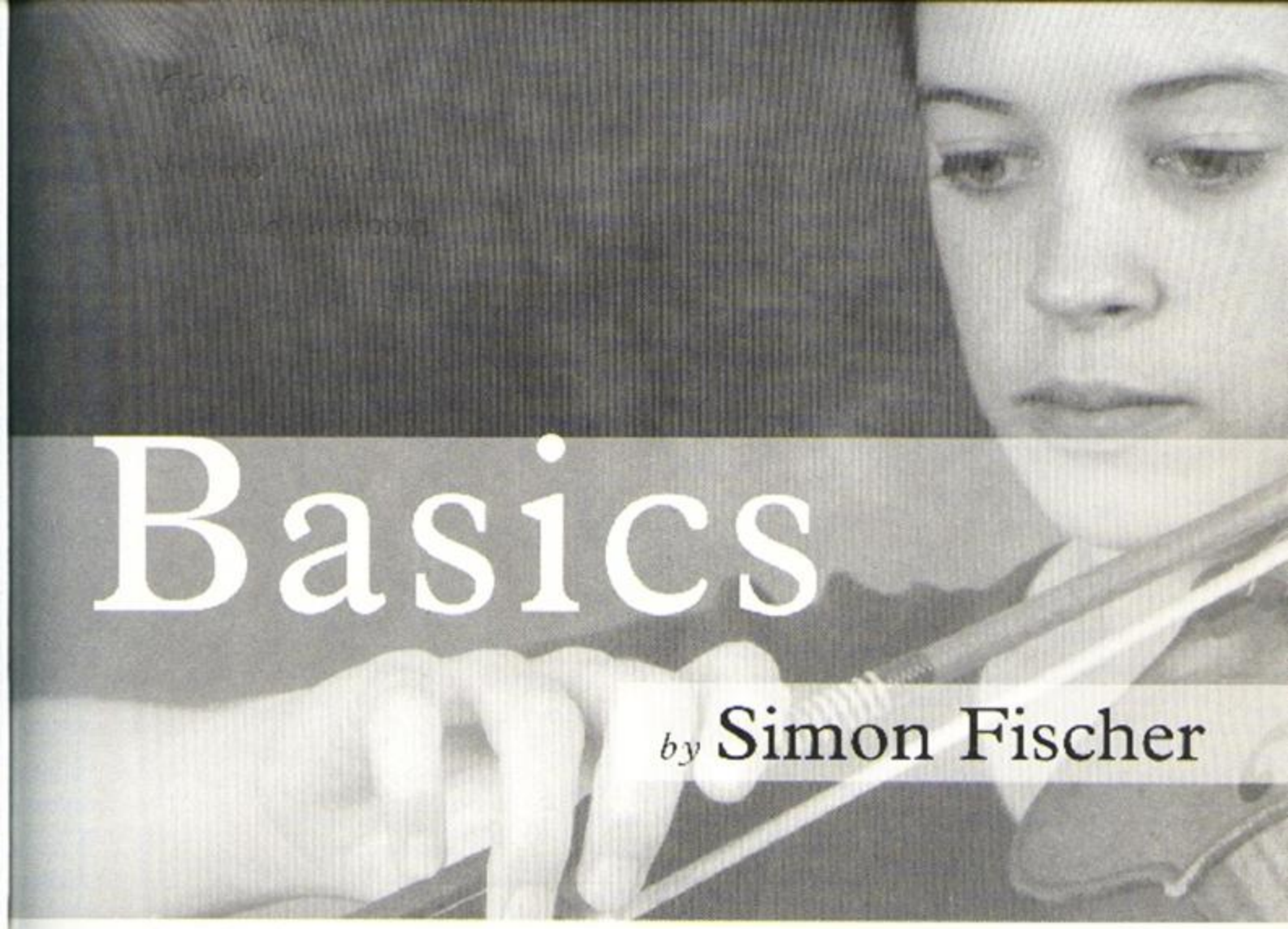
Basics

by Simon Fischer

300
exercises and practice routines for the violin

EDITION PETERS
No. 7440



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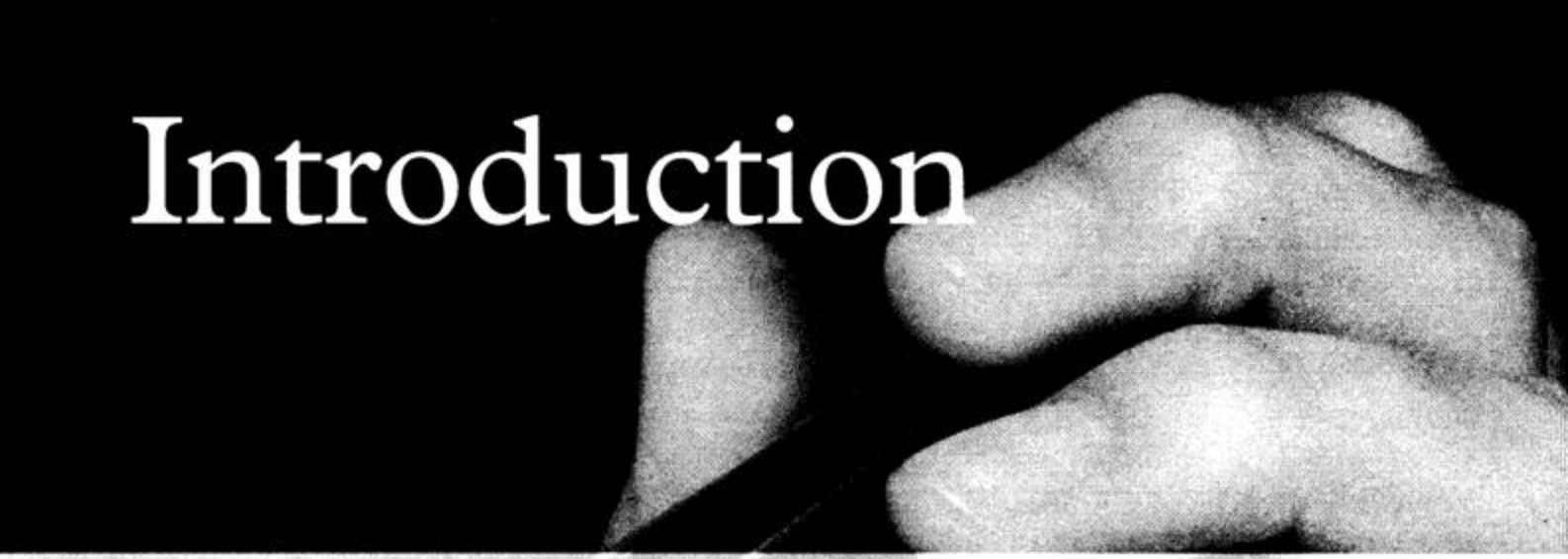
Introduction



Basic technical exercises can be used by players of all levels because most of the technical issues remain the same – e.g., intonation, tone production, rhythm and articulation, co-ordination, relaxation, as well as the easiest possible working of arms, hands and fingers.

Violin playing is complex because to play even a simple phrase a large number of quite different techniques must be performed one after another, often at great speed. Each note in a succession of notes may need to be produced in a fundamentally different way from the others. For example, to play the first note the bow may have to be placed on the string and then 'bite' the beginning of the note; to play the second note the bow may have to pivot smoothly across to another string; to play the third note a finger may have to be lifted, to play the fourth note the hand may have to shift up or down, and so on.

On their own, most of the separate techniques are very simple. It is only when we try to perform several of them at the same time that they can appear to become more difficult. To a certain extent, an 'easy' piece is easy because very few actions have to be performed at the same time; a 'difficult' piece is difficult because ten or twenty actions may have to be performed at the same time or in close succession. (The easiest 'piece' of all must therefore be just one open string played pizzicato, because it consists of only one action.)

Many of the individual actions that make up technique can themselves be broken down into several elements. This book deals with these elements, large or small, one at a time, which is the quickest way to build technique.

The exercises in *Basics* can be used in a number of different ways. First, they provide an easy and direct way to build, one at a time, the simple actions that together are called 'technique'. Second, many of them double as useful warm-up exercises. Third, even a player with the finest technique has to continue to practise in order not to lose it, and *Basics* exercises are an effective and time-efficient way to work on specific areas.

Well-aimed exercises develop individual parts of technique. The next step is to combine the individual techniques in countless different ways by playing scales, studies and pieces. But many of the difficulties of everyday playing simply vanish if you regularly practise key individual techniques separately.

The most important thing is to have so much technique that you don't have to think about it. If you are too conscious of the 'how', it can make playing almost impossible, just as any actions that normally happen automatically – walking, talking, eating, etc. – become stilted and awkward when we try to perform them consciously. Children learn quickly because the 'how' goes straight into the unconscious. It is through the adult knowing ever more clearly and consciously what to do, that finally technique becomes automatic and is then naturally forgotten. Then the player can really be free to make music.

Sources

Many of the exercises in this collection have been used widely for decades, and in some cases for centuries. Their exact origin is difficult to trace because they have been so widely practised. Others have been used so much by certain teachers, though not necessarily invented by them, that the exercises have become associated with them: Galamian-type tone production exercises, Flesch Urstudien-type finger tapping (repeated by Yost and Dounis), Ševcik or Schradieck-type finger patterns, Dounis-type shifting or finger action exercises, etc.

Some of the exercises are adaptations of traditional methods, while others are my own. But in a field as old and widespread as violin playing, new ideas usually turn out to have been thought of before. As a student I 'invented' the exercise in which the player runs his or her hand up and down the stationary bow (Exercise 36). I showed it to a Bulgarian violinist who said she had been taught that same exercise in Sofia fifteen years earlier. Later I came across a similar exercise in *Six Lessons with Yehudi Menuhin* (Faber, London, 1971), and again in Tortelier's *How I Play, How I Teach* (Chester Music, London, 1975).

Some of the exercises originally appeared in serialised form in *The Strad* magazine. The first of these was a tone production exercise that I learnt from Dorothy DeLay. Before sending the article to the magazine, I telephoned Miss DeLay in New York to ask her permission, explaining that I did not want to 'steal' her exercise. She laughed and said: 'Don't worry. I learnt it from Galamian, and he learnt it from Capet, so feel free – what is important is that these exercises become known!'

Acknowledgements

My thanks to Dorothy DeLay, whose basic exercises were not only the inspiration but also the starting point for this book, as well as my gratitude for her support and encouragement for the project over the years.

I am indebted to the many friends and colleagues, notably Emanuel Hurwitz, who have looked through or used early drafts of the book, and whose suggestions have always been so helpful; and in particular to Kyra Humphreys and Veronika Weise whose painstaking work in trying out exercises and checking text was invaluable.

Thanks also to all the many students over the fifteen-year period during which the book has developed, who have acted as willing and enthusiastic 'guinea pigs', making it possible to refine and redesign each exercise countless times. Without them, few of the exercises could have evolved into their final form.

Finally, I am grateful to Jennifer King who modelled so patiently for the photographs.

How to use *Basics*

Which exercise to practise?
How long to practise it for?
How often to practise it?

Everybody's needs are different, and an exercise that may be relevant for one player may be irrelevant for another. *Basics* can be used in any number of ways according to preference.

The exercises fall into several categories. Some are intended simply to illuminate a particular aspect of playing, e.g., nos. 1, 2, 6, 19, 54, 55. These can be returned to from time to time, but do not need to be practised regularly.

Some of the exercises are designed to give a different feel to the hands and arms in all the different aspects of playing, for example: the feel of each finger on the bow; of raising and dropping the fingers; of drawing a straight bow, and so on. Most of these are very short and simple, and do not require more than sixty or ninety seconds, e.g., nos. 3, 4, 5, 9, 56, 89, 98, 128. They do not need to be practised every day, although many players find that different exercises become 'favourites' to which they return again and again. They can be used daily for building technique; or, by returning to them regularly, used as a quick way to ensure that everything stays in good working order.

Other exercises are solid practice routines that constantly develop technique and, like playing scales, may become part of everyday practice. Some of the key exercises in this category are tone production, shifting, intonation and vibrato. Used again and again, these improve the player's technique on a continual basis.

Many *Basics* exercises can be used in daily practice to save time. Intonation exercises, for instance, save time by 'tuning' the hand so that fewer intonation problems are likely to arise in subsequent practice. Fifteen minutes spent on an intonation exercise can mean that you spend one hour instead of two working on intonation in a piece. Many of the shifting exercises include all possibilities of shifting from one finger to another. Once you have practised them for an hour, or for ten minutes, the repertoire you play afterwards feels more secure because, in effect, you have already worked on all the shifts in one go.

Some players like to spend all the practice in a day just playing, for example, shifting exercises or tone production exercises. The improvement in the general level of playing that results from working like this can be felt for a long time to come.

Although *Basics* is not a book to play through from cover to cover, one approach is to practise something from each section every day. Some exercises will take thirty seconds, and some will take thirty minutes; what is practised depends entirely on the individual's needs and availability of time.

Keep a record of what you have practised. For example, in a row of alternative key signatures (such as on page 142), tick each key signature as you play it. Mark each exercise with a tick each time you do it. Practising a tone production exercise, make a note of 'A string, low position', 'D string, high position', and so on.

Right Arm and Hand part 2

Bow hand

Thumb counter-pressure

1

Counter-pressure is sometimes very little, and at other times much more, depending on the amount of pressure into the string, and which part of the bow is used. At the heel the thumb's contact with the bow can be very light, even in the loudest playing. At the point, the thumb has to work hard against the downward pressure of the fingers into the bow. However much it is, counter-pressure should always be as little as possible.

Counter-pressure is automatic and unconscious, but conscious releasing can be helpful. The most common thumb tension problems do not come from counter-pressing, but from not letting the thumb release when less counter-pressure is needed.

Place the thumb at an angle of about 45° to the bow, so that the tip of the left side of the thumb (as seen from the player's viewpoint) is on the stick and the right side is against the nut. The thumb should always bend outwards.

This exercise shows how much counter-pressure the thumb has to give in every part of the bow.

Light and relaxed thumb despite the pressure into the string

At the point the thumb counter-presses more

Fig. 1

1 Place the bow on the string at the heel, just in front of the first finger, holding the bow with only the thumb and first finger (Fig. 1a).

2 Slowly push the wood of the bow down as far as possible. However hard you press into the string, the thumb can be light and relaxed.

3 Replace the bow on the string a centimetre higher up. Slowly press the wood of the bow down as far as possible. Feel how the thumb has to counter-press a fraction more.

4 Continuing to hold the bow with only the thumb and first finger, press the bow down into the string centimetre by centimetre up the whole length of the bow. Feel all the different degrees of counter-pressure the thumb has to give. Pressing at the point creates the most counter-pressure (Fig. 1b).

5 Using a normal bow hold, press down into the string in every part of the bow, feeling all the different degrees of thumb counter-pressure.

2

The thumb and second finger

See also *About the movement of the bow within the hand*, page 72.

The thumb and second finger are the centre of the bow hold. The second finger needs to sit very slightly to the left of the thumb (as seen from the player's viewpoint; Fig. 2).

A bow hold with the thumb *between the second and third fingers* can cause tension in the base of the thumb. (Without the bow, hold the hand in bow-hold position. Move the thumb very slowly towards the fourth finger. The closer the thumb gets to the fourth finger the harder the muscle becomes in the base of the thumb.)

The thumb should not be placed *between the first and second fingers* because this gives an unbalanced distribution of the fingers, with three fingers one side of the thumb and one the other side. Another reason is that the first finger would be too near the thumb, causing it to have to work too hard. Any downward pressure from the first finger has a greater effect the further away from the thumb it is.

Fig. 2

Thumb and second finger relationship

Use a normal bow hold throughout this exercise. Move the tip of the bow up and down using only the fingers, not the hand. To help isolate the finger movement so that the hand itself remains still, hold the right hand with the left hand. Place the thumb on the back of the hand, and the first finger in the palm of the hand.

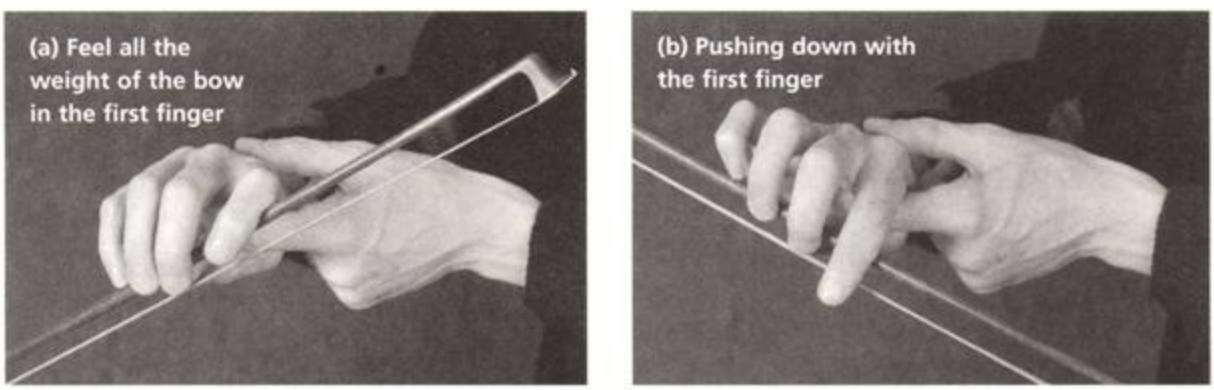
1 Hold the bow in the upper half (Fig. 3a). Feel the first finger supporting all the weight of the bow.

2 Push down with the first finger, making the heel of the bow move up (Fig. 3b). Notice the fourth finger curving at the same time. Keep the forearm still and use only the finger to move the bow.

3 Release the first finger pressure, letting the heel of the bow move down. Feel the bow moving around the thumb and second finger, like the centre of a seesaw. Repeat the movement several times, in a continuous motion.

4 Repeat with the hand in the middle of the bow, where less weight is pushing into the first finger; at the point-of-balance, where the bow feels evenly balanced; and in the normal bow-hold position, where the fourth finger supports all the weight.

Fig. 3



Holding the right hand with the left hand while doing the exercise

3

Thumb flexibility

Invisible, unconscious movements of the thumb are an essential part of almost all bowstrokes. A rigid thumb can badly affect the entire bow arm.

1 Playing lightly near the fingerboard, play whole bows on one note. Keep the hand and fingers loose and relaxed.

2 Bend and straighten the thumb ten or more times during each bow (Figs. 4a and 4b). The fingers should curve and straighten at the same time.

3 Repeat while playing between the bridge and the fingerboard, where the bow will be heavier and deeper in the string. Keep the fingers and thumb relaxed and free.

4 Finally, make the movement while playing very heavily near the bridge. The thumb and fingers should remain free even though a lot of weight now has to go into the bow. Keep the right shoulder relaxed.

Repeat on each string. Play double stops as well as single notes.


(a) The thumb bent


(b) The thumb straighter

Fig. 4

Balancing with the fourth finger

Playing in the lower half, the fourth finger sits on the bow as on a seesaw, controlling the pressure of the bow in the string. In the upper half the fourth finger balances the first finger, preventing the tone from becoming too pressed.[1] Balancing the bow with the fourth finger is also a major part of all lifted bowings.

4

Exercise 1

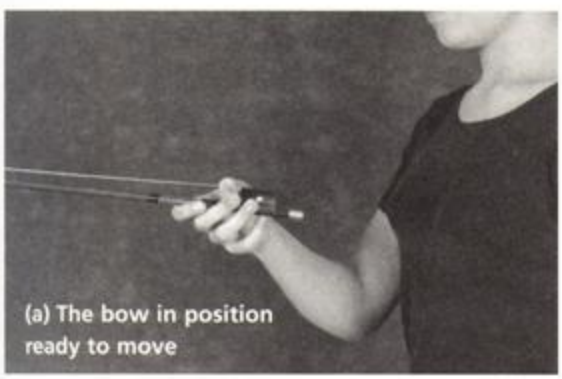
Point the bow slightly more towards the left shoulder, as it does during normal playing. Keep the thumb curved and relaxed.

The usual position for the fourth finger is on the *upper, inside edge* of the bow, but in this exercise place it directly on top of the bow. Keep the fourth finger curved all the time.

1 Turn the hand clockwise so that the bow points to the right, and the hair is above the stick (Fig. 5a).

2 Make a fast, anticlockwise movement so that the bow is suddenly returned to its normal position. Make the movement so quickly that there is a 'swishing' noise as the air rushes through the hair.

Feel all the weight of the bow going into the little finger (Fig. 5b). Relax the thumb.


(a) The bow in position ready to move

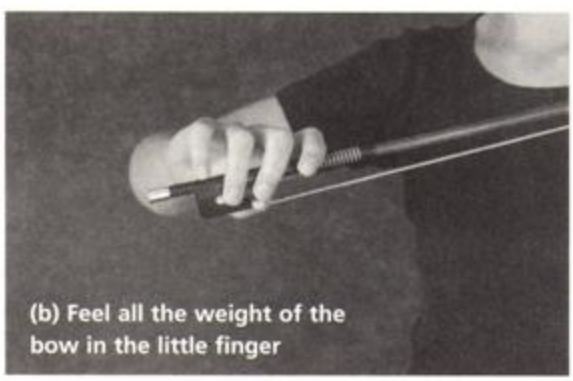

(b) Feel all the weight of the bow in the little finger

Fig. 5

[1] Some schools say that the fourth finger should be taken off the bow in the upper half; certainly players with short arms often cannot reach the point (with a straight bow) if they do not let the fourth finger come off the bow. If you take the fourth finger off you have to be extra careful not to squash the sound by over-pressing with the first finger.

5

Exercise 2

Point the bow slightly more towards the left shoulder, as it does during normal playing. Keep the thumb curved and relaxed.

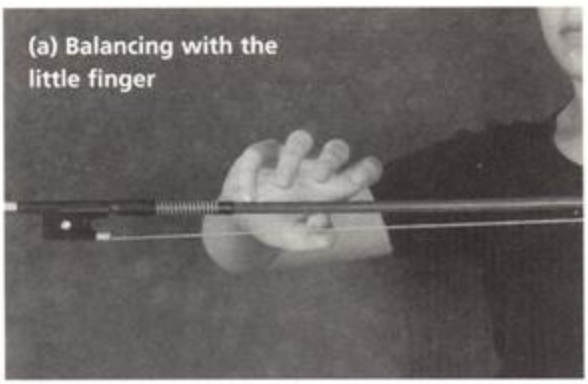
1 Hold the bow with only the thumb and fourth finger, just below the point-of-balance[1] (Fig. 6a). Place the fourth finger directly on top of the stick.

