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21M.735 Tech Note 10: Pyrotechnics

Safety Guidelines for Working with Pyrotechnics

The general easiest guideline for working with pyrotechnics is don't. Many locations will require licensing, if they allow it at all. The primary problem is that pyrotechnics are fire. Fire, in the presence of more fuel and oxygen, is fairly self-perpetuating. That is, in a theater, where many things are made out of wood and cloth, and the theater is full of people (the audience), there is a huge fire risk, which is the reason for all the strict codes about proper exits and fire doors and the like to minimize the risk of fire starting, and if it should start, of spreading. Pyrotechnics do just the opposite: they seek to create fire, intentionally and regularly.

Below appear some procedures to decrease the risk of disaster:

- The pyrotechnics should be triggered by a firing box. The firing box should have two switches, a least one of which should be lockable with a key. The technician loading the pyrotechnic into position should check both that the box is off, and that he or she is in possession of the key while loading it, to prevent it accidentally being turned on.

- The key should only enter the box right before firing.

- It is advisable to store as little in the way of explosives as possible, but if they must be stored, it must be in a locked metal cabinet.

- The transfer from storage to location of firing should be done in a locked metal box, too.

- There should be no smoking anywhere near the storage place or handling places of the pyrotechnic.

- The device should be loaded in as late as possible, but it should not be done while rushing.

- The operator should be the closest person to the effect, and should have a good clear view from the firing box to the device.

- During the first technical run of the play, the pyrotechnic should not be loaded in before the actual use. At the moment where it would be used, the technician should explain to actors and other technicians what the pyrotechnic will entail and proper safety regulations. Only then should the device be set up and activated.

There are three types pyrotechnics:

- Marroons/Firecrackers. These create "explosions." They are usually fired off inside a cast bomb tank, with a mesh over the top to catch debris. They are primarily for noise effect.

- Flashes: These are more for the visual effect, and come in all different colors.

- Streamers: These are glittery streamers that are set off by a pyrotechnic charge.

Again, if pyrotechnics are desired, it is almost always easier to think up another way to do the same effect and do it, rather than hassle with the regulations and standards that you must if you want to carry through with the pyrotechnics. And always, call a professional.