

IMPROCHART: USER GUIDE

APPLICATIONS OF IMPROCHART

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INTRODUCTION

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- **Improvisation** exists since the beginning of the Music history.
- Nevertheless, nowadays its use has been practically reduced to **Jazz**.
- **Improvisation** generally **consists in creating a melody suitable for a given chord progression**. That is, a melody must be composed in such a way that it “fits” or “sounds well” with those chords.

INTRODUCTION

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- The most common procedure for improvising consists of 2 Phases:
 - 1) For each chord or group of chords we need know which scale or scales are suitable for improvising on them.
 - 2) After choosing one of these scales, we have to form a melody with its notes.

INTRODUCTION

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- For solving the Phase 1, an **Improvsation Chart** has been developed, called **IMPROCHART™**, which automatically gives us all the scales related to a given chord.
- **In this presentation, we will explain all its features and how to make the most of them.**
- Regarding the Phase 2, we will explain the **Tensions**, which is a basic subject to make melody and harmony consistent to each other.

INTRODUCTION

- In another presentation, entitled “**EXAMPLES ON IMPROVISATION**”, we will show how to use IMPROCHART™ in some practical cases and will give more directions for Phase 2.
- On the other hand, let us remember that **Music is an Art, so it is not constrained to strict rules**. This means that performers make use of many other resources, such as chromaticism, anticipations, delayed attacks, all kinds of embellishments and even the reharmonization of the whole piece.

INTRODUCTION

- The following books were taken into account for developing the Improvisation Chart or IMPROCHART™:
 - Aebersold, Jamey: *Jazz Handbook*, www.aebersold.com, 2000.
 - Bergonzi, Jerry: *Inside Improvisation Series, Vol. 1 "Melodic Structures"*. Rottenbug, Germany: Advance Music, 1994.
 - Crook, Hal: *How to Improvise. An Approach to Practicing Improvisation*. Rottenbug, Germany: Advance Music, 2002.
 - Herrera, Enric: *Music Theory and Modern Harmony, Vol. 1* (in Spanish). Barcelona, Spain: Antoni Bosch, 1995.
 - Iturralde, Pedro: *324 Scales for Jazz improvisation* (in Spanish). Madrid, Spain: G. Agenjo, S. A., 1993.

INTRODUCTION

- ▣ Levine, Mark: *The Jazz Theory Book*. Petaluma, CA, USA: Sher Music Co., 1995.
- ▣ Nettles, Barrie; Graf, Richard: *The Chord Scale Theory & Jazz Harmony*. Rottenbug, Germany: Advance Music, 2002.
- ▣ Pease, Ted: *Jazz Composition. Theory and Practice*. Boston, MA, USA: Berklee Press, 2003.
- ▣ Schroedl, Jeff: *Jazz Guitar*, Milwaukee, WI, USA: Hal Leonard Corporation, 2003.
- ▣ Willmott, Bret: *Complete Book of Harmony, Theory & Voicing*. Pacific, MO, USA: Mel Bay Publications, Inc., 1994.

IMPROVISING ON A CHORD

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- We are going to explain how to improvise on a chord by means of an example. Suppose that we want to improvise on the Em7 chord.
- Firstly, we will look at the **context** in which this chord is located; that is, which are the chords around it. Let us consider some cases:
 - 1) If we find the chords CΔ, FΔ, Dm7, G7 around Em7, we will generally improvise with the C Major scale (and its corresponding modes), since all these chords belong to this scale.

IMPROVISING ON A CHORD

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- 2) If we find the chords $D\Delta$, $G\Delta$, $A7$, $F\#m7$ around $Em7$, we will use the D Major scale, since all of them belong to this scale.
 - 3) If we find the chords $Dm\Delta$, $F+\Delta$, $G7$, $C\#\emptyset$ around $Em7$, we will use the D melodic minor scale, for the same reason.
- Logically, all these scales contain the notes of the $Em7$ chord, that is, E, G, B and D, as well as the notes of the other chords in the context.
 - Other examples can be considered, including cadences, turnarounds or harmonic clichés.

