

## **WHEELCHAIR MOUNTING SYSTEMS FOR COMMUNICATION DEVICES AND COMPUTERS**

*MICHELLE L. LANGE, OTR, ABDA, ATP*

### **Access to Independence**

Many people who use dependent mobility bases (strollers) and manual or power wheelchairs use other assistive technology. Those “other” devices may include communication devices, computers and electronic aids to daily living. Often these devices are mounted to the wheelchair, either for safety (prevents the device from falling), security (yes, people will steal this stuff right off your tray) or to place the device in a good position for access (visually regarding the device and direct access, if possible). Communication devices are the most frequently mounted device.

A wheelchair mounting system consists of a mounting block that attaches to the frame, vertical and horizontal bars to position the device and a mounting plate that attaches the communication device to the horizontal bar. Some of the mounts are rigid. If you want to move the device out of the way, say for a transfer, you must remove the mount. Other mounts swing away to the side or fold down to the side. In general, the mounts with the most adjustability can also be the least stable and the most difficult to assemble. Some of these mounts also support laptop computers.

Placement of a mount on a mobility base can be challenging, to say the least. Here are some of the challenges:

- Some dependent mobility bases have unusual tubing sizes that aren't compatible with commercially available mounting systems. Also, some stroller frames are simply not strong enough to support the mount (which is heavy) and the device. Since strollers are usually lightweight, the mount can often tip the base over when the child is removed.
- If the client propels their manual wheelchair, adding a mount and device adds a lot of weight to the chair. If the mount is swung away to the side, the chair may tip over when the client gets out. The mount needs to be removed or folded down to the side to prevent this. Also, the mount must be placed so it's not in the way of self-propulsion (arm stroke).
- New tubing diameters and shapes come out on manual and power wheelchairs before mounting blocks are available (how frustrating!).
- If the wheelchair includes a tilt system, the mount must be attached above the hydraulics to “follow” the client, or the device will not remain in the optimal position. The client may even run into the device! Often there is little room on the frame above the tilt mechanism.
- Never mount these systems to moveable parts, like swing-away footrests and armrests, because the weight of the mount and device will quickly create more “play” in these parts.
- If the client is in a recline system, the mount may need to be attached to the back canes to provide continual access.
- The mount needs to be placed so that the width of the wheelchair is not unreasonable.
- The device needs to be positioned so as not to block the view of the client (particularly a client who propels their own manual or power wheelchair). However, the device still needs to be seen and accessed. This can be particularly difficult with small children who may have a limited reach and yet need to access a communication device and joystick.
- If a client transfers independently, they may require a mount they can move out of the way independently, as well. Daessy's Locking, Swing-Away mount is the only mount designed for this purpose, but since it swings out of the way rather than folds down to the side, the chair is more likely to tip to the side.
- If the client has more than one mobility base, you may need to find funding for two mounting systems. I've tried ordering two mounting blocks and using the same mount between the chairs. However, unless the client has identical frames, the device will not be in the same location on each chair. This may be acceptable for switch users, but not for direct access.

- Someone has to put this mount on the chair! Believe me; your average caregiver just isn't going to do it. These can be challenging to mount. Including labor as a part of the order is recommended.

Many speech generating devices weigh less than several years ago, so smaller mounting systems can often be used.

Placement of a speech generating device or laptop computer on a mobility base provides safety, security and optimal placement for access and visual regard. Assessment is crucial to determine the optimal placement and equipment required.

### **References**

Lange, M., Communication Device Mounting Systems for Wheelchairs. [www.rehabcentral.com](http://www.rehabcentral.com), June, 2000.

Lange, M., Wheelchair Mounting Systems. Rehab Report (pp. 24-29), November 1999.

### **Speaker Bio**

Michelle is an occupational therapist with 20 years of experience in the area of assistive technology. She is the former Clinical Director of The Assistive Technology Clinics of The Children's Hospital of Denver and is now in private practice. Michelle's work in assistive technology includes a broad range of roles and services. She is a well-respected lecturer, both nationally and internationally and has authored 4 book chapters and over 80 articles. Michelle is on the teaching faculty of RESNA and also serves as Secretary and as member of the Assistive Technology Journal Editorial Board. She is a past Member at Large, member of the Board of Directors, Education Chair and SIG-09 Vice-Chair. Michelle is on the RERC on Wheeled Mobility Advisory Board. She is also former Editor of the Technology Special Interest Section of the American Occupational Therapy Association. Michelle is a credentialed ATP and is a Senior Disability Analyst of the American Board of Disability Analysts.