

## VELOCITY IN SCALES

As a coordination and velocity exercise, practicing the Segovia scales (see Bibliography) is still unsurpassed. The scales should be played always in distinct rhythmic groupings—eighths, triplets, and sixteenths:



never just as an unmeasured, unaccented succession of notes. Remember also that for two-octave scales in triplets and three-octave scales in sixteenths an “extra” note (preferably the leading-tone beneath the lowest tonic) must be added in order to keep the accentuation symmetrical in repeats. Use both the *i-m* and *m-a* alternations; the latter is one of the very best ways to strengthen the *a* finger. The *a-m-i* alternation also strengthens the *a* finger and improves the overall balance of the touch. Alternation of the stronger *i-m* pair is the most reliable way to play fast passages, however. A virtuoso performer can handle all the Segovia scales in sixteenths at ♩ = 144 and faster with this touch. A respectable speed for most serious guitarists would be ♩ = 132 in sixteenths.

Make a distinction between *controlled speed* and *raw speed*. The former is the speed at which deliberate articulation is still possible, the latter that at which it is not. Past a point it is impossible to increase raw speed

voluntarily, but as controlled speed increases, so does raw speed. Determine with the metronome the fastest speed at which you can play a given scale and record the figure. Determine next your best controlled speed figure. It may be only half the raw speed figure at the outset. That doesn't matter. As you become more accustomed to preparation, your controlled speed will increase—and with it your raw speed.

Keep written records of your progress. Time and again tape recordings of one's playing will prove that what sounded fast was sluggish, while something else that seemed to drag was in fact quite lively. The development of an accurate sense of tempo may take years. It is a part of musicianship that should develop together with technique, and one way to see that it does is to make frequent objective reference to the metronome. Like the mechanical rabbit at the dog races, the metronome also serves as a necessary incentive when practicing for velocity.

A diary of speeds attained during a month in which you concentrate on this type of development can be very reassuring. Ten-percent improvement is common. Over a year or more, staccato scale practice can improve one's speed by half. Increases of more than 30 percent, for example from sixteenth notes at ♩ = 92 to ♩ = 126, are typical.

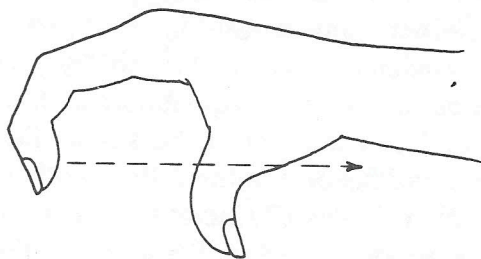
When one has reached a fairly fluent level of velocity (for instance, the three-octave E, F, or G major scale at ♩ = 120 in sixteenths), it is usually necessary to lighten the touch to progress further. The really sparkling execution of scales depends upon a light touch in both hands. At virtuoso speed levels, tone is secondary. Economy of movement, on the other hand, is paramount.

The reason for this is clear enough if you think of the alternation of fingers as resembling somewhat the back-and-forth movements of a pendulum. Make a common ring-on-a-string pendulum; swing it back and forth, and note how each movement is "braked" by the cessation of its own momentum. A comparable sense of equilibrium in the fingers requires tiny relaxations at the end of each half of the stroke: flexor, relax/extensor, contract; extensor, relax/flexor, contract; thus each muscle can operate unimpeded by the other. As velocity increases, however, so does the extent of the muscular contractions, and together with that, the momentum of the fingers. Furthermore, the amount of time in which the relaxation can occur lessens almost to zero. The result is that the weak extensor must literally fight the flexor in order to return the finger to a usable position. The greater exertion results in a larger recovery, thereby uselessly widening the stroke. Past a certain point, there will be no increase in speed for much the same reason that no matter how violently you swing your string pendulum, you cannot make it move any faster past a certain point. Cannot, that is, without shortening the string. As you shorten the string more and more, the ring will move back and forth progressively faster without any greater effort on your part. And for much the same reason, if you shorten your stroke it will be faster too.

Since we are dealing here with such minute distances, it is best to approach the stroke-shortening process from the standpoint of physical sensations rather than micro-measurements. Some control of extensor action is already built into the process of stroke preparation. Preparatory movements restrict the recovery and incorporate it within the physical sensation of the attack. There is little more that can be done to shorten the recovery directly. Extensor movements, however, tend to balance flexor movements with an equivalent force. The more energetic your attack, the more energetic your recovery is likely to be. Conversely, as you restrain the intensity of attack, you shorten the recovery.

