

CERTIFIED TRAINING CURRICULUM

for the TriCaster 850 EXTREME, 850, 450 EXTREME and 450



Activities

Certified Training Curriculum Activities

for the TriCaster 850 EXTREME, 850, 450 EXTREME and 450

This is the Activities book for the Certified Training Curriculum for the TriCaster 850 EXTREME, 850, 450 EXTREME and 450. It contains an Activities Summary and the Detailed Activities to be performed by learners under the guidance of the instructor.

Activities are written for an operational TriCaster 850 Extreme™ model. The activities assume the included stock NewTek content is present. To the greatest extent possible, activities are written to be possible without live camera inputs; however, since the most effective training simulates an actual live production environment, instructors are encouraged to substitute live inputs for the DDRs or still graphics whenever appropriate.

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Revised March 2012.

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Activities Summary

Module 1: Physical Setup

#1: Attach Computer Connections

Mod. 1: a

Learners attach all the various computer-related connections to the TriCaster and ensure the cables hang safely and securely. If the back of the TriCaster is inaccessible, the instructor may prefer to have learners point to the appropriate connections on a photograph of the back, rather than actually attach cabling.

3 min.

#2: Attach Video Connections

Mod. 1: b, c

Learners attach all the various permutations of video input and output connections to the TriCaster and ensure the cables hang safely and securely. The connection types are both input and output for: SDI, YUV component, Y/C, composite, and HDMI. Also, learners hook up genlock and a fill and matte connection. If the back of the TriCaster is inaccessible, the instructor may prefer to have learners point to the appropriate connections on a photograph of the back, rather than actually attach cabling.

5 min.

#3: Attach Audio Connections

Mod. 1: d, e

Learners attach the various types of audio input and output connections to the TriCaster and ensure the cables hang safely and securely. The connection types are XLR, AES/EBU, and SDI embedded audio. Also, learners hook up a timecode signal and four line-level inputs to be combined with the Line Quad function. If the back of the TriCaster is inaccessible, the instructor may prefer to have learners point to the appropriate connections on a photograph of the back, rather than actually attach cabling.

5 min.

Module 2: Registration

#4: Register a TriCaster

Mod. 2: a, b

Learners go through the registration process for a TriCaster. The instructor may prefer to simulate this process, rather than setting up an unregistered TriCaster.

10 min.

#5: Restore a TriCaster

Mod. 2: c

Learners go through the process of restoring a TriCaster. The instructor may prefer to simulate this process, rather than actually restoring a

5+ min.

machine.

#6: Update a TriCaster

Mod. 2: d

Learners go through the process of updating a TriCaster. The instructor may prefer to simulate this process, rather than actually updating a machine.

5+ min.

Module 3: Session Setup

#7: Create and Configure a New Session

Mod. 3: a, b, c, d, e, h, i, j

Learners create a new session, configure the inputs, set up genlock, set up timecode, set the production clocks, configure the Multiview output, configure auxiliary output, set SD analog connections, and select record settings according to provided scenarios which simulate the needs of a live production.

12 min.

#8: Adjust a Color Bar Still Using Proc Amps

Mod. 3: f

Learners adjust a set of color bars using Brightness, Contrast, Hue, and Saturation. The color bar frames being adjusted are pre-made such that one of the four controls will correct it. The activity does not cover the White Balance controls.

12 min.

#9: Session Management

Mod. 3: k

Learners back up, restore, rename, and delete a session. They start by backing up an existing session, then restore it to a different media drive if available (or the same one, if not). Then they rename the backed up session; then delete it. This process should leave the TriCaster sessions as they were before the exercise.

10 min.

Module 4: Media Management

#10: Manually Import Media

Mod. 4: a, c

Learners manually place various types of supported media files in the proper location for a session using a Windows™ Explorer window. Media can be taken from USB drives, removable media drives, or other sessions on the same media drive as the current session. (This is not the typical way media are imported; the main purpose of this exercise is to teach the learner how a session's directories are structured.)

3 min.

- #11: Import Media Using the Media Browser** Mod. 4: b, c
 Learners import various types of supported media files into a session using the Import Media Browser. Media can be taken from USB drives, removable media drives, or other sessions on the same media drive as the current session. (This is the preferred way media to import media.) 3 min.
- #12: Install and Eject Media Drives** Mod. 4: d
 Learners properly install and eject media drives in a TriCaster while its running. 3 min.
- #13: Export Media** Mod. 4: e
 Learners populate the Export Media window with various media to be exported, set the export parameters, and export to a specified location. 5 min.

Module 5: LiveText

- #14: Create an Editable LiveText Title Page** Mod. 5: a, b, c, d
 Learners create an editable LiveText Title page using a supplied texture (or some other element), create a new LiveText project, edit an already existing Title page, and use some LiveText drawing tools. This activity is only meant to give the basics of LiveText, not all its functionality. It assumes LiveText is run on the TriCaster, not an external, networked computer. (To edit the Title page in a playlist, see activity #19.) 10 min.

Module 6: Playlists and Media Players

- #15: Populate Playlists with Media** Mod. 6: a, b, e
 Learners populate the DDRs, Stills, Titles, and Sounds playlists with appropriate media and put a still in the Framebuffer. The media files are chosen and arranged according to provided requirements which simulate those of a live production script. 10 min.
- #16: Work with a Single Media File** Mod. 6: c
 Learners manipulate the controls that affect individual media files in playlist. These include the duration, transport controls, trimming and scrubbing, volume, and headroom. 7 min.
- #17: Work with Media Player Controls** Mod. 6: c
 Learners manipulate the controls that affect all media files in playlist. These include Single, Autoplay, Loop, playback speed, the time display, and warning colors. Single, Autoplay, and Loop are configured to meet provided 10 min.

requirements which simulate live production situations.

#18: Media Player Presets Mod. 6: d
Learners create, delete, rename, export, and import media player presets. 5 min.
Learners experience the preset “gotcha” by intentionally interrupting Program Out by activating a DDR preset when live.

#19: Edit LiveText Title Page Mod. 6: f
Learners change the editable properties of a LiveText Title page, including 2 min.
font, size, bold, italics, underline, the image, and spelling. (To create Title pages, see activity #14.)

Module 7: LiveMatte and Virtual Inputs

#20: LiveMatte Setup Mod. 7: a, c
Learners set up the LiveMatte keyer on an input, DDR, or other source and 5 min.
turn on/off that key using the source monitor indicator light.

#21: List Factors that Affect Key Quality Mod. 7: b
Learners list the on-set factors that affect key quality and describe how to 2 min.
change them to improve key quality.

#22: Virtual Input Setup Mod. 7: d
Learners set up a Virtual Input to put a keyed person over a camera input 5 min.
or still image with a picture-in-picture and an overlaid lower 3rd graphic.
This does not include a virtual set, just setting up the Virtual Input.

#23: LiveSet Setup Mod. 7: e, f
Learners set up a front, left, and right virtual set for a three-camera shoot 8 min.
such as you might find on an interview or news show. Learners switch
between the Virtual Inputs while live, switch the B source while live, and
use the zoom feature.

#24: Virtual Input Presets Mod. 6: d; 7: f
Learners create, delete, rename, export, and import Virtual Input presets. 5 min.
Learners experience the preset “gotcha” by intentionally interrupting
Program Out by activating presets when live.

Module 8: Audio Setup

#25: Basic Audio Setup and Controls

Mod. 8: a, b

Learners configure the external audio inputs, and use the Balance, Mono, Mute, Pan, Trim, and Talk controls to adjust the audio of various sources.

7 min.

#26: Check a Microphone During a Production

Mod. 8: b, c

Learners check if a microphone is operational during a live production without disturbing Program Out by using Mute, Solo, and the Headphone output.

5 min.

#27: Use Follow and Grouping

Mod. 8: d, e

Learners use the Follow and Grouping controls to set up audio follow video and a mix-minus.

8 min.

#28: Audio Mixer Presets

Mod. 6: d; 8: h

Learners create, delete, rename, export, and import audio mixer presets. Learners experience the preset “gotcha” by intentionally interrupting Program Out by activating an audio mixer preset when live.

