Orchestration at A level

KS5

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Introduction

Rimsky-Korsakov, a Romantic Russian composer and inspirational orchestrator, said that 'to orchestrate is to create; it cannot be taught'. Let's hope he was wrong, at least on that last point. (It's interesting to note it didn't stop him writing his own 300-page manual, *Principles of Orchestration*!)

His main message, though, rings true: orchestration should be seen as a fundamental part of the composer's creative process, of how they think in sound for any combination of instruments, whether a jazz piano trio, a rock band or a symphony orchestra.

The study of orchestration can be made integral to any A level curriculum, whether supporting the **composing** briefs or **expanding listening** and analytical skills. In particular, it builds knowledge and confidence in:

- **Historical appreciation**: how ensembles developed from Baroque bands into the modern symphony orchestra.
- **Inner ear and audiation**: hearing more imaginatively what's on the page.
- **Aural analysis**: opening the ear to details in the score, from instrumentation through to form.
- **Broadening listening**: appreciating composers' signature traits and cross-referencing them.
- **Score-reading**: reading different clefs and transposing instruments.
- **Harmonic analysis**: expanding the eye vertically to pick out chord types and their progressions.

After a brief historical overview, this resource delves into the principles of orchestration – form, balance, colour and texture – and seeks to make them relevant to a specification wherever possible. To that end, examples are drawn from a cross-selection of set works:

- Bach Violin Concerto in A minor (AQA)
- Vivaldi Concerto in D minor for four violins (EdExcel)
- Haydn Symphony No. 104 *London* (Eduqas)
- Berlioz *Symphonie fantastique* (Edexcel)
- Debussy *Nuages* (Eduqas)
- 20th-century developments (all)
- Stravinsky *The Rite of Spring* (Edexcel)
- Messiaen (AQA)

A Spotify playlist (**https://open.spotify.com/playlist/110iHoozYPT1S5gHdaqtrJ?si=TipIRBuFTV6jqRo_TG_Xig**) accompanies this resource, for ease of reference. Ideally, a few sessions would be set aside to focus purely on the subject of orchestration, so that the knowledge can then be embedded and assimilated when covering the set works, or when composing for ensembles.

What this resource is not

There's no space here to go into the details of a handbook, with guidelines on the ranges of the instruments and their technical limitations. For that level of detail, there are, as you'll no doubt be aware, many fine manuals. Everybody has their favourite, but here is a trio that have stood the test of time:

- *The Study of Orchestration* by Samuel Adler
- *Orchestration* by Walter Piston
- *Instrumentation and Orchestration* by Alfred Blatter

A helpful YouTube series can be found on the channel OrchestrationOnline (**www.youtube.com/user/OrchestrationOnline**).

Instrumentation vs orchestration

The terms instrumentation and orchestration often get confused by students, to the point where they're often used synonymously. Instrumentation is the choice and allocation of instruments – based on their range, colour and position within the score – and, as such, an important discipline within the wider considerations of orchestration, which looks at the big picture and how all the compositional elements are brought together both vertically and horizontally.

A working definition of orchestration is the study and practice of writing, transcribing and arranging for an orchestra or, more loosely, for a combination of instruments.

A more poetic definition would be to say it is the art of '**sculpting sound**'. This goes one step further than the usual 'painting with sound'.

What makes a good orchestrator?

Somebody who can 'sculpt sound' needs to have a great inner ear, first and foremost, to imagine the density and textures of what they're creating on the page. It's not just a matter of seeing tonal colours and 'painting' them together in pleasing combinations, but also imagining the sound as three-dimensional matter, with depth of field and weight.

When you listen to Ligeti's *Atmosphères* for example, you feel as if you are in the midst of a strange, shifting fog of microtonal clusters. Around you that fog thickens and thins, ever fluid, either close and intense or distant and elusive. It's not a two-dimensional experience but an immersive one, even without the use of surround sound. The best orchestrators (and choral arrangers) have a feel for this dimension, as well as for combinations of colour.

This requires some key skills to be trained over time. Good orchestrators need to know their instruments inside out and have an instinct for what it's like to play their ideas on each instrument. They then have to imagine how the instruments can best be combined, making sure that the parts make sense individually as well as collectively.

See the Spotify playlist for Ligeti's *Atmosphères* and other examples

Seeing the wood and the trees

The beginner often loses sight of what the individual parts might be like to play, so that when the parts are printed off, there are either long rests, or fragments of lines, or lines that melodically don't make sense. The orchestrator has to attend to both this horizontal aspect – each line having integrity within itself – as much as the vertical combinations.

