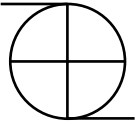
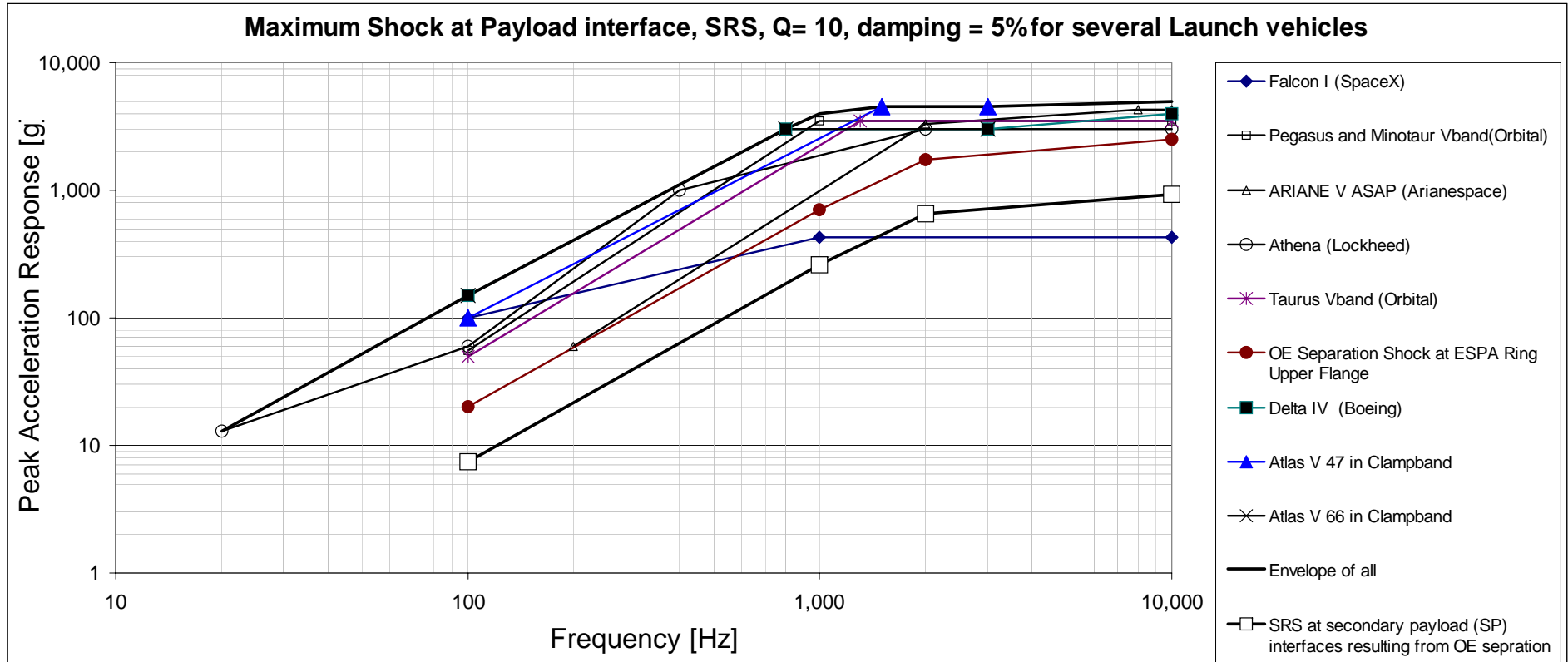


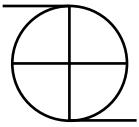
Shock Test Summary

- Two Lightband were shock tested
 - 15 inch Motorized Lightband (MLB) 4000389A SN 01
 - 15 inch Standard Lightband (SLB) 4000368A SN 01
- **Test Objectives: (Success Criteria)**
- 1- Measure Shock generated by Lightband Separation
 - SUCCESS
- 2- Measure Transmissibility of shock through Lightband
 - SUCCESS
- 3- Induce shock in Lightband exceeding “OE separation shock at ESPA ring upper flange” (see appendix A)
 - FAILED, BUT MET “SRS At Secondary Payload (SP) Interfaces resulting from OE separation”
- 4- Attempt to induce shock in Lightband exceeding “Envelope of all” (see appendix A)
 - NOT ATTEMPTED, no way that a sledge hammer will induce “Envelope of all”