5 min.

Module 9: Network Inputs

#29: Use a PC or Macintosh™ as a Networked Input with iVGA

Mod. 9: a, b, c, d, e, f

Learners install and run iVGA on a networked PC or Macintosh™, use that computer as a network input, and set various iVGA functions, such as Privacy and Zoom. The instructor may want to simulate learner setting up the network in Windows™.

8 min.

Module 10: Streaming

#30: Stream to the Internet

Mod. 10: a, b

Learners set up a content delivery network (CDN) account and the streaming profiles for both a Windows Media™ and Flash® push stream. They then test the stream and start an actual stream. After, they locate the saved stream on the media drive. The instructor may want learners to simulate setting up the CDN account.

8 min.

Module 11: Live Operation

#31: Live Switching

Mod. 11: a, b, c, i

Learners set and un-set the Tabs Follow Preview and the Audio Tabs Open Together preferences. They rename input monitors and buttons. They start and stop recording the Program output. They switch Program Out sources by clicking directly on the Program bus buttons, by clicking on the input monitors, and by placing sources on the Preview bus then performing a Take or transition. They load and adjust transitions. 7 min.

#32: Use the DSKs

Mod. 11: d, e, f

Learners bring graphics with alpha channels on and off Program Out with the DSKs. They adjust the DSK positioning controls. 5 min.

#33: Utility Bus and Transition Delegate

Mod. 11: g, h

Learners delegate the Utility bus sources, explore the different transition delegate options, and correlate the Preview monitor with the different states of the transition delegate. 7 min.

#34: Grab Frames While Live

Mod. 11: i

Learners choose a base filename, grab frames, de-interlace them when necessary, add them to the current Stills playlist, and find the saved frames on the media drive. This activity is most effective when something is playing on Program Out. 2 min.

#35: Operate the Control Surface

Mod. 11: j

Learners do all operations on the Control Surface that can be done with the keyboard and mouse as well as those that can only be done on the Control Surface. This activity can be considered to have been accomplished if the learner uses a Control Surface for all the other activities in the curriculum and does the additional activities that can only be on the Control Surface. 10 min.

Activities Details

1) Module 1: Physical Setup

#1: Attach Computer Connections

Description: Learners attach all the various computer-related connections to the TriCaster and ensure the cables hang safely and securely. If the back of the TriCaster is inaccessible, the instructor may prefer to have learners point to the appropriate connections on a photograph of the back, rather than actually attach cabling.

Objective: Be able to correctly attach the keyboard, mouse, Control Surface, network, power cables, an external eSATA hard drive, and tally light connections and ensure the cables hang safely and securely.

Initial Conditions: A TriCaster with the included computer components and cables, a Control Surface, an external eSATA hard drive, a network connection, and a tally light cable.

Steps:

- A. Attach each of the cables and/or devices to the proper connector on the machine. Screw in the fasteners on any connection that has them.
- B. When done, ensure the cables hang in such a way that people walking by won't trip on the cables or pull them out.

Things to Watch Out for: Hooking both power cords to the same power source. Cables not secured, not screwed in, or hanging where operators might trip over them or cause them to become unplugged.

Questions to Test Mastery: How many USB ports are there on the TriCaster? What network connection speed does the TriCaster support? Why are there two power supplies and to what power sources should they be connected? What are tally lights for? Will a 450 Control Surface work on an 850? Name at least two reasons why cabling should be hung so people won't get tangled in them.

Time Required: 3 minutes.

#2: Attach Video Connections

Description: Learners attach all the various permutations of video input and output connections to the TriCaster and ensure the cables hang safely and securely. The connection types are both input and output for: SDI, YUV component, Y/C, composite, and HDMI. Also, learners hook up genlock and a fill and matte connection. If the back of the TriCaster is inaccessible, the instructor may prefer to have learners point to the appropriate connections on a photograph of the back, rather than actually attach cabling.

Objective: Be able to correctly attach all the various permutations of video input and output connections to the TriCaster and ensure the cables hang safely and securely. Be able to correctly attach a genlock signal.

Initial Conditions: A TriCaster and cables for each of the possible input and output types of connections (analog, digital, component, composite, HDMI, and genlock.)

Steps: A. Attach the cabling for each of the different types of input and output connections. Attach a genlock connection.

B. When done, ensure the cables hang in such a way that people walking by won't trip on the cables or pull them out.

Things to Watch Out for: Putting cables on the wrong connector, such as mixing up R, G, and B cables for a component connection. Attaching fill and matte to the wrong input numbers.

Questions to Test Mastery: Given various input and output scenarios, describe how the audio/video cabling is attached to the TriCaster. Can the TriCaster output digital and analog from the same output row at the same time? Can the TriCaster output component and Y/C from the same output row at the same time? Describe how a fill and matte connection is hooked up. What signals are on each cable of a fill and matte connection? What is the purpose of genlock? What things can generate a genlock signal? What are the advantages of using genlock? Name at least two reasons why cabling should be hung so people won't get tangled in them.

Time Required: 5 minutes.

#3: Attach Audio Connections

Description: Learners attach the various types of audio input and output connections to the TriCaster and ensure the cables hang safely and securely. The connection types are XLR, AES/EBU, and SDI embedded audio. Also, learners hook up a timecode signal and four line-level inputs to be combined with the Line Quad function. If the back of the TriCaster is inaccessible, the instructor may prefer to have learners point to the appropriate connections on a photograph of the back, rather than actually attach cabling.

Objective: Be able to correctly attach the various types of audio input and output connections to the TriCaster and ensure the cables hang safely and securely. Be able to correctly attach a timecode signal.

Initial Conditions: A TriCaster and cables for each of the possible input and output types of connections (XLR, AES/EBU, and SDI embedded.)

Steps: A. Attach the cabling for each of the different types of input and output connections. Set up cables for combining four line-level inputs into one set of controls (Line Quad). Attach a timecode connection.

B. When done, ensure the cables hang in such a way that people walking by won't trip on the cables or pull them out.

Things to Watch Out for: Attaching a line level input then configuring it as Mic in the Audio Mixer or configuring a connected microphone as Line. Connecting a timecode signal to the wrong input. Connecting an AES/EBU connection to an SDI connector.

Questions to Test Mastery: How many channels of audio does the TriCaster take from an embedded SDI signal? How many channels of analog audio can be input into on TriCaster 850? A timecode signal is connected to which connection? Name at least two reasons why cabling should be hung so people won't get tangled in them.

Time Required: 5 minutes.

2) Module 2: Registration

#4: Register a TriCaster

Description: Learners go through the registration process for a TriCaster. The instructor may prefer to simulate this process, rather than setting up an unregistered TriCaster.

Objective: Be able to register a TriCaster and clear the watermark.

Initial Conditions: A new or just restored TriCaster connected to the Internet.

Steps:

- A. Boot the TriCaster and activate Microsoft Windows™.
- B. Accept the TriCaster End User License Agreement. Register by going to <http://register.newtek.com> from the Register TriCaster dialog box.

Things to Watch Out for: Difficulty locating the TriCaster registration number.

Questions to Test Mastery: When does a TriCaster need to be registered? What happens if the TriCaster is not registered? Where do you find the TriCaster serial number?

Time Required: 10 minutes.

#5: Restore a TriCaster

Description: Learners go through the process of restoring a TriCaster. The instructor may prefer to simulate this process, rather than actually restoring a machine.

Objective: Be able to restore a TriCaster to factory defaults and state what files are and are not overwritten by doing this. Be able to decide if the system should be updated after restoring.

Initial Conditions: Any TriCaster with correctly functioning hardware. Access to the Internet.

Steps:

- A. Boot the TriCaster and choose Restore to Factory Defaults from the Utilities menu. If the TriCaster will not successfully boot to the TriCaster software, choose Restore Factory Defaults from the Windows™ Boot Manager screen.

B. Power off the TriCaster, then restart it.

C. Re-activate Windows™, re-register the TriCaster, install all updates to the TriCaster, re-install any add-ons previously on the machine, restore any files saved from the C drive before the restore was done.

