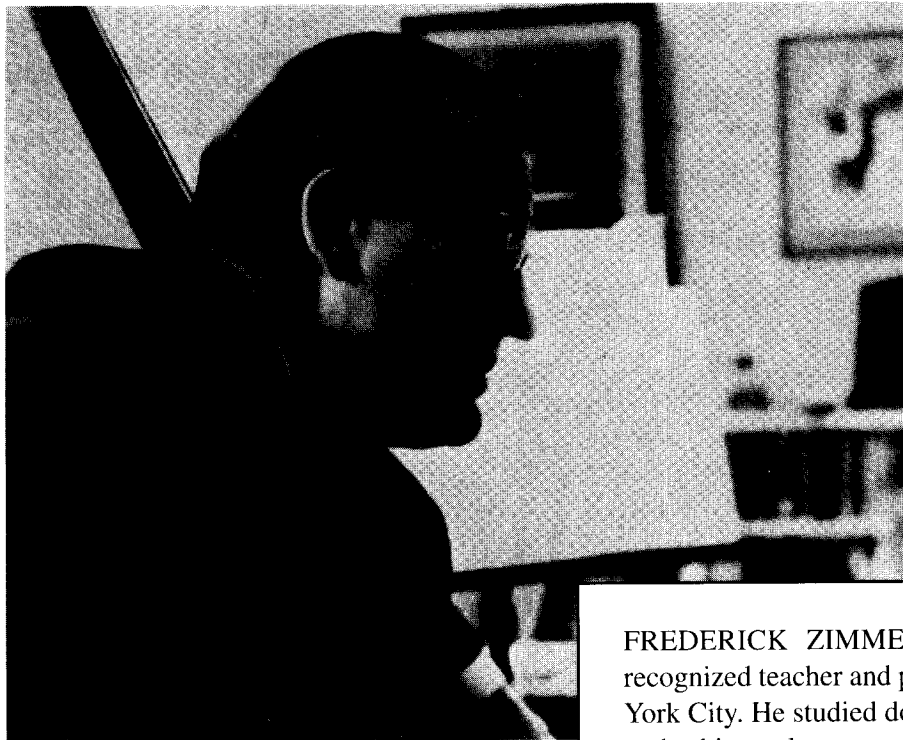


A CONTEMPORARY
CONCEPT OF
BOWING TECHNIQUE
FOR THE
DOUBLE BASS

By **FREDERICK ZIMMERMANN**





FREDERICK ZIMMERMANN (1906-1967), internationally recognized teacher and performer, was born and educated in New York City. He studied double bass with Herman Reinshagen and, under his tutelage, was one of the first Americans to concertize on the double bass. He succeeded this eminent teacher as a member of the faculty of the Julliard School of Music in 1935.

He was also a member of the faculty of the Mannes College of Music; The New School of Music, Philadelphia; double bass coach of the Canadian Youth Orchestra, Toronto, Canada and was a teacher in Education at New York University. He was also a member of the New York Philharmonic Symphony for 36 years.

As a lecturer he conducted seminars at various colleges in the East, presenting contemporary concepts of playing, as well as teaching techniques. As a writer he presented the history of the double bass, as well as a new image of the instrument and its performer, elevating it to a level heretofore never realized by either player or listener and giving it a dimension heretofore unknown.

The concept of two, three and four double basses playing in ensemble as a method of study, preparing the student as an ensemble and orchestral player, originated with Frederick Zimmermann. He has transcribed much music, from the 14th to the 20th centuries, for this purpose and has interested contemporary composers to write for consorts of double bass.

His pupils have filled important positions as players and teachers in the United States, Canada and Europe. More than anyone else in the 20th century, Frederick Zimmermann enlarged the literature of the double bass and gave the instrument prominence and dignity in the musical world.

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PREFACE

Many of the technical problems presented in the playing of the double bass are problems peculiar to that instrument. They exist because of its physical structure and its manner of tuning.

The most formidable problems presented by the proportions of the double bass are the great distances separating notes and intervals, and the excessive number of shifts made necessary by the fact that only two semi-tones can be played in one position.

The solution to the problem of playing a complex, non-diatonic passage at a rapid tempo is sought in fingering as many notes (intervals), or orders of notes (chordal), as possible in one position. However, while this solves one problem, it creates another: it adds to the number of cross-string bowing changes.

An approach to the development of a technique relating to this particular problem is the subject of this work.

Fingerings function as guides, outlining generalizations and "systems", to train the fingers to move automatically in established and readily recognizable patterns.

The fingers trained to respond to

Example 1:

Allegro

Two alternative bass clef staves in 4/4 time. The first staff shows a sequence of notes with fingerings 3 and 3. The second staff shows a sequence of notes with fingerings 1, 2, 3, 4, 3, 2, 1.

along the contours of the fingering pattern in

Example 2:

Allegro

Two alternative bass clef staves in 4/4 time. The first staff shows a sequence of notes with fingerings 1, 0, 4, 2, 4, 0, 1. The second staff shows a sequence of notes with fingerings 1, 4, 0, 1, 1, 4, 2, 4.

will do so as a reflex in whatever context this figure may occur (Mozart, Beethoven, Brahms, Storch-Hrabe, etc.).

Such a spontaneous recognition of and response to a figure does not, however, occur in the action of the bow arm. There are no precise guides, such as fingering indications, to clarify and make knowledgeable the nature and structure of the bowing patterns which seem to be, so to speak, woven in the very texture of the passage itself.

To abstract such bowing patterns from their particular environment or passage for ready identification, classification, communication, detailed study and analysis is the main objective considered in organizing the material of this work.

Using measures from the last movement of the third Symphony of Beethoven, the method by which bowing patterns are abstracted is outlined as follows: The excerpt is written in the upper staff of a pair of bracketed staves:

Example 3:

The image shows a musical staff in bass clef with a 2/4 time signature and a key signature of two flats. The melody consists of a sequence of notes: G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6, D6, E6, F6, G6, A6, B6, C7, D7, E7, F7, G7, A7, B7, C8, D8, E8, F8, G8, A8, B8, C9, D9, E9, F9, G9, A9, B9, C10, D10, E10, F10, G10, A10, B10, C11, D11, E11, F11, G11, A11, B11, C12, D12, E12, F12, G12, A12, B12, C13, D13, E13, F13, G13, A13, B13, C14, D14, E14, F14, G14, A14, B14, C15, D15, E15, F15, G15, A15, B15, C16, D16, E16, F16, G16, A16, B16, C17, D17, E17, F17, G17, A17, B17, C18, D18, E18, F18, G18, A18, B18, C19, D19, E19, F19, G19, A19, B19, C20, D20, E20, F20, G20, A20, B20, C21, D21, E21, F21, G21, A21, B21, C22, D22, E22, F22, G22, A22, B22, C23, D23, E23, F23, G23, A23, B23, C24, D24, E24, F24, G24, A24, B24, C25, D25, E25, F25, G25, A25, B25, C26, D26, E26, F26, G26, A26, B26, C27, D27, E27, F27, G27, A27, B27, C28, D28, E28, F28, G28, A28, B28, C29, D29, E29, F29, G29, A29, B29, C30, D30, E30, F30, G30, A30, B30, C31, D31, 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G327, A327, B327, C328, D328, E328, F328, G328, A328, B328, C329, D329, E329, F329, G329, A329, B329, C330, D330, E330, F330, G330, A330, B330, C331, D331, E331, F331, G331, A331, B331, C332, D332, E332, F332, G332, A332, B332, C333, D333, E333, F333, G333, A333, B333, C334, D334, E334, F334, G334, A334, B334, C335, D335, E335, F335, G335, A335, B335, C336, D336, E336, F336, G336, A336, B336, C337, D337, E337, F337, G337, A337, B337, C338, D338, E338, F338, G338, A338, B338, C339, D339, E339, F339, G339, A339, B339, C340, D340, E340, F340, G340, A340, B340, C341, D341, E341, F341, G341, A341, B341, C342, D342, E342, F342, G342, A342, B342, C343, D343, E343, F343, G343, A343, B343, C344, D344, E344, F344, G344, A344, B344, C345, D345, E345, F345, G345, A345, B345, C346, D346, E346, F346, G346, A346, B346, C347, D347, E347, F347, G347, A347, B347, C348, D348, E348, F348, G348, A348, B348, C349, D349, E349, F349, G349, A349, B349, C350, D350, E350, F350, G350, A350, B350, C351, D351, E351, F351, G351, A351, B351, C352, D352, E352, F352, G352, A352, B352, C353, D353, E353, F353, G353, A353, B353, C354, D354, E354, F354, G354, A354, B354, C355, D355, E355, F355, G355, A355, B355, C356, D356, E356, F356, G356, A356, B356, C357, D357, E357, F357, G357, A357, B357, C358, D358, E358, F358, G358, A358, B358, C359, D359, E359, F359, G359, A359, B359, C360, D360, E360, F360, G360, A360, B360, C361, D361, E361, F361, G361, A361, B361, C362, D362, E362, F362, G362, A362, B362, C363, D363, E363, F363, G363, A363, B363, C364, D364, E364, F364, G364, A364, B364, C365, D365, E365, F365, G365, A365, B365, C366, D366, E366, F366, G366, A366, B366, C367, D367, E367, F367, G367, A367, B367, C368, D368, E368, F368, G368, A368, B368, C369, D369, E369, F369, G369, A369, B36

One soon notices, in examining the patterns abstracted from the orchestral excerpts in this work, how often the basic elements of the various sections occur - either by themselves or in combination with one another. They are present throughout the entire literature, regardless of the key, style or form of a composition.

The basic elements of each section, such as those of Section 1, and their inversions

should be studied together with the visual guide (graph) of each in detail, before going on to the next, since the understanding and skill with which one pattern is played (repeatedly) depends on the knowledge and assurance one has gained from the previous pattern, though each separate one is a new experience in controlling the alternating movements of the bow.

The general format of this work includes a preface (the object and purpose of this work); an introduction (description of the functions of the arm and hand, and the purpose of their functions and supplementary material), and six sections.

Sections 1 to IV are subdivided into these parts:

1. The Basic Patterns.
2. Suggested Practice Procedure.
3. Etudes constructed on the Basic Patterns and Permutations of Their Elements.
4. Bowings and Etudes Built on the Bowing Patterns.
5. Examples from Etudes, Orchestral Passages and Materials from the Solo Repertoire.
6. Graphic Bowing Charts.

Section V:

Patterns, Etudes and Excerpts Relating to Three and Four Strings.

Section VI:

Bowing Drills.

There are over four hundred bowing patterns forming the main portion of this book. Though not an attempt to exhaust all the possibilities, they serve as a sufficient basis for further study, reference, serious consideration and expansion. Their efficacy will be realized in proportion to the manner in which they are used. To have a knowledge of some is to bring a technique to the solution of a bowing problem; to have command of many is to face the materials of music with confidence and skill.

- - Frederick Zimmermann

INTRODUCTION

There are two considerations which are of major importance in the course of practicing cross-string bowing patterns. First, the hair of the bow must remain as close to the strings as possible, in the particular pattern being studied; and second, the raising and lowering movements of the arm must be kept at a minimum.

The technique of bowing across two or more strings is a total operation consisting of three principal parts, each part acting in accord with the others:

1. The horizontal movements of the bow arm.
2. The raising and lowering motions of the arm.
3. The tilting actions of the hand.
 - a. A sub-phase is the feeling of the weight of the arm. This sensation of weight (the actual weight of the arm) is carried along the intricate motions of all the cross-string patterns.

Each stage in turn has its specific function and purpose:

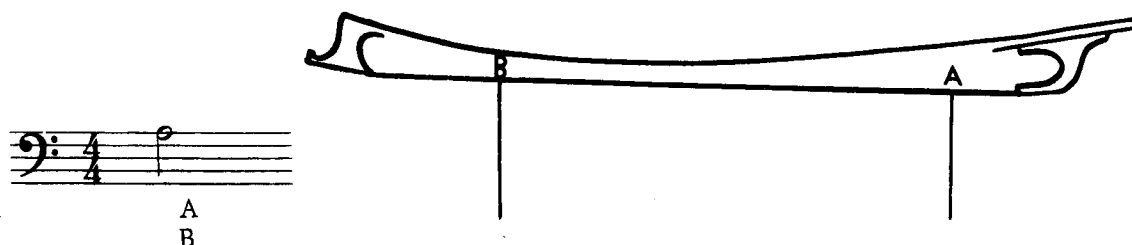
1. The horizontal movements of the arm direct the bow in either alternate or successive down and up-bow motions. They also serve to regulate the various rates of speed (velocity) at which the bow travels.
2. The raising and lowering motions of the arm tilt or direct the bow to either a lower or a higher pitched string.
3. The tilting action of the hand turns the stick of the bow toward the fingerboard in going to a higher pitched string, and away from it in going to a lower pitched string. This motion is auxiliary to and coincidental with the gradual raising and lowering movements of the arm, and serves to reduce its movements considerably. Both actions operate in accord, thus effecting smooth and facile string crossing.

The following exercises are included as outlines intended to train the hand and arm to move with an economy of motion from one string surface to another. The tilting action of the hand is valid for both styles of bowing, except that when using the *French Bow* there is more wrist movement, whereas when using the *Dragonetti Bow* (German) there is oblique wrist and forearm motion.

M. M. ♩ = 42

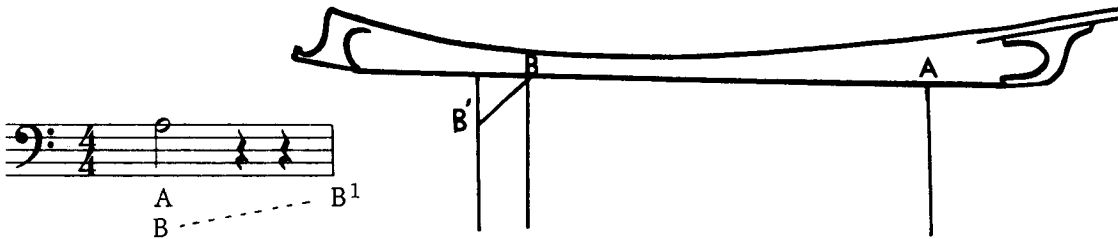
1. Stroke the note "A"; pause after the full durational value has been realized. (A to B)

Diagram 1:



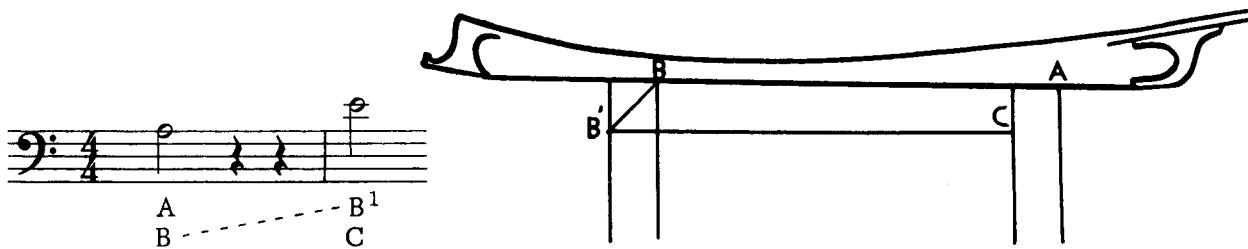
2. During the period of rest tilt the bow slowly, in the direction of the fingerboard, until the hair of the bow finds the surface of the "G" string, engaging it securely preparatory to stroking the note "E". (see Diagram 2.) (B to B¹)

Diagram 2:



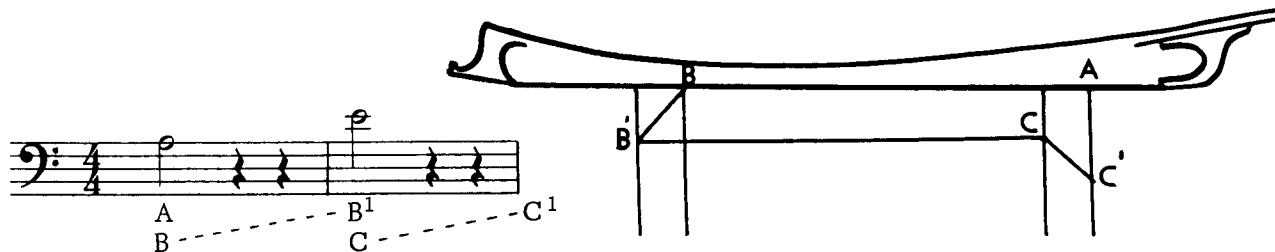
3. Stroke the note "E"; pause after the durational value has been realized. (see Diagram 3.) (B¹ to C)

Diagram 3:



4. During the period of rest, tilt the bow slowly, away from the fingerboard, until the hair of the bow finds the surface of the "D" string, engaging it securely, preparatory to stroking the note "A". (C to C¹)

Diagram 4:



5. Stroke the "A"; pause after the durational value has been realized.

6. Repeat the steps as outlined in phases 1 to 4 (C to D, D¹ to E, E¹ to F, F¹ to G, G¹ to H).

$\text{♩} = 42$

mf

1. During the stroking of the first half of measure 1 (the sounding of the "A"), gradually tilt the bow toward the surface of the "G" string, as close as possible, without actually resonating it. Gauge the speed of the bow and its distance from the "G" string.
2. On the count of three, gently and delicately move the bow across the "G" string without any acceleration of speed or change in dynamics, thereby sounding and sustaining the double-stop for the remainder of the measure.
3. Raise the bow but slightly from the surface of the "D" string while sounding the "E" again.
4. While stroking the "E", gradually tilt the bow toward the surface of the "D" string, as close as possible, without actually resonating it. Gauge the speed (velocity) of the bow and its distance from the "D" string, preparatory to sounding the note "A", then repeat phases 1 to 4.

