

## Castors on Lab Chairs

### 1. Cons

The primary argument against having castors on lab chairs appears to be that they increase the risk of someone injuring themselves while getting onto the chair. This is most likely to happen if the seat height is set too high, i.e. at a height where the individual has to hitch themselves up onto the seat, rather than sit down onto it. If they catch the edge of the seat there is a chance that the chair may be propelled backwards, causing the individual to fall to the floor. This would, undoubtedly, be a painful experience and most likely result in bruising, although, in the worst case scenario, such a fall could result in a spinal fracture. The likelihood of the chair shooting away increases if the floor has a smooth surface, e.g. tiles or linoleum, as it does in SLS labs.



Such an accident has never been reported to SLS H&S, but we are aware of Safety Services receiving at least one report from an institute in Coventry. Also, there must have been several cases world/Europe-wide to warrant the introduction of an industry standard. The upshot is that castors are only permitted on chairs with a maximum seat height that allows persons of “normal height” to have both feet firmly on the ground at all times. This rules out draughtsman chairs (standard lab chairs) but allows for castors on operator chairs (standard office chairs). Unfortunately, operator chairs are too low for using at standard lab benches and TC cabinets. (They do, however, come in useful where there is low level benching, e.g. microscope stations, and in the Mezzanine Floor TC suites where the lower ceiling height dictates the use of lower height TC cabinets.)

### 2. Pros

The argument for castors is based on the belief that chairs without castors pose a greater risk of injury than those with castors. The increased risk arises from an increase in the likelihood of injury occurring rather than an increase in the potential severity of the injury, i.e. there are more ways to hurt oneself but the injury is not likely to be as severe as a spinal fracture. It is also worth noting that people who are used to using lab chairs with castors fitted are far more likely to injure themselves than those who are not. The potential problems associated with castor-less lab chairs are described below.

#### a. Glides do not glide!



Rather than gliding across the lab floor, chairs fitted with “glides” tend to stick and have to be dragged or lifted in order to move them. Although the chairs are not overly heavy, this is a high frequency activity and the potential for manual handling related injury to the back and upper limbs exists. Those of slight stature, or those with an existing medical condition or weakness, are at greater risk.

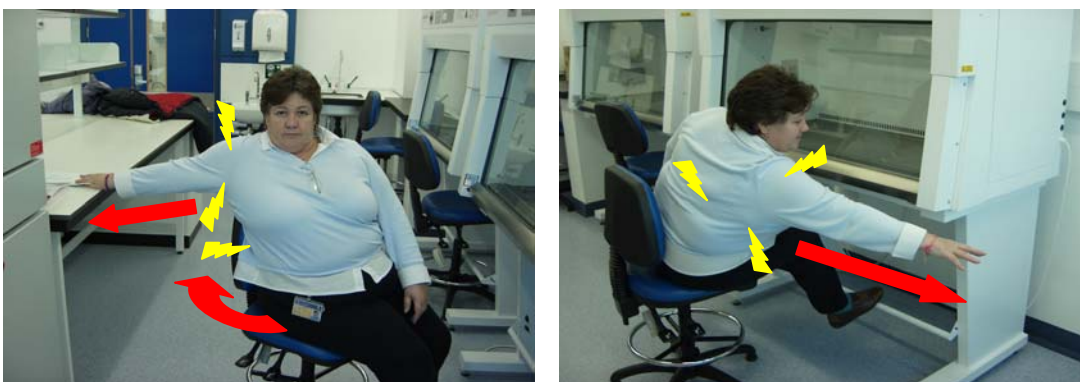
**b. Castor-less chairs create an obstruction in narrow lab bays.**



When moving through a lab bay with your hands full, you can nudge a chair fitted with castors out of the way quite easily. If the chairs are castor-less you have to put down what you are carrying and move them out of the way - inconvenient, but hardly hazardous - or manoeuvre your way around them increasing the likelihood of a trip/fall and, if the

individual is carrying reagents or cultures, causing a hazardous spill. The narrower lab bays make this more of an issue in CIR than it would be in WTB.