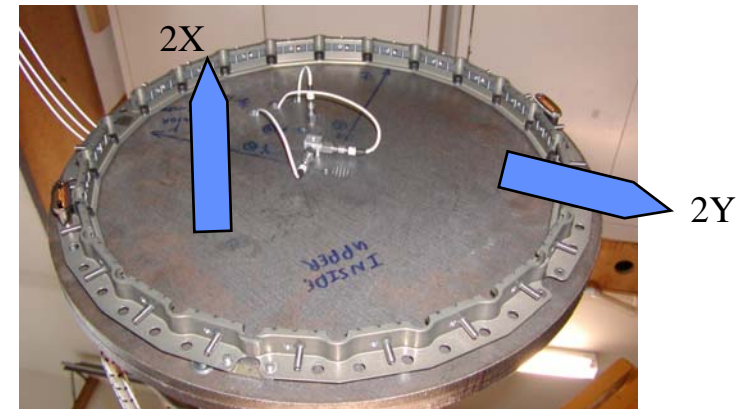
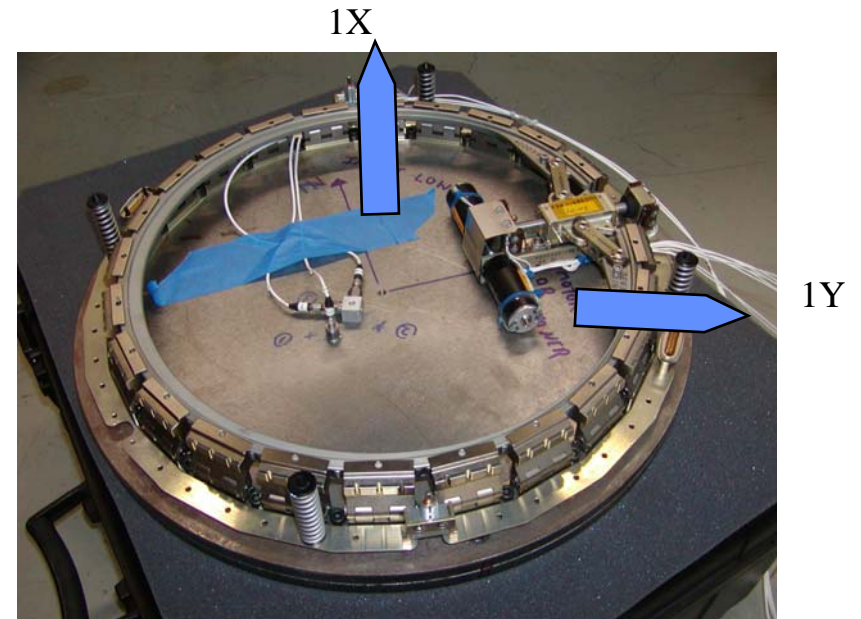
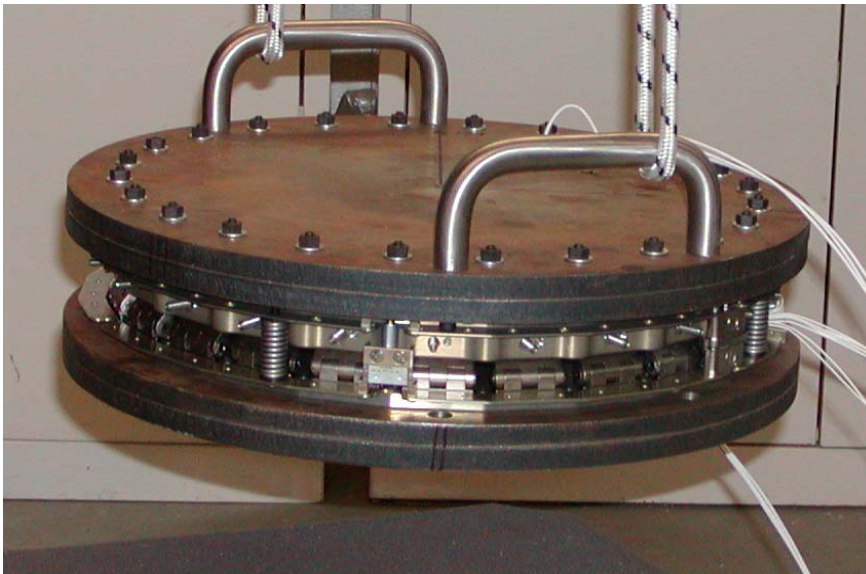
Shock Spectra

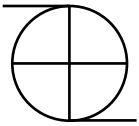




Test Item

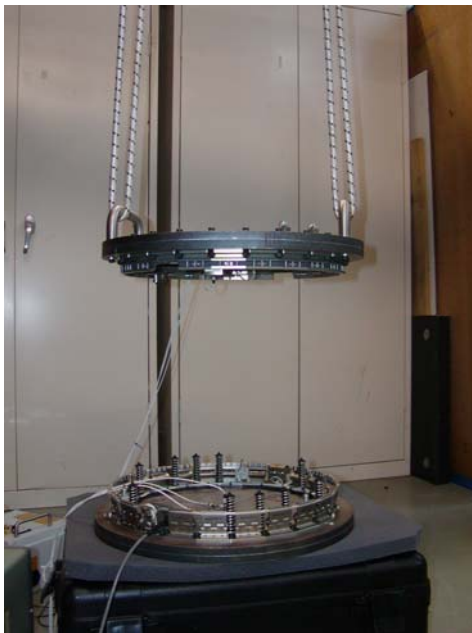
- Lightband is fastened to steel plates with shock accelerometers mounted to the inside center of the steel plates
 - The whole test item weighs 146 LB
 - Each steel plate weighs 34 lb





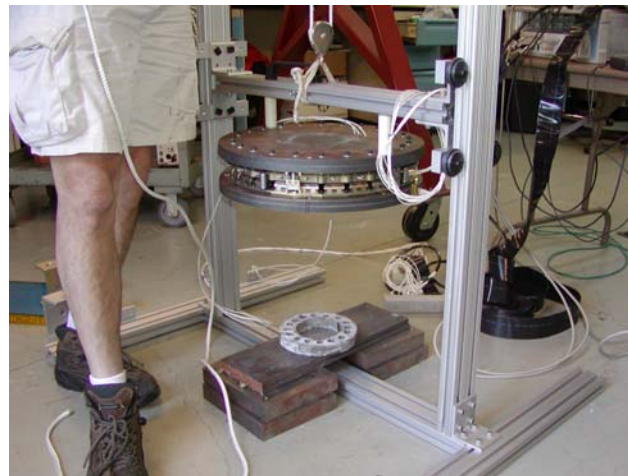
Test Set up

Separation Shock



The shock the Lightband generates during separation is measured

Inducing X Axis Shock

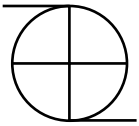


An external shock is applied to the Lightband in the X axis by dropping the whole test item on to a circular lead (Pb) target from a certain drop height

