## Intonation

Itzhak Perlman once said, comparing Dorothy DeLay with Galamian: "If Galamian heard a note out of tune he would say so. DeLay might say instead, 'Well, dear, what is your *concept* of an F#?""

To play in tune you have to have a clear mental picture of each note. If you were asked to recall say, the front door of your house, you would probably be able to picture it in great detail. The mental picture of each note on the fingerboard, and each group of notes, should be in the same detail.

The mental picture includes the exact place of the note on the string, which position, the feeling of the hand, which finger, the shape of the finger, the tone-semitone relationships of the fingers to each other, and the aural relationships of each note to the surrounding notes. The complete picture may include the width of the fingerboard and neck for that particular note, the height of the string above the fingerboard, and so on.

Most of us are clearer about some notes (or particular fingers on notes) than others. We may approach some with an attitude of 'don't look it's too awful'. With others our mental picture consists more of memories of tension or insecurity rather than of the note itself. Then we either play these notes out of tune, or *hesitate* instead of going straight to them. The hesitation is caused by needing time to think, i.e. to formulate a mental picture 'on the spot'. This often leads to far worse than simply playing a note out of tune.

One can gain a glimpse of what it must be like to be a Heifetz, a Vengerov, a Sarah Chang: their mental picture of *every* note or group of notes on the fingerboard (and every stroke, phrase and passage), is detailed and vivid.

## UNIFORM INTONATION EXERCISE

One of the main parts of the mental picture is the relationship of the note to other notes. This exercise helps make intonation consistent, so that the same notes, played with any finger in any octave, are the same pitch. Use it to improve general intonation, or as a time-saving warm-up exercise.

In this exercise, constantly check that notes are in tune by comparing them against the following:

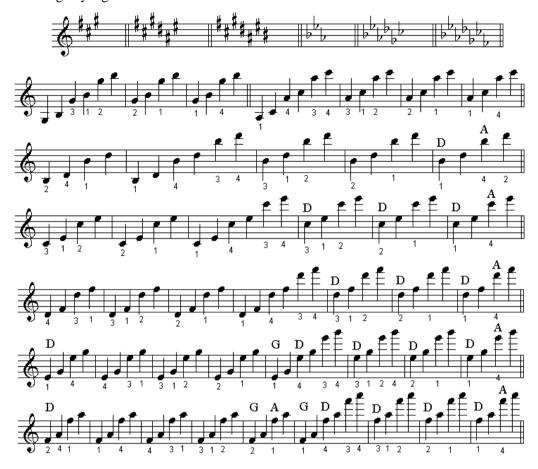
G	Tune to the open G	$\mathbf{C}^{\#}$	Tune from D
$\mathbf{A}^{\mathbf{b}}$	Tune from G	D	Tune to the open D
$G^{\#}$	Tune from A	$\mathbf{E}^{\mathbf{b}}$	Tune from D
A	Tune to the open A	$\mathbf{F}^{\mathbf{b}}$	Tune from Eb
$\mathbf{B}^{\mathbf{b}}$	Tune from A	$\mathbf{D}^{\#}$	Tune from E
$\mathbf{C}^{\mathbf{b}}$	Tune from B <sup>b</sup>	$\mathbf{E}$	Tune to the open E
$\mathbf{A}^{\#}$	Tune from B	$\mathbf{F}$	Tune from E
В	Tune from C	$\mathbf{G}^{\mathbf{b}}$	Tune from F
$\mathbf{C}$	Perfect 4th/5th from G	$\mathbf{E}^{\#}$	Tune from F#
$\mathbf{D}^{\mathbf{b}}$	Tune from C	$\mathbf{F}^{\#}$	Tune from G

- Make the pitches of each major or minor third identical. Constantly check notes against others as described above.
- It is not necessarily the point of the exercise to be able to play all the notes continuously, in tune, without stopping. Rather, play groups of notes several times, learning the *feeling* of where the hand and fingers are, while seeking to make the notes identical.
- First play without vibrato, and then with vibrato.
- Tempo: slow, medium and fast.

First play separate bows, martelé, with a space between each note. Then play slurred:



Use the following key signatures to cover different intervals:



## **Higher positions**



The mental picture of specific notes in a piece will also include the harmony of which the note is a part, and its place in the scale. The exact tuning of a sharp or flat depends on the key, style and character of the music. For example,  $B^{\flat}$  as the third of G minor is lower than  $B^{\flat}$  as the tonic of  $B^{\flat}$  major. Tuning also depends on whether it is a single or double-stop, what other instruments are playing, and the tempo: the faster the passage, the higher the sharps and the lower the flats.