by Denis Khvatov Scales The smart way to understand and play scales, chords and arpeggios



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Happy Scales

The smart way to understand and play scales, chords and arpeggios

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## Features and Symbols of This Book

- Scales, chords and arpeggios in 24 keys (essentials)
- Full transcription of scales, chords and arpeggios in *E Major*
- Organization of keys in alphabetical order from A Major to G#Minor
- Exploring scales, arpeggios and chords by: the relative keys, the circle of fifths and groups of same fingering. Fingering groups for scales and arpeggios can be found on *page 42*
- To aid visual perception the black keys are presented with black note heads and white keys are presented with white note heads
- Fingering of the blocked chords is given for the middle note only. Fingering above the staff is for the right hand, fingering below the staff is for the left hand.
- Same fingers of both hands playing the same note at the same time are highlighted with a circle
- The note head  $\otimes$  is used to mark the beginning of a repeated pattern in different octaves in some scales
- "M" is for melodic Minor and "H" is for harmonic Minor.
- "+" is for Major and "-" is for Minor.

**A** Maior

previous D - A - E next

+ **A** C D E G Scale Fingering Group I



**Relative Keys** 

**F**<sup>#</sup> / Relative Minor

Circle of Fiftbs

Fingering Group

### The Best Scales to Start

- *B Major* or *D flat Major*, parallel motion see page 8 or 12 *E Major*, contrary motion see page 30
- Chromatic scale on *D*, contrary motion see page 28

Read also an *Editor's View* on page 40.







 $\frac{\mathbf{A}\textit{Major}}{\mathbf{F}^{\sharp}\textit{/}\textit{Relative Minor}}$ 

previous  $D - \mathbf{A} - E$  next















Minor A











Leading Note (Diminished) Seventh Chord and Arpeggios



**B** *Major* 

**G** / Relative Minor











previous  $E - \mathbf{B} - F \# (G_b)$  next









Dominant Seventh Chord and Arpeggios







previous G –  $\mathbf{C}$  – F next

+ A C D E G Scale Fingering Group I



















**D** Major

previous G –  $\mathbf{D}$  – A next

**B** / Relative Minor











**E** *Major* 

previous  $B\flat - E\flat - A\flat$  next

\_

**C** / Relative Minor











**E** Major

previous A – E – B next

+ A C D E G Scale Fingering Group I















previous C –  $\mathbf{F}$  – Bb next

+ **F** Scale Fingering Group IV

**D** / Relative Minor













previous Db - Gb - B next

+ B D , G , Scale Fingering Group III

 $\mathbf{E}_{\mathbf{b}}$  / Relative Minor











**G** Major

previous C – G – D next

#### + A C D E **G** Scale Fingering Group I

**E** / Relative Minor











- A C D E **G** Scale Fingering Group I

θ

5

3

## Minor **G**

θ

 $\overline{(3)}$ 













**F** / Relative Minor











# Minor G#









Leading Note (Diminished) Seventh Chord and Arneggios

- C# F F# **G**#



### Chromatic Scales on D

















## Scales, Chords and Arpegios in E Major Full transcription

### E Major Scales

















### Chromatic Scales on E





#### A minor third apart



### E Major *Tonic* Triads and Arpeggios









Arpeggios in root position, 1st and 2nd inversions



E Major Dominant Seventh Chord and Arpeggios





4 note, alternate







Arpeggios in root position, 1st, 2nd and 3rd inversions



### E Major Leading Note (Diminished) Seventh Chord and Arpeggios













Arpeggios in root position, 1st, 2nd and 3rd inversions

![](_page_36_Figure_2.jpeg)

![](_page_36_Figure_3.jpeg)

11 Chords on E to work on chords and arpeggios

![](_page_36_Figure_5.jpeg)

![](_page_36_Figure_6.jpeg)

# Exercises for Finger Crossings

![](_page_37_Figure_1.jpeg)

![](_page_37_Figure_2.jpeg)

![](_page_37_Figure_3.jpeg)

![](_page_37_Figure_4.jpeg)

![](_page_38_Figure_0.jpeg)

![](_page_38_Figure_1.jpeg)

![](_page_38_Figure_2.jpeg)

![](_page_38_Figure_3.jpeg)

![](_page_38_Figure_4.jpeg)

# Editor's View

by Denis Khvatov

The idea of writing a book that introduces a fresh approach to studying scales had been flying in the air for a long time. While talking to my colleagues about musical matters in the field of piano teaching, the topic of improved ways to teach scales and exercises related to them had been discussed not once and not twice. Especially the aspect of teaching these things to a beginner.