Inducing Y and Z Shock

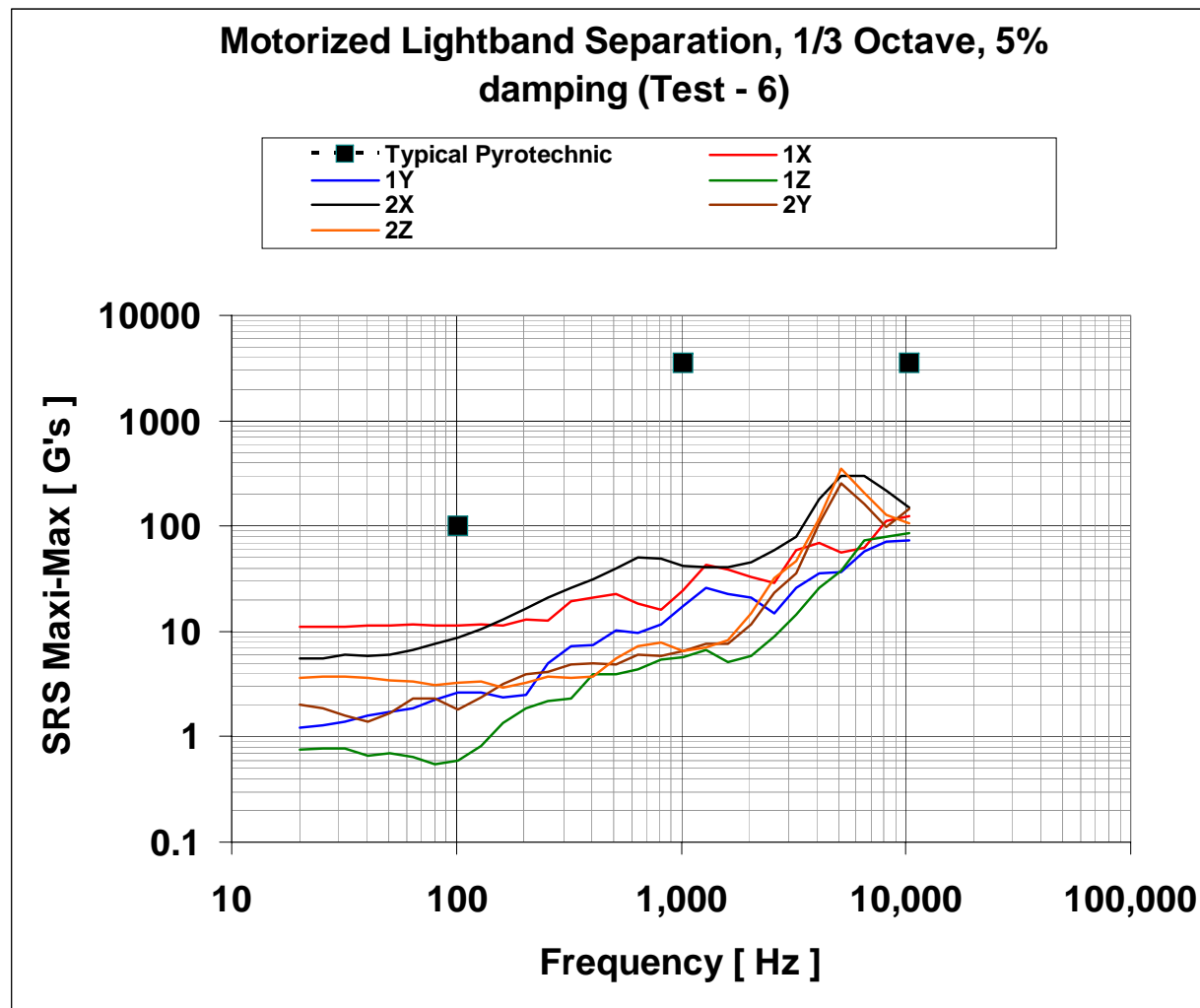


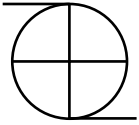
An external shock is applied to the Lightband in the Y and Z axis by hitting the lower plates with a 16 lb sledge hammer