2 Move the point of the bow up, by pushing down with the little finger (Fig. 6b), and then let the point down again to the starting point (Fig. 6a). Keep the forearm still and use only the finger to move the bow. Repeat this a few times, in a continuous motion.

3 Place the hand a few centimetres closer to the frog and repeat. Continue, gradually getting closer to the frog, until the hand is in its usual position.

[1] The point-of-balance is below the middle of the bow because the heel end of the bow is heavier than the point end. Many spiccato or semi-lifted bowings feel particularly balanced and comfortable here.

Fig. 6



Holding the bow without gripping

The fingers must always be *alive* on the bow. Tiny adjustments to the bow hold have to be made all the time, because the conditions of playing are always changing. From note to note, the brain sends millions of subconscious messages to the fingers to change their contact with the bow. These often invisible changes are instinctive reactions to musical feeling and to the changing contacts of the bow with the string, rather than being something that can be taught or learnt. The bow has to be held without undue tension so that the spontaneous adjustments can occur without restriction.[2]

You also have to be able to make larger, deliberate alterations to the bow hand, for instance, when playing ***pp*** one moment and *martelé* the next.

6

Exercise 1

The fingers hold the bow firmly in strong, forceful playing, even squeezing it at times (for instance, playing a stroke that begins with a sharp bite). Other strokes require more of a bow *balance* than a bow *hold* or bow *grip*.

There is nothing wrong with a strong bow hold when needed, as long as it is always followed by release when no longer needed. To avoid tension, the norm should be a bow balance with a stronger grip when required, rather than the other way round.

1 Tilt the bow over, as though playing on the outer edge of the hair. Place the fourth finger on the *upper, inside edge* of the bow. Take the second and third fingers off the bow (Fig. 7a).

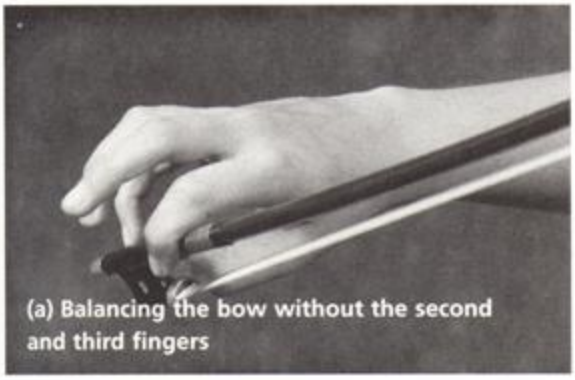
Notice the weight of the bow resting on the pad of the first finger and balanced by the fourth finger and thumb. All three support the bow – if any were taken off, the bow would fall. In this position, the bow is balanced in the hand, and does not need to be 'held'.

2 Put the second finger on the frog slightly more to the left of the thumb than usual. Take the first finger off.

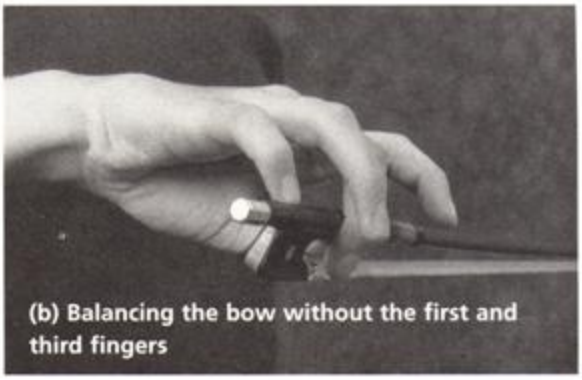
Now the bow is balanced by the second and fourth fingers, and by the thumb (Fig. 7b). Feel the weight of the bow resting against the second finger.

3 Put the first and third fingers back on the bow and hold it normally with all the fingers. Find the same feeling of weight and balance in each finger, without gripping the bow with the fingers.

[2] 'Our sensitivity diminishes in proportion to the total amount of stimulation. If there are two candles lit in a room, we easily notice the difference in brightness when a third candle is lit. But if there are fifty candles burning, we are unlikely to notice the difference made by a fifty-first. The harder we press on a violin string, the less we can feel it. The louder we play, the less we hear. The more relaxed and ready the muscles are, the more different ways they can move.' Stephen Nachmanovitch: *Free Play – Improvisation in Life and Art* (Los Angeles, 1990), 63.



(a) Balancing the bow without the second and third fingers



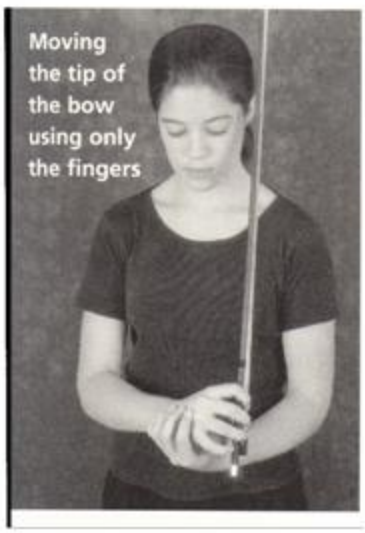
(b) Balancing the bow without the first and third fingers

Fig. 7

7

Exercise 2

However firmly the fingers hold the bow, they should be able to move freely and flexibly. In this exercise keep the hand quite still, with only the fingers moving. Feel the *pads* of the first and third fingers, the joint nearest the nail of the second finger, and the *tips* of the thumb and fourth finger, on the bow. However firmly they hold the bow, the fingers can move freely, and independently of the hand.



Moving the tip of the bow using only the fingers

Fig. 8

1 Hold the bow pointing up vertically.

2 Move the tip of the bow in circles *using only the fingers* (Fig. 8). Hold the bow very firmly, and move the fingers as far as possible. It may be helpful to hold the right hand with the left, to make sure that only the fingers move.

3 Do the same with the bow in playing position.

4 Do the same with the bow pointing to the right, bow hair above the stick.

8

Exercise 3

- Play several slow, whole bows, ***ff***.
- Bowing up and down continuously, move the hand up to the middle of the bow and back again to the heel, using only the fingers to crawl up and down the stick.

It will not be possible to continue crawling up the bow beyond a certain point near the middle, but move up as far as possible. Still play the up-bows to the heel even when your hand is near the middle of the bow. The most difficult part is crawling back down the bow again to the frog.

9

Hand balance

At the heel, the first finger contacts the bow closer to the nail joint (Fig. 9a), which makes the hand slightly more vertical on the bow. The fourth finger balances the weight of the bow.

At the point, the first finger contacts the bow closer to the middle joint (Fig. 9b), which makes the hand slightly tilted, i.e., turned away from the fourth finger towards the first finger.

The first finger has two jobs to perform:

1 The part of the first finger on top of the stick injects weight into the string.[1] Except when playing ***f*** it touches the stick lightly, and in the lower half sometimes comes a hair's breadth away from the stick.

2 The part of the first finger on the side of the stick helps to keep the bow straight.

Because the contact point on the side of the stick does not change, it feels as though the first finger stays fixed in one position – even though the contact point on top of the stick changes between the heel (nearer the nail joint) and the point (nearer the middle joint).

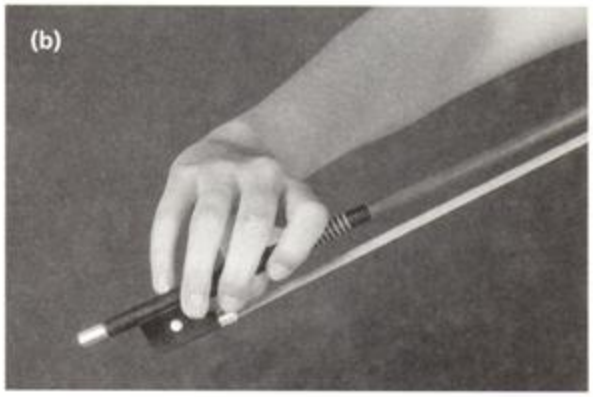
The fourth finger should stay on the stick in the upper half unless the hand is too small, keeping the hand balanced on the bow and helping to avoid too much first-finger pressure.

The change from more vertical at the heel (Fig. 9a) to more tilted at the point (Fig. 9b) must happen smoothly or the bow will shake somewhere around the middle of a whole down-bow stroke.

[1] The second finger also injects weight into the string. To do this it must be positioned slightly to the left of centre opposite the thumb. (See Fig. 2, page 2.) Sharing the weight between the first and second fingers produces a less pressed, more rounded tone than if you use only the first finger.

Fig. 9

The first finger contacting the bow between the nail joint and the middle joint



Contacting the bow nearer to the middle joint

Play slow, even, ***ff***, whole bows near the bridge.

1 Start playing at the heel without the first finger (Fig. 10a). After a few centimetres put the first finger down in its usual place on the stick.

   Continuing down-bow, take off the fourth finger, third finger and second finger in that order. Arrive at the point with only the first finger and thumb on the bow (Fig. 10b).

2 Up-bow: start with only the thumb and first finger; put the second, third and fourth back on the bow in that order; take off the first finger, and arrive at the heel with all the fingers on the bow except the first. Be careful to put the fingers back in their correct shape and position.

3 Do exactly the same, down and up, but without lifting the second finger.

4 The same, but do not lift the third finger either.

5 Start and finish without the first finger as before, but leave all the other fingers on the bow in their usual place.

6 Without lifting any finger, each remaining solidly on the bow, play ***f*** whole bows with a solid and even tone. Feel the same changes in weight distribution as you play from heel to point and back again.

Fig. 10

Starting position at the heel

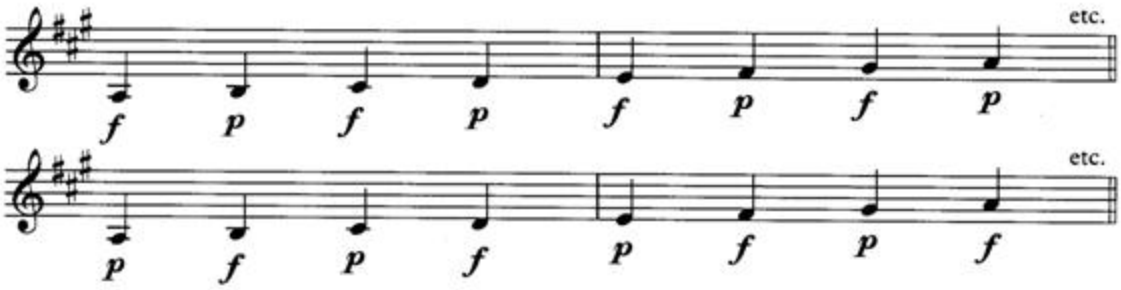
At the end of the first down-bow

10

The give of the hand into the bow

This exercise exaggerates lowering and raising the knuckles.

- For the purposes of the exercise, during the ***f*** hold the bow firmly and lower the knuckles (Fig. 11a). At the same time curve the thumb and fourth finger.
- During the ***p***, release the fingers on the bow and raise the knuckles (Fig. 11b). At the same time let the thumb and fourth finger straighten slightly.
- Play the strokes with an even bow speed and pressure, connecting them to each other seamlessly. Play *subito* ***f*** and *subito* ***p***, without any *crescendo* or *diminuendo*.
- Play quarter-length strokes at the heel, middle and point. Repeat using half bows in the lower half, middle, and upper half.



Play two-octave scales in one position across the strings, major or minor, in the following keys:

1 A (1st position) **2** E (5th position) **3** A (8th position)

Lower knuckles ready to begin the down-bow

Higher knuckles ready to begin the up-bow

Fig. 11

Vertical and horizontal finger movement

Exercise 1 – Vertical

- Hold the bow two centimetres above the string at the nut, with exaggeratedly rounded fingers and low knuckles (Fig. 12a).
- Place the bow on the string by straightening the fingers (Fig. 12b), and then lift off back to the starting point by curving the fingers again.
- Keep the arm and hand still, using only the fingers to lower or raise the bow. Repeat the movement up and down several times.

Make sure that the thumb moves freely with the fingers: when the fingers straighten the thumb straightens, and when the fingers curve the thumb curves.

The fingers curved ready to place the bow on the string

Placing the bow on the string

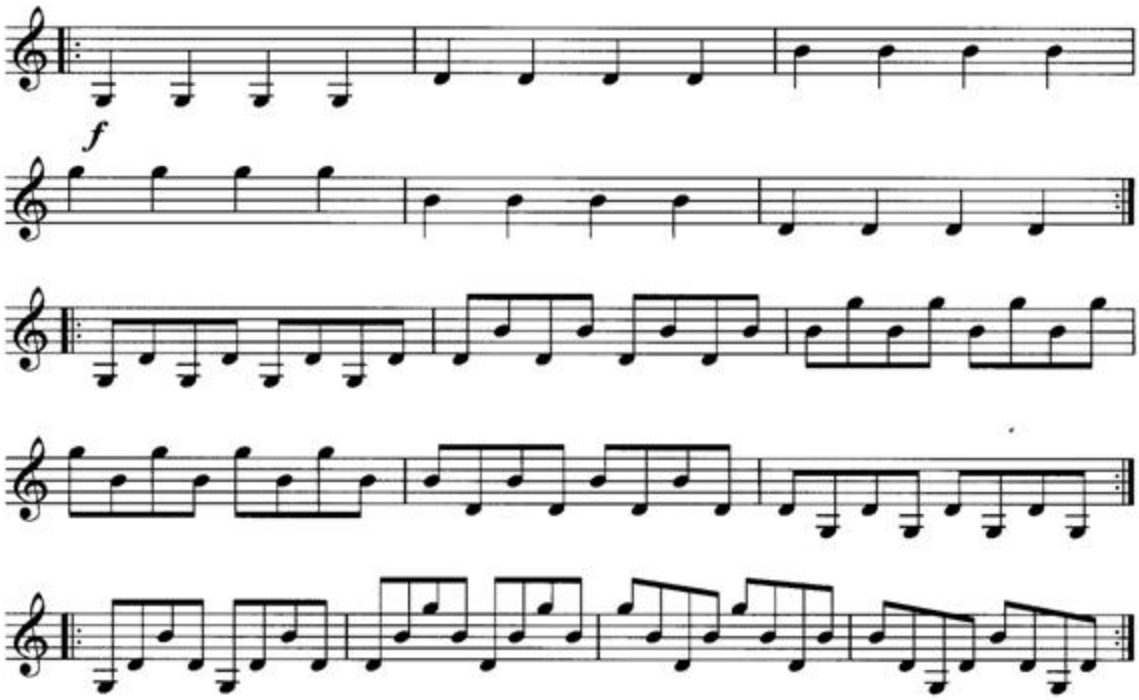
Fig. 12

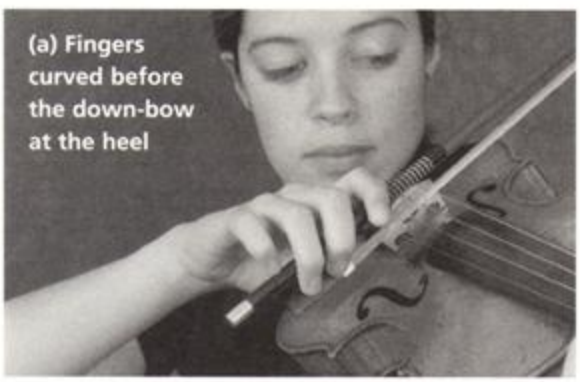
12

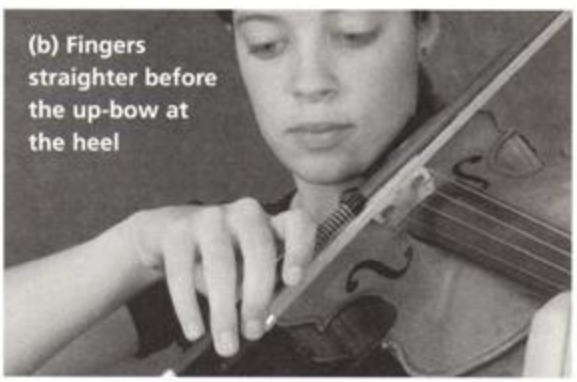
Exercise 2 – Horizontal

There is really no such thing as a 'horizontal' finger movement. The fingers are hardly able to move sideways, but when they are placed on the bow so that they lean towards the first finger, rather than vertically, straightening and curving the fingers moves the bow horizontally along the string.

- Play *f*, but using only the fingers to move the bow. Keep the arm and hand as still as possible.
- Curve the fingers to move the bow up, straighten to move down. Figs. 13a and 13c show the fingers curved, ready to straighten for a down-bow. Figs. 13b and 13d show the fingers straighter, ready to curve for an up-bow.
- Use a mirror to see that the bow stays parallel to the bridge.
- Play at the heel, middle and point.







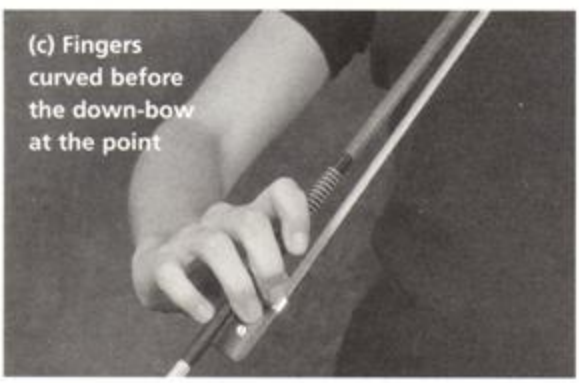
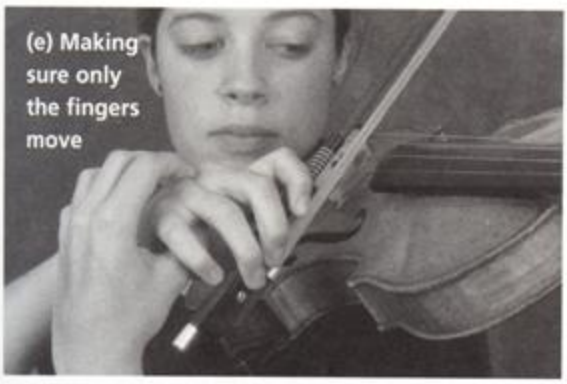


Fig. 13



Making sure only the fingers move

Play a few open strings at the heel, holding the right hand with the left hand (Fig. 13e). Place the thumb in the palm of the hand, and the first finger on the back of the hand. This helps to isolate the finger movement so that the hand itself remains still.

Exercise 3 – Vertical and horizontal combined

Make small circles by combining the flexing movement of the fingers with a small amount of circular hand movement.

Use *as much* finger movement as possible, *as little* hand movement as possible, and no arm movement. Make a sound by touching the string at the bottom of the curve (Fig. 14).

1 Start by holding the bow with curved fingers two centimetres or so above the string. The back of the hand and the fingers should be in a straight line.

2 Lower the bow to the string in a circular movement, straightening the fingers slightly. Play the note, and lift off back to the starting point by curving the fingers.

3 Do this clockwise and anticlockwise, in a continuous motion, at the heel, middle and point.

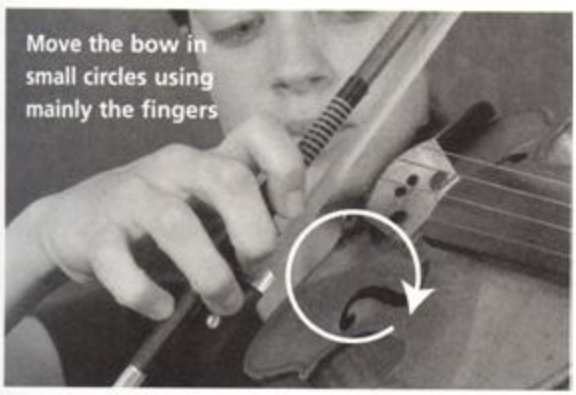


Fig. 14

Changing bow

A little give of the fingers helps the change of bow to be smooth. This exercise exaggerates the give by making it a large, conscious movement of the fingers.[1]

Play short (one eighth of a bow), smooth, sustained strokes at the heel, middle and point.

- Just at the end of each down-bow, while the bow is still moving, smoothly straighten the fingers and thumb. At the same time let the hand move slightly in the same direction as the fingers (i.e., down, producing more of an upward curve at the wrist).
- Just at the end of each up-bow, while the bow is still moving, smoothly curve the fingers and thumb (and lower the knuckles). Move the hand slightly with the fingers (i.e., up, producing less of a curve at the wrist).

Figs. 13a and 13c show the fingers just before the down-bow; 13b and 13d show them just before the up-bow. In reality these finger and hand movements can be so slight as to be invisible, since the tiniest give is enough to make the bow changes smooth.[2]

[1] There is a difference between a give of the fingers and an active finger movement. In reality, finger movements at the bow change should be kept to a minimum, since a 'flick' of the fingers at the change causes the bow speed to increase. Smooth bow changes come more easily from (1) slowing the bow speed, and (2) lightening the bow, just before changing direction. An active finger movement at the heel is often associated with the Carl Flesch school of playing. But Flesch himself said that he introduced the finger action into his teaching method only as a helpful exercise, and had never intended it to become a crucial point of bow technique. 'The finger stroke must only be used in minimal doses because if the change of bow is seen, it will also be heard!' Carl Flesch: *Problems of Tone Production in Violin Playing* (Baden-Baden, 1931), 14.

