Research and Report Suggestions

Select a particular technology which is applicable to our craft – some suggested topics are listed below. Explore the methods of implementing, controlling, or otherwise applying this technology. Discuss the mechanics, chemistry, physics, or whatever it is that makes this thing function. Include in your research sources, pricing, and other information applicable to its use. Dig deep to really understand your selected technology. Options could range from vacuum forming to RF control of stage machinery. Pick something new to you – otherwise you're wasting your time. We're happy to make suggestions, and ask that you please have your selection approved.

Steel vs. Wood: What are the pros and cons of each of these materials? Begin your thinking with the following questions: How do they compare in terms of weight, structural strength, fabrication time, and price? What about the implied costs related to the tools specific to construction with each material? What are local and national suppliers of wood and steel, what is the lead time when placing orders? Present your information in a format that would be useful to a technical director making materiality decisions for an upcoming show.

What is ACN? How does this protocol compare to DMX? What are the benefits of it? How will it be implemented? What equipment currently supports ACN control?

Sculptural Lighting: Research the technologies of neon tubes, electroluminescent wire and tape, and side- and end-glow fiber optics. What are the benefits of each? How are they implemented? What is the cost? What important aesthetic differences should be considered, including brightness, color, and other qualities?

Pick your own topic: Pick an applicable topic of comparable scale to those listed above. Be sure to have it approved before you take off.

Technical Problem Solving

Select a problem from the list below. Research, concept development, and pricing of your solution will be required. Present your solution in a way that is accessible and clear, such as a functional model, AutoCAD or other drawing, and clear textual descriptions.

Headset system based on telephone technology: Design a system of headsets for use in production environment. The system should be as affordable and versatile as possible. Consider things such as: Wired vs. wireless headsets, number of headsets supported by the system, expandability, compatibility with Clearcom headset systems. Etc. Also think about features such as volume control, call button, multiple channels, etc. Circuit diagrams, part lists, and other technical documentation should be provided. A reader of your project should be able to construct the system based on your specifications. If you want to build a demo system, that'd be sweet.

Descending or ascending staircase: Design a staircase which can be raised or lowered into position. When in the "horizontal" position, the surface should be playable as a flat platform. When moved into position, the stairs should be useable. Imagine a gangplank which, as it is lowered, converts from flat playing area to staircase.

Motor actuated revolve: Design a turntable at least 10' in diameter. Specify the support and framing structure, as well as the type of motor, drive, and control system.

System for sliding a platform to a given position on stage: Design an electrically or hydraulically actuated system of placing a platform anywhere along a track on stage (moving in one dimension.) At minimum, the system should allow the operator to remotely place the platform while monitoring its position with some sort of feedback mechanism. Ideally, the

operator should be able to specify a position and a speed, and the system should place itself based on those parameters.

Trap Door with Elevator: Design a trap and elevator system which will allow an actor to be raised to or lowered from the stage. A combination of pneumatics, hydraulics, solenoids, or motors could be used. The more automation, the better.

Remote Controlled dropping Scrim (a la Hamlet): Design some sort of remote-controlled system to drop a 6' scrim panel on command.

Hone your Skills

Create for yourself a project which challenges your skill set. This could be a fabrication project, an automated lighting cue sequence, a remote-controlled system of some sort… any project which allows you to spend hands-on time in an area you're interested in mastering. The important thing here is that you pick a project which challenges your skill set and takes you outside your usual comfort level. Note that, should you choose this project, you'll need to provide your own materials. Also, we have to discourage projects which involve metalwork, unless you're able to make your own arrangements to work either in our shop or elsewhere.