IMPROVISING ON A CHORD

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- Nevertheless, determining the context in which the chord is located may not be easy. Sometimes, the key signature of the piece suggests us the scale to use. But we cannot fully trust it, since most pieces contain brief modulations and/or altered chords.
- On the other hand, what about if we find the chords $Fm7$, $E\flat$, $B\flat\Delta$ or $B\flat m$ around $Em7$? No one of them is related to $Em7$ by means of a major or minor scale.

IMPROVISING ON A CHORD

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- In other cases, we find the same chord over several bars, so using only one scale may be monotonous.
- And, occasionally, we just want to introduce a special sound on certain chords; for example, on a dominant seventh chord.
- For all these reasons, we need know not only the scale for the context in which the considered chord is located, but all the **available scales for improvising** on it.

IMPROVISING ON A CHORD

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- According to the **Chord Scale Theory**, the available scales for improvising on a given chord are all those containing the notes of the chord.
- The choice of a particular scale will depend on the musical style and the performer's will.
- If wished, it is possible to choose, among them, the one that corresponds to the **context** in which the chord is located. To do that, we simply have to take one scale related to all the chords in the considered group of chords (if any).

THE CHORD SCALE THEORY

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- **The Chord Scale Theory states that, if the notes of a chord belong to a certain scale, this scale can be used for improvising on the chord.**
- For example, the Em7 chord is composed by notes E, G, B and D. And these notes belong, among others, to the C Major scale. This means that the C Major scale can be used for improvising on Em7. Other possible scales are G Major, D Major, B harmonic minor and D melodic minor.

THE CHORD SCALE THEORY

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- Next figure shows the relationships among Em7 and these scales. In it, take into account the following:
 - 1) Every scale was written starting with note E. (For simplicity, the modal names were not used here).
 - 2) In this context it is assumed that the melodic minor scale is that having the 6th and 7th degrees raised one half step, both ascending and descending.
 - 3) Natural minor scales are not considered here, as they are equivalent to their relative major ones.

THE CHORD SCALE THEORY

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C Major

Em7 chord = E, G, B, D

G Major

D Major

B harmonic minor

D melodic minor

The image displays five musical staves, each representing a different chord scale. The scales are: C Major, G Major, D Major, B harmonic minor, and D melodic minor. The notes of the Em7 chord (E, G, B, D) are highlighted with red vertical ovals across all five staves. The Em7 chord is defined as E, G, B, D.

Scale	Notes	Em7 Chord Notes
C Major	C, D, E, F, G, A, B	E, G, B, D
G Major	G, A, B, C, D, E, F#	E, G, B, D
D Major	D, E, F#, G, A, B, C#	E, G, B, D
B harmonic minor	B, C, D, E, F#, G, A	E, G, B, D
D melodic minor	D, E, F, G, A, B, C#	E, G, B, D

THE CHORD SCALE THEORY

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- It can be proved that there are no other major or minor scales containing the notes of Em7.
- To get a full picture of this subject, let us remember that there are many different types of chords; with 3, 4, 5 or more notes, and that the root of a chord may be any of the 12 notes.
- Regarding the types of scales, apart from the major and the minor, there are others, such as the diminished, whole tone, pentatonic, Bebop, etc.
- As an example, the following table was developed.

THE CHORD SCALE THEORY

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<i>Chord</i>		<i>Related Scales</i>		
<i>Symbol</i>	<i>Notes composing the chord</i>	<i>Major</i>	<i>melodic minor</i>	<i>harmonic minor</i>
C+Δ	C E G# B		A	A
CΔ	C E G B	C G		E
CmΔ	C Eb G B		C	C E
Cm7	C Eb G Bb	Bb Eb Ab	Bb	G
C ^o	C Eb Gb Bb	Db	Db Eb	Bb G
C ^o	C Eb Gb Bbb			C# E G Bb
C7	C E G Bb	F	F G	F
C7/5+	C E G# Bb		F Db	F
C7/5-	C E Gb Bb		G Db	
C7sus	C F G Bb	F Bb Eb Ab	F Bb	F

THE CHORD SCALE THEORY

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- Last table shows all major and minor scales related to the main seventh chords with root C.
- But, what about if we are dealing with other types of chords? Or if the root is not C? Or if we want to use other types of scales?
- For example, imagine that we have the F7(b9) chord. Which are the available scales?
- Before answering this kind of questions, it is worth studying another important concept: the tensions.