13

14

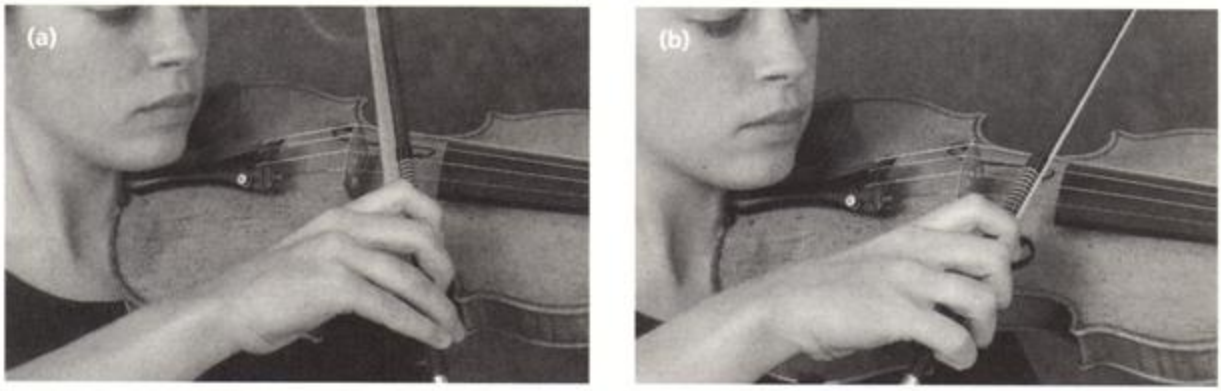
[2] Dounis recommended a larger, more visible movement, and called it the 'brush stroke…based on a mental image of the right hand acting like a paint brush, the fingers being the hairs of the paint brush, and the hand the handle.' (Chris A. Costantakos: *Demetrios Constantine Dounis: His Method in Teaching the Violin* (New York, 1988), 76.

15

Bow angle

The fingers help to keep the bow parallel with the bridge. A common error is to try to correct crooked bow strokes by changing what the arm is doing, when the fault really lies with the fingers. This can result in awkward arm movements and tension.

Fig. 15



Using the fingers to alter the angle of the bow

- Hold the bow above the string at the heel. Move the point towards the bridge (Fig. 15a), and away from the bridge (Fig. 15b), using only the fingers.
- To move the point in towards the bridge, pull the first finger in and extend the fourth finger. To move the point out again, pull the little finger in and extend the first finger.
- Keep the heel of the bow above the string.
- Keep the arm and hand still. Place a coin on the back of the hand and make the movements without the coin falling off.

Hand movements

Moving the hand from the wrist, during string crossings, reduces the movement needed by the upper arm and forearm. A little hand movement replaces a lot of arm movement.

16

Exercise 1 – Basic movements

Hold the forearm near the wrist with the left hand.

1 Start with the forearm and hand in a straight line. Then lower the hand from the wrist, below the level of the forearm. This creates a 'high' wrist (Fig. 16a). Return to the straight line again, and repeat several times in a continuous motion.

   Raise the hand above the level of the forearm. This creates a 'low' wrist (Fig. 16b). Return to the straight line again, and repeat several times.

   Keep the forearm parallel with the floor and move only the hand.

2 Move the hand from side to side, keeping the forearm and hand parallel to the floor. Swing the point of the bow towards the shoulder by moving the hand to the left (Fig. 16c), and away again by moving it to the right (Fig. 16d). (Naturally, this movement is never used in actual playing.)

3 Put the vertical and horizontal movements together to make circles. Curve the fingers and thumb as the hand moves up, straighten as the hand moves down. Move the hand only, keeping *the forearm parallel with the floor, and the bow at right angles to the forearm.*

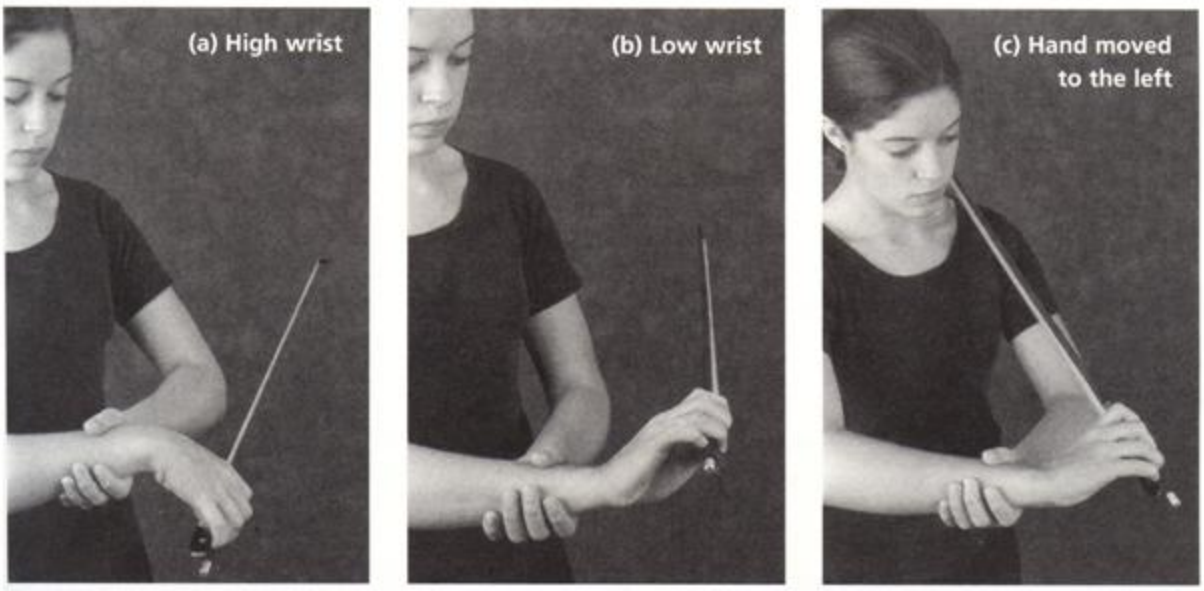


Fig. 16

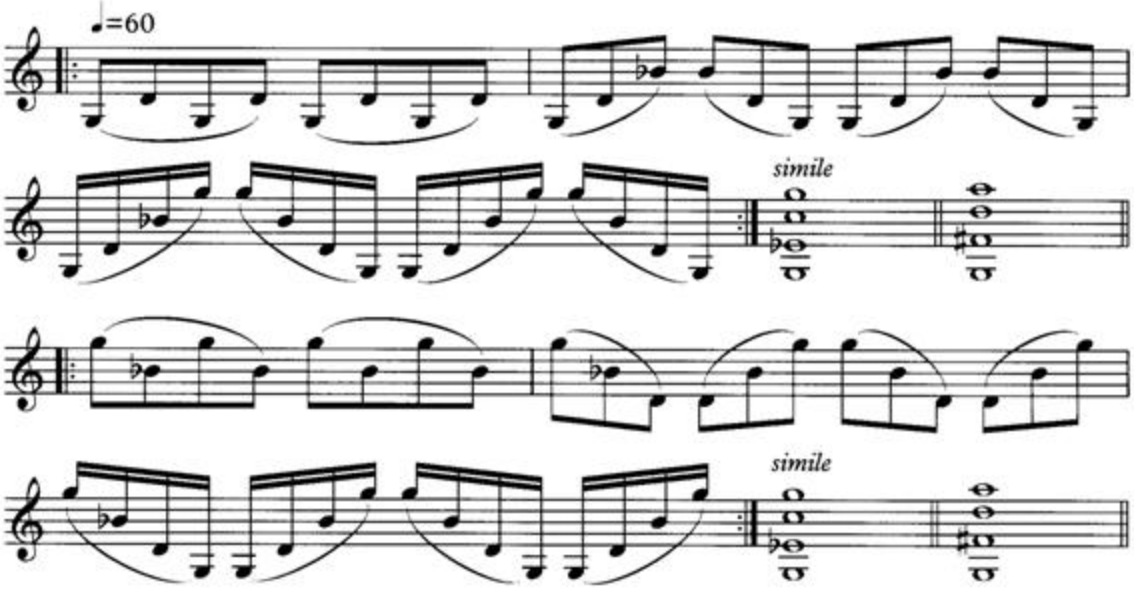
17

Exercise 2

In this exercise, use as little arm movement as possible to cross from one string to another, to exaggerate the hand movement. Mainly use the hand, moving from the wrist, and forearm rotation (see page 15).

- Play only in the upper half.
- In each bar, position the elbow in a middle position so that the hand can reach both outer strings comfortably.
- Use a higher wrist to play a higher string (Fig. 16a), and a lower wrist to play a lower string (Fig. 16b).

Also play Exercise 49 in the upper half, using only the hand to change strings.



18

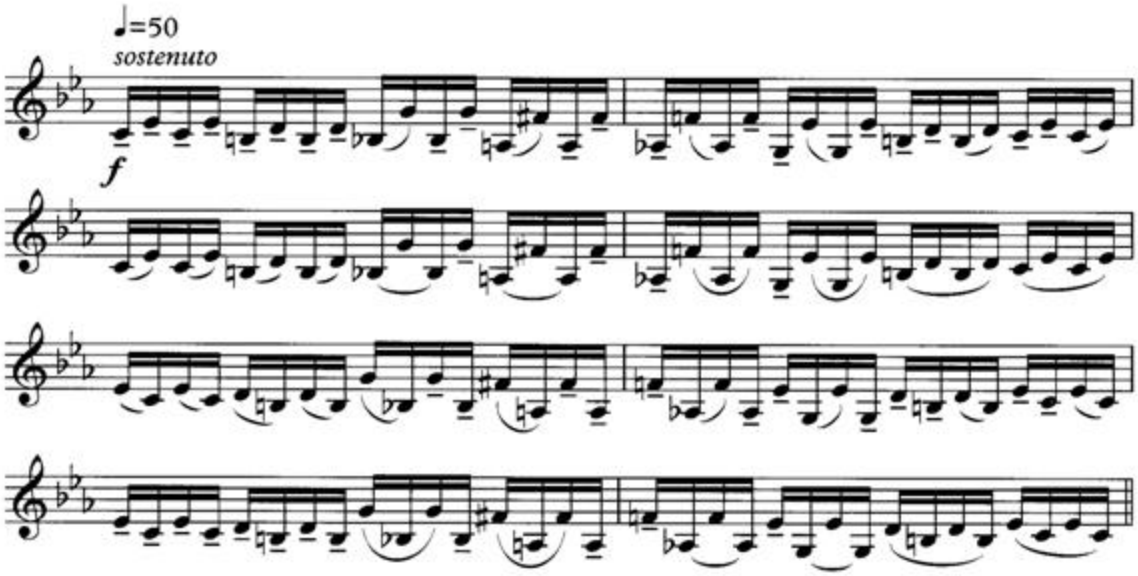
Exercise 3

As in Exercise 17, use as little upper-arm movement as possible to cross from one string to another, to exaggerate the hand movement. Use a higher wrist to play a higher string (Fig. 16a), and a lower wrist to play a lower string (Fig. 16b). Use plenty of forearm rotation.

1 First play through using ten centimetres of bow in the middle.

2 Then repeat using ten centimetres of bow at the point.

3 Use half bows in the upper half. Now mainly use the arm, with the same hand movement as before but so little that it is hardly visible.



Play the same sequence on the D–A and A–E strings.

Putting weight into the string

When playing ***ff***, or (for example) playing heavy chords, you use some weight from the upper arm. However, arm weight is often too clumsy for delicate nuances. A finer contact with the string can come from the hand, with the rest of the arm remaining passive. In less powerful playing, or to make subtle changes of colour during a stroke, use the arm to transport the hand and bow along the string, and *move the hand down from the wrist to make the sound.*

All the different proportions of arm and hand weight are needed for different strokes and effects: all arm weight, no hand; half arm weight, half hand; all hand, no arm; and all the combinations in between.

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Using weight from the arm

This exercise requires an assistant:

1 With one hand, support the entire weight of the player's arm at the elbow (Fig. 17a).

2 Put the fingers of your other hand under the wrist, supporting the arm equally with both hands (Fig. 17b).

3 Very slowly remove the fingers supporting the elbow, and gradually transfer all the weight of the arm to the fingers under the wrist. At this point the player must not let the upper arm droop, while still resting the whole weight of the arm into the assistant's supporting fingers (Fig. 17c).

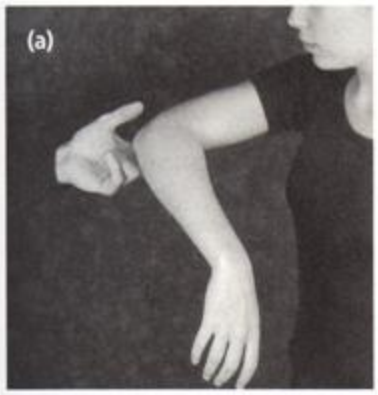
4 Put the fingers of your free hand under the bowing hand, supporting the weight of the arm equally with both hands (Fig. 17d).

5 Very slowly remove the fingers supporting the wrist, and gradually transfer all the weight of the player's arm to your fingers under the bowing hand. The player's wrist must not droop at this point (Fig. 17e).

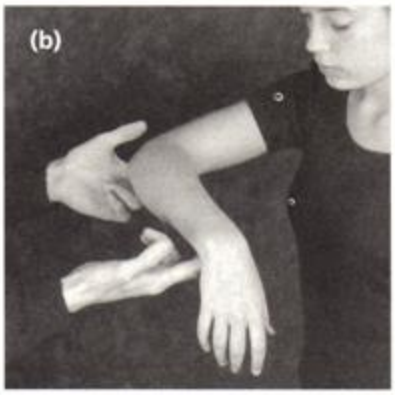
6 Insert the bow into the player's hand, the player still resting the entire arm weight on the supporting fingers (Figs. 17f and 17g).

Then put the back of your hand under the hair near the heel. The player's arm rests equally on your fingers under the bowing hand, and the back of your other hand under the hair (Fig. 17h).

7 Very slowly remove the fingers supporting the bowing hand, the player gradually resting the entire weight of the arm, through the bow, into the assistant's hand (Fig. 17i).



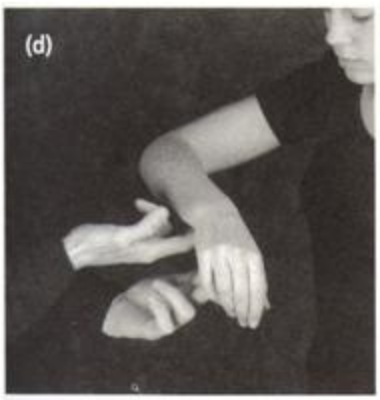
Supporting the entire weight of the arm at the elbow



Supporting the weight of the arm equally at the elbow and wrist

Very slowly remove the left hand, gradually transferring all the weight into the fingers under the wrist

Fig. 17

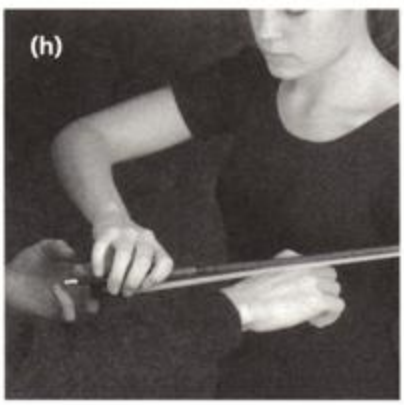


Supporting the weight of the arm equally at the wrist and in the palm of the hand

Gradually transfer all the weight into the fingers in the palm of the hand

The left hand continues to support the weight as...

...the right hand inserts the bow into the player's hand



Supporting the weight of the arm equally in the palm of the hand and through the bow

Gradually transfer all the weight into the hand supporting the bow

20

Using weight from the hand

Also see the *Pressure exercise*, Exercise 78.

The movements in this exercise are so slight as to be invisible.

1 Rest the middle of the bow on the string.

Press the wood down to the hair with the hand, in a motion similar to the downward movement that creates a high wrist (Fig. 16a). As a result the wrist will be very slightly more curved upwards. Release the wood again. Do not press the first finger to exert pressure, or turn the hand on to the first finger. Feel the extra pressure from the hand/wrist distributed evenly amongst the fingers.

2 Put the bow on the string a centimetre above the middle and repeat. Do the same, a centimetre higher each time, up to the point.

3 Play the following pattern in the upper half, using only the hand movement to play the stresses. Do not play each note with a fast–slow bow speed: use one even bow speed for the whole bar.

4 Play slow, ***f***, down- and up-bow strokes in the upper half, using only the hand movement to sink the hair heavily into the string. Play on each string.

Spreading weight through the hand

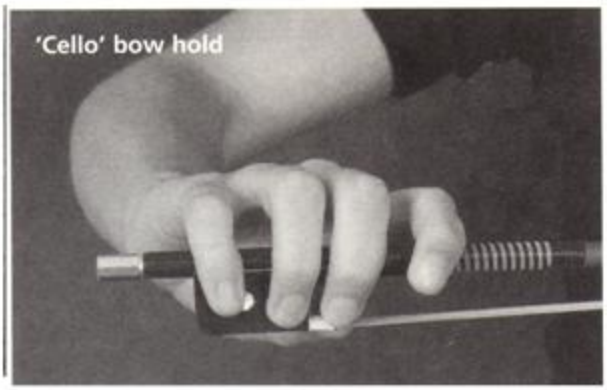
Spread bow pressure throughout the bow hand, rather than only pressing into the string with the first finger.

21

Exercise 1

- Play medium-speed, ***f*** strokes, down-bow and up, with the pad of the fourth finger on the side of the frog (next to the third), like a cello bow hold (Fig. 18). You cannot play to the point holding the bow like this, but play up and down as far as remains comfortable.
- Notice how the weight feels spread across the hand rather than only pressing through the first finger.
- Then find the same feeling while playing with a normal bow hold.

Fig. 18



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Exercise 2

If the second finger is positioned very slightly to the left of the thumb (as seen from the player's viewpoint), a certain amount of bow pressure can be taken away from the first finger and given to the second.

- Hold the bow without the first finger on the stick, and with the second finger just slightly more to the left of the thumb than usual.
- Play a few long, ***ff*** notes on each string; or play whole passages in pieces. Feel the second finger helping to produce the sound.
- Repeat with the first finger on the bow. Notice the second finger still taking some of the work away from the first finger, and feel the weight of the whole hand spread evenly over the frog. Pull the third finger in firmly against the frog.

Pull and push

23

Also see *String tensions*, Exercise 55.

It is significant that we have bow 'strokes', not bow 'presses', and that in French the words for down-bow and up-bow are *tiré* and *poussé* ('pulled' and 'pushed'). The most freely speaking, sweet and resonant tone is produced more by speed of bow than pressure, because then the string is able to vibrate (i.e., swing from side to side) freely.

Play several loud, sustained whole bows on one note.

- **Down-bows:** play without the first finger on the bow.

  Up-bows: play without the fourth finger on the bow.
- *Pull* the down-bows; *push* the up-bows.
- Then feel the same pull and push while playing with a normal bow hold.

Play on each string, using double stops as well as single notes.

Forearm and upper-arm movements

Forearm rotation

A little forearm rotation (the movement used to turn a door handle) can replace a much larger movement of the whole arm.

Exercise 1

Place the bow on the D string at the heel. Then turn the hand clockwise, lifting the bow up and round to the right until it is upside-down (Fig. 19).

Return to the string and repeat several times in a continuous movement.

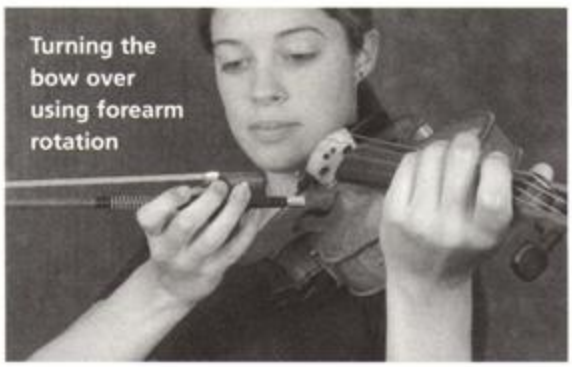


Fig. 19

24

25

Exercise 2

Play at the extreme heel, with the right elbow positioned level with the middle strings. Move the forearm only. It may be helpful to place the left hand on the right upper arm to help keep it still.

1 At the extreme heel, play a short up-bow on the E string. Stop (Fig. 20a).
2 Move the bow to the G string, using only the hand (forearm) to change levels. Stop (Fig. 20b).
3 Play a short down-bow on the G string. Stop.
4 Return to the E string, using only the forearm. Stop.
5 Move the bow to the G string, and so on several times.

It may be helpful to play the upper string on the outside edge of the hair (tilt the bow towards the fingerboard), and the lower string on the inside edge of the hair (tilt the bow towards the bridge).


(a) The bow ready to play a short up-bow on the E string


(b) Use only the forearm to move the bow to the G string

Fig. 20

26

Exercise 3

Play Exercises 17 and 18 in the *lower third* of the bow.

Play without any hand movement. Cross strings by turning the forearm, and also use a small amount of finger movement (see page 7). Make the string crossings smooth and rounded.

27

Exercise 4

The hand turns towards the first finger (pronation) to give greater pressure into the string.[1] It turns towards the fourth finger (supination) to reduce pressure. A slight supination is an essential element in many off-the-string bowings.[2]

All the movements of the hand in this exercise come from a rotation of the forearm, not the hand itself.

1 Rest the middle of the bow lightly on the string, with the hand in its normal position on the bow.

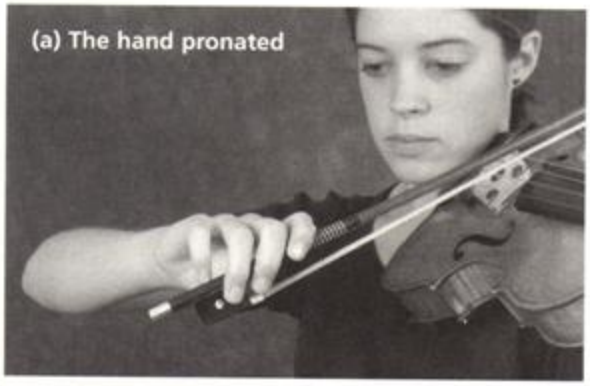
2 Press the wood of the bow down to the hair by leaning the hand more to the left (pronate): the first and second fingers press the bow down, and the fourth finger straightens slightly (Fig. 21a).

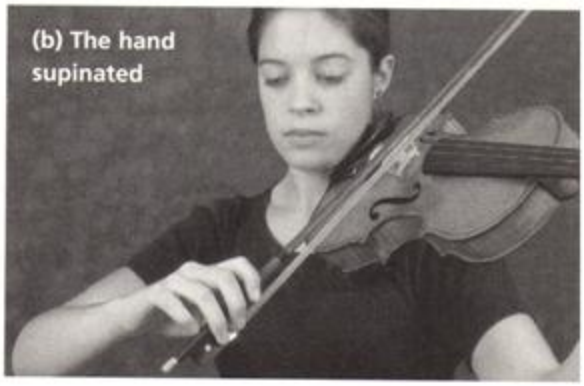
Release the wood of the bow by leaning the hand slightly to the right (supinate): the fourth finger curves more, and the middle joint of the first finger comes away from the stick (Fig. 21b).

