of this type would change the value of the transit time between two consecutive echoes by $\pm$ 0.10 μsec which would be easily located when settings are made to $\pm$ 0.01 μsec. If the same error in choosing corresponding cycles was made between every echo the mistake would be concealed; therefore a buffer quartz measurement* was made on each transit time to eliminate any systematic effect of this type.

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*If a rod of fused quartz is inserted between the transducer and the specimen, the reflection from the silver-air interface is identical, except for amplitude, to the reflection from the quartz-silver interface and corresponding cycles may be chosen with confidence. This method yields a true transit time of sufficient precision to detect an error as large as 0.10 μsec.

The acoustic wave velocities v were then computed from the length L and transit time T using $v = \frac{2L}{T}$. The density of silver as a function of temperature was calculated by taking the lattice constant as 4.0861Å at 25°C, the atomic weight as 107.880, Avagadro's number as 0.602305×10^{24}, and β for silver as 57×10^{-6} $(^{\circ}C)^{-1}$. The values of the ρv^2 were calculated using the appropriate value of density for the temperature at which the measurements were made and then corrected by small amounts to 27°C using data for dC/dP from Neighbours and Alers[2].