

Tuning a pipe band snare drum

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Here is our method of tuning a pipe band snare drum.

Although this method was originally applied to an Andante DTS 6 snare, it should work equally well for any drum that has adjustable bottom snares and whose top snares are adjustable for both height and tension. Understanding how drums work (produce sound) is a great benefit so some explanation is warranted here.

- **Q.** If you hit a drum in outer space, what would you hear?
- **A.** Nothing! The most essential component of a drum is air!

A drum, any drum, produces sound by making a column of air move up and down within a container (the drum shell). When the drum is struck, the head is set into an up and down vibratory motion which in turn, causes the air inside to move in sympathy. The moving air impinges upon the bottom head and makes it move sympathetically also, in addition, the vibrating air column causes the shell to resonate - amplifying the sound. As this is going on, the snares are also made to vibrate by the head motion.

I know that modern Kevlar top heads are tensioned so much that they feel "solid", (more on this later) but believe me, they still move - they have to, otherwise they wouldn't work. It is the head tension that is mainly responsible for the tonal pitch of the drum, on a highly tensioned head the vibrations start and stop quickly giving the high pitch, fast attack and decay times that are characteristic of a pipe band snare drum.

No doubt you will be familiar with the dampening techniques used on bass and tenor drums, these work by pressing against the head causing the vibrations to be stopped sooner than they would on a freely moving head. This is helpful in reducing unwanted "ringing" or resonance's.

Here is a key point!

Drum corps sometimes have dampers in their snare drums! They often don't know it though - they call them **top snares!**

On a badly tuned snare drum, the top snares can act as a damper as well as a snare. In bad cases the effect is visual - "bumps" can be seen in the top head caused by the snare pressing too tightly on the underside. The effects are:

- The head is prevented from moving freely.
- The drum loses some projection (the moving air column is reduced)
- It sounds like sh**!
- It "feels" wrong when played.

If you find you need to use excessive height to prevent snare ringing or other unwanted sounds, then there is something wrong with the snare or mechanism itself, squashing it against the head is not the way to fix it! On a properly tuned drum the top snare height is set so that is pressing against the head **just enough** so the wires can vibrate freely, the actual snare sound can then be altered by adjusting the tension. The most common problem seems to be one or more wires which have been stretched more than the others or damaged in some way, problems can also arise that stem from bad snare manufacture at the outset. A stretched or damaged wire can be snipped out and the snare will still be serviceable, a snare whose wires are not level with each other will generally need replaced.

Ok, if you've had the patience to read this far you must be wondering if we're going to get to actually tuning the drum! Sorry, here it comes. This method works best for me, I hope it works for you too!

- First make sure that top and bottom snares are in good condition with level wires.
- Get the heads tensioned roughly to the point where you want them. It's difficult to be specific about this because it's largely a matter of taste and fashion, most corps seem to like as sharp a pitch as they can get. The bottom head being usually plastic, will take much less tension before breakage than the top head but it should feel quite firm when pressed with the thumb. Some corps use tympanic gauges to get accuracy but their use is not necessary. The bottom head should be clear plastic incidentally - for reasons that will become "clear" later.
- Roughly tune the drum with the top and bottom snares disengaged from the heads.
- Now bring on the bottom snare until it's in contact with the head and all wires are touching the head over the full length. The tension should be set so the wires can easily be moved from side to side when gently pressed by a finger.
- Play the drum using closed rolls, you should be able to get a good snare sound from just the bottom head, adjust the tension until you do.
- Looking through the "clear" bottom head, slacken the top snare tension until the wires are seen to be just free of strain then increase tension to just past the "free" point, this is a good starting place. The height adjustment should still be down, i.e. not touching the top head.
- Now start bringing the top snare up while tapping the drum. At some point you should hear a reasonable snare sound, take the height up past that point (helps to level the snare) then back it off a little again.
- I've never seen a snare mechanism that didn't have some interaction between height and tension adjusters so you will have to make minor adjustments to both to get the sound you want. The main thing is to resist applying too much height, there should be no "dents" in the top head. As mentioned earlier, if you can't get a good sound without "denting" then something is wrong with the snare or mechanism.
- Bear in mind that a small "ring" is not necessarily a disaster, prove this to yourself by having someone else play the drum while you listen to it from a little distance (where judges or audiences will be). You may well find the ring that was audible while you were playing, can no longer be heard.
- If you will be playing in an outdoors contest or concert - tune it outside, don't worry about how it sounds indoors.
- Lastly, get to know exactly how the snare mechanisms of your particular drum manufacturer, work. This will enable you to diagnose problems quicker.

There are other factors which affect the sound or tone of a drum. The heads themselves are one source, a corps should always play the same type of heads on all snare drums. Another major source of tonal change is the shell. Most pipe band corps play wooden shelled drums, wood is a material that varies in density and this produces tonal differences even on instruments from the same manufacturer. If you can, should should try to select the drums for a corps from a quantity larger than you need. This is best done by listening to the drum being played with no snare action at all. Shell problems can arise also, we recently had one drum that nobody could get a sound from, investigation showed that the plywood laminations had separated circumferentially - the only solution was to replace the shell.

In summary I will quote from a young (and talented) player from our corps who came to me saying that his drum needed tuning.

"What's wrong", I said.

"It doesn't feel right", he replied.

Notice he didn't mention the sound, he hit the nail on the head - a well tuned drum "feels" right, even with modern high tension heads there is still a little "give" in it, this can be felt when playing.

"Ahh well...that top snare damper thing again... "

Happy tuning!

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