3 Make this from-side-to-side movement several times, in a continuous motion. Do not move the upper arm or elbow. Move the fingers and forearm only, feeling the hand turning around the thumb.

4 Then do the same while keeping the wood of the bow pressed down to the hair all the time, without releasing during the supination. The first and second fingers must now keep pressing down, with the middle joint of the first finger staying on the stick – even though the hand makes exactly the same movement as in (2) and (3) above.

Fig. 21



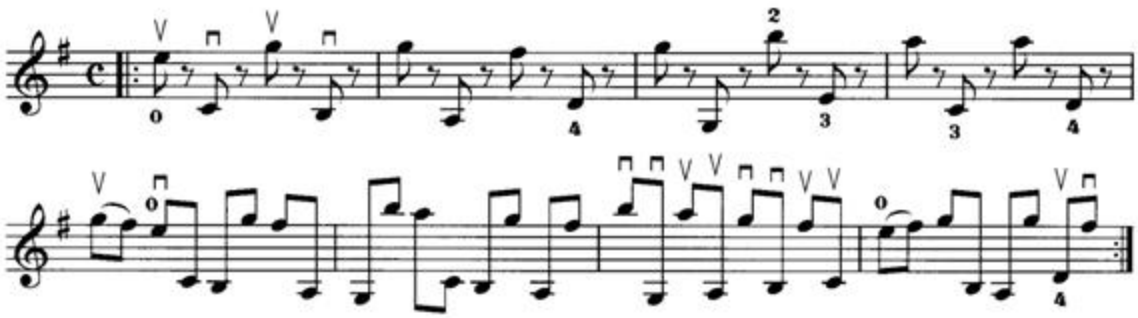


Upper-arm movement

28

Exercise 1 – Vertical movement

Play at the extreme tip, using very little bow. For the purposes of the exercise move the *whole* arm from the shoulder.



Play the exercise in two ways:

1 Stop the bow on the string before moving to the next string level: play and stop – move to the next string and stop – play and stop – move to the next string and stop – etc.

2 Play and move all in one action: play and move – play and move – etc.

[1] Increasing the weight of the bow by pressing with the first finger often produces a squashed tone, and should generally be avoided. The feeling of putting more weight into the string should be spread across the fingers. The most direct first-finger pressure is used for biting attacks such as *martelé* and *collé*; but even then it is better if the second finger (positioned slightly in front of the thumb: see Fig. 2, page 2) also helps inject pressure. This gives the bow hand a finer, more sensitive touch and control.

[2] See *About the movement of the bow within the hand*, page 72

Exercise 2 – In and out

Towards the *end of the down-bow* the upper arm pushes *forward* (out). At the *beginning of the up-bow* the upper arm moves *back* (in). Figs. 22a and 22b show the two movements.[1] This exercise exaggerates them, and also helps find the best violin position.

Play in front of a mirror. To see easily if the bow is parallel with the bridge, stand so that the violin is parallel with the mirror.

1 Place the bow on the A string at the point, parallel with the bridge. Angle the violin slightly too far to the left, so that to keep the bow parallel to the bridge the arm has to be straight (Fig. 22c).

2 Play short strokes up-bow and down, in the top quarter of the bow. To keep the bow parallel with the bridge the upper arm has to move in (up-bow), and out (down-bow), much more than usual. Repeat on each string.

3 Now find the correct angle of the violin, where the arm is neither too straight nor too bent at the end of the down-bow. Play the short strokes at the top of the bow again, feeling the same (though smaller) in and out movements as before.

From here to the point the upper arm moves forward ('out')

The upper arm moves back ('in') at the beginning of the up-bow

The violin positioned so that the arm has to be too straight

Fig. 22

About raising the elbow[2]

Some schools of violin playing suggest that the elbow should be on the same level as the bow most of the time. Others suggest that the elbow should be higher in the lower half of the bow (raising during the up-bow, lowering during the down-bow). There are advantages in both methods and many players use a combination of the two, depending on what they are playing.

One advantage of keeping the elbow level with the bow in the lower half is the feeling of the elbow moving *at the same speed as the bow* (in the lowest part of the bow), which gives great control.

Raising the elbow can help to take weight out of the string in the lower half (to 'float' the bow), or it can be used to lever weight *into* the string. It reduces any feeling of being cramped against the side of the body, and produces a wave-like motion which comes from changing the direction of the elbow just before changing bow.

In the upper half, for effortless, sustained, ***f*** playing, lever the bow and bow arm into the string by slightly raising the elbow. Leaning into the string by raising the elbow in the upper half is usually so slight that it is hardly visible, although many players need to raise it considerably to find enough power.

[1] In the upper half the upper arm does not always move 'in' and 'out' as described. In many instances it may do the opposite, particularly in fast strokes, moving very slightly back on the down-bow and forward on the up-bow. This gives the feeling of playing with the whole arm, and of powering the strokes from the upper arm even though most of the movement comes from the forearm.

[2] Teaching a beginner, it is usually best to follow the principle of 'one thing at a time'. The student should first learn how to bow with a 'flat' bow arm, the elbow on the same level as the bow at all times. Only once this is established (whether it takes a week, a month or a year), add raising the elbow in the lower half. Once this is established, add raising the elbow in the upper half. Advanced players can practise in the same way: a few minutes with a flat bow arm, a few minutes raising the elbow only in the lower half, and then raising in the upper half.

30

Leading string crossing

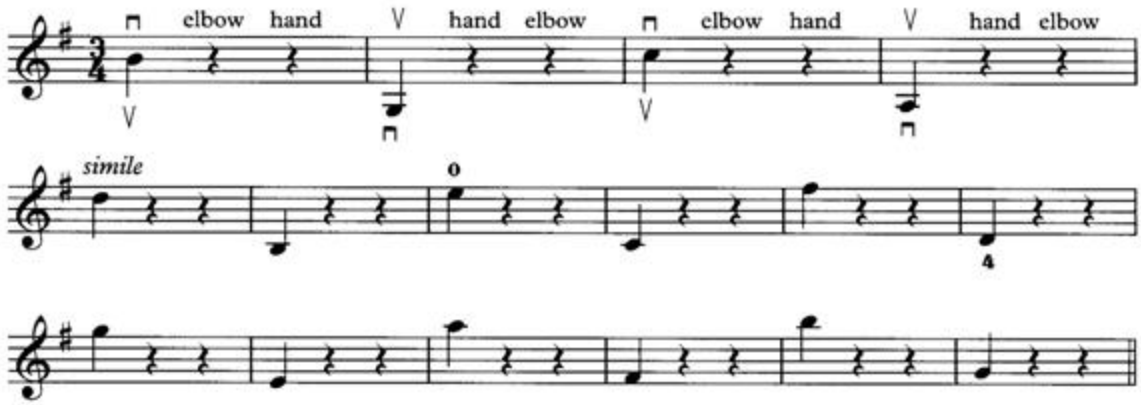
The right arm does not have to move all in one piece when crossing from one string level to another. The hand leads when crossing from a lower string to a higher string, and the elbow follows. The elbow leads when crossing from a higher string to a lower string, and the hand follows. This is hardly visible during normal playing, and the exercise exaggerates it by splitting the whole-arm movement into two, separate movements.

First, stop between each movement

Play the note on the upper string – stop – move the elbow to the lower string level – stop – move the hand and forearm to the lower string level – stop, etc.

Then make all the movements continuous

Now play without stopping, so that one movement flows easily into the next. But still exaggerate the timing of the movements by clearly moving first one part of the arm and then the other.



Play in time at a slow tempo (♩ = 60), counting in three:

Bar 1 On count 1 – Play the B with the whole arm on the A string level.
On count 2 – Move the elbow to the G string level, keeping the bow on the A string.
On count 3 – Move the bow to the G string.

Bar 2 On count 1 – Play the G with the whole arm on the G string level.
On count 2 – Move the bow to the A string level, keeping the elbow on the G string level.
On count 3 – Move the elbow to the A string level.

Long, slow sustained bows

Known as 'son filé', this is one of the most important practice methods for bow control and tone production.

31

Exercise 1

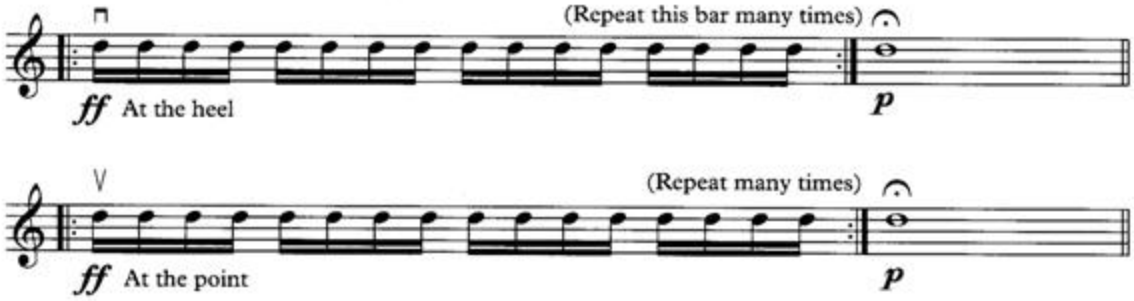
- Using whole bows on each string, sustain single notes for as long as possible. Play near the bridge, always aiming for a pure sound even if at times that seems impossible.
- Set the metronome at 60 (i.e., one beat per second). Begin with down- and up-bows lasting 30 seconds, and gradually increase day by day up to 60 seconds or more.

Try to sustain the sound, drawing the bow evenly. The benefits of this work are extraordinary, even if the sound scratches or disappears from time to time because the bow speed is so excessively slow.

32

Exercise 2

- Repeat the bar of rapid sixteenth-notes (semiquavers) for 10, 20, 30 seconds or more. The longer, the louder, and the faster the sixteenth-notes are, the more control is needed to begin the pause note cleanly.
- Play straight from the sixteenth-notes into the pause, beginning it ***p*** without any hesitation or unevenness in the stroke. Hold the pause 10, 20, 30 seconds or more, sustaining evenly.



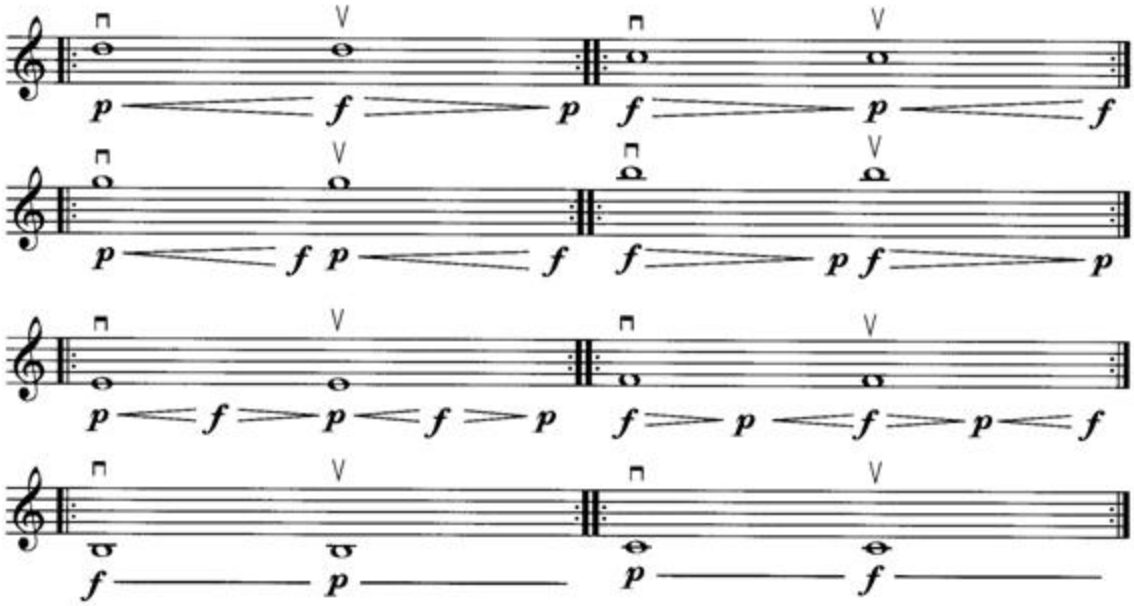
Play on each string.

Exercise 3

33

Playing long, sustained strokes using different lengths of bow, different string crossings and in different positions, there are an infinite number of possibilities of *crescendo*, *decrescendo* and *sostenuto*. However, since all variations come from the following basic patterns, practice of these alone is sufficient to cover the essentials.

- Play as slowly and as evenly as possible, at about ♪ = 40–60 (the slower the better).
- Stay close to the bridge, rather than going to the fingerboard when playing ***p***.



Play on each string.

Exercise 4

34

Play whole bows on one note with the metronome at 60. *Keep going without stopping throughout the exercise.*

1 Bowing near to the bridge, play 10 beats on the down-bow and 10 on the up. Keep the speed, pressure and distance from the bridge absolutely even.

2 Without stopping, play 12 beats on the next down- and up-bow, and then 14, 16, 18 and 20. Play closer to the bridge as the number increases.

3 Gradually get faster again by reducing the number to 18, 16, etc., down to 10, 8, 6, 4, 3, 2 and 1 bow to a beat. Play further from the bridge as the number decreases, but stay as close as possible.

At each bow speed, feel the exact distance from the bridge that produces the best sound and feeling in the bow. It should feel as though, were you to play a hair's breadth closer to the bridge, the sound would break. 'Ride' the hair against this point like a surfer riding against a wall of water.

35

Exercise 5

Move the bow in the air just above the string, never actually touching it.

- Holding the bow half a centimetre above the string, move as slowly as possible from the heel to the point and back again.
- Relax all the muscles in the bowing arm, and the muscles in the back (between the shoulder blades and on either side of the spine).
- Change the bow hand from heel position to point position gradually and smoothly, the bow moving evenly above the string.
- Breathe normally.

Do the exercise on each string. It feels considerably different on each level.

Bowing parallel to the bridge

About the angle of the violin to the body

Long arms: Point the scroll more to the left. Place the violin lower on the shoulder (i.e., the chin more to the left of the tailpiece).

Short arms: Point the scroll more in front. Place the violin higher on the shoulder (i.e., the chin closer to, or above, the tailpiece).

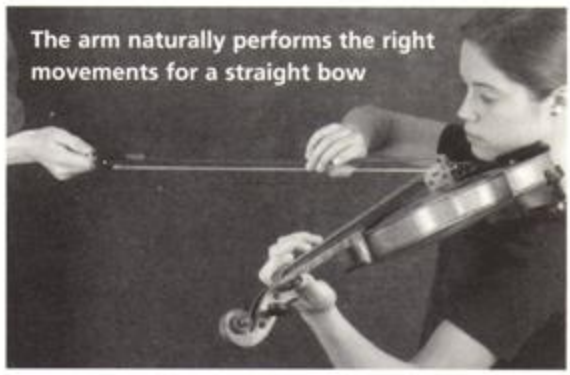
The more the scroll points to the left (and/or, the lower the violin on the shoulder), the easier it is for the fingers to reach the strings; but the further the right arm has to extend to keep the bow straight at the point.[1]

The more the scroll points to the front (and/or, the higher the violin on the shoulder), the easier it is to keep the bow straight at the point, but the more the left forearm has to twist for the fingers to reach the strings.

At the point, the bowing arm should be neither straight at the elbow nor too bent. By adjusting the direction of the scroll and the height of the violin on the shoulder, every player can find a comfortable playing position. Some teachers recommend that players with very short arms avoid the last two inches of the bow, and/or hold the bow slightly higher up the stick.

36 **Fig. 23**

Moving the hand along the bow


The arm naturally performs the right movements for a straight bow

In this exercise the hand moves along the bow while it rests on the string without moving. Because the bow is parallel with the bridge the arm has no choice but to make exactly the correct movements. This is one of the best exercises because it gives you the *feeling* of drawing a straight bow.

The exercise requires an assistant[2] who rests the bow on the string at the point, holding it exactly parallel to the bridge (Fig. 23). Use only the screw of the bow to hold it, to leave as much room as possible for the player's hand.

- Position the violin so that at the end of the down-bow the arm is neither straight at the elbow nor too bent.
- The player lightly runs his or her hand up and down the bow, which remains stationary. Begin slowly but later make the movement faster.
- Keep the hand in bow-hold shape wherever it is on the bow, letting it change naturally from its shape when playing at the heel, to its shape when playing at the point.[3]
- Begin with a flat bow arm, i.e., keep the elbow approximately level with the stick in all parts of the bow. Then add any other movements, if (for example) you normally raise the elbow in the lower half.
- The assistant should hold the bow on each string, and at different distances from the bridge, always keeping the bow parallel to the bridge.

Fig. 24 shows the different movements of the arm in each part of the bow.

[1] Imagine that the violin and the bow were joined together as one solid piece of wood. The point of the bow is joined to the violin between the bridge and the fingerboard, and the bow is fixed parallel to the bridge. With your chin staying in one place on the chin rest, move the scroll of the violin to the left: the frog of the bow moves further away from you. Move the scroll to the right: the frog of the bow moves back, closer to you. Now keep the scroll in one position and move the chin-rest end of the violin to the right, so that your chin is very much to the left of the tailpiece. The frog of the bow again moves forward. Keeping the scroll in the same place, move the violin to the left, so that your chin is above the tailpiece: the frog of the bow moves back, closer to you.

[2] If help is not available, it is possible to rest the frog of the bow on the music stand

[3] See *Hand balance*, page 5

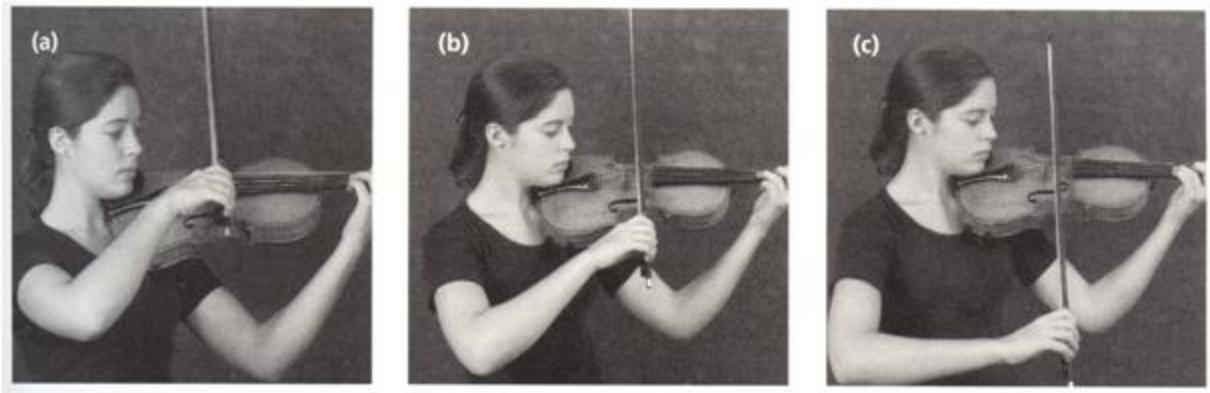
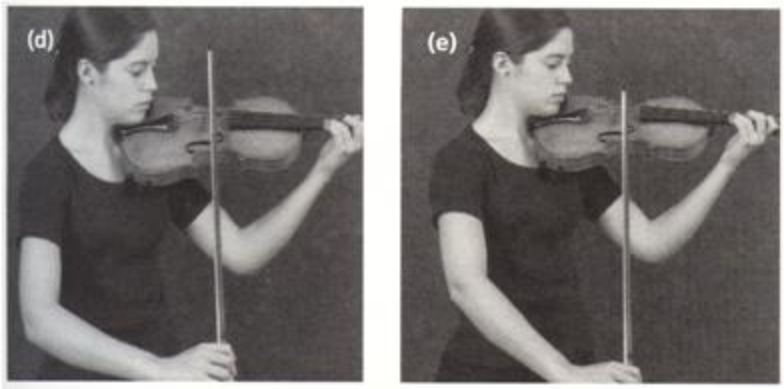


Fig. 24

Heel: only the upper arm moves, with little or no forearm

Point-of-balance: some upper-arm and some forearm movement

Square: only forearm, the best place to play short, fast sixteenth-notes (semiquavers)



Between the square and the point: mainly forearm, with some forwards (down-bow) and backwards (up-bow) movement of the upper arm

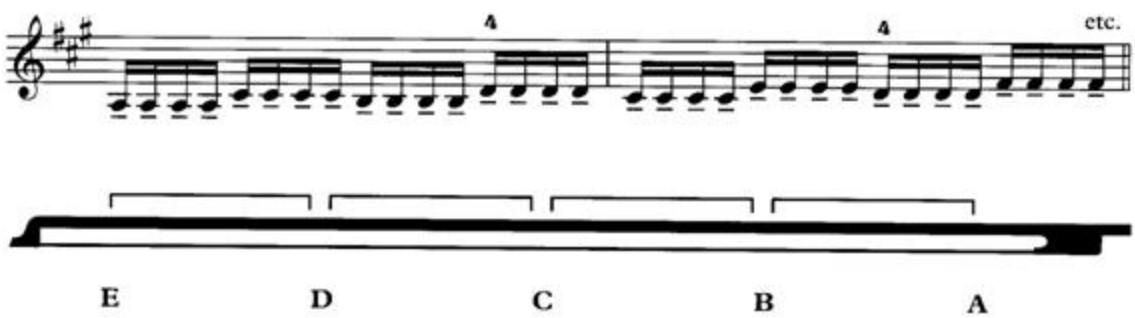
Point: some forearm and more forwards and backwards movements of the upper arm

Dividing the bow into four parts

37

The idea is to play quarter-length strokes in each part of the bow, and then half bows, three-quarter bows and whole bows, keeping the bow parallel with the bridge throughout.

- Play in front of a mirror, holding the instrument parallel to the mirror.
- Play four smooth strokes to a note, using, for example, a two-octave scale in broken thirds. Begin quickly, and play more slowly as you use more bow.



1 First play medium-speed strokes, bowing from **A** to **B**, from **B** to **C**, from **C** to **D**, and from **D** to **E**.

