

## Ligatures

The purpose of the ligature is to properly hold the reed on the mouthpiece. If the ligature holds the reed too loosely, the reed will not be secure. If the ligature holds the reed too tightly, the vibration of the reed will be restricted, making the clarinet difficult to play. If the clarinet mouthpiece has two horizontal lines on it, it is important that the ligature is centered between the lines. The ligature should be positioned midway on the mouthpiece.

For the beginner, the ligature that is provided with the clarinet is generally satisfactory. As the clarinetist progresses, it is often recommended that a higher quality ligature be purchased.

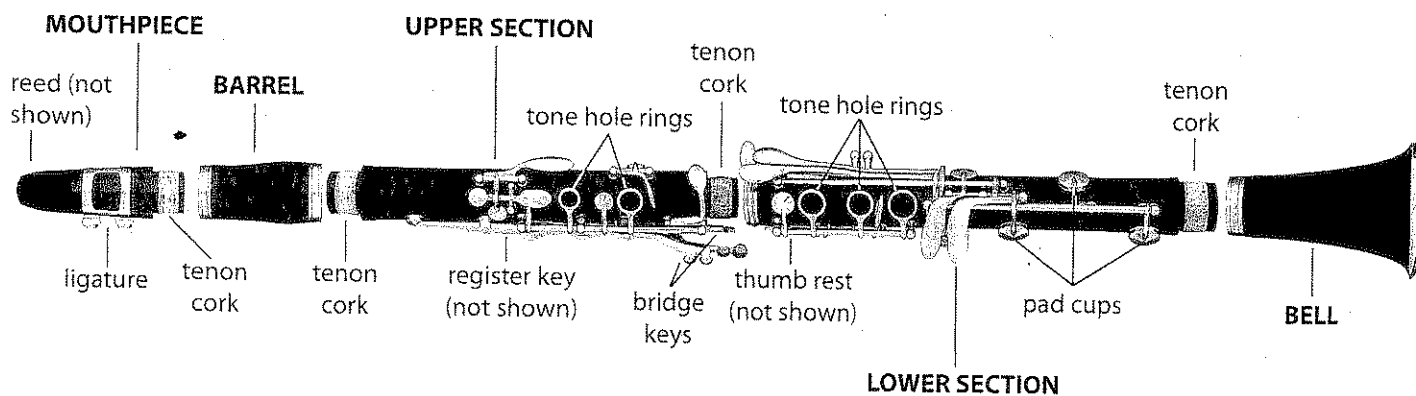
Some recommended ligatures are:

BG  
Bois Classique  
Bonade  
Luyben  
Rico H  
Rovner  
Vandoren Optimum

## Selecting Players

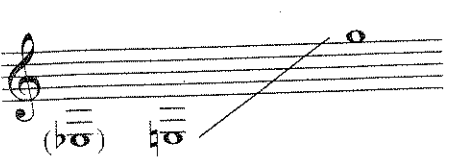
Listed below are some student qualifications that are recommended for successful clarinet players:

1. Hands are large enough to reach all keys and fingertips are large enough to cover the tone holes.
2. Thumbs are not double-jointed.
3. Student's orthodontist approves of him or her playing the clarinet.
4. Good sense of pitch.
5. Good eye-hand coordination.
6. Reading skills are above average.

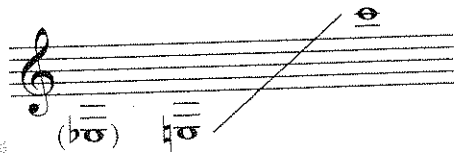


**Playing Ranges**

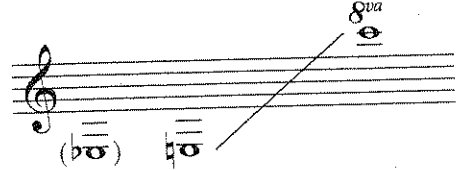
Beginning Range



Intermediate Range



Advanced Range

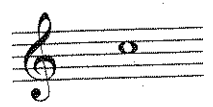


**Transposition**

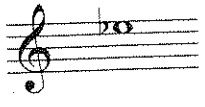
All members of the clarinet family are transposing instruments. Their transpositions follow:

