

Ergonomics Case Study Olympia School District Cafeteria Tables

Background

Risk management from Educational School District 113 contacted the L&I Ergonomics Program for help at an Olympia elementary school. Custodians at the school were having difficulty folding the cafeteria tables to move them out of the way when cleaning floors. Several custodians had been injured while handling the tables in the recent past.

Issues Found

Custodians fold the 12 cafeteria tables at the school twice a day. In order to fold the tables, custodians had to bend over and lift at the center point of the table. They would then push the two halves of the table together until they locked in the upright position. Even the strongest custodian felt that the folding task was difficult to perform.

An L&I ergonomist helped measure the apparent weight of the tables during folding by having a custodian stand on an electronic scale while lifting. Custodians used more than 80 pounds of lifting force to fold the tables, which is well over recommended weight limits.



Recommendations

A number of solution options were proposed, and these included:

- Purchasing newer tables with standard folding mechanisms. Newer tables at another school could be folded up with 50 pounds for force. This would still be a bit of challenge for smaller custodians, or those with pre-existing injuries.
- Purchasing tables with a spring-assist device that would greatly reduce the folding effort.
- Purchasing smaller tables that convert to benches, which are easier to fold up and move out of the way. Since each table is half the size of a standard cafeteria table, this would result in handling twice as many tables.
- Contacting a lift-assist manufacturer to design a retro-fit device that could be installed on existing tables.

A cost-benefit analysis showed that even the more expensive spring-assist tables would be a cost-effective solution, since injuries related to handling the tables were very expensive. However, it would take a while to budget for purchasing new tables. Also, except for the effort required to fold them, the existing tables were in very good condition.

Implementation

The school district's risk management took the information back for discussion with the custodial and maintenance departments. Rather than wait for the budget to replace the tables or have a retro-fit device designed, they came up with their own solution – a battery-powered lifting device. With a slight modification, the device could be used to lift the tables at the folding point, with very little effort on the part of the custodian.



Follow-up

The custodian is very happy with the lift. She had the following to say about using it:

“The lift is great! I have no stiff or sore muscles at the end of my shift. It seems slower, but I think it’s mostly because you don’t have as much movement to get the job done. Actually, it adds about 10 minutes to my setup time, but we can do this with one person and the extra time is time well and safely spent.”