2 Then play slightly slower strokes, bowing from **A** to **C**, from **B** to **D**, and from **C** to **E**.

3 Bow from **A** to **D**, and from **B** to **E**.

4 Whole bows.

38

Dividing the bow into two parts

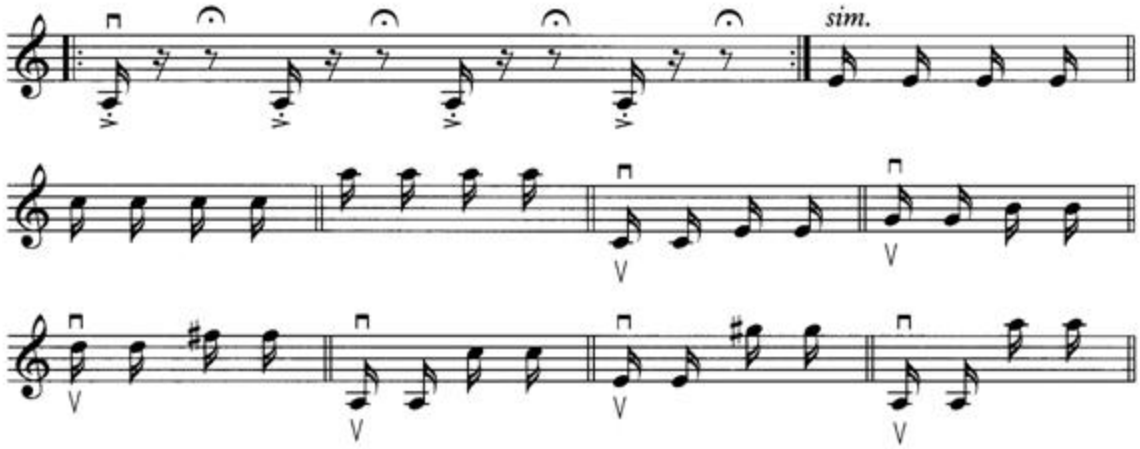
First practise the stroke from the *heel to the square,*[1] and then from the *square to the point.* The aim of the exercise is to use the arm, hand and fingers in such a way that the bow stays parallel to the bridge however fast each stroke.

Repeat each bar several times, playing in the following three areas of the bow:

1 From the heel to the square.

2 From the square to the point.

3 Whole bows, from the heel to the point.



- Play each stroke as fast as possible, so that you cannot correct the angle of the bow during the stroke. This is one of the few occasions when tone quality is not important – just move the bow along the string as a physical action. If the bow is parallel to the bridge the end of the stroke will be at exactly the same distance from the bridge as the beginning of the stroke.
- Before playing each stroke, check in the mirror to see that the bow is exactly parallel with the bridge. During the stroke, the bow should move as straight as an arrow. Keep the elbow approximately level with the bow.
- At the end of each stroke, pause with the bow on the string and see whether it is still straight with the bridge. If not, decide what caused it to deviate: the movement of the upper arm? of the forearm? fingers changing the angle of the bow? wrist tight? violin position?

  Then straighten the bow, play the next stroke, see whether the bow is parallel to the bridge, and so on.

[1] 'Square' is the name Galamian used for the place in the bow where there is a right angle between the bow and the forearm, the forearm and the upper arm, and between an imaginary line drawn from the shoulder to the bow. Longer-armed players have the square higher up the bow, above the middle. Shorter-armed players have it lower down in the bow, directly at the middle. The square is the only place where the forearm can move alone, without the upper arm moving as well. This area is really only a couple of centimetres long. Add a few centimetres above and below this area to play longer strokes, so that the upper arm is still only used to the smallest extent. This is often the best place to play short, fast sixteenth-notes (semiquavers), without having to use the much larger apparatus of the upper arm.

39

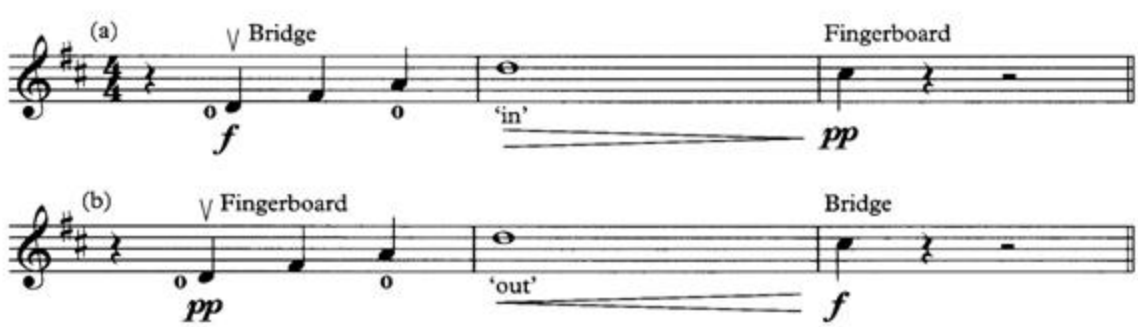
Bowing at an angle

See also *Changing soundpoint,* Exercise 67; *Speed exercise moving across soundpoints,* Exercise 72.

To draw a straight bow, the bow must be exactly parallel to the bridge. When the bow is not parallel it slides across the strings as it moves down or up. The greater the angle to the bridge, the faster it slides.[2]

Fig. 25a shows the bow angled in.[3] During the down-bow, the bow moves towards the fingerboard. During the up-bow, it moves towards the bridge. Fig. 25b shows the bow angled out. During the down-bow, the bow moves towards the bridge. During the up-bow, it moves towards the fingerboard.

You can angle the bow deliberately to move further from, or closer to, the bridge. In (a), angling the bow in makes the hair automatically move towards the fingerboard. In (b), angling the bow out makes the hair automatically move towards the bridge.[4]

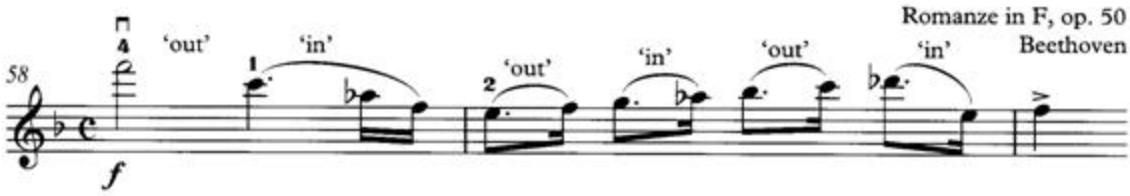


[2] Although the norm should be a straight bow, different tone colours can be found by deliberately drawing the bow slightly crookedly to the bridge, while at the same time forcing the bow not to travel towards or away from the bridge.

[3] 'In' and 'out' refer to the position of the frog of the bow, not the point. When the bow is angled 'in' the frog is brought closer in to the body.

[4] Of course you can also move to the fingerboard while keeping the bow straight, and it is possible to diminuendo with the bow staying quite near the bridge.

You can also angle the bow to help stay near the bridge in *f* passages. Angle it only very slightly:



The bow angled in

The bow angled out

Fig. 25

Practising angled bowing increases your ability to make instantaneous adjustments while playing, improving bowing technique in general. The bow ends up straighter and is easier to correct the moment it goes off course:

Bow angled in

1 Place the bow on the string at the heel, near the bridge. Angle the bow in. Do not angle the bow too much or it will slide across the strings too quickly.

2 Play a whole bow to the point, medium speed. As the bow moves it will drift closer and closer to the fingerboard. *Do not try* to make this happen – let the bow drift automatically because of its angle. Keep the sound even and smooth. Begin with a lot of pressure, and decrease the pressure as the bow drifts to the fingerboard.

3 Having arrived at the point leave the angle the same – i.e., the heel is further back than the point.

4 Play a whole bow back to the heel. Let the bow drift away from the fingerboard back to the starting place. Increase the pressure during the stroke.

Bow angled out

1 Place the bow on the string at the heel, near the fingerboard. Angle the bow out.

2 Play a whole bow to the point. As the bow moves it will drift closer and closer to the bridge. Begin with hardly any pressure, and increase the pressure as the bow drifts to the bridge.

3 Having arrived at the point leave the angle the same – i.e., the heel is further forward than the point.

4 Play a whole bow back to the heel. Let the bow drift away from the bridge back to the starting place. Decrease the pressure during the stroke.

Using half bows instead of whole bows, repeat both angles in the middle of the bow, and in the lower and upper halves. Always playing with a pure tone, increase or decrease the angle to drift across the strings at different speeds.

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Fast whole bows in the air

In a well-developed bow arm the whole-bow stroke feels like one single action, not a series of smaller movements joined together. In this exercise the bow is moved in the air, to help develop the feeling of one movement more easily.

Use a mirror to check that the bow remains parallel to the bridge.

1 Play a very small stroke at the heel. Stop on the string and wait.

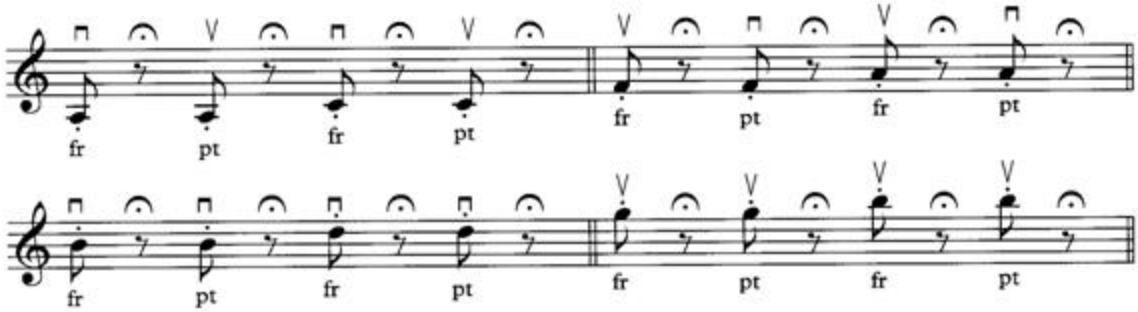
2 Make a sudden, fast movement in the air to the other end of the bow, and place the bow on the string. Stop and wait.

3 Play a very small stroke at the point and leave the bow on the string. Wait.

4 Make a sudden, fast movement in the air to the heel, and place the bow on the string. Wait.

Move the bow through the air as fast as possible, as straight as an arrow, without wobbling in the air or losing its parallel line with the bridge.

During the movement the hand must change from heel position (fingers slightly more vertical, fourth finger curved), to point position (fingers slightly more tilted to the left, fourth finger straighter). See Figs. 9a and 9b, page 6.



5 Then play without stopping between the stroke and the movement.

Play the short stroke at the heel, and in the same movement move above the string at great speed to the point. Pause. Play and move to the heel. Pause, and so on.

41

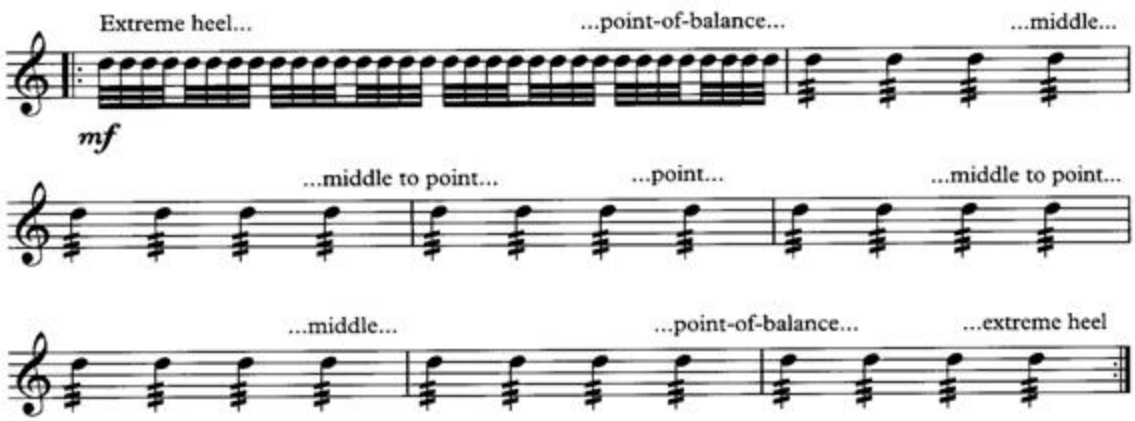
Fast, short strokes moving up the bow

A simple test of whether the bow stroke is straight or not is to play fast thirty-second-notes (demisemiquavers) with separate bows. The soundpoint[1] changes on each stroke if the bow is not parallel to the bridge, because you cannot correct the bow during a stroke. Watch the point of the bow to see that its movement is straight up and down with no sideways movements.

Using very little bow, play fast thirty-second-notes on one note at the heel, ♩ = 66.

- Without stopping, gradually move the bow up to the point, and down again to the heel.
- Do the same with strokes about ten centimetres long (♩ = 60) and then about twenty centimetres (♩ = 50).

Keep the bow in good contact with the string, with a clean sound. Watch the bow in a mirror, and make sure that it stays exactly parallel to the bridge. Use the fingers as well as the hand to control the direction of the bow (see *Bow angle*, Exercise 15). Play on each string.



[1] See *Soundpoints*, page 41

Pivoting and string crossing

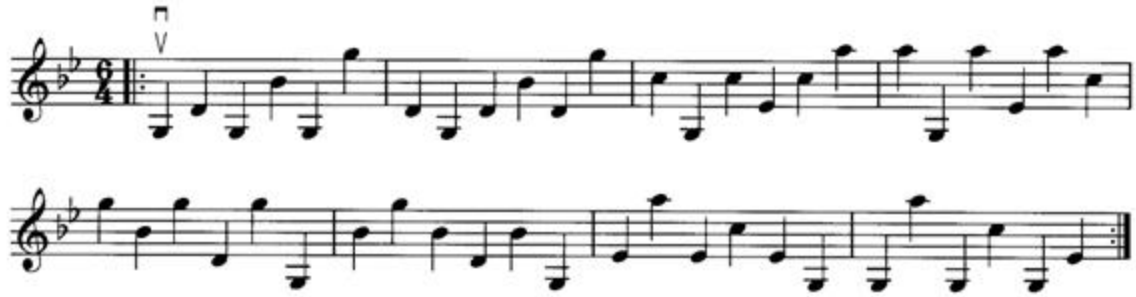
Seven levels of the bow

Level 1 G string
Level 2 G–D double stop
Level 3 D string
Level 4 D–A double stop
Level 5 A string
Level 6 A–E double stop
Level 7 E string

Exercise 1 – Single strings

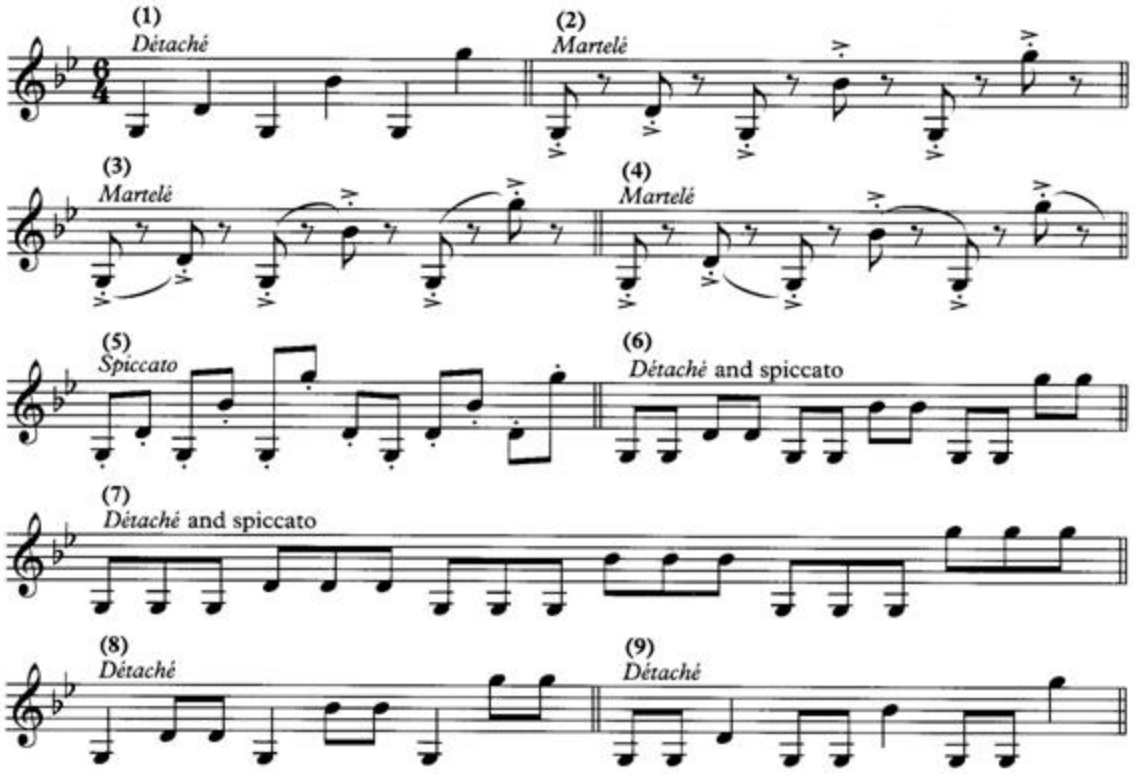
Play the theme using the nine bowing variations. Play at slow, medium and fast speeds.

Theme



Nine bowing variations

Start each variation beginning up-bow as well as down-bow.



Strokes

***Martelé*:** Begin each stroke with a firm bite. Leave the bow on the string throughout. Notice the different parts of the bow hair that catch the different strings.[1]

1 Quarter-length strokes at the heel, middle and point.

2 Half-length strokes in the lower half, middle, and upper half.

[1] For example, play a down-bow on the G string, and stop the bow on the string. Notice the exact part of the hair that touches the G string where the bow has stopped. Leaving the bow on the string, pivot over to the E string and stop the bow on the string. The place on the hair that now contacts the E string is a few centimetres lower down the hair than the hair that finished on the G string.

Détaché*:** Play a slow, smooth *détaché*, ***f, sustaining the sound fully. Connect the strokes well, joining one stroke to another solidly.

1 Quarter-length strokes at the heel, middle and point.

2 Half-length strokes in the lower half, middle, and upper half.

Spiccato: Use three different spiccato strokes:

1 Just below the middle: fast, light, short, low strokes.

2 At the point-of-balance: medium strokes.

3 Near the heel: slow, heavy, long, high strokes.

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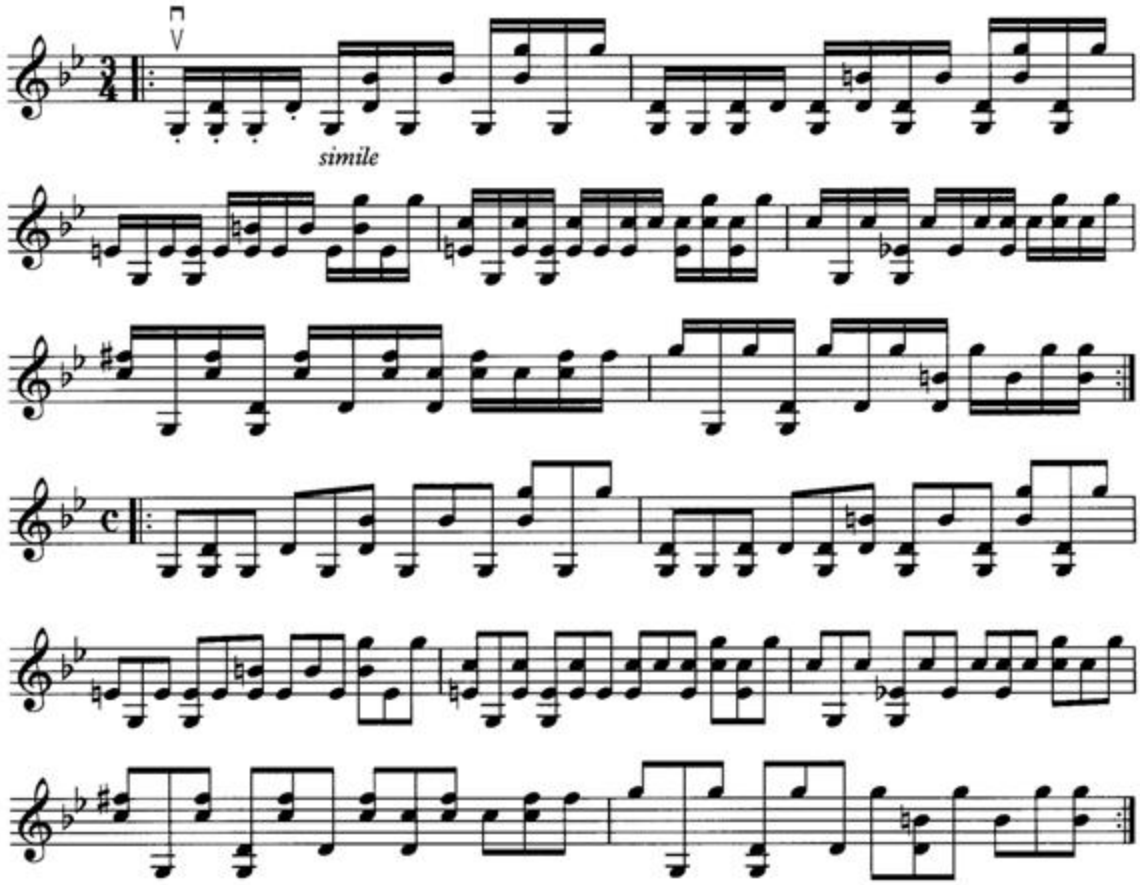
Exercise 2 – All levels

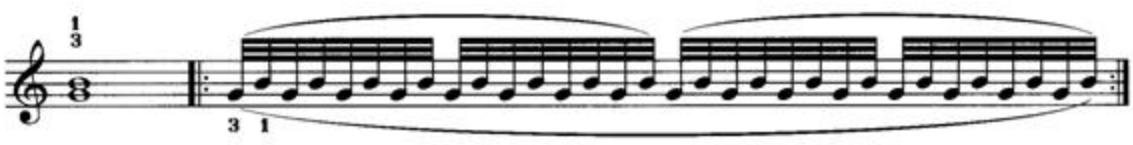
This continuous study includes every crossing from any level to any other. Play the same strokes as in Exercise 42. Play at slow, medium and fast speeds.