Separation Shock Generated By MLB

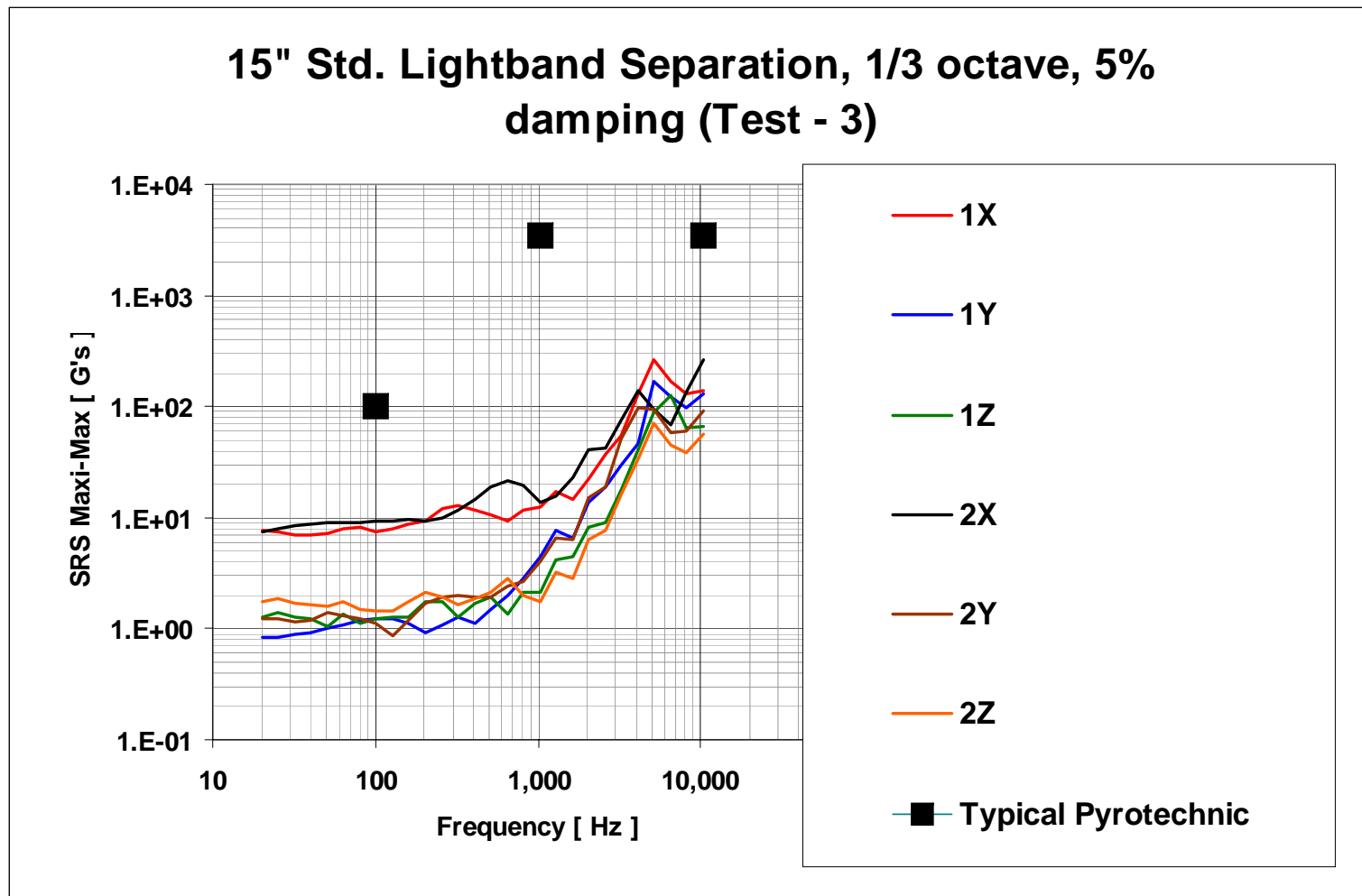
- MLB generates an order of magnitude less shock than a typical pyrotechnic

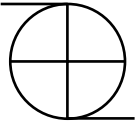




Separation Shock Generated By SLB

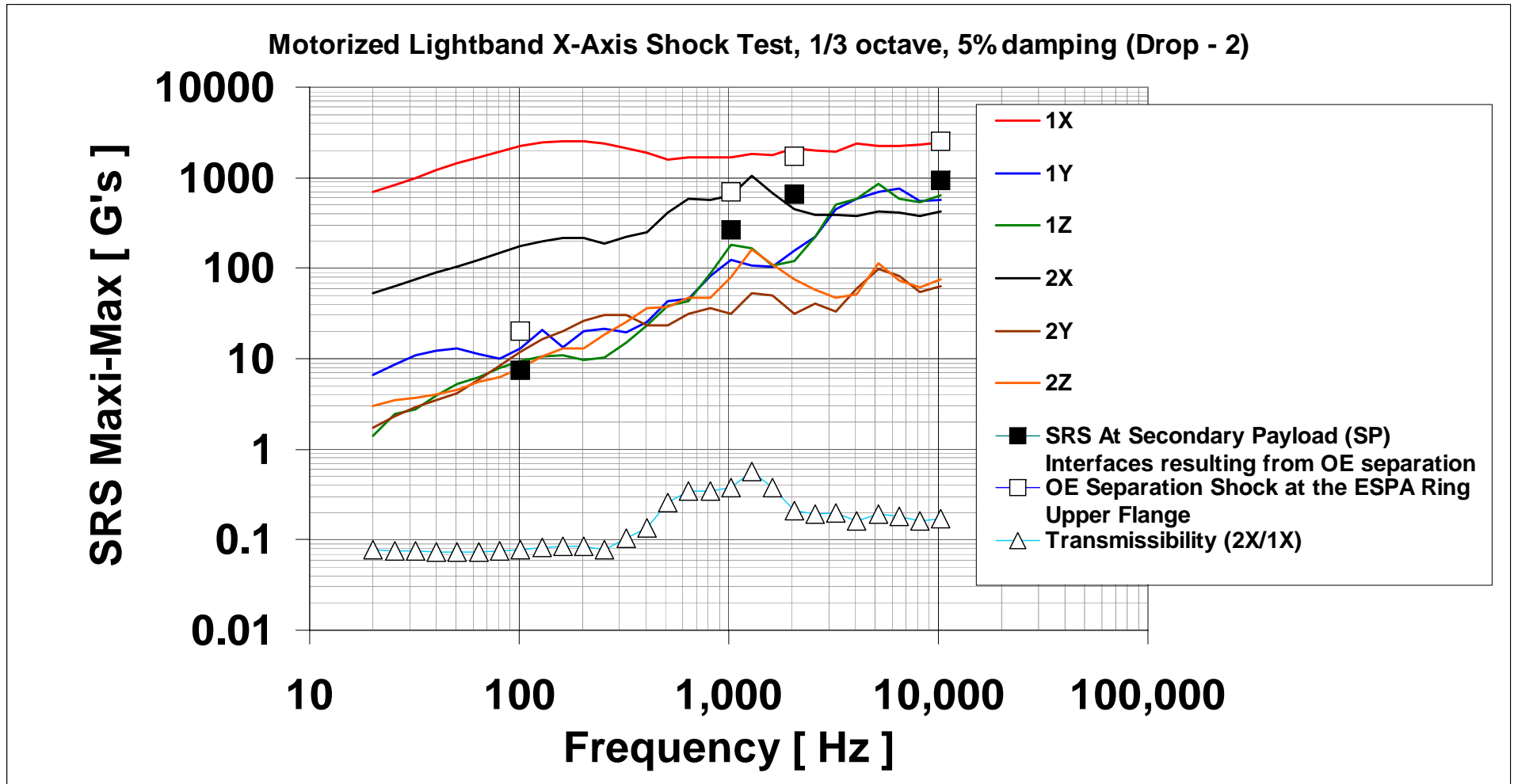
- SLB generates an order of magnitude less shock than a typical pyrotechnic

