

CHORD COMPUTER SIDE TWO

TRANSPOSER To transpose from one key to another, move the master slide on the reverse side of the Computer to the left or right until the required key in the lower window is immediately adjacent to the key which is existing. Then read off transposed chords from top to bottom.

For example, if the written key is E^b and it is required to be transposed to the key of F. Align F in the bottom window with E^b on the top. The following existing sequence $E^b/A^b7/B^b9/Am7$ will become in the key of F. $F/B^b7/C9/Bm7$. Note that the symbols following the root note remains the same. The order in which the keys have been written on the transposer relates to the cycle of keys is explained in detail below.

Many of the keys shown on the transposer are frequently shown differently, for example B^b may be shown as A^\sharp . This is termed "enharmonics". These substitutions can be seen fully on the Computer Keyboard on the front page.

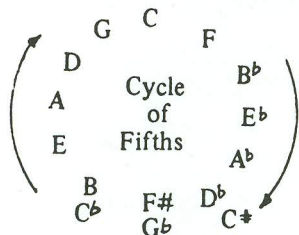
KEY INFORMATION

To obtain information on any key move the slide of the reverse side of the Computer so that the key required is shown in the window adjacent to the word "KEY". The number of sharps or flats in the key signature is now automatically shown below the key in the window. Below this is detailed the notes affected by these accidentals. In the base of the window the dominant seventh to the key displayed can be seen. To the right is shown the Relative Minor key of the key shown, and below this the Dominant 7th of this minor key.

NOTE: The two sections on the reverse of the computer are NOT interrelated NOR do they relate to the keyboard side of the computer.

THE CYCLE OF THE KEYS

Chord changes, key changes, etc. are based to a great extent on the "cycle of keys" or cycle of fifths as it is sometimes called. A chord of C followed by C7 will naturally resolve into the chord of F (the next stage around the cycle moving clockwise). Similarly F7 will resolve to B^b , B^b7 to E^b and so on. Adjacent keys on the cycle have key signatures which possess either one extra flat or one less sharp in the same direction. F has 1 \flat , B^b 2 flats, E^b 3 flats and so on. A has 3 \sharp , D 2 sharps, G 1 sharp and so on. The note affected by adding a flat or subtracting a sharp also fits the order established by the cycle from key to key.



These instructions are only intended to be brief and act as a basis to the study of chords. A further knowledge is advised obtainable from a score of tutors available on the market to help a deeper understanding of chord structure.

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SCALES Western music, as opposed to Oriental music, is based on a chromatic scale consisting of 12 notes pitched in semi-tones. The 13th. note makes an Octave & simultaneously is the 1st. note of the next Octave. An Octave contains the 8 notes which form a Scale. A few scales have more notes or less.

All scales are made up of Tones & Semi-tones ($\frac{1}{2}$ a tone.) spaced at Intervals on the chromatic scale. See 'INTERVALS'. There are very many possible scales but only 4 may be regarded as being essential. They are, in order of importance:- Major; Harmonic Minor; Melodic Minor and Chromatic scales.

MAJOR scales have 8 notes with intervals of:-

Tone, tone, semi-tone, tone, tone, tone, semi-tone. (8)

R-----2-----3-----4-----5-----6-----7-----8

HARMONIC MINOR scales have 8 notes with intervals of:-

Tone, semi-tone, tone, tone, semi-tone, 3 semi-tones, semi-tone. (8)

R-----2-----3-----4-----5-----6-----7-----8

Melodic MINOR scales have 8 notes, the third being flattened ascending & the 3rd, 6th, and 7th being flattened descending. The intervals are:-

Tone, semi-tone, tone, tone, tone, semi-tone. (Ascending)

R-----2-----3-----4-----5-----6-----7-----8

Tone, semi-tone, tone, tone, semi-tone, tone, tone. (Descending)

R-----2-----3-----4-----5-----6-----7-----8

The **CHROMATIC** scale. This uses every semi-tone. R-----8

MODES. Each Major scale has 7 Modes. This means starting the scale on a different note in the scale. e.g. R 2 3 4 5 6 7 8., is the Ionian mode. Dorian=2 3 4 5 6 7 1 2. Phrygian=3 4 5 6 7 1 2 3. Lydian=4 5 6 7 1 2 3 4. Mixolydian=5 6 7 1 2 3 4 5. Aeolian=6 7 1 2 3 4 5 6. & Locrian=7 1 2 3 etc.

Dud 'Fumble-finger' Fuller's SCALE CHARTS.

Learning scales (once thought to be drudgery) with the aid of the SCALE CHARTS, becomes interesting & easy from the start. By having the Charts immediately behind the keys, with all the notes & fingering marked, a mental picture of each scale, relative to its Root-note & the natural "2-3" Black Note pattern of the Keyboard, is built up unconsciously.

Scale practise makes, and keeps fingers supple and strengthens them, building technique and helping immeasurably with fingering in general.