The attempt merely to play softer may help. Overplaying is a common cause of sluggishness in otherwise very well-developed players. The reason is that speed and volume are inversely related. Past a point, if you want to play faster, you must also play with less intensity. The principle applies throughout the range of technique, not only to scales, and for that matter, not only to the guitar. But underplaying has drawbacks too, such as weak tone and rhythmic slackness; it is also fairly common among intermediate to advanced guitarists. Therefore, if we want a lighter touch in scales without sacrifice of incisiveness, we will need to employ some specific practice techniques for that purpose. The following will help increase your scale velocity to virtuoso levels:

1. Lower the wrist and curl the fingers more than you would for ordinary playing. This puts the fingertips directly on a line of force with the playing muscles in the forearm. It also lessens the bite of the nails, making for less string resistance:



Rest strokes performed from this position feel decidedly different from rest strokes performed from a higher wrist position. The muscular exertion seems confined to the palm of the hand, and although this is an illusion fostered by the mechanical efficiency of the position, the sensation of lessened muscular effort is certainly real enough. (The tendency of the elbow to move outward and the shoulder to roll forward when lowering the wrist is natural and shouldn't be inhibited.)

2. Keep the tip-joints absolutely firm. Any joint collapse, no matter how small, can only slow the stroke. (Experimentation with the piano has

shown that the collapse of a joint increases the time required for key-depression by more than 100 percent, from 2/50 to 5/50 of a second.)<sup>2</sup> In fact, it may help even to think of the stroke as originating in an actual flex of the fingertip, as if scratching a mosquito bite.

3. Restrain the attack in extremely slow practice by trying to stop the finger short of the string it comes to rest against. Of course, this is next to impossible, but the effort to “brake” the stroke this way will, when unconscious reflex takes over, lighten it further without sacrificing incisiveness. The recovery will seem to be an instantaneous short recoil, like the pounce of a cat’s paw. Strokes performed in this manner are more akin to free stroke than to the weightier kind of rest stroke used in slower playing or for emphasis. They also help to promote indirectly the light left hand touch so necessary for fluent playing (p. 32).

# Scales: Control and Velocity

Control is more important than speed. If you can exercise control while playing, speed, when necessary, will follow easily. There are several general misconceptions about speed, especially in scales:

## *Misconceptions about speed...*

1. *Without a certain amount of speed one is not a good player.* The fastest players are not necessarily the best players.
2. *Speed is a goal—rather than a tool.* Speed is something we use towards a musical end.
3. *One must be able to play very fast for long stretches of time.* Many students fail to recognize that the vast majority of scale passages in the repertoire requiring speed are only one or two measures long.

There are four elements to be mastered for the development of scale speed. They are:

1. Right-hand velocity.
2. Synchronization of the right and left hands.
3. String - crossing.
4. Piecing together.

Each element shall be addressed briefly, along with an exercise.

## Right-Hand Velocity

Right-hand velocity refers to how well you're able to pluck a series of notes in rapid succession with your right hand. Towards this end, practice *speed bursts*. A *speed burst* is a long string of slow notes interrupted by a short burst of fast notes. At first, you should frequently return to the slow notes between bursts; the slower notes act as a launching pad for the quick ones.

Here are a series of speed-burst exercises. Make sure each exercise is secure before moving on to the next one. While they're new to you, practice them using rest stroke, being strict about the staccato markings. After that feels good, try playing them using a legato free stroke.

# Some Other Speed Aids

Here is a chromatic scale with some rhythmic variations. Practicing scales with various rhythmic variations is invaluable to making them faster and cleaner. Notice that certain rhythmic configurations, including dots, triplets, etc., create short speed burst situations. The variations below are just a few possibilities. Practice them with this chromatic scale fingering. You should apply them to your other scales, as well.

The first staff shows a chromatic scale in 4/4 time, starting on G4 and ending on G5. It is divided into six measures by dashed lines, each labeled with a circled number (6, 5, 4, 3, 2). Fingerings are indicated by numbers 0-4 below the notes. The second staff continues the scale from G4 to G5, divided into three measures labeled 1, 2, and 3. Fingerings are indicated by numbers 1-4 below the notes. The third staff shows the scale from G4 down to G3, divided into three measures labeled 4, 5, and 6. Fingerings are indicated by numbers 4, 3, 2, 1, 0, 4, 3, 2, 1, 0, 4, 3, 2, 1, 0 below the notes.

## Rhythmic Variations

The first staff shows a chromatic scale with dotted rhythms. The second staff shows a chromatic scale with eighth-note pairs. The third staff shows a chromatic scale with eighth-note groups. The fourth staff shows a chromatic scale with triplet rhythms. Each staff is followed by the text "etc." to indicate further variations.