**E<sup>b</sup> (Soprano) Clarinet**

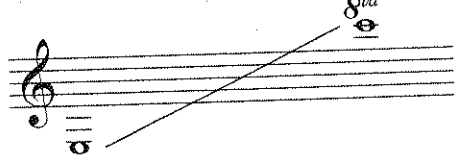
Written



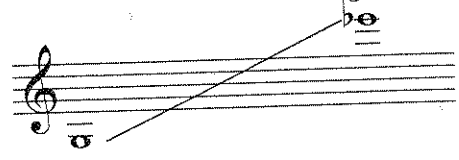
Sounds



Range of Written Notes



Range of Actual Sounds

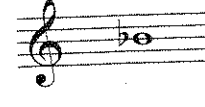


**B<sup>b</sup> Clarinet**

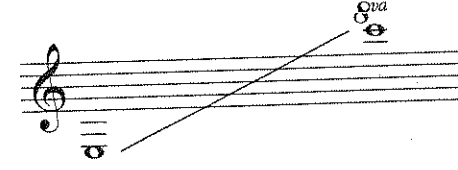
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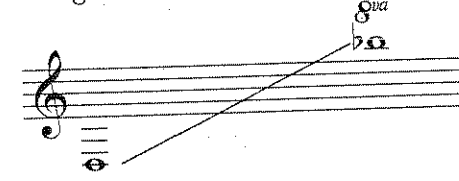
Sounds



Range of Written Notes



Range of Actual Sounds



**E<sup>b</sup> Alto Clarinet**

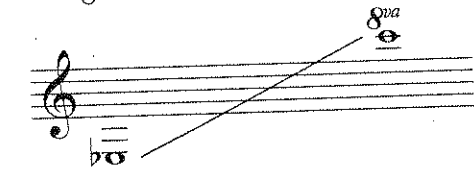
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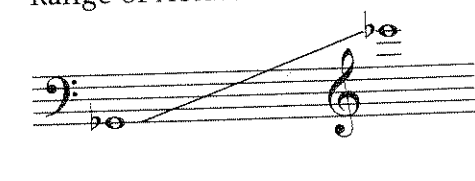
Sounds



Range of Written Notes



Range of Actual Sounds



**B<sup>b</sup> Bass Clarinet**

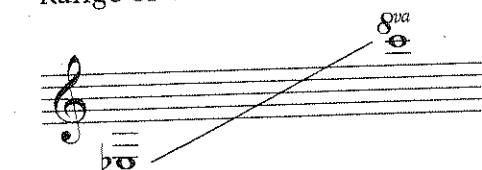
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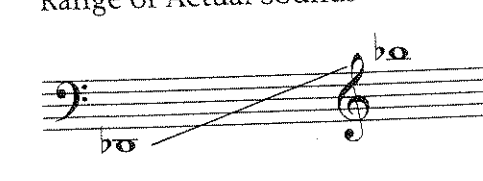
Sounds



Range of Written Notes



Range of Actual Sounds



The clarinet is built to play slightly sharp. As the clarinet is somewhat inflexible in pitch, tuning to it is not out of order, and many bands do this. (The oboe, the traditional tuning instrument, is more flexible.)

Probably the best tuning notes on the clarinet, once a student has a good embouchure, are thumb F and open G, but for best results several notes in different ranges should be used. Changes in temperature and in the density of air affect the pitch; cold and heat, dryness and humidity alter the pitch just as change of volume does. In cold temperatures the pitch will drop; in warm temperatures it will rise. Thin, dry air gives a faster sound wave and a higher pitch, whereas moist air causes slower waves and a lower pitch. Changes of volume also have an effect: *pianissimo* playing without adjustment will be sharp and *forte* playing flat (the opposite of the flute).

The clarinet tends to go sharp in the lower register and throat tones, and flat in the upper register, also opposite to the tendencies of the flute. To play in tune, soft tones should be produced by controlling the airstream with the large breathing muscles, but some players pinch off the air with their lips, thus tightening the embouchure and producing a sharper pitch. The fact that tighter lips produce a better tone quality in soft playing complicates the problem.

### Sharp Tones

Pitches that are particularly sharp when played softly are shown in Figure 13-8. First-line E<sup>b</sup> may also be sharp when soft. To correct, open the throat more and use more breath support. Only as a last resort should one use less pressure from the lower lip.

### Flat Tones

Low E and F may be flat in *forte* playing, even though generally sharp in normal and soft playing. The beginning player should constantly be reminded of intonation problems so that the ear becomes sensitive to small discrepancies.

### Adjustments and Corrections

Tightening the lips will raise the pitch slightly. Adequate breath support will keep the pitch from sagging. When the throat is relaxed, the pitch will be steady as well as of better quality; tension in the throat will raise the pitch and adversely affect tone quality. Any jaw movement will alter the intonation, as will changing the angle at which the clarinet is held. None of these changes make large differences in the pitch; for larger differences, the player relies on alternate fingerings.

