

Chapter 2 – Time Signatures

2.1 – The Barline

In Chapter 1, we saw how rhythm in music is notated. We saw that there are different note shapes for different beat values and also that each rhythmical value has its own rest which denotes a silence for a set number of beats.

To make the reading (and writing) of rhythm in music easier, something called a **barline** is used. Its purpose is to divide the music into a set number of beats.

This is an example of music written without a barline:



Fig. 2.1-1: Music with no bar lines

This is the same piece of music with a barline after every 4 beats.



Fig. 2.1-2: Same example with a barline every 4 beats. It's easier to count the beats now isn't it?

As you can see it is easier to read the rhythm since you are looking at the music in sections of 4 beats instead of looking at the whole music at once. Notice also the bar at the end of this example. It is made up of a thin line followed by a thicker one; this denotes the end of the music (*see also Fig. 2.1-5*).

Note that in some styles of modern music, the music is unbarred on purpose.

When handwritten, the barline should be written across the 5 lines of the staff – not any longer or any shorter:



Fig. 2.1-3: The first barline is too short, the second one is too long.

The barline should also be written vertical, not slanting on either side:



Fig. 2.1-4: The first 2 barlines here are wrong as they are slanting. The third one is correct.

Besides sectioning the music into a set numbers of beats, the barline has another function – that of denoting which beat is the strongest and which is the weaker. The section of music enclosed in between 2 barlines is called a **bar**.

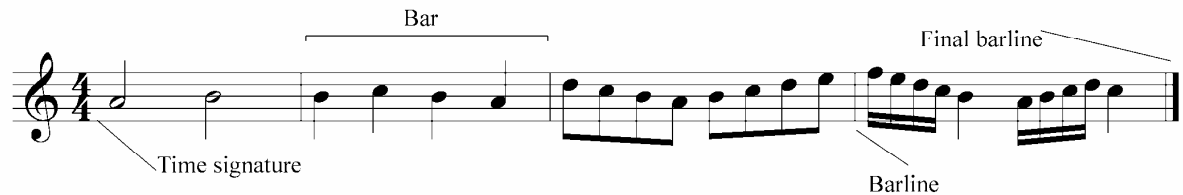


Fig. 2.1-5: The bar, barline, the final barline and the time signature

2.2 – Simple Crotchet Beat Time Signatures

2.2.1 - $\frac{4}{4}$ (common time)

In Fig. 2.1-5, notice the two numbers which follow the treble clef - $\frac{4}{4}$. This is called a **time signature** and it contains two pieces of information. $\frac{4}{4}$ time is the most common time signature. It is in fact referred to as common time. The lower number in the time signature tells us what the unit of the beat is. In Chapter 1, we learned that a crotchet is equal to one beat. The value of a crotchet can be different in other time signatures. How can we tell how much a crotchet will be worth?

The lower number in our case is 4. Which of the rhythmical values do we need 4 of to form a semibreve? – The crotchet (in fact as already explained in Chapter 1, in American notation it is normally referred to as the quarter note). Thus the lower 4 in $\frac{4}{4}$ is telling us that, for this time signature the unit of the beat is the crotchet. In other words in this time signature it is the crotchet which is worth one beat.

The upper number tells us how many units there shall be in one bar. In the case of $\frac{4}{4}$, there shall be 4 units in a bar. As was explained in the previous paragraph, the lower number is also 4, meaning that in this time signature each bar will have 4 crotchet beats.

Each time signature we will encounter also has its own descriptive name. $\frac{4}{4}$ is referred to as **simple, quadruple, crotchet beat time**.

Simple means that the beat is subdivided in multiples of 2, that is, in 2 or 4 and in higher levels, in 8. In higher levels we shall come across compound time where the beat is subdivided in odd numbers (mainly 3).

Quadruple means that there are 4 beat units in a bar, and **crotchet beat** because as was explained, the lower number shows us that the unit of the beat for this time signature is the crotchet since 4 crotchets are required to make up a semibreve.

Common time is also commonly notated as **C** instead of $\frac{4}{4}$. In common time, the first beat is the strongest, meaning that when the note on the first beat is played, it is normally hit the hardest. The third beat is weaker while the second and fourth beats are the weakest.



CD track 9 – This is an extract from a piece by Pyotr Tchaikovsky which is in $\frac{4}{4}$ time. Notice the rhythmical feel to this time signature, where the first beat is the strongest, the third beat is weaker while the second and the fourth beats are the weakest. Tchaikovsky (1840-1893) was a Russian composer who wrote a number of famous works including a number of ballets such as 'Swan Lake' and 'The Nutcracker'.

A musical score for piano in 4/4 time, consisting of four systems of two staves each. The first system starts with a forte (*f*) dynamic. The second system has a measure number '4' at the beginning. The third system starts with a fortissimo (*ff*) dynamic. The fourth system has measure numbers '11' at the beginning and '11' at the start of the second staff, and includes a *rit.* (ritardando) marking and a piano (*pp*) dynamic marking. The score features various melodic lines, chords, and a steady bass accompaniment.

