Use special air hose with snap-on fitting at either end.

Show that the frequency changes as the length of the pipe is changed. (Watch out for harmonics. See below.)

The harmonic content, which can be noted audibly, depends greatly upon the rate at which air is supplied and upon the opening (which can be varied) at the lower end of the pipe. Set the pipe for a frequency corresponding to C (29 cm on the scale), and the opening at the lower end about 1/2". A fairly pure fundamental tone can be obtained by adjusting the air supply. Note the effect of both air supply and opening upon the harmonic content.

Set the microphone close to the pipe, and connect to the projection oscilloscope. Set the oscilloscope in front of the lecture table, to project onto the screen. The wave form corresponding to the fundamental tone can be seen, as can the change in wave form accompanying the introduction of harmonics. Satisfactory settings of the oscilloscope controls are as follow:

- Sync Amp: +20
- Y Sel: AC Amp
- Sync Sel: Int
- Calib: Y Input

Y Amp: 100
Y Atten: 1
Sweep Ver: 48
Sw-Time: 5-50 m-sec

X Sel: Recur. Sw.
X Amp: 60
X Atten: 1