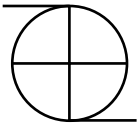




Induced Shock X Axis (MLB)

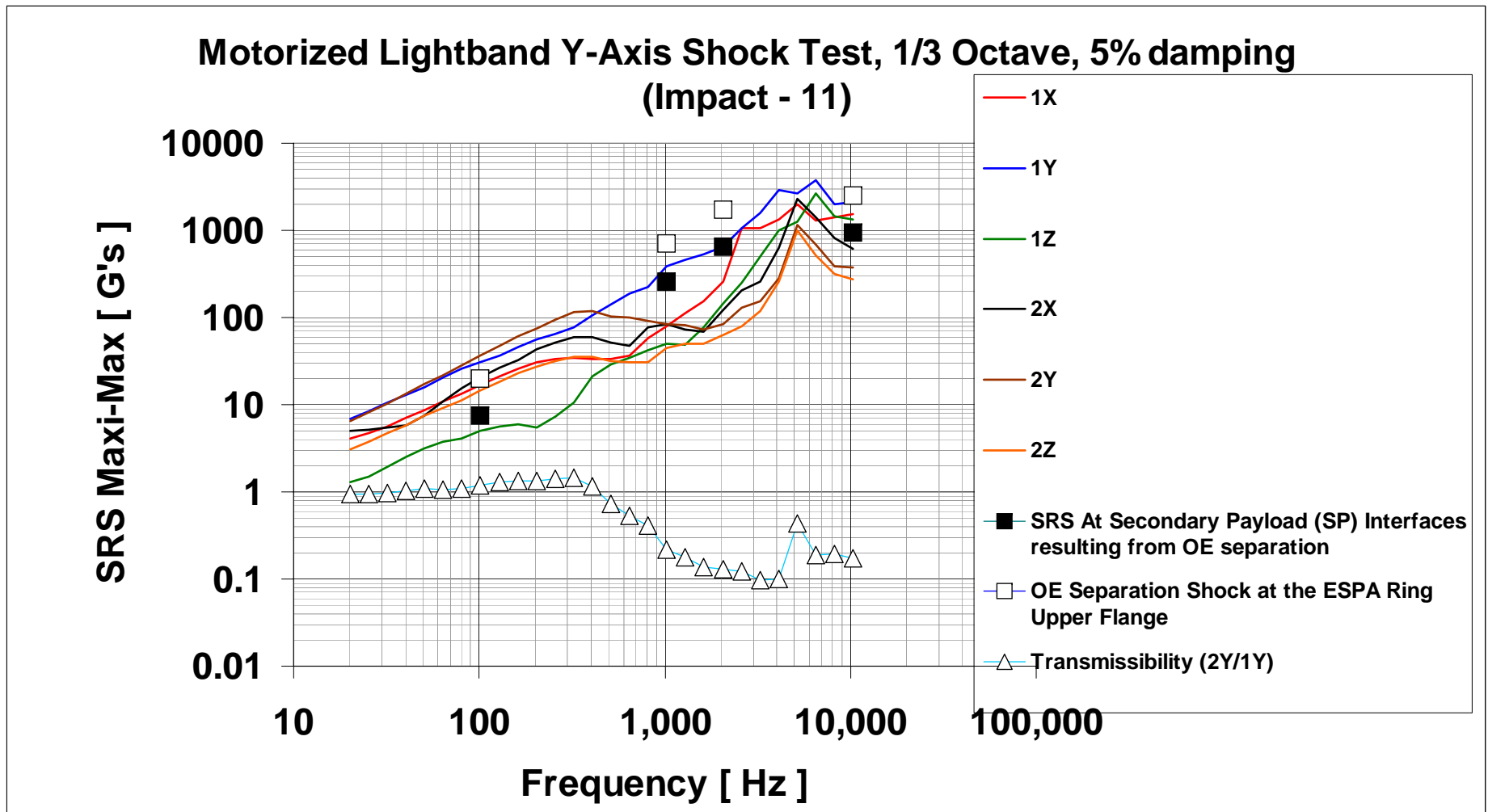
- The MLB survives predicted environment “SRS At Secondary Payload (SP) Interfaces resulting from OE separation”
- Impact was lower plate in X axis (1X)

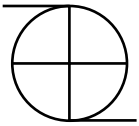




Induced Shock Y Axis (MLB)

