

CERTIFIED TRAINING CURRICULUM

for the TriCaster 40



Activities

Certified Training Curriculum Activities

for the TriCaster 40

This is the Activities book for the Certified Training Curriculum for the TriCaster 40. It contains an Activities Summary and the Detailed Activities to be performed by learners under the guidance of the instructor.

The activities are written for an operational TriCaster 40 model and assume the included stock NewTek content is present. To the greatest extent possible, the activities are designed to be performed 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 DDR or still graphics whenever appropriate.

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Activities Summary

1 Physical Setup

#1 Attach Computer Connections

video sections a, b, c

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.

#2 Attach Video and Audio Connections

video sections d, e, f, g

Learners attach all the various permutations of video and audio input and output connections to the TriCaster and ensure the cables hang safely and securely. The video connection types are input and/or output for YUV component, Y/C, composite, and HDMI. The audio connection types are both line and microphone inputs and both RCA and headphone outputs.

2 Registration and the Admin Page

#3 Register a TriCaster

video section d

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

#4 Restore a TriCaster

video section e

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

#5 Update a TriCaster

video section c

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

3 Understanding Sessions

#6 Create and Configure a New Session

video sections a, b, c, e, f, h, i, j

Learners create a new session, configure the inputs, 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.

#7 Session Management

video section 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.

4 Media Players

#8 Import Media Using the Media Importer

video 3 section c

Learners import various types of supported media files into a session using the Media Importer. Media can be taken from USB drives, eSATA drives, or other sessions on the internal media drive. (This is the preferred way media to import media.)

#9 Manually Import Media

video section d

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, eSATA drives, or other sessions on the internal media drive. (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.)

#10 Connect and Disconnect Media Drives

video sections e

Learners properly connect and disconnect eSATA media drives to a TriCaster while its running.

#11 Populate Playlists with Media

video sections b, c, d, g

Learners populate the DDR and Graphics playlists with appropriate media. The media files are chosen and arranged according to provided requirements which simulate those of a live production script.

#12 Edit LiveText Title Page

video section f

Learners change the editable properties of a LiveText Title page, including font, size, bold, italics, underline, the image, and spelling.

#13 Work with a Single Media File

video 9 section g

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

#14 Work with Media Player Controls

video 9 sections e, g

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.

5 LiveMatte, Virtual Sets, and Virtual Inputs

#15 LiveMatte Setup

video sections a, b

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.

#16 List Factors that Affect Key Quality

video section b

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

#17 Virtual Input Setup

video section d

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.

#18 LiveSet Setup

video sections e, f, g

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.

6 Audio Setup

#19 Basic Audio Setup and Controls

video sections a, b

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

#20 Check a Microphone During a Production

video section c

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

#21 Use Follow

video section d

Learners use the Follow control to set up audio follow video.

7 Network Inputs

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

video sections a, b, c, d, e

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 Streaming

#23 Stream to the Internet

video sections a, b, c

Learners set up a content delivery network (CDN) account and the streaming profiles for both a Flash® and Windows Media™ 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.

9 Live Operation

#24 Live Switching

video sections a, b, c, d, f

Learners set and un-set the Tabs Follow Preview preference. 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.

#25 Use the DSKs

video section e

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

#26 FX Bus

video section h

Learners use the FX bus to set DSK sources.

#27 Grab Frames While Live

video section i

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

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, and external eSATA hard drive 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, and a network connection.
- 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: 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? 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 and Audio Connections

Description: Learners attach all the various permutations of video and audio input and output connections to the TriCaster and ensure the cables hang safely and securely. The video connection types are input and/or output for YUV component, Y/C, composite, and HDMI. The audio connection types are both line and microphone inputs and both RCA and headphone outputs.

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

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

Steps:

- A. Attach the cabling for each of the different types of input and output connections.
- 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.

