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BRYSTON
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This Issue

What Do Bryston And Chicago Have In Common?

Bryston is pleased to announce that the latest blockbuster movie CHICAGO was recorded using Bryston Amplifiers and a Bryston 280B Dolby Noise Reduction Unit. Chicago has received 13 OSCAR nominations including both Music and Sound.

For those not familiar with the Bryston 280B Dolby Noise Reduction unit it is a specialized product we manufacture which is used in combination with a Nagra Analog tape recorder for doing on-sight location sound recording for major feature films.

Mr. David Lee the location sound recording engineer on the movie Chicago is up for an OSCAR for his work on this project. David has already won the United Kingdoms version of the OSCAR (Bafta) for his work on the film.

Bryston 4B amplifiers were also used for the on-location playback system.

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The PMC Transmission Line Design

As you may know Bryston distributes the PMC Transmission Line Loudspeakers in North America. I have had numerous questions over the years as to what transmission line technology is all about - so here goes ...

There are three main types of dynamic loudspeaker enclosure designs:

Infinite baffle (Closed box)

Reflex (Ported)

Transmission line

All of the above use conventional moving coil drive units of varying cone size and dome material.

The transmission line (TL), though much more complex in execution, is considered to be the theoretical ideal and represents the most complex construction techniques available to load a moving coil loudspeaker design. The basic concept is that 'ALL' of the rear wave information coming off of the woofer - or any loudspeaker driver for that matter - would be absorbed by the enclosure (box) behind the woofer. In the real world this ideal is obviously impossible as the speaker box would be the size of the Chunnel.

The most practical implementation is to create a long tunnel within a cabinet by introducing internal partitioning that folds the line up and down the length of the cabinet (see figure 1). At the very end of the line there is a very specific size of opening that vents directly into the room. A major benefit to this construction is that the labyrinth (partitioning) braces the entire structure from beginning to end. This nearly eradicates cabinet colouration created by the effects of the outer walls of the cabinet flexing which is a serious problem with other loudspeaker box designs. Cabinet integrity and internal panel damping are essential to produce a successful design due to the TL's inherent ability to produce phenomenal Low Frequency extension (pressure), even from a modest size box.

The main driver is placed at one end of the TL, which is heavily damped with absorbent acoustic material. The most predictable and accurate absorber is a highly specified foam material that in PMC's products took a vast amount of R&D to derive the correct formula of profile, pore size and density of the polymer. The foam, probably the least visually dramatic of the

Bryston SST Series Gets Class A Rating

Bryston is pleased to announce that the 14B SST and the 9B SST have received Class A ratings in the April 2003 issue of Stereophile Magazine.

There is also a great follow up review in the same issue on the 7B SST by Larry Greenhill. Larry comments that the new 7B SST "was neutral, as neutral, in fact, as Brystons new 14B SST". We expect to receive a Class A Rating on the 7B SST as well once a full review is done.

These new SST Series amplifiers are being recognized the world over as the best available regardless of price.

components is tremendously important. It has to absorb all the upper bass frequencies and allow the lower frequencies to exit the vent at the far end of the line 'in phase' with the main driver. It must also be exactly specified to ensure a consistent and balanced backpressure on the driver by interfacing smoothly with the column of air within the line. With too higher damping, the driver cannot move freely enough, and conversely too little damping produces a lack of control and the result is a low frequency response similar to that of a regular ported reflex design.

When this equilibrium is achieved between the length of line and the acoustic absorbency, the air density increases by up to 30% making the 'effective' line length far greater than it's physical length. This backpressure holds the main driver in a vice like grip and the control is effective over a huge frequency range, reducing unwanted cone movement which lowers audible distortion. This lack of harmonic distortion in the low frequency creates superb midrange clarity as it eradicates the effects of midrange and high frequency masking caused by a lack of control on low frequency drivers. The consistent air loading also facilitates full frequency bandwidth at all listening levels allowing for extended periods of monitoring without the risk of fatigue. In other words, the speaker sounds dynamic and balanced at all listening levels.

So the main advantages of the TL design:

Lower distortion

Improved driver control

Higher SPL

Lower bass extension from a given box size

Consistent balance at all levels

If you realize that in fact musical signals are a transient condition then all this technology kind of falls into place. The ability of the loudspeaker to 'start and stop' on command without delay or overhang has obvious major sonic advantages. The loudspeaker follows the signal from the amplifier much more precisely and the result is much more accurate translation of the original input signal.

Believe me once you get use to transparency, transient response and lower distortion available from properly designed Transmission Line loudspeakers there is no going back.

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