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INTRODUCTION TO THE VIOLONCELLO EDITION

As a student of Leonard Rose at the Juilliard School of Music I was first introduced to some of Ivan Galamian's principles of string playing. One of the great cellists and pedagogues of this century, Mr. Rose was very much influenced by Mr. Galamian's teaching. During the summers from 1953 until 1966 Rose taught together with Galamian at the Medowmount School of Music, which Galamian founded. Over the past 15 years I have used the Galamian scale system as an integral part of my own teaching method and I have always felt that there was a strong need to formally adapt this method to the violoncello.

The Galamian scale system is not only a great aid in developing agility and control in the left hand, but is also an invaluable tool for building important basic skills of the bow arm and in developing coordination between the hands. Scale and arpeggio practice is important on all string instruments for the development of strong mental images and a solid physical, tactile sense of fingerboard spacing. Although one can study this book in many different ways it is most effective to practice each chapter in its entirety to gain a clear understanding of the fingering concepts presented. Wherever possible, fingerings have been organized so that they are consistent within each chapter. Once a particular fingering system is understood, keys in any given chapter can be learned in any order. In addition, each individual player should take the time to explore his or her own fingerings since no two people are alike.

Most of Galamian's violin method is very easily adapted to the cello. Chapters 10 through 13 (Scales and Arpeggios in One Position), however, offer the greatest technical challenge to cellists due to the large handshapes and stretches presented. These four chapters can be very helpful in developing the use of the thumb in the low as well as in the high registers. It is nevertheless important to keep in mind that sustained stretching and extending of the hand can be very harmful. Practice chapters 10 through 13 very carefully, always releasing tensions caused through stretching by relaxing the hand immediately after extending it. If any pain or discomfort is felt, stop immediately and rest the hand for a few minutes before continuing.

Read and study the Preface by Ivan Galamian and Frederick Neumann very carefully in order to fully understand the system of bowings and rhythm patterns. The rhythm and bowing patterns can be employed in a great variety of ways and should be customized to suit each individual player's particular needs.

Including the Galamian scale system as an important part of one's daily practice routine will help develop a sound technical foundation. In order to play scales and arpeggios well it is necessary to have complete control in three areas: the spacing of the hand within one position, the lifting and dropping motion of the fingers, and finally, shifting. There are many fine exercise books by such cellists as Cossmann, Klengel, Feuillard and Starker which are devoted to developing those skills. Those books are all very useful companions to the Galamian scale system.




My deepest gratitude and special thanks is given to cellist Edward Goldsmith for his invaluable suggestions and help in proofreading. Thanks also go to cellists Charles Jacot and Andrew Talle for their constructive suggestions. I would also like to thank my cello students at Northwestern University for their helpful comments.





Hans Jørgen Jensen
Northwestern University 1994

PREFACE

Scales and arpeggios are in the Galamian Scale System integrated in an entirely new way with a system of bowing and rhythm patterns. By application to the exercises, the patterns are designed to help the student derive greater and quicker benefit from his scale and arpeggio practice.

Since technical mastery depends more upon control of mind over muscle than upon mere agility of fingers, the direct way to such mastery lies through working procedures which present a constant challenge to the student's thinking processes. For this reason new problems must always be faced and solved. To provide such new problems in almost inexhaustible supply is the chief purpose of these patterns.

The patterns are in two categories: Bowings (designated by B) and Rhythms (designated by R). Each category is divided into sections, coded B1 to B 16 for bowings, and R1 to R16 for rhythms. The numbers indicate the number of notes in each pattern. For example, the following bowing pattern  is regarded as a two-note pattern, being made up of two-note components  and is therefore listed under B2. The design  is a four-note pattern and appears under B4.


The same principle applies to the Rhythms. The following example  derives from the two-note rhythmical figure . Accordingly it is referred to as a two-note rhythm pattern and is listed under R2. The figure  is a three-note pattern (R3). The figure  is a twelve-note pattern (R12).

