

Assignment 1: Functional Sound Design

For the purpose of this assignment, I have chosen to base the scenario of my alert sounds in the area of a retail workplace, specifically a retail emergency alarm system.

An alarm system of this type would typically be broken down into separate categories depending on the seriousness of the situation as well as what situation that calls for the alert such as calling a store assistant to the office, signalling a lunch break, an armed hold-up.

An alarm system in such a retail store would normally cause various problems in the store affecting both customers and staff depending on how badly the sounds were designed, because of this the alerts that will be designed will be based on a new system where each sound will serve a specific purpose aimed at giving staff a clearer understanding of what is happening around them as well as disturbing customers as little as possible.

A break-down of the system in which the sounds will be created for are as follows:

1. Calling assistance or more staff for the registers.
2. Calling staff into the office.
3. Calling for a manager or supervisor to the registers.
4. Alerting staff of possible criminal activity (such as theft).
5. Alerting staff of the possibility of harmful activity (such as bomb threats, fire etc...)

NOTE: this system display the seriousness of the alert where 5 is the most serious.

Rationale

In the study of sound design, a pulse rate or pitch in the sound would invoke a stronger response from the audience, since these alerts sounds are designed to make the staff pay attention in a progressively higher degree based on the situation it is logical that the more important the situation, the higher the pulse rate of the sound must be.

Also a louder sound usually provokes a faster response. However there is the 'startle' issue where if a loud sound suddenly occurs, the audience will most likely be in a state of panic where they will be in a state that doesn't think or do anything. To prevent this, the sounds must have a gradual start to them which would allow the audience to bypass this startle effect.

In association with the startle effect is another effect that is also most encouraged when working on sound design. The 'looming' effect comes into play when the alert's fade is too long in length; making the sound seems to be coming from towards a person from a distance.

Sound Generation

Based on the specifics and limitations of creating sound design, the series of alert sounds were created with point above in mind.

The sounds were created using the Pro-Tools Vacuum plug-in, modifying a single notes frequency, pulse rate, oscillation as well as the shape of the amplitude waves the sound possesses.

Since the background noise in a retail store would assume to be rather loud, the alert sounds would need a certain degree of sharpness to be heard clearly throughout the store, even though the alerts themselves would be played on the store loudspeakers. As such, the localization of the alert sounds would be restricted in the store, having alerts play loud at emergency exits may have a negative effect of keeping away personnel and customers from the exits in times of emergency.

The alerts themselves increase in pulse rate the more urgent the situation is. For example, during the Alert 5, the oscillation or pulse rate of the sound is higher than the other alerts, as well as a noticeable higher frequency and sharpness to the tone used. To achieve this, modulation controls in the Vacuum plug-in were used to produce the desired effect as well as the VTO controls that increased the oscillation and EV controls to produce a clear sound.

Despite having a higher pulse rate and sharpness, the sounds did not exceed 1.6Hz, and was limited to 73dB, with the store ambient noise approximated to be around 60dB, alerts should be approximately 13dB above the ambient noise.

Alerts 4 and 5 were also designed to produce a slight stress effect on the audience, which would hopefully encourage them to move faster and respond quicker, but true to the analysis above, the sounds were tuned to reduce the 'startle' effect by not being too loud or annoying.

All the alerts were also implemented with a slight fade which does not really seem noticeable at first hearing, but would reduce the 'startle' effect, making the alert sound much more effective.

Conclusion

All the sounds were designed following the sound design guidelines stated on the ICAD website as well as information given by Prof William Martens to achieve the best possible alert signals in the given scenario. The simulation gives the user an idea of the context in which the sounds would be played based on the retail stores sound system currently in place – which would be a simple loudspeaker system, with speaker placed strategically throughout the store.