P6: Testing the behaviour of acoustic waves in a liquid medium

Pre-lab summary:

Our understanding and manipulation of wave behaviour is at the core of many modern technologies, such as submarines or ultrasounds.

In this experiment, we will look at how acoustic waves behave in liquid materials.
We will do this by arranging two ultrasonic transducers, at opposite ends of a water basin, and connecting one to a wave generator on the other to an oscilloscope. Between our transducers, we will place a solid plate, in order to analyze the transmission loss through a finite solid material within our liquid environment.
This loss will be measured as a funct° of the received frequency and angle of incidence, using very short wave pulses, normal incidence, and non-normal incidence. We will compare our results to modern wave theory, and observe the present discrepancies.