

CERTIFIED TRAINING CURRICULUM

for the TriCaster 40



Instructor Guide



Certified Training Curriculum Instructor Guide

for the TriCaster 40

This is the Instructor Guide for the Certified Training Curriculum for the TriCaster 40. It contains the Instructor Notes, the Video Outline, the Activities Summary, and the Answers to the Activities Mastery Questions.

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Instructor Notes

Purpose and Audience

The Certified Training Curriculum for the TriCaster 40 enables learners to set up and operate a TriCaster during a live production and to pass the TriCaster 40 Certification Exam.

The course is designed for students learning about the live event production process. It focuses only on TriCaster function and operation and does not include material about standard video production techniques. Students learning video production from the ground up would need other course work to supplement this curriculum, such as camera techniques, lighting, audio, scriptwriting, editing, video graphics, directing, and production.

How to Use the Curriculum

The curriculum materials consist of nine videos, a set of written notes that accompany the videos, and 27 learner activities. The curriculum is modular in nature, with each section able to stand on its own and be taught in any order.

The sections are:

- 1 Physical Setup
- 2 Registration and the Admin Page
- 3 Understanding Sessions
- 4 Media Players
- 5 LiveMatte, Virtual Sets, and Virtual Inputs
- 6 Audio Setup
- 7 Network Inputs
- 8 Streaming
- 9 Live Operation

Instructors should look through the materials and videos for the nine sections and decide which ones, and in what order, to include in their course. The sections are given in the order an operator would do those activities for an actual live production, starting with setting up the TriCaster and ending with the switching of the show itself.

A typical daily lesson plan using the curriculum is given below. We take as an example setting up a LiveMatte key for use in a Virtual Input.

Introduction

The instructor discusses the importance and uses for keying in video production.

Watch Videos

The instructor shows the class parts a and b from video *5 LiveMatte, Virtual Sets, and Virtual Inputs*.

Review Video Notes

The instructor reviews the notes for that section of the videos and asks for questions.

Do Hands-on Activities

The instructor takes the learners through activities *#15 LiveMatte Setup* and *#16 List Factors that Affect Key Quality*.

Ask Mastery Questions

The instructor asks members of the class the *Questions to Test Mastery* from those activities.

Final Review

The instructor answer answers any questions the class may have and previews the next lesson.

As an alternative, the instructor could do the same material as is in the video him or herself as a demonstration in front of the class.

About the Videos

The videos are divided into nine sections. The total running time of all videos is 144 minutes. A list of the nine sections is given in the Video Outline section below, as well as at the beginning of the *Video Notes* document.

About the Video Notes

The video notes are intended as a supplement to the videos themselves, not to stand on their own. They are not a complete set of notes, but rather contain the ideas from the videos that call for special emphasis or which may not have been completely clear. The learner is encouraged to add their own notes based on what they find the most useful content from the videos.

About the Activities

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.

The Activity Summary below gives a brief description of each activity, the video sections it relates to, and the approximate time required to complete it. In the Activities Details section of the *Activities* document, each activity is broken down into seven attributes. Those are explained here:

Description: A description of what the learners do during an activity.

Objective: The learning objective describes what the learners should be able to do when they have completed the activity.

Initial Conditions: The initial state the TriCaster and content at the start of the activity. These are sometimes specified so that the TriCaster will behave a certain way while the learner interacts with the machine. For example, Activity #14 requires the Autoplay button be off at the start of the activity so that the DDR will react properly when the learners use it. Other materials necessary to conduct the activity are also listed, such as real-world scenarios or proposed production requirements.

Steps: The main steps to take the learner through to complete the activity. These are high-level instructions for conducting the activity. Instructors are expected to give more detailed instructions to learners during the activity, such as the location of specific media files to be loaded in a media player, etc.

Things to Watch Out for: Common mistakes learners make when performing the activity. They may be specific misunderstandings about how the TriCaster operates, or they may be general misunderstandings about the live event production process. This list is not exhaustive; instructors are expected to add their own real-world experience and lessons learned to the activities.