Practice method: balancing double stops

The perfect balance of the bow playing two strings at once (i.e., the best weight distribution), is rarely even. Normally one string will need slightly more weight than the other, depending on the relative thickness of each string, and the lengths of each string. (A perfect fifth creates the same string lengths, an octave creates different string lengths.)

A useful practice method to balance the bow perfectly on each string is to tremolo the bow across the strings:



Find how to play the tremolo very fast and perfectly evenly, each note sounding clearly. Afterwards the double stop will feel more evenly balanced.

Practise double-stop scales by playing each interval with a tremolo before playing it as a normal double stop.

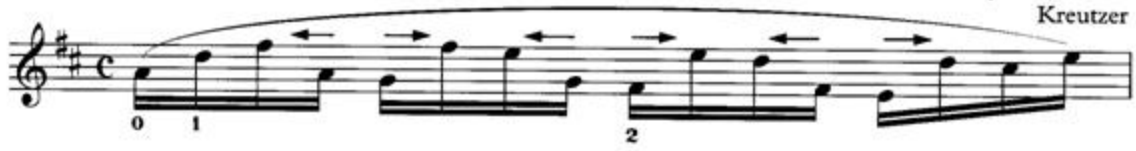
Pivoting

See also Exercises 124–5 for *Smooth pivoting* in chord playing.

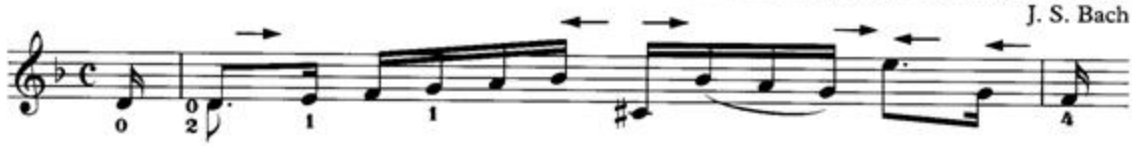
Pivoting, the movement around the string that takes the bow from one string to another, is one of the most important elements of bowing. The bow moves around the string while moving along as an up- or down-bow.

In the examples, ← means pivot to the next lower string, → means pivot to the next highest string. In both cases pivot during the note before the string crossing.

42 Etudes ou caprices, no. 29
Kreutzer



'Allemanda' from Partita in D minor, BWV 1004
J. S. Bach



Pivoting is an example of technical timing that is earlier than the musical timing.[1] The pivoting movement has to be timed so that the first note on the new string sounds as if there had been no string crossing.

You can see clearly how smooth or sudden the pivot is by standing with the violin at right angles to a mirror.

Exercise 1

Play whole bows, pivoting several times during each stroke without touching an adjacent string.

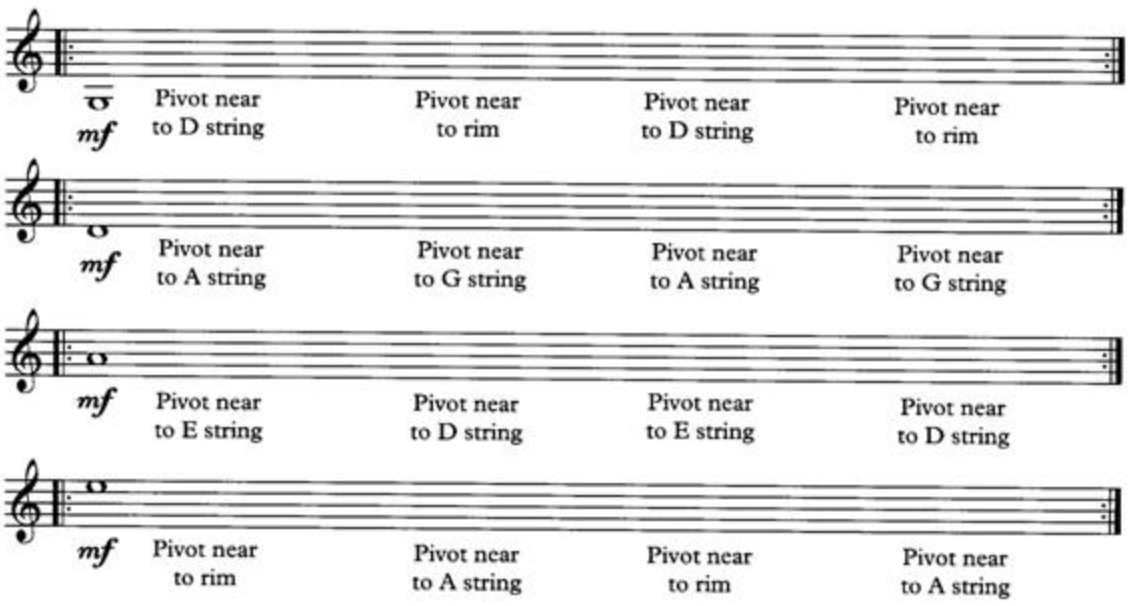
- Pivot while the bow is moving along the string. Pivot two, four and eight times in each stroke, making it sound like normal playing on one string without pivoting. The example below shows four pivots on each string.

  On the **G string**, pivot to the left until the hair almost touches the rim of the violin; pivot to the right until almost touching the D string.

  On the **E string**, pivot to the right until the hair almost touches the rim of the violin; pivot to the left until almost touching the A string.

  On the **D and A strings**, pivot between the adjacent strings as far as possible without touching them.

- In the upper half, moving the hand from the wrist reduces the amount of arm movement needed.



[1] Musical timing is *when* you want the note to sound; technical timing is sometimes at the same moment as the note sounding, and sometimes *before* the sound. Other obvious examples of early technical timing are finger preparation, biting the string before strokes such as *martelé*, and shifting. See Ivan Galamian: *Principles Of Violin Playing And Teaching* (New Jersey, 1962).

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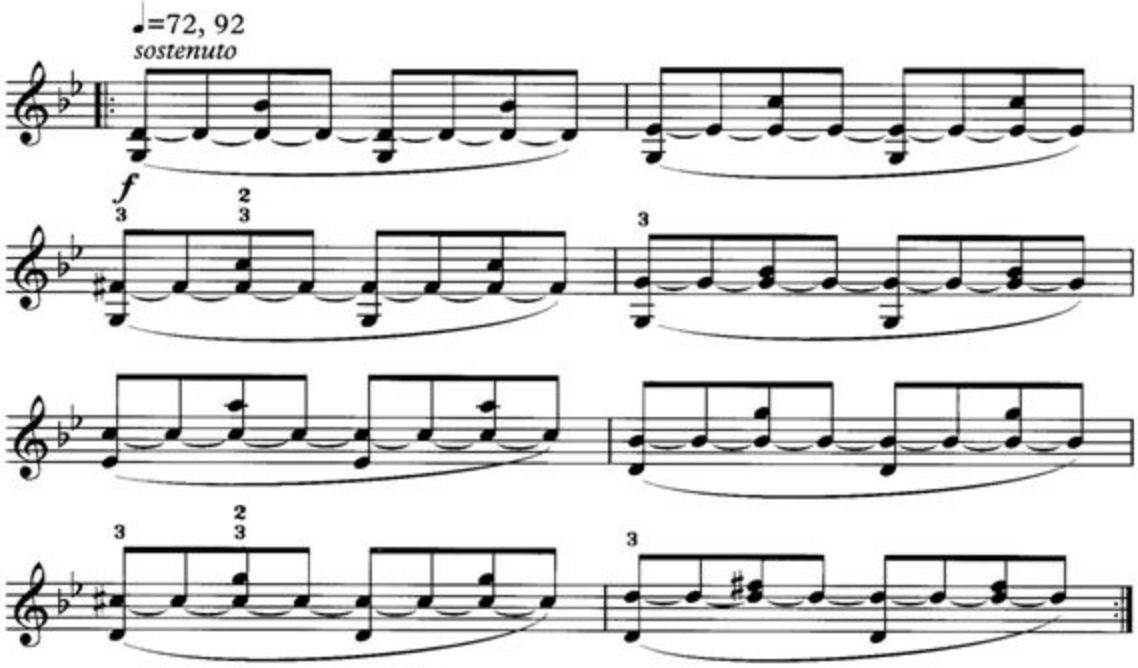
Exercise 2

This passage should sound as though one player is sustaining smooth and even whole-notes (semibreves), while another is playing short, smooth eighth-notes (quavers) on each beat.

1 Use half bows in the lower half, middle, and upper half.

2 Use whole bows.



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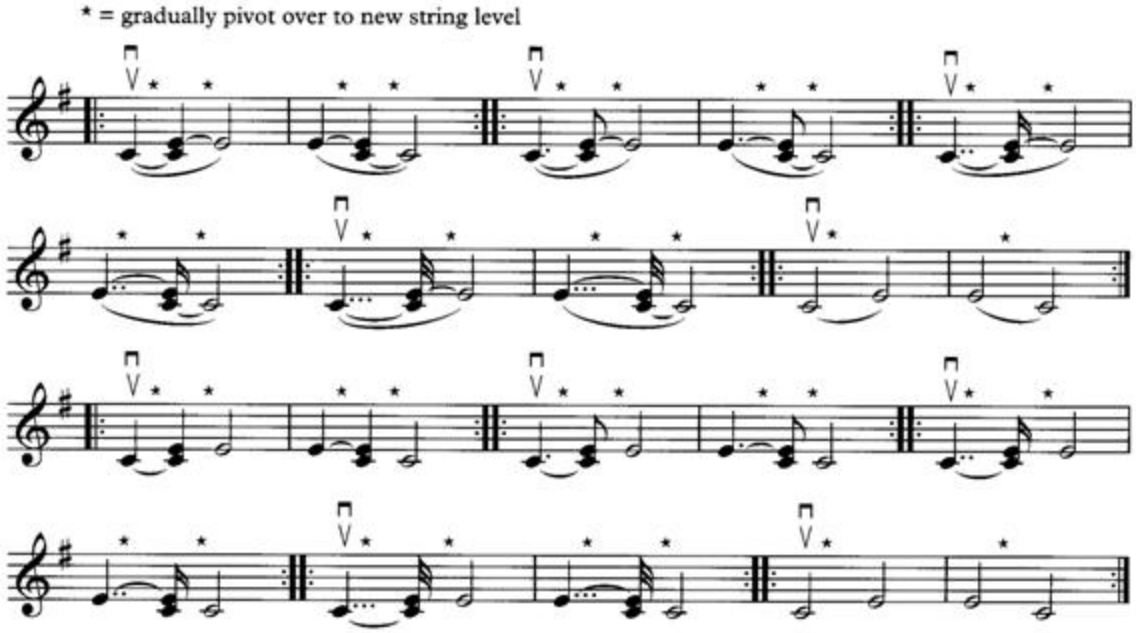
Exercise 3

When legato string crossings are not smooth enough, it is usually because the string crossing is too late. The bow should pivot across to the new string *while* playing the note before the string crossing, not *after* playing it.

This exercise uses double stops to force the string crossing to be too early. The double stop is gradually shortened, making the pivot happen later and later, until finally reaching a normal and very smooth string crossing.

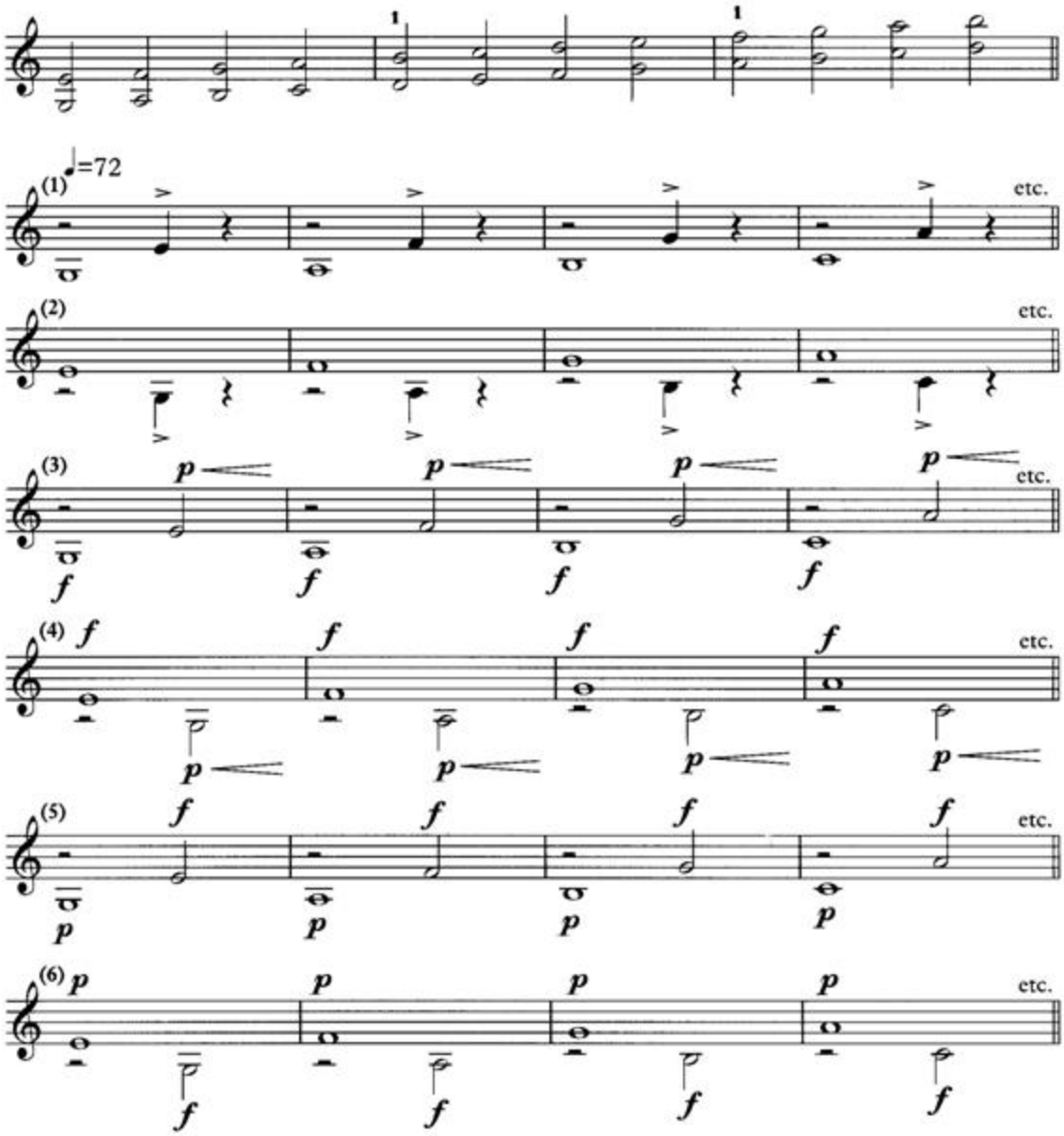
- Play half-length strokes in the lower half, middle, and upper half.
- Although pivoting later and later, continue to make the movement rounded and smooth by pivoting *while* playing the first note, gradually bringing the hair nearer and nearer to the new string.



Repeat on the D–A and A–E strings.

Exercise 4

- In (1) and (2), keep the whole-note (semibreve) sustained evenly while pivoting to and from the quarter-note (crotchet). Accent the quarter-note without disturbing the whole-note.
- In (3) and (4), play the whole-note ***f***. Begin the half-note (minim) ***p*** and make a *crescendo*. This forces the pivot to be slow and measured.
- In (5) and (6), play the whole-note ***p*** and the half-note ***f***. Do not let the pivot, or the ***f*** half-note, disturb the whole-note.
- Continue the examples up the scale.



Also play these patterns on double stops in high positions for the different feel of the strings.

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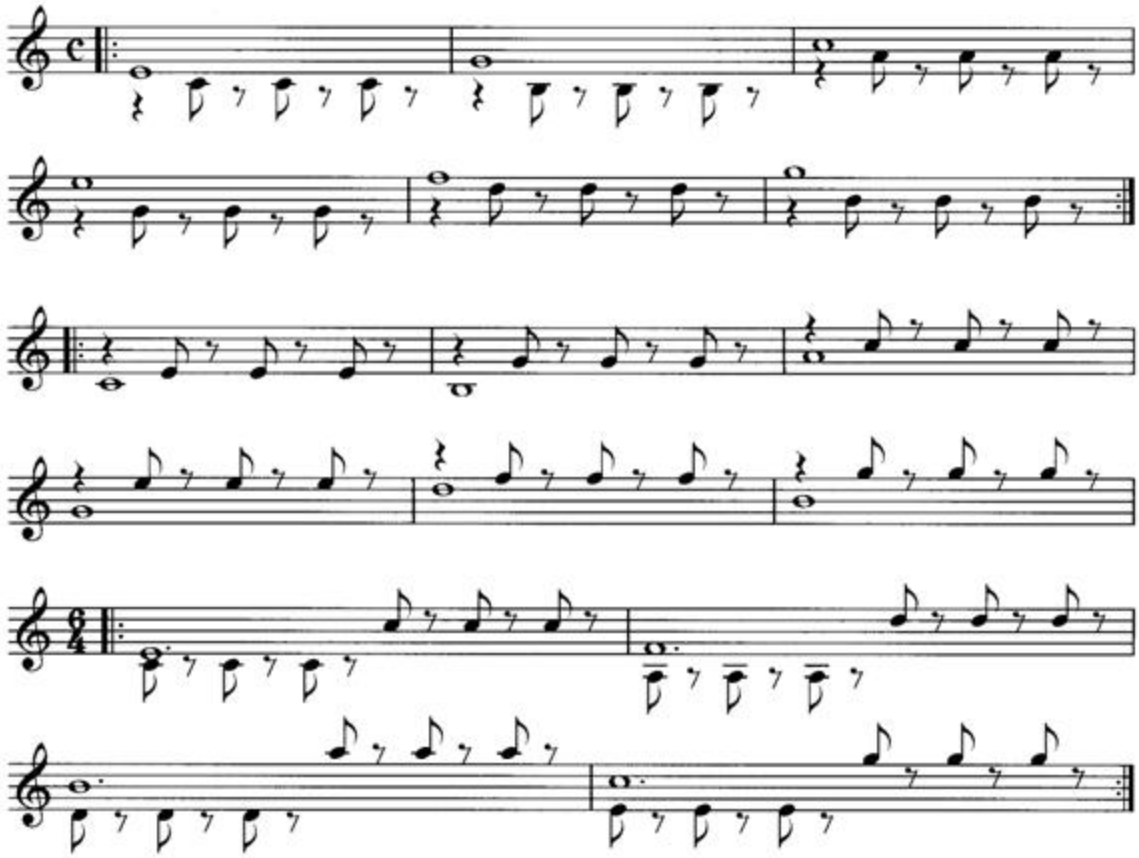
Exercise 5

Sustain the whole-notes (semibreves) evenly. Keep the bow close enough to the two strings so that the pivoting movement does not have to be too large.

1 Use half bows in the lower half, middle, and upper half.

2 Use whole bows.



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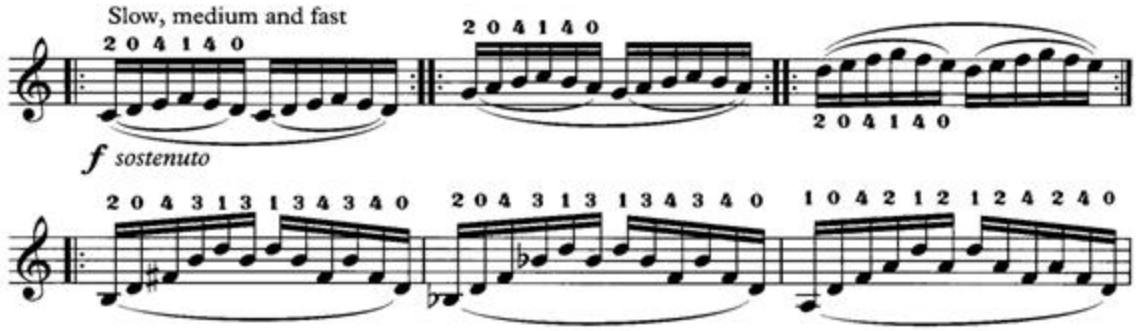
Exercise 6

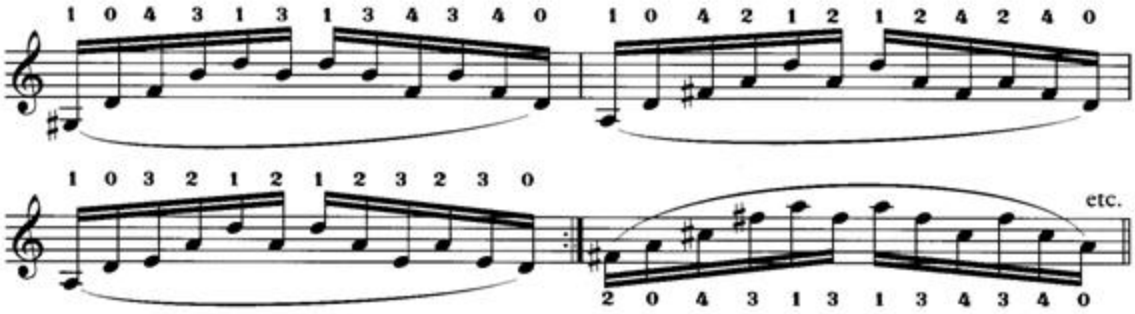
Keep the bow deep in the string, with the hair close to both strings. Make each bar sound the same as if playing with a normal fingering, either on one string or across the strings.

1 Use half bows in the lower half, middle, and upper half.

2 Use whole bows.

Hold fingers down on the string for as long as possible.