Fig. 2.2-1: Music in $\frac{4}{4}$ time.

2.2.2 - Simple triple time, crotchet beats - $\frac{3}{4}$

In this time signature, the unit of the beat is still the crotchet (since the lower number is 4) but the upper number is 3, indicating that there are now 3 crotchet beats per bar.

In fact it is referred to as **simple** (because the beat is still subdivided in even numbers), **triple** (since there are 3 beats to every bar), and **crotchet beats** since the unit of the beat is the crotchet.

In $\frac{3}{4}$ time the first beat is the strongest (it is normally hit the hardest when playing in three-fourths).



CD track 10 – Listen to this arrangement of a waltz by Tchaikovsky from another of his ballets – 'The Sleeping Beauty'. A waltz is characterised by being in triple time signature which gives it this characteristic rhythmical feel. Notice the rhythmical feel of simple triple, crotchet beat time, where the first beat is the strongest and the second and third beats are weaker.

A musical score for a waltz in 3/4 time, consisting of four systems of piano accompaniment. Each system has a grand staff with a treble and bass clef. The first system is marked 'p dolce' and features a melody in the treble clef and a bass line in the bass clef. The second system continues the melody and bass line. The third system is marked 'p' and shows a more active bass line. The fourth system is marked 'ff' and features a strong, rhythmic bass line. The score concludes with a double bar line and a repeat sign.

Fig. 2.2-2: Waltz from 'The Sleeping Beauty'.

2.2.3 - Simple duple time, crotchet beats - $\frac{2}{4}$

In this time signature the unit of the beat is still the crotchet, but this time there are 2 beats to every bar, hence the term 'duple'. **Simple** (because the beat is still subdivided in even numbers), **duple** (since there are 2 beats to every bar), and **crotchet beats** since the unit of the beat is the crotchet. In $\frac{2}{4}$ time the first beat is the strongest while the second beat is weaker as in $\frac{2}{2}$ (listen to track 12).

Notice that in all three time signatures which have the crotchet as their unit of the beat, beamed notes are usually grouped together to form crotchet beats. Thus quavers are beamed in twos while semiquavers are beamed in fours. This is important since it helps in counting the beats. Unbeamed notes or notes incorrectly beamed will cause confusion.

Two exceptions need to be noted. In $\frac{2}{4}$ time, if a bar consists of 4 quavers they are all beamed together in this way:

















And when a $\frac{3}{4}$ bar consists entirely of quavers, then all are grouped together like this:



In section 2.2 of the *Practical Musical Theory - Level 1 Workbook*, you can work out exercises which involve correct beaming of notes.

2.3 – Simple Minim Beat Time Signatures

At this level you will also be asked questions about time signatures with 2 as the lower number. Which rhythmical value do we need 2 of to make up a semibreve? – the minim (see fig.1.1-14). Thus in minim beat time signatures, the minim is the unit of the beat (meaning that the minim is now worth 1 beat). Hence everything has to be halved. Thus a semibreve is now worth 2 beats, a minim is worth 1 (since it is the unit of the beat), the crotchet is worth half, the quaver is worth one fourth and the semiquaver worth one eighth. No wonder that $\frac{2}{2}$ time is also referred to as half-time. The table below shows the new values of the notes as compared to what they are normally worth in crotchet beat time signatures.

Note Name	Symbol	Rest	Normal Value	Value in minim beat time signatures
Semibreve			4	2
Minim	 or 		2	1
Crotchet	 or 		1	$\frac{1}{2}$
Quaver	 or 		$\frac{1}{2}$	$\frac{1}{4}$
Semiquaver	 or 		$\frac{1}{4}$	$\frac{1}{8}$

2.3.1 - Simple quadruple, minim beats - $\frac{4}{2}$

In this time signature, the unit of the beat is the minim since 2 minims are needed to make up a semibreve. The upper number shows us that there are 4 units to each bar.

It is described as **simple** (because the beat is divided in even numbers), **quadruple** (because there are 4 units to each bar) and **minim beats** since the unit of the beat is the minim. There are 4 minims to each bar, but remember that each note value is halved.

$\frac{4}{2}$ has a rhythmical feel similar to common time (listen to track 9), that is, the first minim is the strongest, the third is weaker while the second and fourth are the weakest.

2.3.2 - Simple triple, minim beats – $\frac{3}{2}$

In this time signature, the unit of the beat is again the minim, since 2 minims are needed to make up a semibreve. The upper number shows us that there are 3 units to each bar.

It is described as **simple** (because the beat is divided in even numbers), **triple** (because there are 3 units to each bar) and **minim beats** since the unit of the beat is the minim. There are 3 minims to each bar but remember that again, each note value is halved.

$\frac{3}{2}$ has a rhythmical feel similar to simple triple crotchet beat time, meaning that the first minim beat is the strongest, while the second and the third are the weakest.



