

## 1. INTRODUCTION

This report describes the test activities performed to measure vibrations present on a lift during the emergency stop.

The test has been performed on the lift designer request in order to certify that the maximum deceleration peak during emergency stop is less than  $\pm 500$  mg in X, Y and Z direction.

## 2. TEST DESCRIPTION

The lift has been installed to connect the car parking and the reception of a hotel located on Lago di Como; it moves on a ramp running on two rails.

The triaxial accelerometer MS2002 has been fixed to the lift floor using bolts.

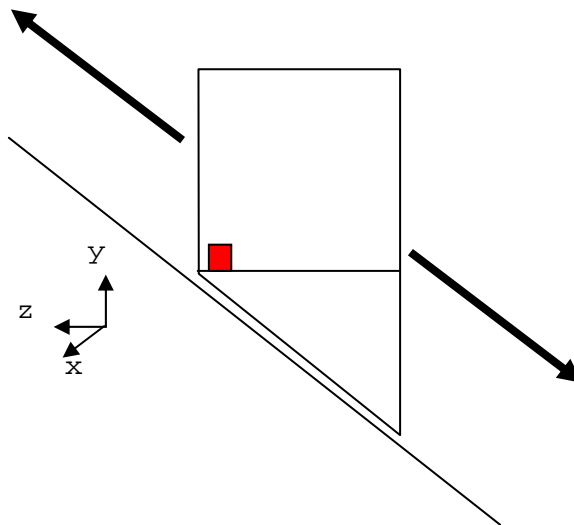


Figure 1 shows the acceleration time histories measured at first trial. They are well above the  $\pm 500$  mg limit in Y and Z direction.

Figure 2 shows the same signals in the frequency domain.

The reason for this has been found in a non perfect configuration of the braking system, in particular there were some errors in the brake lubricating oil system pump setting.

