

CELESTION

Alnico Blue



From the earliest days of rock music one name has been the first choice in loudspeakers. A new instrument which resulted from the combination of an electric guitar and an overloaded valve amplifier found its voice in the unique tonal qualities of the Celestion G12. The early Vox and Marshall amplification used by so many of the emerging heroes of the new music were all fitted with the G12s.

The original G12 was a radio loudspeaker, toughened to withstand the demands of the music business. In that form it was widely used in the amplifiers of the rock'n'roll days. It had a tendency to break-up and snarl when driven hard, which was something of a handicap until the idea of grossly overloading the amplifier to modify the tone was discovered. Then the soft creamy loss of detail which resulted became the golden sound of a new music.

The recent discovery of a number of almost unused loudspeakers of the original type supplied to Vox in the Middle 60's gave Celestion engineers the chance to probe the secrets and the result is the Celestion Blue, a faithful copy of the original rock music speaker.

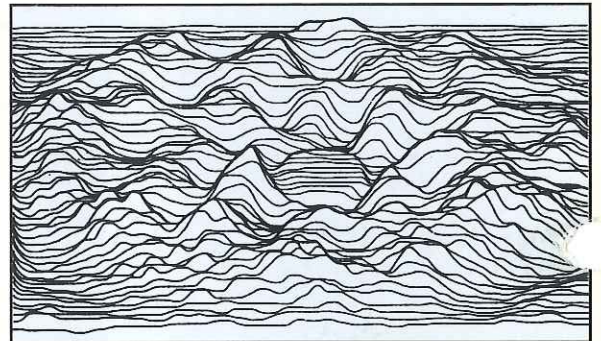
Overloaded valve amps are not the nicest things to listen to, for along with the desirable harmonics comes a lot of less pleasant stuff. Because they were resonant and slightly slow to respond, the G12's obscured the bad, and blended the sound into a golden reedlike timbre, strong on midrange and sweet in the high frequencies. Plectrum and finger noises became less prominent and the best players could achieve virtually infinite sustain. The resonances in the cone of the loudspeaker fell into that band which the guitar and amplifier most strongly speak to, so as not to produce uncontrollable howl. The damping and decay of the resonances match the rest of the system so well that simply by use of his hands the player could dictate the behaviour of the air.

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For the first time the modern rock guitar was heard. A new instrument made up of the musician, the guitar, the amplifier and the loudspeaker in a feedback system, with air as the transmitting medium. As the music grew the instrument grew with it. New techniques of playing were evolved and other speaker manufacturers learned to make the type of device on which the sound depended. The demand for power led to product changes even in the Celestion line, and with the increase in robustness came a subtle loss of the original character.

The reproduction of the sonic character of a loudspeaker is a complex task. In the hi-fi field much amusement can be gained from comparing a line-up of different models all claiming to be accurate. If no two "accurate" loudspeakers sound the same what chance have we to accurately copy a loudspeaker with a cherished character?

Fig 1: PLOT OF G12 CONE



Celestion has a great advantage over rivals in this area. We have a Laser Doppler Interferometer which produces magnified moving pictures of the behaviour of sound waves in loudspeaker cones. The unique timbre of the Celestion Blue comes from the precise frequency range and time signature of the

bell-resonances of the cone. Fig 1 shows a plot of the type of resonance involved taken from the cone of an unused 20 year old model. The cone behaves like a bell and the frequency of the vibration and the rate at which it decays is dictated by the mechanical configuration of the loudspeaker. Subtle factors such as barrel stiffness of the voice coil, dustcap shape and air-flow in the magnet gap all control and modify the nature of the vibration. By acting as a minute time delay the resonances shape and blend the complex music signal with the hard edges being particularly softened.

Celestion's loudspeaker engineers have painstakingly re-created the original G12 by using authentic materials and techniques. Original materials have been used to create the original sound - even to the extent of sacrificing power handling for authenticity of tone. (The use of "Alnico" magnet construction, involving the use of Aluminium, Nickel and Cobalt in place of ceramics, further illustrates this commitment.) The voice coil uses original materials and lacquers and even the sealant on the cone is of the authentic type and is hand-applied. The result is the true "Blue".

SPECIFICATIONS

<i>Diameter</i>	<i>12 inches</i>	<i>Frequency Range</i>	<i>75Hz-5kHz</i>
<i>Power Handling</i>	<i>15 watts</i>	<i>Free Air Resonance</i>	<i>75Hz</i>
<i>Available Impedance</i>	<i>8 and 15 ohms</i>	<i>Sensitivity</i>	<i>100dB</i>

CELESTION *The Original: The Best*

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Celestion's policy is one of continued development and we reserve the right to alter models and/or specification at any time, without notice. E&OE.

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