The following illustrations derived from Chapter 4, will demonstrate the method of combining the exercises with the patterns. The applicable patterns are:

B1, B2, B3, B4, B6, and B12
R1, R2, R3, R4, R6, and B12



First Primary pattern: 

Example of exercise: 




Application of its first primary pattern: 

*The guiding idea of this integration is explained in Ivan Galamian's book, *Principles of Violin Playing and Teaching*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1962.

Application of B3, 2)  with first primary pattern: 

Application of R2, 1)  a) *detache* b) *legato* 

Combined with B3, 2)  and R2, 1)  

Combined with B4, 3)  and R12, 8)  

At the head of each chapter in this scale book B and R code numbers are listed to indicate the applicable patterns. Primary patterns in which the exercise should first be practiced are also given.

All three-note patterns can be applied to any exercise employing groups of three notes or any of their multiples. In an eight-note exercise, all patterns of B1, B2, B4 and B8 can be combined with all patterns of R1, R2, R4 and R8. In twelve-note exercises, all B and R patterns of 1, 2, 3, 4, 6 and 12 can be combined. This versatility of application permits a single pattern to be used for several different exercises. Innumerable combinations of B and R patterns can be utilized, as well.

To facilitate the use of various bowings, rhythms and their combinations, all note-heads in the exercises are printed without stems. Bowing patterns are shown by note-heads which do not indicate any specific time value, meter or rhythm. Rhythm patterns are presented without any indications for specific bowings.

The teacher will be the best judge of which bowings, rhythms and their combinations will most usefully serve the needs of each student. It is suggested that the patterns be utilized in a diversified fashion and that the rhythms and bowings be employed in constantly changing combinations to stimulate continuous interest.

We hope this approach to the problems of contemporary cello technique will provide interesting and profitable results for both teacher and student.

Ivan Galamian
 Frederick Neumann

Additions and Changes to the Violoncello Edition
from the Original Version of
Contemporary Violin Technique
By Ivan Galamian and Frederick Neumann

The Violoncello Edition has been organized into a format more suitable for the cello. The following changes have therefore been necessary:

1. Chapters 1, 2 and 3 have been added in order to give less experienced players an introduction to scale and arpeggio study. The keys in these chapters have been arranged in the order of the circle of fifths so as to provide a basic understanding of key relationships for the younger player. This will serve as a preparation for learning the three and four octave studies in subsequent chapters.
2. Chapter 5, *Broken Thirds in Three-Octaves* and Chapter 8, *Chromatic Scales in Four-Octaves* have been added in an effort to make this book more comprehensive.
3. Chapter 9, *Four-Octave Arpeggios* has been expanded from the original four to include eight arpeggios in each key. Unlike the original violin version however, the cello edition includes the fifth scale degree in all diminished seventh and dominant seventh chords. As a result these arpeggios contain sixteen notes rather than the usual twelve notes found in the other chords. The addition of the fifth scale degree also applies in Chapter 6, *Three-Octave Arpeggios*.

The Violoncello Edition has been organized into six (6) broad sections — Two-Octave Studies, Three-Octave Studies, Four-Octave Studies, Studies in One Position, Studies on One String and Unusual Scales and Arpeggios.

1 Scales in Two Octaves

Groups of eight notes. PATTERNS: *B1, B2, B4, B8, B16*
R1, R2, R4, R8, R16

Primary Patterns:



Two octave scales should also be studied as acceleration exercises 2, 4, 8, 16 and 32 notes to the bow. For an explanation of acceleration exercises please turn to page 11.

