

Studio B Workshop

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An Introduction:

Studio B was designed to meet the needs of community producers who wish to make small-scale, but high-quality television programs quickly and easily.

Small Scale:

The small size of the room (17' x 15') makes it suitable for shows that include from 1 to 4 people in front of the cameras. This makes it ideal for small "talk show" style programs.

If your program requires more people, or more space for them to move, you may prefer to use MetroEast's Studio A, which is more than 6 times as large. Consult the monthly MetroEast newsletter or visit our website at www.metroeast.org for information about Studio A classes.

High Quality:

Studio B is equipped with all the trappings of a professional high-definition television studio.

The studio is equipped with 3 remote-control video cameras. The crew can switch between the cameras during the show, to provide the audience with good views of the action. Pre-set lights make clear and flattering images, and several options for choice of backgrounds (including "green-screen" effect) are available. A "teleprompter" lets the performer read text from a screen mounted in front of the camera lens for smooth presentations.

Programs can be cablecast "Live" on local cable channels, and/or recorded on solid-state hard drives for additional editing, or for submission for broadcast on local cable TV.

For sound, up to 4 microphones can be used, including "lapel" or stand-mounted styles. Pre-recorded sound from CDs or videos can also be played during the program. Phone lines are available so that viewers can call-in during live shows to join the conversation.

A computer "Character Generator" is available to add titles, credits, and name identifiers. It can also be used to display images like still photos, maps, charts, etc.

Quick and Easy:

Studio B was designed to require less "set-up" time, and fewer crew members. This allows the Producer to spend less time recruiting volunteer crew before the show, and spend less time adjusting equipment on the day of the show. Typically, a 30-minute program can be completed in about 2 hours.

To accomplish this, the equipment in Studio B is simpler to operate than its Studio A counterparts. While its capabilities are necessarily a little less sophisticated, it also means that each member of the technical "crew" can do several jobs simultaneously. This means that Studio B requires only a few (from 1 to 3) crew members, less than half the number typically needed for a production in Studio A.

For example, in Studio A an operator is required for each of the three cameras. In Studio B, one person can operate all three cameras with remote controls located in the adjacent "Control Room".

About Multi-Camera Production:

Studio-style programs are sometimes called “multi-camera” production. This style of production creates a finished program at the end of shooting, that shouldn’t require any additional editing.

Video:

Each of the 3 cameras is assigned to shoot a particular part of the program. For example, in a talk show with a host and two guests, the camera assignments might be:

Camera 1: Close shot (head and shoulders) of the Host

Camera 2: Close shot of Guest 1 or Guest 2 (depending on which is speaking)

Camera 3: Wide shot of the entire group

All three cameras feed their video through cables into the Control Room, where they connect to a video “switcher”. The program Director selects which camera to show the audience, and record on the videotape, by pushing a button on the switcher.

While one camera is “hot”, the Director can be changing the shots of the other two, to provide some variety and keep the “guest” camera on the one that is speaking.

The crew can also play-back video from pre-recorded videotapes to show during the program.

Audio:

The sound is controlled by a completely different set of equipment. The Audio Technician on the crew can provide the audience with sound from several different sources:

Microphones: To pick-up the sound of performers in the studio

CD Player: In the Control Room, to add music or sound effects

DDR Video Player: In the control room, for pre-recorded segments

Telephone: For live call-in shows

Hours and Policy:

To begin a Studio B project, you should first contact MetroEast to reserve studio time:

Studio B is available for your use:

s	Monday, Thursday	11:00 am - 10:00 pm	Friday	3:00 pm - 9:00 pm
s	Saturday	11:00 am - 9:00 pm	Sunday	11:00 am - 7:00 pm

To Reserve time, call the Equipment Room at 503-667-8848 ext. 307

- s A typical reservation is 2.5 hours. Longer sessions can be reserved if needed.
- s All crew members must have completed the “Basic Studio - Control Room” workshop.
- s Complete the “Producer Activity Form” and pay the annual activity fee before reserving.
- s MetroEast Staff are always on duty to provide technical and creative assistance.
- s MetroEast equipment may only be used for non-commercial programs that will be cablecast on MetroEast channels. Please do not use equipment for personal projects.
- s Equipment is available to record DVD or Blu-Ray disk copies of the finished program, to give to guests or view at home.

The Layout:

The Studio consists of 2 rooms: The “Studio” contains the lights and cameras, and is where the talent will perform. The “Control Room” holds all of the equipment for controlling video, audio, and graphics, and for recording the show.

The Studio:

Lights: The “Light Grid” (network of pipes) overhead holds 2 types of lights. The “Cyclorama” lights are used for shining different colors of light on the background. The “Soft-lights” are arranged to light the performers. The lights are controlled from the “Dimmer” board in the Control Room.

The lights are pre-set and should not need to be adjusted.

Cameras: Cameras are mounted on wheeled tripods for easy positioning. Camera #1 is equipped with a “floor monitor”, which can show any desired picture, and a “Teleprompter”.

Backgrounds: You may pull around a black cyclorama curtain, or pull back the curtain and use the green wall to use the “Chroma-Key” effect to place your subjects in nearly any setting you wish.

The Control Room:

Video Control: This area has monitors that show each camera, plus “Program” (the “hot” camera), and “Preview”.

The “Switcher” selects which camera is being recorded and cablecast if live.

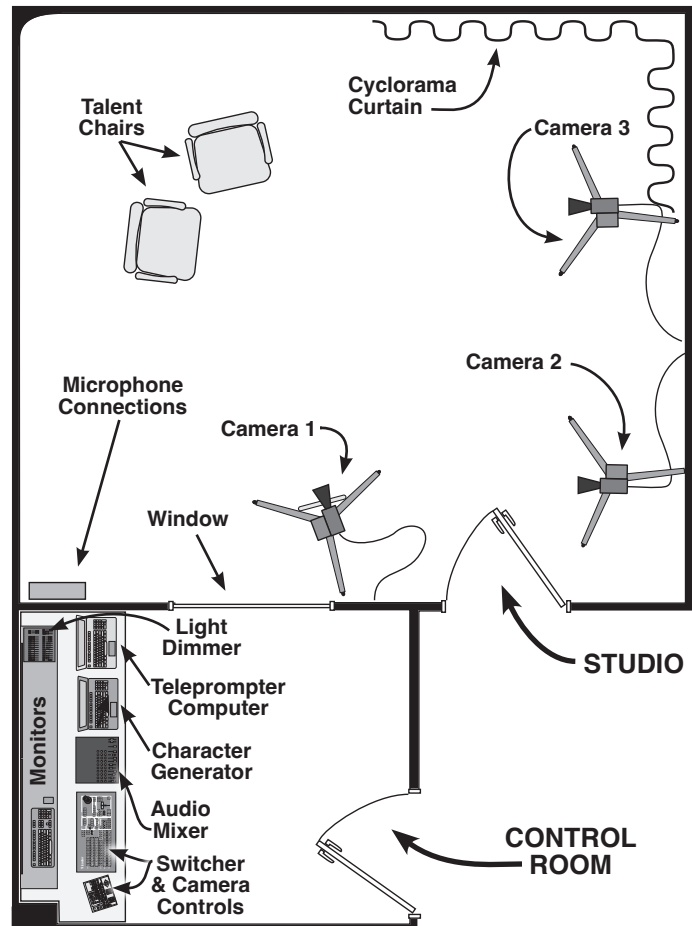
A Camera Control unit let the operator remotely aim, zoom, and focus the three cameras in the studio.

Audio Control: All audio (mics, CD player, Video players) are controlled by the “Audio Mixer”. The CD player can be used to add theme music or sound effects.

Graphics: The “Character Generator” is used to add text information to the program, like show titles, name identifiers, phone numbers, and credits.

Light Control: The “Dimmer” board lets the operator turn lights off and on, control the brightness, and select the color of the cyclorama lights in the studio.

Miscellaneous: This rack contains a clock, Studio A Intercom connection, Video “Patch” panel, and a Mic for speaking to subjects in the Studio.



The Crew:

Studio B was designed with the notion that each member of the crew would perform the jobs of 2 or more members of a traditional studio crew. Below is a description of the typical job duties of each crew member, and how they might be combined in Studio B.

CREW MEMBER #1:

Director: The technical manager of the show. Directs the activities of each of the other crew members. For example, the Director decides what kind of shot (wide, close) each camera will get, which camera will be shown to the viewer, when graphics will be shown, when talent will be cued to begin performing, when microphones or CD will be heard, etc.

It is also the Directors job to “interpret” the action in the studio for the viewer; to show the audience what they want to see, at the moment they want to see it. The Director must pay attention to what the performers are saying and doing, anticipate what’s coming next, keep an eye on the clock, and give clear and concise instructions to each member of the crew.

Technical Director: Operates the “switcher” that selects which camera, graphic, or videotape is being shown to the viewer.

The switcher in Studio B is less complicated than its Studio A counterpart, which requires less training to use, and reduces the chances of switching mistakes.

Camera Operator: Uses the zoom, focus, and pan/tilt movements of the camera to frame shots of the talent as assigned by the Director.

In a traditional studio, each camera would have an operator. In Studio B, the cameras are remotely controlled, so one person can operate all three simultaneously. Each camera also has “memory” settings, so they can quickly return to any of several preset positions.

CREW MEMBER #2:

Audio Operator: Controls all sound heard by the viewer. Before the show, she selects the most appropriate microphones for the show, connects and tests them. She also pre-tests any other sound to be used, such as CD player, video player, and telephone.

During the show, she will regulate the volume of sound for each of the sound sources, and blend them together through operation of the “Audio Mixer”.

Character Generator Operator: The “CG” crew member creates graphic elements for the program, using a computer to choose the fonts, colors, borders, etc. for each “page”.

During the show, the CG operator calls-up the pages as needed, and displays them for the audience.

CREW MEMBER #3: (Optional)

Teleprompter Operator: Types “scripts” into a computer, and then scrolls them so that the talent can read what they want to say from a monitor mounted over the camera lens.

Lighting: If your program calls for any adjustments to the lights during the show, this crew member can operate the lighting dimmer.