♩ = 72

♩ = 72

♩ = 96

♩ = 96

♩ = 66

♩ = 69

0 1 2 4 1 4 2 3

3 2 4 1 4 2 1 0

♩ = 72

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

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

♩ = 72

mf

♩ = 72

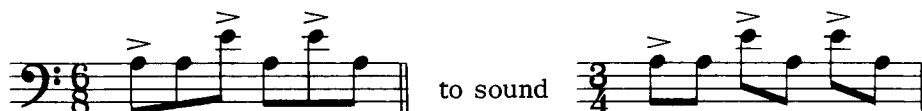
mf

It is also important to the overall objective of developing a fine bowing technique, that the metric and durational values be kept under control. Since the rhythmic and metric beats in these examples and exercises are one and the same, care must be taken to accent only the primary and secondary beats, to avoid any alteration, in pattern or meter, caused by the accidental emphasis placed on a note by the mere act of crossing the string, as illustrated in the following figures.

Alteration of pattern:



Alteration of meter:



Alteration of durational values:



A compound of faults:



There are numerous instances, however, when non-metric beats are accented, as in the following excerpt, from the overture to *Der Freischütz*, by Carl Maria von Weber, in which the composer indicates a stronger emphasis on the last beats of the first four measures, and on the second and fourth beats of the following measures:



The metronome markings, suggested by the writer, are to be used for the practice of the various abstracted patterns throughout the sections of this book. It is advisable also to practice them one notch above as well as one notch below the metronome marks indicated.

SECTION I

PATTERN I

Handwritten: 1500

A B C D

E F G H

SUGGESTED PROCEDURE FOR PRACTICE

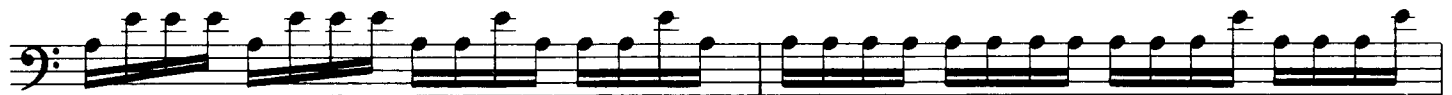
Begin each measure with the metronome set at $\text{♩} = 72$ (two beats to a measure). These are to be played with a *détaché* bowing; a smoothly articulated stroke with no pause or break between the notes. When the movements of the arm and hand feel comfortable and the crossing motion secure and well directed, advance the mark to $\text{♩} = 88$. Again, when these are played with a feeling of ease and control, advance to $\text{♩} = 104$. Play each measure keeping the metronome at $\text{♩} = 104$, using a *spiccato* bowing. When these are played with a sense of ease and control, increase the metronome marking step-wise to $\text{♩} = 116$ and $\text{♩} = 126$. At an advanced marking of $\text{♩} = 132$ to $\text{♩} = 152$, the bow is again moved with a rapid *détaché* bowing.

A

ETUDE

PATTERN I

♩ = 92 (*spiccato*), ♩ = 126 (*détaché*)



PERMUTATIONS OF PATTERN I

Staff 1: Pattern A, B, A, C, A, D

Staff 2: Pattern A, E, A, F, A, G, A, H

Staff 3: Pattern B, A, B, C, B, D

Staff 4: Pattern B, E, B, F, B, G, B, H

Staff 5: Pattern C, A, C, B, C, D

Staff 6: Pattern C, E, C, F, C, G, C, H

Staff 7: Pattern D, A, D, B, D, C

Staff 8: Pattern D, E, D, F, D, G, D, H

Staff 1: Bass clef, 3/2 time signature. Notes: E, A, E, B, E, C. Each note has an accent (>) and a repeat sign (:||).

Staff 2: Bass clef, 3/2 time signature. Notes: E, D, E, F, E, G, E, H. Each note has an accent (>) and a repeat sign (:||).

Staff 3: Bass clef, 3/2 time signature. Notes: F, A, F, B, F, C. Each note has an accent (>) and a repeat sign (:||).

Staff 4: Bass clef, 3/2 time signature. Notes: F, D, F, E, F, G, F, H. Each note has an accent (>) and a repeat sign (:||).

Staff 5: Bass clef, 3/2 time signature. Notes: G, A, G, B, G, C. Each note has an accent (>) and a repeat sign (:||).

Staff 6: Bass clef, 3/2 time signature. Notes: G, D, G, E, G, F, G, H. Each note has an accent (>) and a repeat sign (:||).

Staff 7: Bass clef, 3/2 time signature. Notes: H, A, H, B, H, C. Each note has an accent (>) and a repeat sign (:||).

Staff 8: Bass clef, 3/2 time signature. Notes: H, D, H, E, H, F, H, G. Each note has an accent (>) and a repeat sign (:||).

ETUDES

PERMUTATIONS OF PATTERN I

Allegro ♩ = 96 (*spiccato*)

The first section of the music is in 2/4 time and consists of four staves of music. It begins with a treble clef and a 2/4 time signature. The tempo is marked 'Allegro' with a quarter note equal to 96 beats per minute, and the articulation is 'spiccato'. The music features a series of eighth-note patterns that are permuted across the four staves. The first staff contains the first permutation, the second staff the second, the third staff the third, and the fourth staff the fourth. Each staff ends with a double bar line.

Allegro molto ♩ = 112 (*spiccato*)

The second section of the music is in 2/4 time and consists of seven staves of music. It begins with a treble clef and a 2/4 time signature. The tempo is marked 'Allegro molto' with a quarter note equal to 112 beats per minute, and the articulation is 'spiccato'. The music features a series of eighth-note patterns that are permuted across the seven staves. The first staff contains the first permutation, the second staff the second, the third staff the third, the fourth staff the fourth, the fifth staff the fifth, the sixth staff the sixth, and the seventh staff the seventh. Each staff ends with a double bar line.

BOWINGS

PATTERN I

The musical score is organized into 10 staves, each containing four measures labeled A, B, C, and D. The first two staves show patterns with slurs and accents. The next two staves show patterns with slurs and accents, but with some notes marked with a dot. The final six staves show patterns with slurs and accents, with some notes marked with a dot.

* The dotted notes are to be played alternately on the string (*Staccato*) and off the string (*Flying Spiccato*).

ETUDE

BOWINGS (PATTERN I)

Moderato ♩ = 84

The first section consists of six staves of music in 4/4 time. The tempo is marked 'Moderato' with a quarter note equal to 84 beats per minute. The notation includes various bowing techniques such as slurs, accents, and dynamic markings. The first staff shows a sequence of eighth notes with slurs. The second staff continues with similar patterns, including some notes with accents. The third staff features a mix of eighth and sixteenth notes with slurs. The fourth staff has a more complex pattern with slurs and accents. The fifth staff continues with eighth notes and slurs. The sixth staff concludes the pattern with a final note and a double bar line.

22 | 5 | 07 ♩ = 80

PATTERN II

The second section consists of two staves of music in 3/2 time. The tempo is marked with a quarter note equal to 80 beats per minute. The notation includes various bowing techniques such as slurs and accents. The first staff shows a sequence of eighth notes with slurs, labeled A¹, B¹, C¹, and D¹. The second staff continues with similar patterns, labeled E¹, F¹, G¹, and H¹. The notation includes various bowing techniques such as slurs and accents.

PERMUTATIONS OF PATTERN II

A¹ B¹ A¹ C¹ A¹ D¹

A¹ E¹ A¹ F¹ A¹ G¹ A¹ H¹

B¹ A¹ B¹ C¹ B¹ D¹

B¹ E¹ B¹ F¹ B¹ G¹ B¹ H¹

C¹ A¹ C¹ B¹ C¹ D¹

C¹ E¹ C¹ F¹ C¹ G¹ C¹ H¹

D¹ A¹ D¹ B¹ D¹ C¹

D¹ E¹ D¹ F¹ D¹ G¹ D¹ H¹

Staff 1: Bass clef, 3/4 time signature. Notes: E1, A1, E1, B1, E1, C1. Chords: E1, A1, E1, B1, E1, C1.

Staff 2: Bass clef, 3/4 time signature. Notes: E1, D1, E1, F1, E1, G1, E1, H1. Chords: E1, D1, E1, F1, E1, G1, E1, H1.

Staff 3: Bass clef, 3/4 time signature. Notes: F1, A1, F1, B1, F1, C1. Chords: F1, A1, F1, B1, F1, C1.

Staff 4: Bass clef, 3/4 time signature. Notes: F1, D1, F1, E1, F1, G1, F1, H1. Chords: F1, D1, F1, E1, F1, G1, F1, H1.

Staff 5: Bass clef, 3/4 time signature. Notes: G1, A1, G1, B1, G1, C1. Chords: G1, A1, G1, B1, G1, C1.

Staff 6: Bass clef, 3/4 time signature. Notes: G1, D1, G1, E1, G1, F1, G1, H1. Chords: G1, D1, G1, E1, G1, F1, G1, H1.

Staff 7: Bass clef, 3/4 time signature. Notes: H1, A1, H1, B1, H1, C1. Chords: H1, A1, H1, B1, H1, C1.

Staff 8: Bass clef, 3/4 time signature. Notes: H1, D1, H1, E1, H1, F1, H1, G1. Chords: H1, D1, H1, E1, H1, F1, H1, G1.

ETUDES

PERMUTATIONS OF PATTERN II

Allegro non troppo ♩ = 88

The first section consists of five staves of music in bass clef with a 4/4 time signature. The tempo is marked 'Allegro non troppo' with a quarter note equal to 88 beats per minute. The music features a series of eighth-note patterns that are permuted across the staves. The first staff begins with a descending eighth-note scale. The second staff continues with a similar pattern, shifting the starting pitch. The third and fourth staves show further permutations of the eighth-note sequence. The fifth staff concludes the section with a final eighth-note pattern and a whole note chord.

Allegro ♩ = 92

The second section consists of four staves of music in bass clef with a 4/8 time signature. The tempo is marked 'Allegro' with a quarter note equal to 92 beats per minute. The music features a series of eighth-note patterns that are permuted across the staves. The first staff begins with a descending eighth-note scale. The second staff continues with a similar pattern, shifting the starting pitch. The third and fourth staves show further permutations of the eighth-note sequence. The fourth staff concludes the section with a final eighth-note pattern and a whole note chord.

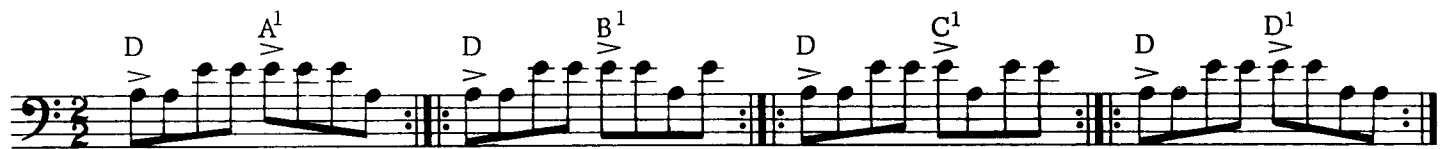
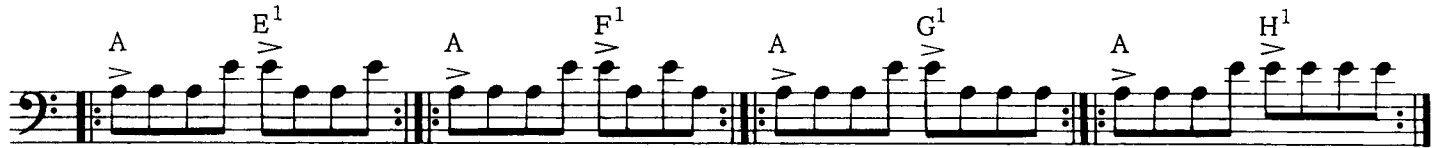
BOWINGS

PATTERN II

The image displays 12 systems of musical notation for a bass clef instrument, arranged in two columns of six systems each. Each system consists of two staves: a top staff with a treble clef and a bottom staff with a bass clef. The music is written in 2/4 time. The patterns are organized into groups of four systems each, labeled A¹, B¹, C¹, and D¹ for the first group, and E¹, F¹, G¹, and H¹ for the second group. Each system contains four measures of music, with the first measure of each system starting with a specific fingering (A¹, B¹, C¹, D¹, E¹, F¹, G¹, or H¹). The notation includes various bowing techniques such as slurs, accents, and dotted notes. The patterns are designed to be played alternately on the string (Staccato) and off the string (Flying Spiccato).

* The dotted notes are to be played alternately on the string (*Staccato*) and off the string (*Flying Spiccato*).

PERMUTATIONS OF PATTERNS I & II



Staff 1: Bass clef, 2/4 time signature. Four measures of eighth-note patterns. Chords: E, A¹, E, B¹, E, C¹, E, D¹.

Staff 2: Bass clef, 2/4 time signature. Four measures of eighth-note patterns. Chords: E, E¹, E, F¹, E, G¹, E, H¹.

Staff 3: Bass clef, 2/4 time signature. Four measures of eighth-note patterns. Chords: F, A¹, F, B¹, F, C¹, F, D¹.

Staff 4: Bass clef, 2/4 time signature. Four measures of eighth-note patterns. Chords: F, E¹, F, F¹, F, G¹, F, H¹.

Staff 5: Bass clef, 2/4 time signature. Four measures of eighth-note patterns. Chords: G, A¹, G, B¹, G, C¹, G, D¹.

Staff 6: Bass clef, 2/4 time signature. Four measures of eighth-note patterns. Chords: G, E¹, G, F¹, G, G¹, G, H¹.

Staff 7: Bass clef, 2/4 time signature. Four measures of eighth-note patterns. Chords: H, A¹, H, B¹, H, C¹, H, D¹.

Staff 8: Bass clef, 2/4 time signature. Four measures of eighth-note patterns. Chords: H, E¹, H, F¹, H, G¹, H, H¹.

Allegro di molto ♩ = 112

The first exercise is written in bass clef with a 3/4 time signature. It consists of five staves of music. The first staff begins with a treble clef and a 3/4 time signature, followed by a bass clef. The music is a continuous sequence of eighth notes, with some slurs and accents. The tempo is marked 'Allegro di molto' with a quarter note equal to 112 beats per minute.

This exercise is to be practiced with a Martelé bowing; each note beginning with a sharp attack and separated from the next note.

Allegro giusto ♩ = 100

The second exercise is written in bass clef with a 2/4 time signature. It consists of six staves of music. The first staff begins with a treble clef and a 2/4 time signature, followed by a bass clef. The music is a continuous sequence of eighth notes, with some slurs and accents. The tempo is marked 'Allegro giusto' with a quarter note equal to 100 beats per minute.

ETUDES

BOWINGS (PATTERNS I & II)

Allegro non troppo ♩ = 88

The musical score consists of ten staves of music, all in bass clef and 2/4 time. The tempo is marked 'Allegro non troppo' with a quarter note equal to 88 beats per minute. The notation includes various bowing patterns, such as slurs, accents, and dynamic markings like *mf* and *f*. The patterns are designed to be practiced as exercises for bowing technique.

Allegro di molto ♩ = 112

Allegro di molto, 2/4 time signature. The score consists of six staves of bass clef notation. The music features a rhythmic pattern of eighth notes, often grouped in pairs and slurred. The first four staves show a consistent eighth-note pattern with slurs. The fifth staff introduces a change in the pattern, and the sixth staff concludes the section with a final note.

Moderato assai ♩ = 66

Moderato assai, 4/4 time signature. The score consists of six staves of bass clef notation. The music features a rhythmic pattern of dotted eighth notes, often grouped in pairs and slurred. The first four staves show a consistent dotted eighth-note pattern with slurs. The fifth staff introduces a change in the pattern, and the sixth staff concludes the section with a final note.

(PERMUTATIONS OF PATTERNS I & II)

Staff 1: Bass clef, 2/2 time signature. Four measures of music with notes and accents. Labels: A¹, A, A¹, B, A¹, C, A¹, D.

Staff 2: Bass clef, 2/2 time signature. Four measures of music with notes and accents. Labels: A¹, E, A¹, F, A¹, G, A¹, H.

Staff 3: Bass clef, 2/2 time signature. Four measures of music with notes and accents. Labels: B¹, A, B¹, B, B¹, C, B¹, D.

