Natural Overtones*

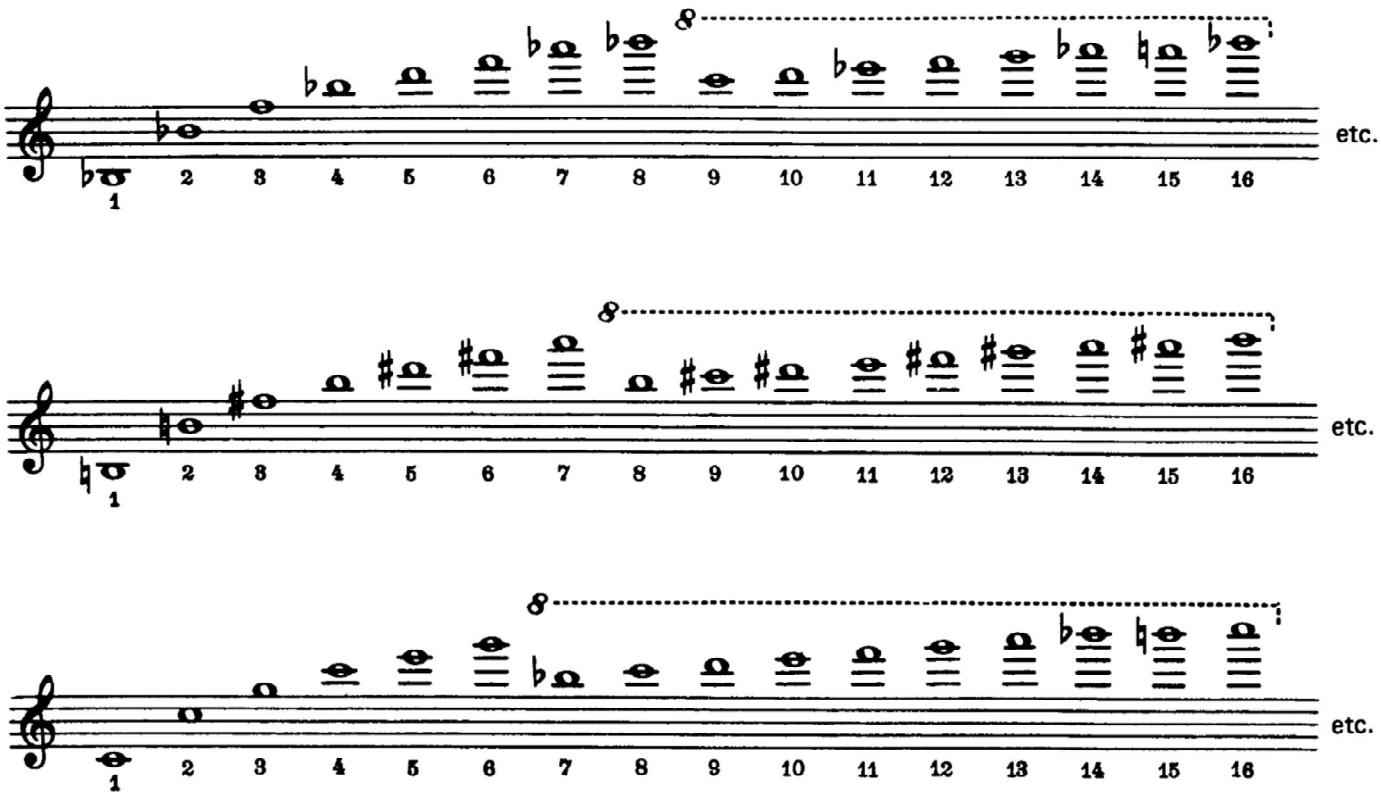
Playing natural overtones on the saxophone is also part of the necessary ear and embouchure training. It corresponds to the development of the "lip slur" on a brass instrument. The fingerings used for high tones in performance are different from those in the following exercises. But the student will find it very difficult to produce any tone above "top F" with the fingerings indicated on page 19 if the natural overtones have not been studied.

The importance of an active mind has been stressed on the previous pages. Thus, these exercises are not only designed for the development of tone quality, etc., but just as much for that of the "ear of the mind."

We proceed now to that part of the study where the effort spent on these exercises will bear fruit. The production of an overtone is the result of a delicately adjusted embouchure coupled with a completely controlled flow of air. Variations of these two factors are so nimble that the author hesitates to define them. The attempt to do so would be comparable to the admonition of the voice teacher: "Give 4 and 1/16 ounces of tension on the vocal cords, produce an outgoing airflow of 3278 cc. per minute and check with your ear that the desired number of vibrations of the vocal cords and, hence, of the tone per second is 660 – that is, E." Instead, he tries to give the student an accurate concept of the aimed-for tone (pitch as well as other properties) which, in turn, influences (below the level of consciousness) the action of the lungs, vocal cords, etc., resulting eventually in the production of the tone.

Now if we substitute "embouchure" for "vocal cords," we have exactly described the production of an overtone. We presuppose, of course, that the two major components of the effort, namely, accurate tone concept and controlled embouchure, are well-developed. Otherwise, the end result, tone, will be off pitch and/or of poor quality. As the natural overtones are in natural pitch, not all of them fit into our tempered scale. Therefore, the overtones 7, 11, 13 and 14 will be found to be markedly "off tune."** On the saxophone, overtones of the gamut built on low B flat are quite well in tune (except for 7, 11, 13 and 14) because the instrument's proportions are mainly related to this basic tone. Other overtone gamuts are in tune only a few steps beyond their fundamental tone.

The following rows of overtones are not given here as an exercise, but are intended to serve for reference only.



*These paragraphs are not intended as a scientific discussion of overtones.

**The eleventh overtone, for instance, is about one quarter of a tone higher than the fourth tone in the tempered scale. Unless special signs are used, this cannot be indicated with traditional accidentals.