

ALTEC LANSING APPLICATIONS NOTES

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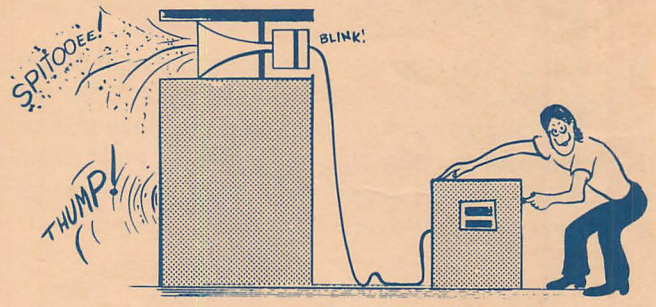
The Illustrated Guide to Loudspeaker Health Care and General Sound System Well-Being (or The Adventures of Captain Rock and His Sidekick "Roadie")

by Larry Lutz

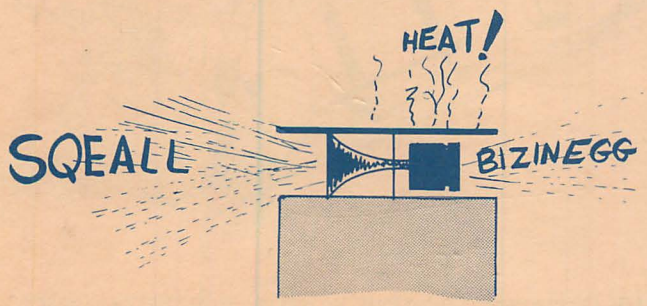
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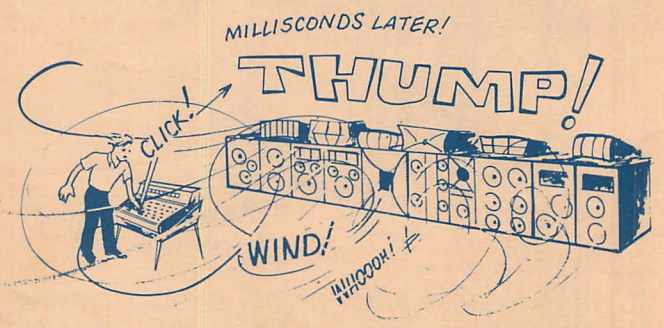
1. **Never** hook up a speaker when the amplifier is on and being driven by a signal.



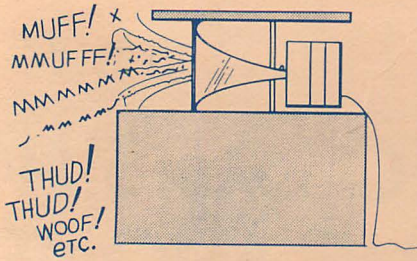
3. **Always** use a DC Blocking capacitor on high frequency compression drivers when bi-amping to protect them from turn-on transients and spurious low frequency signals.



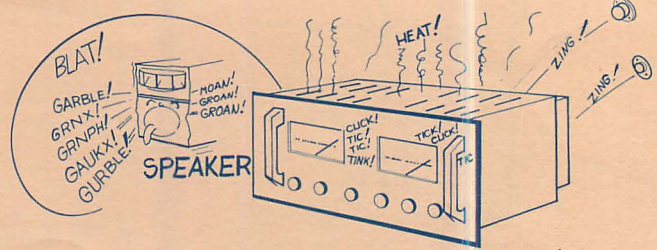
2. Avoid feedback like the plague, high frequency compression drivers can very quickly be overpowered by sustained feedback.



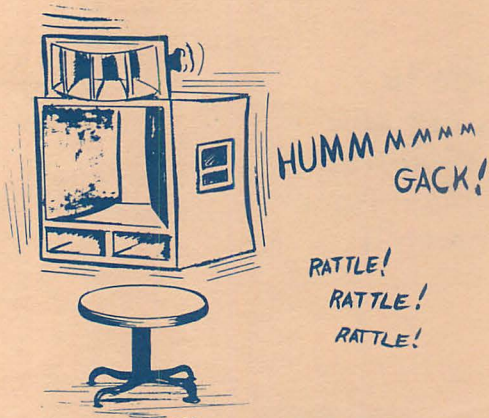
4. **Never** turn on low level electronics (mixer, graph, etc.) after the power amplifiers are on.