Preparing for the Show: Lights and Set

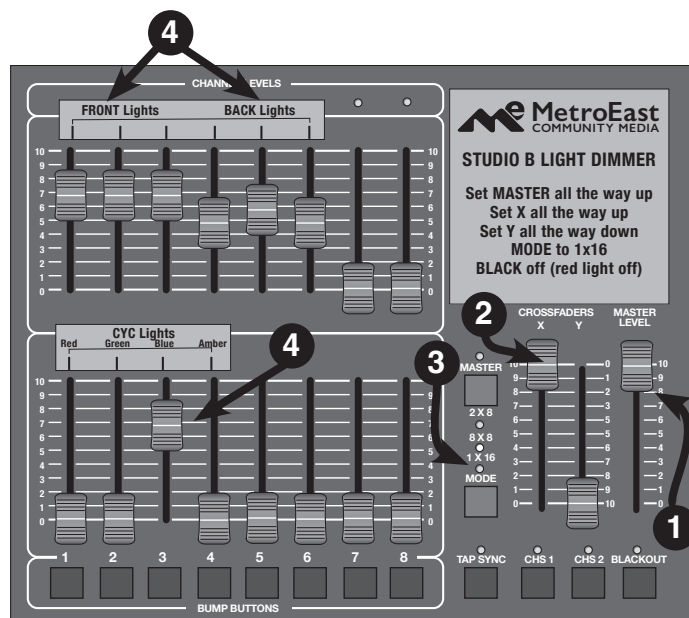
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Studio B was designed to require minimal time for pre-show set-up. Typically, you'll need to arrange a few chairs, turn on the lights, select a background option, and you're ready to shoot!

Turn on the Lights:

Dimmer: There are 9 lights in the Studio, which are controlled from the “dimmer board” in the Control Room. You can increase or decrease brightness, or select a color for the background behind the talent.

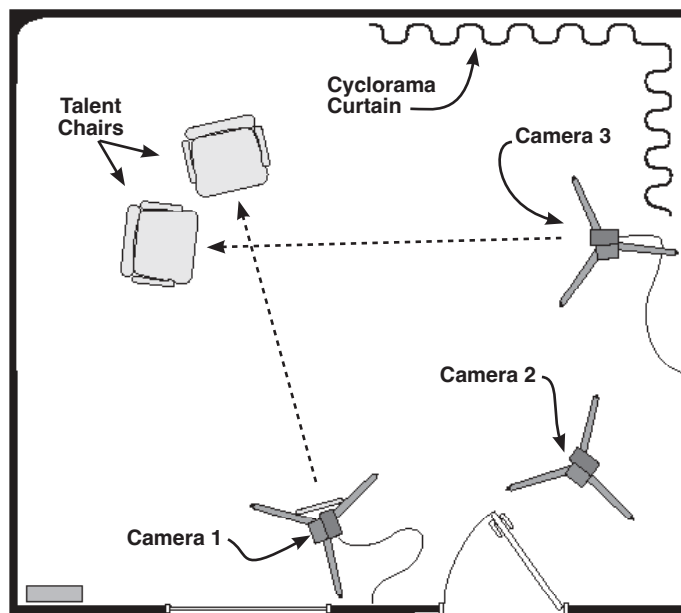
- 1) Slide the slider labelled “MASTER LEVEL” all the way to the top. This controls the brightness of all lights.
- 2) Slide the CROSSFADERS “X” slider all the way up, and the “Y” slider all the way down.
- 3) The MODE should be set to 1 x 16. If it is not, push the MODE button a few times.
- 4) Slide up the FRONT and BACK light controls to 7 or higher.
- 5) Choose a background color, by pushing up either any of the 4 color slides. You can get other shades by mixing colors (a little red + a little blue = purple)



Set-Up the Set and Position Cameras:

- 1) Position 2 or 3 chairs so that talent faces will be oriented toward the corner where Camera 3 is mounted up high. Keep the chairs at least 3' - 4' from the wall.
- 2) Carefully move the cameras to get “face-on” shots of the talent. Position the host toward Camera 1 (for teleprompter, clock, and monitor).

When moving the cameras, grab them by the tripod legs, NOT by the camera! Also, be careful not to run-over or tangle the cables connected to the camera.



NOTE: MetroEast will supply chairs, a small round table, a side table, and other small decorative items for your use. If you wish to bring in outside items, please check with Equipment Room staff regarding size limitations to avoid damage.

Preparing for the Show: The Cameras

The 3 cameras in Studio B are each a little different in their configuration, but all are fragile and must be moved and positioned carefully.

The Parts of the Camera:

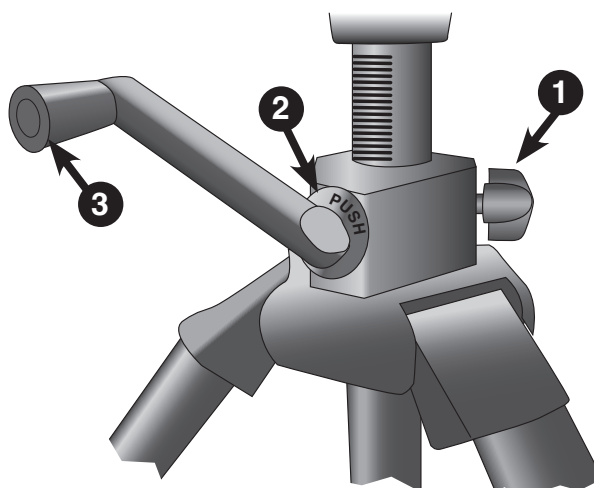
- 1) **Camera and Lens:** The camera lens can move up/down (tilt), left/right (pan) from the Control Room remote controller.
- 2) **Floor Monitor (Camera 1 only):** Lets the talent see any camera or other video source. Power button on back at the lower right corner.
- 3) **Master Clock (Camera 1 only):** Shows the “official” MetroEast time. When doing a “Live” show, this clock should be used to determine when your show will be scheduled to start and end.
- 4) **Dolly Wheels:** Allows easy rolling of cameras for pre-show positioning.
- 5) **Pedestal (behind floor monitor in illustration):** Turn the crank handle to raise or lower the camera, to adjust for standing or seated talent. Set height to about eye level of the talent.

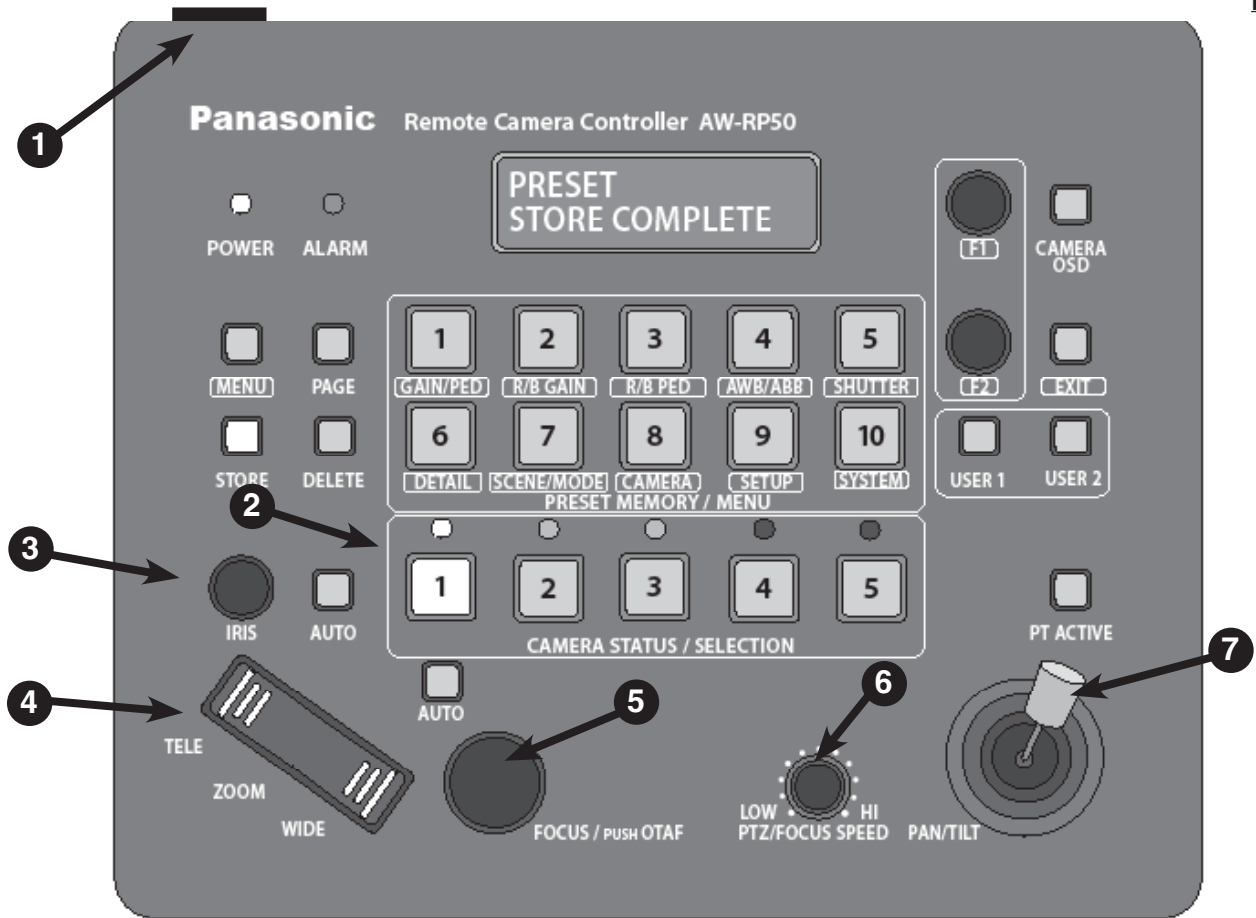


NOTE: When positioning the camera, grab the unit by the tripod legs only. DO NOT grab the camera or Pan/Tilt head, or damage may result. Also, be careful not to run-over or tangle the cables connected to the camera.

Adjust the Cameras Height:

- 1) Loosen the Pedestal Lock by turning the knob counter-clockwise. Re-tighten knob after adjusting height.
- 2) Fold-out crank handle by pushing ring toward center of column, and pulling outward on the handle.
- 3) Turn the handle clockwise to raise the camera. Be careful to not stress attached cables or move the camera pan/tilt head.