Staff 4: Bass clef, 2/2 time signature. Four measures of music with notes and accents. Labels: B¹, E, B¹, F, B¹, G, B¹, H.

Staff 5: Bass clef, 2/2 time signature. Four measures of music with notes and accents. Labels: C¹, A, C¹, B, C¹, C, C¹, D.

Staff 6: Bass clef, 2/2 time signature. Four measures of music with notes and accents. Labels: C¹, E, C¹, F, C¹, G, C¹, H.

Staff 7: Bass clef, 2/2 time signature. Four measures of music with notes and accents. Labels: D¹, A, D¹, B, D¹, C, D¹, D.

Staff 8: Bass clef, 2/2 time signature. Four measures of music with notes and accents. Labels: D¹, E, D¹, F, D¹, G, D¹, H.

Staff 1: Bass clef, 2/2 time signature. Four measures with notes and accents. Chord labels E¹, A, B, C, D are placed above the notes.

Staff 2: Bass clef, 2/2 time signature. Four measures with notes and accents. Chord labels E¹, F, G, H are placed above the notes.

Staff 3: Bass clef, 2/2 time signature. Four measures with notes and accents. Chord labels F¹, A, B, C, D are placed above the notes.

Staff 4: Bass clef, 2/2 time signature. Four measures with notes and accents. Chord labels F¹, E, F, G, H are placed above the notes.

Staff 5: Bass clef, 2/2 time signature. Four measures with notes and accents. Chord labels G¹, A, B, C, D are placed above the notes.

Staff 6: Bass clef, 2/2 time signature. Four measures with notes and accents. Chord labels G¹, E, F, G, H are placed above the notes.

Staff 7: Bass clef, 2/2 time signature. Four measures with notes and accents. Chord labels H¹, A, B, C, D are placed above the notes.

Staff 8: Bass clef, 2/2 time signature. Four measures with notes and accents. Chord labels H¹, E, F, G, H are placed above the notes.

ETUDES

PERMUTATIONS OF PATTERNS II & I

Allegro ♩ = 92

The first section of the piece is written in bass clef with a 4/4 time signature. It consists of eight staves of music. The first staff begins with a treble clef and a 4/4 time signature, indicating a transposition. The music is a continuous sequence of eighth-note patterns, with some staves featuring slurs and accents. The piece concludes with a final whole note chord on the eighth staff.

Allegro ♩ = 92

The second section of the piece is written in bass clef with a 3/4 time signature. It consists of four staves of music. The first staff begins with a treble clef and a 3/4 time signature, indicating a transposition. The music is a continuous sequence of eighth-note patterns, with some staves featuring slurs and accents. The piece concludes with a final whole note chord on the fourth staff.

ETUDES

BOWINGS (PERMUTATIONS OF PATTERNS II & I)

Allegro assai ♩ = 100



PIANO CONCERTO No. 4

LUDWIG VAN BEETHOVEN

Vivace

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

♩ = 108

G G H A C¹ C¹ C¹ H¹

SYMPHONY No. 34

WOLFGANG A. MOZART

Presto

4 0 1 4 4 1 0 4 1 4 0 1 1 0 4 4 0 1 1 4 0

♩ = 116

E A¹ B D¹ E A¹ B D¹

CONCERTO

Allegro moderato

DOMENICO DRAGONETTI

3 3 2 1 1 6 4 1 4 1

♩ = 112

F¹ F¹ F¹ F¹ F¹

CONCERTO

E. D. STEIN

Cadenza

1 0 4 2 4 1 4 6 1 1 2 3

♩ = 112

F¹ F¹ F¹

ETUDE

STORCH - HRABE

Allegro

3/4

♩ = 88

D G D G D

D¹ D¹ B¹ C B¹

CONCERTO

E. D. STEIN

Con fuoco

2/4

♩ = 120

F¹ B¹

ETUDE

ANTON SLAMA

Allegro molto

4/4

♩ = 88

F C¹ F¹ D¹

Allegro molto

4/4

♩ = 92

F E

SONATA No. 5

ANTONIO VIVALDI

Allegro con spirito

♩ = 92

G¹ H¹ H¹ G¹ H¹ H¹

CARNIVAL OVERTURE

Allegro vivo

ANTON DVORAK

♩ = 120

C¹ A¹ F C C C C C

D G D C H F C C C C C

C¹ A¹ C H C C C C

SYMPHONY FANTASTIQUE

HECTOR BERLIOZ

Allegro

First system of musical notation, measures 1-4. The top staff is in bass clef with a key signature of one flat and a 4/4 time signature. It contains a melodic line with slurs and fingering numbers 1, 4, 0, 1, 4, 0, 1, 4, 0, 1, 4, 1, 4. The bottom staff is in bass clef and contains a rhythmic accompaniment of eighth notes with slurs. A tempo marking $\text{♩} = 96$ is placed between the staves.

Second system of musical notation, measures 5-8. The top staff continues the melodic line with slurs and fingering numbers 2, 1, 2, 4, 2, 4, 0, 4, 0, 1, 4, 0, 1, 4. A dynamic marking 'D' is placed below the staff. The bottom staff continues the rhythmic accompaniment.

Third system of musical notation, measures 9-12. The top staff continues the melodic line with slurs and fingering numbers 4, 2, 2, 0, 2, 4, 2, 1, 0, 2. A dynamic marking 'D' is placed below the staff. The bottom staff continues the rhythmic accompaniment.

Fourth system of musical notation, measures 13-16. The top staff continues the melodic line with slurs and fingering numbers 4, 2, 1, 2, 4, 0, 2, 4, 2, 1, 0, 2, 1, 0, 2. A dynamic marking 'D' is placed below the staff. The bottom staff continues the rhythmic accompaniment.

CONCERTO

DOMENICO DRAGONETTI

Allegro

$\text{♩} = 112$
 G¹ H¹ G¹ H¹

SYMPHONY No. 6

PETER I. TCHAIKOVSKY

Allegro vivo

$\text{♩} = 126$
 E E H¹ E H¹

SYMPHONY No. 88

JOSEPH HAYDN

Allegro

$\text{♩} = 138$
 A¹ H¹ A¹ H¹ A¹

Allegro

$\text{♩} = 160$
 B¹ F

SYMPHONY No. 5

Allegro giocoso

SERGEI PROKOFIEFF

Solo

$\text{♩} = 72$

Two systems of musical notation, each with two staves. The upper staff is marked 'Solo' and the lower staff is marked with a piano dynamic. The tempo is $\text{♩} = 72$. The key signature has one flat and the time signature is 2/2.

OCTET

FRANZ SCHUBERT

Allegro

$\text{♩} = 88$ *p*

Three systems of musical notation, each with two staves. The upper staff is marked 'Allegro' and the lower staff is marked with a piano dynamic *p*. The tempo is $\text{♩} = 88$. The key signature has one flat and the time signature is 4/4. Fingerings and breath marks are indicated above the notes. Harmonic labels H^1 , G^1 , D, and A are placed below the piano part.

SYMPHONY No. 3

LUDWIG VAN BEETHOVEN

Presto

♩ = 112

sf

B F¹ C¹ A¹ H¹ A¹

SYMPHONY No. 5

LUDWIG VAN BEETHOVEN

Allegro

♩ = 92

F H¹ F B¹ B¹

SYMPHONY No. 8 (Unfinished)

FRANZ SCHUBERT

Allegro

♩ = 100

A¹ A¹

SYMPHONY No. 7

Allegro vivace (in one)

FRANZ SCHUBERT

The first system of musical notation consists of two staves in bass clef, 2/4 time. The tempo is marked 'Allegro vivace (in one)'. The key signature has one sharp (F#). The first measure contains a triplet of eighth notes (F#, A, C) with a '3' above it. The tempo is marked '♩ = 100'. The word 'simile' appears above the first staff in the fourth measure. The notation includes various note values, rests, and dynamic markings.

The second system continues the musical notation. It features two staves in bass clef. The word 'simile' appears above the first staff in the fourth measure. The notation includes various note values, rests, and dynamic markings.

The third system continues the musical notation. It features two staves in bass clef. The word 'simile' appears above the first staff in the second measure. Below the first staff, the letters 'D' and 'G' are written under the second and third measures respectively. The notation includes various note values, rests, and dynamic markings.

The fourth system continues the musical notation. It features two staves in bass clef. The word 'simile' appears above the first staff in the fourth measure. The notation includes various note values, rests, and dynamic markings.

This bowing (*Piqué*) is to be played in the upper half of the bow; the dotted eighth note short (*Martelé*) and the sixteenth note with a smoother stroke (*Détaché*).

SYMPHONY No. 41

WOLFGANG A. MOZART

Allegro vivace

First system of musical notation. The top staff is in treble clef and the bottom staff is in bass clef. The time signature is 4/4. The tempo marking is $\text{♩} = 168$. The key signature has one flat (B-flat). The system contains five measures. The top staff has various fingerings (0, 1, 2, 4) and accents (V). The bottom staff has similar fingerings and accents.

Second system of musical notation, continuing from the first system. It contains five measures. The top staff features complex fingerings and accents. The bottom staff continues the melodic line with consistent fingerings.

Third system of musical notation, continuing from the second system. It contains five measures. The top staff has many accidentals and fingerings. The bottom staff continues the melodic line.

Fourth system of musical notation, the final system on the page. It contains five measures. The top staff has fingerings and accents. The bottom staff continues the melodic line. The system ends with a double bar line. The letters 'D' and 'A' are written below the bottom staff in the fourth measure.

SONATA

for Two Violins, Cello and Double Bass

Moderato

GIOACCHINO ROSSINI

Solo

$\text{♩} = 66$ *mf*

0 1 1 2 1 1 4 1 0 1

H¹ H¹ A¹ A D¹

A G¹ H¹

4 1 4 1 4 0 1 2 1

E H¹ B¹

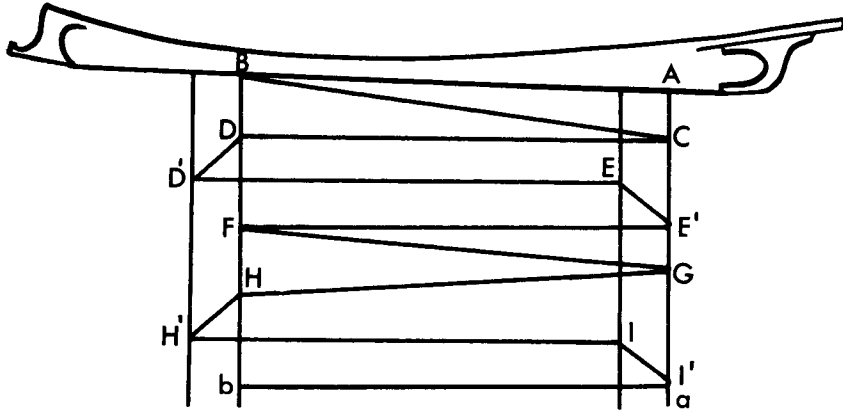
H¹ H¹ G H H¹ G¹

4 1 4 1 4 0

H¹ E

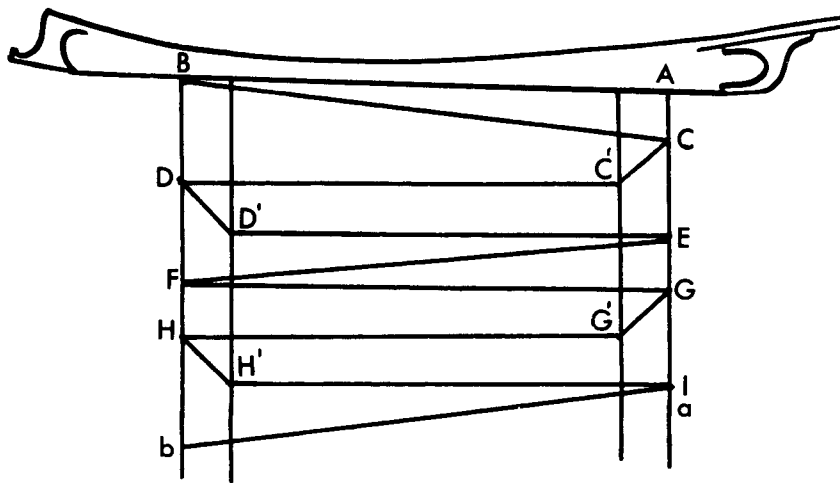
♩ = 60

f A B C D¹ E¹ F G H¹ I¹a
 B C D[/] E[/] F G H[/] I b



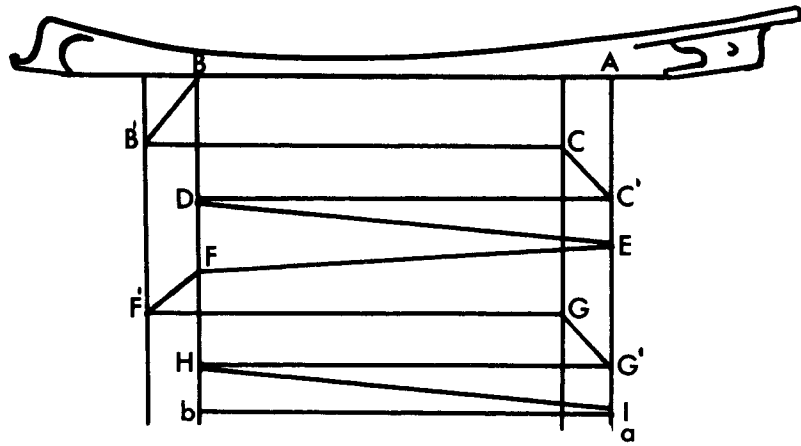
♩ = 60

f A B C¹ D¹ E F G¹ H¹ a
 B C[/] D[/] E F G[/] H[/] I b



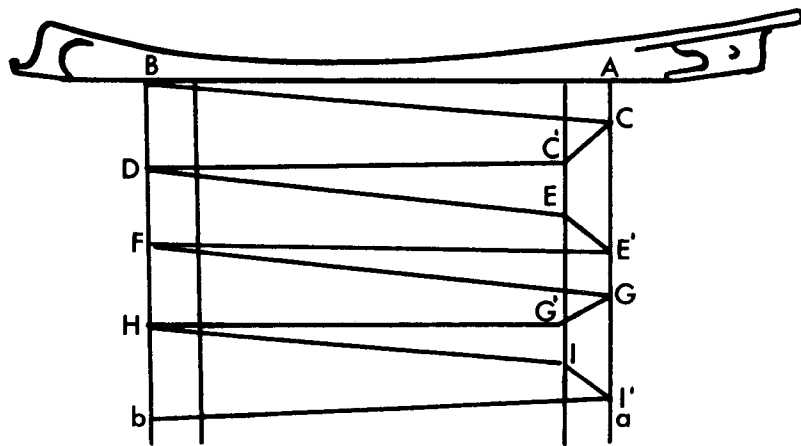
♩ = 60

f A B¹ C¹ D E F¹ G¹ H a
 B C D E F G H I b



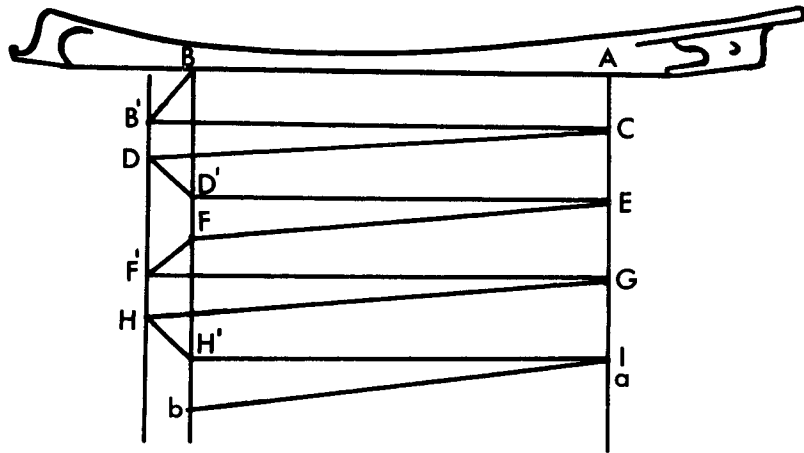
♩ = 60

f A B C¹ D E¹ F G¹ H I¹ a
 B C D E F G H I b



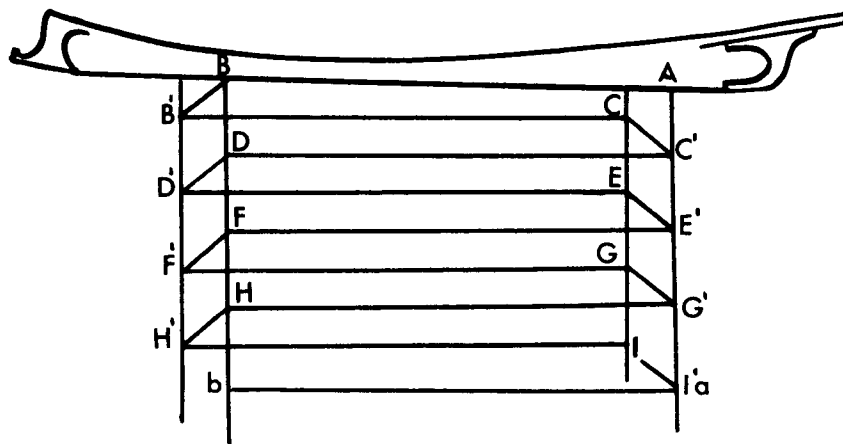
♩ = 60

f A B¹ C D¹ E F¹ G H¹ a
 B C D E F G H I b



♩ = 60

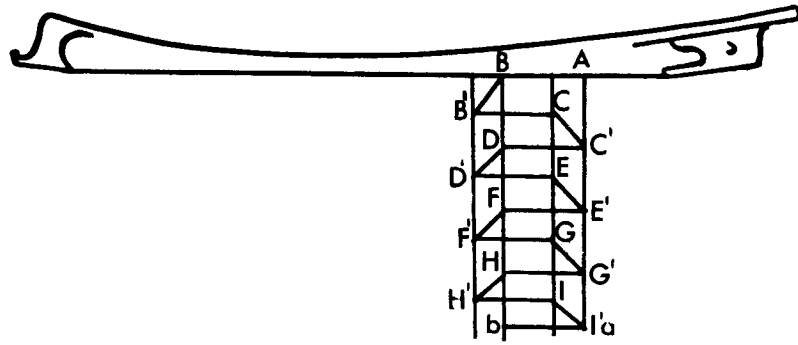
f A B¹ C¹ D¹ E¹ F¹ G¹ H¹ I¹a
 B C D E F G H I b



