



TB160 for Forklift

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Ryan Tai

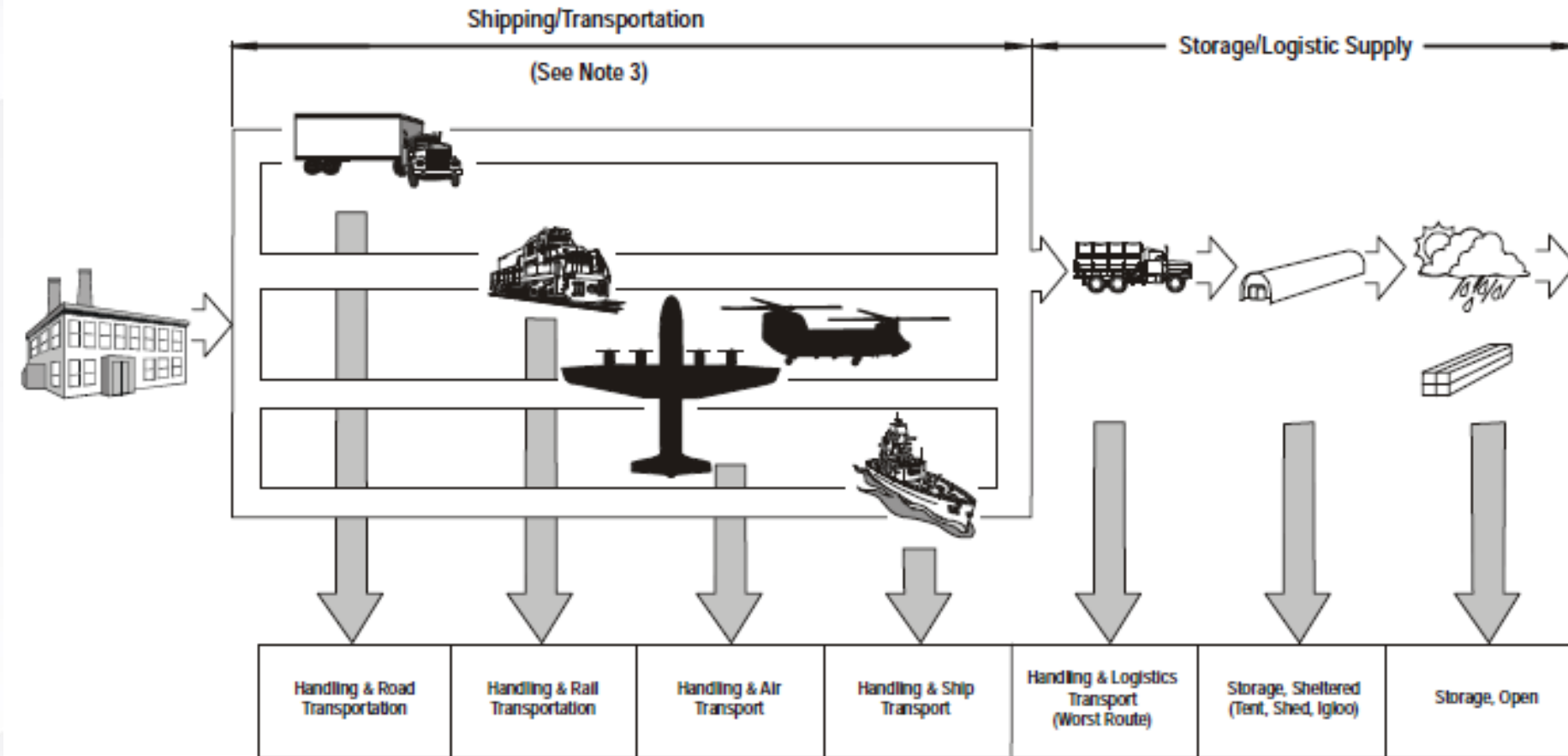
TB160 For Mission Critical

TB160 has **two distinguished items** than common tablets as well as passed the US Military Rugged test standard calls MIL-STD-810G in benefits for forklift application