**c. There is an increased tendency to twist and overstretch.**



A worker who has become used to chairs fitted with castors may find the switch to castor-less chairs causes them to develop a tendency to twist and overstretch frequently. They will be used to manoeuvring on their chair to reach nearby items, especially in TC where only the minimum amount of consumables/apparatus is kept in the cabinet itself, and now find they have to get up off the chair or overstretch/twist. Human nature dictates that they will take the easy option! The frequency with which these movements are undertaken greatly increases the risk of repetitive strain type injuries to the upper limbs and back. Individuals with an underlying medical condition or weakness are at greater risk.

**d. It is difficult to get into position at the bench/TC cabinet.**



Positioning yourself at the bench/TC cabinet on a chair fitted with castors is easy: roll the chair out; sit down; roll it in to a distance that is comfortable for you. Take away the castors and the operation becomes more difficult: drag the chair out; sit down; grab the sides and drag or “bump” it forward into position. This causes strain on the upper limbs and back and it is a frequently executed operation, therefore, over time, it could result in injury.

As before, individuals with an underlying medical condition or weakness are at greater risk.

**e. Attempting to “push off” can cause the chair to tip.**



Those who have recently switched to castor-less chairs will frequently attempt to manoeuvre around on their chair as if it still had castors fitted. When you attempt to “push off” this can cause the chair to tip to the side. There weight distribution is such that there is no chance of the chair toppling over, so it is more of an irritation rather than a health risk.

### **3. Conclusion**

Although the potential severity of a fall while attempting to get on to a chair fitted with castors, in the worst case scenario, is high, experience in SLS suggests that the likelihood of such an incident occurring is extremely low, even in an environment where the operation is carried out by hundreds of people, several times a day.

In the case of castor-less chairs there are more ways of sustaining an injury, albeit a less severe injury that may take time to develop. Also, as mentioned in section 2, people who are used to chairs fitted with castors are far more likely to do the things that will lead to injury. All our existing staff fall into this category. In terms of how frequently someone may suffer an injury, we have no historical data to draw upon, but personnel on all floors of CIR have been expressing concerns since the building opened in summer 2005 and there has been one verbal report of back pain caused by having to use a castor-less chair in TC.

One would have to conclude that, overall, castor-less chairs present a greater health risk to SLS personnel than chairs with castors. Health risks aside, fitting castors to the CIR lab chairs would also make for a more comfortable working environment and, in relation to this issue, at least, a happier workforce.

**From:** Ian Scragg  
**To:** Lisa Grayson  
**Date:** 28/04/2006 11:56:46  
**Subject:** Re: Castors on Lab Chairs

Lisa,

I know of no other laboratory that has come to this conclusion, and when I tried to buy a draughtsmen chair with castors in Oxford the company refused to sell me one on H&S grounds.

When I discussed this issue with the supplier several months ago he told me that the chairs are more likely to fail since they were not designed for this modification, and this will invalidate warranty and CE conformity.

I have checked with Andy Stubbings, Wyeth to confirm that he will not be adopting SLS standard, but University standard.

Regards, Ian

Dr Ian Scragg  
Director of Occupational Health and Safety Services  
University of Dundee

>>> Lisa Grayson 27/04/2006 16:33 >>>  
Hi Ian,

After a few more months of complaints from the CIR occupants about their castor-less chairs, the H&S Working decided to do a thorough investigation. We went into a lab and tried the chairs out for ourselves, taking all the various concerns into consideration. We documented our findings - see attached file - and submitted it to Pete Downes for his consideration. Based on this Pete has decided to allow castors to be fitted to the lab chairs.

Such a furore over a relatively trivial H&S issue has been very damaging to SLS H&S and we've had to endure some severe criticism. We hoped the staff would get used to the castor-less chairs over time but this is not the case. Pete feels strongly that, whilst compliance with Safety Services guidelines should be the norm, there are circumstances such as in this case when the local conditions dictate a different response. He is content that the investigation we have carried out clearly justifies the use of chairs with castors in CIR labs and that therefore this should be the policy adopted by the SLS Health and Safety Management Committee that he convenes.

Best regards,

Lisa.

**CC:** David Duncan; Pete Downes