♩ = 176

f A B¹ C¹ D¹ E¹ F¹ G¹ H¹ I¹ a

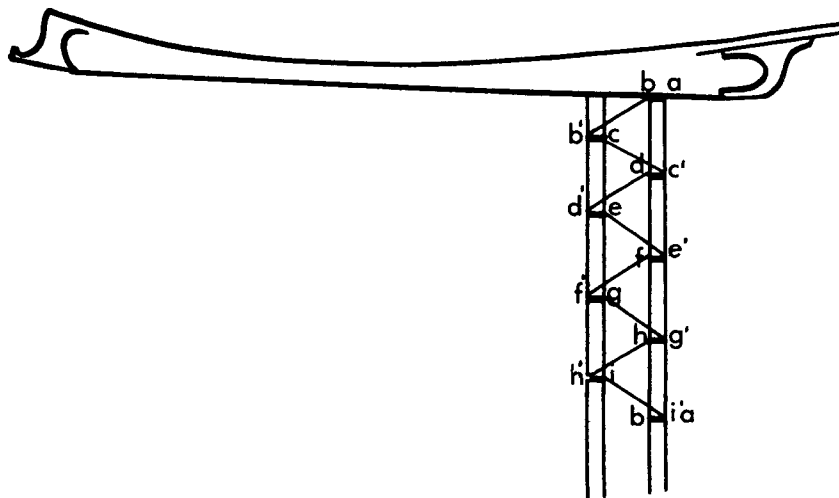
B C D E F G H I



♩ = 144

f A B¹ C¹ D¹ E¹ F¹ G¹ H¹ I¹ a

B C D E F G H I

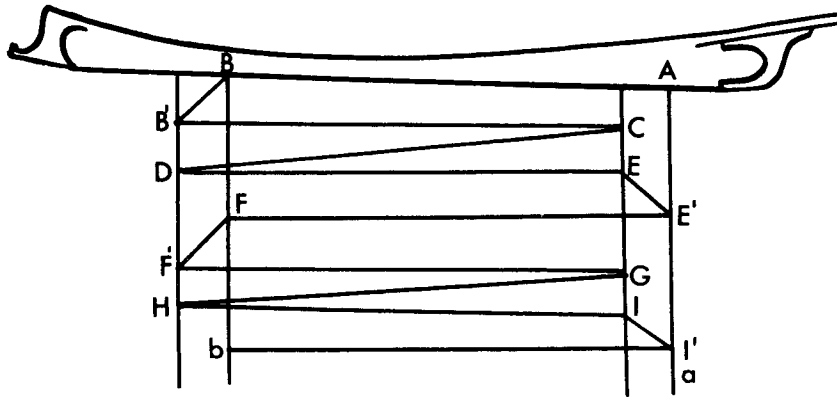


♩ = 60



f A B¹ C D E¹ F¹ G H I I¹a
B C D E F G H I b

The musical notation shows a bass clef with a 2/2 time signature. The melody consists of quarter notes: A, B¹, C, D, E¹, F¹, G, H, I, and I¹a. A dynamic marking of *f* is at the beginning. Below the staff, a second line of notes is provided: B, C, D, E, F, G, H, I, b. Slanted lines connect the notes of the first line to the notes of the second line, indicating a chromatic descent.

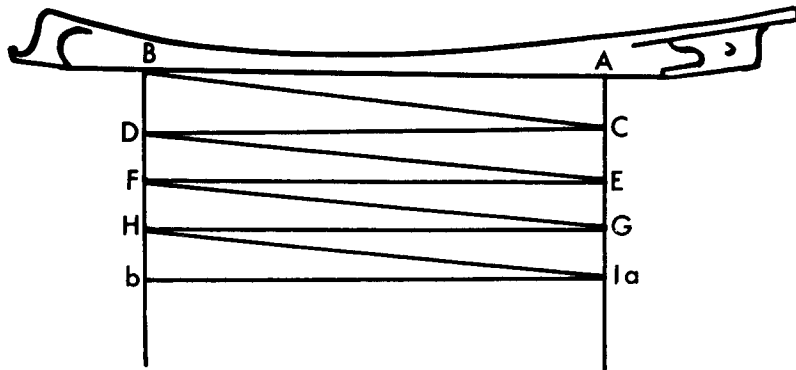


♩ = 60



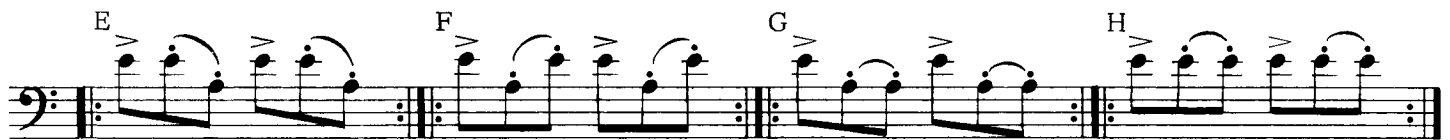
f A B C D E F G H a
B C D E F G H I b

The musical notation shows a bass clef with a 2/2 time signature. The melody consists of quarter notes: A, B, C, D, E, F, G, H, a, and b. A dynamic marking of *f* is at the beginning. Below the staff, a second line of notes is provided: B, C, D, E, F, G, H, I, b. Slanted lines connect the notes of the first line to the notes of the second line, indicating a chromatic descent.



BOWINGS

PATTERN I



ETUDES

BOWINGS (PATTERN I)

Allegro ♩ = 88

Four staves of musical notation in 6/8 time, marked Allegro with a tempo of ♩ = 88. The notation features a consistent bowing pattern of eighth notes with slurs and accents, typical of a double bass exercise.

Allegro ♩ = 96

Four staves of musical notation in 6/8 time, marked Allegro with a tempo of ♩ = 96. The notation continues the bowing pattern with eighth notes, slurs, and accents.

Moderato ♩ = 80

Four staves of musical notation in 6/8 time, marked Moderato with a tempo of ♩ = 80. The notation features a consistent bowing pattern of eighth notes with slurs and accents.

PERMUTATIONS OF PATTERN I

A B A C A D

A E A F A G A H

B A B C B D B A

B E B F B G B H

C B C A C B C D

C E C F C G C H

D C D A D B D C

D E D F D G D H

Staff 1: Bass clef, 6/8 time signature. Notes: E, A, E, B, E, C. Chords: E, A, E, B, E, C.

Staff 2: Bass clef, 6/8 time signature. Notes: E, D, E, F, E, G, E, H. Chords: E, D, E, F, E, G, E, H.

Staff 3: Bass clef, 6/8 time signature. Notes: F, A, F, B, F, C. Chords: F, A, F, B, F, C.

Staff 4: Bass clef, 6/8 time signature. Notes: F, D, F, E, F, G, F, H. Chords: F, D, F, E, F, G, F, H.

Staff 5: Bass clef, 6/8 time signature. Notes: G, A, G, B, G, C. Chords: G, A, G, B, G, C.

Staff 6: Bass clef, 6/8 time signature. Notes: G, D, G, E, G, F, G, H. Chords: G, D, G, E, G, F, G, H.

Staff 7: Bass clef, 6/8 time signature. Notes: H, A, H, B, H, C. Chords: H, A, H, B, H, C.

Staff 8: Bass clef, 6/8 time signature. Notes: H, D, H, E, H, F, H, G. Chords: H, D, H, E, H, F, H, G.

ETUDES

PERMUTATIONS OF PATTERN I

Allegro con brio ♩. = 112 (*spiccato*)



Vivace ♩ = 126

The first exercise is written in bass clef with a 9/8 time signature. It consists of five staves of music. The first four staves contain a continuous sequence of eighth notes, with each note starting with a sharp attack. The fifth staff concludes the exercise with a final note that has a fermata above it.

This exercise is to be practiced with a *Martelé* bowing; each note beginning with a sharp attack and separated from the next note.

Allegro non troppo ♩ = 88

The second exercise is written in bass clef with a 6/8 time signature. It consists of five staves of music. Each staff contains a sequence of eighth notes, with each note starting with a sharp attack. The notes are grouped in pairs across the staves, creating a rhythmic pattern of eighth notes followed by eighth notes.

ETUDES

BOWINGS (PERMUTATIONS OF PATTERN 1)

Allegro ♩. = 88



Allegro ♩ = 96



Moderato ♩ = 76



VARIATION OF PATTERN I

A B C D
 E F G H

This section contains two staves of music in bass clef with a 6/8 time signature. The first staff contains measures 1 through 4, each labeled with a letter (A, B, C, D) above the first measure. The second staff contains measures 5 through 8, each labeled with a letter (E, F, G, H) above the first measure. Each measure consists of a sequence of eighth notes, with some measures featuring beamed eighth notes.

PERMUTATIONS

A B A C A D
 A E A F A G A H
 B A B C B D
 B E B F B G B H
 C A C B C D
 C E C F C G C H

This section contains six staves of music in bass clef with a 6/8 time signature, continuing the sequence from the previous section. Each staff contains four measures, each labeled with a letter above the first measure. The letters used are A, B, C, D, E, F, G, and H, representing different permutations of the original pattern. The notation for each measure is consistent with the previous section, using eighth notes and beamed eighth notes.

D A D B D C

D E D F D G D H

E A E B E C

E D E F E G E H

F A F B F C

F D F E F G F H

G A G B G C

G D G E G F G H

H A H B H C
 H D H E H F H G

ETUDE

PERMUTATIONS OF VARIATIONS OF PATTERN I

Moderato $\text{♩} = 76$

ETUDES

PERMUTATIONS OF ANOTHER VARIATION OF PATTERN I

Moderato ♩. = 72

The first section of the etude consists of six staves of music in 6/8 time. The tempo is marked 'Moderato' with a quarter note equal to 72 beats per minute. The music is written in bass clef and features a complex rhythmic pattern of eighth and sixteenth notes, with some triplets and slurs. The first staff begins with a treble clef and a 6/8 time signature. The subsequent staves continue the melodic and rhythmic development of the piece.

Moderato ♩. = 76

The second section of the etude consists of five staves of music in 3/8 time. The tempo is marked 'Moderato' with a quarter note equal to 76 beats per minute. The music is written in bass clef and continues the rhythmic and melodic themes from the first section. The first staff of this section begins with a treble clef and a 3/8 time signature. The piece concludes with a double bar line on the final staff.

EXERCISES BASED ON PATTERN I

Allegro di bravura ♩. = 132

The image displays ten staves of musical notation, each containing a sequence of exercises based on a specific pattern. The notation is written in bass clef with a 9/8 time signature. Each exercise consists of a series of eighth notes, often grouped in pairs or triplets, with accents (>) placed above the notes. The exercises vary in their rhythmic and melodic structures, providing a comprehensive set of drills for the performer. The first staff begins with a treble clef and a 9/8 time signature, while the subsequent staves use bass clefs. The exercises are arranged in a continuous sequence across the ten staves, with some staves containing multiple measures of the exercise.

TROUT - QUINTET

Allegro (in two)

FRANZ SCHUBERT

Scherzo (in one)

SYMPHONY No. 4 (Italian)

Allegro vivace

FELIX MENDELSSOHN

Allegro vivace

OVERTURE TO "EURYANTHE"

CARL MARIA von WEBER

Allegro
f
 ♩ = 152

SYMPHONY No. 103 (Drum Roll)

Allegro con spirito

JOSEPH HAYDN

♩ = 96

SYMPHONY No. 5

Moderato assai

PETER I. TCHAIKOVSKY

♩ = 120 *ff*

CEPHALE ET PROCRIS SUITE

Allegro

ANDRE GRETRY - MOTTL

First system of musical notation for 'CEPHALE ET PROCRIS SUITE'. It consists of two staves: a treble staff with a key signature of one sharp (F#) and a 6/8 time signature, and a bass staff. The tempo is marked 'Allegro' and the metronome marking is '♩ = 152'. The treble staff contains a melodic line with various fingerings (1, 0, 4, 0, 4, 1, 2, 4, 1, 0, 4, 0). The bass staff contains a rhythmic accompaniment. Below the bass staff, the notes H, C, H, D, D are indicated.

Second system of musical notation for 'CEPHALE ET PROCRIS SUITE'. It continues the two-staff format. The treble staff has fingerings (4, 1, 0, 4, 1, 0, 4, 2, 1, 0). The bass staff continues the accompaniment. Below the bass staff, the notes D, A, H, H, E are indicated.

SYMPHONY No. 45 ("Farewell")

Presto

JOSEPH HAYDN

First system of musical notation for 'SYMPHONY No. 45 ("Farewell")'. It consists of two staves: a treble staff with a key signature of one sharp (F#) and a 3/8 time signature, and a bass staff. The tempo is marked 'Presto' and the metronome marking is '♩ = 144'. The treble staff features a complex melodic line with many triplets and fingerings (4, 2, 4, 2, 4, 1, 4, 1, 1). The bass staff features a rhythmic accompaniment with triplets. Below the bass staff, the notes G, G, G, D, G, G, D, G are indicated.

Second system of musical notation for 'SYMPHONY No. 45 ("Farewell")'. It continues the two-staff format. The treble staff has fingerings (1, 2, 4, 1, 2, 4, 1, 4, 1, 4, 1, 4, 1, 2). The bass staff continues the accompaniment. Below the bass staff, the notes G, D, E, D, D, G, G, D, G, G, D, E are indicated.

Third system of musical notation for 'SYMPHONY No. 45 ("Farewell")'. It continues the two-staff format. The treble staff has fingerings (4, 2, 4, 1, 4, 1, 4, 2, 4, 1, 4, 2, 4, 1, 4). The bass staff continues the accompaniment. Below the bass staff, the notes D, G, E, G are indicated.

SYMPHONY No. 7

LUDWIG VAN BEETHOVEN

Vivace

♩ = 104

simile

simile

This page contains the first 16 measures of the first movement of Ludwig van Beethoven's Symphony No. 7. The music is written for two bass staves in G major and 6/8 time. The tempo is marked 'Vivace' with a metronome marking of 104 quarter notes per minute. The score includes various musical notations such as slurs, accents, and fingering numbers (1, 2, 3, 4, 0). The word 'simile' appears above the first two measures of the second system. The piece concludes with a final cadence in the 16th measure, marked with 'A' and 'D' below the notes.

PIANO CONCERTO No. 4

Presto

LUDWIG VAN BEETHOVEN

♩ = 160

B 3

B 3

E 3

B 3

D 3

TILL EULENSPIEGEL

Allegro con brio

RICHARD STRAUSS

♩ = 132

H E H

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DON QUIXOTE

Allegro di molto

RICHARD STRAUSS

♩ = 138

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SYMPHONY No. 7

Allegro vivace (in one)

FRANZ SCHUBERT

The first system of musical notation consists of two staves in bass clef, 2/4 time. The tempo is marked 'Allegro vivace (in one)' and the dynamics are 'ff' (fortissimo). The tempo marking is accompanied by a quarter note symbol and the number '100'. The music begins with a V-shaped breath mark above the first note. The first staff contains a sequence of eighth notes with fingerings 1, 0, 1, 3, 4, 1, 3. The second staff contains a sequence of eighth notes with fingerings 3, 3, 3, 3, 3. A 'D' chord symbol is placed above the fourth measure of the first staff.

The second system of musical notation consists of two staves in bass clef, 2/4 time. Both staves contain eighth notes with a '3' (triple) marking below each note. The first staff has fingerings 0, 3, 3, 3, 3, 3, 3. The second staff has fingerings 3, 3, 3, 3, 3, 3, 3.

