

Introduction

Speed–pressure–soundpoint

Everything about tone is to do with the balance of speed of bow and pressure in relation to the distance of the bow from the bridge. See Fig. 1: *Five soundpoints*, page viii.

There is also the question of the amount of hair, from tilted to flat, and the angle of the bow to the bridge; and many faulty sounds are the result of poor co-ordination where the bow begins to play an as-yet not fully stopped string – in other words, when the left finger is late for the bow.

But leaving these things aside, every sound that comes out of a string instrument is the result of a certain combination of speed, pressure and soundpoint. High, harmonic-like, squeaking, whistling sounds are the result of the bow being too fast or too light for the soundpoint; low, scraping, pressed, gritty sounds are the result of it being too slow or too heavy.

Speed not pressure

The first principle of tone production is for it to be based on speed of bow, not on pressure. Playing on soundpoints 5 and 4, and even when playing on soundpoint 3, do not *apply* the bow to the string: almost float the bow, and *draw* the sound out of the string.

Even when you are playing deeply into the string near to the bridge, the focus of the musical playing – the phrasing, colour and expression – is still the speed of bow. Sometimes you might need to play so heavily that you are at the limit of what the instrument is capable of, but still the speed of bow remains the governing factor.

Purity of tone

The most effective way to improve tone is to experiment at different distances from the bridge, feeling the differences in speed and weight that are appropriate at each soundpoint.

Imagine that it is possible to measure speed or pressure exactly, using a scale from 1 to 9:

- 1 = Very slow bow, or very light
- 9 = Very fast bow, or very heavy

Suppose that the widest possible vibration of the string is 10. On each soundpoint, you could express the ideal balance of speed and pressure as follows:

Soundpoint 5	Speed: 9 + Pressure: 1 = 10
Soundpoint 4	Speed: 7 + Pressure: 3 = 10
Soundpoint 3	Speed: 5 + Pressure: 5 = 10
Soundpoint 2	Speed: 3 + Pressure: 7 = 10
Soundpoint 1	Speed: 1 + Pressure: 9 = 10

Of course, the widest possible vibration on every note is not necessarily what you want musically. Sometimes you want light and airy sounds (i.e. slightly too little weight for the soundpoint, or too fast speed); sometimes you want dark, depressed sounds (i.e. slightly too much weight for the soundpoint, or too slow speed). And every other possible musical colour or effect.

But total purity and evenness of tone is what we are concerned with here, where the balances of weight and speed on each soundpoint are perfect for the string to vibrate widely, or at its maximum given the soundpoint and length of bow.

The beginning, middle and end of every note in this book should be a 10, with never a hint of a scrape (far too much weight, or too slow) or a squeak (far too little weight, or too fast), or any other distortion to the pure, resonant tone – such as the pressed, restricted sound of just slightly too much pressure, especially on soundpoints 5, 4 and 3.

Evenness

Absolute evenness is another essential factor. During an evenly-sustained stroke, if the amplitude (the swinging of the string from side to side) alternates between wider and narrower, it means that in the moment when the amplitude is wider the speed-pressure-soundpoint balance is better than when the amplitude is narrower. Watch the blur of the string as you work on a note. Find how to keep the right proportions of speed and pressure steady, so that the amplitude remains even throughout the stroke.

Letting the bow play

An essential aspect of a good bow-arm is to let, or to encourage, the bow to play, rather than trying to make it do everything yourself. Feel the momentum of the bow in every stroke, with the feeling that if you let go of the bow it would continue in the same direction on its own.

The momentum is very clear in lifted strokes like *spiccato*. Feel the weight of the wood of the bow as it reacts to the hair bouncing on the string. Feel the energy underneath the wood, in the springiness of the hair and the string.

You can feel the same sense of momentum in along-the-string strokes too. Play with a sense of the bow-hand following the bow.

Listening to the ring

The violin is a resonating box. Listen to the ring of the violin behind the primary sound of the notes you are playing.

If you play a short note and lift the bow from the string, you can hear the ring that continues after the end of the bow stroke. What happens to that ring during a longer note, if the sound that produces the ring continues at the same time as the ringing?

Listen 'behind' the sound of the principal note and you can hear a continuous background ring which is like a distinct note sounding on its own. Focus on this background ring as well as on the primary sound, and a new quality of 'drawing the sound out of the string' enters every bow-stroke.

Playing musically

Although the point of each exercise is to find perfect balances of speed and pressure at different distances from the bridge, and the exercises are therefore about complete control of the bow, ultimately this does not come from conscious, deliberate control of muscular movements of hands and fingers, but from forgetting about them and playing expressively.