For many pianists, playing scales, chords, and arpeggios is an everyday routine just like morning exercises or brushing teeth. Scale exercises are considered an important part of well known technical methods by Franz Liszt, Alfred Cortot, Marguerite Long and others. Scales, chords, and arpeggios are the musical textures, elements on which the music is built. Knowledge of these elements makes learning musical pieces easier, requiring less effort. Scale practice does not only develop finger dexterity, but forces the student to think about keys/tonalities, chord progressions, fingerings, and hand positions.

The purpose of this book is to introduce a piano student to the whole scope of keys by playing exercises on scales, chords, and arpeggios. In this book the exercises can be approached by the Circle of Fifths, relative Major and Minor, and via exploration of common fingering for particular groups of scales and arpeggios. This book can be successfully used to prepare for exams.

In the text below I share my point of view on teaching scales to a student. The reasoning prevails above the definitions themselves. It is a mix of overview and suggestions on how the subject can be delivered to a student. However, definitions, rules, notices, charts, and helpful illustrations can be found in this book along with notated scales, chords, and arpeggios.

#### Exploring Scales. Where to Start?

A student is mostly concerned with studying scales just to pass an examination. Scale exploration is usually stretched for years, and often the only thing students do is playing the exercises mindlessly. In fact, there is much more to scales, including relationship between keys and the idea about the whole scope of keys. In my opinion, it is good for a student to learn about all 24 keys as soon as possible. The keys (or tonalities) are "countries" in which music lives. Similar to traveling from one country to another, playing the scales, chords, and arpeggios in different keys allows a student to get familiar with local features and be prepared to meet them in larger pieces. There is no doubt that simple-minded drilling is less valuable than thoughtful exploration of how the scales are built and organized in different keys. But what scale should a student start with?

If we take the most common point of view on the scales, the journey should start on *C Major* scale. What could be easier? Portrayed picture is simple and beautiful, with no accidentals. But what is easy for the sight is not always easy for fingers. Music in the book is like a flat map, but keyboard is "terra nova" with hills of black keys and ravines between them. It has to be explored by stepping, hopping, or running fingers.

Reality is that *C Major* is not the best scale to start with. Every finger has different length so each finger must be adjusted to the absolutely flat surface on which *C Major* is built. Frederic Chopin suggested learning scales by starting with those that have all of the black keys in them, like *B Major* or *D flat Major*<sup>\*</sup>. This way the short thumbs are placed on white keys but long fingers are placed on black keys: this provides the most natural and comfortable position for the hand. It also results in two good outcomes: first is that fingers are set in the right position with the thumb not dangling off the keyboard; and the second is that a student is not scared of playing on the black keys. If we do not tell a student that playing on the black keys is hard (which is not true), probably he or she will never realize it! A beginner student does not know yet what is hard and what is easy due to the of absence of experience. In addition, scales that use all five black keys are good for introducing a student to scales in parallel motion.

After trying the very first scale the question "What's next?" arises. Getting further ahead in studying scales on the keyboard we face two problems: how to build a scale, and what fingering to use?

To advance successfully, a student has to know more about Major and Minor, as well as being able to distinguish them from each other. A student also has to know about tones and semitones, building and modifying triads and scales.

<sup>\*</sup> This fact is mentioned in a book "The Art of Playing the Piano" written by Henrich Neighause, a great Russian pedagogue, a teacher of the legendary pianists Svyatoslav Richter and Emil Gilels.

This knowledge can also be acquired from experimenting on the the keyboard and learning music theory<sup>\*</sup>. However, it should be noticed that the feeling of the sound comes first; then, the wish to produce sound; and lastly, the realization of how the sound can be presented on paper. It is equally true for playing music as well as for playing scales and chords.