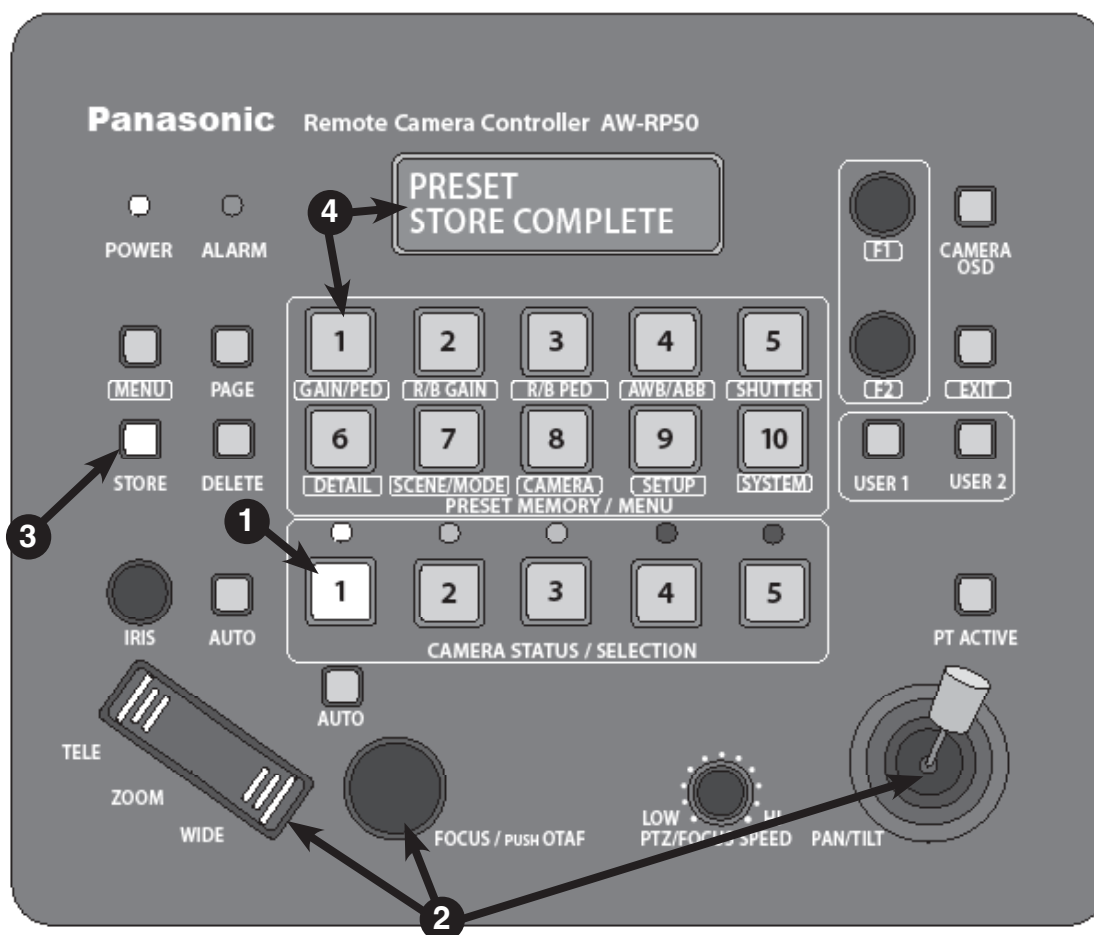


Operating the Cameras:

The 3 cameras in Studio B are controlled with a remote control unit like the one shown above. They cannot be adjusted at the camera; all movements are made with the remote controls.

The Parts of the Controller:

- 1) **Power:** Turn on the camera controller with the switch on the upper-left-back.
- 2) **Camera Selector:** The controller can control up to 5 cameras. For Camera 1, push the “1” button. All the controls will now operate Camera 1.
To Control Camera 2, Push “2” and to operate Camera 3, Push “3”. 4 & 5 do not function.
- 3) **Iris:** Controls the brightness of the video picture. Push the “AUTO” button so that it is lit to activate automatic control of the camera brightness.
- 4) **Zoom:** Rock the switch one way to zoom-in to a close view of the subject, or push the opposite way to zoom out to a wider view.
- 5) **Focus:** Zoom-in as close as possible to the desired subject. Then move the focus knob to achieve a sharp, clear image. Then zoom out to the desired framing.
- 6) **Speed:** Controls how fast the camera moves. Generally the slow speed looks better, and is easier to control.
- 7) **Pan/Tilt:** Tilts the camera UP or DOWN, and pans it LEFT or RIGHT. Push the joystick in the direction you wish to move the camera lens.



Using "Shot Memory":

To make camera operation easier, the controller can "remember" up to 10 different shots.

- 1) **Select a Camera:** Push a button to select control of Camera 1, 2, or 3.
- 2) **Set-up a Shot:** Use the Pan/Tilt, Zoom, Iris, and Focus controls to frame a shot.
- 3) **Activate STORE Mode:** Push the STORE button. It will light. This function allows the controller to "remember" various different shots you want to use in your show. Each camera can have up to 10 preset shots stored.

By setting up these shots before the show, you don't have to spend time adjusting the cameras during the show; just hit one button, and the camera remembers the shot.
- 4) **Select a Preset:** Push and hold #1 of the 10 "PRESET" buttons. After a few moments, the display window will read "PRESET STORE COMPLETE". Release the button.
- 5) **Repeat:** Set-up a different shot, and then repeat Step 3. This time, push and hold the #2 PRESET button. If you push #1, the new shot will erase the first one you set.
- 6) **Turn off STORE mode:** Push the STORE button again. It should unlight, and exit the STORE mode to return to normal operation of the controls.
- 7) **Use the Presets:** Select any one of the 3 cameras. Push the #1 PRESET button. The controller should adjust the pan, tilt, zoom, and focus to return to the framing of the first shot you set.

Preparing for the Show: Framing Camera Shots

Before the show starts, take a few minutes to set-up several shots. Decide which camera will shoot which subject, and then establish “wide”, “medium” and “tight” shots of each. Using several different angles will make the show more visually interesting for the viewer.

Framing and Composition:

Here are a couple of pointers to help you set-up shots that are flattering to the talent, and interesting for the audience.

- 1) **Head-Room:** Leave a little space between the top of the talents head, and the top of the picture.

However, too much head room is just as bad as too little. One helpful tip called “the rule of thirds” suggests that you place the subjects eyes about 1/3 of the way down from the top of the picture. Doing this usually results in a good amount of headroom.

- 2) **Nose Room:** If shooting a profile (face-on shots are better!), leave more room on the nose side.

- 3) **Head & Shoulders/Close-Up:** A useful shot for one person shows the whole head, and the top of the shoulders.

Too close is unflattering, and doesn't leave space for graphics at the bottom. Too wide is less interesting for the audience.

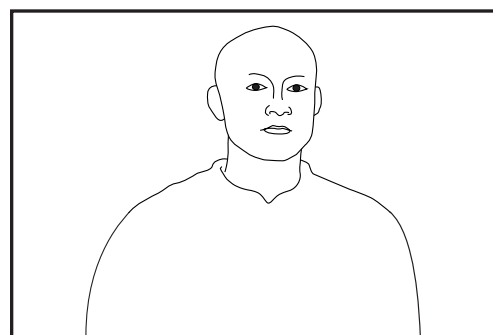
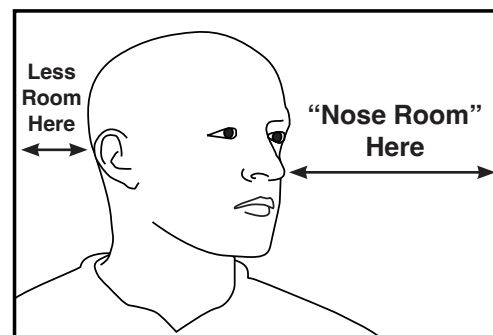
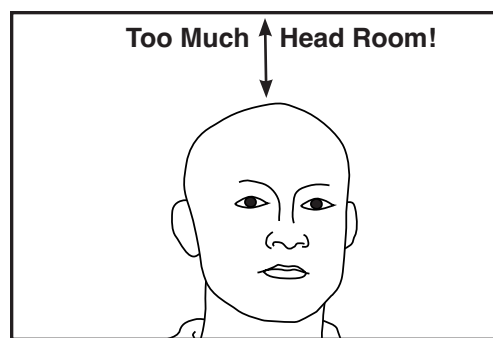
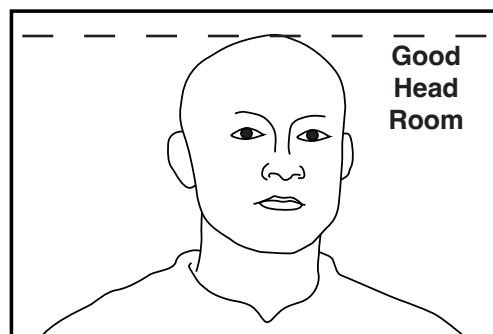
- 4) **Medium Close-Up:** This slightly wider shot has about the same amount of Head Room as the “Close-Up”, but includes a little more of the subjects body, with the bottom of the picture just above the waist.

