

Demo 6: Hookup Schedules

Part 1: Stage & Aud Sources

NOTE: We are interpreting hookup schedules to mean physical connection of all cables external to permanent installation wiring (e.g. wiring that goes through the walls). The purpose of the hookup schedule is to provide the production sound engineer with a location-based sheet that identifies all patches they need to make in that location. We have divided our locations into three areas and six locations: 1. Stage & Auditorium, 2. FoH & SVC, and 3. Amplifiers & Speakers. In the next module, we will introduce routing schedules which involve the computer programming of specific applications within individual devices. Obtain the most recent updated inventory from the student resources folder to identify appropriate equipment needed to complete the installation. Refer to the Hansen Sound Devices Photos folder in the Student Resources folder to identify appropriate connection plates, locations, etc.

1. Open up your *Nell Gwynn Drawings and Schedules* Vectorworks file.
NOTE: Remember to save a backup copy to an old folder to keep track of your changes.
2. Navigate to our THTR 569 Brightspace course.
 - a. Navigate to Content>Additional resources and download the Demo 6 Hookup Schedules Excel file
 - b. Save a copy of this file to an Excel Hookup Schedules folder within your *Nell Gwynn Drawings and Schedules* show folder. Make a backup of the Demo 6 Hookup Schedules Excel file to your Old Drawings & Schedules folder. Rename the main Excel schedule to *Nell Gwynn Hookup Schedules* with the appropriate date and initials.
3. Open the document and notice that we have formatted it in 11x17 format with margins that match the drawings and schedules margins.
 - a. Choose page layout from the file menu and in the page tab make sure the document is set to the landscape orientation and fit to 1 pages wide by 1 pages tall.
 - b. In the margins tab make sure “center on page horizontally” is checked
NOTE: This formatting will make it easy to import Excel spreadsheets into your show drawings and schedules file.
4. Within the *Nell Gwynn Drawings and Schedules* Vectorworks file, navigate to sheet HS-01, HS-02, and HS-03 and notice the repertory schedule imports on the sheet layers.
NOTE: The designation rep. plot, which shows the cable patching does not typically change from show to show, and the show specific patching which is where you will put the hookup schedule for your particular design.
5. Navigate back to your Excel Document and select the tab “Hookup-Stage & Aud Sources”.
6. Review the designer notes located on the bottom of the “Hookup-Stage & Aud Sources” worksheet.
NOTE: These notes are for the designer’s reference only and do not print when importing the sheet back into Vectorworks.
7. Navigate to BD-01 in the *Nell Gwynn Drawings and Schedules* Vectorworks file.

8. Starting from your first device, input the signal chain from microphone to mixer into the Excel document.

a. Source Device:

i. Source Device Number: The receiver that will patch into the system, “R-01”;

NOTE: We do not need to list the wireless mic element or the wireless mic transmitter as these do not physically patch into the system using cables.

ii. Location: The location of the device, R-01, e.g., “RF-Land”;

iii. Source Device Name: The name of the source device, e.g., The first four letters of the characters’ name, “Nell”;

NOTE: Use a capital letter for the first letter of the name, and then lower case, unless you also need to identify a second word, in which you would again use a capital letter for just the first letter of the second word, e.g., Swis or SwiC, for Swiss Cheese in Mother Courage;

iv. Source Device Make & Model: The make & model of the source device R-01, e.g., “Shure ULXP4”;

b. Cable Information:

NOTE: Since we will be using a snake to connect directly to the receiver, leave the cable information cells empty.

i. Cable Type & Number: The red show-specific cable type & number symbol located on sheet BD-01 and physically affixed to both ends of the cable;;