Understanding how to build up a scale comes through understanding how to build up a triad. We can feel the quality of a triad which can be Major, Minor, Diminished, or Augmented<sup>\*\*</sup>. Major or Minor triads are foundations for scales, and as the tonic triads they determine a key. It is quicker to figure out the order of notes in the scale while keeping in mind a tonic triad for the following reasons: Any Major or Minor scale consists of 7 notes (or degrees). By playing a tonic triad a student finds 3 notes of the scale (degrees I, III and V), then it is not a big problem to figure out 2 notes on degrees II and IV. Now, 5 of 7 notes are known. One of 2 notes that are left (degree VI) can be found a whole tone up from degree V. The last note of the scale is situated a semitone down from degree I (or tonic). This is degree VII, also called a leading note. Of course, it is good to know the formula "Tone-Tone-Semitone, Tone-Tone-Semitone" for memorizing the order of tones and semitones in a Major scale (*see at the bottom of this page*).

A little practical work now. Let it be a building triads on every white key with one hand starting on *C*. Fingers of the right hand are placed in 5 note position. What can we hear if we play  $1^{st}$ ,  $3^{rd}$  and  $5^{th}$  fingers together? Is it Major or Minor? Let's try to check the quality of triads on every white key. On *B* key a surprise is awaiting. On this note a piano beginner probably encounters the sound of a diminished chord for the first time.

\* Some definitions releated to exercises on scales, chord and arpeggios can be found on page 46 in this book. More detailed explanation can be found in the *"First Book of Piano Music"*, Musical Sparrow, 2012

\*\* Augmented triads are not used for examinations and not included in this book.

The next little step forward are learning how to change qualities of the triads: Major to Minor, Minor to Major and Diminished to Major through Minor.

The middle tone of Major and Minor triads in root position affects the chord's quality (or mood). Like the spirits which fall from happy mood to gloomy, the lowered middle tone of a Major triad switches its quality to Minor. And opposite, a raised middle tone changes Minor to Major similar to the corners of a mouth that make a happy smile by moving up. The Diminished triad can be explained as a "superminor" chord because in comparison to a Major triad it has two lowered tones, not just the middle, but the top as well.

#### Minor Scales

The Melodic Minor scale played upward differs from the same name Major scale only by one note. The III degree is lowered. Raised degrees VI and VII of a Melodic Minor scale are the same as degrees VI and VII of a Major scale of the same key. When playing a Melodic Minor scale down, Natural Minor scale (a Minor Scale that does not have raised degrees VI or VII) is used. Harmonic Minor is a modified Natural scale with raised degree VI, which is left unchanged whether the harmonic scale is played up or down.

#### Chromatic Scales

Besides "usual" fingering which uses 1<sup>st</sup> finger alternating with 3<sup>rd</sup>, an alternative fingering which involves 4<sup>th</sup> finger is suggested in this book. See page 28.

The next pages contain fingering groups for scales and arpeggios on triads and seventh chords.

![](_page_40_Figure_12.jpeg)

# Scale Fingering Groups\*

#### **Group I**

Includes 10 scales in Major and Minor. Each of them starts on the white keys, except *B* and *F*. Degrees III and VI of these scales are played with  $3^{rd}$  fingers, both hands at the same time. This move can be called the "rule of  $3^{rd}$  fingers".

This group is good for introducing a student to playing scales in contrary motion. In this motion, the finger crossing happens in both hands with the same fingers at the same time.

The list of scales is organized to follow the descending numbers of accidentals in the key signatures of Major scales.

Major and Minor Keys

E Major (4 sharps)
E Minor (1 sharp)
A Major (3 sharps)
A Minor (no key signature)
D Major (2 sharps)
D Minor (1 flat)
G Major (1 sharp)
G Minor (2 flats)
C Major (no key signature). Also can be played using fingering of F Major or B Major.
C Minor (3 flats)

\* The fingering is considered for scales in parallel motion.