*Right-Hand Speed Bursts* When you have become comfortable with the supported strokes in the exercise in Figure 5-22, you can start to build up your right-hand speed. (Before starting the exercises, make sure your nails are done well so they do not snag.) The conventional way of increasing speed is to move up the metronome a notch at a time. This usually works, but for many people the Play-Relax approach works better. The Play-Relax way is not to begin with long "speed runs." Instead, you start with short, quick bursts of *i m* or *m i* alternation with rests in between as in Figure 5-22.

Figure 5-22 Right-hand speed burst exercise



With your thumb resting on the sixth string and wrist lowered, play this exercise as fast as is comfortable. Do it with the metronome for rhythmic precision. Do not work too hard to play fast. *Let* it happen rather than trying to force it. You will find that it is best to play somewhat more lightly when you are aiming for speed. The vital parts of the exercise are the rests. Let the hand and fingers relax as much as possible during these rests. You can make up your own exercises along these lines with varying numbers of notes per beat and varying speeds. In order to integrate accuracy with speed, you can alternate the slow, staccato practice with the practice of speed bursts. This will eventually produce dynamic relaxation in the right hand. When you are comfortable with short bursts of strokes, do longer and longer bursts until they extend to the length of whatever scales you want to play.

And now, for more fun, try these! Group #1 concentrates on one string, Group #2 on two strings, and in Group #3... anything goes! Remember, you can only go as fast as you can play the sixteenth notes, so work these out slowly. To reap the maximum benefits from these, think before you play every note, and feel each note as you play it.

## Speed Bursts

1. (A) *i a i a i a*  
*a a i a a i*  
*i m i m i m*  
*i i m i m i*

(B) *a a i a i a i*  
*i i m i m i m i*

(C) *i m i m i m i m i m*  
*i m i m i m i m i m*

(D) *i m i m i m i m i m*  
*m m i m m i m i m i*  
*i i m i i m i m i m*

(E) *m i m i m i m i m i*  
*i m i m i m i m i m*

(F) *m i m i m i m i m i*  
*i m i m i m i m i m*

2. (G) *m i m i m i*  
*i m i m i m*  
*m i m i m i*  
*i i m i i m*

(H) *i m i m i m i m*  
*m i m i m i m i*  
*i m i m i m i m*

(I) *i m i m i m i m*  
*i m i m i m i m*

(J) *i m i m i m i m i m*  
*m i m i m i m i m i*

(K) *i m i m i m i m i m*  
*i m i m i m i m i m*

(L) *i m i m i m i m i m*  
*i m i m i m i m i m*

3. (M) *i m i m i m i m*  
*m i m i m i m i m i*

(N) *i m i m i m i m*  
*m i m i m i m i m i*

(O) *i m i m i m i m*  
*m i m i m i m i m i*

(P) *i m i m i m i m i m*  
*m i m i m i m i m i*

(Q) *i m i m i m i m i m*  
*m i m i m i m i m i*

(R) *i m i m i m i m i m*  
*m i m i m i m i m i*



# Rasgueados

This is another flamenco technique which is sadly neglected by many classical guitarists. A *rasgueado* is really more of a percussive effect than a strum. It is done by hitting the strings with the backs of the nails.

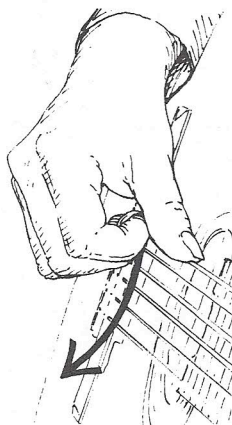
Practicing rasgueados develops the extensor muscles, which are the muscles that move the fingers outward, away from the palm. Many players believe that playing scales with considerable speed and accuracy is dependent upon how quickly we can move our fingers out, not in. This would certainly explain why most flamenco guitarists have the ability to play blazingly fast scales.

For now, practice your rasgueados by anchoring your thumb on the fourth string as you play on the first, second and third strings. It is helpful to begin by alternating only two fingers. Play the examples on the next page with the indicated alternation combinations.

*Attack the strings from just above ...*



*... not like this.*



On page 45 there are some rasgueado patterns that include all of the fingers. Some are traditional patterns, and some are a little out of the ordinary.

The letter “*i*” indicates the little finger (the pinky, *chiquito* in Spanish). For all the examples except numbers 3 and 6, keep the fingers extended until they have all finished playing.

Examples 8 through 12 involve an exchange between the thumb and the fingers (either all together or individually). This requires a particular motion of the wrist. The wrist should remain as straight as possible while pivoting, as if turning a doorknob. As the thumb plays its upstroke, the fingers follow it into a ready position. As the fingers play the downstroke(s), the thumb follows them into a ready position. In Examples 10 through 12, the thumb returns to a ready position only after *i* has played.