The third system of musical notation consists of two staves in bass clef, 2/4 time. The first staff contains eighth notes with fingerings 0, 1, 1, 4, 3, 3, 3, 3, 3. The second staff contains eighth notes with a '3' (triple) marking below each note and fingerings 3, 3, 3, 3, 3, 3, 3.

The fourth system of musical notation consists of two staves in bass clef, 2/4 time. The first staff contains eighth notes with fingerings 1, 2, 4, 1, 2, 0, 1, 3. It includes a V-shaped breath mark above the first note of the first measure and another above the first note of the fifth measure. The second staff contains eighth notes with a '3' (triple) marking below each note and fingerings 3, 3, 3, 3, 3, 3, 3.

The fifth system of musical notation consists of two staves in bass clef, 2/4 time. Both staves contain eighth notes with a '3' (triple) marking below each note. The first staff has fingerings 3, 3, 3, 3, 3, 3, 3. The second staff has fingerings 3, 3, 3, 3, 3, 3, 3.

The sixth system of musical notation consists of two staves in bass clef, 2/4 time. The first staff contains eighth notes with fingerings 2, 1, 2, 1, 0, 1, 2, 3, 3, 3, 3, 3. The second staff contains eighth notes with a '3' (triple) marking below each note and fingerings 0, 3, 1, 3, 3, 3, 3, 3.

2 1 2 1 4 1
3 3 3 3 3 3
B 3 H B 3 H B 3 H B 3 H

V 0 V V 0 1 0
3 3 3 3 3
V 3 V 3 V 3

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

SYMPHONY No. 1

Allegro

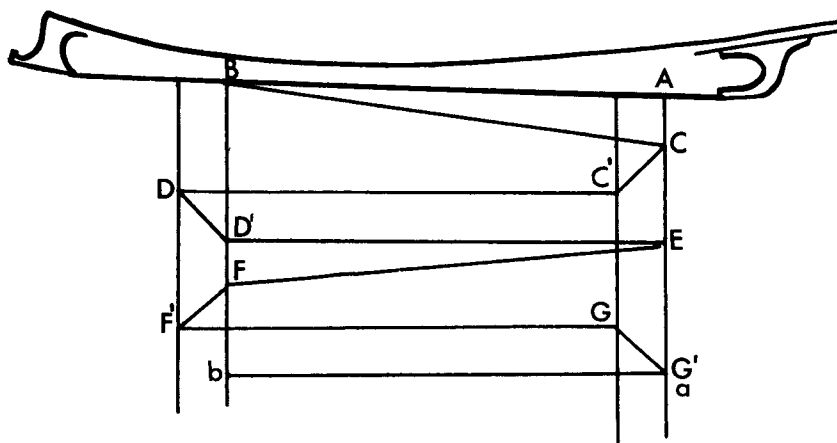
JOHANNES BRAHMS

$\text{♩} = 120$ *ff*
D D D V V V V V V

V V V V V V V V V V V V V V V V

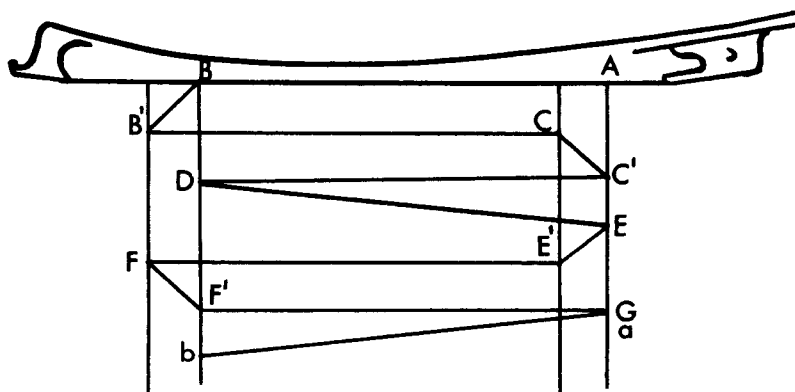
$\text{♩} = 50$

f A B C¹ D¹ E F¹ G¹a
 B C D E F G b



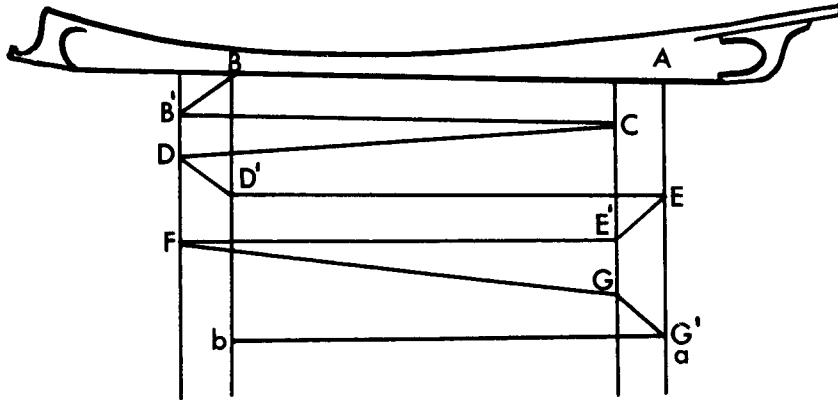
$\text{♩} = 50$

f A B¹ C¹ D E¹ F¹ G a
 B C D E F G b



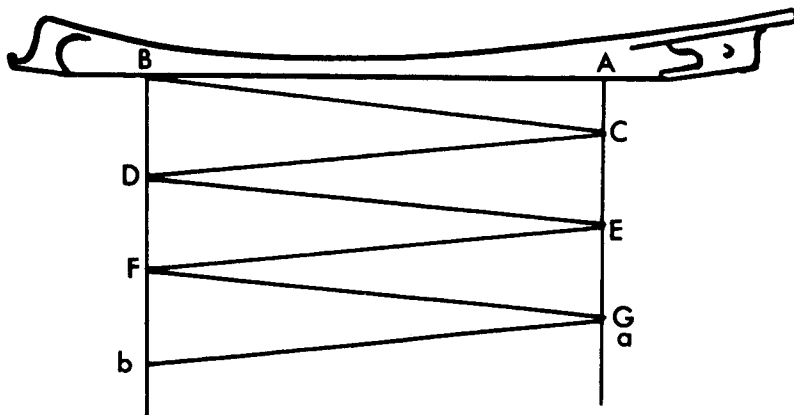
♩ = 50

f A B C D E F G G¹a
B C D E F G b



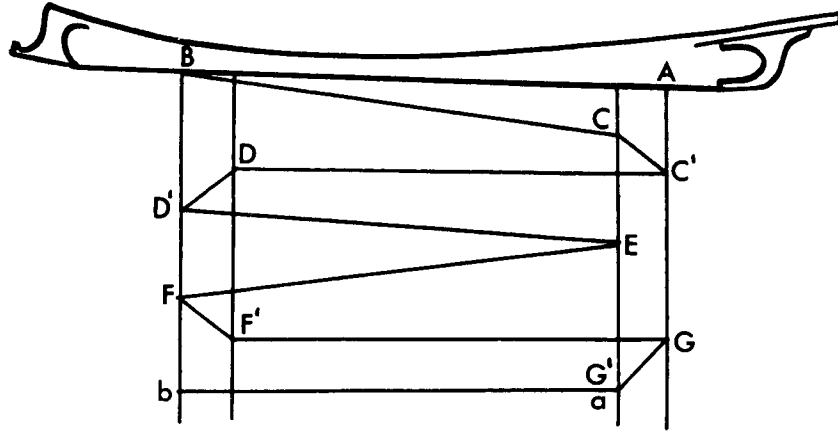
♩ = 50

f A B C D E F Ga
B C D E F G b



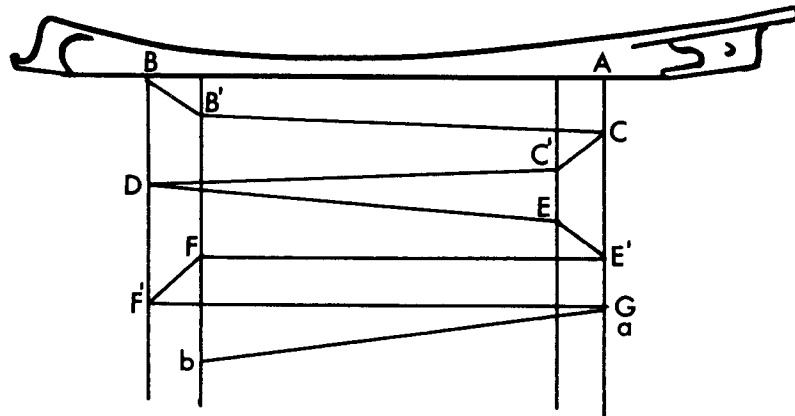
♩ = 50

f A/B B/C C¹/D¹ D¹/E E/F¹ F¹/G¹ G¹/a



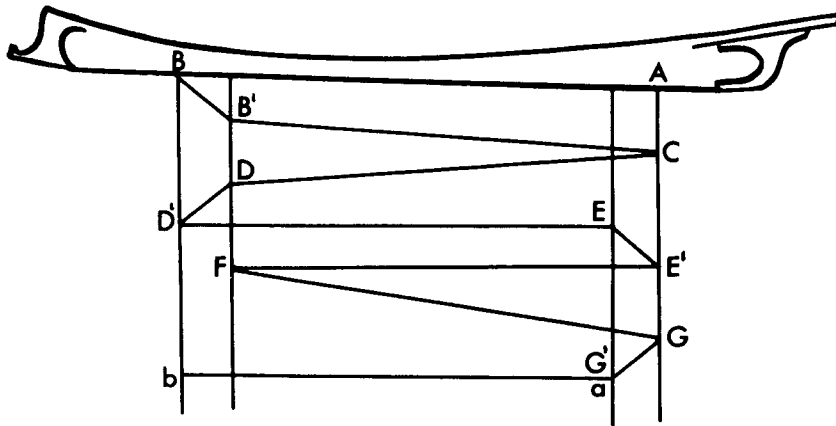
♩ = 50

f A/B¹ B¹/C¹ C¹/D D/E¹ E¹/F¹ F¹/G G/a



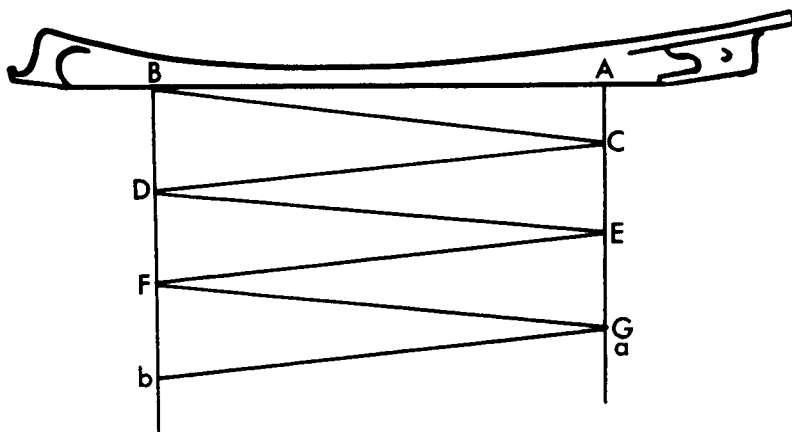
♩ = 50

f A B C D E F G G¹a
B C D E F G b



♩ = 50

f A B C D E F G
B C D E F G



SECTION III

PATTERN I

Pattern I consists of two staves of music. The first staff contains four measures labeled A, B, C, and D. The second staff contains four measures labeled E, F, G, and H. Each measure shows a sequence of eighth notes with accents, followed by a double bar line and repeat dots.

SUGGESTED PROCEDURE FOR PRACTICE

$\text{♩} = 72$ to $\text{♩} = 132$ (*détaché*)

The suggested procedure for practice consists of five staves of music. The first staff is in 2/4 time and shows a sequence of eighth notes with accents. The second and third staves are in 2/4 time and show a sequence of eighth notes with accents, followed by a double bar line and repeat dots. The fourth and fifth staves are in 3/4 time and show a sequence of eighth notes with accents, followed by a double bar line and repeat dots.

ETUDE

PATTERN I

Moderato $\text{♩} = 84$

The Etude consists of five staves of music. The first staff is in 2/4 time and shows a sequence of eighth notes with accents. The second, third, fourth, and fifth staves are in 2/4 time and show a sequence of eighth notes with accents, followed by a double bar line and repeat dots.

PERMUTATIONS

PATTERN I



Staff 1: Bass clef, 2/4 time signature. Notes: E, A, E, B, E, C. Each note has a 'V' above it and a '>' below it. The staff is divided into three measures by double bar lines.

Staff 2: Bass clef, 2/4 time signature. Notes: E, D, E, F, E, G, E, H. Each note has a 'V' above it and a '>' below it. The staff is divided into four measures by double bar lines.

Staff 3: Bass clef, 2/4 time signature. Notes: F, A, F, B, F, C. Each note has a 'V' above it and a '>' below it. The staff is divided into three measures by double bar lines.

Staff 4: Bass clef, 2/4 time signature. Notes: F, D, F, E, F, G, F, H. Each note has a 'V' above it and a '>' below it. The staff is divided into four measures by double bar lines.

Staff 5: Bass clef, 2/4 time signature. Notes: G, A, G, B, G, C. Each note has a 'V' above it and a '>' below it. The staff is divided into three measures by double bar lines.

Staff 6: Bass clef, 2/4 time signature. Notes: G, D, G, E, G, F, G, H. Each note has a 'V' above it and a '>' below it. The staff is divided into four measures by double bar lines.

Staff 7: Bass clef, 2/4 time signature. Notes: H, A, H, B, H, C. Each note has a 'V' above it and a '>' below it. The staff is divided into three measures by double bar lines.

Staff 8: Bass clef, 2/4 time signature. Notes: H, D, H, E, H, F, H, G. Each note has a 'V' above it and a '>' below it. The staff is divided into four measures by double bar lines.

ETUDES

PERMUTATIONS OF PATTERN I

Allegro vivo ♩ = 96 to ♩ = 120



Allegro vivo ♩ = 96 to ♩ = 120



BOWINGS

PATTERN I



* The dotted notes are to be played alternately on the string (*Staccato*) and off the string (*Flying Spiccato*).

ETUDE

BOWINGS (PATTERN I)

Moderato ♩ = 76



ETUDE

BOWINGS (PERMUTATIONS OF PATTERN I)

Allegro ♩ = 96



PATTERN II

A musical staff in bass clef with a 2/4 time signature. It contains four measures of eighth-note patterns, each starting with a ledger line below the staff. The notes are labeled A¹, B¹, C¹, and D¹ above the first note of each measure. Each measure is followed by a repeat sign.

A musical staff in bass clef with a 2/4 time signature. It contains four measures of eighth-note patterns, each starting with a ledger line below the staff. The notes are labeled E¹, F¹, G¹, and H¹ above the first note of each measure. Each measure is followed by a repeat sign.

ETUDE

PATTERN II

Vivo ♩ = 120

A musical staff in bass clef with a 2/4 time signature. It begins with a bass clef and a 2/4 time signature. The first measure starts with a ledger line below the staff. The etude consists of continuous eighth-note patterns across the staff.

A musical staff in bass clef with a 2/4 time signature, continuing the etude with eighth-note patterns.

A musical staff in bass clef with a 2/4 time signature, continuing the etude with eighth-note patterns.

A musical staff in bass clef with a 2/4 time signature, continuing the etude with eighth-note patterns.

A musical staff in bass clef with a 2/4 time signature, concluding the etude with eighth-note patterns and ending with a double bar line.

PERMUTATIONS OF PATTERN II



Staff 1: Bass clef, 2/4 time signature. Notes: E1, A1, E1, B1, E1, C1. Chord symbols: E1, A1, E1, B1, E1, C1.

Staff 2: Bass clef, 2/4 time signature. Notes: E1, D1, E1, F1, E1, G1, E1, H1. Chord symbols: E1, D1, E1, F1, E1, G1, E1, H1.

Staff 3: Bass clef, 2/4 time signature. Notes: F1, A1, F1, B1, F1, C1. Chord symbols: F1, A1, F1, B1, F1, C1.

Staff 4: Bass clef, 2/4 time signature. Notes: F1, D1, F1, E1, F1, G1, F1, H1. Chord symbols: F1, D1, F1, E1, F1, G1, F1, H1.

Staff 5: Bass clef, 2/4 time signature. Notes: G1, A1, G1, B1, G1, C1. Chord symbols: G1, A1, G1, B1, G1, C1.

Staff 6: Bass clef, 2/4 time signature. Notes: G1, D1, G1, E1, G1, F1, G1, H1. Chord symbols: G1, D1, G1, E1, G1, F1, G1, H1.

Staff 7: Bass clef, 2/4 time signature. Notes: H1, A1, H1, B1, H1, C1. Chord symbols: H1, A1, H1, B1, H1, C1.