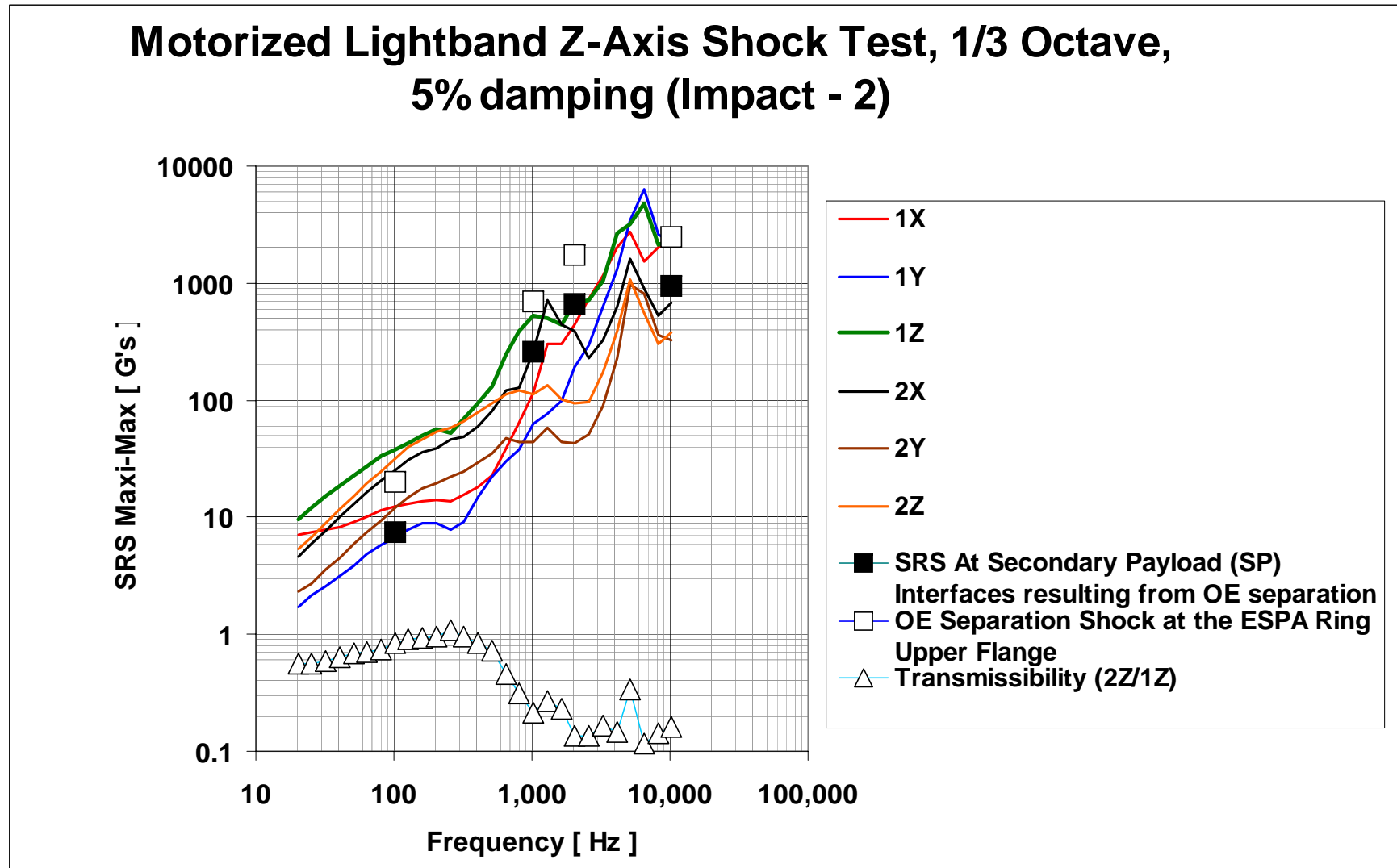
- The MLB survives predicted environment “SRS At Secondary Payload (SP) Interfaces resulting from OE separation”
- Impact was lower plate in Y axis (1Y)

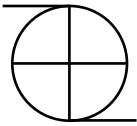




Induced Shock Z Axis (MLB)