C Major

A Melodic Minor

F Major

D Melodic Minor

B-Flat Major

G Melodic Minor

E-Flat Major

1 4 2 1 2 0 0 2 1 0 1 2 4 0 4 0 1 2 4 1 3 4 3 1 4 2 1 2 1 0 4 2 1 0 4 2 0 2 1

C Melodic Minor

0 2 1 0 1 2 4 0 1 3 4 0 1 2 4 1 3 4 2 1 4 2 1 0 4 2 1 0 4 2 1 0 4 2 1 0

A-Flat Major

1 4 2 1 2 4 1 2 4 1 2 4 1 3 4 3 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1

F Melodic Minor

1 4 3 1 3 4 1 2 4 1 2 4 1 3 4 2 1 4 2 1 4 2 1 4 2 1 4 3 1 4 3 1 4 3 1

D-Flat Major

1 4 2 1 2 4 1 2 4 1 2 4 1 3 4 3 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1

B-Flat Melodic Minor

1 4 3 1 3 4 1 2 4 0 1 2 1 2 4 1 2 3 2 1 4 2 1 4 2 1 4 2 1 4 3 1 4 3 1

G-Flat Major

1 4 2 1 2 4 1 2 4 1 2 4 1 3 4 3 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1

E-Flat Melodic Minor

1 4 3 1 3 4 1 2 4 0 1 2 1 2 4 1 2 3 2 1 4 2 1 4 2 1 4 2 1 4 3 1 4 3 1

B Major

1 4 2 1 2 4 1 2 4 1 2 4 1 2 3 2 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1 4 2 1

3

Arpeggios In Two Octaves

Groups of six notes. PATTERNS: *B1, B2, B3, B6*
R1, R2, R3, R6

Primary Patterns:

6/8 | | || 3/4 | | ||

C Major | A Minor | F Major | D Minor | B-Flat Major | G Minor | E-Flat Major | C Minor

Each major key is followed by its relative minor key. The notation includes bass clefs, key signatures, and fingerings (1-4) for each note. The patterns are presented in two octaves on a single staff.

4

Three-Octave Scales

Groups of twelve notes. PATTERNS: *B1, B2, B3, B4, B6, B12*
R1, R2, R3, R4, R6, R12

Primary Patterns:

The primary patterns are shown in three time signatures: 4/4, 3/4, and 6/8. Each pattern consists of a group of twelve notes, with some notes beamed together in groups of three.

In addition to these patterns, practice all three-octave scales with the *Acceleration Exercise* as shown in the following example. Make sure the value of the quarter note remains the same throughout. Choose a slow tempo at first (♩ = 50-60), then gradually increase it. The exercise may also be practiced in reverse as a *Retardation Exercise* by starting at the end with the thirty-second notes and finishing with the quarter notes.

The page contains eight systems of musical notation, each representing a three-octave scale with an acceleration exercise. The systems are arranged in pairs, with the first system of each pair in bass clef and the second in treble clef. The time signatures vary: 2/4, 3/4, and 4/4. The notation includes quarter notes, eighth notes, and sixteenth notes, with some notes beamed together. Fingerings (1-4) are indicated throughout the scales. A large watermark 'Copyrighted Material' is overlaid diagonally across the page.

Note: Please look at page 19 for alternate fingering systems for the three octave scales.

5

Broken Thirds In Three Octaves

Groups of eight notes. PATTERNS: *B1, B2, B4, B8*
R1, R2, R4, R8

Primary Patterns:



C Major

A Melodic Minor

F Major

D Melodic Minor

Handwritten musical notation for the D Melodic Minor scale. The first system shows the bass clef with notes D, E, F, G, A, B, C, D and fingerings 1, 4, 3, 0, 4, 1, 0, 2. The second system shows the tenor clef with notes D, E, F, G, A, B, C, D and fingerings 1, 3, 2, 2, 3, 1, 2, 2. A large watermark 'Copying is illegal only' is overlaid diagonally across the page.

B-Flat Major

Handwritten musical notation for the B-Flat Major scale. The first system shows the bass clef with notes Bb, C, D, Eb, F, G, Ab, Bb and fingerings 2, 0, 4, 1, 0, 2. The second system shows the treble clef with notes Bb, C, D, Eb, F, G, Ab, Bb and fingerings 1, 3, 2, 2, 1, 4, 2, 2. A large watermark 'Copying is illegal only' is overlaid diagonally across the page.