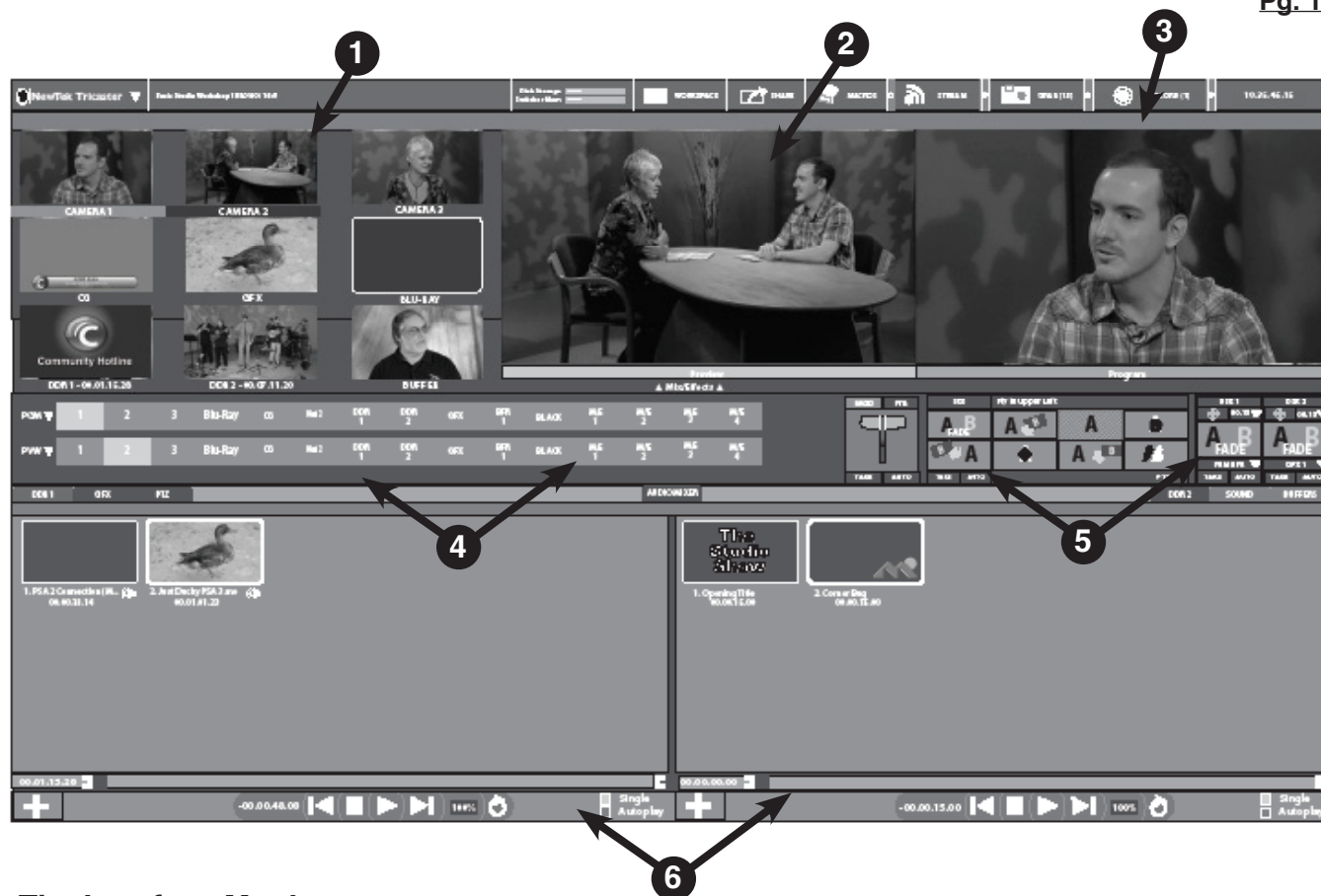
Because it's a little wider, it is easier to keep the subject “in the frame” if they tend to move around in their chair a little, and lets the viewer see the subjects hands if they gesture while speaking.

It may also be a little more flattering than a close-up.

- 5) **Wide Shot:** Camera angles that show several people at once -- sometimes called “2-Shot” or “3-Shot” based on the number in the picture -- are important because they let the viewer see “the big picture” and where each person is in relation to the others in the scene.

However, Wide Shots are less interesting for the viewer, because they don't show as much detail. It's a good idea to begin the show on a wide shot, and throw one in from time-to-time, but most of the show should be made up of closer shots.

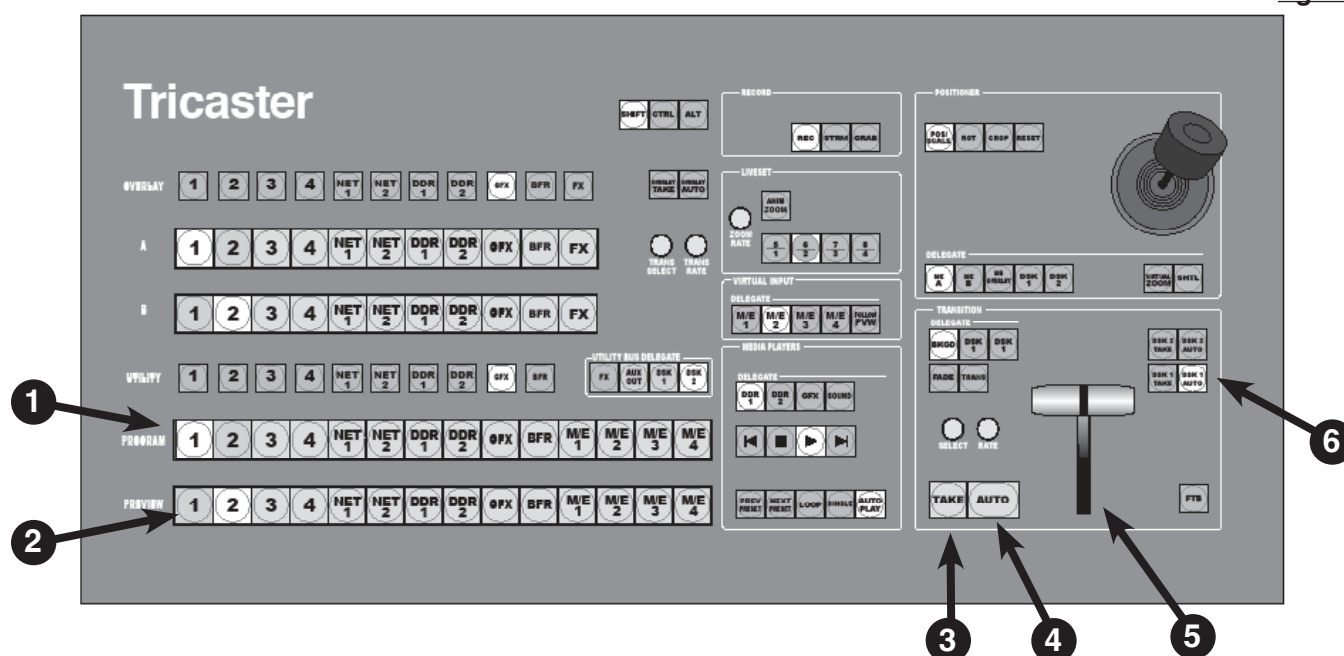




The Interface Monitor:

The two large monitors attached to the wall above the switcher allow the operator to see all of the available video sources (cameras, graphics, video clips), and to adjust settings for switching between the sources, replaying videos, and displaying graphics.

- 1) **Source Monitors:** The small images in the upper left corner show several video sources (how many and which can be adjusted). This lets you monitor all cameras and other sources, and make changes to them “off air”, that is, before you show them to the viewer.
- 2) **“Preview” Monitor:** This shows whichever camera (or graphic or clip) will be shown next. When you make a transition on the switcher, the picture on “PREVIEW” will become “PROGRAM”.
- 3) **“Program” Monitor:** Shows what the viewer is seeing, and what is being recorded. It will always show whichever of the sources is selected on the switcher.
- 4) **“Virtual” Switcher:** A representation of the physical switcher. The 2 identically laid-out rows of buttons each represent one of the video sources, with one row selecting the Program source, and the other selecting the Preview source.
- 5) **Transition Section:** A virtual representation of the controls on the physical switcher that let you choose how you want to switch between Program and Preview sources, and to superimpose graphic images over the video sources.
- 6) **Media “Bins”:** The 2 large boxes at the bottom of the screen are areas for storing video clips for replay, and graphic elements to be displayed.



The Switcher:

The switcher is used to select which of the available video sources (cameras, DDR video players, graphics) will be shown to the viewer, and recorded on the Master Recording. It also can create several different ways of transitioning between sources, overlay graphics onto other sources, and create visual effects (green screen and virtual sets).

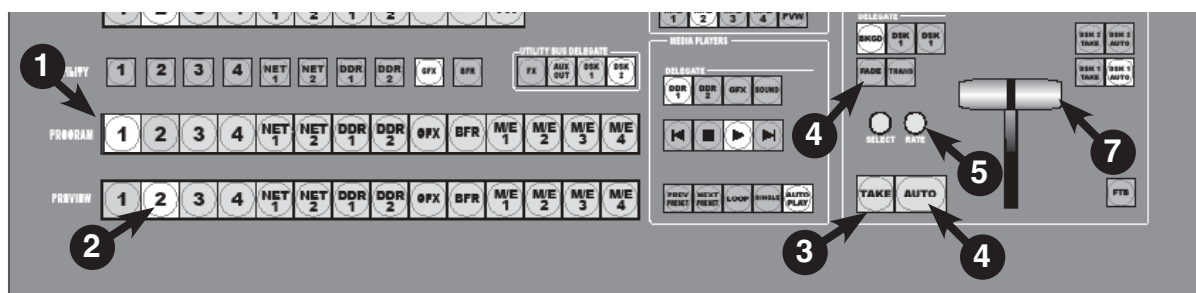
The switcher only affects video, and does not operate on sound at all.

- 1) **Program Row:** Push Button 1 to show Camera 1, Button 2 to show Camera 2, etc. The button will light, and the selected source will show on the “PROGRAM” monitor.
- 2) **Preview Row:** The same “sources” as the program row, this row lets you “cue up” the next source (camera, etc.) that you will switch to after the current one.

The Fader Handle is used to create special transitions between 2 video sources. Select a source on the A row, a different source on the B Row, and move the handle to transition from one to the other. The fader can be used to create either a “mix” or a “wipe” transition.

- 3) **TAKE Button:** Push this button perform an instant switch between the sources selected on PROGRAM and PREVIEW rows. The two sources trade places on the rows, and on the PROGRAM and PREVIEW monitors.
- 4) **AUTO Button:** Push to perform either a FADE (a gradual blend between the Program and Preview sources) or a TRANSITION (any one of several hundred patterns or animated motions that swap the Program and Preview sources at a preset speed).
- 5) **FADER Handle:** Move from one end of its range to the other to manually perform the same type of transition as the AUTO Button.
- 6) **DSK Buttons:** Push to overlay graphics on a camera or DDR video player image.

Note: The controls on the upper half of the switcher are used for more advanced features. To learn more about these functions, watch for the “Studio Switcher” workshop.



Switching a Show:

Below is a sample of the steps for switching a typical program. Before the show, use the camera controllers memory presets to set up several different shots for each camera.

- 1) **Select a “PROGRAM” Source:** Push the “1” button on the Program Row to select Camera 1. The button will light red, and the source will appear on the Program Monitor.
- 2) **Select the “PREVIEW” Source:** Push the Camera 2 button on the Preview Row. The button will light green, and Camera 2 will appear on the Preview Monitor.
- 3) **Switch Cameras:** When appropriate, push the “TAKE” button, a few inches to the right of the PREVIEW row. The two cameras on PROGRAM and PREVIEW should swap places on the rows, and on the PROGRAM/PREVIEW monitors. Camera 2 is now on PROGRAM. The TAKE button performs an instant transition, also called a CUT.

- 4) **Make a Fade:** Now, select Camera 3 on PREVIEW. Then, push the button marked FADE, a few inches above the TAKE button. The button lights, but nothing happens yet.

Next, push the AUTO button, right next to the TAKE button. This will create a more gradual blend between the 2 pictures for a second or so as one fades out and the other fades in.