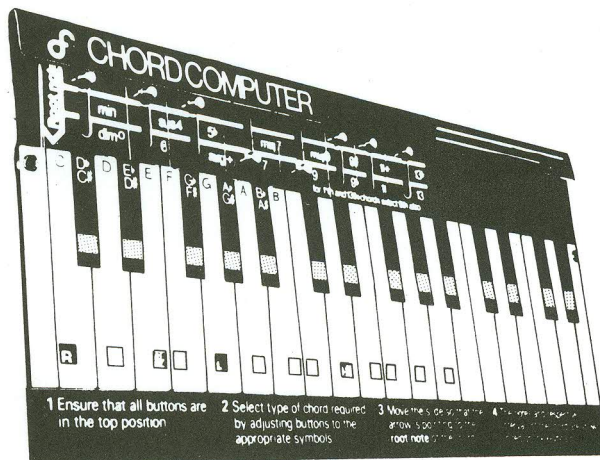
Last, but not least, facilitating the smooth execution of fast syncopated runs and passages, so necessary in Jazz, "Pop" and indeed most other music.

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CHORD COMPUTER

A Great British Invention

- Over 2000 chords shown
- Any chord in any key
- Immediate transposing from and to all keys or notes



RECOMMENDED BY OSCAR PETERSON

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GENERAL INSTRUCTIONS

The CHORD COMPUTER is a precision instrument that will give a lasting and useful service if treated with care and the following recommendations are advised to retain the Computer in good condition, ensure its accuracy and ease of working.

DO NOT BEND ON ANY ACCOUNT
DO NOT REMOVE THE SLIDE FROM THE BODY OTHERWISE
PERMANENT DAMAGE WILL BE CAUSED
TREAT THE BUTTONS WITH CARE AND DO NOT FORCE UNDULY
KEEP DRY (DO NOT WASH)

The slide movement is also used to advantage by providing on the reverse side of the Computer additional useful information. It offers a quick method of transposing to any key a chord sequence or musical notation; and full information on all keys (number of sharps or flats and notes affected, the dominant 7th, relative minor and the dominant 7th of the minor key).

INSTRUCTIONS FOR USE

TO FIND ANY CHORD SYMBOLS (For example Cm7)

1. Ensure that all buttons are in top or neutral position.
2. Move the slide between the thumbs to the left or right so that the Root arrow points to the centre of the key marked with the root note of the chord required (e.g. Cm7, the arrow should point to the key marked C). The chord now shown in red is the major triad of the key pointed to (e.g. C-Major: notes CEG).
3. Slide down relevant buttons to symbols required using the forefinger and thumb (e.g. Cm7 move the first button to the base of the slot so that it is adjacent to min. C minor is now shown on the keyboard.
Also move the fourth button from the left to the base of its slot so that it is next to figure 7).
4. The chord required can now be seen indicated in red on the keyboard and each is marked with its particular interval (e.g. Cm7, C marked R for root, E^b is m for minor third, G is 5 for fifth interval, B^b is 7 for seventh interval).

NOTE: When 11th or 13th chords are required, it is necessary also to select the fifth button to the 9 position.

SCOPE OF THE COMPUTER

The CHORD COMPUTER is designed to provide an easy and visual means of discovering the structure of musical chords.

It is intended to be a permanent source of reference and/or a means of acquiring knowledge for both the experienced musician and the student. Popular sheet music contains chord symbols which are usually simplified in order to make them easy to play. A good knowledge of chords however, enables the sound to be "filled out" by substituting with more sophisticated chords.

Likewise the musician who plays by ear may be able to render the melody correctly or provide a basic chordal accompaniment, but he can add a subtler range of sounds if he is able to use the full structure of the chords employed in the tune.

The CHORD COMPUTER alone offers an efficient and immediate way of obtaining this knowledge.

DESCRIPTION OF THE COMPUTER

The CHORD COMPUTER consists of a simulated keyboard encompassing more than two and a half octaves, each individual key containing a clear plastic window. A slide situated above the keyboard moves bodily to the left and right using light finger pressure. This movement determines the Key or Root note of a chord. The slide contains eight buttons which are finger operated and move vertically up and down. This movement selects the type of chord required.

In selecting a desired chord (by adjusting the slide and buttons) the notes constituting the chord will automatically appear in red within the relevant windows on the keys, each marked with its particular interval within the chord.