G Melodic Minor

Handwritten musical notation for the G Melodic Minor scale. The first system shows the bass clef with notes G, Ab, Bb, C, D, Eb, F, G and fingerings 0, 2, 1, 4, 2, 0, 4, 1. The second system shows the treble clef with notes G, Ab, Bb, C, D, Eb, F, G and fingerings 1, 3, 2, 2, 3, 1, 2, 2. A large watermark 'Copying is illegal only' is overlaid diagonally across the page.

E-Flat Major

Handwritten musical notation for the E-Flat Major scale. The first system shows the bass clef with notes Eb, F, G, Ab, Bb, C, D, Eb and fingerings 2, 0, 4, 1, 0, 2, 1, 2. The second system shows the treble clef with notes Eb, F, G, Ab, Bb, C, D, Eb and fingerings 1, 3, 2, 2, 1, 4, 2, 3. A large watermark 'Copying is illegal only' is overlaid diagonally across the page.

6 Three-Octave Arpeggios

Groups of nine notes. PATTERNS: *B1, B3, B9*
R1, R3, R9

Primary Patterns:

Key of C

Note: The Dominant Seventh Arpeggios contain twelve notes in each measure rather than nine like the other arpeggios. Adjust the bowings accordingly. For additional information and an explanation of the Three Octave Arpeggios please see page 38 at the end of this chapter.

Dominant Seventh of D-Flat

Musical notation for the Dominant Seventh of D-Flat chord. The notation is on a bass clef staff with a key signature of two flats (B-flat and E-flat). The notes are G-flat, B-flat, D-flat, and F. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Key of D-Flat

D-Flat Minor

Musical notation for the D-Flat Minor scale. The notation is on a bass clef staff with a key signature of two flats. The notes are D-flat, E-flat, F, G-flat, A-flat, B-flat, C, and D. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Flat Submediant Six

Musical notation for the Flat Submediant Six chord. The notation is on a bass clef staff with a key signature of two flats. The notes are D-flat, F, A-flat, and C. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Augmented

Musical notation for the Augmented chord. The notation is on a treble clef staff with a key signature of two flats. The notes are D-flat, F, and A-flat. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Relative Minor Six

Musical notation for the Relative Minor Six chord. The notation is on a bass clef staff with a key signature of two flats. The notes are D-flat, F, A-flat, and C. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Dominant Seventh of G-Flat

Musical notation for the Dominant Seventh of G-Flat chord. The notation is on a bass clef staff with a key signature of two flats. The notes are F, A-flat, B-flat, and D-flat. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Subdominant Six-four

Musical notation for the Subdominant Six-four chord. The notation is on a treble clef staff with a key signature of two flats. The notes are D-flat, F, A-flat, and C. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Minor Subdominant Six-Four

Musical notation for the Minor Subdominant Six-Four chord. The notation is on a bass clef staff with a key signature of two flats. The notes are D-flat, F, A-flat, and C. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

D-Flat with Four-three Suspension

Musical notation for the D-Flat with Four-three Suspension chord. The notation is on a bass clef staff with a key signature of two flats. The notes are D-flat, F, and A-flat. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

D-Flat Major

Musical notation for the D-Flat Major scale. The notation is on a treble clef staff with a key signature of two flats. The notes are D-flat, E-flat, F, G-flat, A-flat, B-flat, C, and D. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Dominant Seventh of D

Musical notation for the Dominant Seventh of D chord. The notation is on a bass clef staff with a key signature of two sharps (F-sharp and C-sharp). The notes are D, F-sharp, A, and C. Fingerings are indicated by numbers 1-4 above the notes. A large watermark 'Copyrighted Material' is visible across the page.

Key of D

D Minor Flat Submediant Six

Augmented

Relative Minor Six Dominant Seventh of G

Subdominant Six-four

Minor Subdominant Six-four D with Four-three Suspension

D Major

Dominant Seventh of E-Flat

7

Four-Octave Scales

Groups of eight notes. PATTERNS: *B1, B2, B4, B8*
R1, R2, R4, R8

Primary Patterns:



C Major

C Harmonic Minor

C Melodic Minor

Note: Please look at page 48 for alternate fingering systems for the four octave scales.