### Physical Alterations

If the clarinet is consistently sharp, the player should pull slightly at the joints, the barrel, the middle joint, and the bell, although the lower joints have less effect. If the throat tones are in tune and the middle register sharp, the middle joint may be pulled to improve the intonation of the middle register. However, pulling too much can add to intonation problems rather than eliminate them; for example, middle-line B<sup>b</sup> uses only one-fourth of the clarinet tube as its vibrating chamber, so pulling affects this four times as much as it affects the B natural one-half step above, which uses all the tube for its vibrating chamber.

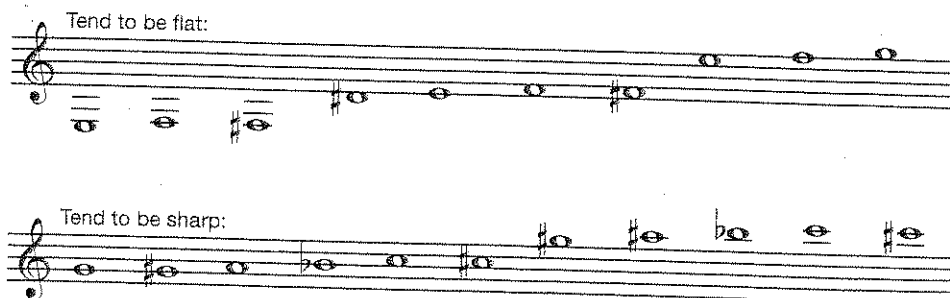


Figure 13-8 Pitch Tendencies of Certain Notes on the Clarinet

Adding tuning discs to correct sharpness lengthens the clarinet without forming air pockets. A shorter barrel primarily raises the throat tones and the left-hand notes. A barrel that is too short produces the same general problems as if the player had failed to pull the barrel sufficiently: throat tones or the entire register will be faulty and excessively sharp. Conversely, pulling the barrel too much will flatten the throat tones.

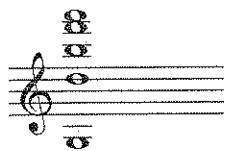
### Other Factors

Other factors that may affect pitch relate to reeds, position of instrument, and use of the jaw, the most common are these:

1. A cheap mouthpiece may play extremely sharp. If the throat tones, G, G<sup>♯</sup>, and A, are out of tune, the fault may be with the mouthpiece rather than with the instrument. The tone chamber—that part of the mouthpiece that is immediately below the air entrance—is not proportioned correctly for the clarinet.
2. A mouthpiece with a bore slightly smaller than that of the instrument will raise the pitch of notes in the lower register. A mouthpiece bore slightly larger than that of the instrument will lower the pitch of the low notes.
3. The diameter of the barrel also makes a discernible difference in intonation as well as in tone quality.

### TONE QUALITY

In the spectrum of instrumental sound, the clarinet's unique contribution is a quality that has both an edge and a large, full sound. Those who want to make the clarinet always sound mellow or who want a personal, romantic sound from the instrument fail to understand and appreciate its tonal possibilities. The clarinet sounds like a clarinet due to the odd-numbered partials sounding. When a low F concert is played (see Figure 13-9) the second partial, the octave, is not present. The third partial, C concert, is sounded and becomes the predominate pitch when the register key is depressed, as well as the fifth, seventh, and ninth (A, E<sup>b</sup>, and G). This effect is due to the clarinet's being a cylindrical pipe, closed at one end. Other wind instruments are either conical, having the same acoustical properties as open pipes (that is, sounding all partials), or a combination of conical and cylindrical that results in a combination of odd- and even-numbered partials sounding.



**Figure 13-9**  
B<sup>b</sup> Clarinet: The  
Odd-numbered  
Partials When a Low  
F Concert Is Played

Hearing good clarinet tone is desirable but apparently not essential in concept formation, as students have been known to overcome the models heard on MTV. The notes D, E, and F at the top of the staff are considered model tones for tone production. Good tone is accomplished by practicing sustained tones, first within a narrow range then gradually enlarging the range as skill increases. An occasional good tone does not constitute good playing: tone quality must be attractive at all times and in all registers. It is easier for teachers to focus their attention on the more objective elements of performance, such as technique and dynamics, than to encourage good tone.

Variables in good tone production are the instrument and reed, the mouthpiece, the player's lip and facial structure, the embouchure, breath support, the amount of mouthpiece in the mouth, and the angle at which the clarinet is held.