TENSIONS

- Generally, a scale has more notes than a chord. For that reason, when using a scale for improvising on a chord, its notes can be classified as:
 - 1) **Chord Tones:** Notes belonging to the chord.
 - 2) **Available Tensions:** Notes not belonging to the chord, but that are affine to it; that is, they are harmonically compatible with it.
 - 3) **Unavailable Tensions or Avoid Notes:** Notes not belonging to the chord and not affine to it; that is, they are harmonically incompatible with it.

TENSIONS

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- Notes in Group 1 (Chord Tones) are the 1st (Root), 3rd, 5th and 7th, since we are generally considering seventh chords.
- Notes in Groups 2 and 3 (Tensions, in general) will be identified as the 9th, 11th and 13th of the chord. They may be altered or unaltered. They are considered unaltered when forming major or perfect intervals with the root.
- For example, next figure shows the tensions arising when improvising on Em7. Signs “+” and “-” are used to indicate altered tensions, although signs “#” and “b” can also be used, respectively.

TENSIONS

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C Major

Em7 chord = E, G, B, D

The image shows five staves of music in treble clef, each with a key signature of one sharp (F#). The notes on each staff are: C Major (C, E, G, B, D), G Major (G, B, D, F#, A), D Major (D, F#, A, C, E), B harmonic minor (B, D, F#, G, A, C), and D melodic minor (D, F#, G, A, B, C). Red vertical ovals group the notes into four columns. Red numbers are placed below the notes in these columns: -9, 11, -13, 9, 11, -13, 9, 11, 13, 9, +11, 13, -9, 11, 13.

Staff	Column 1	Column 2	Column 3	Column 4
C Major	C	E	G	B
G Major	G	B	D	F#
D Major	D	F#	A	C
B harmonic minor	B	D	F#	A
D melodic minor	D	F#	G	A

-9 11 -13

9 11 -13

9 11 13

9 +11 13

-9 11 13

AVOID NOTES

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- Notes in Group 3 or **Avoid Notes** are those found a half step above a chord tone. For example, F and C in Em7 chord.
- For some authors, notes forming a tritone interval with any chord tone are also considered avoid notes. For example, C# in Em7 chord (as it forms a tritone with G); or A# (which forms a tritone with E). For other authors, however, these notes are considered available tensions. So, it is up to the performer to classify these notes into Group 2 or 3.

AVOID NOTES

- Finally, in a dominant seventh chord, only the 11th and the major 7th (Δ) are considered avoid notes.
- As a **General Rule**, avoid notes must be of short duration and must resolve by step to a chord tone or available tension. That is, they must be considered as **approach notes**.
- The resolution may be direct or indirect (that is, inserting an extra note). There are, therefore, several options.

AVOID NOTES

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- Regarding **direct resolution**, we can distinguish among passing note (in between two different chord tones), prepared resolution (in between two equal chord tones) and unprepared resolution (following a leap or a rest). Examples:

The image shows a musical staff in treble clef with a common time signature (C). The chord is labeled as Em7. The staff contains three measures of music, each illustrating a different type of resolution:

- prepared:** The first measure shows a sequence of notes: G4, A4, B4, A4, G4. An upward arrow points to the G4 note, and a curved arrow above the staff indicates the resolution from A4 to B4.
- unprepared:** The second measure shows a sequence of notes: G4, A4, B4, G4. An upward arrow points to the G4 note, and a curved arrow above the staff indicates the resolution from A4 to B4.
- passing note:** The third measure shows a sequence of notes: G4, A4, B4, A4, G4. An upward arrow points to the A4 note, and a curved arrow above the staff indicates the resolution from B4 to A4.