C-Sharp Major

Musical notation for the C-Sharp Major scale. The bass clef part starts with a whole note chord 'I' (C#4, E#4, G#4) and then ascends: C#4 (1), D#4 (1), E#4 (1), F#4 (1), G#4 (1), A#4 (1), B#4 (1), C#5 (3), D#5 (2). The treble clef part descends: C#5 (3), B#4 (2), A#4 (1), G#4 (1), F#4 (1), E#4 (1), D#4 (1), C#4 (1). Fingering numbers are placed above or below the notes.

C-Sharp Harmonic Minor

Musical notation for the C-Sharp Harmonic Minor scale. The bass clef part starts with a whole note chord 'I' (C#4, E#4, G#4) and then ascends: C#4 (1), D#4 (1), E#4 (1), F#4 (0), G#4 (1), A#4 (2), B#4 (4), C#5 (1), D#5 (1), E#5 (1), F#5 (3), G#5 (2). The treble clef part descends: C#5 (3), B#4 (2), A#4 (3), G#4 (4), F#4 (4), E#4 (4), D#4 (4), C#4 (4). Fingering numbers are placed above or below the notes.

C-Sharp Melodic Minor

Musical notation for the C-Sharp Melodic Minor scale. The bass clef part starts with a whole note chord 'I' (C#4, E#4, G#4) and then ascends: C#4 (1), D#4 (1), E#4 (1), F#4 (1), G#4 (1), A#4 (1), B#4 (1), C#5 (1), D#5 (1), E#5 (3), F#5 (2). The treble clef part descends: C#5 (3), B#4 (2), A#4 (2), G#4 (2), F#4 (2), E#4 (2), D#4 (2), C#4 (2). Fingering numbers are placed above or below the notes.

D Major

Musical notation for the D Major scale. The bass clef part starts with a whole note chord 'I' (D4, F#4, A4) and then ascends: D4 (1), E4 (0), F#4 (1), G4 (1), A4 (1), B4 (1), C#5 (1), D5 (3), E5 (2). The treble clef part descends: D5 (3), C#5 (2), B4 (2), A4 (2), G4 (2), F#4 (2), E4 (2), D4 (2). Fingering numbers are placed above or below the notes.

D Harmonic Minor

Two staves of musical notation for the D Harmonic Minor scale. The top staff is in bass clef and the bottom staff is in treble clef. The scale is written in a two-octave format. Fingerings are indicated by numbers 1-4 above or below notes. A large watermark 'Copying is illegal only' is overlaid diagonally across the page.

D Melodic Minor

Two staves of musical notation for the D Melodic Minor scale. The top staff is in bass clef and the bottom staff is in treble clef. The scale is written in a two-octave format. Fingerings are indicated by numbers 1-4 above or below notes. A large watermark 'Copying is illegal only' is overlaid diagonally across the page.

E-Flat Major

Two staves of musical notation for the E-Flat Major scale. The top staff is in bass clef and the bottom staff is in treble clef. The scale is written in a two-octave format. Fingerings are indicated by numbers 1-4 above or below notes. A large watermark 'Copying is illegal only' is overlaid diagonally across the page.

E-Flat Harmonic Minor

Two staves of musical notation for the E-Flat Harmonic Minor scale. The top staff is in bass clef and the bottom staff is in treble clef. The scale is written in a two-octave format. Fingerings are indicated by numbers 1-4 above or below notes. A large watermark 'Copying is illegal only' is overlaid diagonally across the page.

E-Flat Melodic Minor

Musical notation for the E-flat Melodic Minor scale. The bass clef line starts with a 1 2 4 1 fingering pattern. The treble clef line includes a 3 2 fingering pattern. The scale is written in a single octave across two staves.

E Major

Musical notation for the E Major scale. The bass clef line includes a (3) 2 1 fingering pattern. The treble clef line includes a 2 3 2 4 4 4 fingering pattern. The scale is written in a single octave across two staves.