An ideal is to see the orchestra as one instrument, just with lots of different facets, like a massive cathedral organ with five manuals and a bewildering array of stops. An orchestrator is aware of this ecology of sound and how it all belongs together, while writing imaginatively for its individual components.

The only real way to learn is to try things out, facing up to the often humbling experience of realising how ideas on the page work (or don't work) in practice. More fundamentally, the keen orchestrator listens regularly to how other composers have done it, scrutinising their scores and being curious about how they've achieved their particular alchemy of sound.

Comparing Huts and their Fowl's Legs

A quick demonstration to start with would be to compare the original piano version and orchestration of 'The Hut on Fowl's Legs' from Mussorgsky's *Pictures at an Exhibition* (**https://open.spotify.com/playlist/110iHoozYPT1S5gHdaqtrJ?si=oDo2yLFmRbSujIzSdNNo8g**) This is one of the most vivid and exciting pictures in the set, depicting the witch Baba Yaga chasing after her prey.

- First play the piano version. What choices of instrumentation would students make, in broad terms? And why?
- Then compare the orchestrations of Ravel, Wood and Stokowski, all found on the Spotify playlist.

Each version works in its own terms, but which choices jump out, and why? Do students agree, for example, with Henry Wood's use of the tambourine? How about Stokowski orchestrating each bar for a different section of the orchestra so that it leaps around manically? What gives Ravel's version its clarity?

A quick historical overview

In the late Renaissance and Baroque periods, ensembles would be largely dictated by the availability of court musicians and the generosity of the patron. If the Prince, say, was a keen musician and happy to invest, then a regular core group of strings could be relied on, with multiple substitutions for wind players. Lully, for example, was lucky: under the lavish patronage of Louis XIV, he could regularly write for strings and double wind. This was not the norm, however.

Opera and ballet were the most popular genres involving instrumental groups and they drove the development of the orchestra, with the dramatic concerns of narrative and staging, leading to new experiments in expression. There's nothing like a good storm scene to test out *tremolando* techniques on your string section, for example.

The concerto form that emerged later in the Baroque period allowed composers to try out different combinations of instruments. The most experimental in that respect must include Bach's Brandenburg Concertos, with the diverse range of soloists and intricate writing for the ripieno orchestra. No. 6 is particularly daring, with its dark assortment of violas and bass instruments.

In this era, we expect to see the bulk of the material carried by the string section, as the most stable and homogenous family. The concertino group then alternates between joining in with the ripieno, being integrated into their texture, and taking more ornamental, solo episodes.

Case studies: Vivaldi and Bach

What's interesting about Vivaldi's Concerto in D minor, Op. 3 No. 11 (see Spotify playlist), is how it starts with an extended passage for the two solo violins alone, in close imitation. That lean sound is then contrasted against the soft, full chords of the ripieno section that follows, and then by the busyness of the whole string section set in fugal counterpoint.

Much of what gives this Concerto its interest is Vivaldi's highly contrasting textures. He is not afraid to leave space which can then be filled in. The roles of the soloists are particularly fluid throughout: in the outer movements they operate as a duo, the Larghetto only has one prominent solo line, and throughout, the cello continuo flips between accompanying duties and surprisingly active, soloistic functions.

The Bach A minor Violin Concerto has a more traditional role for its soloist. In the famous slow movement, it's a case of less being more. Consider how stripped back the accompaniment is, and how strictly the ostinato patterns are maintained throughout, ensuring the soloist's lyrical line remains in the spotlight.

An interesting comparison is the transcription made of this Concerto for the keyboard (in G minor, BWV 1058, also on the Spotify playlist). In one way, particularly in the faster outer movements, the sharply distinct sound of the harpsichord lends a transparency to the overall sound, making it feel less dense. The ability of the solo violin, however, to sustain the line and 'sing' it more expressively comes to the fore in the middle movement.

By the Classical era, and thanks to the pioneering work of the Mannheim orchestras and then Haydn's Esterházy ensemble, the instrumental forces of the orchestra solidified, as did the form of the symphony. A Classical orchestra constituted **three distinct 'choirs'**: strings, wind and brass. The timpani were always paired with the trumpets, which explains why the horn – an honorary member of the woodwind family when required – sits above the trumpets in the score, despite playing at a lower register.