Whatever the sequence of notes, imagine that it is a characterful or expressive passage in a solo, chamber or orchestral piece. You can even imagine that a single note repeated over and over again is part of an accompanying passage in an orchestral piece or string quartet, with harmonies shifting above and below it.

Not compromising on beauty and quality of tone

Imagine repeat marks around each bar or sequence as you search for perfect proportions of speed, pressure and soundpoint on each note.

The great cellist Pablo Casals said that good intonation is 'a question of conscience'. Surely the same can be said about purity of tone as well.

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Illustrations

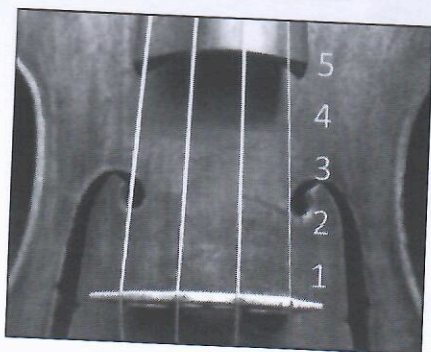


Figure 1 Five soundpoints

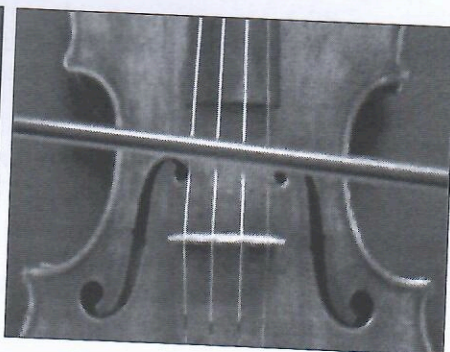


Figure 2 The bow angled 'in'

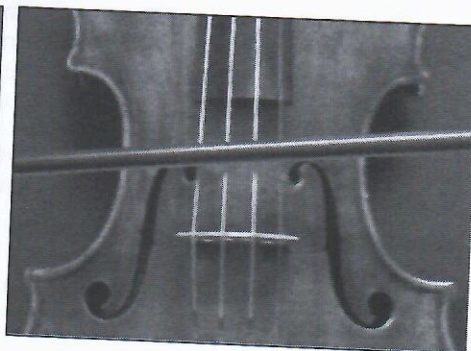


Figure 3 The bow angled 'out'

Five soundpoints

Measure and control the distance of the bow from the bridge precisely with every bow stroke. Soundpoint 3 is at the centre between the bridge and the fingerboard; 2 is in the middle between the centre point and the bridge; 4 is in the middle between the centre point and the fingerboard; 1 extends all the way from very near the bridge to soundpoint 1½. Soundpoint 2 includes anywhere from 1½ to 2½, and so on. Exactly where to play, within that sort of range, depends on the type of stroke and the tempo. But in each case the purpose of the exercise is simply to find how to make the strokes successful at all the different points of contact, from as near to the bridge or to the fingerboard as practicably possible.

Bow angles

When the bow is drawn perfectly parallel to the bridge, its distance from the bridge does not change during the stroke. When it is drawn at a slight angle to the bridge, the bow naturally drifts.

With the bow angled 'in' (Fig. 2), during the \blacksquare it naturally moves towards the fingerboard; during the \blacktriangledown it moves towards the bridge.

With the bow angled 'out' (Fig. 3), during the \blacksquare it naturally moves towards the bridge; during the \blacktriangledown it moves towards the fingerboard.

Let the bow drift when you use angled bowing. Do not force it to move, but angle it just the right amount (from almost straight to quite angled), in relation to the bow speed, for it to drift at the appropriate speed.

Symbols

⑤	Soundpoint 5	M-Pt	Midway between the middle and the point (also Pt-M)
④	Soundpoint 4	Pt	At the point
③	Soundpoint 3	WB	Whole bow
②	Soundpoint 2	LH	Lower half
①	Soundpoint 1	UH	Upper half
1=	Stop two strings	TFTF	Tilted bow, flat, tilted, flat
⊖	Very slightly lighter weight	¼	Quarter of the bow-length
⊕	Very slightly heavier weight	½	Half the bow-length
H	At the heel	3 cm	3 cm of bow
PoB	At the point-of-balance	In	Angle the bow 'in' (Fig. 2, above)
PoB-M	Between the point-of-balance and the middle (also M-PoB)	Out	Angle the bow 'out' (Fig. 3)
M	At the middle		