D. State what important files are/are not overwritten when doing a system restore.

E. State what actions must be taken after doing a system restore.

Things to Watch Out for: Failing to backup whatever files from the C drive the operator may want to save, such as saved Presets, saved Virtual Set Editor projects, or saved Animation Store Creator projects.

Questions to Test Mastery: Why do you need to update the TriCaster after doing a restore? Does any of the media from the removable media drives get erased by doing a restore? Name some files an operator may want to save from the C drive before doing the restore. What is the file path to the Virtual sets and animation store transitions that need to be backed up before doing a restore? What is the file path to the custom presets that need to be backed up before doing a restore? What's the difference between the process of starting the restore for a machine that is booting into Windows™ and one that is already at the home page?

Time Required: 5 minutes plus the time during which the TriCaster is writing files to the hard drive (15 to 30 minutes).

#6: Update a TriCaster

Description: Learners go through the process of updating a TriCaster. The instructor may prefer to simulate this process, rather than actually updating a machine.

Objective: Be able to update the TriCaster software.

Initial Conditions: Any properly functioning TriCaster connected to the Internet.

Steps: A. Choose Update TriCaster from the Utilities menu. Download the update file.

B. Exit to Windows™, run the update file, and follow the instructions.

Things to Watch Out for: Performing an update too close to the start of a live production.

Questions to Test Mastery: Should Windows™ updates be performed on the TriCaster? Should the TriCaster hardware ever be upgraded or changed? How much time should you allow before needing to use the TriCaster for a live production when updating? Is it possible for features to change or be added by doing an update? Where can you find the currently installed version of the software and hardware?

Time Required: 5 minutes plus the time during which the TriCaster is writing files to the hard drive (10 to 20 minutes).

3) Module 3: Session Setup

#7: Create and Configure a New Session

Description: Learners create a new session, configure the inputs, set up genlock, set up timecode, set the production clocks, configure the Multiview output, configure auxiliary output, set SD analog connections, and select record settings according to provided scenarios which simulate the needs of a live production.

The learner creates and configures a session according to those needs, then the instructor evaluates the created session using the scenario as a standard. Where a parameter is not specified by the scenario, the learner may choose any setting which does not interfere with the output or operation of the live production.

Objective: Be able to create a new session, configure the inputs, set up genlock, set up timecode, set the production clocks, configure the multi-view output, configure auxiliary output, set SD analog connections, and select record settings according to a set of specifications.

Initial Conditions: A multi-standard TriCaster is better, though not necessary. The instructor should prepare production scenarios which include: the name of the live event; the external inputs to be used, including signal resolution and format and if any are fill and matte; what type of genlock, if any, to be used; what type of timecode, if any, to be used; the start time and expected length of the production; how the Multiview output is to be used; what the auxiliary output needs to feed; for an SD production, what analog output connections are required; the desired recorded streams and their formats. The greater the number and variety of scenarios, the more effective the learning will be.

Steps:

- A. Set the parameters on the Home page for a new session according to the specification. Start the session.
- B. Configure the inputs according to the specification.
- C. Set the genlock, timecode, and start and end production clock as applicable.
- D. Set the Multiviewer, auxiliary outputs, and SD analog connections according to the specification.
- E. Set the recording streams according to the specification.

Things to Watch Out for: Failure to name the new session. Placing an input to be used as the fill of a fill and matte configuration on an even numbered input. Not placing the matte source on the next higher input from the fill source. Not using the Subtract 12 hours function for productions which might go past mid-night. Not setting the auxiliary output analog connections. Recording more than two streams per media drive. Recording more than one h.264 or MOV stream in one production.

Questions to Test Mastery: How does the TriCaster name a session if the operator doesn't specify a name? How might that cause problems? What kinds of devices generate fill and matte outputs? Where is NTSC-J television broadcast? What does genlock do? When is it important to record time code? Which record formats record time code? How can you tell external timecode is being used? How can you tell what the resolution of the session is by looking at the live desktop? What will happen to an analog SD output if the analog output is not configured correctly? What are some reasons to choose one particular record format over another?

Time Required: 12 minutes.

#8: Adjust a Color Bar Still Using Proc Amps

Description: Learners adjust a set of color bars using Brightness, Contrast, Hue, and Saturation. The color bar frames being adjusted are pre-made such that one of the four controls will correct it. The activity does not cover the White Balance controls.

Objective: Be able to correct into NTSC specification four color bar stills using Brightness, Contrast, Hue, and Saturation.

Initial Conditions: Four pre-made color bar frames which need correcting using each of the four main Proc Amps controls.

To make these frames, take the included color bars frame, then adjust it out of specification using, for example, Brightness, then grab that frame. Do this for the other three controls. The learner should then be able to move these frames back into specification using the Proc Amp controls.

Steps: A. Load one of the color bar frames into the Stills player. Using the Proc Amp, adjust the frame to bring it into NTSC specification.

B. Repeat for all misadjusted frames.

Things to Watch Out for: Learners have a tendency to over-tweak, to use too many adjustments, and to spend too long to try to get the graphs "exactly" right.

Questions to Test Mastery: What tool shows the luminance values of a video signal? What tool shows the color values of a video signal? What controls are used to adjust luminance or brightness of the signal? What controls on the proc amp are used to adjust color? What are the NTSC high and low specifications for Brightness values? How can you tell when the Hue and Saturation values are set correctly?

Time Required: 2 minutes.

#9: Session Management

Description: Learners back up, restore, rename, and delete a session. They start by backing up an existing session, then restore it to a different media drive if available (or the same one, if not). Then they rename the backed up session; then delete it. This process should leave the TriCaster sessions as they were before the exercise.

Objective: Be able to back up, restore, rename, and delete a session.

Initial Conditions: At least one already existing session with both internal and external media in the playlists.

Steps: A. Go to the Session page for a session. Choose Back up Session from the Manage menu. State the difference between the two options presented regarding media external to the session. Choose a location to store the back up.

B. On the Home page, choose Restore Backup Session... on a different drive than the backed up session came from (if available). Navigate to and select the backed up session.

C. Right-click on the backed up session and choose Rename from the context menu. Choose a new name for the session.

D. Right-click on the newly renamed session and choose Delete from the context menu to delete the session.

Things to Watch Out for: Failing to include external media when backing up a session.

Questions to Test Mastery: What is the difference between media that is internal (or local) to the session and media that is external to the session? Is media that is external to the session automatically backed up during a session backup? Once a session is backed up, is it deleted from the TriCaster? Sessions are restored from which page of the TriCaster interface? Sessions are backed up from which page of the TriCaster interface?

Time Required: 10 minutes.

4) Module 4: Media Management

#10: Manually Import Media

Description: Learners manually place various types of supported media files in the proper location for a session using a Windows™ Explorer window. Media can be taken from USB drives, removable media drives, or other sessions on the same media drive as the current session. (This is not the typical way media are imported; the main purpose of this exercise is to teach the learner how a session's directories are structured.)

Objective: Be able to manually place the various types of supported media files from external drives, the current media drive, and other internal media drives in the proper location for a session using a Windows™ Explorer window opened from the session page.

Initial Conditions: Be on the Session page of an existing session. Have media of various types (video clips in different popular formats, stills graphics, title graphics, and audio files) ready to be placed in the current session. Some of the media should be on an external drive, some on a second internal TriCaster media drive, and some in a different session on the same media drive as the current session. An external USB drive should be connected to the TriCaster and recognized by the system.

Steps:

A. Go to the Session page for a session. Click on the Manage icon on the icon ring. Click any of the lines under Browse except SpeedEDIT Projects or LiveText Editor Projects. A Windows™ Explorer window opens.

B. One-by-one, navigate to the location of the media to be imported to the current session, copy the media, then navigate to the appropriate directory in the current session and paste the files. You can open a second Explorer window by clicking on one of the lines under Browse and dragging files between windows.

Things to Watch Out for: Files placed in a directory which holds a different type of media. Transferring video files that should be transcoded first.