NOTE: M=microphone, L=line, S=speaker, N=Network, P=peripheral;

ii. Cable Label: the unique name on the device channel to which you are connecting, preferably one that identifies the entire source chain, (e.g., Nell, attached to the breakout cable);

iii. Source Cable Input Connector: The connector on the source end of the cable, e.g., “XLR5”;

iv. Source Cable Length: The length of the cable in feet, e.g., “15” (ft);

v. Source Cable Output Connector: The connector on the destination end of the cable, e.g., “XLRP”;

c. Stage Box/Snake

i. Stage Box/Snake Name: The unique identifier associated with the stage box or snake, e.g., “SB-01”, and physically affixed to both ends of the cable (e.g., to the main snake or box, not the breakouts);

ii. Make & Model: The make and model of the stage box or snake, e.g., “Pro-Co Acculink AC/8”;

iii. Stage Box/Snake Channel: The unique name on the box or the breakout that the manufacturer uses to identify the Stage Box/Snake channel to which you are connecting; (e.g., “1”);

iv. Stage Box/Snake Label: the unique temporary name on the device channel to which you are connecting, preferably one that identifies the entire source chain, (e.g., 1-Nell, attached to the breakout cable);

- v. Stage Box/Snake Source Connector: The specific connector coming from the source device, e.g., “XLR_S”;
 - vi. Stage Box/Snake Cable Length: The length of the snake, e.g., “15” (ft);
 - vii. Stage Box/Snake Destination Connector: The specific connector connecting to the destination, e.g., “XLR_P”;
- d. Yamaha DM1000 RF Mixer:
- NOTE: In our production we are using a stage preamplifier mixer to audition our RF sources and to put them on our Dante audio network. We will need to create 3 columns in our spreadsheet to accommodate this. Because we only have one Yamaha DM1000 in our system we can save space in our spreadsheet by including the make and model in the header field of our new columns.*
- i. Insert three columns in the Hookup-Stage & Aud Sources table before the Destination header.
NOTE: you will probably need to change the font in ANY new cells you create to match the cells in the tables, etc., you are inserting into;
 - ii. Move the “Destination” header field to the last two columns and create a header field across the three columns you just created. Name that header field “Yamaha DM1000 RF Mixer”;
 - iii. Name the first column “Input Name” and input the input number from BD-01, e.g., “1”;
 - iv. Name the second column “See Note” and fill each cell in the column with a heavy gray fill; narrow the column to the width of the header text;
NOTE: Include a note at the bottom of the hookup schedule that says, “Grey cell between DM1000 Input and Output indicates that the input does not necessarily patch from the input to the output. See routing sheet for specific routing instructions”.
 - v. Name the third column “Output Name” and input the output number from BD-01, e.g., “MY16 AUD2 Slot 1 Pr”;
 - vi. Insert a red line similar to the others in the table to the right of the Yamaha DM1000 RF Mixer to separate the devices.
- e. Change the Cable Information header to “Source Information Cable”. Copy the Cable Information columns and insert them after the Yamaha DM1000 RF Mixer; name the header “Destination Cable information”; also change the individual headers under Source Cable Information to include “Source”, “Input” and “Output”, e.g., Source Input Cable Connector and rename the Destination Cable Information to include “Destination”, “input” and “output”, e.g., Destination Output Cable Connector and eliminate the “2”;
- i. Destination Cable Type & Number: The red show-specific cable number symbol located on sheet BD-01 and physically affixed to both ends of the cable, e.g., “N-21”;

- ii. Destination Cable Label: the unique name on the device to which you are connecting, preferably one that identifies the entire source chain, (e.g., DM1000);
 - iii. Destination Cable Input Connector: The connector on the source end of the cable, e.g., “RJ-45P”;
 - iv. Destination Cable Length: The length of the cable in feet, e.g., “15”;
 - v. Destination Cable Output Connector: The connector on the destination end of the cable, e.g., “RJ-45P”;
 - f. Destination:
 - i. Destination Device Name: Input destination device name, e.g., “C201”;
 - ii. Destination Device Label: Input destination device label, e.g., “D-A1”;
- 9. Repeat step 9 as necessary to enter all of your source devices for the show.
- 10. Place a border around the entire Hookup Schedule, not including your Notes at the bottom;
- 11. Print to PDF and import your schedule:
 - a. Make sure to narrow column lengths to minimum size to avoid columns spilling over onto the adjacent page;
 - b. Make sure to reset the Print Area to match the new size of your schedule (not including Designer Notes);
 - c. Save the file and create a PDF of only this tab of the worksheet and append the name to the default title. Save the PDF you just created to your show folder (e.g., Nell Gwynn/Drawings & Schedules/Hookup Schedules);
 - d. Switch back to your Vectorworks file and navigate to sheet HS-01 and delete the spreadsheet already there;
NOTE: Make sure to click fit to page area in the view;
 - e. Import the PDF you just created;
NOTE: Make sure to check “Snap to Geometry”;
 - f. Change the class of the PDF you just imported to Schedules.