STANDARD AND ALTERNATIVE CHORD SYMBOLS

Chord Name	Symbol on slide	Alternative symbols
Major	no symbol	
Minor	min	m
Diminished seventh	dim	dim 7
Sixth	6	add 6
Suspended fourth	sus 4	
Augmented fifth	aug +	+ 5, 5 ⁺
Flattened fifth	5 ^b	-5, (Flat 5)
Dominant seventh	7	dom. 7
Major seventh	maj7	7, 7 ⁺ , perf. 7
Dominant ninth	9	dom. 9
Flattened ninth	9 ^b	-9, Flat 9
Major ninth	maj9	9, 7 ⁺ , 9 ⁺
Sharpened ninth	9 [#]	aug. 9, 9 ⁺
Eleventh	11	
Sharpened eleventh	11 ⁺	aug. 11, 11 ⁺
Flattened thirteenth	13 ^b	-13, Flat 13
Thirteenth	13	

Occasionally other symbols may be found but the generally accepted symbols are printed above. Sometimes "add6" is used in place of "13". The "+" symbol can be confusing when used in a complex chord since e.g. C7 + 9 means a C dominant seventh chord with an augmented fifth note and the ninth note. This chord could also be written C9+.

INTERVALS

The distance between any two notes is called an 'interval'.

In the key of C
reckoned from
the lowest note:—

C to D is a second.
C to E is a major third.
C to F is a perfect fourth.
C to G is a perfect fifth.
C to A is a major sixth.
C to B is a major seventh.
C to C is an octave.

These intervals
can be altered
chromatically:—

C to D^b is a Diminished second.
C to D[#] is an Augmented second.
C to E^b is a Minor third.
C to F[#] is an Augmented fourth.
C to G^b is a Diminished fifth.
C to G[#] is an Augmented fifth.
C to A^b is a Minor sixth.
C to B^b is a Minor seventh.
C to C^b is a Diminished octave.

CHORD CONSTRUCTION

A chord is the sound made by several notes played simultaneously.

Every chord has its own characteristic sound affected by the distance (the 'interval') between its component notes.

The simplest chord is a triad—three notes sounded together.

There are three kinds of triad—

1. The Common Chord, major or minor.
With the root note C the major triad would be C, E, and G. (C to E is a major third, E to G is a minor third, and C to G is a perfect fifth.)
The minor triad would be C, E^b and G. (C to E^b is a minor third, E^b to G is a major third.)
2. The Diminished Triad.
With the root note C this would be C, E^b, and G^b. (C to E^b is a minor third, E^b to G^b is also a minor third, C to G^b is a diminished fifth.)
3. The Augmented Triad.
With the root note C this would be C, E, and G[#]. (C to E is a major third, E to G[#] is also a major third, C to G[#] is an augmented fifth.)

1) is a concordant, restful sound, 2) and 3) are discordant and suggest the need of another chord to follow.

The addition of more notes produces more colourful chords, for instance, the four note chord built in thirds from the root note G (the fifth degree of the C scale) comprising the notes G, B, D, and F gives the familiar sound of the Dominant Seventh chord—often proceeding the common chord on C to finish a musical phrase.

Chords are used to add harmonic background to a melody or used to provide a basis for improvisation. A series of chords given in a certain order is called a chord progression or sequence.

All chords are built up on a root note mainly in thirds, thus: R 3 5 (6) 7 9 11 13. The most simple chord being the triad R 3 5—the Common Chord.

The root note (R) is the key note upon which the chord is built. Intervals refer to the distance between successive notes in a chord and are numbered according to their position in the scale counting up from the root note. Thus in the key of C we have:

C D E F G A B C
R 2 3 4 5 6 7 8 (octave)

The C major triad would therefore be C E G (R 3 5).

INVERSIONS

All chords demonstrated on the CHORD COMPUTER are shown in "root position" (i.e., with the root note in the lowest position). The root note may however be positioned anywhere within the chord. The entire structure of a chord can be changed around without changing its name. These other positions are termed "inversions". For example, R 3 5 7 may become 3 5 7 R, 5 7 R 3 or 7 R 3 5.

OPEN OR VOICED INVERSIONS

To obtain a more pleasing sound the chords and inversions may be spread out or voiced. Thus R/3/5 can become: R/ /5/3 or 5/ /3/ /R or 3/ /R/ /5.

The notes of spread chords should be played using both hands, the melody note, if any, being played on top. Full chord voicing is left to the taste and experience of the musician.

TIMING

In using sheet music or chord sequences, a given chord is always held until another is indicated to replace it. During this time it is up to the individual to decide what should be played, but alternatives are:

1. Sustain the chord for its duration.
2. Repeat on each beat.
3. Play alternately with base notes.
4. Vary the chord using inversions.

| Dm7 | ./. | ./. | C7 | Am7 | ./. |

The above illustration is a progression and indicates that the chord Dm7 is held for three bars duration, C7 for one bar, and Am7 for two bars. The number of beats to each bar is dependent on the time signature being played which is mostly 4 beats to each bar as shown above. Sheet music will always state the time signature at the beginning of a piece of music. Most (but not all) modern melodies consist of a 32 bar duration split into sections of 8 bars each. One selection is often repeated three times as follows:

AABA. The B section is termed the middle eight bridge. The middle eight frequently goes up a key round the cycle (see side two).