work to help him get assistance through the state Division



*Wosoba using his Freedom Lift to access his pickup truck.*

*Photo courtesy of Missouri AgrAbility project.*



of Vocational Rehabilitation (VR); and that "Brad knew all of the places to call for everything that I needed. It was great." VR agreed to purchase a Freedom Lift for Wosoba.

In 1999, the lift was installed in a ½ ton 1988 Chevy pick-up truck. He plans to move it to a ¾ ton 1999 Dodge pickup truck soon. The initial local installation resulted in some problems. Wosoba contacted Howard Derksen (the designer) and he "immediately flew down from Canada and took care of the problem himself. His service was great." Since then the lift has been trouble-free.

With this all-purpose lift, he can now access his New Holland TR85 hydrostatic combine, Cougar 251 Steiger tractor, 5240 front-wheel assist Case IH tractor, 1896 Case IH tractor, 1494 Case tractor, and all-hydrostatic bulldozer.

**Assistive Technology Notes**

**Commercial Lifts**

**Lectra Aid® Person Lift by SFH Products**

A Lectra Aid® Person Lift can have a chair seat or step platform on which the operator stands that rises on a vertical lift tube, and swings around to the door frame. The user sits on the chair or stands on the platform, pushes the control button, rises slowly, and swivels the chair or platform into the door opening, where he or she can transfer into the vehicle. The manufacturer understands that each person's situation is unique, therefore, customizing is a regular part of the business.

**Specifications & Costs**

The Lectra Aid® Person Lift (available in a step platform or a chair model) is installed next to the door of an recreational vehicle (RV) or inside the door of a van. On a tractor the lift is mounted next to the cab door. Although designed first for use with RVs, only minor modifications are required for use with tractors in most cases. The lift is powered by on a reversing 12-volt DC motor that is powered by the tractor's battery. Two gear speeds are available. The chair and swing arm bracket can be removed quickly and easily for storage during travel. The double-hinged design of the swing arm bracket allows the durable aluminum chair to turn to any angle for easy loading.

The operator controls the lift with a rocker switch on the motor or an optional remote cable. The operator raises the lift to the desired level where it can be swiveled into the door. To get out, the rider transfers to the chair, which is then swiveled away from the door, and the control switch is pushed causing the chair to descend. The Lectra Aid® Person Lift is engineered for durability and ease of use. Installation requires a minimum of modification to a vehicle, making it an economical solution. Prices for the 48" lift with step start at \$2874 plus UPS shipping and for the 48" lift with chair start at \$2976 plus UPS shipping.

The lift is a compact 52-60" high with a lift tube of 2.25 inches in diameter, and weighs approximately 50 pounds. Custom options include lift tubes available up to 12 feet long, chairs with 22" width and with extended backs (additional cost is \$460). Seat belts and chair padding must be added by the customer. Installation is an additional charge and varies depending on who does it. Complete instructions are provided with the lift.



**A farmer tries out the Lectra Aid® lift.**

Photo courtesy of SFH Products.

**Safety Considerations**

During the past 15 years, over 1500 lifts have been built and installed. Of that number, 30 have been installed on tractors, one on a hay swather, and one on a combine. While the lift raises the operator to the height of the operator platform, and the seat swivels, it does not extend forward to the tractor seat for easy transfers. Therefore, special care should be taken during the transfer process. For the operator to transfer safely from a wheelchair to the lift chair and then to the vehicle seat, he or she must have good upper body strength and stability.

**Kentucky Farmer Uses Lectra Aid Lift**

David Watkins is a 38-year old Kentucky farmer, who with his mom and dad, runs a 435-acre cow/calf operation. As a result of a fall from a 3930 Ford tractor, he sustained a C5-7 and T12 spinal cord injury.

After conducting a worksite assessment with Watkins, Kentucky AgrAbility staff put him in touch with the state division of vocational rehabilitation (VR). VR purchased a Lectra Aid Person Lift for Watkin's 3930 Ford tractor with ROPS.

He is still undergoing rehabilitation therapy to help him gain upper body strength and control, which he needs in order to use the lift regularly. Although he is not yet ready to use the lift on his own, he tried accessing the tractor using the Lectra Aid Person Lift and the help of two people. He feels that once he gains the needed strength, the lift will work for him. In the meantime, when his father uses the 3930 Ford, he only has to remove one piece from the lift in order to access the driver's seat easily.

## The Delmarva AgrAbility Project

The **Delmarva AgrAbility Project** is a partnership between the University of Delaware Extension Service (UD) and Easter Seals Delaware. The Delmarva AgrAbility project combines the expertise of Ron Jester, Pam Turner and Sally Van Schaik.

### Public Education Efforts

With the support of a local television station, Delmarva AgrAbility produced a public service announcement that aired for two months at various times throughout the day. Although no direct referrals have yet been identified, it has generated a great deal of interest in the Project and has provided invaluable public exposure.

### Funding Initiatives

During the first quarter of 2001 Delmarva AgrAbility staff conducted two fundraising events to benefit a client who has muscular dystrophy. He needed funds to build a ramp onto his home and to purchase an accessible feeder system for his animals. Students from a local FFA chapter and an Animal Science Club helped with the events. A total of \$862 was raised.