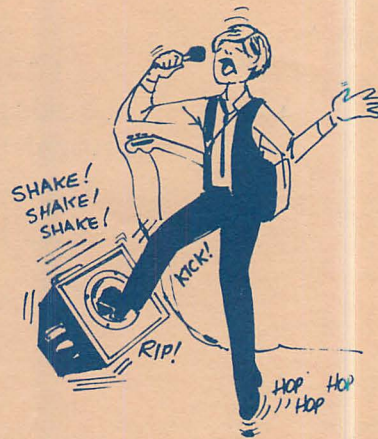
5. Keep dust, dirt, coca-cola, beer, popcorn, dead mice, etc. out of the throat of the high frequency horn. They present an increased load on the driver and significantly reduce high frequency output.



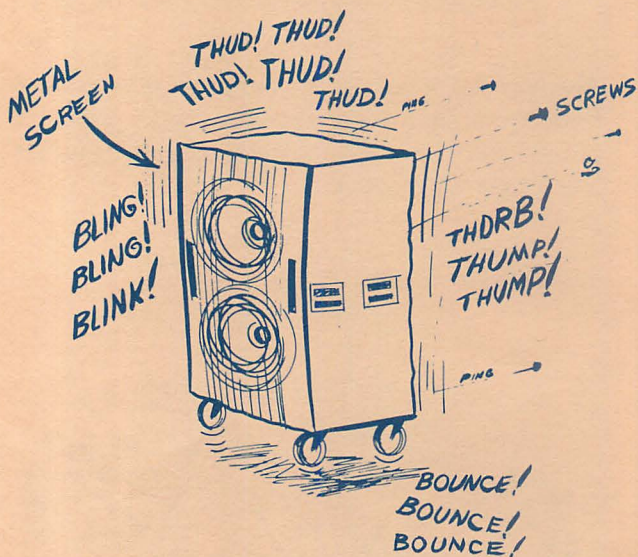
8. Do not run power amplifiers into clipping as this will reduce both amplifier and speaker life expectancy.



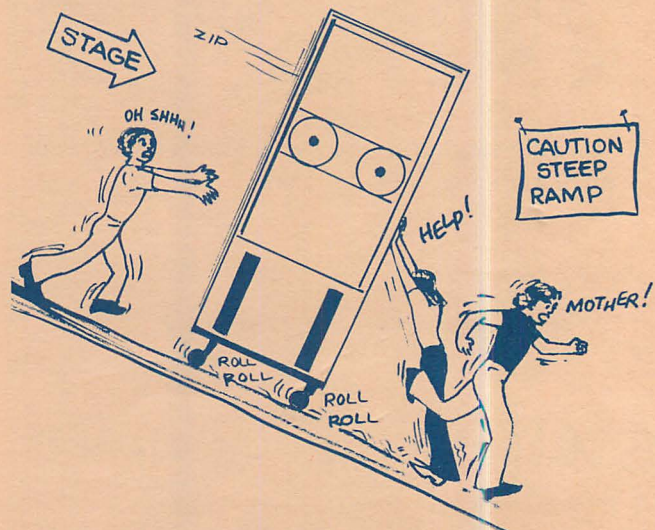
6. Avoid ground loops; ground loops and high power amplifiers may be fatal to loudspeakers. Do not make connections to equipment with levels up or power amps on. Use connectors that make ground connections first such as XLR type. Keep cables in good repair.



9. A stout grille should be used on floor monitors.



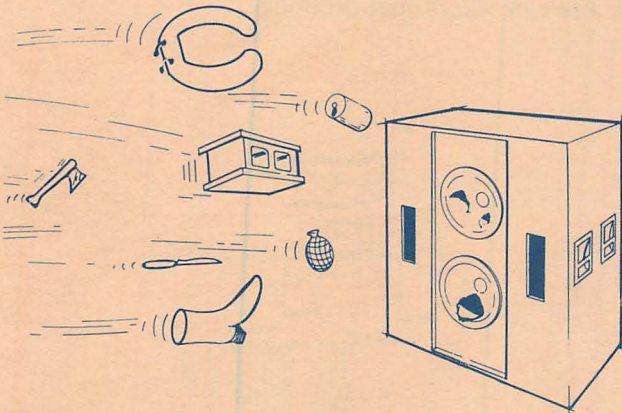
7. Avoid excessive low frequency signals as severe cone damage becomes more probable. Use high pass filters, 40-60 Hz, 10 db/octave.