Questions to Test Mastery: Explain how the media directories for a session are structured. What is the difference between media that is external to the session and local (or internal) to the session? What are the dangers and/or symptoms of media being placed in the wrong directory? Which types of video clips, still images, and audio files are supported by the TriCaster? Are there any popular video formats not natively supported by the TriCaster?

Time Required: 3 minutes.

#11: Import Media Using the Media Browser

Description: Learners import various types of supported media files into a session using the Import Media Browser. Media can be taken from USB drives, removable media drives, or other sessions on the same media drive as the current session. (This is the preferred way media to import media.)

Objective: Be able to import several different types of media at once into a session using the Import Media Browser.

Initial Conditions: Be on the Session page of an existing session. Have media of various types (video clips in different popular formats, stills graphics, title graphics, and audio files) ready to be placed in the current session. Some of the media should be on an external drive, some on a second internal TriCaster media drive, and some on the same media drive as the current session. An external USB drive should be connected to the TriCaster and recognized by the system.

Steps: A. Go to the Session page for a session. Click the Manage icon on the icon ring. Click the Import Media button. An Import Media window opens. Click Add and navigate to the location of the media to be imported to the current session. You can select files individually, or multi-select.

B. As you select files to import, the Import Media Window is populated with a queue of items to import. Some of the clips may have a Transcode checkbox which is either forced to stay checked, not able to be checked, or can be checked at the operators discretion. Click Import.

Things to Watch Out for: Not testing clips that could have been transcoded, but which weren't by playing in a DDR before the production starts. Such clips may not play properly in the DDR, and the operator won't know until too late.

Questions to Test Mastery: What is the difference between media that is external to the session and local (or internal) to the session? What are the dangers and/or symptoms of media being placed in the wrong directory? What determines when the operator should enable transcoding for clips when the option is available?

Time Required: 3 minutes.

#12: Install and Eject Media Drives

Description: Learners properly install and eject media drives in a TriCaster while its running.

Objective: Be able to Properly install and eject media drives while the TriCaster is running and state what must be done with media drives before shipping the unit.

Initial Conditions: A TriCaster with one media drive installed and one additional (not yet installed) media drive.

Steps: A. Note the location on the interface (drop-down menu in the upper-right corner) where media drives are recognized by the system. Install the additional media drive. Note that this new drive is added to the drop-down list of installed drives.

B. Select the newly added drive on the drop-down list to eject it, then physically remove the drive. Attempt to select the session drive; note that the system will not let you eject it.

Things to Watch Out for: Trying to eject the session drive. Ejecting a media drive which has media loaded into the current session playlist.

Questions to Test Mastery: Can you remove a non-session media drive while the TriCaster is running? Can you remove the session media drive while the TriCaster is running? What does it mean when a media file icon is ghosted in a playlist? About how many hours of 1080i HD video can be stored on a 2TB drive? About how many hours of SD video can be stored on a 2TB drive? How does iso-recording affect the amount of production time that can be stored on a drive? What needs to be done to the media drives before shipping the TriCaster?

Time Required: 3 minutes.

#13: Export Media

Description: Learners populate the Export Media window with various media to be exported, set the export parameters, and export to a specified location.

Objective: Be able to populate the Export Media window with various media to be exported, set the appropriate Target and Preset, and export to a specified location.

Initial Conditions: Be on the Session page of an existing session. Have media of various types (video clips in different popular formats, stills graphics, title graphics, and audio files) to export from the current session.

Steps: A. Go to the Session page for a session. Click the Manage icon on the icon ring. Click the Export button. An Export Media window opens. Click Add and navigate to the location of the media to be exported from the current session. You can select files individually, or multi-select.

B. When the media are in the Export Media window, select the appropriate setting on the Target dropdown first for each item, then select the appropriate setting on the Preset dropdown for each item. Select the dropdown for Destination and choose a location to receive the files. You can multiple select the items before setting the parameter on the dropdowns to avoid having to set it for each file individually.

Things to Watch Out for: Failing to appropriately set any of the necessary export parameters or the export location.

Questions to Test Mastery: What is the reason for choosing from among the choices of Targets and Preset? Name some uses for an exported file and what Target and Preset settings are right for that use. Is there a way to get a QuickTime file out of the media exporter with no render time? If a web stream was not recorded as a streaming file, is there a way to convert the recorded MPEG file for use on the web? Can a single MPEG file be converted to multiple formats in one pass?

Time Required: 5 minutes.

5) Module 5: LiveText

#14: Create an Editable LiveText Title Page

Description: Learners create an editable LiveText Title page using a supplied texture (or some other element), create a new LiveText project, edit an already existing Title page, and use some LiveText drawing tools. This activity is only meant to give the basics of LiveText, not all its functionality. It assumes LiveText is run on the TriCaster, not an external, networked computer. (To edit the Title page in a playlist, see activity #19.)

Objective: Be able to create an editable LiveText Title page using a supplied texture (or some other element), create a new LiveText project, edit an already existing Title page, and use the LiveText drawing tools.

Initial Conditions: Be on the Session page of a session with an editable Title page in its Titles folder. A texture or some other graphical element stored in a known location.

Steps:

A. Create a new LiveText project. Import an already existing Title page. Make changes to that page and send it to live. Exit the project, saving it. Check that the changes affected the Title page in the Live Desktop.

B. Exit the Live Desktop, and load the project saved in step A. Load the texture or graphic and make a new Title page with it. Add some shapes to the page using the drawing tools and include editable text. Send this page to live. Exit the project, saving it. Check that the changes affected the Title page in the Live Desktop.

Things to Watch Out for: Not saving the final pages as editable pages.

Questions to Test Mastery: Can the internal version of LiveText that comes with the TriCaster be run and used during a live production? When pages are “sent to live,” where can they be found? How do you select several items on a page and move them all as one item? What’s the difference between *Send Current Page to Live* and *Send All Pages to Live*? What is the difference between sending a page to the Live Desktop as a .cgxml versus a .png file? Where in the LiveText interface is external content incorporated into a CG page? Where in the LiveText interface are foreground and background elements adjusted?

Time Required: 10 minutes.

6) Module 6: Playlists and Media Players

#15: Populate Playlists with Media

Description: Learners populate the DDRs, Stills, Titles, and Sounds playlists with appropriate media and put a still in the Framebuffer. The media files are chosen and arranged according to provided requirements which simulate those of a live production script.

Objective: Be able to navigate to and add various types of media files to an appropriate media player and/or the Framebuffer according to a specification.

Initial Conditions: Be in the Live Desktop of a TriCaster with various types of media on the media drive (such as the stock content). The instructor should prepare media requirement lists which include specific video clips for both DDRs, stills, titles, and sounds. The files to be added to playlists should be both local and external to the session so that learner needs to look in different places, such as other sessions or other media drives using the Browse button.

Steps:

A. In each media player, click Add, then navigate to and add media files. Browse to other sessions on the current and other media drives to add media. In folders with many files, use Filtering to locate the desired files.

B. Add a media location to a Media Browser and add media from that location.

C. In a playlist, rearrange the media files by dragging them, singly, and in groups. Duplicate a file using either the right-click context menu or Shift-dragging. Rename and delete a media file.

D. Send a still or title to the Framebuffer.

Things to Watch Out for: Adding media to an inappropriate media player. Being unable to find media which is not in the current session. Adding media from an external (particularly video clips from a USB) drive, rather than importing it.

Questions to Test Mastery: Why should video clips not be added to a playlist from an external USB drive? State what types of media files each of the media players can successfully play. If an inappropriate type of media file is added to a play list, how is that indicated? State the difference between content that is local (internal) to a session versus external to the session.

Name a potential problem with using external media in a session. How does the TriCaster handle mixing 16:9 and 4:3 media? What is the indication that the TriCaster can't find a media file in a playlist? Describe the process of updating a Framebuffer over a network. Does removing a media file from a play list delete it on the hard drive? Does renaming a media file in a playlist rename it on the hard drive?

Time Required: 10 minutes.