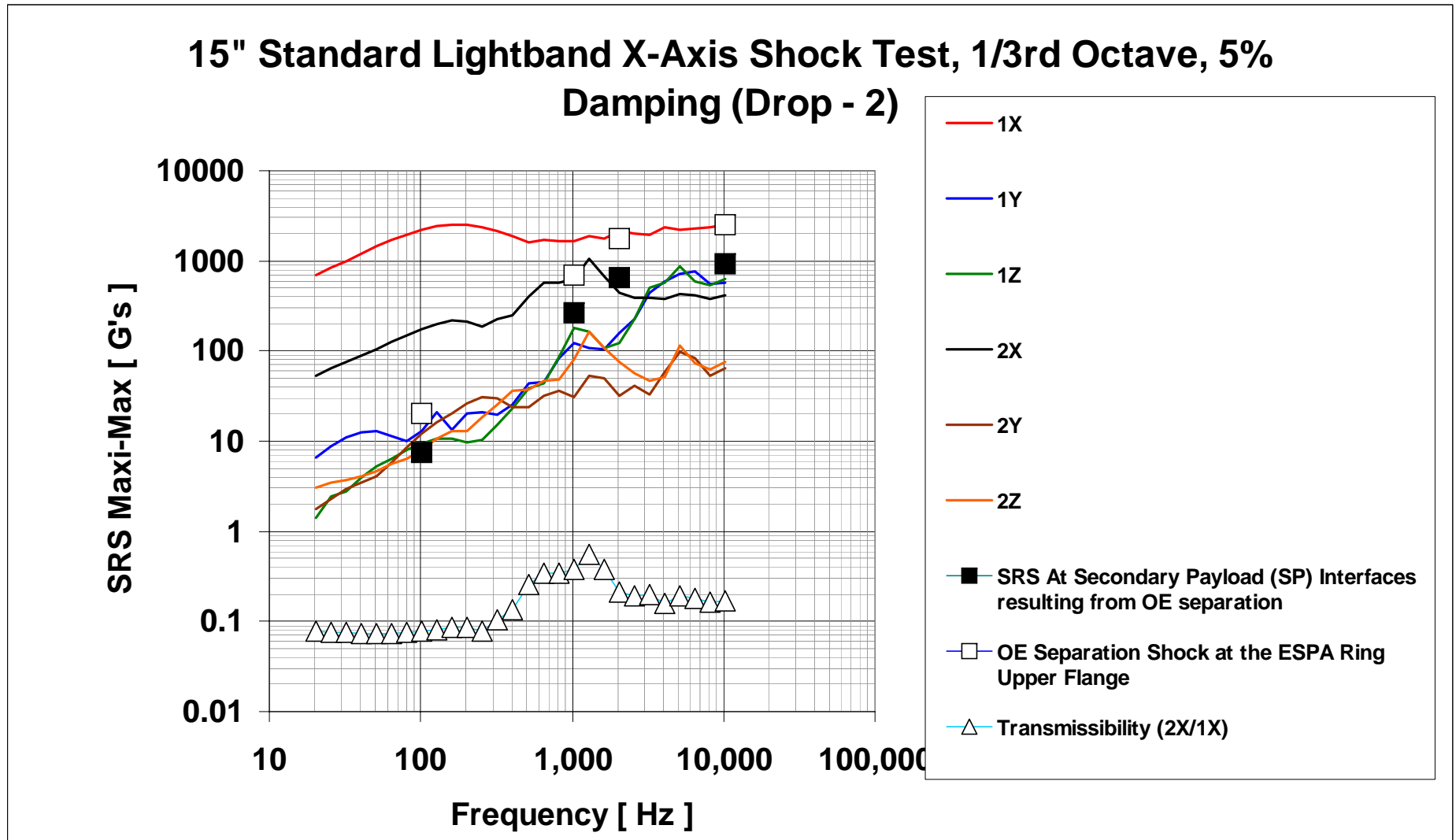
- The MLB survives predicted environment “SRS At Secondary Payload (SP) Interfaces resulting from OE separation”
- Impact was lower plate in Z axis (1Z)

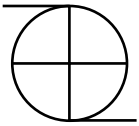




Induced Shock X Axis (SLB)

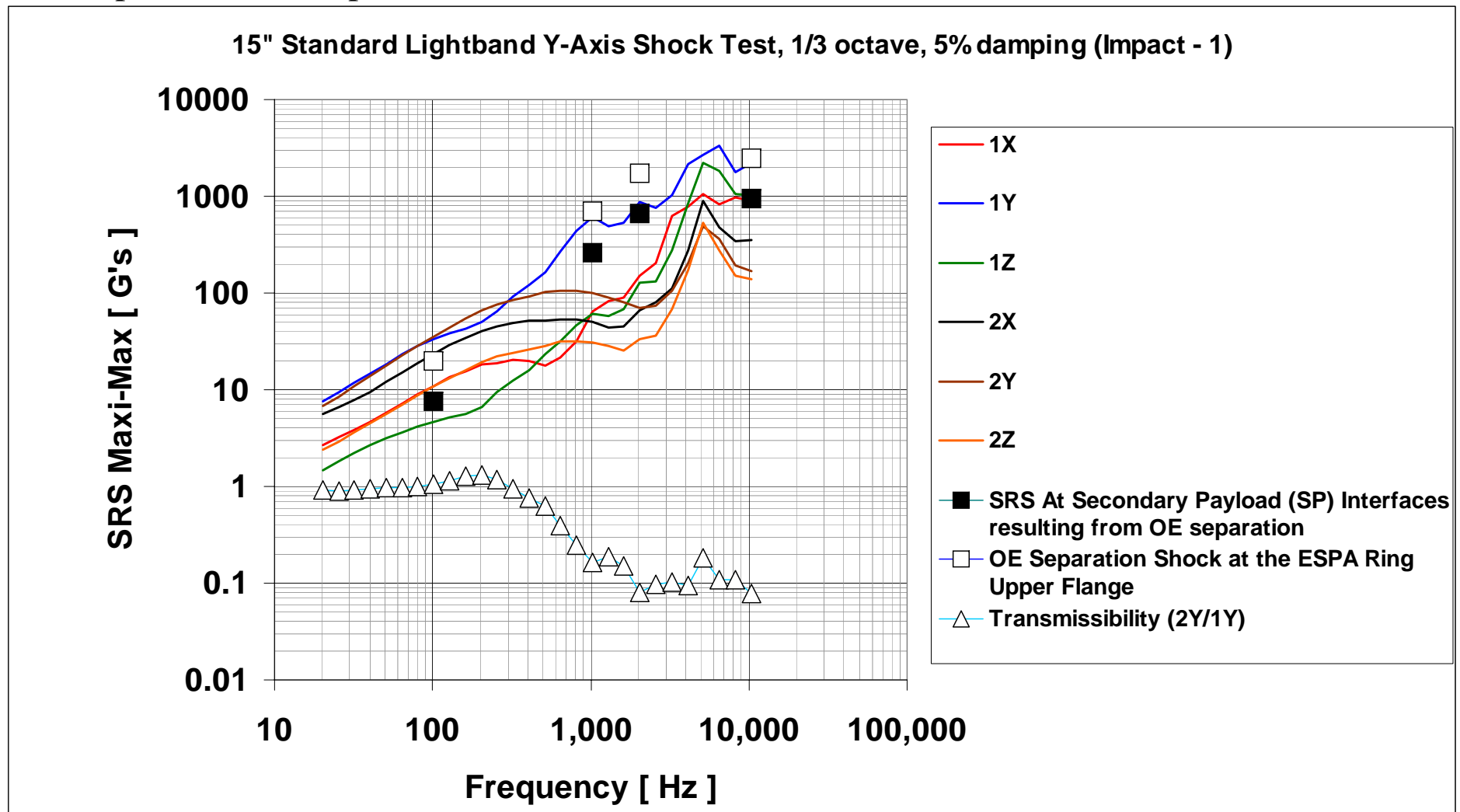
- The SLB survives predicted environment “SRS At Secondary Payload (SP) Interfaces resulting from OE separation”
- Impact was lower plate in X axis (1X)

