

The Horn News

News People listen to. April -2006

Harry Olsen's Bass Horns.

Here are some rearload horns designed by Harry Olsen.

Both are excellent designs. I have built the big corner horn, and it is the best rearload horn I have ever come across. I was lucky enough to get the original drawing done in pencil by Harry Olsen himself!

The horn was exposed to the weather, but is still OK.

The Twin Power is a horn I sold years ago (A Loudspeaker Group product). I made about 100 of them. The

Orange parts are the patterns from which the horns were made.

1684 Olsen and Hachley: Horn and Direct Radiator Loud-Speaker

The folded horn, used in this combination is equivalent to a straight axis exponential horn having a mouth area of 300 square inches, a throat area of 16 square inches, and a length of 82 inches. The throat area was chosen so that the surge impedance at the throat of the horn matched the combined acoustical and electrical impedance of the vibrating system and its associated electrical circuit. The length and mouth area of the horn were then determined so as to give as low a cutoff frequency as was practical with the space available.

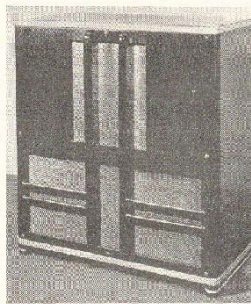


Fig. 6—Commercial design of the combination horn and direct radiator loud-speaker.

DESCRIPTION OF COMBINATION HORN AND DIRECT RADIATOR

The speaker mechanism used in the combination horn and direct radiator shown in Fig. 1 consists of a six-inch corrugated paper cone with an aluminum voice coil. The cone has a leather outside suspen-

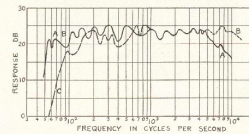
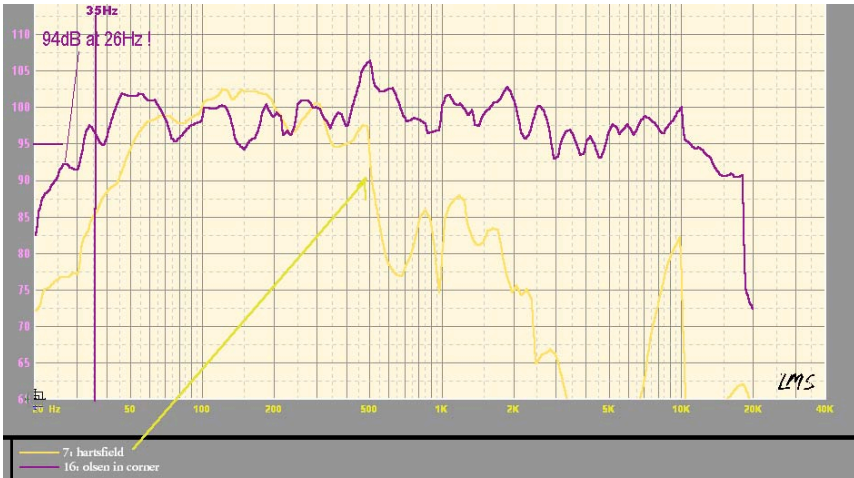
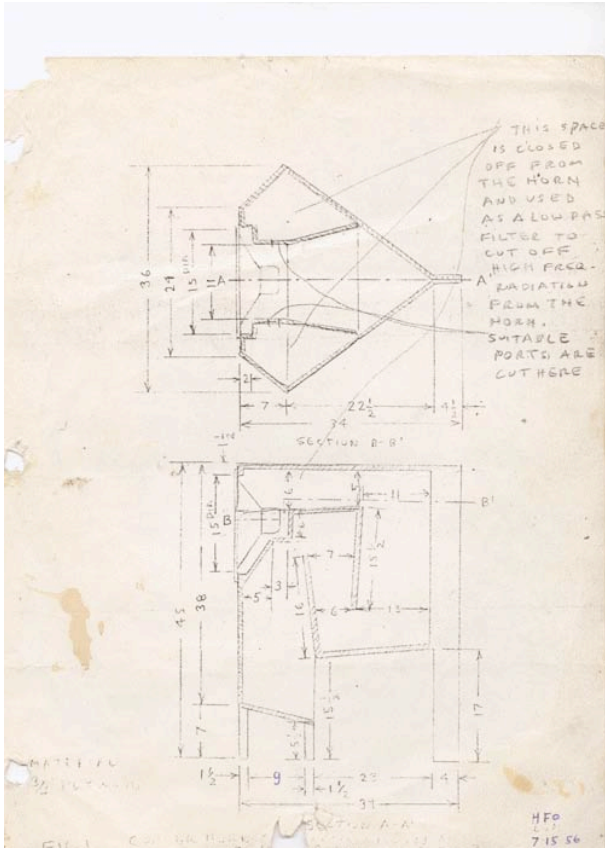


Fig. 5—Experimentally determined response characteristics.
A. Combination horn and direct radiator loud-speaker with single aluminum voice coil mechanism.
B. Same as A with double voice coil mechanism.
C. Single aluminum voice coil mechanism in a large flat baffle.

sion, and a solid izarine center suspension. The air-gap flux density is 12,000 gauss with ten watts field dissipation. A frequency response curve taken on the axis of the speaker mounted in a flat baffle is shown in Fig. 5, curve C.



Here is a never before plan of the corner horn from Olsen's book..



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