Staff 8: Bass clef, 2/4 time signature. Notes: H1, D1, H1, E1, H1, F1, H1, G1. Chord symbols: H1, D1, H1, E1, H1, F1, H1, G1.

ETUDE

PERMUTATIONS OF PATTERN II

Moderato ♩ = 88



PERMUTATIONS OF PATTERNS I & II



Staff 1: Bass clef, 2/4 time signature. Four measures with notes and accidentals: E, A¹; E, B¹; E, C¹; E, D¹.

Staff 2: Bass clef, 2/4 time signature. Four measures with notes and accidentals: E, E¹; E, F¹; E, G¹; E, H¹.

Staff 3: Bass clef, 2/4 time signature. Four measures with notes and accidentals: F, A¹; F, B¹; F, C¹; F, D¹.

Staff 4: Bass clef, 2/4 time signature. Four measures with notes and accidentals: F, E¹; F, F¹; F, G¹; F, H¹.

Staff 5: Bass clef, 2/4 time signature. Four measures with notes and accidentals: G, A¹; G, B¹; G, C¹; G, D¹.

Staff 6: Bass clef, 2/4 time signature. Four measures with notes and accidentals: G, E¹; G, F¹; G, G¹; G, H¹.

Staff 7: Bass clef, 2/4 time signature. Four measures with notes and accidentals: H, A¹; H, B¹; H, C¹; H, D¹.

Staff 8: Bass clef, 2/4 time signature. Four measures with notes and accidentals: H, E¹; H, F¹; H, G¹; H, H¹.

ETUDES

PERMUTATIONS OF PATTERNS I & II

Allegro ♩ = 92 to ♩ = 108

This section consists of six staves of music in bass clef, 2/4 time signature. The tempo is marked 'Allegro' with a metronome marking of ♩ = 92 to ♩ = 108. The music features a series of rhythmic patterns involving eighth and sixteenth notes, with some slurs and accents. The patterns are permutations of two basic motifs, I and II, as indicated by the title.

Allegro ♩ = 108

This section consists of five staves of music in bass clef, 3/4 time signature. The tempo is marked 'Allegro' with a metronome marking of ♩ = 108. The music continues with rhythmic patterns similar to the first section, but adapted for the 3/4 time signature. It includes various rhythmic values such as eighth, sixteenth, and dotted notes, with slurs and accents.

PERMUTATIONS OF PATTERNS II & I

A¹ A A¹ B A¹ C A¹ D

A¹ E A¹ F A¹ G A¹ H

B¹ A B¹ B B¹ C B¹ D

B¹ E B¹ F B¹ G B¹ H

C¹ A C¹ B C¹ C C¹ D

C¹ E C¹ F C¹ G C¹ H

D¹ A D¹ B D¹ C D¹ D

D¹ E D¹ F D¹ G D¹ H

Staff 1: Bass clef, 2/4 time signature. Notes: E¹, A, E¹, B, E¹, C, E¹, D. Each note is followed by a triplet of eighth notes.

Staff 2: Bass clef, 2/4 time signature. Notes: E¹, E, E¹, F, E¹, G, E¹, H. Each note is followed by a triplet of eighth notes.

Staff 3: Bass clef, 2/4 time signature. Notes: F¹, A, F¹, B, F¹, C, F¹, D. Each note is followed by a triplet of eighth notes.

Staff 4: Bass clef, 2/4 time signature. Notes: F¹, E, F¹, F, F¹, G, F¹, H. Each note is followed by a triplet of eighth notes.

Staff 5: Bass clef, 2/4 time signature. Notes: G¹, A, G¹, B, G¹, C, G¹, D. Each note is followed by a triplet of eighth notes.

Staff 6: Bass clef, 2/4 time signature. Notes: G¹, E, G¹, F, G¹, G, G¹, H. Each note is followed by a triplet of eighth notes.

Staff 7: Bass clef, 2/4 time signature. Notes: H¹, A, H¹, B, H¹, C, H¹, D. Each note is followed by a triplet of eighth notes.

Staff 8: Bass clef, 2/4 time signature. Notes: H¹, E, H¹, F, H¹, G, H¹, H. Each note is followed by a triplet of eighth notes.

ETUDE

PERMUTATIONS OF PATTERNS II & I

Allegro con moto ♩ = 88 to ♩ = 100



VARIATIONS ON A THEME BY HAYDN

(Variation No.6)

JOHANNES BRAHMS

Vivace

♩ = 92

A A

E E H D D

A A

OVERTURE "LEONORE No. 3"

Allegro (in two)

LUDWIG van BEETHOVEN

♩ = 132

H E G D G

F G

SYMPHONY No. 102

JOSEPH HAYDN

Allegro vivace

The first system of the musical score for Symphony No. 102 by Joseph Haydn. It features two staves in bass clef with a 2/2 time signature. The tempo is marked 'Allegro vivace'. The key signature has one flat (B-flat). The first staff contains a melodic line with various fingering indications (4 1, 2 1, 0 1) and slurs. The second staff contains a rhythmic accompaniment with notes marked 'H' and 'D'. A tempo marking '♩ = 132' is present.

SYMPHONY No. 35

WOLFGANG A. MOZART

Presto

The first system of the musical score for Symphony No. 35 by Wolfgang A. Mozart. It features two staves in bass clef with a 4/4 time signature. The tempo is marked 'Presto'. The key signature has two sharps (F# and C#). The first staff contains a melodic line with complex fingering (0 1, 4, 1 4, 2, 2 4, 4, 4 1 4, 1 4, 1 1) and slurs. The second staff contains a rhythmic accompaniment with notes marked 'H' and 'D'. A tempo marking '♩ = 132' is present.

OVERTURE to "DER FREISCHÜTZ"

CARL MARIA von WEBER

Molto vivace

The first two systems of the musical score for the Overture to 'Der Freischütz' by Carl Maria von Weber. It features two staves in bass clef with a 4/4 time signature. The tempo is marked 'Molto vivace'. The key signature has two flats (B-flat and E-flat). The first system includes a tempo marking '♩ = 104 p'. The first staff contains a melodic line with various fingering (4 1 2 0 0) and slurs. The second staff contains a rhythmic accompaniment with notes marked with accents (>).

SYMPHONY No. 3

FELIX MENDELSSOHN

Vivace

♩ = 120 *p*

D

4 1 4 2 4

This system shows the beginning of the first movement in 2/4 time, marked Vivace and piano. The music is written for two staves. The first staff contains a melodic line with eighth-note patterns and a triplet of eighth notes. The second staff provides a rhythmic accompaniment with eighth-note chords. A dynamic marking of piano (*p*) and a tempo of 120 beats per minute are indicated. A fingered chord 'D' is shown in the first staff, and a sequence of fingerings (4, 1, 4, 2, 4) is provided for the triplet.

This system continues the musical notation from the first system, showing the progression of the eighth-note patterns in both staves.

Vivace

♩ = 120

1 4 2

This system continues the musical notation, featuring a tempo of 120 beats per minute. The first staff includes a sharp sign (#) and a triplet of eighth notes. Fingerings 1, 4, and 2 are indicated for the triplet.

4 1 2

This system concludes the musical notation on this page, showing the continuation of the eighth-note patterns and the triplet in the first staff.

OVERTURE TO ROMEO AND JULIET

PETER I. TCHAIKOVSKY

Allegro giusto

♩ = 138

V
D H H

C G

H G D D D

SYMPHONY No. 88

JOSEPH HAYDN

Allegro

♩ = 138

E E E E D A H

D D E E

SUITE No. 2 in B MINOR

Badinerie

JOHANN SEBASTIAN BACH

$\text{♩} = 120$

B C B D B B C B H B

SONATA No. 3

Allegro (sostenuto)