AgrAbility Project staff wrote a needs statement describing why resources are limited for their clients and how financial assistance would help them secure the assistive technology necessary for them to continue farming. Easter Seals then retained a grant writer to use the statement to create a proposal and identify potential funding sources to which the proposal could be submitted.

Levels of assistance provided to clients through funds raised as a result of this proposal will be based on level of need and clients may be asked to match a percentage of the contribution.

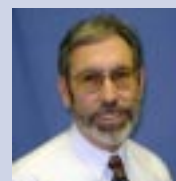
### Collaborations with Outside Groups

As members of the planning committee for this year's Annual Delaware Agricultural Safety and Health Fair, Project staff was successful in bringing in two new exhibitors. The Arthritis Foundation and the Mental Health Association each offered information on their agencies and demonstrated how they could support the rural community.

Van Schaik gave a presentation on stress and its impact on farm families. Project staff also served on the planning committee for the Safety Fair, which was directed at the agricultural community, held in February in Salisbury, MD.

### Meet the Delmarva Project Staff

**Ron Jester**, Ph.D., is the Safety Specialist with the University of Delaware Cooperative Extension Service and also a safety consultant for the University of Maryland Cooperative Extension. Dr. Jester has served as the Co-director of the Delmarva AgrAbility Project since its inception.



**Pam Turner** joined Easter Seals in 1999 and assumed the role of Co-director of the AgrAbility Project. Her background in rehabilitation includes home health and the issues surrounding long-term disability and chronic health conditions. Turner has experience in assistive technology, particularly in the areas of wheeled mobility and tools for assisted activities of daily living.



**Sally Van Schaik** began working part-time as AgrAbility case manager in 1999. Her position soon became full time to meet the growing needs of the AgrAbility Project and to expand the client list. Van Schaik has an extensive background in social work with a special interest in mental health and stress issues as they relate to farm families.



## Commercial Lifts

### Tips for Preventing Slips or Falls When Using Tractor Chair Lifts

1. Make sure that all transfers from a wheelchair to chair lift are level. Uphill or downhill transfers should be avoided because they can result in loss of balance and a potential fall.
2. The lift seat should include armrests to help the operator maintain stability during transfers and while the lift is being raised or lowered.
3. The lift seat should be deep enough to prevent the operator from sliding out of the seat. The space between the front of the lift seat and the back of the operator's knees should be approximately two inches.
4. Every lift seat should include a seatbelt and the seatbelt should always be used. The seat belt can prevent the operator who has leg spasms as a result of a spinal cord injury from sliding off the lift seat. The seat belt can also help the operator sustain balance and position in the lift seat.
5. The lift seat should be tilted slightly upward to prevent the operator from sliding forward.

The **AgrAbility Project** promotes success in agriculture for individuals with disabilities and their families through on-site assistance and educational resources. For additional information on the **National AgrAbility Project** or for a current list of state project sites, addresses and telephone numbers contact:

**University of Wisconsin- Cooperative Extension**  
**460 Henry Mall**  
**Madison, WI 53706**  
**866-259-6280 or 608-262-5166**

**Easter Seals**  
**700 Thirteenth St., NW-Suite200**  
**Washington, DC 20005**  
**800-914-4424 or 202-347-3066**

<http://www/agrabilityproject.org>

### State Projects

**Colorado** - Colorado State University Extension Service  
 Easter Seals Colorado

**Delaware** - University of Delaware Extension Service  
 Easter Seals Delaware

**Illinois** - University of Illinois Extension Service  
 Easter Seals Central Illinois

**Indiana**- Purdue University Extension Service  
 Southern Indiana Center for Independent Living

**Iowa** - Iowa State University Extension  
 Easter Seals Iowa

**Minnesota** - University of Minnesota Extension Service  
 Goodwill/Easter Seals Minnesota

**Mississippi** - Mississippi State University Extension Service  
 T.K. Martin Center for Technology and Disability

**Missouri** - University of Missouri Extension Service  
 Services for Independent Living

**Nebraska** - University of Nebraska Extension Service  
 Easter Seals Nebraska

**North Carolina** - North Carolina State University  
 Partnership in Assistive Technology

**North Dakota** - North Dakota State University Extension Service  
 Easter Seals North Dakota

**Pennsylvania** - Pennsylvania State University Extension Service  
 Easter Seals Central Pennsylvania

**South Dakota** - South Dakota State University Extension Service  
 Easter Seals South Dakota  
 Avera Health System

**Tennessee** - University of Tennessee Extension Service  
 Easter Seals Tennessee

**Texas** -Texas Agricultural Extension Service  
 Warm Springs Resource Center

**Utah** - Utah State University Extension Service  
 Options for Independent Living

**West Virginia** - West Virginia University Cooperative Extension  
 North West Virginia Center for Independent Living

**Wisconsin** - University of Wisconsin Cooperative Extension  
 Easter Seals Wisconsin

States with affiliate projects are Kentucky, Louisiana, Michigan, Idaho, New Hampshire, New Jersey, New York and Vermont.

The AgrAbility Project is administered by the U.S. Department of Agriculture CSREES. Funding for this document was provided under project number 00-41590-0932.