Subject: Re: Musical Instuments and Time Alignment
Posted by Paul C. on Sun, 11 Aug 2002 23:08:59 GMT
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Not really what Benade prefers, but what MUSICIANS prefer is that they can hear each other onstage. Ever see a rock band, or other big stage production where every musician has a monitor spkr in front of him? Well, imagine being on stage with 70-100 other musicians, there you are, you have a duet line with another musician across the stage 50' away from you, and you cannot hear him to play intune, you cannot hear him to syncronize rhythmically, etc. It is like playing by yourself. Same for the other guy. And pitch is not fixed. Non musicians see just 12 keys in an octave on the piano, but in reality, there are hundreds of pitches. A note will sound "consonant" or be harmonically in tune with other notes, only when it is a whole number ratio, and the difference frequencies produced from two different pitches played simulataneously is in tune with harmonics (whole number multiples) of either of the two notes. And when you have more complex harmonies, there are more possibilities.The ear tells the musician when he is in tune. Well, an A=440 works one way in the the key of C, another way in the key of D, and still another way in the key of E, etc. And it depends on what chord is being played with it. So, you might have to play that A at 440.7 hz, or maybe 439.5 or whatever. And it changes from second to second as you play.And if you cannot hear the other musicians, you cannot do this.I LOVE playing in a good band shell. Next, on a good stage with a ceiling from 20'-30' high, and not to deep from lip of stage to the back wall. And I don't want to be on an the apron stuck out past the curtains, but back under the lower ceiling so I can hear.A natural amount of echo and reverb in the hall itself is good, too, warms up the tone. But you want it to be at a low, just barely noticable level... it must give a little sustain to you sound, without being echo, or multiple echos. Many musicians will clap their hands in an empty hall (which gives no indication of how it will sound filled with bodies), and what they listen for is the clap to have a sustain to it, but not to hear the slap echoed.But, as one of my old musician buddies says (who played in the Chicago Theater in the 30's-40's), "Every body absorbs as much sound as a 5' open window, and when you put 5000 people in there, that is what the Chicago Theater held, you had better be able to BLOW, Man... 'cause if the guy in the last row of the balcony can't hear you, then you aren't doing your job!"Well, also in that paper was an explaination of how the overtones are fixed in position in relation to the fundamental. I have to agree with Wayne in what my ears tell me... while we can tolerate a considerable amount of frequency response anomalies (to the ear, this is like being in room A vs room B, each having different peaks and dips from room resonances), time alignment in speakers is not nearly as noticable as a big dip or peak at the crossover.