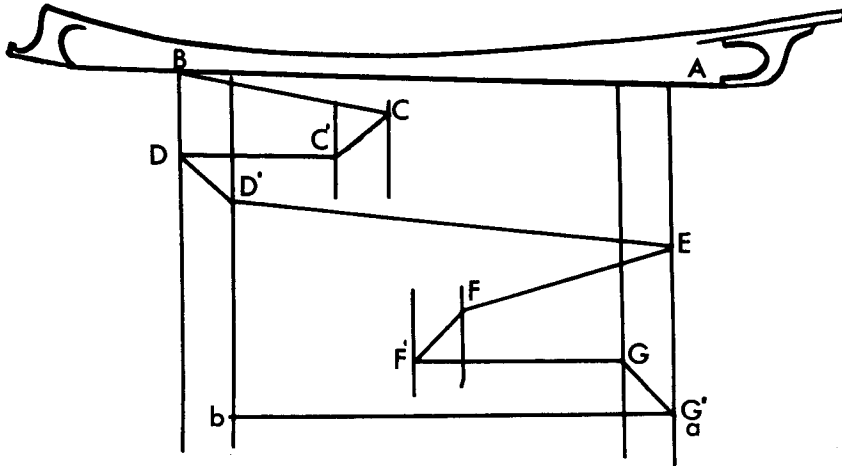
ANTONIO VIVALDI

$\text{♩} = 104$ *f*

H¹ H¹ D¹ D¹ H¹ D D C¹ C¹ C¹ C¹

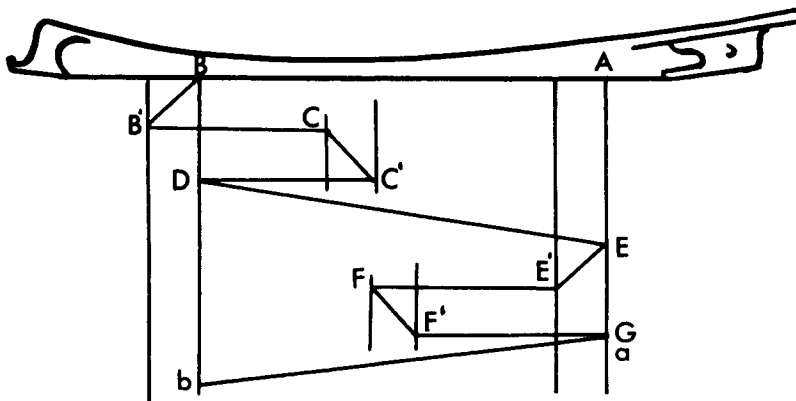
♩ = 72

f A B C¹ D¹ E F¹ G¹ a
 B C D E F G b



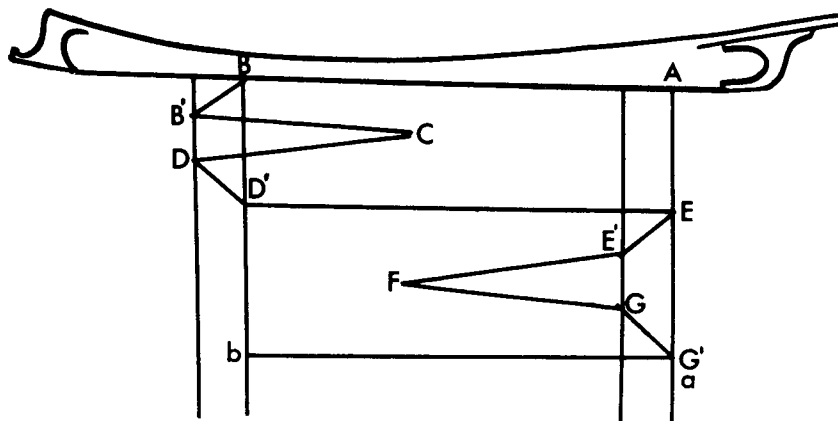
♩ = 72

f A B¹ C¹ D E¹ F¹ G a
 B C D E F G b



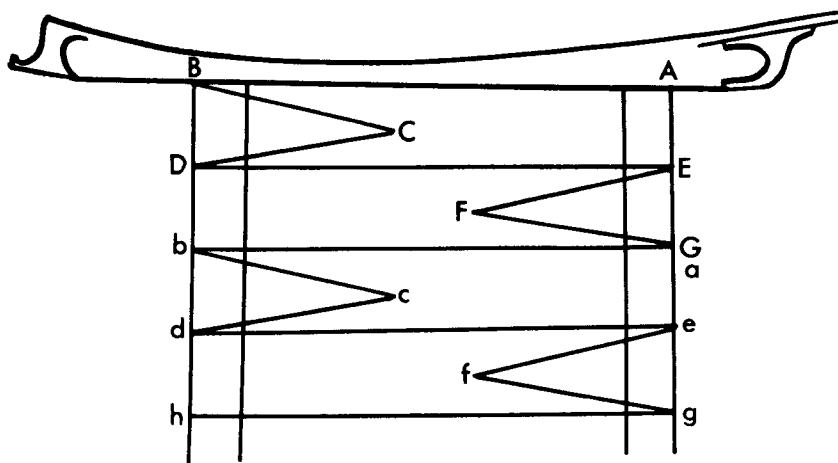
♩=72

f A B¹ C D¹ E¹ F G¹a
 B C D E F G b



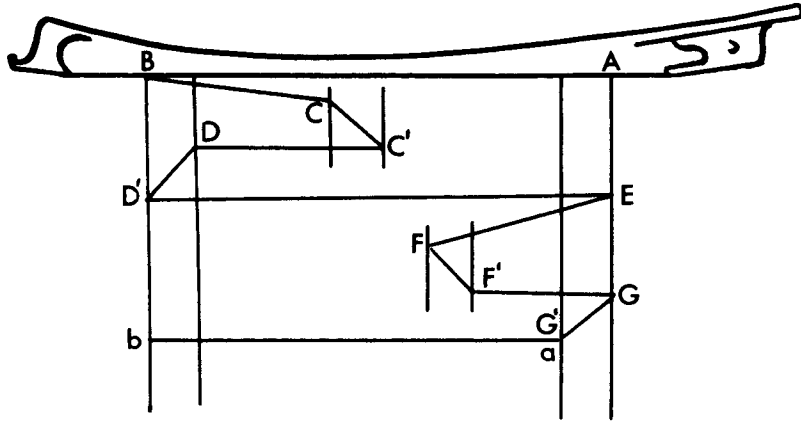
♩=72

f A B C D E F Ga
 B C D E F G b



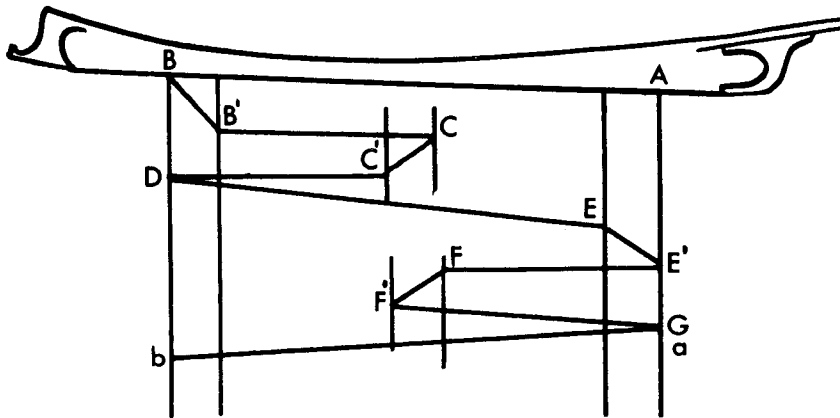
♩=72

f A B C¹ D¹ E F¹ G¹a
 B C D E F G b



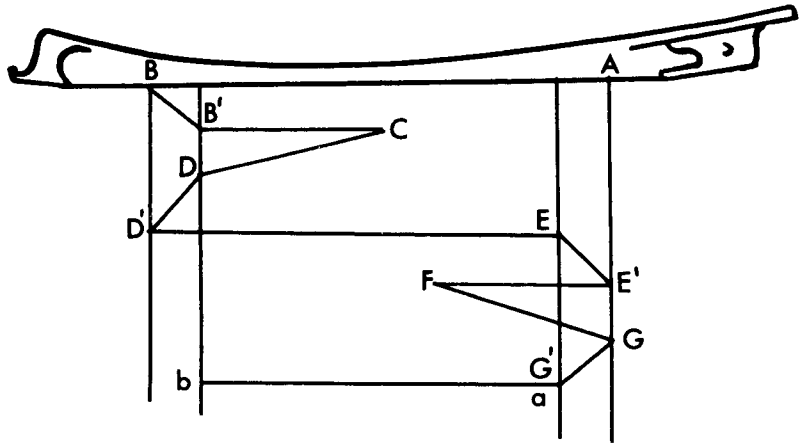
♩=72

f A B¹ C¹ D E¹ F¹ G a
 B C D E F G b



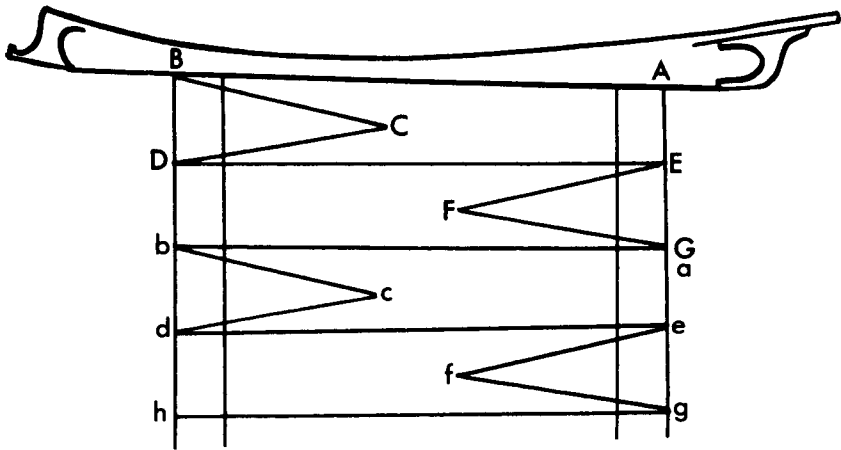
$\text{♩} = 72$

f A / B¹ C / D¹ E¹ F / G¹ a
 B / C D E / F G / b



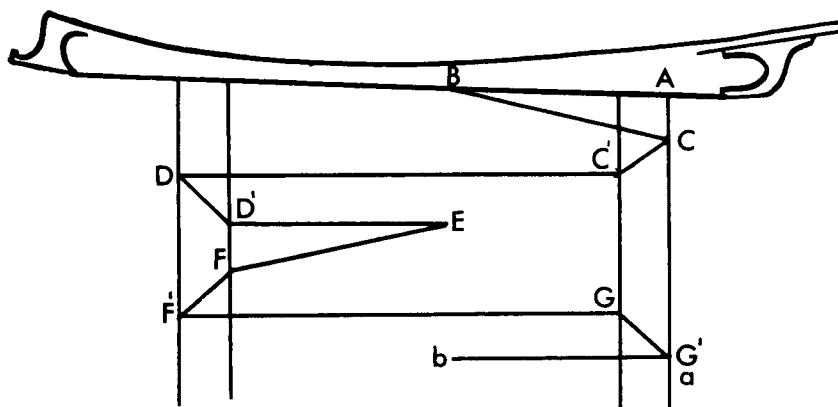
$\text{♩} = 72$

f A B C D E F Ga
 B C D E F G b



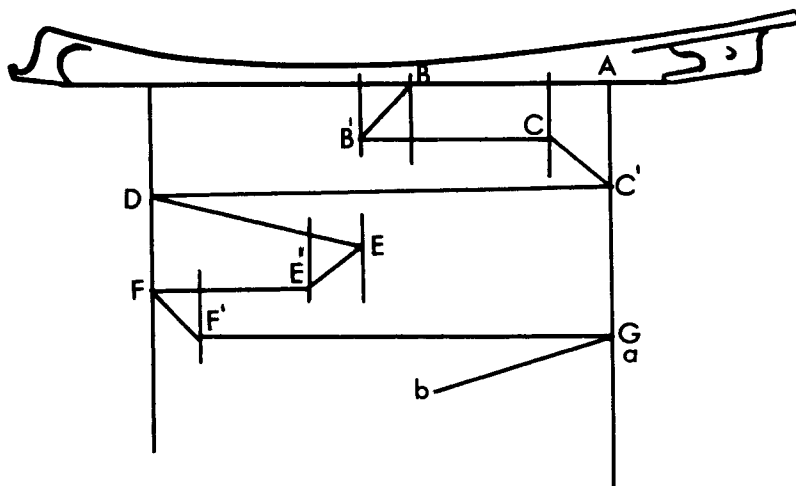
$\text{♩} = 72$

f A B C¹ D¹ E F¹ G¹ a
 B C D E F G b



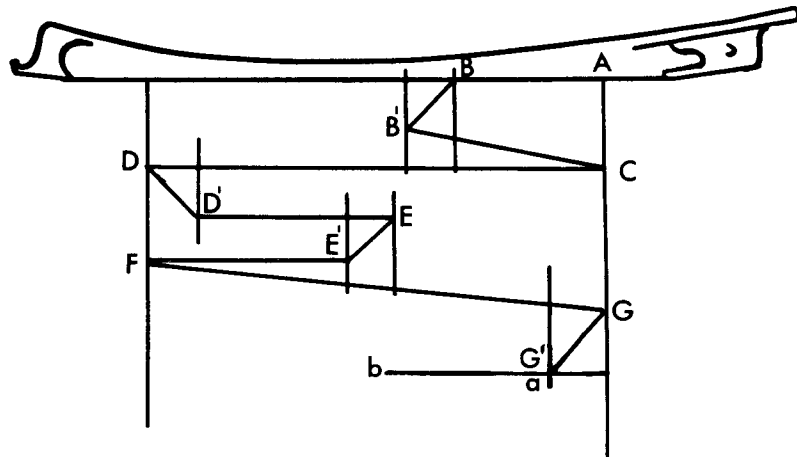
$\text{♩} = 72$

f A B¹ C¹ D E¹ F¹ G a
 B C D E F G b



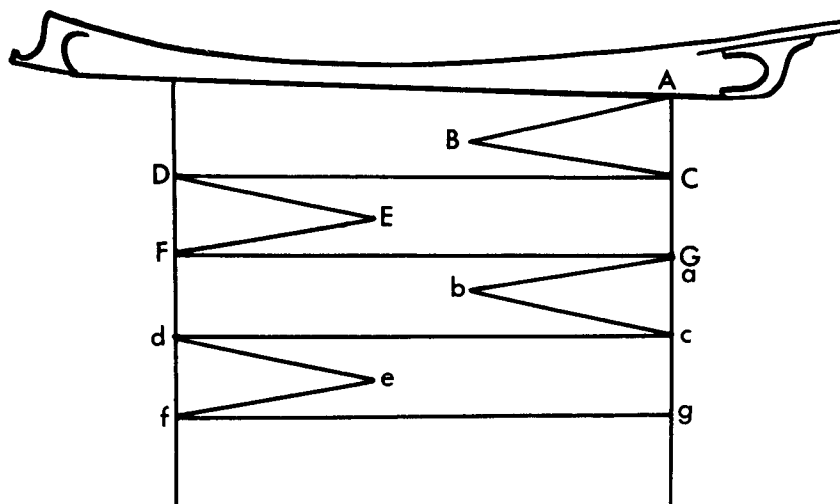
$\text{♩} = 72$

f A B C D E F G a
 B C D E F G b



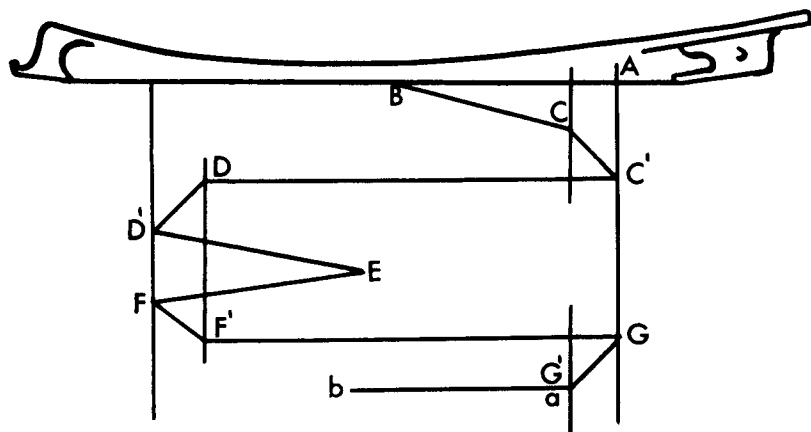
$\text{♩} = 72$

f A B C D E F Ga
 B C D E F G b



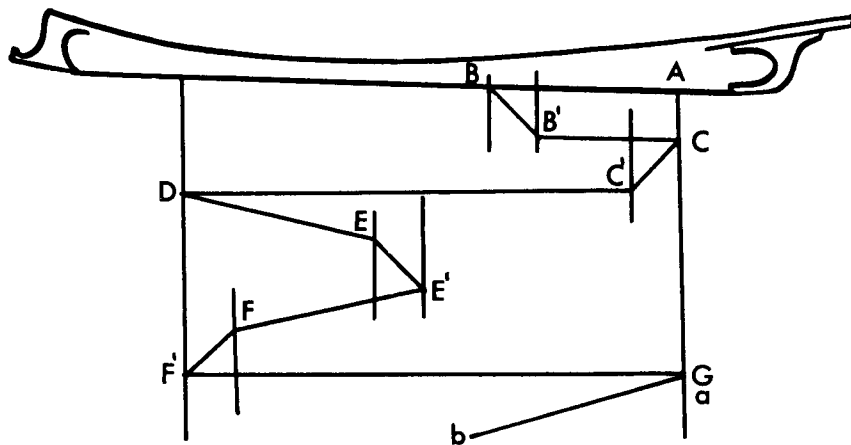
$\text{♩} = 72$

f A B C¹ D¹ E F¹ G¹ a
 B C D E F G b



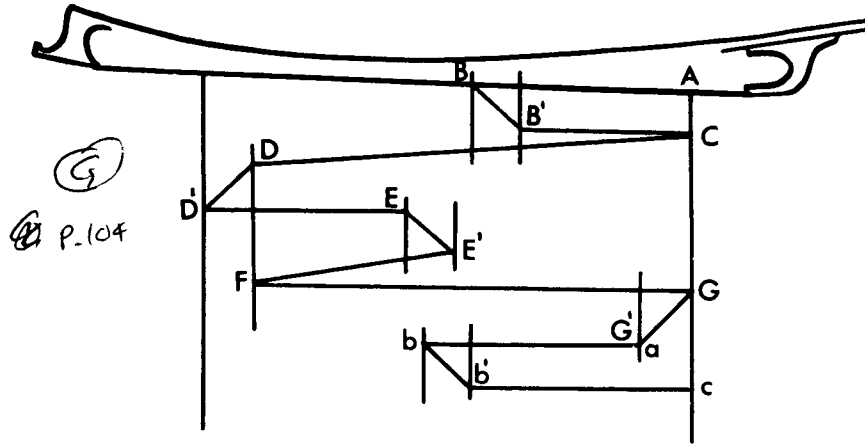
$\text{♩} = 72$

f A B¹ C¹ D E¹ F¹ G a
 B C D E F G b



$\text{♩} = 72$

A B¹ C D¹ E¹ F G¹ a
B C D E F G b



SECTION IV

PATTERN I



Suggested procedure for practice: Each pattern is played first at a metronome marking of $\text{♩} = 90$. The tempo is accelerated until $\text{♩} = 176$, with the bow on the string (*Détaché*). With the metronome set at $\text{♩} = 192$, the patterns are practiced with a *Spiccato* bowing. At $\text{♩} = 88$ the bow remains again on the string.



Presto ♩ = 76

Musical score for Presto exercise, 6/8 time signature. The score consists of five staves of music. Each staff contains a sequence of eighth notes, with the first note of each eighth-note group marked with an accent (a small triangle above the note). The notes are arranged in a pattern that repeats every two measures, with the first measure containing two eighth notes and the second measure containing one eighth note followed by a quarter note. The tempo is marked Presto with a quarter note equal to 76 beats per minute.

This exercise is to be practiced with a *Martelé* bowing; each note beginning with a sharp attack and separated from the next note.

Moderato ♩ = 144

Musical score for Moderato exercise, 3/4 time signature. The score consists of five staves of music. Each staff contains a sequence of eighth notes, with the first note of each eighth-note group marked with an accent (a small triangle above the note). The notes are arranged in a pattern that repeats every two measures, with the first measure containing two eighth notes and the second measure containing one eighth note followed by a quarter note. The tempo is marked Moderato with a quarter note equal to 144 beats per minute.

BOWINGS

PATTERN I

1

2

3

4

First row of exercise 4, measures A through D. Each measure contains a sequence of eighth notes with slurs and accents.

Second row of exercise 4, measures E through H. Each measure contains a sequence of eighth notes with slurs and accents.

5

First row of exercise 5, measures A through D. Each measure contains a sequence of eighth notes with slurs and accents.

Second row of exercise 5, measures E through H. Each measure contains a sequence of eighth notes with slurs and accents.

6

First row of exercise 6, measures A through D. Each measure contains a sequence of eighth notes with slurs and accents.

Second row of exercise 6, measures E through H. Each measure contains a sequence of eighth notes with slurs and accents.

7

First row of exercise 7, measures A through D. Each measure contains a sequence of eighth notes with slurs and accents.

Second row of exercise 7, measures E through H. Each measure contains a sequence of eighth notes with slurs and accents.

ETUDES

BOWINGS (PATTERN I)

Moderato ♩ = 126

Musical notation for the Moderato section, 3/4 time signature. It consists of five staves of music. The first staff begins with a treble clef, a 3/4 time signature, and a tempo marking of Moderato with a quarter note equal to 126 beats per minute. The notation features a series of eighth-note patterns with slurs and accents, characteristic of a bowing exercise. The piece concludes with a double bar line.

Andante ♩ = 138

Musical notation for the Andante section, 3/8 time signature. It consists of five staves of music. The first staff begins with a treble clef, a 3/8 time signature, and a tempo marking of Andante with a quarter note equal to 138 beats per minute. The notation features a series of eighth-note patterns with slurs and accents, characteristic of a bowing exercise. The piece concludes with a double bar line.

PERMUTATIONS OF PATTERN I

Staff 1: Pattern A, B, A, C, A, D

Staff 2: Pattern A, E, A, F, A, G, A, H

Staff 3: Pattern B, A, B, C, B, D

Staff 4: Pattern B, E, B, F, B, G, B, H

Staff 5: Pattern C, A, C, B, C, D

Staff 6: Pattern C, E, C, F, C, G, C, H

Staff 7: Pattern D, A, D, B, D, C

Staff 8: Pattern D, E, D, F, D, G, D, H

Staff 1: Bass clef, 3/4 time signature. Notes: E (quarter), A (quarter), A (quarter), G (quarter), F (quarter), E (quarter). Rehearsal marks A, B, C.

Staff 2: Bass clef, 3/4 time signature. Notes: E (quarter), D (quarter), D (quarter), C (quarter), B (quarter), A (quarter). Rehearsal marks D, F, G, H.

Staff 3: Bass clef, 3/4 time signature. Notes: F (quarter), A (quarter), A (quarter), G (quarter), F (quarter), E (quarter). Rehearsal marks A, B, C.

Staff 4: Bass clef, 3/4 time signature. Notes: F (quarter), D (quarter), D (quarter), C (quarter), B (quarter), A (quarter). Rehearsal marks D, E, G, H.

Staff 5: Bass clef, 3/4 time signature. Notes: G (quarter), A (quarter), A (quarter), G (quarter), F (quarter), E (quarter). Rehearsal marks A, B, C.

Staff 6: Bass clef, 3/4 time signature. Notes: G (quarter), D (quarter), D (quarter), C (quarter), B (quarter), A (quarter). Rehearsal marks D, E, F, H.

Staff 7: Bass clef, 3/4 time signature. Notes: H (quarter), A (quarter), A (quarter), G (quarter), F (quarter), E (quarter). Rehearsal marks A, B, C.

Staff 8: Bass clef, 3/4 time signature. Notes: H (quarter), D (quarter), D (quarter), C (quarter), B (quarter), A (quarter). Rehearsal marks D, E, F, G.

ETUDES

PERMUTATIONS OF PATTERN I

Allegro molto ♩ = 152 to ♩ = 176 (*spiccato*) to ♩ = 208 (*détaché*)



Allegro molto ♩ = 168 to ♩ = 184 (*spiccato*)



BOWINGS

PERMUTATIONS OF PATTERN I





ETUDES

BOWINGS (PERMUTATIONS OF PATTERN I)

Allegro giusto ♩ = 138 to ♩ = 160



Allegro giusto ♩ = 138 to ♩ = 160



SYMPHONY No. 1

JEAN SIBELIUS

Scherzo

♩ = 92

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SONATA

Vivace (in one)

HENRY ECCLES

♩ = 72

SYMPHONY No. 8

LUDWIG van BEETHOVEN

Allegro vivace

♩ = 69

SONATA No. 5

ANTONIO VIVALDI

Allegro

Musical score for Sonata No. 5 by Antonio Vivaldi. The score is in 3/8 time and features a double bass line with fingerings and fret numbers. The tempo is marked 'Allegro'. The key signature is one sharp (F#). The score shows two staves with notes and rests, and a fretboard diagram below the first staff. The fretboard diagram shows the first two frets with fingerings: 0, 4, 0, 4, 4, #, 4, 2. The notes are F and C.

SCYTHIAN SUITE

SERGEI PROKOFIEFF

Vivace

Musical score for Scythian Suite by Sergei Prokofiev. The score is in 6/4 time and features a double bass line with fingerings and fret numbers. The tempo is marked 'Vivace'. The key signature is one flat (Bb). The score shows two staves with notes and rests, and a fretboard diagram below the first staff. The fretboard diagram shows the first two frets with fingerings: 1, 4, 1, 0. The notes are H, C, H, D, D, F, D, F, D, C, H, D.