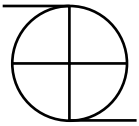




Induced Shock Y Axis (SLB)

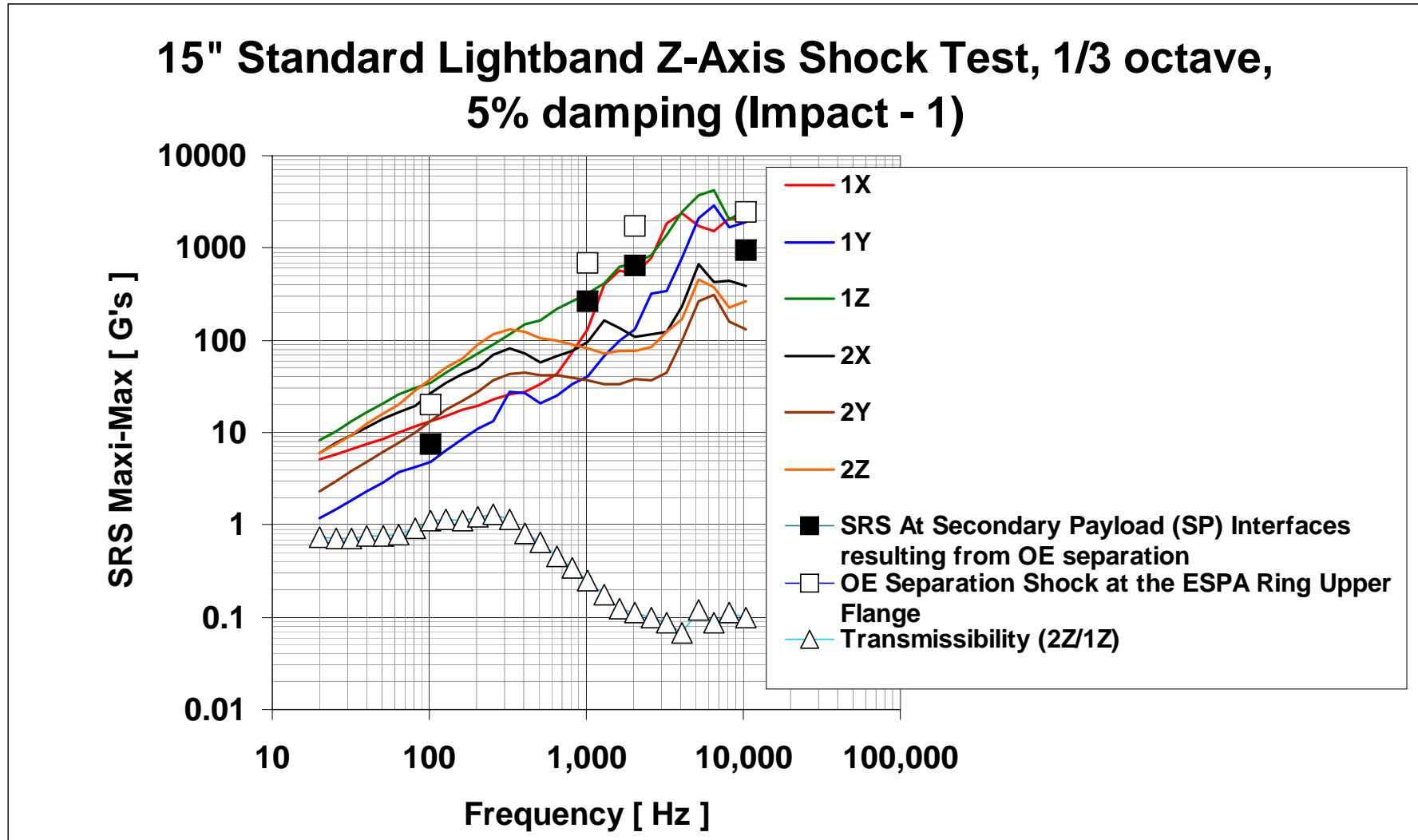
- The MLB survives predicted environment “SRS At Secondary Payload (SP) Interfaces resulting from OE separation”
- Impact was lower plate in Y axis (1Y)

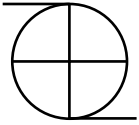




Induced Shock Z Axis (SLB)

- The MLB survives predicted environment “SRS At Secondary Payload (SP) Interfaces resulting from OE separation”
- Impact was lower plate in Z axis (1Z)





Summary

- Lightbands generate much less shock than pyrotechnics
- Lightbands survive Shock levels predicted At Secondary Payload (SP) Interfaces resulting from OE
- Lightbands attenuate shock