Questions to Test Mastery: Questions designed to test if learners have understood the activities and/or can relate them to the real-world experience of live production. Some questions test if the learner has taken an interest in live production and learned more about it by their own, independent research—outside the material covered in the videos and activities. These are not designed as certification exam preparation questions, even though some questions directly relate to questions asked on the certification exam. Instructors are expected to add their own real-world experience and lessons learned by asking their own questions.

Time Required: An approximate time required for *one* learner to complete the activity under the guidance of the instructor. This time will need to be adjusted if there are more learners and if they are sharing machines.

Other Resources for Learners

A number of resources are available to aid learners. Some are listed here:

These training videos are found at:

<http://tc40.newtek.com/index.php/tricaster40training>

The TriCaster 40 User Guide can be found at:

<http://www.newtek.com/support/documentation.html>

Other video resources on NewTek TV are at:

<http://tv.newtek.com/library.php>

The TriCaster FAQ is available at:

<http://www.newtek.com/support/certified/support-certif-get-certified-exam/tricaster-faq.html>

Details about the Certification Exam are at:

<http://www.newtek.com/support/certified/support-certif-get-certified/403-tricaster-certification-get-certified-details.html>

Learners can talk to experienced TriCaster operators on the NewTek Discussion Forums:

<http://forums.newtek.com/>

Video Outline

There are nine videos with a total of 69 subsections. The total running time of all videos is 144 minutes.

1 Physical Setup (total 7:09)

- a) Power Connections
- b) Interface and Secondary Monitor Connections
- c) eSATA
- d) Video Inputs
- e) Video Output
- f) Audio Inputs
- g) Audio Output and Headphones

2 Registration and the Admin Page (total 7:29)

- a) The Administrator Mode
- b) File and Web Browsing
- c) Update The TriCaster
- d) Register The TriCaster
- e) Performing a System Backup/Restore
- f) System Settings
- g) Display Setup
- h) Virus Protection

3 Understanding Sessions (total 31:17)

- a) The Home Screen
- b) Create a Session
- c) The Session Page
- d) Interface Overview
- e) Camera Configuration
- f) Proc Amps
- g) Switching Overview
- h) Output Configuration
- i) Record Settings
- j) Grabbing Stills
- k) Session Management

4 Media Players (total 10:46)

- a) Accessing the Media Players
- b) The Media Browser
- c) Importing Media from Another Session
- d) Manually Importing Media
- e) Media Drives
- f) Working With Title Templates
- g) Organizing Your Media
- h) Cache Clips in the DDR
- i) Exporting Media

5 LiveMatte, Virtual Sets, and Virtual Inputs
(total 22:27)

- a) Setting Up LiveMatte
- b) Factors to Make a Better Key
- c) Cropping an Input
- d) Setting Up a Virtual Input
- e) Setting Up LiveSets
- f) Using LiveSets
- g) Virtual Input Overlay

6 Audio Setup
(total 5:31)

- a) Source Types and Levels
- b) Balance and Pan
- c) Using Solo with the Headphone Out
- d) Follow

7 Network Inputs
(total 12:10)

- a) Network Setup
- b) iVGA Setup
- c) iVGA for Windows™
- d) iVGA for Macintosh™
- e) Connecting to iVGA
- f) Using External LiveText
- g) Apple Airplay
- h) TriCaster and 3PLAY

8 Streaming
(total 12:33)

- a) Streaming Setup
- b) Start Streaming
- c) Stop the stream

9 Live Operation
(total 34:52)

- a) Live Desktop Overview
- b) Switching Basics
- c) Take, Fade, and Transitions
- d) The Background Layer
- e) The Downstream Keys (DSKs)
- f) Fade to Black (FTB)
- g) Media Player Controls
- h) The FX Row
- i) Record, Stream, and Grab
- j) Manuals from QR Codes
- k) Backup a Session
- l) Live Show Rundown

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.

Answers to Activity Mastery Questions

1 Physical Setup

#1 Attach Computer Connections

1. How many USB ports are there on the TriCaster 40?
10
2. What network connection speed does the TriCaster support?
Up to Gigabit Ethernet.
3. Name at least two reasons why cabling should be hung so people won't get tangled in them.
 - a) Tripping over cables can un-plug them from the TriCaster during the production causing that source or output to disappear.
 - b) Cables can become damaged during the live production.
 - c) For safety so no one gets hurt by tripping over them.

