
BASICS

Balancing double stops

Standing on two weighing machines

Suppose you weigh 150 pounds and you stand evenly on two weighing machines, one foot on each at the same time. Each weighing machine will indicate 75 pounds because your total weight is divided equally between them. If you then lean on to one foot and lift your other foot into the air, all your weight will now be going into one spot and the machine will register 150. Or you could lean a little more on to one foot than the other, making the machines register 100/50, 50/100, or whatever ratio you like.

Therefore, if you want to play a double stop at the same volume as a single stop you have to use double the bow weight because, all other things being equal, the bow weight is divided between two strings. If you play three strings at the same time, you need three times the amount of weight.

However, all the other things are not equal because each string is a different thickness from the next, has a different amount of tension and is a different length (except open strings or stopped perfect 5ths). So the weight will rarely be divided 'equally' between them. Of course, it is not possible to measure exactly these tiny differences of weight through any kind of conscious process when you are playing. It is naturally a matter of instinct and 'feel', which comes from good listening. So it is enough just to keep at the back of your mind the basic principle of 'double stops need much more bow weight than single stops'.

A simple experiment easily proves the principle. Sustain one note down-bow and up-bow. Play forte and note the distance between the wood of the bow (in the middle of the bow) and the hair. Play at such a volume that you push the wood of the bow down about halfway towards the hair, and do not allow that distance to change as you move the bow up and down.

Then without stopping, and keeping the volume of the first note absolutely the same, add another note and continue as a double stop. Note how you are now pushing the wood of the bow nearly all the way down to the hair – and yet the first note will not have changed volume at all because the extra weight is divided between the two strings.

Wood pushed halfway down towards the hair Same volume D Same volume D

f Wood nearly touching the hair Wood pushed halfway down towards the hair Wood nearly touching the hair

The diagram shows a musical staff with four measures. The first measure contains a single note (D) with a forte (*f*) dynamic marking. The second and third measures contain double stops (D and another note) with the instruction 'Same volume D'. The fourth measure contains a single note (D) with a forte (*f*) dynamic marking. Above the staff, the first measure is labeled 'Wood pushed halfway down towards the hair'. Above the second and third measures, the label 'Same volume D' is centered. Above the fourth measure, the label 'Wood pushed halfway down towards the hair' is centered. Below the staff, the first measure is labeled 'Wood nearly touching the hair'. Below the second and third measures, the label 'Wood pushed halfway down towards the hair' is centered. Below the fourth measure, the label 'Wood nearly touching the hair' is centered.

Thinking in finger-spacing intervals

As well as thinking of the aural distance of an interval, think of the two fingers as being the same intervals they would be if they were playing on one string. This is very helpful in learning what the feel of a double stop is when it is in tune; and the mental picture of the normal spacing of the fingers on one string helps in finding the double stop, when you simply put a finger in the same place but on an adjacent string. Some typical examples:

Semitone Tone Minor 3rd Major 3rd Perfect 4th Tone Semitone Semitone Tone Minor 3rd Major 3rd

Major 3rd Minor 3rd Tone Semitone Semitone Tone Aug. 4th Major 3rd Minor 3rd Tone Semitone

The diagram shows two musical staves. The first staff contains 11 pairs of notes representing intervals between two strings. The intervals are: Semitone, Tone, Minor 3rd, Major 3rd, Perfect 4th, Tone, Semitone, Semitone, Tone, Minor 3rd, and Major 3rd. The second staff contains 11 pairs of notes representing intervals between two strings. The intervals are: Major 3rd, Minor 3rd, Tone, Semitone, Semitone, Tone, Aug. 4th, Major 3rd, Minor 3rd, Tone, and Semitone.

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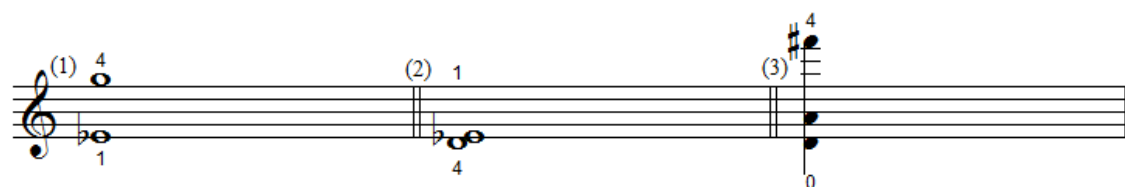
Notice how a major third is a minor third apart in spacing, and a minor third is a major third apart – a common cause of confusion in students playing running passages of thirds.

The double stops that need the greatest difference in weight distribution, so that the bow is heavier on one string than on the other, are those that have the biggest difference in string length, i.e. major sevenths and octaves (major thirds and perfect fourths apart respectively), and minor seconds played 1-4 (augmented fourth apart). There are also unisons played 1-4 (perfect fifth apart in spacing), and tenths.

The shorter the string, the less pressure

Why do the different string lengths require different amounts of pressure? It is basically because of the principle that the shorter the string, the less pressure it can take from the bow.

Normally, the higher up the string you play (the shorter the string) the nearer to the bridge you have to play. But when you play a double stop you naturally have to play both strings on the same soundpoint, so you have to compensate by playing the shorter string more lightly if you want the notes to be equal, and to avoid squashing the shorter string.



(1) Play the upper string, which is just over half its full length, more lightly than the lower string (which is almost full length). The G will suffer if the string gets the same weight as the Eb. (2) Play the lower string more lightly than the upper string. (3) This chord comes at the end of the second movement of the Cesar Franck Violin Sonata. While the open A is full length, the F# makes the E string less than half as long, and the note may easily be crushed unless it is played much more lightly than the A string.

Varying the weight

Experiment with different degrees of weight on each string to find the best balance of the bow:



- Practise a phrase of double stops playing the lower string *f*, the upper string *p*.
- Staying *f* on the lower string, gradually play more and more loudly on the upper string until the tone is balanced evenly.
- Repeat the other way round. Keeping the upper string *f*, play the lower string gradually louder and louder until both strings are equal.

Independence of the hands

The extra weight in the bow must not affect the left hand. Whether you are playing double stops or three- or four-string chords, each finger stopping a string should still follow the rule of ‘as much pressure as necessary but as little as possible’. Triple stops do not require triple finger-pressure. Excess finger-pressure, as an unconscious reaction to the extra weight in the bow, is one of the most common causes of left hand tension in playing double-stops. Neither must the light left fingers cause the bow to play too lightly.