



# Case study

## Expert witness: Investigating lift drop

### THE CHALLENGE

Frazer-Nash was asked to provide expert evidence that would determine whether its clients were liable for injuries sustained by a healthcare Porter in a lift drop incident.

The Porter alleged that when travelling in the passenger lift as part of his daily routine, the lift had dropped uncontrollably two stories and then came to an abrupt halt. He claimed he suffered back injury as a result and was unable to work.

### OUR SOLUTION

We examined the lift structure and mechanism to establish what factors may have caused the lift to drop. On reviewing documentation regarding various lift structures, we found that there are many safeguards to prevent a lift from dropping. These are intrinsic to the lift's design and have been built into the mechanisms and control systems.

These safeguards include a control system to monitor the lift's descent, a mechanism that restricts the speed of the lift, and brakes that apply against the guide rails to stop a runaway lift within a drop of two feet. Significant damage can be expected when these brakes apply as they are usually made of steel and run on steel guides, therefore dissipating considerable energy.

We reviewed the lift's maintenance records to ensure that no repairs had been carried out to the brakes and rails at the time of, and following the incident. Our site inspection confirmed that the lift and shaft did not display any evidence of brake application, or any other signs indicative of lift drop or failure.

We also conducted a thorough failure mode and effect analysis on the mechanisms that prevent lift drop to identify other critical safety components. These were examined and found to be secure.

### THE OUTCOME

Our comprehensive analysis resulted in our client being successful in court as it was concluded that no physical evidence existed to support their employee's personal injury claim.

#### Client

Confidential

#### Business need

Our client required independent expert advice on the probable cause of a hydraulic lift drop. The evidence would be used to defend a substantive claim for personal injury.

#### Why Frazer-Nash?

Frazer-Nash has over 20 years experience in the analysis and assessment of incidents, and has provided evidence to support or defend a number of litigation disputes.

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