#### **Group II**

Includes 4 scales in Major which start on the black keys and follow this rule: R.H. always plays B flat with  $4^{th}$  finger, and  $1^{st}$  finger always plays C and F. L. H. always plays degree IV with  $4^{th}$  finger.

Organized by descending number of accidentals at the key signature.

Major keys only.

D flat *Major* (5 flats), also belonged to the *Group III* A flat *Major* (4 flats) E flat *Major* (3 flats) B flat *Major* (2 flats)

#### **Group III**

This group of 6 scales includes:

B Major (5 sharps)
B Minor (2 sharps)
B flat Minor (5 flats)
D flat Major (5 flats), also belongs to Group II
E flat Minor (6 flats)
G flat Major (6 flats) = F sharp Major (6 sharps)

The main feature of this group is that the L.H. always plays F sharp (*G* flat) with fourth finger on every scale.

Another feature is that thumbs of both hands are used twice within an octave to play the same note (octave apart) of the same time. It can be called the "2 thumb rule". *F Major* and *F minor* are also the scales which use the "2 thumb" fingering however they were placed in *Group IV*, the group of mixed fingering.

#### Group IV

#### F Major (1 flat).

Left and Right hands play fingering from the different groups at the same time:

R.H. uses fingering from *Group II* (4<sup>th</sup> finger on *B flat*) L.H. uses fingering from *Group I* (similiar to *G* or *D Major*)

**F** *Minor* (4 flats). Same fingering that is used for *F Major* scale.

#### C sharp Minor (4 sharps)

*Harmonic*: fingering of *E Major* is used (like playing *E Major* starting on *C sharp* but playing B sharp instead of B natural)

*Melodic*: fingering of *D flat Major is* used for playing the scale up («2 thumb» fingering) and the fingering of *E Major* is for playing it down.

#### G sharp Minor (5 sharps)

*Harmonic*: fingering of *B Major* is used (like playing *B Major* starting on *G sharp* but playing F double sharp instead of F sharp). «2 thumb» fingering.

*Melodic*: fingering of *A flat Major* (but with *C flat* instead of *C natural*) is used for playing the scale up and the fingering of *B Major* is used for playing it down.

#### F sharp Minor (3 sharps)

*Harmonic*: R.H. uses fingering of *A Major* (like playing *A Major* starting on *F sharp* but playing *E sharp* instead of *E natural*);

L.H. uses fingering of *B Minor* natural scale (like playing *B Minor* natural starting on *F sharp* but playing *G sharp* instead of *G natural* and *E sharp* instead of *E natural*);

*Melodic*: fingering of *E Major* (like playing *E Major* starting on *F sharp* but playing *E sharp* instead of *E natural*) playing up and the fingering of *A Major* is used for playing the scale down.

## General Plan for Exploration of Scales

- 1. Learning how to build and modify Major, Minor and Diminished triads on the white keys,
- 2. Learning the formula "2 tones, semi-tone, 3 tones, semitone" to secure building of scales in Major,
- *3. B Major* scale as the first scale to start learning the scales and play them in parallel motion. *D flat Major* and *G flat Major* are also acceptable,
- 4. Exploring Major scales from *Group I* by going down the circle of fifths from *E Major* to *C Major*,
- 5. Exploring Major scales with flats starting from *D flat Major* and going down by the circle of fifths (*Group II*),
- 6. Exploring Minor Scales in Group I,
- 7. Exploring Minor scales in Group III,
- 8. Exploring scales in Group IV.

# on Triads

#### Group 0

In this group, triads are written using only black or white keys. Fingering of 4 note triads is used in root position as well as in inversions.

This group includes:

A Minor C Major D Minor D sharp Minor/E flat Minor (all 3 black keys) E Minor F Major F sharp Major/G flat Major (all 3 black keys) G Major

#### Group I

One black key is involved in the middle of a triad.

The fingering of 4 note triad is used in the root position and second inversion.

For the first inversion that starts on a black key the following rules work: while playing upward, R.H. crosses 1<sup>st</sup> finger after the black key, L.H. places 1<sup>st</sup> finger on the white key before crossing to the black one. While playing downward, the rules switch for the hands.

