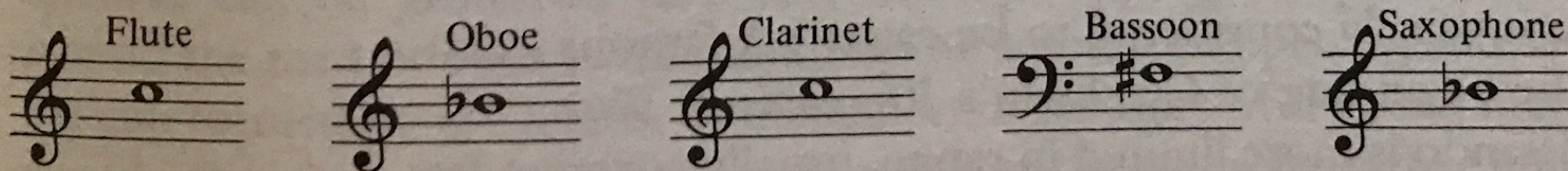


SPECIAL WOODWIND EFFECTS AND DEVICES

Harmonics

All woodwind instruments can produce higher pitches that are partials found in the harmonic series associated with pitches fingered within the lowest register of the instrument. The production of these partials is facilitated by the use of vent holes, register holes, or octave holes built into the instrument and the pitches thus produced are often incorporated into the keying system of the instrument.

When one of these partials is produced by controlling the air column and the embouchure and without the use of the venting, register, or octave holes, a washed-out, transparent note is produced. The result is called a *harmonic*. Harmonics are called for in flute and oboe parts quite frequently, less often in clarinet and bassoon parts. Saxophonists regularly use harmonics to extend the upward range of the instrument. The notation is a small circle (°) over the affected pitch(es).



EXAMPLE 3.9. Harmonics are producible on and above the written pitches shown here