#2 Attach Video and Audio Connections

1. Given various input and output scenarios, describe how the audio/video cabling is attached to the TriCaster.

Component signals attach with 3 BNC connectors for video only. Y/C attaches with two BNC connectors for video only. Composite video attaches with one BNC for video only. Line level audio is connected via two RCA jacks. An unbalanced microphone is attached to the Mic jack.
2. Can the TriCaster output component and Y/C from the same output row at the same time?
No because these outputs use some of the same connectors.
3. What is the purpose of genlock?
To lock the latency of all the equipment in the production workflow.
4. What is usually used to generate a genlock signal?
A Black Burst generator.
5. What is the advantage of genlocking cameras together?
If the cameras are not genlocked together before they are input to the TriCaster, the TriCaster will frame sync the inputs to allow switching. Using this method, the

latency can drift from a half a frame to 2 frames. When the cameras are genlocked, latency is locked and does not drift.

6. How many channels of audio does the TriCaster 40 support?

Two

7. How many channels of audio does the TriCaster 40 take from video clips with more than two channels of audio?

Two

8. Name at least two reasons why cabling should be hung so people won't get tangled in them.

- a) Tripping over cables can un-plug them from the TriCaster during the production causing that source or output to disappear.
- b) Cables can become damaged during the live production.
- c) For safety so no one gets hurt by tripping over them.

2 Registration and the Admin Page

#3 Register a TriCaster

1. When does a TriCaster need to be registered?
Before the first use.
2. What happens if the TriCaster is not registered?
There will be a NewTek watermark on the output.
3. Where do you find the TriCaster serial number?
On the side panel

#4 Restore a TriCaster

1. Why do you need to update the TriCaster after doing a restore?
All updates will be removed by doing a restore.
2. Does any of the media from the media drives get erased by doing a restore?
No.
3. Name files an operator may want to save from the C drive before doing the restore.
Custom Virtual Sets
4. What's the difference between the process of starting the restore for a machine that is on the Windows™ boot screen and one that is already at the home page?
On the Windows™ boot screen you have the choice of Launch TriCaster or Restore TriCaster and, of course, you would choose the latter to start a restore. From the home page of the interface, you can go to Utilities on the menu ring and select Restore TriCaster. *(Note: sometimes on a cold boot you will not see the Windows™ boot screen as the monitor is still in its auto detect mode figuring out what kind of monitor you have. You will always see the Windows™ boot screen on a restart.)*

#6 Update a TriCaster

1. Should Windows™ updates be performed on the TriCaster?
No, never. The TriCaster software is written to take advantage of the precise operating system configuration at the time of shipping. Changing or updating the operating system could adversely affect TriCaster performance.

2. Should the TriCaster hardware ever be upgraded or changed?

No, never. The TriCaster software is written to take advantage of the precise hardware configuration at the time of shipping. Changing the hardware could adversely affect TriCaster performance.

3. How much time should you allow a live production when updating?

Give yourself a couple of hours for install and familiarization.

4. Is it possible for features to change or be added by doing an update?

Yes, the interface can change dramatically as can functionality. It is best to read all documentation of the new update before trying to use it.

5. Where can you find the currently installed version of the software and hardware?

In the About screen on the Home screen from the Utilities menu on the icon ring.

3 Session Setup

#6 Create and Configure a New Session

1. How does the TriCaster name a session if the operator doesn't specify a name?
If the session is not given a name it uses that day's date.
2. How might that cause problems?
If multiple sessions are created this way on the same day, they are named with that day's date plus a sequential number. This makes it hard to identify a specific session, so using meaningful names for sessions are recommended.
3. Where is NTSC-J television broadcast?
Japan.
4. How can you tell what the resolution of the session is by looking at the live desktop?
The resolution and session name are displayed along the top of the main interface.
5. What will happen to an SD output if the analog output is not configured correctly?
It may output the wrong format. It could output component when composite + Y/C is required or vice versa.
6. What are some reasons to choose one particular record format over another?
To use the recorded output in another application that accepts specific formats. To have time code support.