- 5) **Adjust the Transition Speed:** Look at the INTERFACE screen, and locate the section shown here (right side of the screen). On the switcher, turn the RATE knob to increase or decrease the length of the AUTO transition. Notice that the number changes on the Interface.



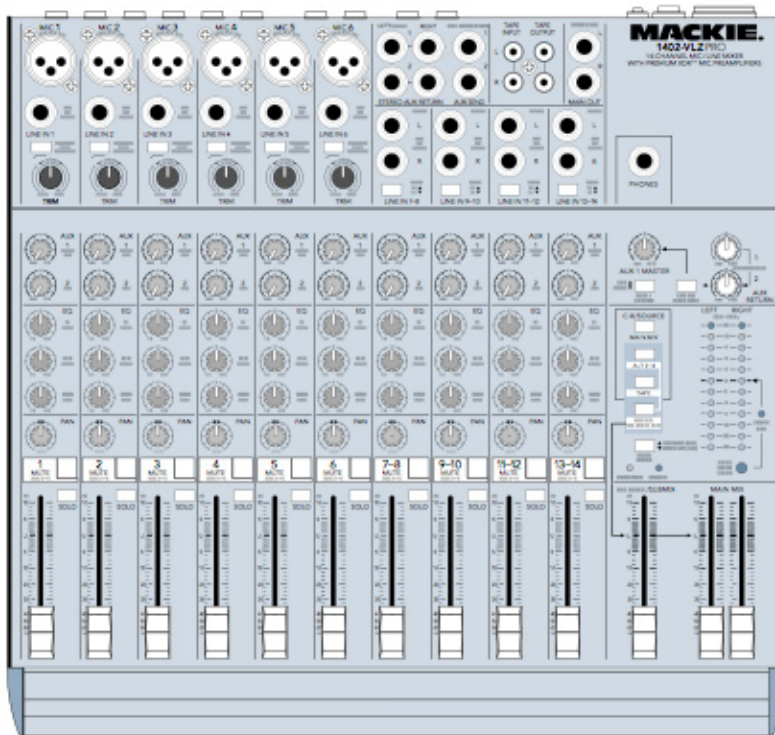
The time shown is in Seconds and Frames. 30 frames = 1 second (01:15 = 1.5 secs)

- 6) **Transitions:** The same AUTO button can also perform even fancier transitions. Push the button labeled “TRANSITION” (next to the FADE button).

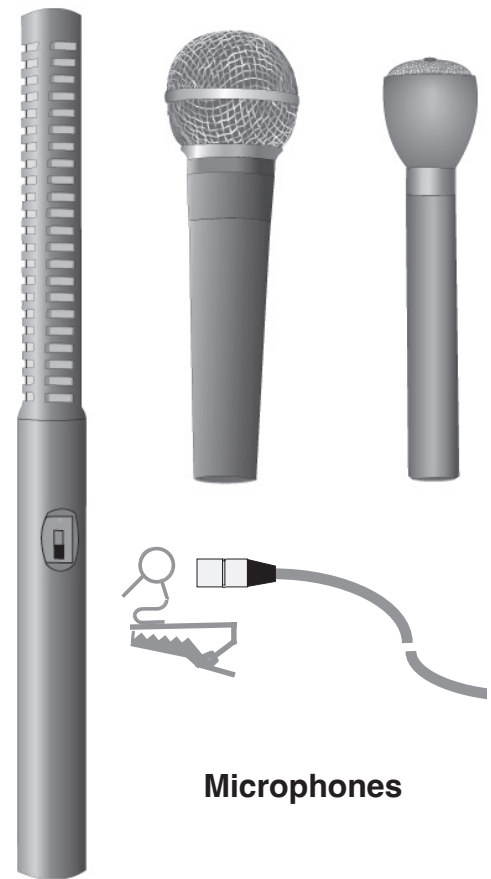
Next, turn the SELECT knob (next to RATE knob), and look right above the Transition Time you just set. You should see a selection highlight moving among 8 boxes. The pictures on the boxes suggest what how the transition will look. There are dozens available.

Push the AUTO button to perform the transition you selected.

- 7) **The FADER HANDLE:** Move the handle to make the same kind of transitions you made with the AUTO button, except manually at whatever speed you choose. If FADE is selected, you’ll get a fade. If TRANSITION is lit, you’ll get one of the 8 transition effects.



Audio Mixer



Microphones

Audio:

One of the most important jobs in any studio production is controlling the sound; a show with poor quality sound is difficult for a viewer to follow.

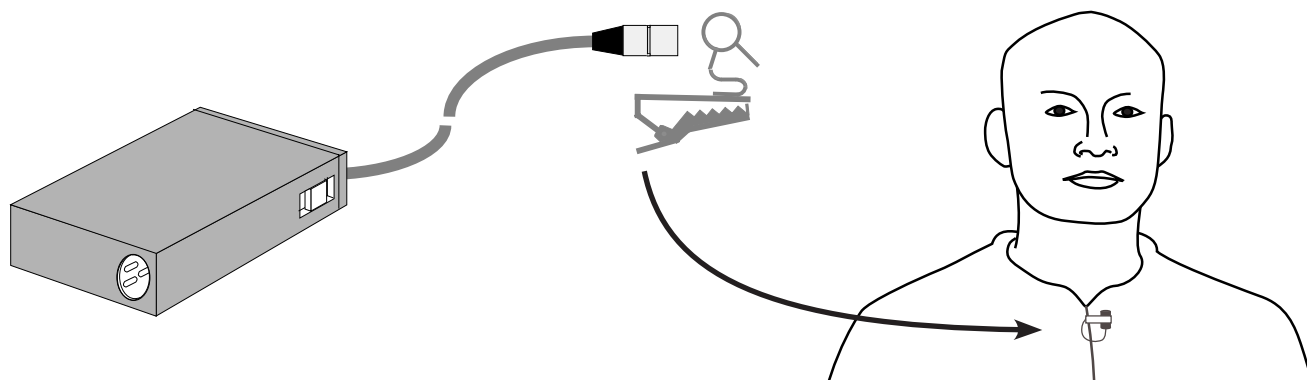
The Audio Technician has two primary responsibilities during the program: the first is mixing the various sounds together so that they are balanced and easily understood; the second is regulating the volume level being recorded and sent out “over the air”. Audio which is too loud can sound distorted, and audio that is too low will be “noisy” with buzz and hiss.

The main tools of the audio technician are:

- 1) **Microphones:** For picking up sound in the studio, 2 types of mics are most common. The tiny “Lapel” mic attaches to the talents shirt, and is ideal for sit-down interview style programs. “Hand Mics” can be mounted on a stand or held and are most often used for singers, instruments, etc.
- 2) **Audio Mixer:** Used for controlling the volume of each of the microphones and other sound generating equipment, and blending them together. The Studio B mixer is a “10 Channel” mixer, meaning that it can control up to 10 sound sources at a time.

Besides microphones, there are at least 3 other sound producing devices available:

- a) **CD Player** - located just above the audio mixer, for adding music or sound effects
- b) **DDR Video Players** - Used for playing digital videos of pre-recorded material
- c) **DVD and Blu-Ray Disk Players** - For disks of pre-recorded material playback.



Using a Lapel Microphone:

Because of the small size of Studio B, it's likely that most of the programs produced will be talk shows. The preferred mic for this use is the "Lapel" mic (also known as "lavalier" or "lav").

The Lapel mic is small, so it's not very visible to the viewer. Also, it's pinned to the shirt of the talent, so it always remains the same distance from the mouth, and doesn't have to be held by the person.

Here are a few pointers for using Lapel Microphones:

- 1) **Position:** Slip the clip over the mic head, and then clip it to the talents shirt or lapel. Keep the mic high on the chest, centered if possible. Make sure that nothing will rub against the mic as the person moves, like hair, jewelry, or fabric.

To help control the cable, it's helpful to make a small loop in the cable, and use the mic clip to pin the loop against the inside of the shirt.

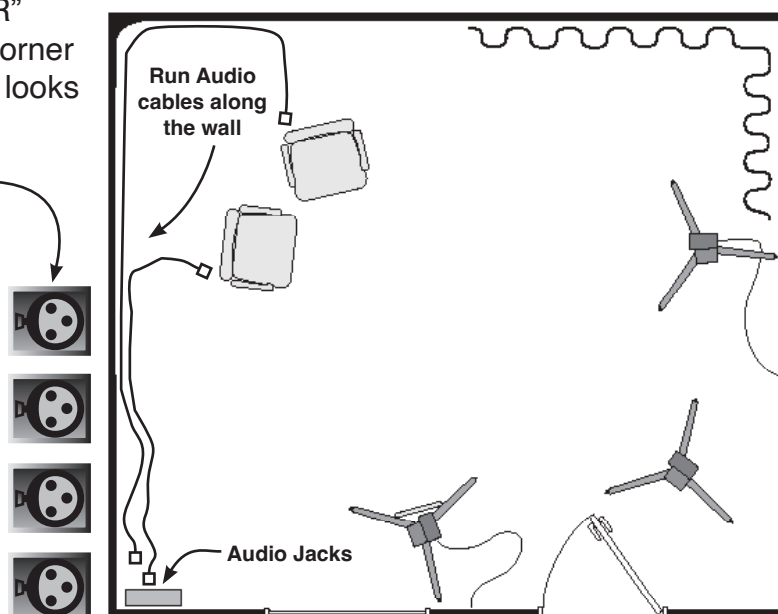
- 2) **Hide the Cable:** Drop the end of the mic cable down through the top of the shirt, and pull the end out at the bottom of the shirt (or let the talent do this if the situation is awkward). All that should be visible is the head of the mic and clip, as shown above.