#16: Work with a Single Media File

Description: Learners manipulate the controls that affect individual media files in playlist. These include the duration, transport controls, trimming and scrubbing, volume, and headroom.

Objective: Be able to set the duration, transport controls, volume, headroom, and do trimming and scrubbing of media files in all media players.

Initial Conditions: Sufficient media loaded in all media players necessary to perform the activities. Start with Autoplay and Loop off and Single on, turning these on/off only when needed.

Steps:

- A. With several stills loaded in the Still media player, place the Still source on Program Out, then, one-by-one, select different stills to observe the effect on Program Out. Repeat with the DDR and Title media player.
- B. In a DDR, manipulate the Scrub-Bar and the other Transport controls to play, stop, and rewind a clip. Drag the In and Out points to change the length of a clip. Set a clip's volume, headroom, and mute it. (Note, only TriCaster Extreme models have volume sliders on the clip icons.)
- C. In the Sound player, manipulate the Scrub-Bar and the other Transport controls to play, stop, and rewind a sound. Drag the In and Out points to change the length of a sound. Set a sound's volume, headroom, and mute it. (Note, only TriCaster Extreme models have volume sliders on the clip icons.)
- D. In the Still and Title players, set the duration for one file. Set it for multiple files at once.

Things to Watch Out for: Depending on how the instructor conducts the activity, the status of the Single and Autoplay controls may affect the behavior of the media players unexpectedly.

Questions to Test Mastery: Why doesn't the Sound player have the Autoplay button? How is setting the duration of a video clip different than setting the duration for a still or title? Can the duration of multiple stills or titles be set at the same time? What do the three colors of the progress bar mean? Why would you want to mute a video clip or sound, rather than just moving the slider to the bottom in the audio mixer for that media player?

Time Required: 7 minutes.

#17: Work with Media Player Controls

Description: Learners manipulate the controls that affect all media files in playlist. These include Single, Autoplay, Loop, playback speed, the time display, and warning colors. Single, Autoplay, and Loop are configured to meet provided requirements which simulate live production situations.

Objective: Be able to set playback speed, the time display, and warning colors in all media players and be able to set Single, Autoplay, and Loop to meet the needs of specified scenarios.

Initial Conditions: Sufficient media loaded in all media players necessary to perform the activities. Start with Autoplay and Loop off and Single on, turning these on/off only when needed. The instructor should prepare scenarios which require Single, Autoplay, and Loop to be in a specific configuration so that when that media player is brought to Program it performs as specified. (For example: Set DDR 1 so that when brought to Program, all the clips will play through once, then the DDR will transition back to Preview.)

Steps: A. Go to DDR 1, turn on Single, and turn off Loop. Play a clip which is at least 12 seconds long. Observe the warning colors and turn them on and off. Observe the time counter and set it to count up, then to count down. Set the playback speed to as high as it will go, then as low, and observe the effect on playback.

B. Stop the playback, turn Loop on, play the clip again and observe the difference in behavior. Turn Loop off and turn Single off, play the clip

again, and observe the behavior. Predict what would happen with Single off and Loop on.

C. Turn Single on and Loop off. Note what clip is cued in the DDR and switch Program Out back and forth between DDR 1 and some other source. Observe that the DDR doesn't play the clip. With the other source on Program Out and the DDR 1 on Preview, turn on Autoplay. Now Take the DDR to Program Out and observe the behavior. Now turn off Single and Take the DDR to Program Out again and observe the behavior. Predict what would happen with Loop on.

D. Give the Learner different desired behaviors of a media player and have them set it up to meet the specification. Repeat steps C and D with the Still (or Title) and Sound players.

Things to Watch Out for: Depending on how the instructor conducts the activity, the status of the Single and Autoplay controls may affect the behavior of the media players unexpectedly.

Questions to Test Mastery: What is the fastest and slowest that playback speed can be set to? Do you prefer the warning colors to be on or off? What are situations in which you would want the time display to count up? Down? Do the DDRs, Stills, and Titles players all have the Autoplay button? How do you get a DDR to play just one clip in a list of clips when using Autoplay?

Time Required: 10 minutes.

#18: Media Player Presets

Description: Learners create, delete, rename, export, and import media player presets. Learners experience the preset "gotcha" by intentionally interrupting Program Out by activating a DDR preset when live.

Objective: Be able to create, delete, rename, export, and import media player presets. Become aware of the possibility of disrupting Program Out by activating presets for a live media player. State the drive on which the presets are stored and give the implications of this with regard to performing a system restore.

Initial Conditions: Some particular configuration set up in a media player in the first preset. This is most dramatic when done in a DDR with moving video observable on Program Out.

- Steps:**
- A. In the already configured media player, switch to the second preset. Add different media than the first one. Switch back and forth between the presets.
 - B. Rename one of the presets. Set up a third preset, then delete it. Export one of the remaining presets. Go to an “empty” preset, and import the previously exported one. Make some changes to it, so all existing presets are different.
 - C. Place the media player with more than one preset on Program Out. Activate the other preset and observe the effect on Program Out of changing presets. This is most dramatic when done in a DDR with moving video.
 - D. Navigate to and find a stored preset in its default location. State the implications of this location with regard to performing a system restore.

Things to Watch Out for: Make sure learners understand that changing presets on a live media player will change what is seen on Program Out.

Questions to Test Mastery: Is there any implication for saved presets by doing a system restore? Name reasons for storing the presets in either the default location or some other location. Why does there seem to be a delay in loading sometimes when changing presets, and how can that be prevented? Navigate to and find a saved preset. What tabbed modules (media players) in the TriCaster do not have presets?

Time Required: 5 minutes.

#19: Edit LiveText Title Page

Description: Learners change the editable properties of a LiveText Title page, including font, size, bold, italics, underline, the image, and spelling. (To create Title pages, see activity #14.)

Objective: Be able to edit the properties, image, and spelling of a LiveText Title page.

Initial Conditions: A LiveText Title page with an editable image in the Still playlist.

- Steps:
- A. Open the Edit Title panel for a Title page. Change the font, size, bold, italics, and underline attributes.
 - B. Replace the image. Try each of the three fitting options.
 - C. Type a common word in a text field, but misspell it. Note the red underline. Right-click and choose the correct spelling from the drop-down menu.

Things to Watch Out for: Using the wrong image fitting choice for a replaced image.

Questions to Test Mastery: How would you use a new (not already installed) font in a LiveText Title page? How can you tell if an image or other element on a Title page is editable in the Edit Title window? What are the three fitting options for an image and what do they do? Name the three types of CG pages you can create in LiveText. If you edit a Title page which is live on Program Out, when will the changes go live? How is the External version of LiveText brought into a TriCaster production?

Time Required: 2 minutes.

7) Module 7: LiveMatte and Virtual Inputs

#20: LiveMatte Setup

Description: Learners set up the LiveMatte keyer on an input, DDR, or other source and turn on/off that key using the source monitor indicator light.

Objective: Be able to set up and optimally adjust a LiveMatte key on an input, DDR, or other source for use in a Virtual Input or DSK. Be able to activate/deactivate the key with the indicator light on the source monitor.

Initial Conditions: A talent which is in front of a keyable green (or other color) screen on an input, DDR, or other source.

Steps: A. On the source with the material to be keyed, turn on and adjust the LiveMatte parameters to get the best key.

B. Turn on and off the LiveMatte key using the indicator lights on the source monitor.

Things to Watch Out for: Overdoing any of the controls (tolerance, smoothing, etc.). Turning on/off Crop or Proc Amp instead of LiveMatte. Spill suppressed to the maximum extent possible. Edges not too "hard." Source colors not washed out or turned black and white.

Questions to Test Mastery: How is the color to be removed selected in the interface? What problems come from overdoing the Tolerance, Spill, and Smoothing adjustments? What do the three colored lights on a source monitor do? What colors can LiveMatte key? What inputs is LiveMatte available on in the TriCaster?

Time Required: 5 minutes.

#21: List Factors that Affect Key Quality

Description: Learners list the on-set factors that affect key quality and describe how to change them to improve key quality.