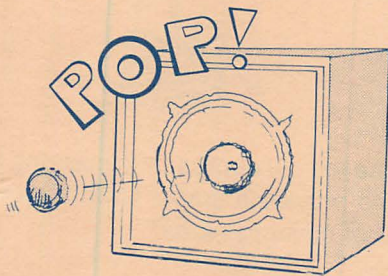
10. Casters are nice but: when moving heavy speaker cabinets and amp racks, secure them to avoid runaways.



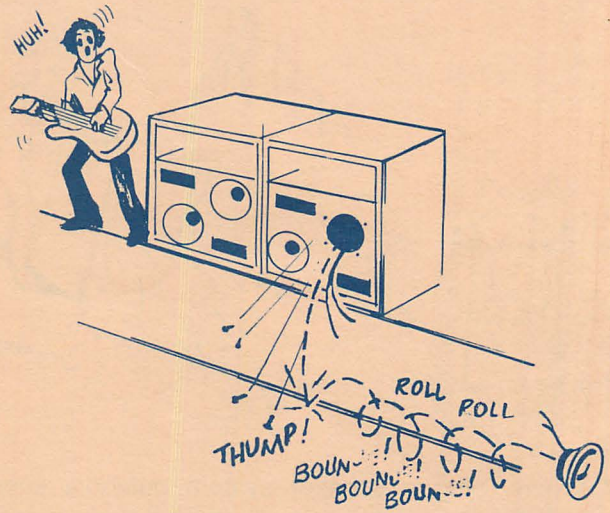
11. A solid support for the speaker system is a necessity.



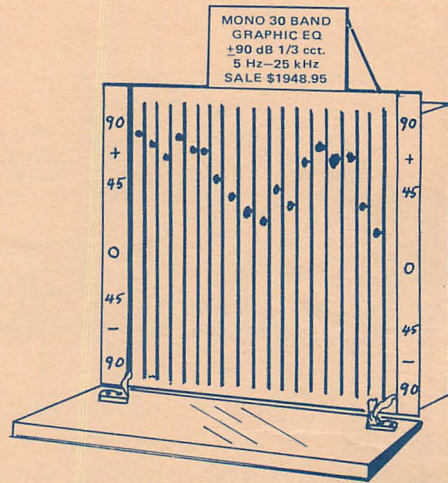
12. It is recommended that you use either metal or plastic screen to protect the speakers from flying objects such as those encountered in taverns and cabarets.



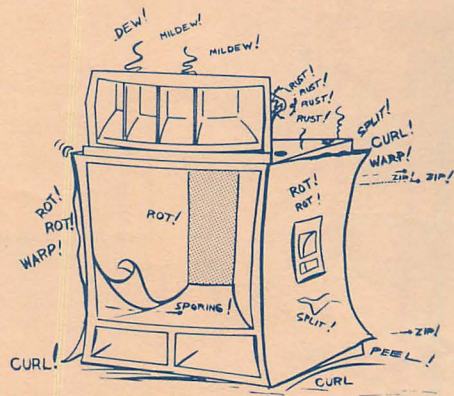
13. Always use a power amplifier with protection (electronic) against DC voltage at the outputs. Dead output transistors can plop the full \pm Big Volts DC power supply voltage through your woofer (or tweeter) voice coil. Typically $\pm 70v$ for a 200 watt per channel, the power supply can deliver a lot of current, and it can do it fast. A fuse (fastblo) takes half a second to quit, yet a speaker is designed to respond to transients of one millisecond or less. That means you can be wearing your voice coil before a fuse blows.



