Simple straight pulses

Demonstration

Observing what happens when straight wave pulses are produced in a ripple tank.

Apparatus and materials

For each group of students

Ripple tank accessories [1]

Wooden rod

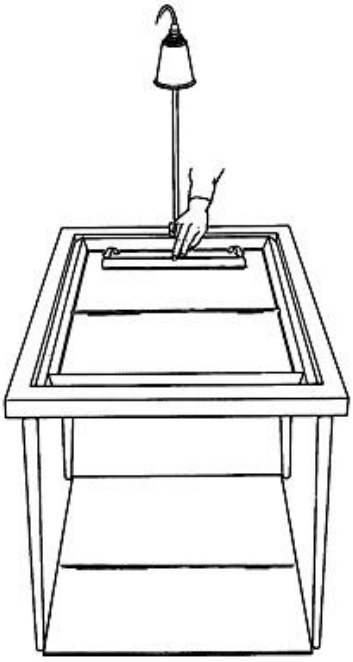
Health &Safety and Technical notes

Beware of water on the laboratory floor. Make sure you have a sponge and bucket handy to mop up spills immediately.

Place the power supply for the lamp on a bench, not on the floor by the tank.

Read our standard health & safety guidance

Procedure



Lay the rod in the tank and produce a pulse by giving it a tiny but sharp roll forwards and back (see diagram). You may find that it is sufficient just to tap the rod. You can produce continuous waves by repeating this motion periodically.

Ask: Do the ripples change as they move away from the rod? If so, how?

Teaching notes

Students should observe that the ripples are rather wide near the rod but become sharper as they move away.

The ripples are sharpest when the filament of the lamp is parallel to them. (This is why special 48 W lamps are required.)

This experiment was safety-checked in February 2006

Related guidance

Using ripple tanks [3]

Source URL: http://www.nuffieldfoundation.org/practical-physics/simple-straight-pulses

Links:
[1] http://www.nuffieldfoundation.org/node/1898
[2] http://www.nuffieldfoundation.org/node/1634/
[3] http://www.nuffieldfoundation.org/node/1961