Objective: Be able to state at least three on-set factors that affect LiveMatte key quality and give ways to adjust an on-set setup to improve key quality.

Initial Conditions: None.

Steps: A. State at least 3 factors that affect the quality of a LiveMatte key and how to change them to improve key quality.

Things to Watch Out for: Memorizing the factors rather than understanding them.

Questions to Test Mastery: Name the three factors that affect the quality of a key. How can you control these factors to make a better key? List in order from best to worst the video signal formats to use to pull a LiveMatte key. What can you do on-set to help make a better key? What are some types of shooting situations where it might be hard to pull a good key?

Time Required: 2 minutes.

#22: Virtual Input Setup

Description: Learners set up a Virtual Input to put a keyed person over a camera input or still image with a picture-in-picture and an overlaid lower 3rd graphic. This does not include a virtual set, just setting up the Virtual Input.

Objective: Be able to place any specified source on the Virtual Input A, B, and Overlay busses and resize or reposition that bus. Be able to use a specified overlay transition at a specified speed to bring on/off a graphic.

Initial Conditions: A keyed source (can be a camera input or DDR); typically this would be a person over a green screen. Either a full-screen still in the Stills player or camera input which is different from the keyed source; this will be the background source. A graphic with transparency (such as a lower 3rd) and a full-screen graphic (such one of the city scenes) in the Titles player. The *Default > A over B* virtual set loaded in the Virtual Input.

Steps: A. Open the controls for a Virtual Input. Place a keyed source on the A bus. Place a different source on the B bus. Place the full-screen graphic in the Titles player on the Overlay bus. Use the positioner to move and/or resize the keyed talent on the A bus.

B. Do a Take to bring the Virtual Input Overlay bus on-screen. Use the positioning controls on the Overlay bus to create a picture-in-picture effect, perhaps placing the image as an over-the-shoulder over the keyed talent.

C. Reset the positioning controls for the Overlay bus and do a Take to bring it off-screen. Replace the full-screen graphic with the lower 3rd. Use the Take, Fade, and a transition of your choice to bring the lower 3rd on and off screen. Replace a transition with a different one and change its speed, then run it again.

Things to Watch Out for: Leaving the positioning controls on after using the Virtual Input, thereby causing problems the next time an operator goes to use that Virtual Input.

Questions to Test Mastery: How do you make a Virtual Input transition ping pong? What modifications can be applied to the A, B, or overlay buses in a Virtual Input? What are the three default speeds for a Virtual Input overlay transition? Is it possible to use a transition speed other than the three preset speeds? Is it possible to use a live keyed input as an overlay on a Virtual Input? When working with a Virtual Input, how many layers of graphics can you add? Is it possible to use a non-keyed source as an overlay? Are there any types of transitions that work fine with a full-screen graphic but don't look as good on a lower 3rd?

Time Required: 5 minutes.

#23: LiveSet Setup

Description: Learners set up a front, left, and right virtual set for a three-camera shoot such as you might find on an interview or news show. Learners switch between the Virtual Inputs while live, switch the B source while live, and use the zoom feature.

Objective: Be able to set up a front, left, and right virtual set for a three-camera shoot and switch between them while live. Be able to switch the B source in one Virtual Input and in all three sets by using the FX bus. Be able to set the zoom presets use the manual and animated zoom features while live.

Initial Conditions: Front, left, and right camera shots of one or two people who are in front of a green screen from each angle with LiveMatte set correctly for each. They may be standing or sitting depending on the desired virtual set to be used. The appropriate angle for the left and right shots can be guided by the setup virtual set designed for this purpose. At least two other sources, either from cameras, DDRs, or even full-screen stills.

- Steps:
- A. Choose a virtual set that has Front, Left, and Right versions which is appropriate for sitting or standing, depending on how the talent is staged. Choose a virtual set that has a B monitor. Place the three camera inputs in the appropriate version of the virtual set in three Virtual Inputs and place one of the other sources in the B bus for each set. Switch back and forth between Virtual Inputs to follow the conversation of the talent.
 - B. While remaining on one virtual set, switch between the different B sources. Place the B source on the FX delegated Utility bus, then change all the virtual sets to use FX as the B source. Now switch back and forth between the front, left, and right sets while also switching the B source on the FX bus.
 - C. While remaining on one virtual set, switch between the different zoom presets. Turn on Animated zoom and see the difference. Change zoom presets and zoom again.

Things to Watch Out for: Putting the left and right cameras in the opposite virtual set. Changing the B source on one virtual set, then switching to one of the other views of that set, but not having the same B source.

Questions to Test Mastery: What main switcher channels can be used on Row A of a Virtual Input? What bus row on a Virtual Input is usually used for the talent in a virtual set? What type of external camera control is needed to use the zoom feature in a virtual set? Is it possible to have a source on the onscreen monitor (Input B) in a virtual set, then switch to that source as a full screen view? What would happen if the camera operator moved or zoomed the camera after the virtual set has been set up? Which attributes of a Virtual Input can be changed while that Virtual Input is live without interrupting Program Out? How can you turn on or off the ease-in/out feature of the animated zoom? How can you change what's on the virtual sets' in-set monitor from the main switcher?

Time Required: 8 minutes.

#24: Virtual Input Presets

Description: Learners create, delete, rename, export, and import Virtual Input presets. Learners experience the preset "gotcha" by intentionally interrupting Program Out by activating presets when live.

Objective: Be able to create, delete, rename, export, and import Virtual Input presets. Become aware of the possibility of disrupting Program Out by activating presets for a live Virtual Input. State the drive on which the presets are stored and give the implications of this with regard to performing a system restore.

Initial Conditions: Some particular configuration set up in a Virtual Input in the first preset. This should have a source with moving video observable on Program Out.

Steps: A. In the already configured Virtual Input, switch to the second preset. Configure this Virtual Input differently than the first one. Switch back and forth between the presets.

B. Rename one of the presets. Set up a third preset, then delete it. Export one of the remaining presets. Go to an “empty” preset, and import the previously exported one. Make some changes to it, so all existing presets are different.

C. Place the Virtual Input with more than one preset on Program Out. Activate the other preset and observe the effect on Program Out of changing presets.

D. Navigate to and find a stored preset in its default location. State the implications of this location with regard to performing a system restore.

Things to Watch Out for: Make sure learners understand that changing presets on a live Virtual Input will change what is seen on Program Out.

Questions to Test Mastery: What causes the hidden presets to appear? Is there any implication for saved presets by doing a system restore? Name reasons for storing the presets in either the default location or some other location. Why does there seem to be a delay sometimes when changing presets, and how can that be prevented? Navigate to and find a saved preset. Getting to the options for renaming and import/export is done by? If all the presets for a Virtual Input are not visible, what action makes them visible?

Time Required: 5 minutes.

8) Module 8: Audio Setup

#25: Basic Audio Setup and Controls

Description: Learners configure the external audio inputs, and use the Balance, Mono, Mute, Pan, Trim, and Talk controls to adjust the audio of various sources.

Objective: Be able to configure the external inputs and use the Balance, Mono, Mute, Pan, Trim, and Talk controls.

Initial Conditions: Ideally, the instructor will attach audio inputs of all the following types to the TriCaster: a microphone, a line-level input (such as a mixing board), four line-level sources which can be combined using the Line Quad feature, embedded SDI audio, and AES-EBU audio. Two clips, one loaded into each DDR, with four channels of audio.

Steps: Note: Typically, learners should adjust a control towards one extreme, then towards the other (or turn buttons on, then off), then move the control back to its default location. Encourage learners to observe the effects of these adjustments on both the Master audio VU meters and in the audible audio on the classroom speakers.

A. Open both audio tabs. Set all the input type dropdown menus to the appropriate setting for the audio coming in on that input. Adjust the levels on the VU meters to proper levels.

B. On a DDR playing a clip with four channels of audio, adjust the Balance control. On a stereo source, turn on and off Mono. Mute and unmute an input.