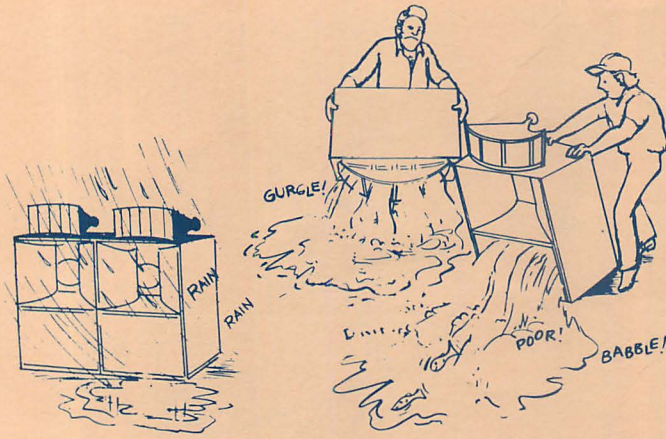
14. Make a habit of checking the mounting bolts or clamps on speakers for tightness: **regularly!**



15. Avoid excessive equalization, avoid frequency extremes when equalizing as it presents demands that most speakers and amplifiers can't handle. (Especially in live sound reinforcement.)



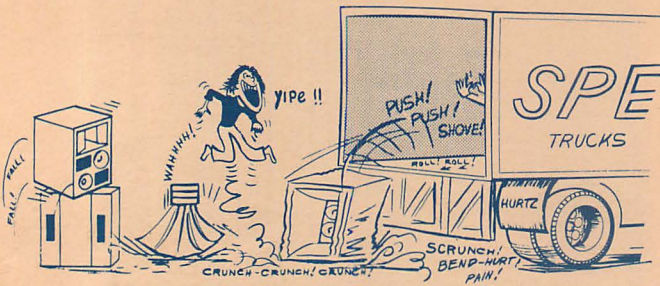
16. Store speakers in areas that maintain fairly even temperature and humidity and not extremes of either.



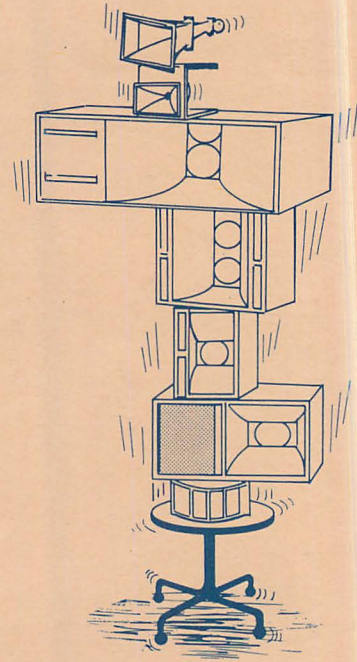
17. When using a speaker system outdoors keep weather protection handy. Even a small amount of rain or water can damage the bass speaker cone and cause rusting of the internal surface of the drivers.



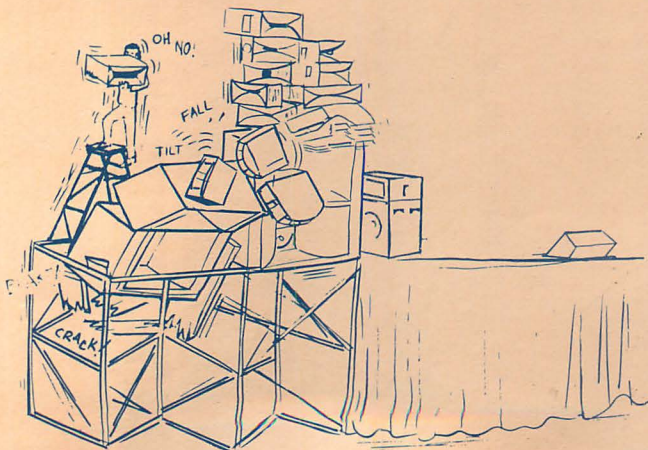
20. **Always** use proper grounding.



18. When using muticell horns or fiberglass horns they should be put into travel cases. It is also advisable to use a hard cover over speakers when transporting them. Even radial and sectoral horns should have cases.



21. Use **some** logical approach to stacking a speaker system to provide a stable structure even at the expense of coverage area!



19. When using scaffold to support a speaker stack, use **very** good planking.

Cartoons courtesy of Barry McKinnon, Acoustic Sound Products, Calgary, Alberta.