The speed of the air determines the intensity of the tone, and good tone demands intensity. A small, flaccid tone is a result of playing with little air support. The beginner should play with as much air, or as big a sound, as possible. The player should learn to control the tone gradually, to focus it, and to reduce the volume while still keeping the intensity in the tone. Overblowing causes harsh sounds and incorrect intonation, especially in the high register. If the embouchure is correctly formed, the air support/pressure should be as great as the muscles of the lips and jaw will allow.

An open throat aids in the production of good tone. This is often taught with the help of vowels, an "ah" for the lower pitches and progressing toward "ee" as the pitch rises. The vowel "ee" helps to lift the tongue and compress the space through which the air must travel, thus helping to achieve the rapid air necessary for the high register tones. This vowel change, with its corresponding change of tongue position, can be acquired by practicing slurs of a tenth or a twelfth.

A good clarinet sound is generally described as being somewhere on a continuum between "dark" and "brilliant"—with a tone on the brilliant side being that most preferred.

## Reed Placement

The placement of the reed on the mouthpiece is extremely important. The tip of the reed should be lined up with the tip of the mouthpiece with just a hint of the tip of mouthpiece showing above the reed. As the following list shows, a reed that is not placed on the mouthpiece correctly can cause a variety of problems.

## Common Reed Problems

Many of the problems here attributed to the reed may also be caused by a bad embouchure and poor finger coordination.

### No sound

1. The reed is too hard.
2. The reed is placed incorrectly on the mouthpiece.
3. The reed is broken or chipped.

### A fuzzy, breathy sound

1. The reed is too hard.
2. The reed is placed incorrectly on the mouthpiece.
3. The reed is broken or chipped.

### Flat pitch

1. The reed is too hard.
2. The reed is placed incorrectly on the mouthpiece.

### Sharp pitch

1. The reed is too soft.
2. The reed is placed incorrectly on the mouthpiece.

### Thin sound

1. The reed is too soft.
2. The reed is placed incorrectly on the mouthpiece.

### Squeaks

1. The reed is either too hard or too soft.
2. The reed is chipped or broken.
3. The reed has an inherent chirp in it and should be discarded.
4. The reed is placed incorrectly on the mouthpiece.

### High notes not speaking or very flat

1. The reed is too soft.
2. The reed is placed incorrectly on the mouthpiece.

## Care of Reeds

The clarinet reed is fragile. It is easy to chip, crack, or break a reed because of the thinness of the tip. The reed will probably become damaged and useless if the tip bumps up against the lip, the teeth, or the end of the mouthpiece.



## Tone Production Problems and Remedies

Sound Produced	Causes of Problem	Remedies
1. No tone, rushing air	<p>insufficient embouchure support</p> <p>too much reed in mouth</p> <p>reed is too stiff</p>	<p>increase embouchure support</p> <p>decrease amount of mouthpiece in mouth</p> <p>if reed is already sufficiently broken in, sand reed</p>
2. Squawky tone, flat pitch	<p>insufficient embouchure support</p> <p>reed is too soft</p> <p>too much reed in mouth</p> <p>insufficient air speed</p>	<p>shape embouchure in "oo" position</p> <p>clip reed</p> <p>review how much reed and mouthpiece should go into mouth, adjust to that amount</p> <p>use faster air</p>
3. Squeaks, high squeal	<p>insufficient embouchure support</p> <p>too much reed in mouth</p> <p>reed too soft</p> <p>clarinet angled too far away from body</p> <p>fingers not covering tone holes</p>	<p>shape embouchure in "oo" position, provide more support and faster air</p> <p>review how much reed should go into the mouth, adjust to that amount</p> <p>change to a stiffer reed or clip it</p> <p>bring clarinet in closer</p> <p>cover tone holes completely</p>
4. Stopped or no sound	<p>pinching or biting reed</p> <p>reed too soft</p> <p>reed not positioned correctly on mouthpiece</p> <p>too much embouchure pressure</p> <p>ligature is too high on reed</p>	<p>shape embouchure with more "O"</p> <p>change to a stiffer reed or clip it</p> <p>correct reed position</p> <p>shape embouchure with more "O"</p> <p>adjust ligature position</p>
5. Thin, sharp pitch	<p>too little reed in mouth</p> <p>tight, closed throat</p> <p>hard reed</p>	<p>review how much reed and mouthpiece should go into the mouth, adjust to that amount</p> <p>open throat with a relaxed yawn and shape embouchure with more "O"</p> <p>use softer reed or sand present one</p>