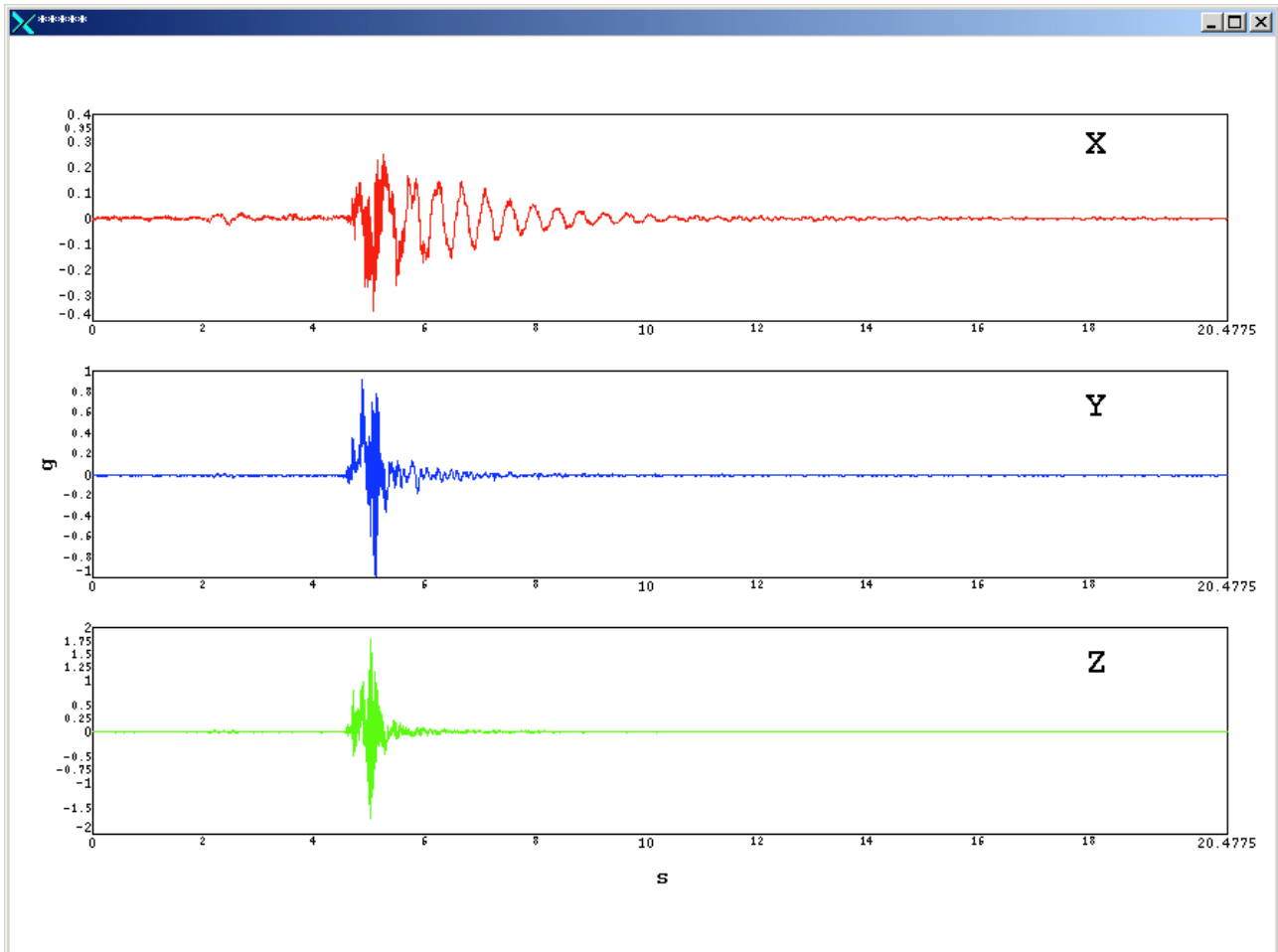
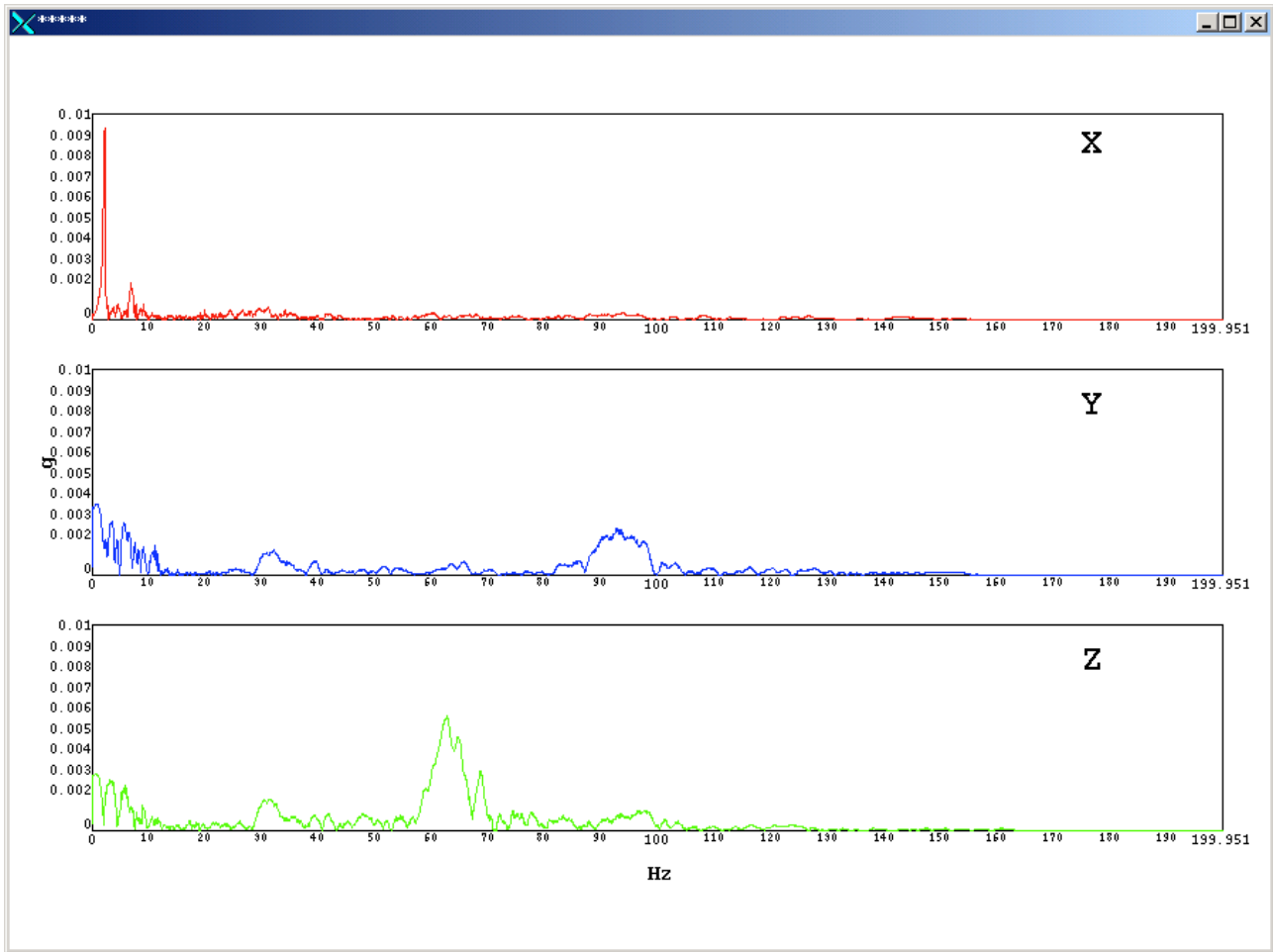