CD track 11 – Listen to this Courante by Johann Sebastian Bach which is in $\frac{3}{2}$ time. Its rhythmical feel is very similar to simple triple, crotchet beat time since the first minim is the strongest, the second and the third are the weakest. J.S. Bach (1685-1750) was one of the most prominent composers of the Baroque era. He composed several works amongst which are the French suites from which this Courante is taken.

A musical score for a piece in 3/2 time, consisting of four systems of music. Each system has a grand staff with a treble clef on the upper staff and a bass clef on the lower staff. The key signature has one flat (B-flat). The first system shows the beginning of the piece with a treble staff starting on a G4 and a bass staff starting on a G3. The second system continues the melody in the treble staff with eighth and sixteenth notes, while the bass staff provides a steady accompaniment. The third system features more complex rhythmic patterns in the treble staff, including triplets and sixteenth notes. The fourth system concludes the piece with a final cadence in the treble staff and a sustained bass line.

The image shows a musical score for an extract of a Courante by J.S. Bach in 3/2 time. The score is divided into four systems, each with a treble and bass staff. Measure numbers 13, 16, 19, and 22 are indicated at the start of their respective systems. The notation includes various note values, rests, and accidentals. Some rests are placed outside the staff to avoid overlapping with notes.

Fig. 2.3-2: Extract in $\frac{3}{2}$ – Courante by J.S. Bach. Notice that in this extract some of the rests are written outside the staff. This is done so that the rests do not clash into the notes and become unreadable. If there are no notes to clash with, the rests should be written in the usual manner, that is taking up the height of the whole staff as explained in chapter 1.

2.3.3 - Simple duple, minim beats – $\frac{2}{2}$

In this time signature, the unit of the beat is again the minim since 2 minims are needed to make up a semibreve. The upper number shows us that this time there are 2 units to each bar.

It is described as **simple** (because the beat is divided in even numbers), **duple** (because there are 2 units to each bar) and **minim beats** since the unit of the beat is, as with the previous two time signatures, the minim. There are 2 minims to each bar, all note values of course being halved. This time signature is also sometimes notated as C

$\frac{2}{2}$ has a rhythmical feel similar to simple duple, crotchet beat time, with the first minim being the strongest, and the second being the weakest.



CD track 12 – Listen to this Arietta by Muzio Clementi which is in $\frac{2}{2}$ time. Its rhythmical feel is very similar to simple duple, crotchet beat time since the first minim is the strongest while the second is the weakest. Muzio Clementi (1752-1832) was an Italian pianist and composer. Amongst several other works he published a set of 100 works called 'Gradus ad Parnassum', which is still very popular today for piano studies.

A musical score for a piece in 2/2 time, consisting of four systems of two staves each (treble and bass clef). The first system begins with a dynamic marking of 'mf'. The music features a mix of eighth and sixteenth notes in the right hand, often beamed together, and a steady accompaniment in the left hand. The piece concludes with a double bar line and repeat dots.

Fig. 2.3-3: Piece in $\frac{2}{2}$ – Extract from 'Arietta' by Muzio Clementi.

Note that in time signatures which have the minim as their unit of the beat, notes are beamed differently than in those with the crotchet as the unit of the beat.

Here 4 quavers must now be beamed together, not 2 since 4 quavers make up a minim:



Semiquavers, though are not usually grouped in 8 since they look a bit cluttered, especially if they are at different heights in the staff (see *Chapter 3 – Pitch* for this).

2.4 – A note about the Placing of Rests

Some important facts have to be noted about the placing of rests in bars.

If we have a bar which is empty, this is designated by putting a semibreve rest **in whatever time signature it is**. This helps the person reading the music immediately realise that a bar is empty.



Fig. 2.4-1: A whole bar's rest is shown by a semibreve rest – whatever the time signature.

In simple quadruple, crotchet beat time, if the second and third beats have a rest, while the first and the fourth have a note, they are not designated by a minim rest but by 2 separate crotchet rests:

Fig. 2.4.-2



This is incorrect.

This is the correct way to place the rests.

In simple triple, crotchet beat time, if the last 2 beats have a rest they are usually designated by 2 separate crotchet rests and not a single minim rest. If the first 2 beats are empty (i.e. rest) then they can be designated with a minim rest (*Fig. 2.4-3*). This is not valid for $\frac{3}{2}$ or $\frac{3}{4}$ where usually minim rests are used.

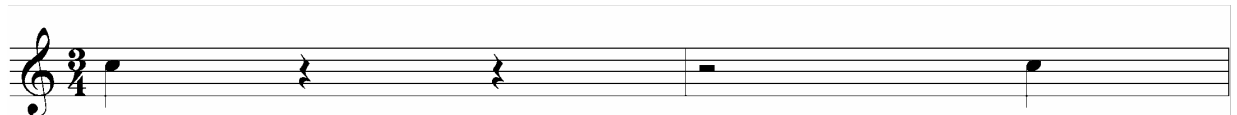


Fig. 2.4-3