#7 Session Management

1. What is the difference between media that is internal (or local) to the session and media that is external to the session?
Internal media is imported into the session before it is run. External content is brought in from another session or some other location using the media browser.
2. Is media that is external to the session automatically backed up during a session backup?
No, the backup requestor presents that option to the operator at the time of back up.
3. Once a session is backed up, is it deleted from the TriCaster?
No.

4. Sessions are restored from which page of the TriCaster interface?
The Home page.
5. Sessions are backed up from which page of the TriCaster interface?
The Session page.

4 Media Management

#8 Import Media Using the Media Importer

1. What is the difference between media that is external to the session and local (or internal) to the session?

Internal media was imported into the session before it was started. External content is brought in from another session's content or from another location.

2. What are the dangers and/or symptoms of media being placed in the wrong directory?

When you click Add, the media browser looks in the directory where it expects to find media that goes in that player. If the media is in another location, it can still be loaded, but you must manually navigate to find it.

3. What determines when the operator should enable transcoding for clips when the option is available?

If clips don't play back properly when tested in the DDR, they should be re-imported and transcoded.

#9 Manually Import Media

1. Explain how the media directories for a session are structured.

A session is always created on one of the available drives. All session content, including media, is stored on this drive. On this session drive, there will be a folder called Media. Inside the Media folder are folders for each of the four media types: video clips, still images, title graphics, and audio files. Within each of these are folders for each session created on that media drive. Within a given session's folder there can be up to three folders.

- a) The *Capture* folder holds all media recorded or grabbed by the TriCaster during the live production.
- b) The *Import* folder holds all the media that was imported for the session.
- c) The *Saved Streams* folder holds any recorded stream files for use as video on demand on the web.

These folders are created when these processes are complete. If you never imported anything, recorded anything or streamed anything, there will be no folders in this directory.

2. What is the difference between media that is external to the session and local (or internal) to the session?

Internal media was imported into the session before it was started. External content is brought in from another session's content or from another location.

3. What are the dangers and/or symptoms of media being placed in the wrong directory?

When you click Add, the media browser looks in the directory where it expects to find media that goes in that player. If the media is in another location, it can still be loaded, but you must manually navigate to find it.

4. Which types of video clips, still images, and audio files are supported by the TriCaster?

Supported file types include:

Video — AVI, MPEG-2, MOV, AVCHD, MXF

Image — JPEG, PNG, Targa32

Audio — WAV, mp3

The Import Media module indicates which files need transcoding and which do not.

5. Are there any popular video formats not natively supported by the TriCaster?

Apple® PRO RES clips are not natively support but can be imported using the Import Media module and transcoded into a file format the TriCaster can use.

#10 Connect and Disconnect Media Drives

1. Can you remove a non-session media drive while the TriCaster is running?

Yes.

2. Can you remove the session media drive while the TriCaster is running?

No.

3. What does is mean when a media file icon is ghosted in a playlist?

The media player tried to load that file but could not find.

4. About how many hours of 1080i HD video can be stored on a 2TB drive?

50

5. About how many hours of SD video can be stored on a 2TB drive?

200

#11 Populate Playlists with Media

1. Why should video clips not be added to a playlist from an external USB drive?

External USB drives are not fast enough to play back video clips without dropping frames. Files should either be imported through media import or copied to the internal media drives before being loaded into a media player.

2. State what types of media files each of the media players can successfully play.

DDRs can play all media types including video clips, stills, titles and audio clips. The Graphics players can play stills, titles, and sounds.

3. If an inappropriate type of media file is added to a play list, how is that indicated?

As a ghosted icon.

4. State the difference between content that is local (internal) to a session versus external to the session.

Internal media was imported into the session before it was started. External content is brought in from another session's content or from another location.

5. Name a potential problem with using external media in a session.

External media may not get backed up with the session unless explicitly done by the operator. It could come in from an external drive that is not fast enough to play the media.

6. How does the TriCaster handle mixing 16:9 and 4:3 media?

It letter boxes, pillar boxes, or scales the media to give the best looking output. This is done transparently to the user.