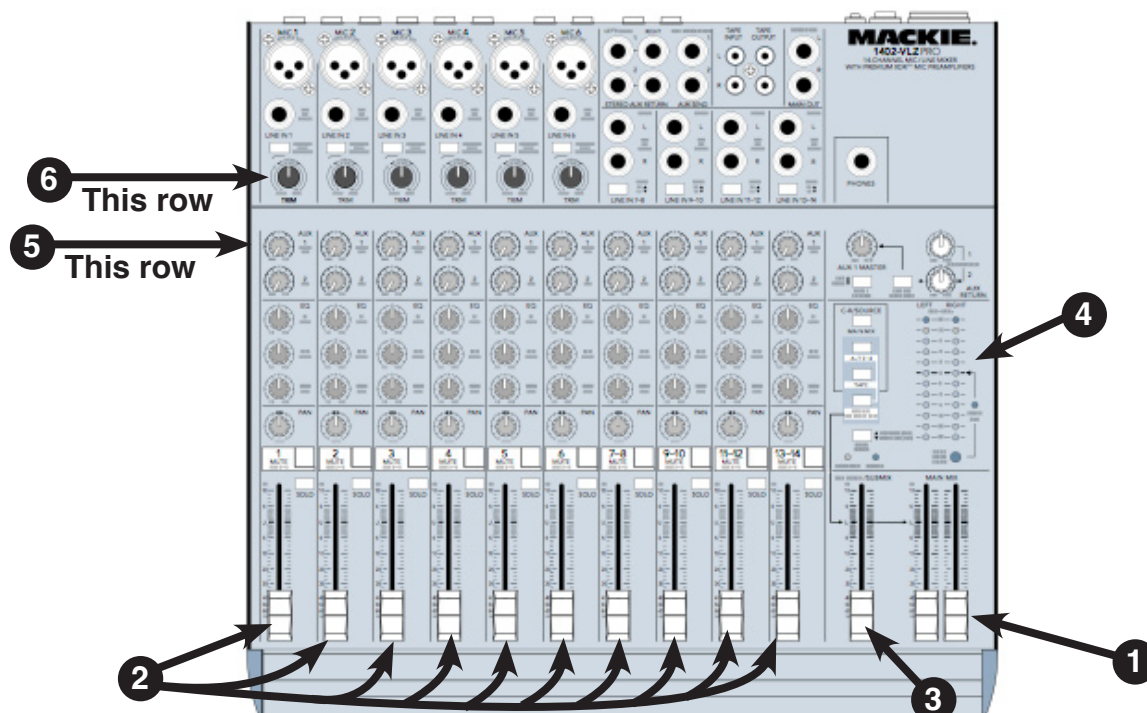
Since the cable on the microphone is not very long, you'll be connecting a longer audio cable -- called an "XLR" cable -- from the microphone to a connection on the wall.

- 3) **Plug it In:** Connect the longer "XLR" cable to a panel at the southwest corner of the studio (near the window that looks into the Control Room).

There are 4 "jacks" on this panel, labelled "1" through "4" that feed the sound from the microphones you plug in into the Audio Mixer in the Control Room.

To unplug the XLR cable, push the release button at the right edge of each jack, and pull the connector straight out from the wall. Please don't pull on the wire!



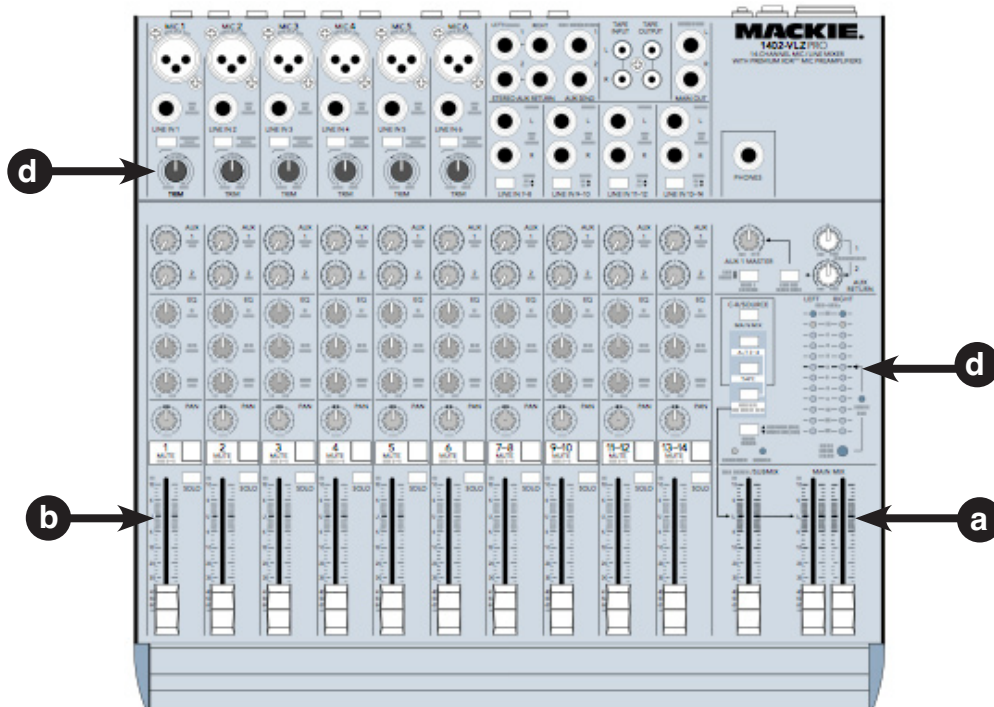


Using the Audio Mixer:

Although the Audio Mixer looks complicated, the basic operation only requires using a few of the sliders, buttons, and knobs. The mixer lets you individually control the volume of up to 4 mics, plus several additional sound sources in the control room (CD player, videotape).

The mixer is divided into 10 “channels”, represented as a row of controls running from the top to the bottom of the mixer. All of the knobs, buttons, and sliders in one channel affect only 1 sound source. The main parts of the mixer are:

- 1) **Master Fader:** Affects all channels simultaneously. Move both sliders up to increase the volume going out “over the air” for live shows, and recorded on the master videotape. Must be turned-up to hear any of the individual channels.
- 2) **Channel Faders:** Increase or decrease volume of just one sound producing device. Channels 1-4 control the volume of mics plugged into the mic jacks in the studio. Channel 7-8 controls the DDR video players. Channel 13-14 controls the volume of the DVD and Blu-Ray disk players. Some channels are not used.
- 3) **Headphone Volume:** Adjust the loudness of the Control Room audio headphones. Note that this does not affect how loud the sound is for the viewer.
- 4) **VU Meter:** Shows a visual display of the loudness of the sound going to the viewer. The “Volume Units” meter is marked-off in reference numbers, which run from a lowest volume of “-60 dB” to a maximum volume of “+24 dB”. The best quality of sound is achieved when the “peaks” of audio hit at the “0 dB” mark, about half-way up the scale.
- 5) **Aux 1/Send to Studio:** Turn up a knob to send the sound from a channel to a speaker in the studio. For example, if the talent wants to sing along to a CD, turn up the AUX 1 knob on the row of controls for the CD (13-14).
- 6) **Trimmer:** Pre-adjust volume of channels so all the channels faders are aligned (mics only)



Before the Show Begins:

Successfully mixing sound involves preparation and testing before the show begins. Here are some steps you should follow before starting the production:

- 1) **Test All Sources:** Make sure each mic is working, and test play any CDs or videotape roll-ins well in advance of the show. You don't want to have to troubleshoot during a live show.
- 2) **Set Levels:** As much as possible, you should try to "even out" the volume of the talent who will be speaking into your microphones. That is, you may have one guest who speaks loudly and another who is quiet. Using the trimmers, you can balance these different levels so that you don't have to memorize different fader positions.
 - a) Turn up the MASTER FADER to the "U" mark (the "U" stands for "Unity").
 - b) Turn up the CHANNEL FADER for Mic #1 to the "U" mark.
 - c) Have the Talent speak at a normal, comfortable level. Suggest they count to 20.
 - d) Watch the VU meter. As they speak, turn the TRIMMER knob until their average "peaks" of volume light the lights up to the "0dB" mark.
 - e) Turn down Channel 1, and repeat steps for Channel 2.

Once the levels have been set, you should be able to set all CHANNEL FADERS to the "U" position, and get the same volume, no matter how loud or soft each person speaks.

During the Show:

- 1) **Turn Down any Source You're Not Using:** To avoid embarrassing mishaps, start the show with the talent mics turned down; if they don't think they're "on the air" yet, they may say things you'd rather not have broadcast.
- 2) **Keep an Eye on Levels:** Don't assume that once you've set levels, they'll remain the same throughout the show; as the talent gets going, they may get louder. Always keep one eye on the VU meter.

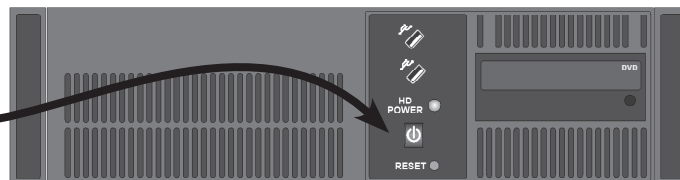
Adding Graphics - The Character Generator:

Putting text or graphic content in your program can provide additional information, or clarify spoken information for the viewer. The “CG” operator first creates “pages” of information -- one page for the show title, another to identify the host, etc. - and saves them on the CG computers hard disk drive.

Then during the show, the CG operator will use the keyboard or mouse to send the pages to the Switcher for display as needed.

Power-Up the Computer:

The CG Computer is located just below the large “Interface Monitor”. Swing open the door on the front, and push the “POWER” switch inside. The Power indicator will light.



Also, switch-on the power on the CG monitor, located just above the DVD & Blu-Ray units.

Launch the “LiveText” Software:

The CG computer will initially “boot-up” to the Windows Desktop.

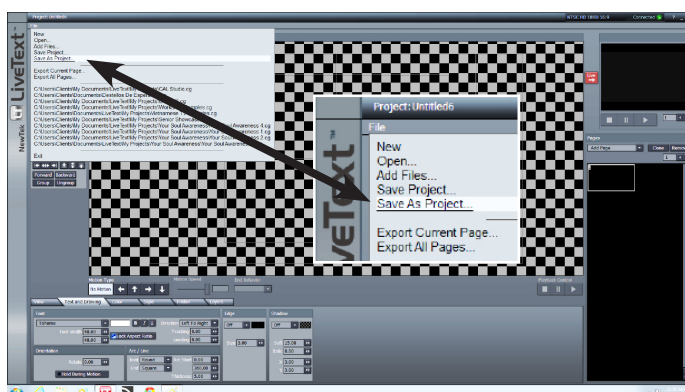
Mouse click on the **LT** icon on the Task Bar at the bottom left of the screen. This should start the CG Program in a few moments.



1) Save the Project

Even though you have created anything yet, it's a good idea to create a “SAVE” file so that you won't lose much work if the computer should “crash”.

Mouse click the FILE menu at the top left of the screen, and then select/click the “Save As Project” function on the list.

