

## Re: Focused sound

*Source:* <http://www.derkeiler.com/Newsgroups/sci.crypt/2004-08/1937.html>

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*Date:* 08/29/04

Date: Sun, 29 Aug 2004 05:17:31 -0500

Douglas A. Gwyn <[DAGwyn@null.net](mailto:DAGwyn@null.net)> wrote:

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| Mok-Kong Shen wrote:

| > <http://www.popsi.com/popsi/science/article/0,12543,351353,00.html>

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| Drat those general-readership articles, that never  
| explain the technical stuff correctly! If I had to  
| guess what this system really is, I would guess that  
| it uses a reference ultrasonic carrier and a separate  
| modulated ultrasonic signal, relying on heterodyning  
| due to (small) nonlinearities of the air to produce  
| the "beat" signal (which is just the modulation).

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Maybe. Some friends & I used a much simpler system (as a college Halloween prank!) back in the mid-1960's: Simply AM-modulate the ultrasonic carrier and let the ear's own non-linearities provide the "detection" (analogous to a simply crystal radio). It worked well enough for the prank, the point of which was that since the ultrasonic carrier frequency was very high, the location of the source seemed to jump around wildly as the listeners turned their heads frantically trying to find the source.

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| I don't much like the idea of beaming ultrasonics around. They give  
| many people a bad headache, and tend to cause irritability in others.

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Well, yes. But that wasn't a problem in our application... ;-} ;-}

-Rob

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