C. On an input set to Mic, adjust the Pan and Trim controls. Turn on and off the Talk control.

D. Set the Auxiliary Audio output to Internal. Play clips in both DDRs that have four channels of audio. Note what channels of each DDR are going out what channels of Auxiliary out.

Things to Watch Out for: Using a Mic input setting for a line input and vice versa.

Questions to Test Mastery: What is the difference between line level and mic level? What are some symptoms of mismatching line and mic levels? What is phantom power and when would you need to use it? What does VU stand for? What colors are appropriate to see on VU meters for good audio volume? What are some typical uses of the 3rd and 4th channels of

audio for those sources that have them? What is the difference between the Balance and Trim controls? What are the sources that can be sent to the Auxiliary audio out? What happens to the DDR audio channels when Auxiliary Out audio is set to Internal? When recording, what happens if the Master audio level gets too loud? How many channels does the Master audio out have?

Time Required: 7 minutes.

#26: Check a Microphone During a Production

Description: Learners check if a microphone is operational during a live production without disturbing Program Out by using Mute, Solo, and the Headphone output.

Objective: Be able to test a source during a live production without disturbing Program Out using Mute, Solo, and the Headphone output.

Initial Conditions: A microphone to be checked.

Steps: A. On an unused input, turn on Mute and Solo.
B. Plug the microphone to be checked into that input. Listen on the headphones while checking the microphone for operability.

Things to Watch Out for: Plugging in the microphone before muting the input will interrupt Program Out.

Questions to Test Mastery: Give examples of other uses or equipment you might test during a live production using this process. Does it matter what order you do these steps in?

Time Required: 5 minutes.

#27: Use Follow and Grouping

Description: Learners use the Follow and Grouping controls to set up audio follow video and a mix-minus.

Objective: Be able to set up audio follow video and a mix-minus configuration.

Initial Conditions: At least three audio inputs coming in to the TriCaster.

Steps: A. Set up a mix-minus using grouping. For example, assume a Skype™ caller is to be brought into the live mix. A networked computer is running Skype™ and is coming into the TriCaster on Network 1 input. Also, assume the other program audio sources are attached to Inputs 1, 2, and 3, and that some clips will be played on a DDR. Place all of these sources in the Green group except the Network 1 input. Set the Auxiliary Out audio to the Green group. The mix-minus is achieved.

B. Set Follow on some audio inputs. For example, suppose a talk show host is interviewing a guest who is taking questions from the live audience. The broadcast audience must be able to hear the host, the guest, and the audience, no matter which one is on camera at the time. At some point, however, a video clip they have been discussing will be played from the DDR. The show's director does not want any of the studio audio to go out over the broadcast while the video clip is playing.

To achieve this result, place the audio inputs for the host, guest, and audience in the Green group and turn on Follow for any (or all) of those inputs. Do not put the DDR in that group.

Things to Watch Out for: When audio sources are grouped, if Follow is on for *any* of them, the Audio Mixer behaves as if it were on for all of them.

Questions to Test Mastery: When do the VU meters show in grayscale? What are some situations in which you would want to set up a mix-minus? What are some situations in which you would want to use audio follow video? What is the effect of enabling Follow for any one member of a group?

Time Required: 8 minutes.

#28: Audio Mixer Presets

Description: Learners create, delete, rename, export, and import audio mixer presets. Learners experience the preset “gotcha” by intentionally interrupting Program Out by activating an audio mixer preset when live.

Objective: Be able to create, delete, rename, export, and import audio mixer presets. Become aware of the possibility of disrupting Program Out by

activating an audio mixer preset when live. State the drive on which the presets are stored and give the implications of this with regard to performing a system restore.

Initial Conditions: Some particular configuration set up in the audio mixer in the first preset. Audio must be going to Program Out from a source.

Steps: A. In the already configured audio mixer, switch to the second preset. Change the levels and/or other setting so that the audio mixer is configured differently than the first preset. Switch back and forth between the presets. Notice that the presets on the Internal and External tabs are the same.

B. Rename one of the presets. Set up a third preset, then delete it. Export one of the remaining presets. Go to an “empty” preset, and import the previously exported one. Make some changes to it, so all existing presets are different.

C. Ensure a source with audio is on Program Out. Activate another preset which changes the settings for the source that is currently live and observe the effect on Program Out of changing presets.

D. Navigate to and find a stored preset in its default location. State the implications of this location with regard to performing a system restore.

Things to Watch Out for: Make sure learners understand that changing presets on a live audio mixer will change what is heard on Program Out.

Questions to Test Mastery: Is there any implication for saved presets by doing a system restore? Name reasons for storing the presets in either the default location or some other location. Why does there seem to be a delay sometimes when changing presets, and how can that be prevented? Navigate to and find a saved preset.

Time Required: 5 minutes.

9) Module 9: Network Inputs

#29: Use a PC or Macintosh™ as a Networked Input with iVGA

Description: Learners install and run iVGA on a networked PC or Macintosh™, use that computer as a network input, and set various iVGA functions, such as Privacy and Zoom. The instructor may want to simulate learner setting up the network in Windows™.

Objective: Be able to install and run iVGA on a networked PC or Macintosh™, to see that computer as a network input, and to set various iVGA functions, such as Privacy and Zoom.

Initial Conditions: A network connection is established between the TriCaster and the computer that is to have iVGA running on it. (See the TriCaster User Guide p.39 for a procedure to set up a network.)

Steps:

- A. Install and run iVGA on a networked PC or Macintosh™.
- B. Use the computer as a TriCaster network input.
- C. Set various iVGA options appropriate for the networked computer, such as Zoom, Privacy, Keynote mode, monitor selection, etc.
- D. Bring a Skype™ call into the TriCaster via iVGA.

Things to Watch Out for: Noisy network causing connection dropping when using Airplay®. Audio feedback when Skyping.

Questions to Test Mastery: How can you tell on the networked computer that iVGA is running? How can you tell it is sending the interface to the TriCaster as an input? Describe the process of using Apple Airplay® as a network input. Describe the process of using LiveText on a networked machine. Describe a reason to use an audio mix-minus when using a networked computer. Where on the system drive is iVGA stored?

Time Required: 8 minutes.

10) Module 10: Streaming

#30: Stream to the Internet

Description: Learners set up a content delivery network (CDN) account and the streaming profiles for both a Windows Media™ and Flash® push stream. They then test the stream and start an actual stream. After, they locate the saved stream on the media drive. The instructor may want learners to simulate setting up the CDN account.

Objective: Be able to set up a CDN account, the streaming account profile, test the stream, stream to the internet, via the CDN, and find the saved stream.

Initial Conditions: The TriCaster can access the Internet and whatever CDN is to stream the production. If simulating setting up a CDN, have an existing CDN account with log-in and password already set up. (See the TriCaster User Guide p.39 for a procedure to set up a network.)

Steps:

- A. Set up a CDN account. Set up the TriCaster streaming profiles to send both a Windows Media™ and Flash® push stream.
- B. Test the stream, then actually stream to the Internet.
- C. Find the saved stream file on the TriCaster media drive.

Things to Watch Out for: Failing to set the video and microphone setting in the Flash® streaming player. Inability to set up or verify a working network or Internet connection.

Questions to Test Mastery: Where is the saved stream stored by default? What determines the type stream file saved? Name some possible complications that can interfere with establishing a network connection? How can you verify the TriCaster can access the Internet?

Time Required: 8 minutes.

11) Module 11: Live Operation

#31: Live Switching

Description: Learners set and un-set the Tabs Follow Preview and the Audio Tabs Open Together preferences. They rename input monitors and buttons. They start and stop recording the Program output. They switch Program Out sources by clicking directly on the Program bus buttons, by clicking on the input monitors, and by placing sources on the Preview bus then performing a Take or transition. They load and adjust transitions.

Objective: Be able to set operating preferences, record Program Out, place sources on the Program output by direct selection on the Program bus, place sources on the Preview bus and switch to them using transitions, and select new transitions and set their parameters.

Initial Conditions: Be in the Live Desktop of a session with media in the playlists. Fade is the selected transition.