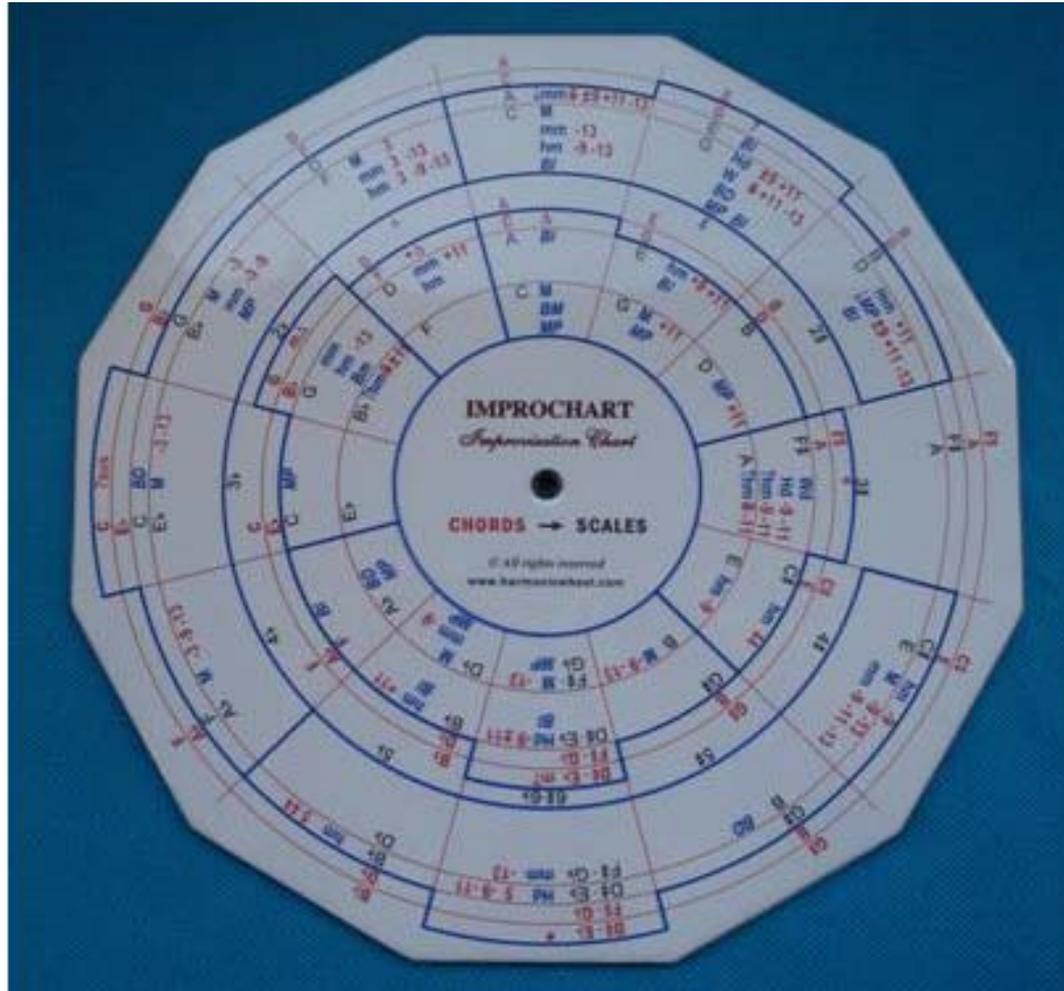
IMPROCHART – Improvisation Chart

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- As previously seen, in order to improvise we have to keep in mind the following points:
 - 1) **Given a chord, which are the available scales for improvising on it?**
 - 2) **After choosing one of those scales, which tensions does it introduce on the chord?**
- To answer these questions, an **Improvisation Chart** called **IMPROCHART™** has been developed. It consists of two rotating discs, being one cardboard and the other plastic. It is shown in next figure:

