

ROTARY CLUB OF BURLINGTON

WHY WE DESIGNED THE WHEELCHAIR THE WAY WE DID

Peter French, Nov 3, 2017

NOTES ON THE DESIGN FEATURES

1. Use of wood

- . most developing countries have an established furniture industry and a source of hardwoods.
- . the wooden arm rest and other parts can be modified by local ideas to increase the ownership of the wheelchairs.

2. Ball handles

- . most wheelchairs use bent tubular handles
- . accurate tube bending is not easy without special equipment
- ... the tube flattens and the angle-of-bend must be precise.
- . most wheelchairs add a rubber hand grip which deteriorates and slides off.
- . those who have used the ball handles comment that they are very comfortable and very ergonomically suitable.

3. Wooden slats for the back rest and seat

- . all wheelchairs use fabric or high-tech, man-made leather for the seat and back. This is difficult to fasten to the tubes and the fabric tears with use.
- . The hammock-like seat in many chairs is uncomfortable and most users add a cushion. The flat seat readily accommodates a cushion.
- . The slatted back will fold and is very comfortable.

4. Removable footrest

. The footrests on conventional chairs flip up to help access. This lifting motion, using the top of a foot, is not easy to achieve and the handicapped often require help from a care giver. The footrests usually fall back down. A removable footrest solves these problems. However, the user must place it on the floor momentarily while accessing.

. The support tubing for conventional footrests in many chairs, can swing out to provide open, side access. This adds more complexity and cost for a feature that is used infrequently because it cannot be easily activated (a small button to push).

. Many users have lost legs, or have crippled and deformed limbs not requiring conventional footrests. The center extension on this chair provides a mounting structure for custom- made leg supports.

5. Open structure of the chassis

. The area under the seat on a conventional chair is filled with cross tubing and support bars. This chair provides an open box that can carry personal or household items.

6. Red, wooden brake knobs

. Brake actuation is ergonomically designed, in a handy location and visible.

. Critics could say that the brake could be inadvertently bumped off. This would be readily apparent with the red knob down, which is more visible than conventional brakes that use a small, hidden lever.

Rotary Club of Burlington, Ontario. Canada.