The strings still lead the texture and the development of ideas in most of Haydn's symphonies, although by the time he got to his last six, the *London* set, he was able to take more liberties, writing larger roles for the woodwind, brass and, in particular, percussion. The *Military* Symphony, No. 100, has the upper wind imitating fifes in a marching band, with the wind carrying a lot of the melodic material in the first movement for a change. And then there's the flamboyant percussion section to give a Turkish flavour, which would have delighted the London audiences.

Case study: slow movement of Haydn's Symphony No. 104 *London*
This final Symphony continues the trend of a more democratic allocation of roles between the wind and strings, particularly in the second movement. Here, from the minor variation on, the wind has much more of voice. A wind quartet restates the theme quietly in the minor before a surprise tutti entry. Throughout this variation the wind have independent parts to the strings. Later, they go back to doubling, although adding important colour. The bassoon and flute both get important solo roles at the beginning and end respectively.

The Romantic era saw the most dramatic development of the orchestra. Innovations in metallurgy meant that instruments could both shrink effectively (the piccolo) and grow, with brass now being looped into fanciful new shapes (eg the ophicleide). A chin-rest could now adorn every violin, and there were intricate new key systems for the woodwind. Romantic composers must have felt like kids in a toy shop, such was the array of sounds now available to them.

Treatises on orchestration proliferated, with greatly expanded sections on instrumental technique. Out of these, the ones by Berlioz and Rimsky-Korsakov are still in circulation and of interest as reference works. Berlioz worshipped Beethoven as the master orchestrator, and put the earlier composer's Sixth symphony, the *Pastoral*, on a particularly high pedestal.

The strings in a mid-19th century orchestra regularly numbered 18, 16, 14, 12, 10 (section by section, from first violin to double bass). There could be as many as six players per woodwind part, as well as eight horns, four trumpets, four trombones, two tubas, harps and piano, not to mention a battery of percussion.

The 20th-century orchestra did not need, really, to expand any more than this, and space on most concert hall stages would not allow it to in any case. Electronic instruments such as the ondes Martenot had a starring role in Messiaen's 1948 *Turangalîla* Symphony, but generally, composers have restricted themselves to acoustic forces. Contemporary composers now have digital resources at their disposal, but again this is the exception. The 'traditional' orchestral sound allows an infinite amount of variety in and of itself.

British composer Thomas Adès added some intriguing new percussion sounds to his *Asyla*, including knives and forks, sandpaper blocks, water gongs and two upright pianos, one of which is detuned. He creates both eerie and epic sounds with this expanded arsenal.

Four guiding concerns

There are four key questions that can usefully guide the orchestration process:

1 Which **function** am I going to allocate to which instrument?
2 How do I **balance** the sound so everything can be heard?
3 Which instrumental **colours** shall I choose to bring out the mood of the music?
4 How do I keep the **texture** effective and interesting?

There is inevitably a lot of overlap between each area of concern, but we'll look at each one in turn now, with some examples from the set works.

Function

In tonal music, there are generally four functions within the score that need to be fulfilled: the bassline, the accompaniment, the melody and the countermelody (or countermelodies). Even in a large symphony by Mahler, there are rarely more than four or five functions at play in any given texture. Mahler is in fact exemplary in this respect – even though his lines may argue with each other, they always do so with absolute clarity.

Out of these, the accompanimental texture is often the hardest to write for. If there is continuous busy movement, for example, the wind must be given opportunities to breathe and the strings' bowing patterns need to be considered.

When discerning where to place the melody, the initial question is one of emphasis. Do you want a solo instrument, or for it be doubled and reinforced, or for it to be a unison statement by an entire family?

Countermelodic lines generally need to support and not overtake the texture, occupying a different register and tonal plane.

There needs to be clarity in these functions, but also variety, so as to keep the interest both for the listener and the player. Don't let the first violins have all the fun!

Case study: Berlioz's *Symphonie fantastique,* **first movement**
This was a benchmark work as much for its conception and form as for its colourful use of an orchestra. After an extended introduction, the famous idée fixe is first played on the flute and first violins, with the lower strings imitating heartbeats. After that, there are rarely more than three planes of sound in operation, with lots of doubling. The development section is exemplary in its clarity of roles, with the strings often pitted against the wind in typical Romantic fashion.

- Can students identify which roles the instruments are playing and how they are blocked together according to their function in the movement's development section?

Balance

Some composers are naturals at creating superbly balanced, transparent yet luminous textures. Mozart, Ravel and Stravinsky spring to mind in this respect. The issues here are mainly around how to ensure the instrument, or choir of instruments, speak in the right **register, dynamic and timbre** so that either they can be heard as a solo or blend together well as a homogenous unit.