A. Vibration

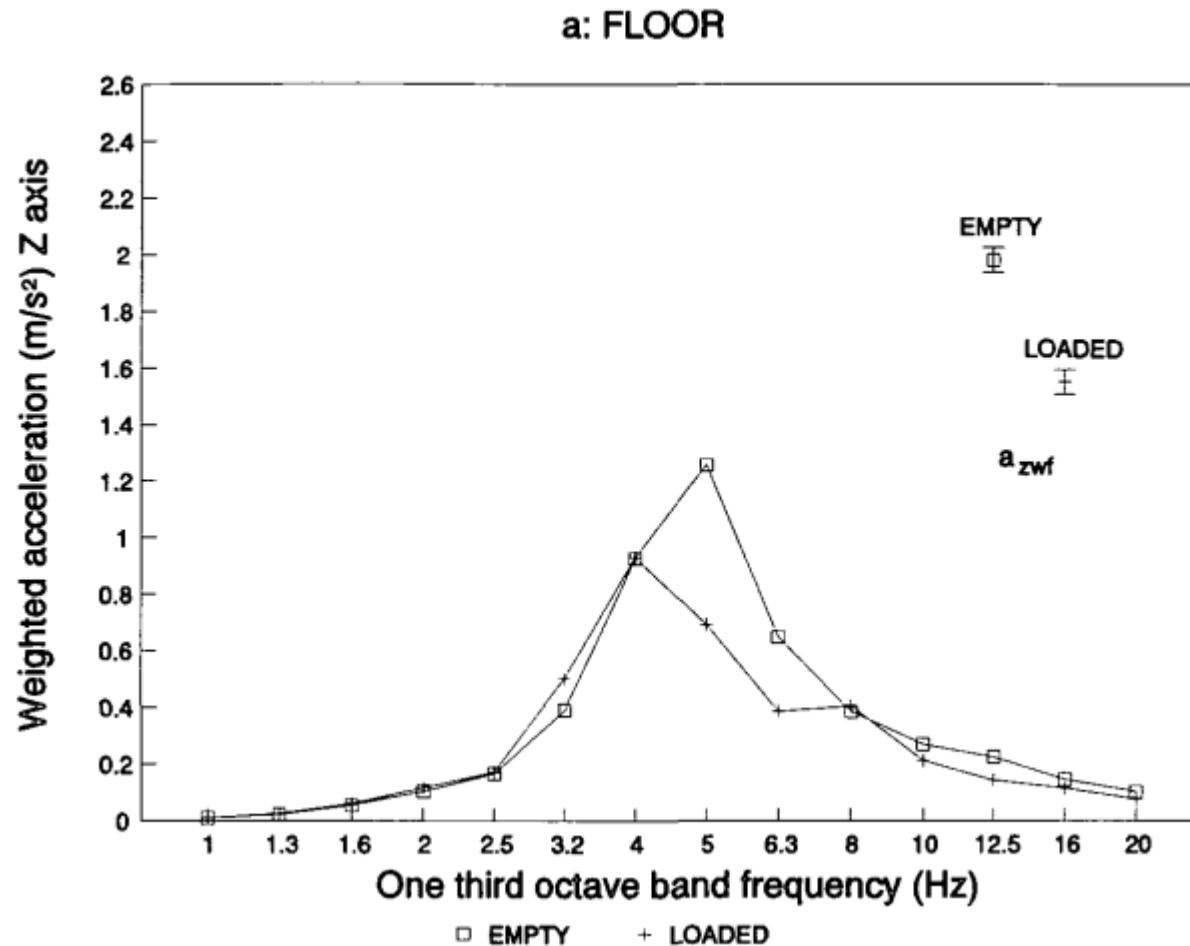
B. Shock

Different Vehicle Vibrations



What the Forklift Vibration's Frequency will be?

The Z frequency with loaded is maximum 20Hz



Source: 1996 British Occupational Hygiene Society
Research dissertation -
VIBRATION EXPOSURE ON FORK-LIFT TRUCKS

MIL-STD-810G Vibration

Passed MIL-STD-810G, Method 514.6, Procedure I

• **Category 4 – Transportation**

1. **Truck/Trailer/Tracked – Secured Cargo**
2. **Truck transportation over US highways**
3. **Mission/field transportation**

Vibration tests passed in Figure 514.6 C1, C2, C3

Common carrier - US highway truck vibration exposure

Test condition: Operating
Vibration Wave form: Random
Frequency: 10-50 Hz
Direction: X,Y,Z axes
Duration: 60 mins /axes
Passed MIL-STD-810G criteria



