Industrial Life Cycle Services Bulletin

Lift Inspection and the Use of State of the Art Testing Techniques	Bulletin 22-01 Rev. 0 - 0

The periodic in-service inspection of lifts has been a definitive regulatory requirement within the European Economic Community since the implementation of the Use of Work Equipment Directive (UWED) (89/655/EEC) and the subsequent introduction of the Amending Directive to the UWED (95/63/EC). Prior to this, member states had defined national requirements and regulations which placed duties to have lifts inspected periodically.

In-service lift inspection has historically involved detailed visual scrutiny, exposure of critical hidden parts and functional checking of mechanical and electrical safety devices. Testing of the functionality and the effectiveness of critical safety mechanisms has been restricted in some countries primarily to the installation process or subsequent to refurbishment. Such testing has often involved the use of physical loads imposing harsh and extreme loading conditions on the structures and mechanisms of lift installations.

Certain critical safety mechanisms, although visually inspected in some countries, are not necessarily physically tested to prove functionality and effectiveness under demand situations. It is considered that the extreme event they protect against, if replicated, may cause significant damage to the installation. However, such critical mechanisms are often an essential last resort device, safeguarding lift users, and their correct function and effectiveness should be verified. This is a dilemma faced by many inspection organisations, who would call for testing as a final measure when they have identified issues of concern and exhausted all other means of verification. However, at some point in time in the life of a lift, such critical safety mechanisms must be verified as being set correctly and able to function satisfactorily. The manoeuvring of physical loads, to facilitate such testing and simulate the design load case, can not only be logistically difficult but potentially damaging to the fabric of a lift. As such, tried and trusted inspection techniques have not necessarily followed lift technology development.

Technological developments in lift testing have resulted in proven systems being available which can be used to test certain safety critical mechanisms of in-service lifts. These systems provide data which can be interpolated to simulate extreme event loading conditions without either the logistical difficulties of supplying and manoeuvring physical loads or having the potential to induce damage into an installation, due to severe load application. Undertaking tests in such a non-destructive manner would not only avoid damage to any given lift installation but would also enhance the inspection process. Excluded from this consideration are all changes to lifts that are not satisfactorily proven by simulation. In such cases (e.g. new drive, new safety gear, new rupture valve) the use of weights is to be considered.

The verification of the correct setting and function of safety critical mechanisms is an essential part of the inspection of an in-service lift. In order to enhance an inspection regime, consideration should be given by an inspection organisation to the application of suitable and sufficient testing. Where the inspection organisation deems it necessary to

Revisions/Reaffirmations

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supplement any lift inspection with testing to verify the integrity of a safety critical mechanism, simulated tests, utilising internationally proven systems should be considered as being suitable and satisfactory.

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