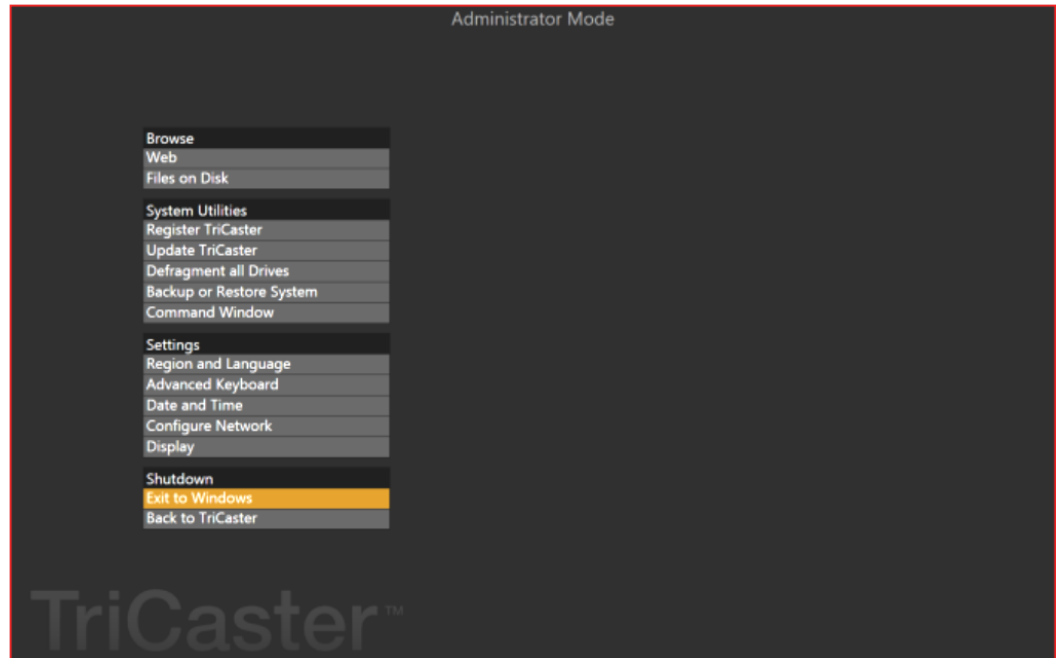
Things to Watch Out for: Putting cables on the wrong connector, such as mixing up R, G, and B cables for a component connection.

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 component and Y/C from the same output row at the same time? What is the purpose of genlock? What things can generate a genlock signal? What is the advantage of genlocking cameras together? How many channels of audio does the TriCaster 40 support? How many channels of audio does the TriCaster 40 take from video clips with more

than two channels of audio? Name at least two reasons why cabling should be hung so people won't get tangled in them.

Time Required: 6 minutes.

2 Registration and the Admin Page



#3 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.
- 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.

#4 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-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 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 media drives get erased by doing a restore? Name files an operator may want to save from the C drive before doing the 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).

#5 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 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 Understanding Sessions



#6 Create and Configure a New Session

Description: Learners create a new session, configure the inputs, 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, configure the Multiview 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; 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 stream and its format. 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 Multiviewer, auxiliary outputs, and SD analog connections according to the specification.
 - D. Set the recording stream according to the specification.

Things to Watch Out for: Failure to name the new session. Not setting the auxiliary output analog connections.

Questions to Test Mastery: How does the TriCaster name a session if the operator doesn't specify a name? How might that cause problems? Where is NTSC-J television broadcast? How can you tell what the resolution of the session is by looking at the live desktop? What will happen to an 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.

#7 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.

