

AN EYE FOR DETAIL

Safe loudspeaker design and rigging requires careful planning and knowledge of array configurations.

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Loudspeaker array theory can be a controversial subject due to the varied opinions regarding the importance of acoustic wavefront alignment, acoustic center alignment, apparent center alignment, cavity resonance effects, point source design implications and other physical and electro-acoustic factors. This article does not intend to argue the significance of any one approach; however, various statements of fact will be made where appropriate. This article does intend to present a multitude of loudspeaker rigging methodologies that are commonly found in the professional audio industry.

Before examining various loudspeaker rigging system approaches, it is vital that the readers understand that all suspension systems must be rated for overhead suspension and must comply with all applicable safety codes for overhead suspension devices. For this reason, some regularly encountered non-compliant rigging systems will not be presented in this article. Additionally, see Figure 1 for an explanation of the terminology to be used in this article.

Function, speed, safety and cost

There are many compromises designed into loudspeaker rigging systems. Among the most often compromised are cost vs. flexibility, cost vs. safety and speed vs. flexibility.

It is an inherent truth that more complex mechanical devices cost more to produce and therefore require a higher investment to own. Loudspeaker rigging systems that are high in function also command a higher investment. The cost vs. flexibility compromise is commonly used as a successful design tactic to

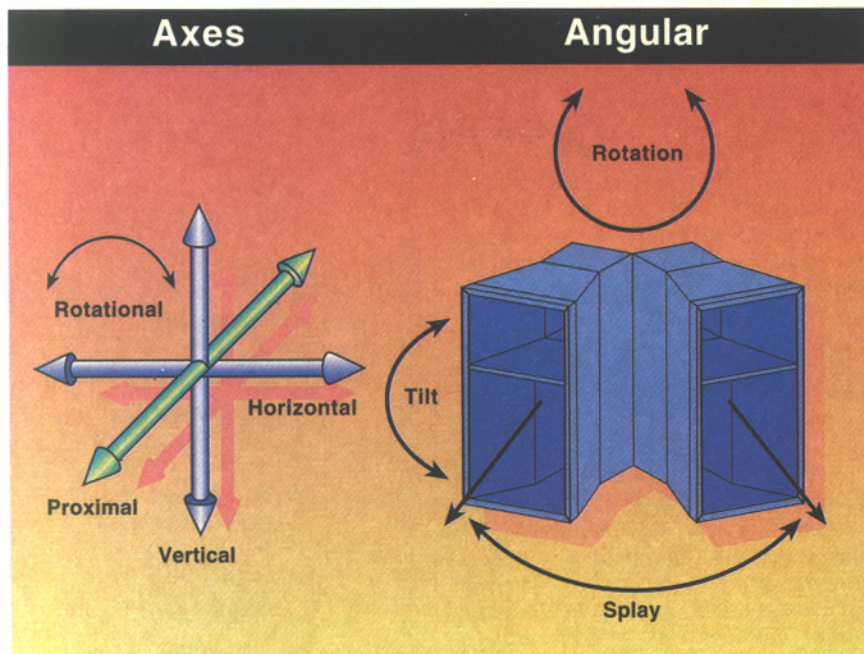


Figure 1. An illustration for quick reference of terms used in this article.