Part 2: Front of House (FOH) & Sound and Video Control (SVC)

NOTE: The sound installer for this part will perform all of the patching at FOH or in the SVC room. The rep plot part of the worksheet typically does not change from show to show. However, for this Demo we will be changing some aspects of the rep plot. You will enter any changes in the show specific section of the worksheet.

1. Navigate to sheet BD-02 in your *Nell Gwynn* Drawings & Schedules Vectorworks file.
2. Navigate to Hookup-FOH & SVC in your *Nell Gwynn* Hookup Schedules and enter in all the show specific information shown in BD-02.
 - a. Patch Source:

NOTE: we will be patching the output of the DM1000 RF Mixer into the system; for more information on the FOH hookups, see the Hookup-Stage & Aud Sources tab of the Hookup Schedules;

 - i. Patch Panel Type: The type of patch panel the installer needs to locate in the SVC room, e.g., “N”;

- ii. Network Signal Type: The virtual local area network (VLAN) type, e.g., "AoiP";
 - iii. Network Name: The network name identified in the SVC Network Switch 01, e.g., "DM1000 Slot 1 (Dante)";
 - iv. Patch Device Name: The name of the patch panel device, e.g., "Network PP";
 - v. Patch Device Make & Model: The make and model of the patch device, e.g., "Leviton Gigamax";
 - vi. Patch Device Label: The patch socket into which the other end of the patch cable is connected, e.g., "A-1";
- b. Destination
- i. Cisco SG300-20 Network Switch Port Number: The physical port number the patch cable plugs into, e.g., "7";
 - ii. ADC PPA3-18MIKII-NO Patch Panel Input: The analog patch panel input the patch cable plugs into;
3. Repeat step 3 as necessary to enter all your patching for the show;
 4. Adjust cell formatting as necessary for clean, clear communication;
 5. Save the file and create a PDF of only this tab of the worksheet. Save the PDF you just created to your show folder.;
 6. Switch back to your Vectorworks file and navigate to sheet HS-02 and delete the spreadsheet already there.;
- NOTE: Make sure to click fit to page area in the view before the next step;*
7. Import the PDF you just created.;
- NOTE: Make sure to check "Snap to Geometry";*
8. Change the class of the PDF you just imported to Schedules.

Part 3: Amps & Speakers

NOTE: The sound installer for this part will perform all the patching in the Amp Room. Most of the amplifier patching is hardwired for the proscenium loudspeakers and rep patched for the surround loudspeakers.

1. Navigate to sheet BD-03 (PES-01, PES-02 as necessary) in your *Nell Gwynn* Drawings & Schedules Vectorworks file.
2. Transfer the information from the front fills on Hansen Amp 2 to the show specific row(s) in the Hookup Schedule: Amps & Speakers:
 - a. Switch:
 - i. Cisco SG350-20 Patch Panel Number: The network panel patch number associated with a particular patch, e.g., "2";
 - b. Amplifier Information:
 - i. Amplifier Number: The amplifier number listed on sheet BD-02, e.g., "2";
 - ii. Amplifier Make & Model: The specific make and model number of the amplifier, e.g., "QSC CXD 8.8Qn";
 - iii. Amplifier Channel Label: The specific channel for that signal chain, e.g., "D";

