

Playing the Drum Set in Microgravity

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Abstract

Playing a drum set (and any other musical instrument) in space has unique challenges and vast differences compared to playing the drums on-planet Earth. This topic is worthy of further research. The presentation will include a brief demonstration of playing the drums in 1g vs. in microgravity titled “*The Overview Effect for Drums*” dedicated to author Frank White.

The Role of Gravity when Playing the Drum Set on Earth

Even though the average drummer isn't normally thinking about it, they totally rely on gravity when playing the drum set. The drummer sits on a throne fixed to the ground, or is standing. All the drums, cymbals and other hardware stay on the ground, because of gravity. Drummers like to flip their drumsticks up and catch them on the way down. In space, the drumsticks won't come down, so the drummer will have to modify the flip so as to not send the sticks ricocheting off the walls of the spacecraft. The drummer plays the high hat and bass drum with their feet using pedals. Exerting force on the pedals in space and even playing the drums with drumsticks will have interesting effects such as causing the drummer to fly towards the opposite side of the spacecraft.

Playing the drums is a vigorous physical activity, and typical gigs can last up to four hours. It is interesting to point out that drummers actually use the force of gravity to their when playing the drums. For instance the drums and cymbals are often placed low vs. high compared to the position of the arms thus leveraging gravity to conserve energy.

In order to play the drums inside a spacecraft, modifications will have to be made compared to playing on Earth. The drummer will need to be strapped in, similar to how astronauts are when using the treadmill in the International Space Station. The drums will need to be bolted down to the spacecraft bulkhead. The drummer will need to reconsider how to hit the drums with the drumsticks without gravity involved. Playing drum rolls in space is not going to be easy.

Changes to Sound and Other Instruments in Microgravity

There will be changes to the sound coming off the drumheads and cymbals because the absence of gravity will affect the behavior of sound waves. Playing other instruments in space will also have changes. Musicians playing woodwind or brass instruments will notice a difference in breath as their lungs and other internal organs will not be pulled towards the ground as they are on Earth. Even a vocalist will feel differences when singing because of the suspension of the lungs and larynx in the absence of gravity.

Conclusions

Drummers and other musicians will experience major differences between playing their instrument in space versus on Earth. These differences could very well lead to the creation of new musical instruments. And, as has occurred over time on Earth, it is inevitable that new genres of music will emerge as humanity travels to different celestial bodies. The genre of space music is emerging and there are vast opportunities for musicians to conduct further research to explore the fascinating possibilities.

Figure Insert: Drummer firmly planted on Planet Earth