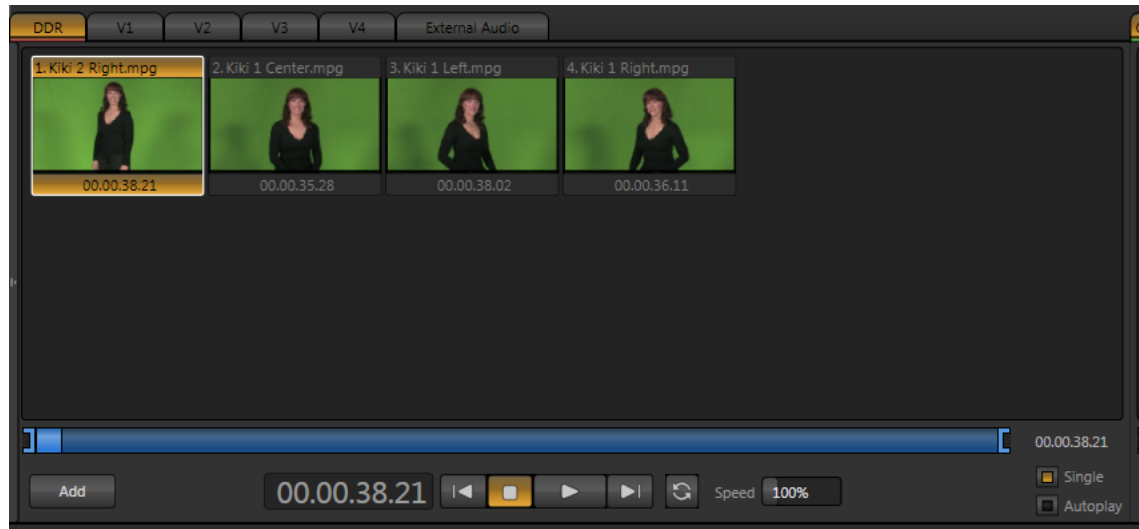
D. Right-click on the newly renamed session and choose Delete from the context menu to delete the session.

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 Media Players



#8 Import Media Using the Media Importer

Description: Learners import various types of supported media files into a session using the Media Importer. Media can be taken from USB drives, eSATA drives, or other sessions on the internal media drive. (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 Importer.

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 the internal TriCaster media drive. An external USB drive and/or an eSATA 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.

#9 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, eSATA drives, or other sessions on the internal media drive. (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 or the current media drive 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 and some in a different session on the internal media drive. An external USB drive and/or an eSATA 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. 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.

#10 Connect and Disconnect Media Drives

Description: Learners properly connect and disconnect eSATA drives to a TriCaster while its running.

Objective: Be able to properly connect and disconnect eSATA drives while the TriCaster is running.

Initial Conditions: A TriCaster with one eSATA drive connected and one additional (not yet connected) eSATA 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 disconnect 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?

Time Required: 3 minutes.

#11 Populate Playlists with Media

Description: Learners populate the DDR and Graphics playlists with appropriate media. 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 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 the DDR and Graphics players. 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.

Things to Watch Out for: Adding a video clip to a Graphics 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? Does

removing a media file from a play list delete it from the hard drive? Does renaming a media file in a playlist rename it on the hard drive?

Time Required: 10 minutes.

#12 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.

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 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 output of the External version of LiveText be brought into a TriCaster production?

Time Required: 2 minutes.

#13 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, and volume.

Objective: Be able to set the duration, transport controls, volume, 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 a Graphics media player, place the Graphics source on Program Out, then, one-by-one, select different stills to observe the effect on Program Out. Repeat with the DDR.
- B. In the 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 and mute it.
- C. In a Graphics player, 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: 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.

#14 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 the DDR so that when brought to Program, all the clips will play through once, then the DDR transitions back to Preview.)

Steps: A. Go to the DDR, 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 the DDR and some other source. Observe that the DDR doesn't play the clip. With the other source on Program Out and the DDR 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 a Graphics player.

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 are the fastest and slowest speed that playback 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 DDR and Graphics players both have the Autoplay button? How do you get the DDR to play just one clip in a list of clips when using Autoplay?

Time Required: 10 minutes.

5 LiveMatte, Virtual Sets, and Virtual Inputs



#15 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 in front of a 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.

#16 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.

#17 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 a Graphics player

or camera input which is different from the keyed source; this will be by 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 other Graphics 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 Graphics 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? 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.