This group includes: **A** *Major* **C** *Minor* 

 ${f D}$  Major

E Major

F Minor

**G** Minor

#### **Group II**

The white key is between two black keys of a chord.

 $1^{st}$  fingers of both hands always play on a white key. Only  $1^{st}, 2^{nd}$  and  $4^{th}$  fingers are used to play arpeggios of this sort .  $3^{rd}$  finger is not involved. This is true for the root position as well as for inversion.

This group includes:

D flat Major C sharp Minor E flat Major F sharp Minor A flat Major G sharp Minor

#### Group III

Altered fingering.

#### B flat Major.

Fingering of Group II is used but with modifications.

In root position, R.H. crosses  $1^{st}$  finger after the black key. First and second inversions are played accordingly the fingering of 4 note triads. R.H. plays  $4^{th}$  finger in all positions.

In root position, L.H. places 1<sup>st</sup> finger on the white key before crossing to the black one. First and second inversions are played according to the fingering of 4 note triads. L.H. plays 3<sup>rd</sup> finger in all positions.

**B flat** *Minor*. Fingering for *Group II* is used but the 3<sup>rd</sup> finger replaces 4<sup>th</sup>.

**B** *Major* Fingering for *Group II* is used but the 3<sup>rd</sup> finger replaces 4<sup>th</sup>.

**B** Minor

Root position and the first inversion are played according to the fingering of 4 note triads.

The second inversion is played with 1<sup>st</sup> finger of both hands on D. It is an exerption to the rule that the R.H. crosses 1<sup>st</sup> finger after the black key.

B	(Roo
C sharp	(Roo
F sharp	(Roo

ot in *E Major/Minor*) ot in F sharp Major/Minor) ot in *B Major/Minor*)

## on Dominant Seventh Chords

#### Group I

Second tone is on the black key, other tones are on the white keys

Α	(Root in I	D Major/Minor)	
---	------------	----------------	--

- D (Root in *G Major/Minor*)
- Ε (Root in *A Major/Minor*)

Group II Second tone is on a white key, other tones are on a black keys

**E flat/D sharp** (Root in *A flat Major/G sharp Minor*) A flat/G sharp (Root in *D flat Major/C sharp Minor*)

#### Group III

The upper tone is on a black key, other tones are on white keys

С (Root in *F Major/Minor*) **E flat** (Root in *B flat Major/Minor*)

#### Group IV. Other

Dominant Seventh Chords that can not be attached to any groups above.

G (Root in CMajor/Minor) **B flat** (Root in *E flat Major/Minor*)

## on Leading Note (Diminished) Seventh Chords

#### Group I

**G** sharp

Α	(Root in B flat Major/Minor)			
C/B sharp	(Root in D flat Major/ C sharp Minor)			
D sharp	(Root in <i>E Major/Minor</i> )			
F sharp	(Root in G Major/Minor)			
Group II				
A sharp	(Root in <i>B Major/Minor</i> )			
C sharp	(Root in D Major/Minor)			
Ε	(Root in F Major/Minor)			
<b>G/F double sharp</b> (Root in <i>A flat Major/G sharp Minor</i> )				
Group III				
В	(Root in C Major/Minor)			
D	(Root in <i>E flat Major/Minor</i> )			
F/E sharp	(Root in G flat Major/F sharp Minor)			

(Root in A Major/Minor)

### Tips and Hints

Arpeggios on triads and seventh chords: if the bottom note of a repeated pattern falls on a white key, the 1<sup>st</sup> finger is used on this note. For arpeggios on triads it can be said that the fingering of four note triad is used if arpeggio starts on a white key.

For arpeggios that start on a black key the following rules work: while playing upward, R.H. crosses 1st finger after the black key, L.H. places 1st finger on a white key before crossing to the black one. While playing downward, rules switch for the hands.

1<sup>st</sup> finger is never used to play on a black key.

*Exception*: arpeggios on triads in *F* sharp Major or *D* sharp Minor which have three black keys.

# Terms and Definitions

#### Accidentals: Sharp, Flat and Natural. Double Sharp

Special signes showing that a note is raised or lowered.

