

## Ergonomics Case Study Seattle Mariners Safeco Field Ticket Sellers

### Background

When the Seattle Mariners moved from the Kingdome to a brand new Safeco Field, some of their old equipment, computers, and furniture made the move with them. Unfortunately, this led to some discomfort among the employees as the old equipment was set up in a new environment. Several employees at the walk-up ticket counters had expressed concerns about twisting to use the computers and bending to reach the ticket printers. Mariners' management was considering making changes in order to proactively address these issues before injury occurred, but they wanted to make sure that the changes would attend to all of the employees' concerns. To get an outside opinion, they invited an ergonomist from Labor and Industries (L&I) to assess the situation and interview the ticket sellers.

### Issues Found

During the interviews, the ticket sellers all identified the same two issues as the primary causes of their concerns with the workstation set up - the location of the computers and the location of the ticket printers.

**Computer Location:** The assessment found that the location of the computer keyboards, mice and monitors were leading to some awkward postures for the staff. The computer equipment was placed on worksurfaces that were at a right angle to the ticket windows, and the sellers, not wanting to turn their chairs completely away from their customers, were instead twisting to use the computers. The location of the monitors also resulted in glare on the screen when the sun was out. The worksurfaces were not adjustable, so smaller employees either had to reach up to use the mouse and keyboard, or raise their chairs to the point that their feet no longer reached the floor.

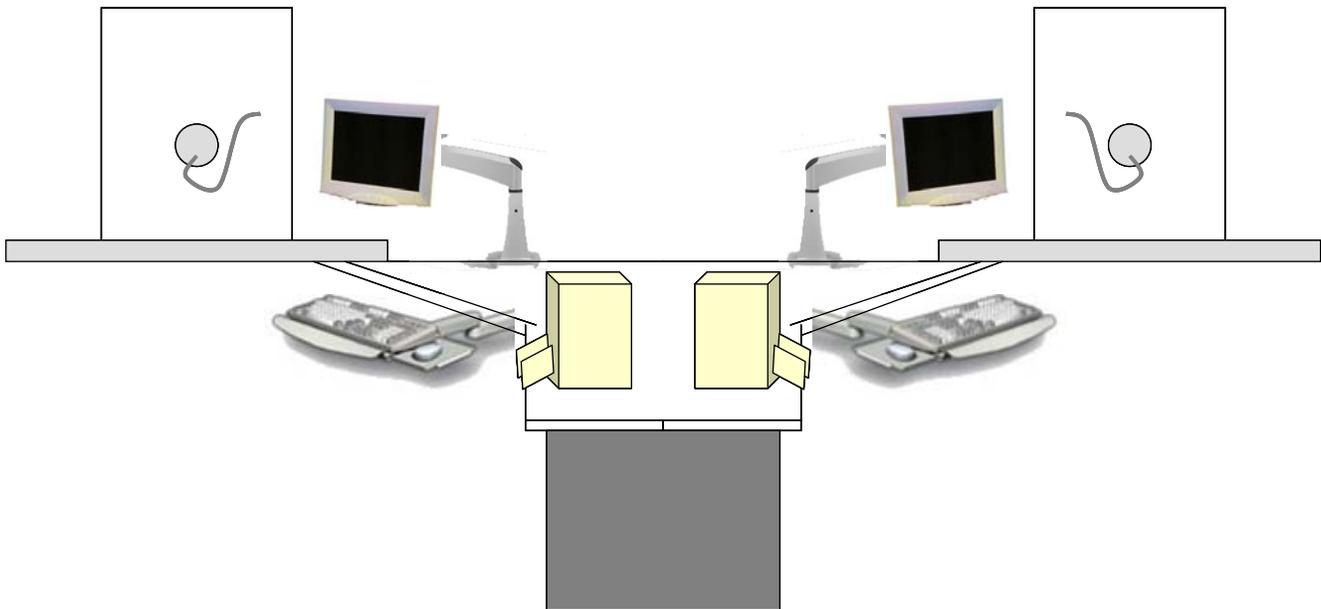


**Ticket Printer Location:** With the computers taking up most of the top of the worksurface, the only room left for the large ticket printers was on a shelf under the worksurface. Unfortunately, the printer output is at the bottom of the unit, which resulted in a long reach down and to the side once the tickets had printed. This location also resulted in awkward postures when refilling the printers with blank tickets, since the printers had to be slid out from the shelf in order to remove the cover.



## Recommendations

Based on the ticket sellers' input, the L&I ergonomist recommended a switch from the old CRT style of monitors to the newer flat panel LCD monitors, along with height adjustable monitor arms and keyboard platforms. The small size and light weight of the flat panel monitors would allow for more placement options, so that they could be located closer to the ticket windows. With both the monitors and keyboards on height-adjustable arms, the ticket sellers could raise or lower them to fit their stature. This diagram shows the proposed ticket window set-up:



With the keyboards and monitors off of the shared worksurface between the ticket windows, the printers could come up from the low shelf and sit on top of the worksurface, where the printed tickets would come out at a convenient height.

## Implementation

Mariners' management contracted with a local-area office equipment vendor to find the best installation option for the monitors and keyboards. They chose a simple installation option, with the keyboard platforms mounted directly under the ticket window counter, and the monitor arms mounted just to the sides of the windows. New adjustable chairs also helped staff to sit more comfortably. The photo to the right shows the new layout, with the ticket printers located close at hand.



## Follow-up

After the ticket sellers had several months to get used to the new set-up, the L&I ergonomist visited to review the changes and observe working postures. The bending, twisting and reaching motions that were so common in the old set-up were no longer present. Thanks to the proactive efforts of the Mariners' management, the ticket sellers are now able to focus on their interactions with customers while working in safe and comfortable postures. Management reports that there have been no more employee comments or complaints since the change.