Vibration tests passed in Figure 514.6 C1, C2, C3

Composite two-wheeled trailer vibration exposure - e.g. forklift trailer

Test condition: Operating
Vibration Wave form: Random
Frequency: 10-50 Hz
Direction: X,Y,Z axes
Duration: 32 mins /axes
Passed MIL-STD-810G criteria



Vibration tests passed in Figure 514.6 C1, C2, C3

Composite wheeled vehicle vibration exposure, e.g. Humvee

Test condition: None Operating
Vibration Wave form: Random
Frequency: 20-2000 Hz
Acceleration: 7.7G
Direction: X,Y,Z axes
Duration: 60 mins /axes
Passed MIL-STD-810G criteria



MIL-STD-810G Shock

Passed MIL-STD-810G, Method 516.6, Procedure I

Test condition: Operating

Pulse Shape: Sawtooth

Frequency: 20-2000 Hz

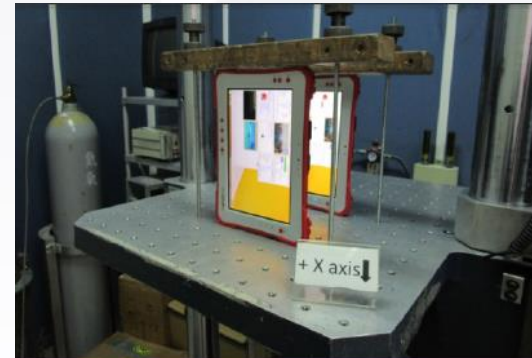
Acceleration: 40G

Shock Direction: 6 faces (+-X, +-Y, +-Z axes)

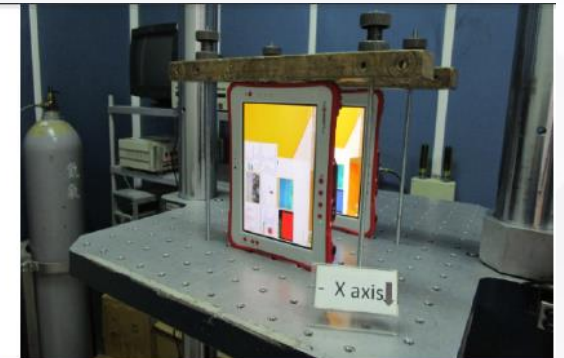
Pulse Duration: 11ms /axes

**Numbers of Shock: 3 shocks of each axes,
total 18 shocks**

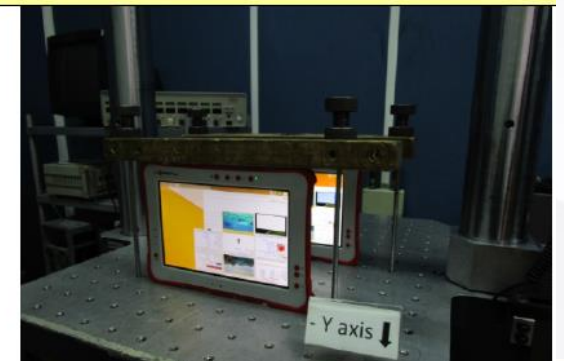
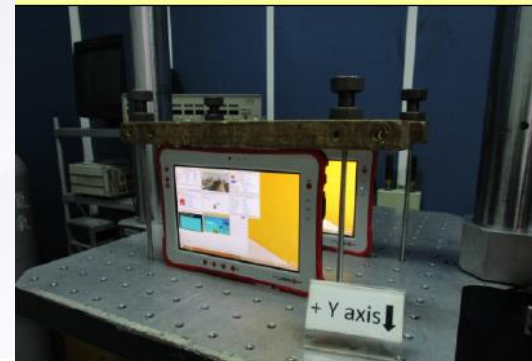
Passed MIL-STD-810G criteria



3. Operating Functional Shock Test: +X axis



4. Operating Functional Shock Test: -X axis



Conclusions

- 1. The MIL-STD-810G's vibration in "Composite two-wheeled trailer vibration exposure" criteria has over the forklift vibration in 50Hz**
- 2. TB160 also can bare with high frequency and critical sawtooth shock test because of its rugged assembly design to prevent both mechanical and electronic parts break during operating on forklift**
- 3. Common tablet can not be survived with these tests**



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