IMPROCHART – Improvisation Chart

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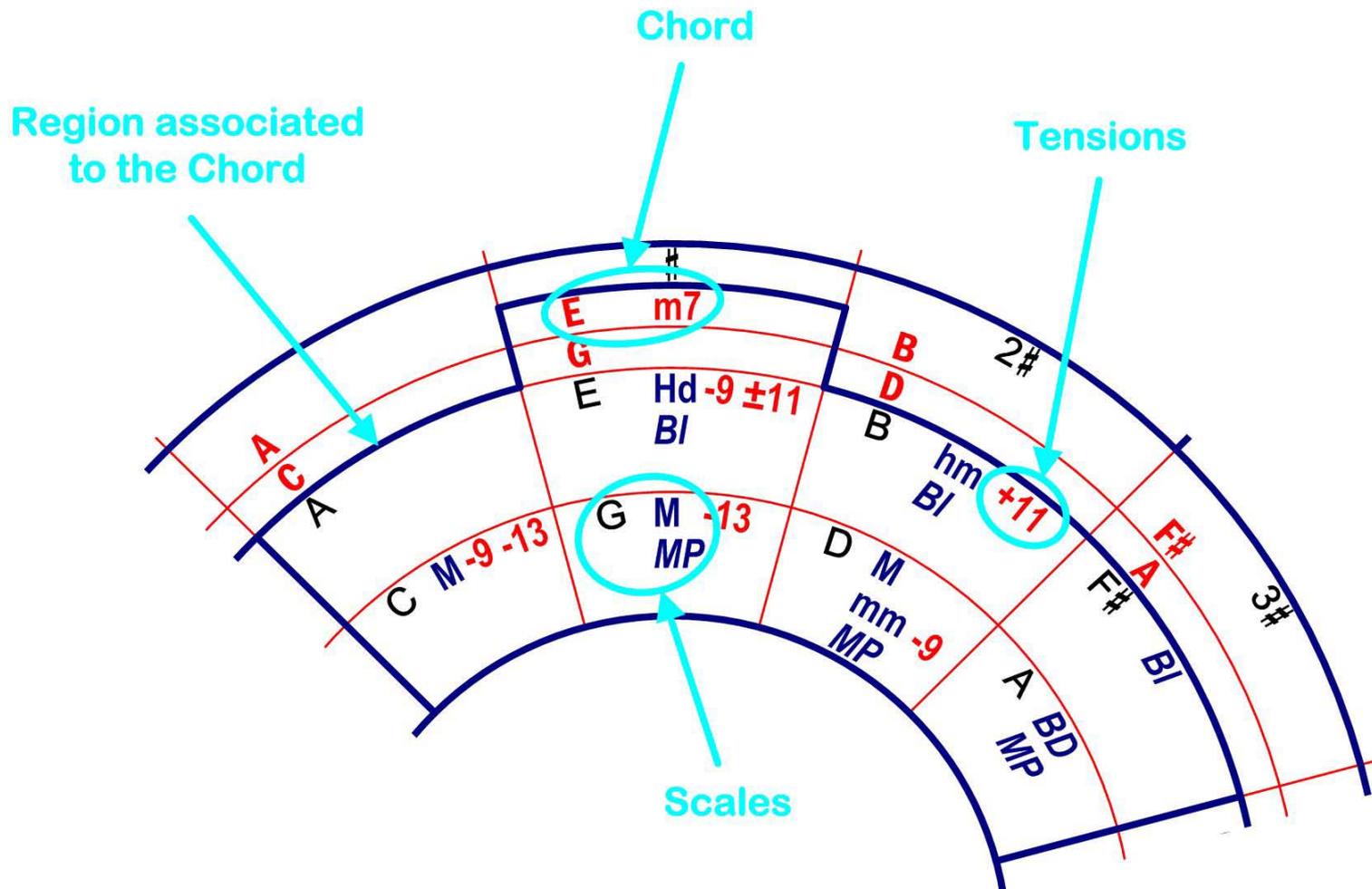
IMPROCHART – Improvisation Chart

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- ❑ **To use it, simply rotate the discs until the chord symbol (printed in red on the plastic disc) matches the desired root (printed in red on the cardboard disc).**
- ❑ A region defined by blue lines is thus obtained, which inside contains the available scales for improvising on the chord.
- ❑ The tensions are indicated to the right of the scales.
- ❑ For example, next figure shows the result when selecting the Em7 chord.

IMPROCHART – Improvisation Chart

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EXPLANATIONS – SCALES

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- **The following explanations are particularly important for SCALES:**
- 1) 10 types of scales have been considered, which are classified into 3 categories:
 - **Basic (3):** Major (*M*), melodic minor (*mm*), harmonic minor (*hm*).
 - **Symmetric (2):** Whole-Half (*Wd*) or Half-Whole (*Hd*) diminished, Whole Tone (*W*).
 - **Special (5):** Bebop Major (*BM*), Bebop minor (*Bm*), Bebop Dominant (*BD*), Major Pentatonic (*MP*), Blues (*Bl*).