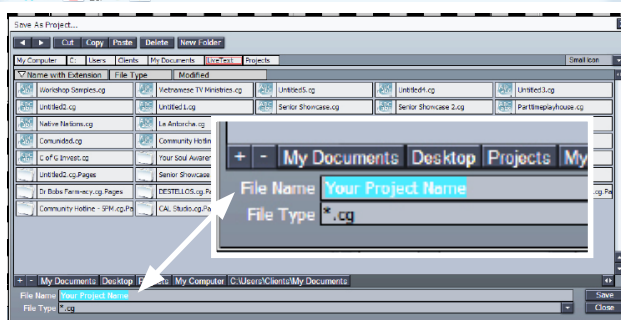


The program will display a window that lists projects that are already saved on the hard disk drive.

2) Give it a Name

Click into the “File Name” space near the bottom of the screen, and type a name for your collection of graphics (the name of your show works well)

Click “Save” in the lower right corner.

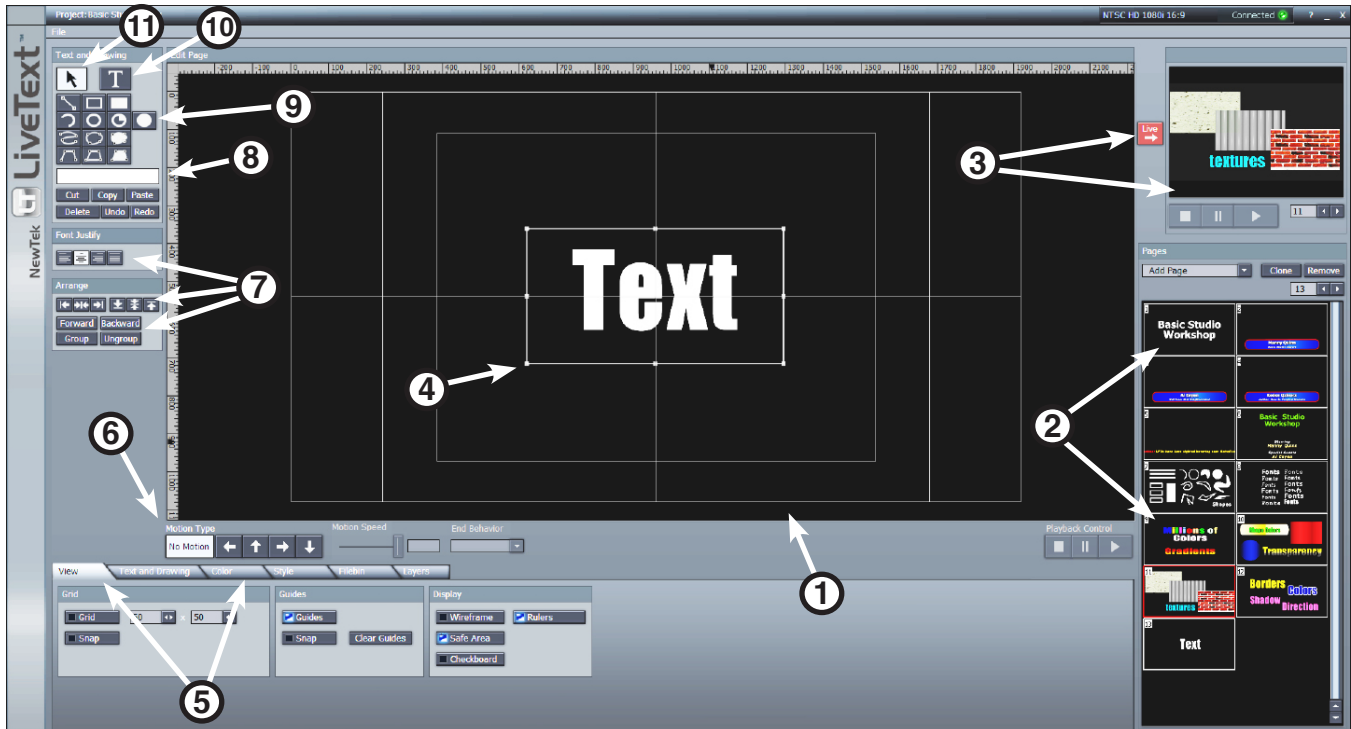



Want to know more about the Character Generator? MetroEast offers more in-depth training on the CG once each quarter in a 3-hour class titled “Studio CG Workshop”. Check metroeast.org for workshop dates, or call 503-667-8848

LiveText CG: A Quick Tour

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The CG software lets you type text, draw simple shapes, and import images created in other computer programs. As you create elements, you can select the “font” for text items, add single or multiple blends of color, add borders and shadows to improve readability, and even create various kinds of moving graphics, like the “credit rolls” often used on programs.




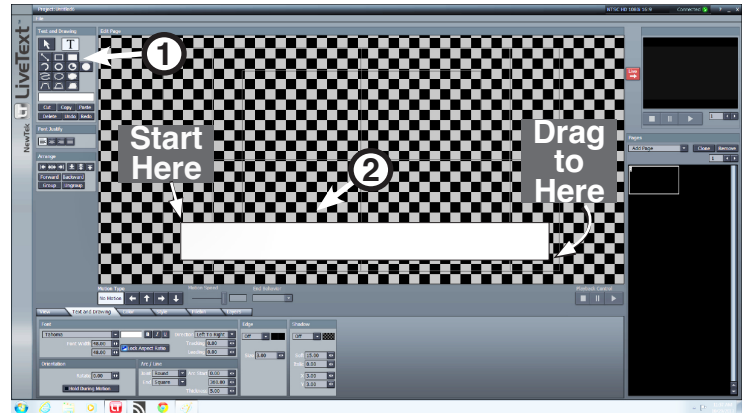
- 1) **Edit Screen.** This largest window is where you type and draw to to create a graphic page.
- 2) **Page “Thumbnails”.** Tiny images of each page you’ve made in your project.
- 3) **Live Player.** Click any thumbnail, and then the “Live” button to send that page to the switcher to display. The selected page shows in the window next to the Live button.
- 4) **Object Selection Box.** Mouse click any text or shape to “select” it. Once selected, you can resize, color, change font, and reposition the element.
- 5) **Menu Tabs.** The lower third of the screen is filled by 6 menus: View, Text & Drawing, Color, Style, Filebin, and Layers. Click on the tab to access the desired controls.
- 6) **Motion Controls.** Select the direction and speed of movement for “Rolls” and “Crawls”.
- 7) **Position Options.** Controls to move layered objects forward or back, to position objects on the screen, and to “justify” text within a multi-line box to the left/center/right of the box.
- 8) **Color Selector.** Shows the current color of the object. Click to open a color selector tool to change the color of the currently selected object.
- 9) **Shape Drawing Tools.** Click any shape button -- Line, Rectangle, Circle, etc. -- and then click and drag the mouse in the drawing area to create a shape.
- 10) **Text Tool.** Click the **T** to select, then click in the Edit Screen to type text.
- 11) **Selector Tool.** Click the , then click any object in the Edit Screen to edit size,font, color.


LiveText CG: Getting Started

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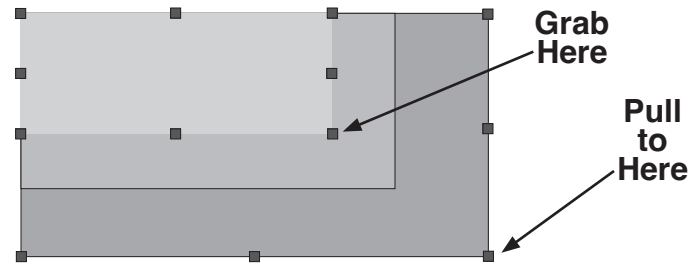
For your first practice, we'll make a simple "lower third" graphic. These are used to identify an on-camera person, by putting their name across the lower part of the screen. Often, the LT also includes the persons title, e-mail address, or similar info below the name.

- 1) **Make a Bar.** Click the  filled rectangle button in the shape tool section.
- 2) **Drag the Shape.** Position the mouse pointer on the Edit Screen as shown to the right. Then, click and hold the left mouse button and drag down and right across the screen. You should see a rectangle appear like this.
- 3) **Select the Shape.** The box you made should show a border around its edge. The border will have 8 dots called "handles" around the edge, 4 at the corners, and 1 at the center of each side.




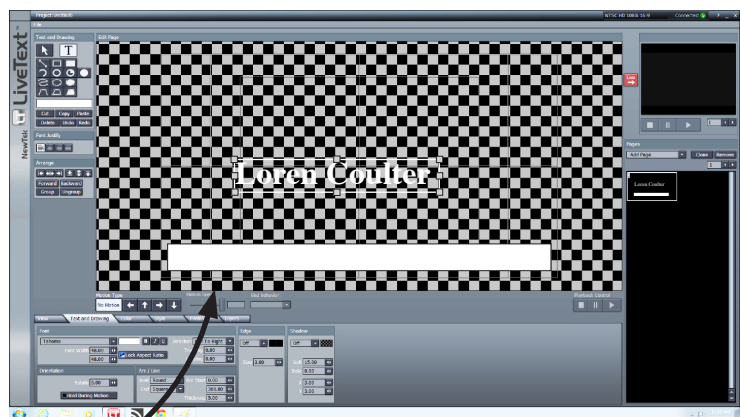
Click the  select button, and click outside the box to deselect it. Click on it to make the handles reappear.

- 4) **Size the Shape.** "Grab" the handle in the lower right corner by mousing over it, and holding down the left mouse button. Now, drag the handle down and right to enlarge the box. Push to the center to make it smaller.



Center handles only adjust height or width, corner handles adjust both.

- 5) **Move the Shape.** To move an object, make sure it's selected, and then "grab" anywhere inside the selection border, and drag around the screen.
- 6) **Add Some Text.** Click the  text button to activate it. Now click on the Edit Screen near the middle of the screen. Type your name.




Your screen should now look something like this.

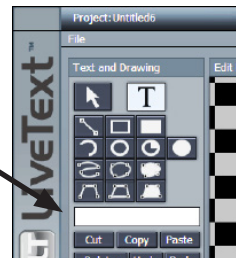
NOTE: Notice that you'll see a small image of the page in the "Pages" Box on the right side of the screen. As you add more pages, you'll see them all here.

LiveText CG: Fine-Tuning the Graphic

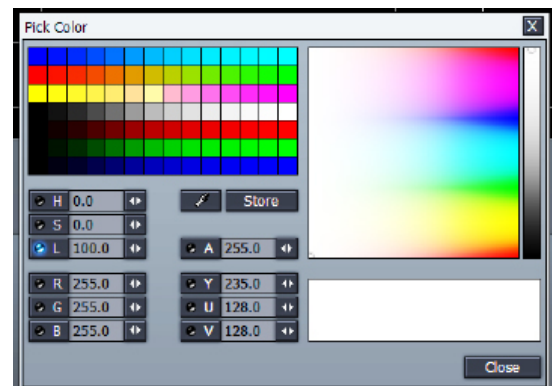
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With a few elements created, now we'll make them a little more interesting to look at by changing the color, and adding a border and shadow.