Steps:

- A. Set and un-set the Tabs Follow Preview, Audio Tabs Open Together, and observe the difference in behavior. Rename an input monitor and button. Learner chooses which state to leave them in according to his/her operating preference. Start recording.
- B. Change Program Out by directly selecting inputs on the Program bus. Change Program Out by clicking on the input monitors. Change Program Out by placing sources on the Preview bus and performing a Take and Fade. Transition with the T-bar.
- C. Choose other transitions and switch Program and Preview with them. Load new transitions in the transition bank. Change the speed, direction, and Ping Pong behavior of transitions.
- D. Stop recording.

Things to Watch Out for: Forgetting to stop or start recording. Over use of the T-bar to perform transitions.

Questions to Test Mastery: What are some reasons why you would want to rename source monitors or buttons? How can you re-label the monitors on the Multiviewer? When a recording is stopped, what makes it immediately show up in a DDR playlist? How do you change a transition already loaded in the switcher to a different transition in the same position in the transition bank? How do you change the direction a transition runs? How

do you get a transition to run in one direction the first time and the reverse the next time? Why is it generally a bad idea to switch Program Out by directly selecting sources on the Program bus? Approximately what percentage of transitions in a typical professionally produced production are Takes and Fades? Is it generally better to perform a transition with the Auto button or the T-bar? Give an example of a reason for reversing a transition. Is it possible to use speeds for a transition other than the default slow, medium and fast speeds?

Time Required: 7 minutes.

#32: Use the DSKs

Description: Learners bring graphics with alpha channels on and off Program Out with the DSKs. They adjust the DSK positioning controls.

Objective: Be able to select DSK sources, Take and Transition DSKs, and use the DSK positioning controls.

Initial Conditions: Moving video playing on Program Out and graphics with alpha channels in the Still and Title media players. These two graphics should be chosen so that they only partially overlap. It is also possible to use a keyed camera input or a video clip with alpha in a DDR instead of the Still and Title players. A full-frame graphic that doesn't use an alpha channel. The DSK transitions selected are Fade.

Steps: A. Select the graphic with alpha channel in the Still and Title media players. Use the drop-down source selector to make the DSK 1 source the Still play and the DSK 2 source the Title player.

B. Perform a Take on each DSK to see them brought to Program. Take them back off, then bring them both back on with Auto. Auto them back off, choose other transitions in the banks for both, then Auto them off with the new transitions. Load new transitions to replace some in the banks. Change the transition speeds and Auto again. Observe that the transitions auto-reverse.

C. Take both DSKs off of Program Out. Select a full-frame graphic (no alpha channel) in the Still media player. Make the Still player the source for DSK 1. Use the positioning controls to make the graphic an over-the-shoulder-style graphic. Take or otherwise transition this resized and positions graphic over Program Out.

Things to Watch Out for: Leaving the DSK positioning controls on after bringing the keyed source off of Program Out.

Questions to Test Mastery: Can a source with no alpha channel be used in a DSK? If yes, then how? How can you tell the positioner is on for a DSK? What inputs on the switcher can be used as a source for the DSKs? Can all the same transitions used to switch between the Program and Preview busses be used as DSK transitions to bring graphics on and off screen? Which is visible “above” the other, DSK 1 or 2? Why is there no Reverse option for transition direction on the DSKs? What variables are controllable when using the positioner for the DSK?

Time Required: 5 minutes.

#33: Utility Bus and Transition Delegate

Description: Learners delegate the Utility bus sources, explore the different transition delegate options, and correlate the Preview monitor with the different states of the transition delegate.

Objective: Be able to set the four Utility delegate sources, set the transition delegate function to transition any combination of the four video layers, and predict the state of the transition delegate buttons based on the content of the Preview monitor.

Initial Conditions: Moving video playing on Program Out and graphics with alpha channels in the Still and Title media players. These two graphics should be chosen so that they only partially overlap. Have a monitor showing Auxiliary out to show the effects of Aux Out delegation. Start with BKGD as the only selected button on the transition delegate group.

Steps: A. Place DSK 2 on Program out. Select DSK 2 on the Utility delegate group. Cycle through several source choices on the Utility bus to see the effect on Program out. Leave the Still source as the selected one. Do the same for DSK 1 leaving the Title source as the selected one. Note which DSK is “on top” of the other. Also note that the same can be done for FX and Aux Out, but it may not be possible to see this effect.

B. Take the Preview source to Program. Now select the DSK 1 button on the transition delegate group and do another Take. Next do DSK 2. Now select both DSK buttons and do a Take. Now transition BKG, DSK 1, and DSK 2 at the same time.

C. Transition to and from black using FTB. Now do all four layers at once.

D. With different sources on Preview, Program, Still, and Title, predict Transition Delegate status based on look ahead preview. The practice exam on the NewTek web site has an example of this.

Things to Watch Out for: Leaving FTB on when not intended and being unable to “get out” of it. Leaving the transition delegate set to something other than BKG when not intended thereby transitioning the wrong layer.

Questions to Test Mastery: What is the “stacking order” of the four video layers? Why is it called “look ahead” preview? Why does the Preview monitor change when the transition delegate buttons are selected/deselected? What is the FX bus for? Is there another way to set the Auxiliary Out source besides the Utility delegate? How do you select more than one transition delegate button using the keyboard and mouse? Using the Control Surface? Can you control the DSKs without using the Transition delegates and the Auto/T-Bar? How do you know if Fade to Black (FTB) is currently engaged? What does Fade to Black fade?

Time Required: 7 minutes.

#34: Grab Frames While Live

Description: Learners choose a base filename, grab frames, de-interlace them when necessary, add them to the current Stills playlist, and find the saved frames on the media drive. This activity is most effective when something is playing on Program Out.

Objective: Be able to choose a base filename, grab frames, de-interlace them when necessary, add them to the current Stills playlist, and find the saved frames on the media drive.

Initial Conditions: Any moving content on Program Out.

Steps:

- A. Open the Grab Still Configuration panel and set the file base name, de-interlace, and add to playlist settings.
- B. Grab frames.
- C. Exit the session, then navigate to and find the grabbed frames.

Things to Watch Out for: Not turning on De-interlace when appropriate. Not adding them to the playlist when wanted. Not being able to find them in the directory structure.

Questions to Test Mastery: What is video interlacing? When de-interlacing typically used when grabbing frames? How can you tell whether the current session is an interlaced one or not? How can you tell when a session is being created whether or not it will be interlaced? Where are grabbed frames stored? What file format are frames saved in?

Time Required: 2 minutes.

#35: Operate the Control Surface

Description: Learners do all operations on the Control Surface that can be done with the keyboard and mouse as well as those that can only be done on the Control Surface. This activity can be considered to have been accomplished if the learner uses a Control Surface for all the other activities in the curriculum and does the additional activities that can only be on the Control Surface.

Objective: Be able to do all operations possible with the Control Surface that can be done with the keyboard and mouse. Be able to do all operations possible with the Control Surface that cannot be one with the keyboard and mouse.

Initial Conditions: An XD850 or XD450 Control Surface.

Steps: A. Perform all operations with the Control Surface that it can which can also be done with the keyboard and mouse.

B. Use the functions which can only be done on the Control Surface, such as delegating virtual sets, delegating the joy stick, operating the media players.

Things to Watch Out for: Using the mouse or keyboard for an operation that can be done with the Control Surface.

Questions to Test Mastery: What type of USB cable connects the Control Surface to the TriCaster? Which Media players can be controlled from the Control Surface? What two positioner variables can be controlled at the same time when using the joystick on the Control Surface? What attributes of a

Virtual Input can be manipulated during a live production from the Control Surface? What is the process for stopping a live recording or live stream from the Control Surface? Can you adjust all of the attributes of a live editable Title Page using only the Control Surface with no keyboard? Can you control the two DSKs independently from the T-Bar/Auto button and from each other on the Control Surface? What are some advantages of using the Control Surface when you could use the keyboard and mouse? Can you operate Program bus selection, Preview bus selection, Auto, and Take functions from a keyboard with no Control Surface?

Time Required: 10 minutes.