EXPLANATIONS – SCALES

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- 2) Unless otherwise indicated, both **Basic** and **Symmetric** scales always contain the notes of the considered chord. As an exception, in the **7** chord, some of these types of scales not containing the **5** are included, which is indicated by **5̄**.
- 3) The **Special** scales are given a different treatment. They are simply related to certain chords.
- 4) Sign **↑** means to raise the scale one half-step and sign **↓** to lower it one half-step. For example, **G ↑hm = G# hm** and **C ↓MP = B MP**.

EXPLANATIONS – SCALES

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- 5) To indicate the tensions, it will be understood that both **Basic** and **Symmetric** scales contain the unaltered 9, 11 and 13 tensions; and **only the exceptions to this rule are indicated.**

For example, when selecting the Em7 chord, we obtain C **M** **-9 -13**, which means that we can use the C Major scale for improvising and that it introduces the **-9, -13** and the unaltered 11 tensions. We also obtain D **mm** **-9**, which means that we can use the D melodic minor scale and that it introduces the **-9, 11 and 13 tensions.**

EXPLANATIONS – SCALES

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- 6) Tension **5** is indicated in the \emptyset chord. And tensions **3** and **-3** are indicated in the **7sus** chord.
- 7) In the **Special** scales, only those tensions being particularly relevant are indicated.
- 8) The minor natural and minor Pentatonic scales are not included, as they are equivalent to their relative Major ones. Also note that, for example, the C Wd and B Hd scales are equivalent.
- 9) IMPROCHART™ comes with a practical Table containing the 10 scale types in every key.

EXPLANATIONS – CHORDS

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- **The following explanations are particularly important for CHORDS:**
- 1) Both chord **Roots** and scale **Tonics** are sorted by **cycles of fifths**. Moreover, they are grouped in **relative couples**.
- 2) Chord roots can be easily found by searching their corresponding **key signatures**.

EXPLANATIONS – CHORDS

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3) Initially, 8 chord types are considered:

- ▣ $+Δ, Δ, mΔ, m7, °$ (intermediate area of the plastic disc, near the key signatures).
- ▣ $7, 7_{sus}, ø$ (external area of the plastic disc).

Nevertheless, this set of chords may be widened to include other chord types, with a smaller or bigger number of notes. For example, triad chords, sixth chords or extended chords (9th, 11th or 13th chords), both altered and unaltered. Let us see how:

EXPLANATIONS – CHORDS

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4) Improvisation on triad chords:

- ▣ Imagine that we want to improvise on Em. Since the 7th is not defined, we can use the scales related to Em with major or minor 7th, that is, Em Δ and Em7 chords.

5) Improvisation on sixth chords:

- ▣ If we want to improvise, for example, on C6, we will note that this chord has the same notes as Am7, so we will use the scales related to the last one.

REMARK: An equivalence table for triad and sixth chords is included on the back, to the right, of IMPROCHART™.

EXPLANATIONS – CHORDS

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6) Improvisation on extended chords:

- ▣ Imagine that we want to improvise on Em9. This chord is equal to Em7 plus the 9th. Therefore, we will look for a scale in the Em7 group which includes the 9 tension. For example, G M, D M or B hm.
- ▣ If we want to improvise on Em13(+11), we will look for a scale in the Em7 group which includes the 9, +11 and 13 tensions. The only option is B hm.

7) For design reasons, the 7/+5 chord is found as 7/-13 and the 7/-5 chord as 7/+11. These chords are inside the 7 chord region.

CONCLUSIONS

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- As a summary, we can conclude the following:
 - 1) Improvisation consists in creating a melody suitable for a given chord progression.
 - 2) On each chord, the melody is composed by the notes of a scale related to the chord.
 - 3) **IMPROCHART™** is an **Improvisation Chart** that automatically gives us all the scales related to a given chord.

CHORDS → SCALES

CONCLUSIONS

- 4) The **Tensions** introduced by each scale on the considered chord are indicated as well.
- 5) The Unavailable Tensions or Avoid Notes must be considered as Approach Notes.
- 6) 10 different types of scales have been considered.
- 7) The system here introduced for selecting the chord type allows us to choose among a large variety of them, even the most complex ones.
- 8) For all these reasons, **this new tool can help to a great extent for learning to improvise.**