- 1) **Select the Bar.** Click the  button, and then click on the bar you made to make the handles visible.
- 2) **Open the Color Tool.** A simple way to change the color of the bar is to click the color box just below the shape tools in the upper left of the screen. This will open a color picker.




- 3) **Adjust the Color.** The Pick Color window provides several different ways to select the color. The simplest is to click on any one of the small color "chips" at the upper left corner of the window. Click on a darkish-blue shade. The Bar should change to this color.

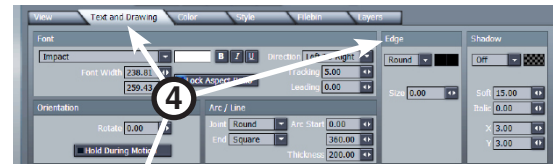


Next, click on your name (it should show handles), and then click on a shade of yellow.

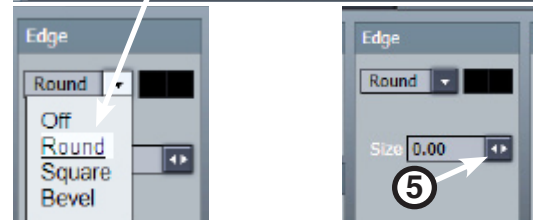
Click the "Close" button to close the window.

- 4) **Add a Border.** Sometimes text can be hard to read when superimposed over the picture from a camera. Adding a "Border" (a line of contrasting color that surrounds the letter) will improve this.

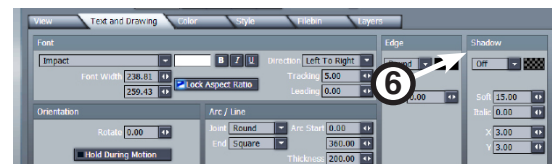
Click the "Text and Drawing" tab at the bottom of the screen, and locate the "Edge" section on the right side. Then, click on the  button, and click the line that reads "Round". A thin outline should appear on your text.




- 5) **Adjust Border Size.** Click and drag the mouse left or right over the buttons next to the "Size" control to increase/decrease the thickness of the line.

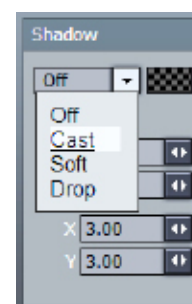


- 6) **Add a Shadow.** On the same menu screen, look for the "Shadow" menu, just to the right of the Edge controls you just used.



Mouse click on the  button near the top, and select the "Cast" option. This should make a small shadow appear behind and below your text.


To adjust the size and position of the shadow, change the X value (left and right) and the Y value (up and down).



NOTE: You can also change the color and transparency of the Border and Shadow if desired.

About Layers:

Each item you make in the CG -- text, shape, etc. -- occupies a “Layer”. When you add a new object, it appears “in front” of any other objects you have created. By creating the Bar first, and the text next, you can now move the text so the bar becomes a background for the text.

- 1) **Move the Text.** Click the  button, and then “drag” your name text down so that it is centered over the bar you created.
- 2) **Adjust the Layers.** If you ever create objects not in the correct order for them to “stack” the way you want, you can select an object, and move it forward or backward using the buttons below the Shape Tools. You may have to click the button several times to move the object to the desired layer.
- 3) **Add Pages.** To create a new page, simply click in the open area in the “Pages” box, where the mini versions of the page.


You can also create a copy of the page you’ve already made, and then use it as a template to create similar pages.

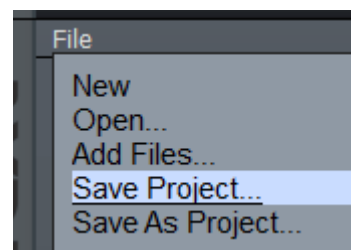
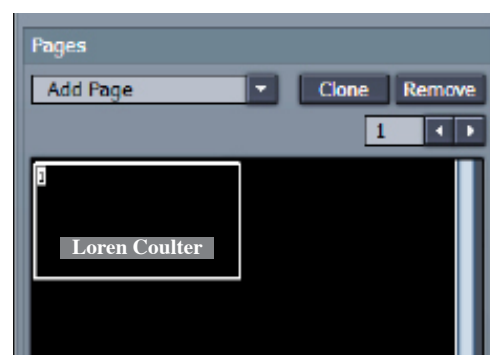
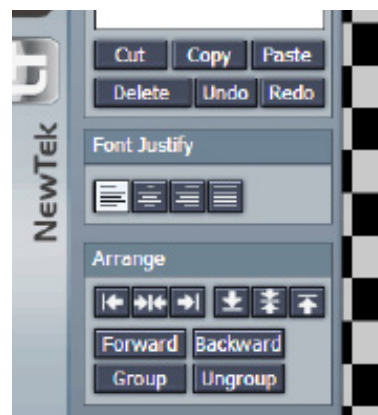
Click the “Clone” button to duplicate a page.

- 4) **Display a Page.** During the actual recording of the Studio production, your job as CG operator will be to call up the pages as needed in the show.

The Switcher operator actually controls when the page is displayed, but you control which page is available for showing.

Select the page needed for the show from the “thumbnail” images in the “Pages” section. That page should appear in the main Edit Screen.

- 5) **Save Your Work.** Remember to save frequently, so you don’t lose much work if things go bad. You already created a project earlier, so now you can just go to the “File” menu, and select “Save Project”. The CG will save all the pages at once.
- 6) **Make it “LIVE”.** Click the red  in the Play section at the upper right of the screen. The page should appear in the small window just to the right of the Live button. It should also display the page number in the box just below the image.



Basic Studio: Recording the Show

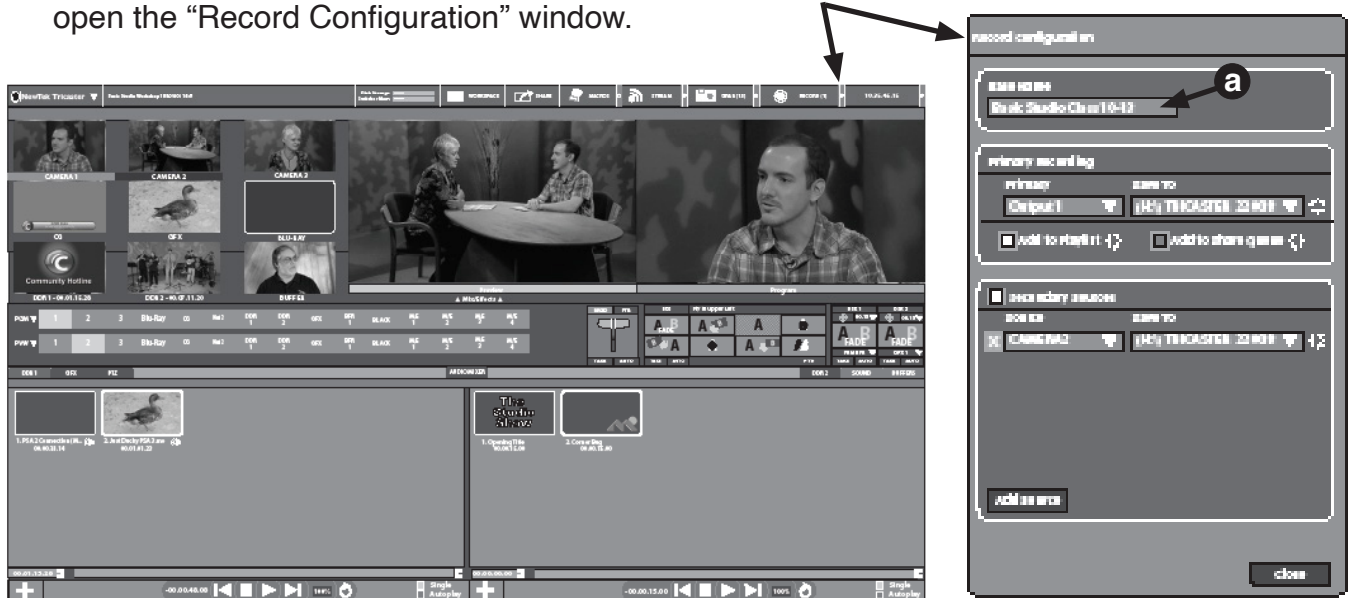
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The “Recordist” crew member has 2 main responsibilities on a production: Making sure that the show gets recorded properly, and; Cueing-up and playing any pre-recorded videos.

Preparing to Record:

The Tricaster records video on Hard Disk Drives. While the Tricaster has 4 built-in hard drives, you will normally attach a small external “Solid State Drive” (SSD) for making your primary recording (see page 4). The SSD makes it easier to quickly transfer your show footage to the editing or Playback facilities when you are done shooting.

- 1) **Set The Record Parameters.** On the menu at the top of the Interface Monitor screen is the RECORD button. At the right edge of the button is a ⚙ gear symbol. Click on the gear to open the “Record Configuration” window.



- 2) **Name The Record.** Use the Tricaster Mouse to click into the “Base Name” field, and then type the name of the show and the date, as “Basic Studio Show 10-24-13”
- 3) **Configure the Primary Recording.** The “Primary Recording” is your main recording of the show, and will record whatever you see on the PROGRAM monitor.
 - a) Set the pop-up “Primary” menu to “OUTPUT 1” (Program)
 - b) Set the “Save To” option to (H:\)TRICASTER 220GB (the 220GB number will vary).
 - c) Click the ⚙ button to the right of the “Save To” and select “Quicktime Movie 4:2:0”.
 - d) Check the “Add to Playlist” option (the button will light blue when on)
- 4) **Start Recording.** A minute or two before you begin the show:
 - a) Left Mouse Click the RECORD button at the top of the Interface Monitor. It should change to red, and begin counting up from 00:00:00:00.
OR
 - b) Push the REC button at the top of the Switcher. It should light red. The RECORD button at the top of the Interface Monitor will also turn red, and begin counting.
- 5) **Stop Recording.** A few moments after you end your production:
 - a) Left mouse click the RECORD button at the top of the Interface Monitor again. It should change back from red to gray when recording stops.

Notes:

[illegible]