#18 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 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 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 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 a virtual set's in-set monitor from the main switcher?

Time Required: 8 minutes.

6 Audio Setup



#19 Basic Audio Setup and Controls

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

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

Initial Conditions: Ideally, the instructor will attach both a microphone and a line-level input (such as a mixing board) to the audio inputs of the TriCaster. A clip in the 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 the audio tab. Adjust the levels on the VU meters to proper levels.

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

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

D. Set the Stream Audio output to Internal. Play clips in the DDR that have four channels of audio. Note what channels are going out what channels of the Stream 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 is the difference between the Balance and Trim controls? What are the sources that can be sent to the Stream audio out? When recording, what happens if the Master audio level gets too loud? What are some typical uses of the 3rd and 4th channels of audio for those sources that have them? How many channels does the Master audio out support?

Time Required: 7 minutes.

#20 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. The Mic input and the Headphones output are not being used.

Steps: A. On the Mic 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: Does it matter what order you do these steps in? Give examples of other uses or equipment you might test during a live production using this process.

Time Required: 5 minutes.

#21 Use Follow

Description: Learners use the Follow controls to set up audio follow video.

Objective: Be able to set up audio follow video configuration.

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

Steps: A. Suppose a talk show host is interviewing a guest and their audio is coming in the Mic input. 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, set Follow on the Mic input. Do not put the DDR in that group.

Things to Watch Out for: Turning Follow on for the wrong source.

Questions to Test Mastery: What is the effect of enabling Follow for an audio source? When do the VU meters show in grayscale? What are some situations in which you would use audio follow video?

Time Required: 6 minutes.

7 Network Inputs



#22 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 learners to simulate 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.

- Steps:**
- A. Install and run iVGA on a networked PC or Macintosh™.
 - B. Use the computer as a TriCaster network input source.
 - C. Set various iVGA options appropriate for the networked computer, such as Zoom, Privacy, Keynote mode, monitor selection, etc.
 - D. Bring a Skype™ call or web page 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 on the TriCaster that a networked computer is sending its 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 computer. Give an example of a use for an audio mix-minus when using a networked computer. Where on the system drive is iVGA stored?

Time Required: 8 minutes.

8 Streaming



#23 Stream to the Internet

Description: Learners set up a content delivery network (CDN) account and the streaming profiles for both a Flash® and Windows Media™ 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.

- 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 file type of the saved stream? 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.

9 Live Operation



#24 Live Switching

Description: Learners set and un-set the Tabs Follow Preview preference. 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 option 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. Overuse 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? 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 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.

#25 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 Graphics 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 the DDR instead of a Graphics player. A

full-frame graphic that doesn't use an alpha channel. The DSK transition selected is Fade.

Steps:

A. Select the graphics with alpha channel in the Graphics media players. Use the drop-down source selector to make the DSK 1 source Graphics 1 and the DSK 2 source Graphics 2.

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 a Graphics media player. Make the Graphics 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 positioned 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? 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.

#26 FX Bus

Description: Learners use the FX bus to set DSK sources.

Objective: Be able to set the DSK sources using the FX bus.

Initial Conditions: Moving video playing on Program Out and graphics with alpha channels in the Graphics players. These two graphics should be chosen so that they only partially overlap.

Steps: A. Place DSK 1 on Program out. On its source selector drop down, select FX. Cycle through several sources on the FX bus to see the effect on Program out. Take DSK 1 off of Program Out and do the same for DSK 2.

Things to Watch Out for: Leaving the DSK source set to FX when not intended, thereby bringing the wrong source to Program Out.

Questions to Test Mastery: What is the stacking order of the four video layers? What is the FX bus for? How do you know if Fade to Black (FTB) is currently engaged? What does Fade to Black fade?

Time Required: 7 minutes.

#27 Grab Frames While Live

Description: Learners choose a base filename, grab frames, de-interlace them when necessary, add them to the Graphics 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 Graphics 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 needed. Not being able to find them in the directory structure.

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

Time Required: 2 minutes.