

Re: The mathematics of Triangulation

Source: <http://sci.tech-archive.net/Archive/sci.math/2004-08/5373.html>

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Date: 08/30/04

Date: Sun, 29 Aug 2004 21:07:10 -0500

sbben <sbben@comcast.net> wrote:

> *Ok, I think I get it. Will the difference in delay be due to the arc
> of the sound wave?*

I suppose you could describe it as a consequence of the fact that sound travels in straight lines rather than following taxicab geometry.

Another way relies on the triangle inequality. Using your picture:

```
gunshot -]
          ] 3 seconds of distance
          -] in this span
receiver1 receiver2
          -]
          ] 6 seconds of distance
          ] in this span
          ]
          ]
receiver3 -]
```

Call the site of the gunshot point G and the three receivers points A, B, and C respectively. Your calculation assumed $GC = GB + BC$, but this is only true if B is on the line from G to C. Otherwise, $GC < GB + BC$.

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