Figure 1. First test (errors in the brakes configuration) time histories.



**Figure 2.** First test (errors in the brakes configuration) frequency spectra.

After having set the braking system correctly, test has been executed again.

Figure 3 shows the time histories measured during this second trial and shows that the  $\pm 500$  mg limit has been respected.

Figure 4 shows the frequency spectra measured during the second test and shows the same peaks of figure 2 but with well lower amplitudes.

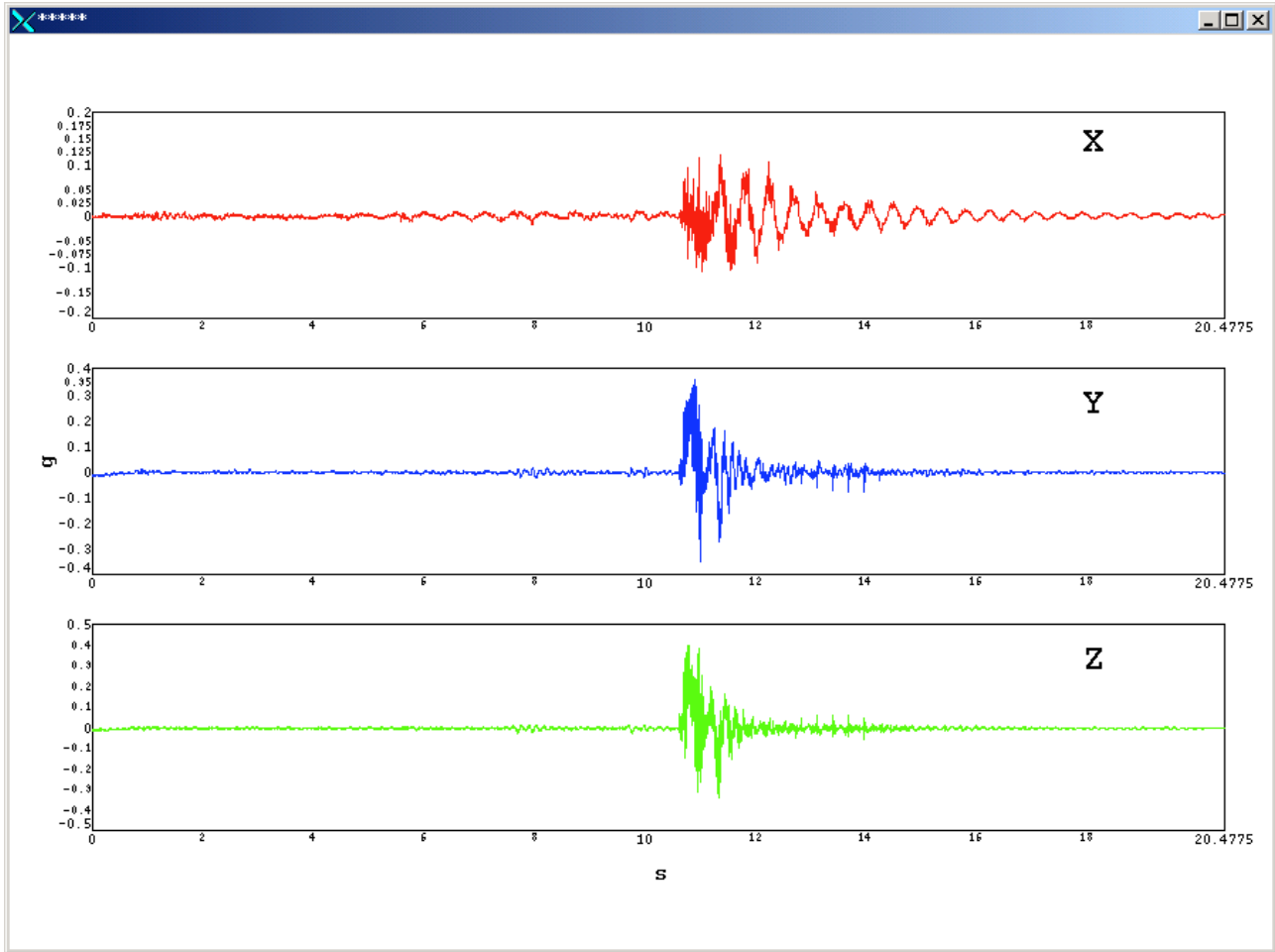
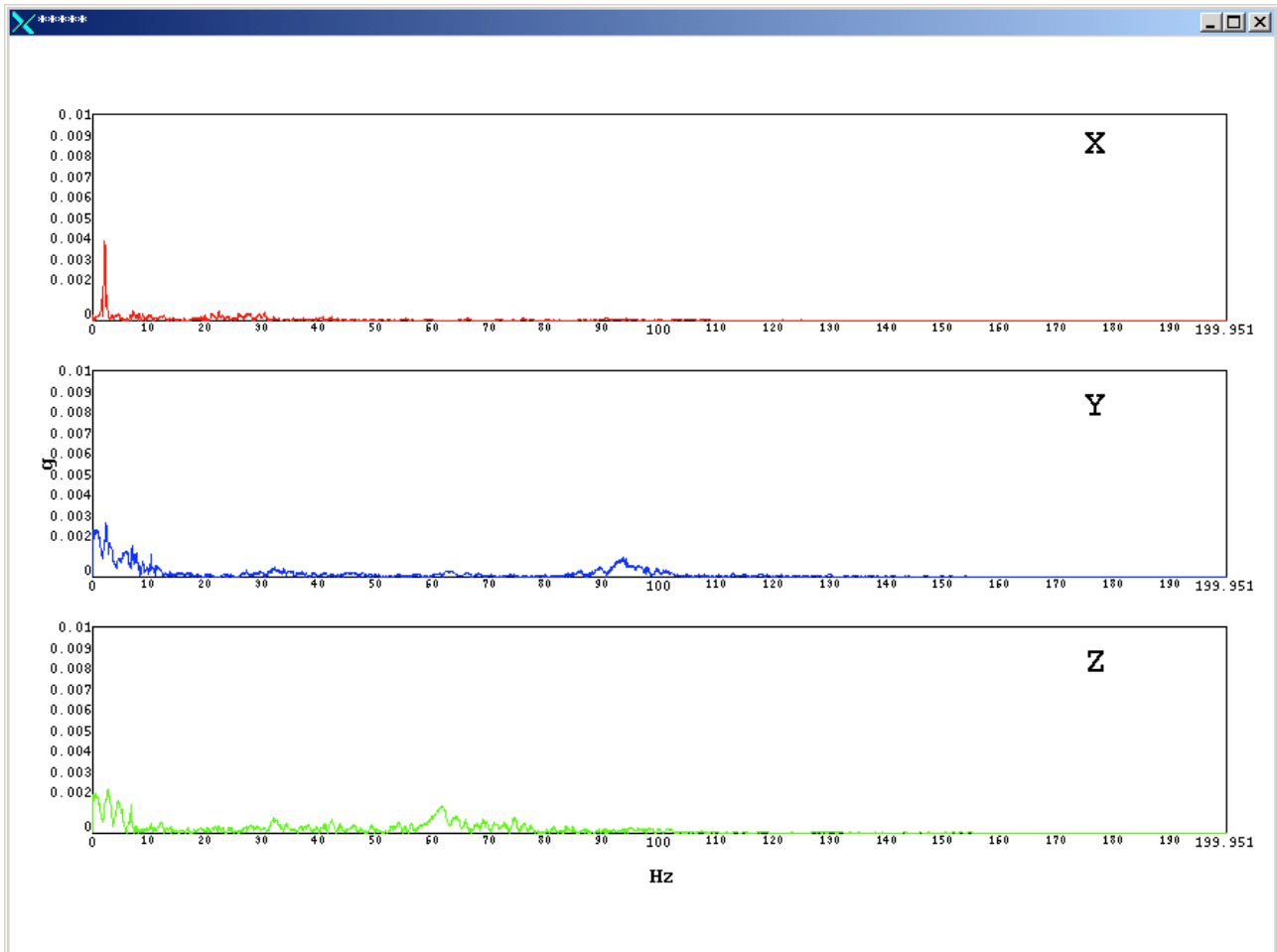


Figure 3. Second test time histories.