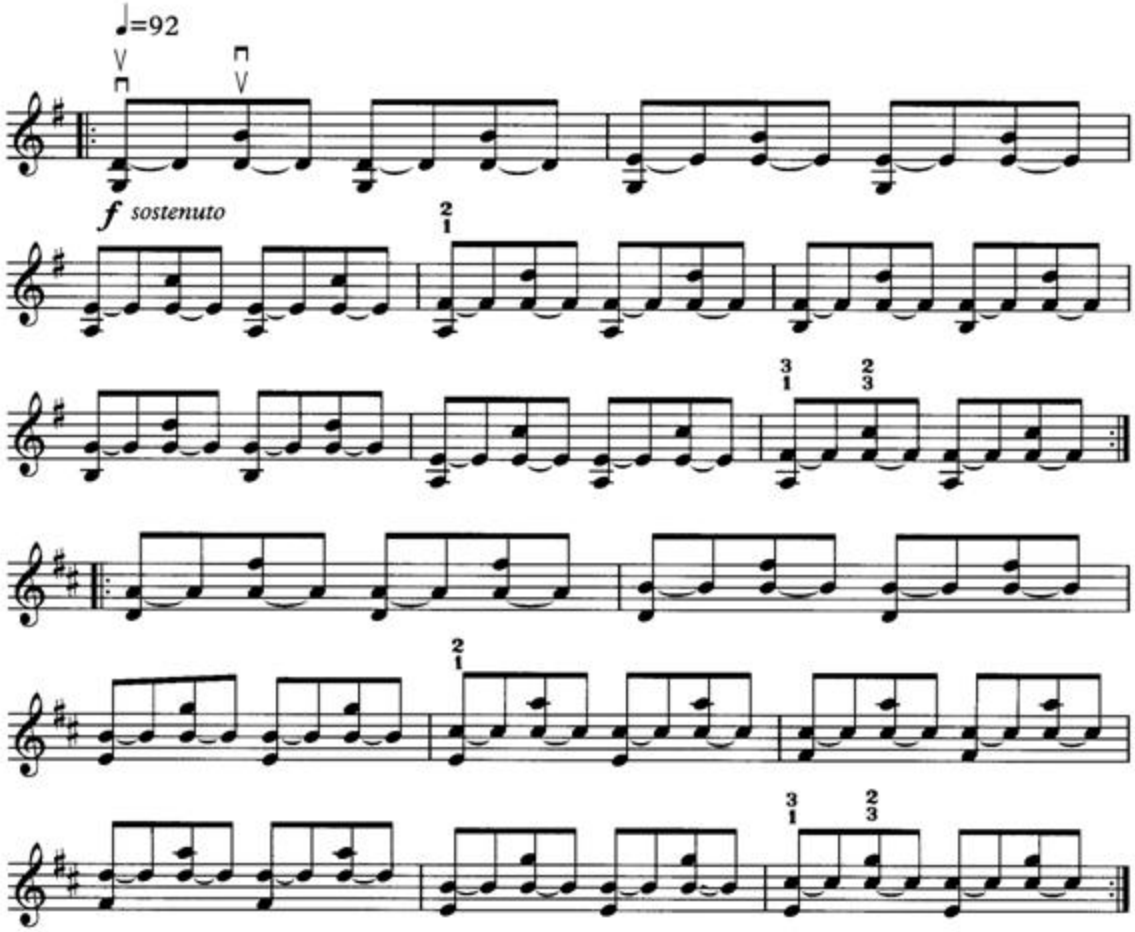




Curves on one string

There is no bow stroke on the violin that moves in an exactly straight line. Even simple down- and up-bows on one string move in curves. The curved bow stroke is the same as a pivoting movement. These exercises make the curves much larger than normal.

Exercise 1



- Sustain the tied notes solidly, so that they sound like one continuous note.
- During the tied notes, pivot towards the next double stop smoothly and evenly. Pivot as far as possible without actually touching the next double stop, so that to play it (on the new bow) you only have to pivot a fraction further.
- Begin with quarter-length bows near the heel; in the middle of the bow; and at the point. Then use half-length bows in the lower half, middle, and upper half.

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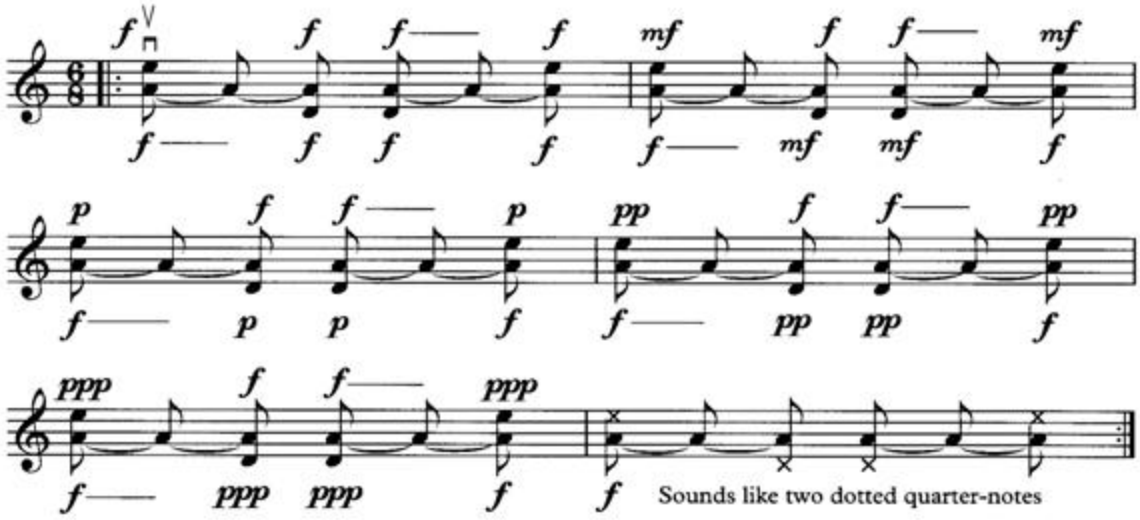
Exercise 2

1 First play the notes equally. Notice the size of the bow movement from the first pair of strings to the second pair.

2 Repeating the bar continuously, very gradually reduce the distance of the bow movement from the first double stop to the second, so that you play the outer strings more and more quietly.

3 Continue to reduce the movement until the bow only barely touches the outer strings, and then does not touch them at all. The x-notes in the last bar of the example indicate the bow moving towards the outer strings without touching them.



- Begin with quarter-length bows near the heel; in the middle of the bow; and at the point. Then use half-length bows in the lower half, middle, and upper half.
- Repeat on the G–D–A strings.
- Also play on the G string, using the rim of the violin as an extra 'string'. Play a 'double stop' made up of the rim and the G string, and play normally on the G and D strings for the other side of the movement.
- Similarly on the E string, use the rim as an extra string. Play a 'double stop' made up of the rim and the E string, and play normally on the E and A strings for the other side of the movement.

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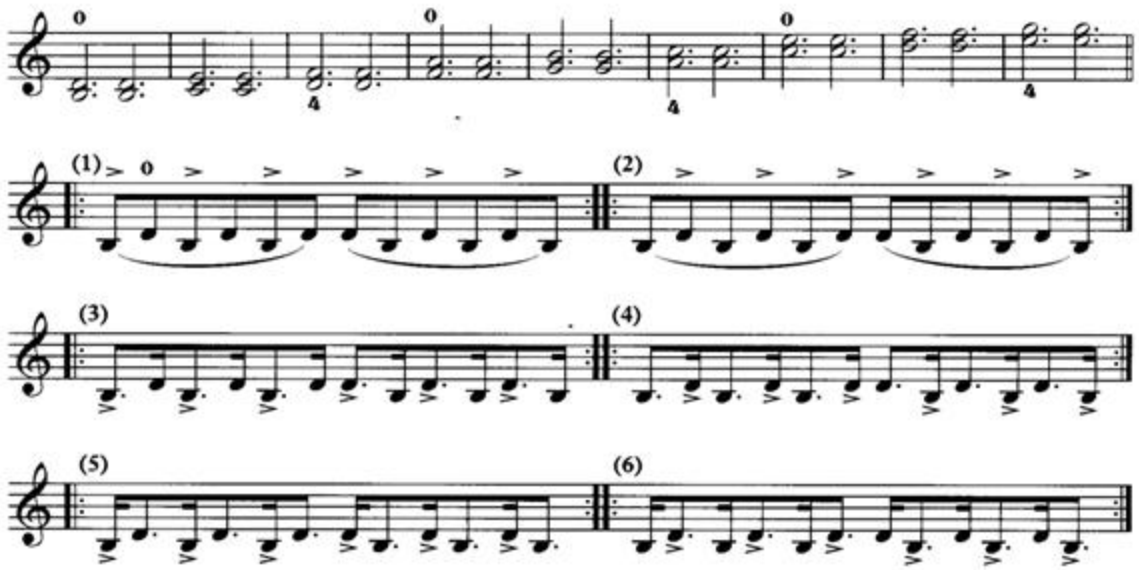
Accented string crossing

Play through the double-stop sequence using the string crossing variations that follow.

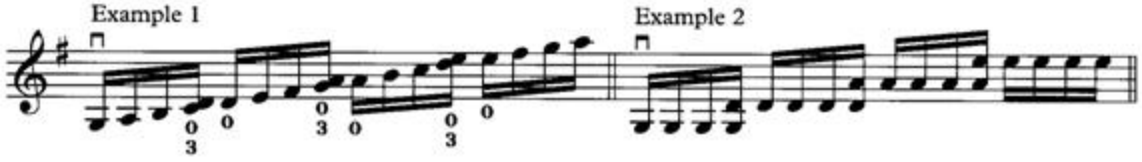
- Patterns 1–2: Play half bows in the lower half, middle, and upper half. Then play whole bows.
- Patterns 3–6: Play at the heel, middle and point with separate bows. Also slur in pairs.
- Begin each pattern up-bow as well as down-bow.



Scale string crossing

An effective way to make string crossings smooth and rounded is to play them as a double stop (Example 1). Bumpy string crossings come from changing from one string to another too late; playing the crossing as a double stop remedies this by doing the opposite – changing string level too early. All smooth string-crossing passages can be practised like this.

Another effective practice technique is to leave out the left hand, and just play the bowing pattern on open strings. Example 2 shows Example 1 played without the left hand.



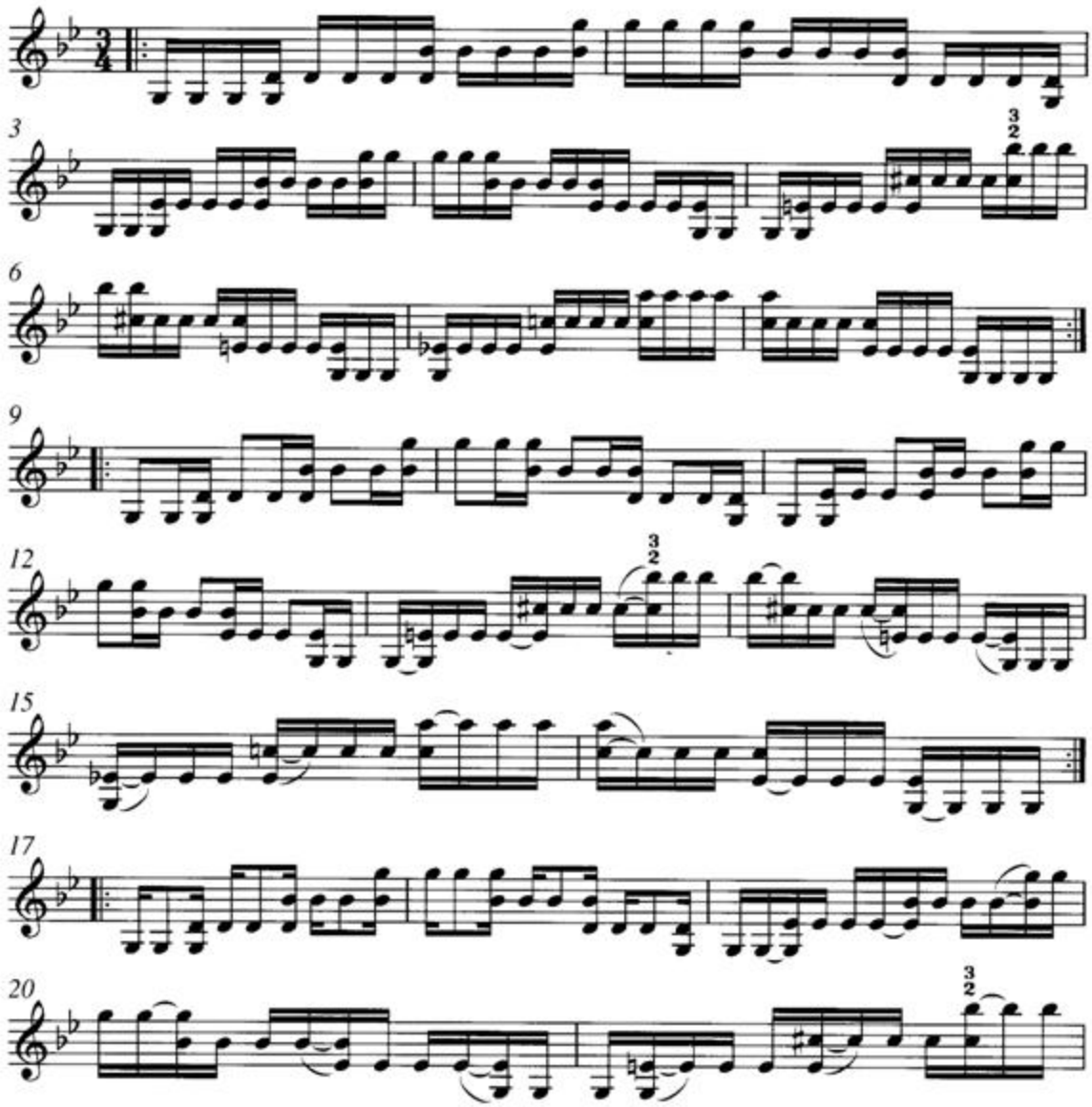
Every scale or run produces its own pattern when reduced to open strings. The study below covers every possibility, including slurs across two, three and four notes.

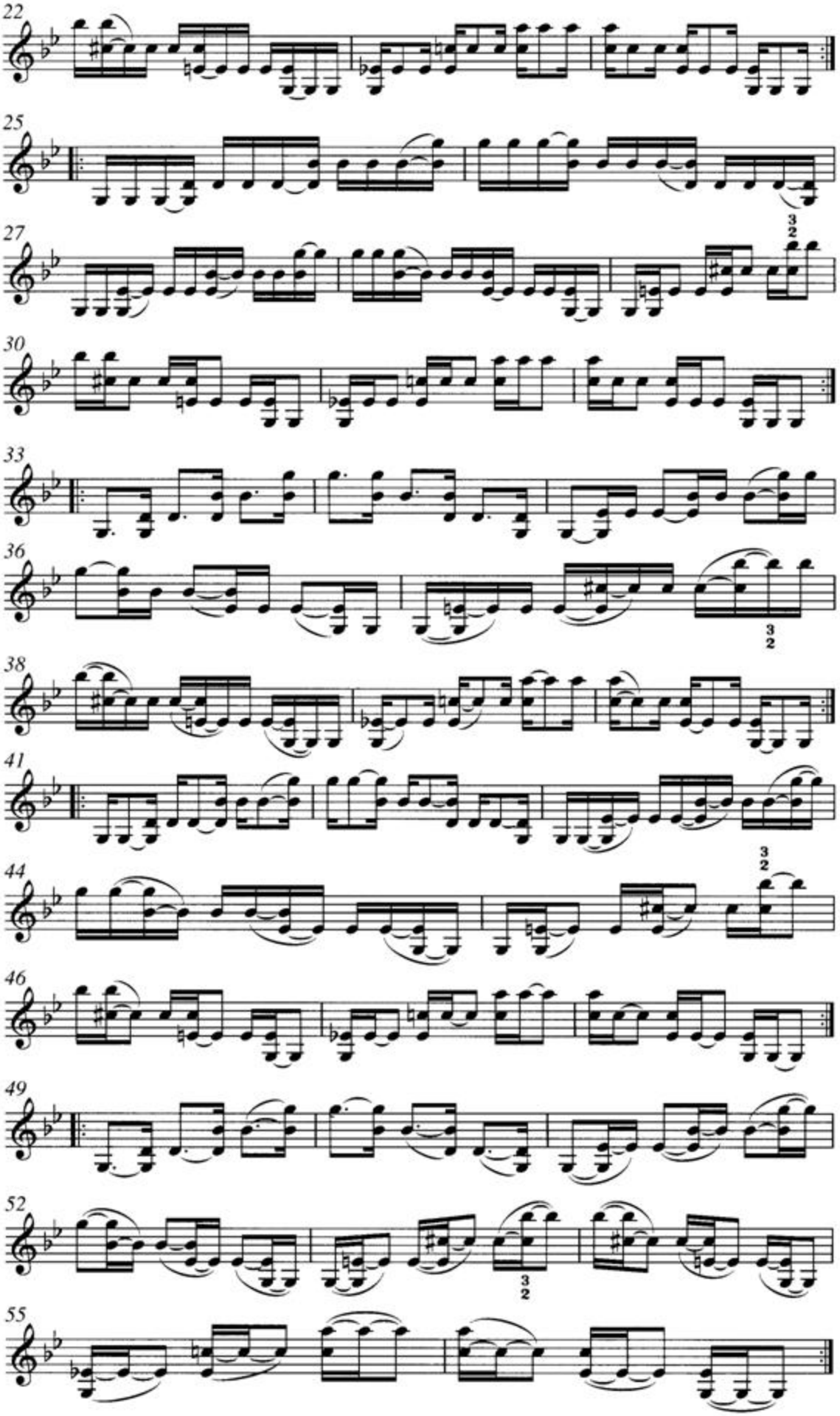
- Begin with quarter-length bows near the heel; in the middle of the bow; and at the point. Then use half-length bows in the lower half, middle, and upper half.

  In each case first play the whole study beginning down-bow, and then beginning up-bow.

- Tempo: slow, medium and fast.

Keep the bow deep in the string, sustaining each stroke firmly and joining it to the next without any break. Play all the tied notes solidly and evenly.

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Tone Production

part 6

General contact exercises

About the tilt and the angle of the violin to the floor

The flatter the violin is held, the more comfortable it is to play on the E string. There is a feeling of the bow resting on the E string, which supports it. The more tilted the violin is, the more there is a feeling of having to hold the bow *against* the E string. This is a common cause of poor tone production on the E string.

However, the flatter the violin is held, the more uncomfortable it is to play on the G string. The right upper arm has to be held unnaturally high, and the left upper arm may have to be pulled in too far to the right for the fourth finger to reach the G string easily enough. This is a common cause of tension.

Therefore, the best possible tilt of the violin is one where the E string gives sufficient support to the bow, while at the same time the right arm and fourth finger can easily reach the G string. In certain passages it is possible to tilt the violin less when playing on the E string, and more when playing on the G string.

When the body of the violin is held parallel to the floor, the neck of the violin slopes down away from the bridge. Therefore, for the strings to be horizontal the scroll of the violin must be slightly raised. It is often better, particularly in high positions, to play with the strings sloping down *towards* the bridge, which helps the bow keep a good point of contact not too far from the bridge. This means that the scroll has to be raised considerably. Many violinists (and particularly violists, because of the viola's extra length and heaviness) play with the scroll of the instrument too low, which means that the bow has to sit on a sharp downward slope.

Bow tensions

A major factor in using the bow is the springiness of the wood and hair. A violinist does not so much play with the bow itself, as with this force *in* the bow. The feeling of playing in the lower half is different from playing in the upper half, because the amount of 'give' in the hair and the wood changes.

At the heel, the hair gives and the wood of the bow is rigid.

At the point, the wood gives and the hair is rigid.

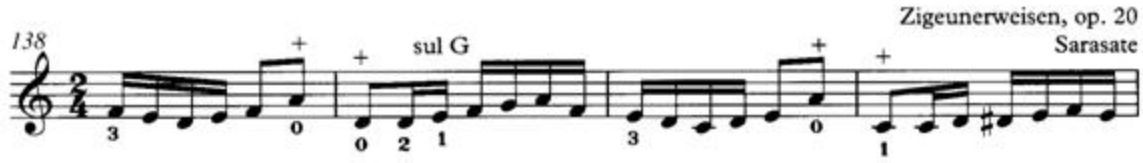
In the middle, both the hair and the wood give equally.

See Figs. 1a and 1b, page 1, which show the hair bending when the bow is pressed down at the heel, and the wood bending (in the middle of the bow) when the bow is pressed down at the point.

The passage from the Brahms Violin Concerto shown below is played with a broad *détaché* in the upper half, but the player feels the give of the wood in the middle of the bow. It is difficult to play such strokes just by feeling the contact of the hair with the string.

Violin Concerto in D, op. 77, mov. I
Brahms

The opposite is true of this passage from *Zigeunerweisen*. Here, the sixteenth-notes (semiquavers) are played deep in the string in the lower half, with a tiny amount of bow. The player plays into the hair, which *remains 'bent' throughout the four notes*. It is difficult to play the passage by feeling anything in the wood of the bow.



1 Rest the bow on the string at the heel, near to the first finger.

Press the hair into the string heavily, without moving along the string. The wood of the bow remains rigid while the hair gives completely. No amount of pressure alters the curve of the bow, while the hair 'bends' where it touches the string.

2 Do the same near the point, pressing the hair down into the string heavily.

The hair is now completely rigid, while the wood gives easily in the middle of the bow. No amount of pressure will 'bend' the hair where it touches the string.

3 Press down in the middle of the bow, where both wood and hair give equally.

4 Still without playing, press down many times, a centimetre or so apart, up and down the whole bow. Notice all the different amounts of give in the hair and wood.

5 Playing *f* on one note, play short down- and up-bows at the heel, in the middle and at the point. Notice the different feel of the wood and hair at each place in the bow.

6 Play whole bows on each string, playing heavily into the stick and the hair. Feel the same changing proportions of give in the different areas of the bow.

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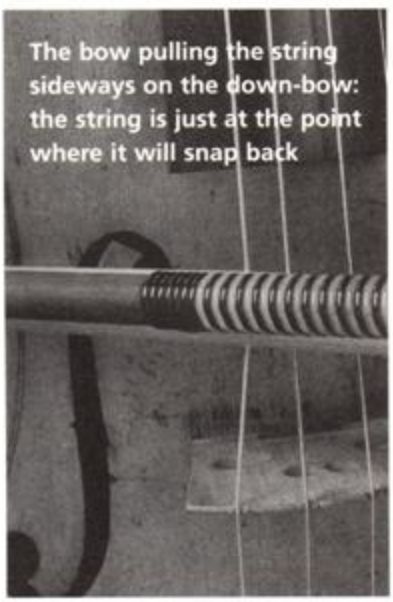
String tensions

The friction of the bow pulls and pushes the string from side to side. A magnified, slow-motion film of a bow stroke would show that during the down-bow the hair 'catches' the string and pulls it to the right. The further the bow pulls or 'bends' the string, the more the tension of the string increases until the tension is such that the string suddenly snaps back. The hair instantly catches the string again, and the 'catch, pull, snap-back, catch' repeats an infinite number of times. The up-bow pushes the string to the left until the tension is such that the string snaps back. If the bow is drawn too quickly or lightly there is a whistling sound because the hair skids over the surface of the string without catching it. Too much pressure produces a torn, scraped sound because the string cannot move freely from side to side underneath the hair.

