**The Secrets of Orchestration**

**Part One. Orchestral Chord Voicings**

**Chapter 2. Brass section**

**Lecture 10a Horn in F**

Hello and nice to see you.

In this lecture, we will learn how to share harmony between 4 French horns.

As you learned in our previous lecture, the possible playing range of this instrument is from **B0** to **B-flat5.**

But this does not mean that all these notes can or should be used.

The common practical and safe range is from **B1** (or **Bb1**) to **F5.**

It is dangerous to exceed above the **F5.**

Let’s start to analyze the registers.

French horn registers differ in various orchestration and instrumentation books, as it is difficult to show the exact boundaries.

After discussing with some orchestra players, I divided the registers as follows for ease of learning and memorization.

I want to remind you that this graphic shows approximate registers.

Each register can be a little bit lower or higher.

The light gray and purple lines show the thickness of the horn sound quality.

As the French horn goes to the end of the range, the thickness is gradually lost.

The pedal tones, which are from **B0** to **Bb1**, are shown with a light gray.

These notes are ineffective because they lack clarity and power.

The instrument cannot get the true ***ff***, ***fff***, or ***pp*** dynamics in this register.

That’s why you should use the bass trombone or tuba, instead of the horn.

The horn’s low register, which I show as “1”, is around **B1** to **F3**.

This register can be divided into low (from **F2** to **F3**) and very low (from **B1** to **F2**) registers.

Here the tones are thick but have no power.

The middle register indicated by the number “2” is from **F3** to **F4**.

This is the best register for chord voicings and melodic lines.

Here the tones are thinner than the 1st register. However, the tones are more powerful than the lower register. This is a very strong register.

The high register is divided into high (from **F4** to **C5**) and very high (from **C5** and **F5**).

The high register indicated by the number “3” is still powerful as the 2nd one.

As you get above the **C5** the sound gets a little thinner and penetrating, however, a professional high player can still make it sound pretty big.

That’s why I show it as a “sharp arrow”.

This register is ineffective in chord voicing, due to its piercing quality.

The gray line shows the natural power of the richness of the sound. As the French horn moves towards the end of the range, it gains power.

I want to remind you that this gray line is not to be mistaken for crescendo and diminuendo. This is a native character of the French horn, regardless of the player and dynamic marking.

The pedal tones and lower register can have unfocused and weak sound.

The horn still lacks power in the upper part of the low register.

The 2nd and 3rd registers which are known as middle and high, they have quite strong timbre. But nevertheless, the horn also can obtain the softest sound in these registers.

The very high register has a thinner and more powerful sound. But this register is not useful for chord voicings due to its penetrating quality. You’d better use the trumpet instead of the French horn.

Let’s talk about the dynamic markings.

Let me remind you that these registers and dynamics are approximate.

So, ***p***, ***mp, mf,*** and ***f*** are obtainable in all registers.

The horns can come down to almost the same pianissimo as the woodwinds.

But is impossible to get the true softest dynamics in the very low and very high register, as the instrument cannot attack softly.

The horn can get the true ***pp*** while used as a soloist. For example, sonatina for horn and piano.

But, when 4 horns take the harmony in the symphony orchestra, the ***pp*** will be very weak against the other instruments. To get the balance, players will play the chord at ***p.***

That’s why I showed them as a dashed line. You can write the ***pp***, but the real sound will be stronger than the written. So, we can call them relative dynamics.

What about the strong dynamics?

The true ***ff*** and ***fff*** can be obtained approximately in the 2nd, 3rd, and 4th registers.

These dynamics should be avoidedin thevery low register, as the horn hasn’t powered.

You should be careful about the strongest dynamics when you are going to use them.

As I know, some modern sample libraries are very misleading about the ***ff*** and ***fff*** sounding.

In fact, the French horn cannot obtain true stronger dynamics in the low and very low registers.

Don’t trust the sound of the sample libraries! The ***f*** dynamic also should be used with great care, as it is harder to get a note to speak clearly.

So, as you can see, the 2nd and 3rd registers are suitable at any dynamic from ***pp*** to ***fff.*** You can get the true crescendo and diminuendo.

Did you understand why these are the best registers of the French horn?

If you want to get more clear sounding with the wide dynamic spectrum use the middle and high registers.

Generally, the lower register well blends in soft dynamics.

The medium and high registers are effective with both soft and strong dynamics.

Now you know the strengths and weaknesses of this instrument.

Let’s share the chord between the horns and find the true dynamics.

Since four horns are used in the chord, we will get a warm timbre.

Let’s start to do it!

The **C major** chord.

The 4th and 2nd horns play the **C** and **G** in the 1st register, which has a thick and weak timbre.

The 3rd and 1st players take the **C** and **E** in the 1st register.

This chord is well-balanced.

Since all horns play a chord in adjacent registers, they have almost the same thickness and power.

This chord works well with soft and medium dynamics***.***

Of course, you can write ***pp*** in the low register,but the Horn players will play it at ***p.***

Because, the ***pp*** intonation of the horn is not audible in the orchestra.

These kinds of problems can be handled by the conductor at rehearsal.

That’s why I added it into relative dynamics.

***ff*** and ***fff*** dynamics should be avoided, as the French cannot produce in the lower register.

Don’t write different dynamics for each instrument.

The **B7** chord.

The 4th and 2nd horns play the **B** and **D#** in the 1st register, which has a thick and medium power.

The 3rd and 1st players take the **F#** and **A** in the 2nd register.

This chord is well-balanced.

Since all horns play a chord in adjacent registers, they have almost the same thickness and power.

This chord works well with soft, medium, and strong dynamics***.***

The ***pp, ff, fff*** will be relative.

Inversions also can be voiced by 4 horns.

The next chord is **Fmaj7.**

All horns are in the 2nd register.

This is the best register of the horn.

We have a wide dynamic spectrum from ***p*** to ***fff***.

I want to remind you that the ***ff*** and ***fff*** dynamics are rarely used in chord voicing.

This is quite strong-sounding.

The ***pp*** will be relative.

The **Cmaj7(#5).**

The 4th and 2nd horns play the **C** and **E** in the 2nd register.

The 3rd and 1st players take the **G#** and **B** in the 3rd register.

This chord is also well-balanced.

A lot of dynamics can be used as the horns are in the best registers.

The 4th register is not useful. Hence, I want to stop here.

Horns are also well blended with added chords.

Since all instruments are in the 2nd register, any dynamic can be used.

The chromatic clusters are also well blended by 4 horns.

The soft and medium dynamics will be better.

So, at the end of this lecture, we can arrive at this conclusion.

1. The horn loses its thickness and gains the power ascending from very low to very high register.

2. All registers (*low, middle, high*) except the 4th (*very high*) are effective in chord voicing.

3. Any distribution of the chords in close four-part harmony, played by 4 horns, gives equal balance while sounding.

4. The best is the medium and high registers.

5. All “true” dynamic markings (***pp,p,mp,mf,f,ff,fff***) are possible in the 2nd and 3rd registers.

So, we have done our lecture. Thanks for watching. Bye for now.