- c. Amplifier Patch:
 - i. Amplifier Patch Panel Label: The analog patch panel label into which you will place one end of your patch cable, e.g., “1 CH D (A2)”;
 - ii. Loudspeaker Patch Panel Label: The row and number of the socket into which you will insert the other end of the analog patch cable, e.g., “E1”
 - d. Device Plate:
 - i. Speaker Device Plate: The device plate number you need to locate in the theatre; e.g., “SL-1”
 - ii. Speaker Device Plate Label: The socket into which you will insert one end of the speaker cable, and place a label on the end of the cable that patches into the device plate socket, e.g., “E1”;
 - e. Speaker Cable Information:
 - i. Speaker Cable Number: The red show specific speaker cable number obtained from BD-03 that you place a label on both ends of the cable, e.g., “S-25”;
 - ii. Speaker Cable Label: The speaker cable label found on both ends of the cable for a particular signal chain, e.g., “FF L”;
 - iii. Speaker Source Cable Connector: The cable connector type found in the source end of the cable, e.g., “NL4P”;
 - iv. Speaker Cable Length Horizontal (ft): The horizontal speaker cable length, e.g., “17 ft”;
 1. Obtain the horizontal cable run from the PES-01 sound plan (Restore Active View);
 2. Within the object info palette, locate the distance of the polyline cable length;
 3. Confirm this length using the tape measure in the Dim/Notes tool set;
 - v. Speaker Cable Length Vertical (ft): The vertical speaker cable length, e.g., “2 ft”;
 1. Obtain the vertical cable run from the PES-02 sound section Restore Active View;
NOTE: you cannot use the Object Info Palette information because it includes the horizontal run you just measured;
 2. Confirm this length using the tape measure in the Dim/Notes tool set;
NOTE: Make sure to not duplicate horizontal measurement in the section view;
- Speaker Cable Length w/15% Extra (ft): The total length of the speaker cable including a 15% surplus;
NOTE: Always make sure to leave at least 15% extra cable as measurements in speaker plots never conform to real world conditions. The cell includes a quick calculator that will calculate the extra 15% for you and give you a new minimum total length.

- vi. Speaker Cable Length Total (ft): The total *stock* speaker cable length in feet, e.g., “25”;
NOTE: Obtain stock speaker cable lengths from the sound inventory in the Student Resources Folder;
- vii. Speaker Destination Cable Connector: The cable connector type found in the destination end of the cable, e.g., “NL4P”;
- f. Speaker Information
 - i. Speaker Device Number: The speaker device number found on sheet BD-03, e.g., “25”
 - ii. Speaker Device Name: The name of the device/speaker located on sheet BD-03, e.g., “FF L”;
 - iii. Speaker Make & Model: The make and model of the speaker, e.g., “RH TX61”;
 - iv. Speaker Horizontal Angle: The horizontal angle of the speaker, e.g., “20°”;
NOTE: on a Mac, Option-Shift-8 gives you the degree symbol; on Windows, Alt 0176;
 - 1. To find this information, use the protractor in the Dims/Notes tool set;
 - 2. Use mode “Angle from three points mode” on the protractor
 - 3. Use this to find the horizontal angle in the PES-01 Sound Plan view relative to the vertical or y-axis;
 - v. Speaker Tilt Angle: The vertical tilt angle of speaker, e.g. “45°”
 - 1. Use the same steps from the horizontal angle measurements to find the vertical tilt angle in the section relative to the horizontal or x-axis;
- 3. Repeat step 2 as necessary to enter all your patching for the show.
- 4. Save the file and create a PDF of only this tab of the worksheet. Save the PDF you just created to your show folder.
- 5. Switch back to your Vectorworks file and navigate to sheet HS-02 and delete the spreadsheet already there.
NOTE: Make sure to click fit to page area in the view
- 6. Import the PDF you just created.
NOTE: Make sure to check “Snap to Geometry”
- 7. Change the class of the PDF you just imported to Schedules

Homework:

You will be creating the hookup schedules for our upcoming production of *Mother Courage*, designed by John Chung. You will input data in the Excel document and import the sheets into your most up to date Vectorworks file, using the guidelines established in the in-class lectures.

Input the required data into the *Mother Courage Hookup Schedules*. The document should include:

1. The default sound system and all its components (these are already included in the document, just don't erase them, even accidentally!);
2. The show specific devices from Sheets BD-01 through BD-03 and any measurements necessary from PES-01 and PES-02;
3. Complete the hookup schedules HS-01 through HS-03 for all of the show specific equipment necessary to install *Mother Courage*;
4. Make sure to check all cell formatting for clear and concise communication.