E Harmonic Minor

Musical notation for the E Harmonic Minor scale. The bass clef line starts with a (2 4 0) fingering pattern. The treble clef line includes a 3 2 2 3 2 2 fingering pattern. The scale is written in a single octave across two staves.

E Melodic Minor

Musical notation for the E Melodic Minor scale. The bass clef line starts with a 2 4 0 1 fingering pattern. The treble clef line includes a 2 3 2 4 2 1 3 1 0 4 4 3 0 4 fingering pattern. The scale is written in a single octave across two staves.

8

Chromatic Scales in Four Octaves

Groups of twelve notes. PATTERNS: *B1, B2, B3, B4, B6, B12*
R1, R2, R3, R4, R6, R12

Primary Patterns:



Also slur two measures.

C

C-Sharp / D-Flat

D

Musical notation for the D major scale. It consists of four staves. The first staff is a bass clef with notes D2, E2, F#2, G2, A2, B2, C#3, D3. The second staff is a treble clef with notes D4, E4, F#4, G4, A4, B4, C#5, D5. The third staff is a treble clef with notes D5, C#5, B4, A4, G4, F#4, E4, D4. The fourth staff is a bass clef with notes D4, C#4, B3, A3, G3, F#3, E3, D3. Fingerings are indicated by numbers 1-3 above or below notes. A large watermark 'Copyright is illegal only' is overlaid diagonally across the page.

E-Flat

Musical notation for the E-flat major scale. It consists of four staves. The first staff is a bass clef with notes E-flat2, F2, G2, A2, B-flat2, C3, D3, E-flat3. The second staff is a treble clef with notes E-flat4, F4, G4, A4, B-flat4, C5, D5, E-flat5. The third staff is a treble clef with notes E-flat5, D5, C5, B-flat4, A4, G4, F4, E-flat4. The fourth staff is a bass clef with notes E-flat4, D4, C4, B-flat3, A3, G3, F3, E-flat3. Fingerings are indicated by numbers 1-3 above or below notes. A large watermark 'Copyright is illegal only' is overlaid diagonally across the page.

9

Four-Octave Arpeggios

Groups of twelve notes. PATTERNS: *B1, B2, B3, B4, B6, B12*
R1, R2, R3, R4, R6, R12

Primary Patterns:



Four-octave arpeggios should also be studied as acceleration exercises. For arpeggios containing twelve notes use 2, 3, 6 and 12 notes to the bow. For arpeggios containing sixteen notes (Diminished Seventh and Dominant Seventh) use 2, 4, 8 and 16 notes to the bow. For an explanation of acceleration exercises please turn to page 11.

Explanation of Fingerings:

I. The Major and Minor Arpeggios have two basic fingering systems notated :

A) *Above the Staff*

For the top octave two different fingerings are suggested: 1 - 3 - 1 - 3 and thumb - 1 - 2 - 3 . The second of these is notated only in the keys of C and D-Flat (pages 56 and 57) but should be used in all keys.

B) *Below the Staff (These fingerings are also used in Chapter 6, "Three Octave Arpeggios.")*

These fingerings are the standard fingerings for the Four-Octave Arpeggios and are the same for all keys. Play three notes on the C string, three notes on the G string, three notes on the D string, and the last four notes on the A string. Two fingerings can be used for the last four notes on the A-string: 2 - 1 - 2 - 3 or 2 - 1 - 2 - 4 . The second of these is notated only in the keys of C and D-Flat (pages 56 and 57) but should be used in all keys.

II. The Subdominant Six-Four and the Minor Subdominant Six-Four

Below the staff: These fingerings are created to develop the use of the thumb.

(R16)

21) 22)

23) 24)

25) 26) 27)

28) 29) 30)

31) 32)

33) 34) 35)



36) 37)



38) 39) 40)



41) 42) 43)

(R16)



b) $\frac{4}{4}$



1)  2) 



3)  4) 



5)  6) 



c) $\frac{5}{4}$



1)  2) 


3)  4) 


5)  6) 

7)  8) 

9)  10) 

11)  12) 

13)  14) 

15)  16) 