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SYMPHONY No. 39

WOLFGANG A. MOZART

Allegro

Musical score for Symphony No. 39 by Wolfgang A. Mozart. The score is in 3/4 time and features a double bass line with fingerings and fret numbers. The tempo is marked 'Allegro'. The key signature is two flats (Bb, Eb). The score shows three systems of two staves with notes and rests, and a fretboard diagram below the first staff. The fretboard diagram shows the first two frets with fingerings: 1, 2, 3°, 4, 1, 4, 1, 4, 4, 0, 1, 0. The notes are E, F, F, G, D, E, F, D, A.

* As illustrated above, a change in fingerings will often induce a change in the bowing patterns. In analyzing the change of patterns one can readily observe, as in the measure indicated by an asterisk, that what is often judged to be an ideal fingering ("ideal" judged by the fact that all the notes of the measure can be played in one position) induces, however, a pattern that presents a complex bowing problem; whereas, in making a move or moves out of position, or even in preferring an open string, very often will induce a sequence of patterns whose similarity and familiarity will afford the passages to be played with greater fluidity.

SYMPHONY No. 9

Presto

LUDWIG van BEETHOVEN

♩ = 192

A G E C A G E C H H

CONCERTO

Rondo Sostenuto

E. D. STEIN

♩ = 72

Più mosso
gva-

♩ = 69

G C G H F H G H

gva

F H G H G C G C

SYMPHONY No. 45 ("Farewell")

Allegro assai

JOSEPH HAYDN

♩ = 168

C E C

V 4 2 4

V 4 1 2

V 4 1 2

V 4 4 1

E E E G

0 1 4

4

1 4 1 0

D C E C

SYMPHONY No. 2

JOHANNES BRAHMS

Allegro non troppo

♩ = 144 *f*

A B H D

COURANTE from SONATA

Allegro con spirito

HENRY ECCLES

The first system of musical notation consists of two staves. The upper staff is in bass clef with a key signature of one flat and a 3/4 time signature. It contains a melodic line with various fingerings (1, 4, 1, 4, 1, 3, 2, 1, 1) and a trill. The lower staff is also in bass clef and contains a rhythmic accompaniment. A tempo marking of $\text{♩} = 100$ is present. Chordal indications 'D' and 'V' are shown below the lower staff.

The second system of musical notation continues the piece. The upper staff features a melodic line with fingerings (4, 1, 1, 2, 1, 3, 2, 4, 1, 2, 4, 1, 0, 1, 4, 4, 1, 1, 1, 4, 4, 1). The lower staff provides a steady accompaniment. Chordal indications 'D' and 'G' are placed below the lower staff.

The third system of musical notation shows further development of the melodic and accompanimental parts. The upper staff includes fingerings (4, 1, 4, 2, 4, 4, 4, 2, 4, 2, 1, 4, 4, 4, 1, 0, 2). The lower staff continues with its rhythmic pattern.

The fourth system of musical notation continues the piece. The upper staff features fingerings (1, 4, 2, 4, 0, 1, 4, 2, 4, 1, 2, 1, 2, 3°). The lower staff maintains the accompaniment. A trill is indicated with a 3° symbol.

The fifth system of musical notation concludes the piece. The upper staff includes fingerings (0, 0, 1, 3, 4, 2, 4, 4). The lower staff ends with a final chord. A chordal indication 'D' is shown below the lower staff.

SECTION V

Patterns, Etudes and Excerpts relating to three and four strings

BOWING DRILLS FOR THE UPPER THREE STRINGS

Musical notation for Bowing Drills for the Upper Three Strings, measures A through O. The notation is in bass clef, 6/8 time, and consists of three staves. Each staff contains five measures, labeled A through O. The notes are quarter notes, and each measure is repeated twice. Measure A includes fingerings: 2, 1, 0, 1, 0. Measures B through O show various bowing patterns with accents (>) over the notes.

BOWINGS

Musical notation for Bowings, measures 1 through 12. The notation is in bass clef, 6/8 time, and consists of three staves. Each staff contains four measures, labeled 1 through 12. The notes are quarter notes, and each measure is repeated twice. Measures 3, 9, and 10 include dotted notes. Measures 3, 9, and 10 also include a star symbol (*). Measures 1 through 12 show various bowing patterns with accents (>) over the notes.

* The dotted notes are to be played alternately on the string (*Staccato*) and off the string (*Flying Spiccato*).

BOWING DRILLS FOR THE LOWER THREE STRINGS

Musical notation for Bowing Drills for the Lower Three Strings, measures a through o. The notation is in bass clef, 6/8 time, and consists of three staves. Each staff contains five measures, labeled a through o. The notes are quarter notes, and each measure is repeated twice. Measures a through o show various bowing patterns with accents (>) over the notes.

ETUDE

UPPER THREE STRINGS

Presto ♩ = 138 (*spiccato*)

The first etude consists of four staves of music in 6/8 time. The tempo is marked 'Presto' with a quarter note equal to 138 beats per minute, and the articulation is 'spiccato'. The music is written in bass clef and features a rhythmic pattern of eighth notes, often beamed in groups of six. The first three staves contain the main melodic line, while the fourth staff provides a concluding phrase with a final dotted quarter note.

ETUDE

BOWINGS FOR THE UPPER THREE STRINGS

Moderato ♩ = 100

The second etude consists of four staves of music in 6/8 time. The tempo is marked 'Moderato' with a quarter note equal to 100 beats per minute. The music is written in bass clef and focuses on bowing techniques, indicated by curved lines above the notes. The first three staves contain the main melodic line, while the fourth staff provides a concluding phrase with a final dotted quarter note.

BOWING DRILLS IN THREE QUARTER METER (UPPER THREE STRINGS)

Three staves of musical notation in bass clef, 3/4 time. Each staff contains five measures of eighth-note patterns, labeled A through O. Each measure begins with a bowing symbol (a v-shape with a line underneath) and ends with a double bar line. The patterns are as follows:

- A:** G4, A4, B4, C5, B4, A4, G4
- B:** A4, B4, C5, D5, C5, B4, A4
- C:** G4, A4, B4, C5, B4, A4, G4
- D:** A4, B4, C5, D5, C5, B4, A4
- E:** G4, A4, B4, C5, B4, A4, G4
- F:** A4, B4, C5, D5, C5, B4, A4
- G:** G4, A4, B4, C5, B4, A4, G4
- H:** A4, B4, C5, D5, C5, B4, A4
- I:** G4, A4, B4, C5, B4, A4, G4
- J:** A4, B4, C5, D5, C5, B4, A4
- K:** G4, A4, B4, C5, B4, A4, G4
- L:** A4, B4, C5, D5, C5, B4, A4
- M:** G4, A4, B4, C5, B4, A4, G4
- N:** A4, B4, C5, D5, C5, B4, A4
- O:** G4, A4, B4, C5, B4, A4, G4

BOWINGS

Three staves of musical notation in bass clef, 3/4 time. Each staff contains four measures of eighth-note patterns, labeled 1 through 12. Each measure begins with a bowing symbol (a v-shape with a line underneath) and ends with a double bar line. The patterns are as follows:

- 1:** G4, A4, B4, C5, B4, A4, G4
- 2:** A4, B4, C5, D5, C5, B4, A4
- 3:** G4, A4, B4, C5, B4, A4, G4
- 4:** A4, B4, C5, D5, C5, B4, A4
- 5:** G4, A4, B4, C5, B4, A4, G4
- 6:** A4, B4, C5, D5, C5, B4, A4
- 7:** G4, A4, B4, C5, B4, A4, G4
- 8:** A4, B4, C5, D5, C5, B4, A4
- 9:** G4, A4, B4, C5, B4, A4, G4
- 10:** A4, B4, C5, D5, C5, B4, A4
- 11:** G4, A4, B4, C5, B4, A4, G4
- 12:** A4, B4, C5, D5, C5, B4, A4

BOWING DRILLS IN THREE QUARTER METER (LOWER THREE STRINGS)

Three staves of musical notation in bass clef, 3/4 time. Each staff contains five measures of eighth-note patterns, labeled a through o. Each measure begins with a bowing symbol (a v-shape with a line underneath) and ends with a double bar line. The patterns are as follows:

- a:** G2, A2, B2, C3, B2, A2, G2
- b:** A2, B2, C3, D3, C3, B2, A2
- c:** G2, A2, B2, C3, B2, A2, G2
- d:** A2, B2, C3, D3, C3, B2, A2
- e:** G2, A2, B2, C3, B2, A2, G2
- f:** A2, B2, C3, D3, C3, B2, A2
- g:** G2, A2, B2, C3, B2, A2, G2
- h:** A2, B2, C3, D3, C3, B2, A2
- i:** G2, A2, B2, C3, B2, A2, G2
- j:** A2, B2, C3, D3, C3, B2, A2
- k:** G2, A2, B2, C3, B2, A2, G2
- l:** A2, B2, C3, D3, C3, B2, A2
- m:** G2, A2, B2, C3, B2, A2, G2
- n:** A2, B2, C3, D3, C3, B2, A2
- o:** G2, A2, B2, C3, B2, A2, G2

ETUDE

IN THREE QUARTER METER - UPPER THREE STRINGS

Moderato ♩ = 126 (*martelé*)

This musical score consists of three staves of music in bass clef, 3/4 time. The tempo is Moderato with a quarter note equal to 126 beats per minute, and the style is *martelé*. The music features a rhythmic pattern of eighth notes with accents, organized into measures of four notes each. The first staff contains 16 measures, the second staff contains 16 measures, and the third staff contains 16 measures, ending with a double bar line.

ETUDE

BOWINGS

Moderato ♩ = 126

This musical score consists of four staves of music in bass clef, 3/4 time. The tempo is Moderato with a quarter note equal to 126 beats per minute. The music features a rhythmic pattern of eighth notes with accents, organized into measures of four notes each. The first staff contains 16 measures, the second staff contains 16 measures, the third staff contains 16 measures, and the fourth staff contains 16 measures, ending with a double bar line.

SYMPHONY No. 1

JEAN SIBELIUS

Scherzo - allegro molto

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

$\text{♩} = 132$ *f*

A

H A H¹

1 4 1 4 1 2

H

2 4 1 2 0 1 4

H H¹ H

2 1 2 2 4 1 4

D G

H H¹ H¹ H

1 4 2 1 8* 2 1 2

H

* If no low C available

BRANDENBURG CONCERTO No. 2

JOHANN SEBASTIAN BACH

Allegro

The image displays a page of musical notation for the Brandenburg Concerto No. 2 by Johann Sebastian Bach. The score is written for two staves, both in bass clef, with a 2/2 time signature and a key signature of one flat (B-flat). The tempo is marked 'Allegro'. The notation includes various rhythmic values, accidentals, and fingerings. The first system shows a steady eighth-note pattern in the right hand and a similar pattern in the left hand. The second system introduces a more complex rhythmic pattern with some rests. The third system features a prominent sixteenth-note figure in the right hand, with fingerings 1, 4, 0, and 4 indicated. The fourth system continues this sixteenth-note figure with more complex fingerings, including 1, 4, 4, 0, 1, 4, 4, 2, 4, 1, 0, 2, 4, 2, 4, 1, 4. The fifth system shows a similar sixteenth-note figure with fingerings 0, 4, 0, 1, 1, 4, 4, 2, 0, 1, 1, 2, 1, 0, 2, 1. The sixth system concludes with a sixteenth-note figure and fingerings 4, 4, 1, 2, 1, 4, 4, 1, 2, 0.

MAGNIFICAT

JOHANN SEBASTIAN BACH

Allegro moderato

♩ = 108

4

This system shows the first four measures of the Magnificat. The treble clef part features a melodic line with a fourth finger (4) on the first measure. The bass clef part provides a rhythmic accompaniment with eighth and sixteenth notes.

1 4 2 0 4 0 1 4 0

This system contains measures 5 through 9. The treble clef part includes fingering numbers: 1, 4, 2, 0, 4, 0, 1, 4, 0. The bass clef part continues the accompaniment.

4

This system contains measures 10 through 14. The treble clef part concludes with a fourth finger (4) on the final measure. The bass clef part continues with a steady accompaniment.

OVERTURE "LEONORE No. 3"

LUDWIG van BEETHOVEN

Allegro

♩ = 132

4 0 2 1 0 2 4 1 2 4 b 4 0 2 1 0

This system shows the first five measures of the Overture. The treble clef part features a melodic line with various fingering numbers: 4, 0, 2, 1, 0, 2, 4, 1, 2, 4, b, 4, 0, 2, 1, 0. The bass clef part provides a rhythmic accompaniment.

SYMPHONY No. 5

LUDWIG van BEETHOVEN

Allegro

♩ = 76

Allegro

♩ = 84

F H¹ F

F¹ B¹ D¹

Musical score for the first system, consisting of two staves with bass clefs. The top staff contains a melodic line with various fingerings (1, 4, 4, 1, 0, 2, 1, 4, 0, 4, 1, 4) and slurs. The bottom staff contains a bass line with notes and rests. Chord markings B¹ and D¹ are present below the first two measures. The system concludes with a double bar line.

SONATA No. 2

Allegro

ANTONIO VIVALDI

Musical score for the second system, consisting of two staves with bass clefs. The top staff begins with a 4/4 time signature and a key signature of one flat. It includes performance instructions: *mf* and $\text{♩} = 108$. The score contains complex rhythmic patterns with many slurs and fingerings (4, 4, 0, 2, 4, 1, 0, 4, 2, 2, 4, 2, 1, 0, 4, 4, 1, 4, 1, 4, 1, 2, 0, 2, 0, 1, 2, 2, 4, 0). A *3^o* marking is present above a triplet in the third measure of the second system. The system concludes with a double bar line.

SECTION VI

BOWING DRILLS FOR THE UPPER TWO STRINGS

PATTERN

A

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

1 4 2 3 3 2 4 1 4 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13

VARIATIONS



G

Exercise G, first system. Bass clef, 4/4 time signature. The first staff contains a sequence of eighth notes with accents, starting on G4 and moving up stepwise to G5. The second staff continues the sequence, ending with a quarter rest.

H

Exercise H, first system. Bass clef, 4/4 time signature. The first staff contains a sequence of eighth notes with accents, starting on G4 and moving up stepwise to G5. The second staff continues the sequence, ending with a quarter rest.

I

Exercise I, first system. Bass clef, 4/4 time signature. The first staff contains a sequence of eighth notes with accents, starting on G4 and moving up stepwise to G5. The second staff continues the sequence, ending with a quarter rest.

J

Exercise J, first system. Bass clef, 4/4 time signature. The first staff contains a sequence of eighth notes with accents, starting on G4 and moving up stepwise to G5. The second staff continues the sequence, ending with a quarter rest.

K

L

M

N

Vivo ♩ = 200 (*spiccato*)

Two staves of musical notation in bass clef, 4/4 time. The first staff contains two measures with notes and fingerings (0, 0, 4, 0, 4, 1, 0). The second staff contains two measures with notes and fingerings (4, 4, 4, 1, 4, 1, 4).

♩ = 200

Two staves of musical notation in bass clef, 4/4 time. The first staff contains two measures with notes and fingerings (0, 0, 4, 0). The second staff contains two measures with notes and fingerings (4, 4, 4, 1, 4, 1, 4).

♩ = 200

Two staves of musical notation in bass clef, 4/4 time. The first staff contains two measures with notes and fingerings (4, 4, 4, 1, 4, 1, 4). The second staff contains two measures with notes and fingerings (4, 4, 4, 1, 4, 1, 4).

The dotted notes are to be played alternately on the string (*Staccato*) and off the string (*Flying Spiccato*).

♩ = 168

Two staves of musical notation in bass clef, 4/4 time. The first staff contains two measures with notes and fingerings (4, 4, 4, 1, 4, 1, 4). The second staff contains two measures with notes and fingerings (4, 4, 4, 1, 4, 1, 4).

♩ = 168



♩ = 152



The dotted notes are to be played alternately on the string (*Staccato*) and off the string (*Flying Spiccato*).

♩ = 160



This bowing (*Piqué*) is to be played in the upper half of the bow; the dotted eighth note short (*Martelé*) and the sixteenth note with a smoother stroke (*Détaché*).

♩ = 160 to ♩ = 176



Moderato ♩ = 120

Three staves of music in bass clef, 3/4 time signature, and one sharp (F#). The music consists of eighth-note patterns. The first staff has two 'v' markings above the first and third measures. The piece concludes with a double bar line and a fermata over the final note.

The dotted notes are to be played with a *Flying Spiccato* bowing.

Allegro ♩ = 200

Three staves of music in bass clef, 3/4 time signature, and one sharp (F#). The music features dotted eighth notes beamed in pairs, each with a slur above it. The piece concludes with a double bar line and a fermata over the final note.

Moderato ♩ = 120 to ♩ = 138

Two staves of music in bass clef, 3/4 time signature, and one sharp (F#). The music consists of eighth-note patterns with slurs above each pair of notes. The piece concludes with a double bar line and a fermata over the final note.

Allegro ♩ = 92

Two staves of music in bass clef, 6/8 time signature, and one sharp (F#). The music consists of eighth-note patterns with slurs above each pair of notes. The piece concludes with a double bar line and a fermata over the final note.

Allegro ♩ = 160



Adagio ♩ = 200

