

The Course of the Sound Signal

When struck, the top head vibrates, i.e., it bends inward and outward very quickly and slightly, so much so that the phenomena is mostly undetectable by the human eye. As the head bends inward, sound waves displace the air inside of the drum. As the head bends back outward, air in front of the head is displaced by sound waves that move towards the drummer. The shell intercepts some of the sound waves produced by the head's bending inward, causing the shell to resonate much like the head does, but in an even less detectable manner. Other sound waves travel towards the bottom of the drum, where they may both bounce off of and resonate in the bottom head, if present, or disperse out of the bottom if not. If a bottom head is present, the sound waves will resonate for a greater duration as they vibrate within that head, and are sent back up into the shell and the top head. During this process, some sound will escape out of a sound hole, if present.