Fig. 26


The bow pulling the string sideways on the down-bow: the string is just at the point where it will snap back

In this exercise the hair catches, pulls and releases the string once at a time, which produces a 'click' sound. This 'click' is the sound at the very beginning of strokes such as *collé*, *martelé*, or sharply accented strokes.

1 Without moving the bow along the string, grip the string with the hair by pressing heavily. At the same time begin to pull the string to the right as slowly as possible (Fig. 26).

2 Gradually increase the tension of the string by pulling it more, fraction by fraction, until the tension is such that the string suddenly snaps back with a sharp 'click'.

3 Do not release the bow when the string snaps back, so that the bow catches the string again, resulting in a continuous catch–pull–click–catch, pull–click–catch, pull–click–catch, pull–click–catch, etc. Do this at about one click per second.

4 Do the same on the up-bow by pushing the string to the left.

There should be no sound other than one single click at a time. Practise at the heel, middle and point, at different distances from the bridge, on each string.

Resonance

A very short, resonant note, such as third finger D on the A string, rings on after the end of the note. The same note played longer should ring *during* the note, as well as after the note stops. Tone production is always enhanced when the player listens as much to the background resonance as to the principal sound.

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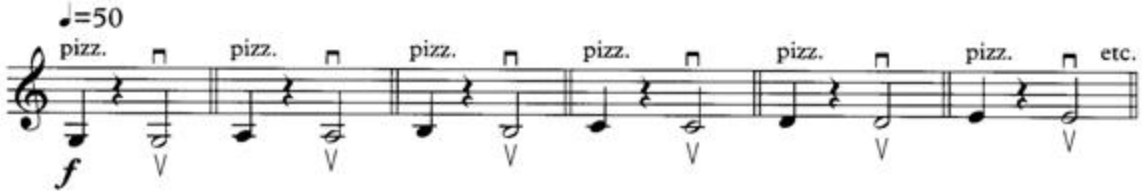
Exercise 1

This is a very simple but effective exercise. Pluck the string well to make a full, rounded note, and listen to the ring. Suzuki calls this ring the 'true sound of the string'. Then listen for the same ring in the sound while playing the note with the bow.



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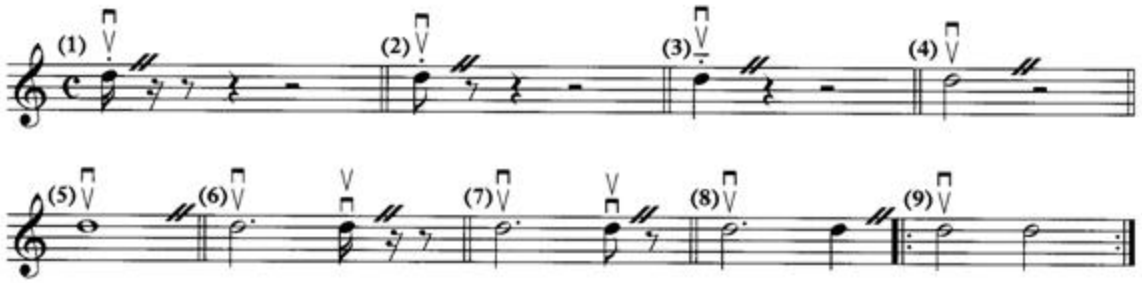
Exercise 2

1 Without vibrato, play a very short stroke at the heel (bar 1). Lift the bow immediately (indicated by '//') and listen to the sound ringing on for a few seconds afterwards. Find how to play the note so that it has the longest possible ring. Make sure that the D is perfectly in tune with the open D.

2 Play longer and longer strokes (bars 2–5). Listen to the ring *during* the note as well as after it has ended (bars 4–5).

3 Changing bow direction (bars 6–8), join the end of one stroke solidly into the beginning of the next without any break or disturbance to the note, and then lift off: listen to the background ring *during the bow change*.

4 Play continuous strokes without lifting the bow (bar 9). Listen to the three different sounds that make up the tone: the actual note you are playing, the surface noise of the hair on the string, and the continuous, background ring.



Using any fingered G, D, A or E, play the exercise on different soundpoints,[1] on each string, in various positions.

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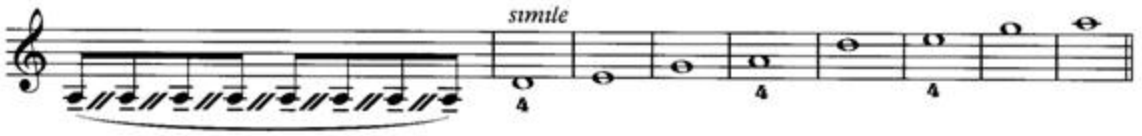
Exercise 3

1 Play several strokes in one bow, lifting the bow a little *off the string* between each stroke. Listen to the continuous background ring, both during the strokes and between the strokes.

2 Play the same figure with the bow firmly *on the string* all the time, stopping the bow on the string between each stroke. Listen to the background ring during the strokes, and while the bow has stopped on the string between the strokes.

3 Do the same on each soundpoint, even near the bridge where it is difficult to catch the string because the string is so hard, and at the fingerboard where it is difficult to catch the string because it is so soft.



[1] See *Soundpoints*, page 41

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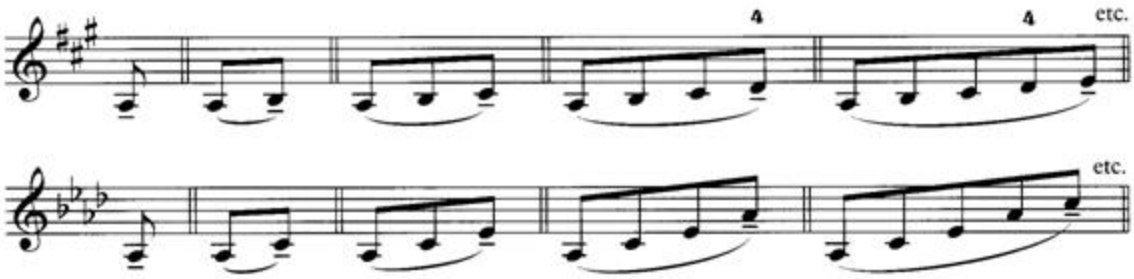
Exercise 4

This exercise is very good for improving listening, and greatly increases richness of tone. Listen to the resonance of 'dead' notes (i.e., A♭) as well as 'live' notes (i.e., G, D, A, E).[1]

1 Play the first note with emphasis, lift the bow, and listen to the ring.

2 Play the first two notes smoothly connected, with an emphasis on the second. Hear the ring during the first note, and after the second note.

3 Play the first three notes smoothly connected, with an emphasis on the third. Hear the ring during the first and second note, and after the third. Stop on the fourth, fifth notes, etc., up the scale.



First play without vibrato, aiming for maximum resonance with the bow only. Then use vibrato, particularly vibrating the last note as though the vibrato will make the resonance last longer.

Play on each string in low, middle and high positions. This is also a good practice technique for passages from the general repertoire.

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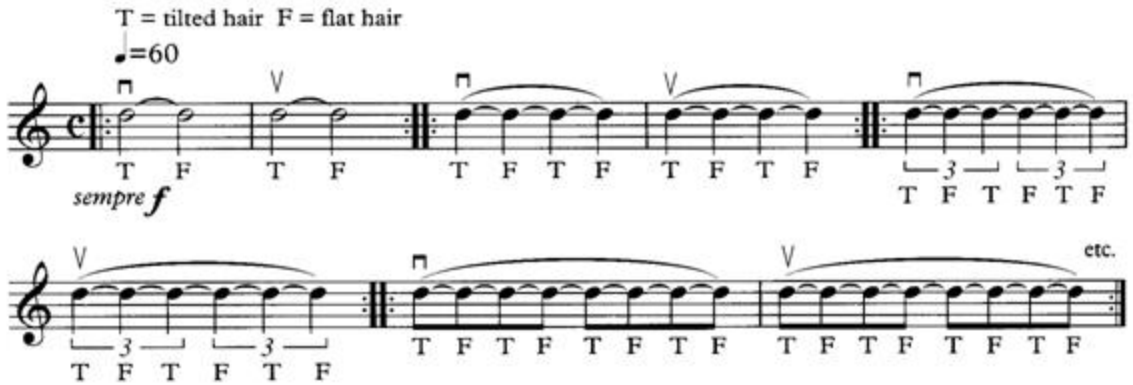
Bow tilt

The tilt of the bow has to be altered frequently. More hair is used for the strongest, thickest and deepest tone, less hair for playing more ***p*** or *dolce*. Lifted strokes respond differently with different amounts of hair, and in the lowest quarter of the bow, many strokes work more easily with slightly tilted hair.

- The exercise alternates flat hair and tilted hair (wood tilted towards the fingerboard). Roll the bow between the fingers to adjust the amount of hair, and use a little hand movement if that feels more comfortable.
- Play continuous whole bows, up and down, on one note. The tone will be richer and thicker during the full hair, but should remain even and strong throughout.
- First play the exercise on soundpoint 2, then on 3 and 4.



1 Play one tilted–flat combination in a bow (bars 1–2), dividing the bow exactly into halves:

Down-bow Lower half tilted, upper half flat

Up-bow Upper half tilted, lower half flat.

2 Play two in a bow (bars 3–4), dividing into exact quarters.

3 Play three, four, six, and eight tilted–flat combinations in one bow. The example shows as far as four in each bow.

4 Repeat the exercise the other way round. Begin with full hair:

Down-bow Lower half flat, upper half tilted

Up-bow Upper half flat, lower half tilted, etc.

Use various notes, in different positions, on each string. Play double stops as well as single notes.

[1] If you think that you cannot hear any resonance in a 'dead' note, imagine how it would sound if the body of the violin, instead of being an empty resonating box, were filled solid. Then, since a note such as A♭ really would be 'dead', what you are hearing normally is in fact resonance – just not as much as from 'live' notes.

True legato

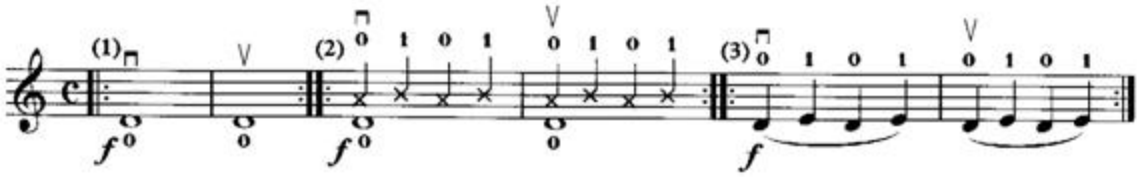
Sometimes you have to use a slight portato instead of true legato, for projection or clarity, or for musical reasons. But ordinarily the strokes should be entirely smooth, and the vertical finger actions should not affect the horizontal bow stroke.

Exercise 1

1 Play whole bows on the open string, very evenly and solidly.

2 Still play the open string, and silently finger the adjacent string (written as x-notes). Move the fingers with a fast and decisive action, and with vibrato. Keep the feeling (and sound) of the evenness of the bow playing the open string.

3 Bow and finger together on the same string. The bowing should remain just as even and solid as before.

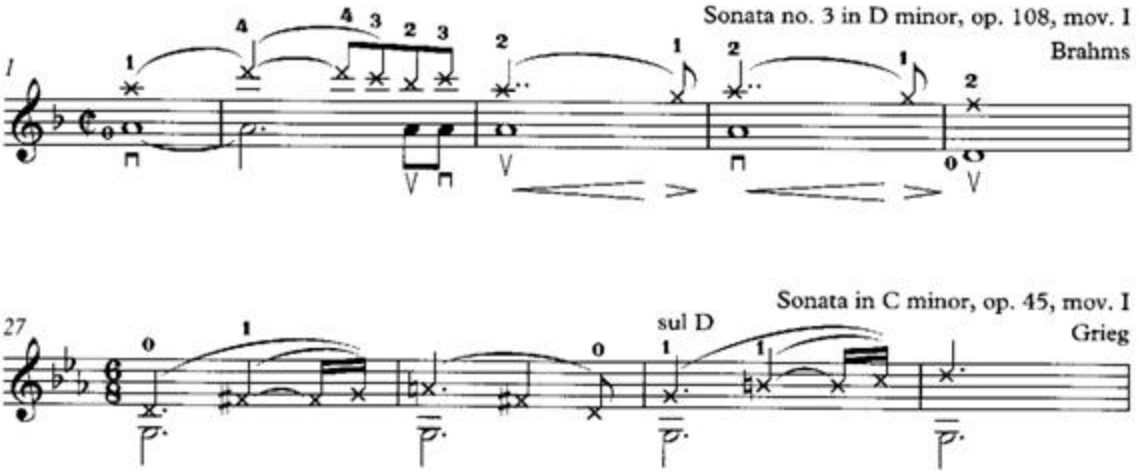


Apply the same method to all the two-note fingering possibilities: 01, 02, 03, 04; 12, 13, 14; 23, 24; 34.

Also play on the other strings, and in low, middle and high positions.

Practice method

The exercise improves technique overall, but it can also be applied as an ordinary part of learning or practising any legato passage. In the example from Brahms, finger the notes normally on the E and A strings, but bow on the open A and D strings. Or play it the other way round, fingering on the A string while bowing on the E string. In the Grieg, bow the open G with deep sonority while fingering silently on the D string. The strokes on the open strings should sound legato, undisturbed by the silent fingering on the other strings.



This type of practice also gives good results with the bow kept on one string, even though in the actual passage it crosses from string to string:

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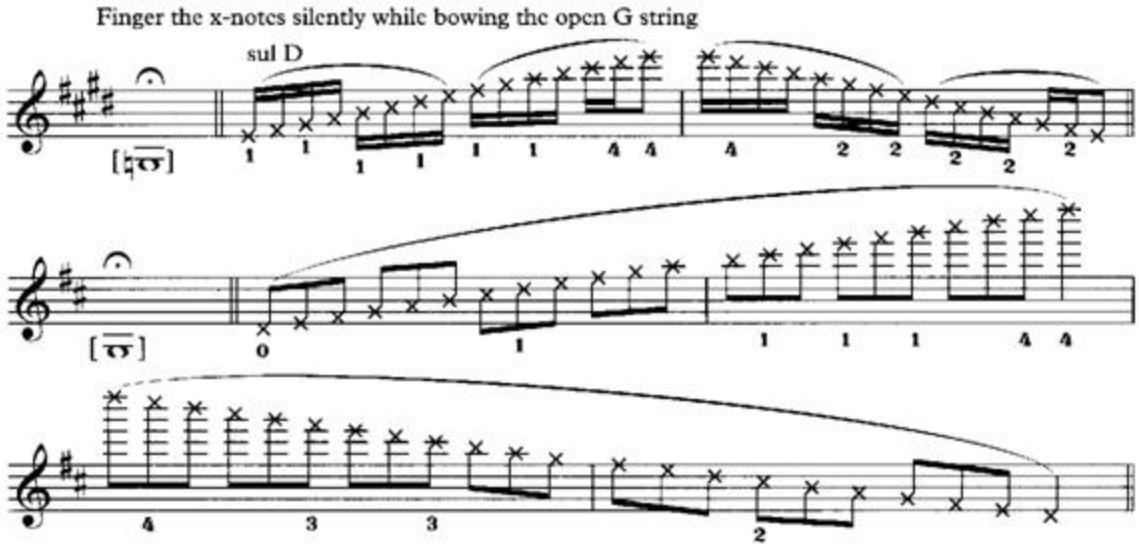
Exercise 2

- Sustain the open G throughout while running the fingers up and down whole scales.
- Feel the smoothness and evenness of the bow, completely undisturbed by the finger action.
- Then play the scale normally, feeling the same evenness in the bow.



Also play the scales in Exercise 226, bowing on one string while fingering another.

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Attacks

Strokes can be started from above the string or from on the string. They can begin (1) with a sharp attack, or (2) with the same sound as the rest of the stroke; or (3) they can begin imperceptibly, so that the first millimetre is ***pp***, the second millimetre is ***p***, the third ***mp***, and so on. This gives an immediate but very smooth beginning to a note.

Play repeated half-notes (minims) on one note, alternating down- and up-bows, separated by a rest.

First play in the lower half, then in the middle, and then in the upper half. In each area of the bow, begin each stroke as follows, playing several of each type before changing to the next:

1 Smooth, imperceptible beginning to each note, placing the bow on the string before playing the stroke.

2 Smooth, imperceptible beginning, starting from above the string. Experiment with different angles of descent, from smooth (like a plane approaching a runway) to almost vertical. Experiment with different speeds of descent, from slow to very fast.

3 Clear, articulated beginning, starting on the string. The very beginning of the stroke should sound exactly the same as the sound that follows.

4 Clear, articulated beginning, starting from above the string. Experiment with different speeds and angles of descent.

5 'Bite' the beginning of the stroke, like a *martelé*, placing the bow on the string before beginning the stroke.

6 Bite the beginning of the stroke, starting from above the string. This is one of the most powerful attacks.

Play on each string, and in different positions – each attack has to be slightly different depending on the thickness and length of each string. Also play double stops on each pair of strings with the same six attacks.

Soundpoints

Flesch and Galamian, amongst others, divided the area between the bridge and the fingerboard (known as the point-of-contact), into five 'soundpoints'. Flesch called them 'at the Bridge', 'Neighbourhood of bridge; that is between Bridge and central point', 'at the central point', 'Neighbourhood of Fingerboard; that is between Fingerboard and central point', 'at the Fingerboard'.[1]

Fig. 27a shows the five soundpoints in 1st position. Since the height and slope of the bridge varies from instrument to instrument, the exact place for each soundpoint may be different.

When exercises using all five soundpoints are played in high positions, the soundpoints have to be squeezed closer and closer to the bridge as the left hand plays higher and higher up the string. Fig. 27b shows the five soundpoints in 9th position.

Naming the soundpoints is useful in teaching, making it possible to call out 'Three', 'Two', and so on while the student is playing.

In low positions, the G and D strings are too thick and hard to respond easily when the bow is very close to the bridge. Near the fingerboard, the A and E strings are too soft to be able to take more than minimum pressure. (Four-string chords sound better when the lower strings are bowed further from the bridge, and the upper strings closer to the bridge.) Nevertheless, wherever possible play the exercises at every distance from the bridge.

Do not use open strings when playing tone exercises on one note, since they ring easily anyway. Begin with resonant notes such as third finger D on the A string, and then 'dead' notes such as second finger C♯.

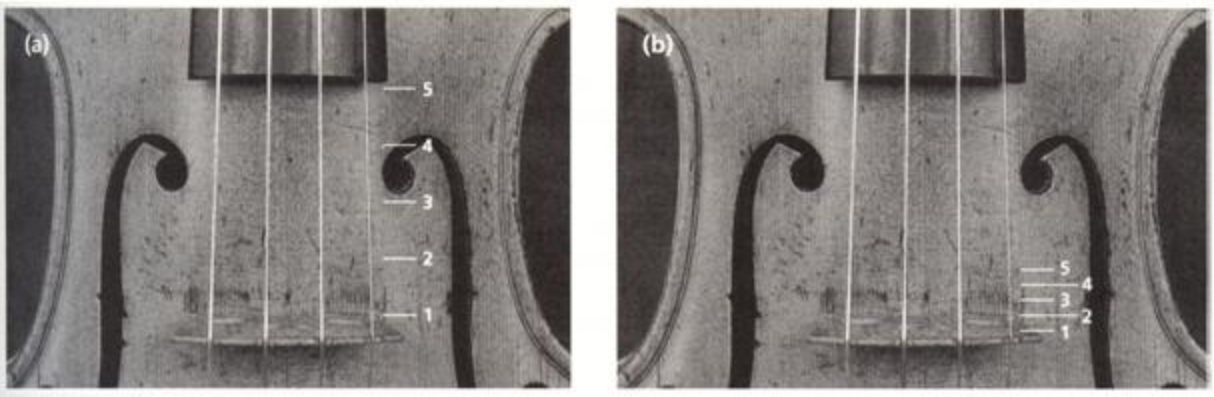

Fig. 27

The five soundpoints in 1st position

The five soundpoints in 9th position

Practice method

Normally the bow plays on different soundpoints from note to note, and from phrase to phrase. To experiment with the proportions of speed and pressure, keep the bow on only one soundpoint at a time. All the soundpoints referred to in this exercise are from Fig. 27a.

- Begin on soundpoint 5. Use fast, light strokes. By finding exactly the right speed and pressure, make the strings vibrate as widely as possible, with a ringing, resonant tone.
- Repeat the phrase or passage playing only on soundpoint 4. Although still fast and light, the bow will now need to be slightly slower and heavier. Find exactly the right speed and pressure to make the strings vibrate as widely as possible.
- Repeat on soundpoint 3. By now the bow pressure will be significantly heavier than it was on soundpoint 5, and the speed of bow slower – either use less bow or slow down the tempo. Find exactly the right speed and pressure to make the strings vibrate as widely as possible.
- Repeat on soundpoint 2. Now the bow pressure will have to be considerable, and the bow speed much slower. Play at a slower tempo. Sink the bow heavily into the strings, feeling the different 'give' of the hair and wood of the bow.[2] Find exactly the right speed and pressure to make the strings vibrate as widely as possible.
- If possible, repeat on soundpoint 1. Play the phrase or passage at a very slow tempo. The bow speed will have to be extremely slow, and the bow pressure extremely heavy. Find exactly the right speed and pressure to make the strings vibrate as widely as possible.

[1] Carl Flesch: *Problems of Tone Production in Violin Playing* (Baden-Baden, 1931), 18

[2] See *Bow tensions*, page 35