To give obvious examples, it's no good giving a flute a solo in its warm, low register if the strings are being shrill beneath. Or to ask a trumpet to play quietly at the top of its range (unless the person doing it is a fabulous player!). Generally, the brass section needs judicious handling so as not to drown out the other families.

A good exercise is to try arranging all the instruments in a standard Romantic orchestra in terms of their register and brightness, from high to low. This is not just a mechanical exercise exploring pitch and range, but one that also highlights complimentarity. Students will see how the glockenspiel and piccolo might vie with cymbals for brilliance at the top, how the clarinets might pair nicely with the second violins, the bassoons in their tenor range with the violas, and how the timpani and double basses can rumble together.

Equally, chords need to be voiced and spaced in such a way that they work both in isolation and as a progression, with good voice-leading. This is one of the more complex areas to master, and requires orchestrators to judge the power of the instruments, the density of the voicing and the tone-weight of the chord.

In his book *The History of Orchestration*, Adam Carse notes that, of all the sections, the woodwind is the most 'quarrelsome' and hardest to blend.

Case study: Debussy's 'Nuages' from *Nocturnes*
Debussy's sensitivity to issues of balance and colour is second to none. So it is that he manages in this *Nocturne* to have multiply divided strings kept *pianissimo* with a cor anglais in the richest part of its register singing above. The player is encouraged to project their part ('very expressive, played to the fore') and the end of the phrase is marked by horns in octaves and then lower strings. Every part to the sentence is eloquent and perfectly audible.

Later there is another great example of balance as a viola solo is set against just a pair of oboes. There is no overlap in the ambit of pitch, and the colours do not compete.

Keen composers might like to consult Walter Piston on voice-leading in his *Orchestration*, pages 396 to 404.

Colour and texture

These are perhaps the most elusive qualities to teach and learn, and they require real-life experience of the individual instruments and of the orchestra at large. Synthetic patches and samples can give false impressions of what genuinely works.

The best instruction here is to study scores and listen widely, immersing yourself in the orchestral sound, so that an instinct for colour combinations can be built. The questions when listening actively are: Why this colour and not another? What would I have done?

Many factors contribute to colour and texture. Timbre and register of individual instruments have to be considered, as well as the articulation of the material and techniques around tonal projection. Do you want the strings to play on or off the string? Should the horns be muted? How agile is the instrument in this register and this key centre?

In a class where there is a good cross-section of acoustic instrumentalists, you can ask students to do a brief show-and-tell, demonstrating the colours of their instrument and techniques (standard and extended) to achieve them. There are also, of course, many good YouTube demonstrations on this topic. The series done by the Philharmonia Orchestra (**www.youtube.com/c/PhilharmoniaLondon/playlists**) is accessible and friendly, for example.

Case study: Stravinsky's *The Rite of Spring***, Introduction to the First Part.**
The opening of *The Rite of Spring* is a masterclass in colour and in the build-up of texture (as is, for that matter, the whole piece). A nice exercise would be to do a graphic response as students listen, representing the burbling and chirping in patterns and colour on the page.

Initially, the instruments are grouped sparsely enough for every colour to be heard, and each section is contrasted as one block of sound against another, moving from shrill flutes and E flat clarinets to the dark-hued cor anglais and bass clarinet.

The writing for strings, inspired in part by Debussy, is particularly instructive. It employs a lot of *divisi,* with *pizzicato ostinato* ideas peaking through hazy chords of harmonics. The detail – having six bass soloists hold one chord, for example – creates clarity rather than confusion, and that is part of his art.

Even when the score begins to look busier, there's generally a small selection of distinct voices to lead the ear, each occupying a different register – that is, until Stravinsky deliberately builds a joyful chaos and spring breaks loose from winter in the very final bars.

Conclusion

The usual encouragement at this stage would be to organise trips to see orchestras live. That, sadly, might not be available to us for a little while yet, for obvious reasons. In its stead, there are at least many good, engaging videos now of the set works where the eye can help the ear in discerning some of the issues above.

Realistically, very few of our students are going to be writing symphonies in their final school years, although production software makes that more enticing than ever before. The study of orchestration as a distinct topic at this stage does, however, carry the benefits of attuning the ear, enlarging the vocabulary and enlivening analysis. It also gives us the key to an orchestral composer's personality and style, with some ideas that can be translated to smaller-scale composing briefs. The same principles of form, balance, colour and texture will always be at play, whatever the size of the ensemble.