TIMBRE

TECHNICAL TERMS FIRST:

Describing the timbre of a piece of music is something we don't do every day. As with the other elements of music, we must first familiarize ourselves with the technical terms. Here are some of them:

Timbre (pronounced TAM-ber) is the quality of sound that is not loudness and pitch. It distinguishes different musical instruments playing the same note with identical pitch and loudness. So it is the most important and relevant facet of music information.

Sound Waves and Frequencies - Musical instruments usually produce sound waves with multiple frequencies. The lowest frequency is has an intimate relation with pitch.

Overtones - The remaining higher frequencies are called overtones.

Tone Color - Along with the fundamental frequency, these harmonic partials make up the timbre, which is also called tone color. The aural distinction between different musical instruments is caused by the differences in timbre.

Attack and decay also contribute to the timbre of sound in some instruments. For example plucking a stringed instrument gives its sound a sudden attack which is characterized by a rapid rise to its peak amplitude. The ear is sensitive to attack and decay rates and uses them to identify the instrument producing the sound.

MUSICAL INSTRUMENTS

Every musical instrument has its own characteristic tone. To describe it, we first have to understand how these instruments produce their tone. Then it is easier for us to find words to express the timbres of these instruments in words.

String Instruments

For bowed string instruments such as violins and cellos, their tone quality, or timbre, is affected by where on the string the bow is placed, how hard it's pressed against the string, and how quickly it's drawn across the string. Instruments that belong to this family include the violin, the viola, the cello and the double bass.

Plucked string instruments - striking the string of a harp, guitar or banjo harder, or nearer to one end, creates stronger harmonic content. Instruments that belong to this family include the guitar, the zither, the harp, the banjo, the harpsichord and more.

Wind Instruments - the shape of your lips and mouth, and how hard you blow, determines the timbre. Blowing harder creates harmonics that are louder than when blowing with less force and the sound will be brighter.

Brass Family– the instruments that belong to this family were all originally made from brass and have a cup shaped mouthpiece. To make a sound on a member of the brass family, the brass player blows air through a cup shaped mouthpiece. Instruments that belong to this family include the cornet, bugle, trumpet, trombone, French horn, and tuba.

Woodwind Family – the defining feature of instruments that belong to this family of the orchestra were that they were all originally made of wood or have a reed in the mouthpiece. These instruments require moving air to make a sound, but the mouthpieces for this family of instruments vary greatly. Instruments that belong to the Woodwind Family include the piccolo, flute, clarinet, oboe, bassoon, contrabassoon, saxophone and even the recorder!

Percussion Family – for an instrument to belong to this family, the sound production method is what unites them. In simple terms, percussion instruments are those that can be hit, shaken, or scraped to make a sound. But percussion instruments can be categorized further as either tuned or untuned. A tuned percussion instrument has definite pitch and untuned percussion instruments do not have definite pitch.

Tuned Percussion instruments include – xylophone, glockenspiel, marimba, tubular bells, timpani and celeste.

Untuned Percussion instruments include – bass drum, snare drum, cymbals, bongo, gong, triangle, tambour, tambourine, clave, guiro, shakers, woodblock, drum kit and many, many more!

Drums - the harder you strike a drum, the brighter the sound will be. Drum overtones also vary in level depending on where you strike them and how hard. Striking a drum near the edge makes overtones louder relative to the fundamental, compared to striking it near the center. This applies to pretty much every other acoustic sound source that occurs in nature.

Cymbals - with larger bells generally produce more overtones and greater volume than cymbals with smaller bells. Thinner models respond fastest (vibrations move through the metal faster) and produce fuller sounds. Thinner crashes are explosive and full sounding. The sound of thinner rides is more tone than stick articulation. Crashes have more attack and penetration, while hi-hats and rides have increased stick articulation, so the strokes you play are clearer.

WORDS USED TO DESCRIBE TIMBRE

wet, resonant - Used for sounds that resonate for a long time, meaning it takes a long time for the sound to die away, even after the instrument has been silenced. For example, playing the piano with the pedal held down. Also, standard instruments will sound wet if they play in a very resonant, echo-y space, such as a cave, or tile bathroom. When discussing instruments, those which produce "wet" sounds are those which ring or resonate for a long time, such as bells, gongs, vibraphone, guitar (esp. electric guitar), etc.

dry - A dry sound or space is one that has no resonance, echo, or reverberation in the sound. Standard instruments will sound dry if they are played in a "dry space", such as outside in a field, in a tent (or some other space where all the walls are covered with fabric), or an "anechoic chamber", like a recording studio. Similarly, with instruments, dry sounds are those which do not resonate much. Examples include wood block, violin pizzicato, ratchet, snare drum, etc.

dark - Dark sounds are those which are more woody and mellow. Examples of instruments which are especially dark include double-bass, viola, bass voice, bassoon, French horn. Most instruments will sound darker as they play lower and lower pitches. For example, flute, clarinet, and alto voice all sound wonderfully dark when they produce low notes.

bright - Bright sounds are more sharp, piercing and metallic (imagine a metal plate being dropped on the ground) Examples include trumpet, violin, glockenspiel (in fact, most mallet instruments), bells, and oboe.Most instruments will sound brighter as they play higher and higher pitches. For example, violoncello and French horn can both sound very bright when they play high notes.

warm - Very similar to "dark", used for mellow, comforting sounds.

cool, icy - Often high-pitched, crystalline, and metallic.

lush - Rich and warm sonorities, often flowing music with many instruments, full sounds, and sweet harmonies.

spare - Very few instruments playing simultaneously, dry sounds, lots of silence.

sweet - Can be used for female voices that are light and innocent, or for music which is harmonious, consonant, and generally soothing.

harsh, grating - Abrasive music with lots of dissonance and scratchy ugly sounds.

muddy - when "lush" goes too far it becomes muddy, too many instruments playing legato music at the same time and in the same pitch range.

clear, clean - used when the music can be perceived and understood quickly and when the major lines and important points are clearly highlighted to the ear. Music without extraneous sounds, instruments, and melodies is usually very clean.

nasal, pinched - Hold your nose and sing. Like that. Often used for oboe, English horn, and muted brass instruments (a mute is a cone that is stuck into the end of the instrument to make the sound more pinched and nasal).

brassy - Like brass instruments. Also used for very strong female voices in the middle register (like Ethel Merman or Liza Minnelli).

woody - Used for instruments that are made of wood, like clarinets, oboes, wood flutes, marimba, etc.

velvety, soft, breathy - Anything with lots of "h" and "s" in the sound, such as flute, soft whistling, very soft strings, etc.

noisy, dirty, scratchy, raspy - Anything with lots of noise (i.e. static, scratches, etc.) in the sound, such as very loud and harsh string playing, and some older singers who have had too many cigarettes.

A VARIETY OF OTHER QUALITATIVE DESCRIPTIONS:

(Use these whenever appropriate)

clangy, glistening, bell-like, crystalline, buzzy, razzy, incisive, piercing, brushy, shriek, growly, mystical, ethereal, otherworldly, honk, quality, reedy, brassy, clear, bright, focused or unfocussed, breathy dark, rounded, piercing, strident, harsh, warm, mellow, resonant, heavy, light, flat, thin, harsh, dull, nasal, metallic, wooden, rich, gentle, ringing, pure, percussive and evolving.