- # *Sharp* raises a note by a semi-tone,
- \* *Double-sharp* raises a note by a whole tone,
- *Flat* lowers a note by a semi-tone down,
- *Dowble-flat* lowers a note by a whole tone,
- \* *Natural* cancels other accidentals and means a white key.

#### Bass

The very bottom note of a *chord* or an *interval*.

#### Cadences

At least two chords which give a musical feeling of pause, or coming to a close. Used to finish a musical sentence. There are 4 types of cadences: *Perfect* (V–I), *Imperfect* (finishes on V), *Plagal* (IV–I), *Desceptive* (V–VI). For examinations the tonic triads finish with a *Perfect* cadence.

#### Cbord

Three or more notes played together.

#### Dominant Seventh Chord

Built on degree V (the Dominant) of a Major or Harmonic Minor scales. It consists of a Major triad above the bass note and an interval of a minor seventh between the bass and top notes. (*Picture on page 47.*)

#### Interval

Two notes that are played together or one after another. Interval receives its name from the number of letters of the musical alphabet used to fill the distance between the bottom and top notes of the interval.

#### Inversion

Moving the bottom note of an interval or a chord one octave up or the top note one octave down.

#### Key Signature

Accidentals which relate to a particular Major or Minor scale and placed at the beginning of every staff in a piece.

#### Leading Note (Diminished) Seventh Chord

Built on degree VII (the Leading Note) of a *harmonic* Major (degree VI is lowed) or *harmonic* Minor (degree VII is raised). It is built entirely by Minor thirds intervals. The bass and top notes make the interval of a diminished seventh.

#### Scale

A series of notes placed in alphabetical order in the range of one or more octaves.

#### Scales in Major

Based on a Major triad and consist of 7 notes made up by following the order of tones and semitones: 2 tones, semi-tone, 3 tones, semi-tone. *Harmonic* Major which has degree VI lowered is used for building a Diminished seventh chord in a Major key.

#### Scales in Minor

Based on a Minor triad and consist of 7 notes. There are 3 types of Minor scales: *natural, harmonic* and *melodic. Natural* minor scales use only the accidentals shown at the key signature. *Harmonic* scales have a raised degree VII, which is left unchanged whether the *harmonic* scale is played upward or downward. *Melodic* scales have degrees VI and VII raised when played upward. However, a *natural* scale is used when playing these scales downward. A *melodic* minor scale played upward is like the major scale with the same tonic, but degree III is lowed.

#### Semi-tone

On the keyboard, the distance between one key and the next is called a semitone. It can be the distance between any white key and following black, any black key and the following white or between the white keys B - C and E - F. (*Picture* on page 47.)

#### Seventh Chord

A chord of four notes built by intervals of a third. The bottom and top notes of a seventh chord make an interval of a seventh.

#### Tone (or whole tone)

Consists of two *semi-tones*. Whole tone can be found between two white keys that are separated by a black key or between any two black keys that are separated by a white key. (*Picture on page 47.*)

#### **Triads**

A chord of three notes built by interval of a third. (Picture on page 47.)

#### Tonic, Dominant, Subdominant, Leading Note and other degrees of Major and Minor scales

- Π Supertonic
- III Mediant
- IV Subdominant
- V Dominant
- VI Submediant

 $V_7$ 

Dominant seventh

chord of F Major/Minor

VII<sub>7</sub>

Diminished seventh

chord of F Major/Minor (Harmonic)

VII Leading Note (in Minor it is raised degree VII)

#### Qualities of triads: Major, Minor, Diminished and Augmented

*Major* relates to a happy mood. Built by a Major and a Minor third from the bass. Minor relates to a sad mood. Built by a Minor and a Major third from the bass. *Diminished* might be discribed as harsh or angry. Built only by Minor thirds. Augmented triad is built only by Major thirds and sounds "enchanted".

![](_page_46_Figure_10.jpeg)

Tone

Tone

Semi-tone

√

Semi-tone

 $\mathbf{r}$ 

### Chart of Relative Major and Minor Keys

![](_page_47_Figure_1.jpeg)