**Figure 4.** Second test frequency spectra.

Finally figure 5 shows time histories recorded on this lift during a normal stop.

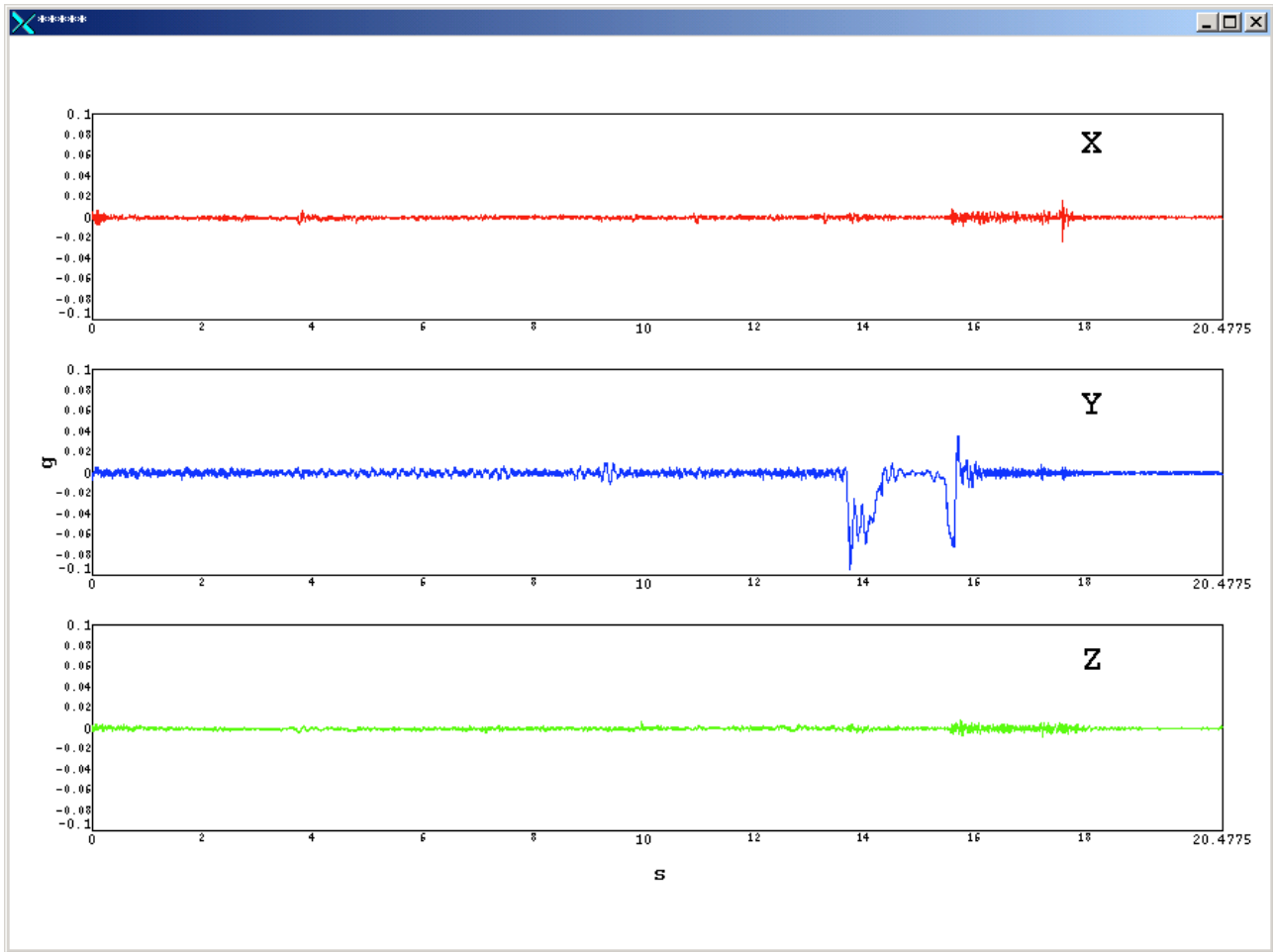


Figure 5. Time histories during normal stop.

### 3. CONCLUSIONS

Tests performed have shown that, after having fixed the problem with braking system, the deceleration values measured in all directions remain below the design limit of 500 mg<sub>P</sub>.