

UFO's and such

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The question I tackle in this technote is how we can have something fly across the stage, from one side to the other, without expensive and cumbersome mechanisms. If we limit ourselves to inanimate objects, then the issue of safety is drastically reduced — all we have to worry about is whether the flying object can come loose and fall. This is easy enough to protect against. This being said, though, how can we achieve horizontal flight? Here are a few solutions.

1 The Runner

One possible solution to this problem is to build a track on the grid directly above the path that you want your UFO to travel. Then, you would need to devise a track runner. Such a runner is described in the accompanying pdf. The next step is to affix a pulley at the end of the track. finally, simply run a rope around the fixed pulley and attach it (directly) to your runner. what you've essentially got now is a system whereby a pull on the rope causes the runner to rapidly glide across the track.

Now attach your 'flying' object to the runner, and you have a convincing UFO. Depending on the effect you're going for, you can attach the UFO with string/line or with a clear plastic

rod. obviously, a flexible connection leads to a ‘floppy’ flying object. Additionally, if you want the UFO to be able to go back and forth, add a fixed pulley to the other end of the track and run another rope.

One issue with this setup is that it would require decent coordination between the men working the ropes, since they will be on either side of the stage. That shouldn’t be too hard to accomplish, but it can be avoided by using a mule block at one end of the track.

2 Freestyle

If linear motion is too constricting for the desired effect, you can have full three-dimensional motion using three pulleys that are able to swivel freely and silently. Connect all three lines to the object, and then use mule blocks and more pulleys to bring them all down in the same place. A single person would operate the whole system.

It would take a decent amount of setup and practice, but you would be able to place a floating object anywhere in the three dimensional volume between the three pulleys. Even better, you can do it precisely. Once you find a desired position during a rehearsal, you can mark all three ropes and the wall with fluorescent tape. Then, during the show, the operator would simply align all four marks in order to reliably place the object in that specific location. This works because you are using the tape to essentially define every edge of a triangular prism, and there is only one point in space that fits those constraints.

3 Conclusion

Both of these techniques of flying objects allow for a lot of freedom at a very low budget. As a tradeoff, they are both fairly intensive to setup. With good lighting, though, either system could realistically give the impression of free-floating objects that move in complex patterns through the air.