7. What is the indication that the TriCaster can't find a media file in a playlist?

The icon is ghosted.

8. Does removing a media file from a play list delete it from the hard drive?

No. Only doing a delete from the media browser and confirming the deletion will remove it from the hard drive.

9. Does renaming a media file in a playlist rename it on the hard drive?

No.

#12 Edit LiveText Title Page

1. How can you tell if an image or other element on a Title page is editable in the Edit Title window?

When you roll the mouse over an editable image or other element, a yellow border displays around it.

2. What are the three fitting options for an image and what do they do?

Stretch causes the image to completely fill the frame. Fill Area retains the image's original aspect, cropping if necessary to fit inside the frame. Show All Image also retains the original image aspect, but fits the entire source image inside the frame (which may result in 'pillar-boxing' or 'letter-boxing').

3. Name the three types of CG pages you can create in LiveText.

Still, Scroll and Crawl.

4. If you edit a Title page which is live on Program Out, when will the changes go live?

When you press the Enter key.

5. How is the output of the External version of LiveText be brought into a TriCaster production?

Through the Network Inputs.

#13 Work with a Single Media File

1. How is setting the duration of a video clip different than setting the duration for a still or title?

The duration of a video clip is set by adjusting the in and out points. Stills and titles have a context menu for setting the duration of the file.

2. Can the duration of multiple stills or titles be set at the same time?

Yes, by multi-selecting the files and setting the duration of one of the selected items.

3. What do the three colors of the progress bar mean?

Green means the file has more than 10 seconds left to play. Yellow means the file has less than 10, but more than 5 seconds left to play. Red means the file has less than 5 seconds left to play.

4. 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?

Because you may want to un-mute and use it at some point and already have the appropriate level set.

#14 Work with Media Player Controls

1. What are the fastest and slowest speed that playback can be set to?

From 25% to 400%.

2. Do you prefer the warning colors to be on or off?

There is no right answer; it depends of the preference of the operator and the needs of the live production.

3. What are situations in which you would want the time display to count up? Down?

Count up may be preferred when a specific amount of time must be filled by the playing media. Count down shows how much time the playlist has left until the media will stop playing.

4. Do the DDR and Graphics players both have the Autoplay button?

Yes, they are both inputs on the switcher that can be put on Program Out. Doing so with Autoplay on plays the selected clip, still, title, or sound then stops playback when the media player is taken off Program Out. Autoplay also cues the next item when the current one stops playing.

5. How do you get the DDR to play just one clip in a list of clips when using Autoplay?

Turn on the Single button.

7 LiveMatte and Virtual Inputs

#15 LiveMatte Setup

1. How is the color to be removed selected in the interface?
Use the eyedropper in the LiveMatte window, left click , hold, and drag over the color on the interface monitor you wish to remove.
2. What problems come from overdoing the Tolerance, Spill, and Smoothing adjustments?
Overusing Tolerance and smoothing can cause the keyed item to become transparent. Overusing spill suppression will change the color of the talent.
3. What do the three colored lights on a source monitor do?
They tell you what is enabled on that input. Green is for Live Matte being enabled. Yellow is for the proc amp being enables. Blue is for cropping being enabled.
4. What colors can LiveMatte key?
Any, but green and blue are used primarily because they are the farthest away from skin tones.
5. What inputs is LiveMatte available on in the TriCaster?
Any live input, the Network Inputs, the DDR, and the Graphics players.

#16 List Factors that Affect Key Quality

1. Name the three factors that affect the quality of a key.
Video signal quality, lighting, and talent placement.
2. How can you control these factors to make a better key?
 - a) Use the best video signal quality you can.
 - b) Evenly light the green screen.
 - c) Separate the talent from the background.
3. List in order from best to worst the video signal formats to use to pull a LiveMatte key.
Component is the best, then Y/C, and then composite. Y/C and Composite are only available as standard definition signals.

4. What can you do on-set to help make a better key?

Re-select the key color from within LiveMatte. Use a better camera. Adjust the lighting. Move the talent away from the green screen. Adjust tolerance and smoothing in LiveMatte.

5. What are some types of shooting situations where it might be hard to pull a good key?

Location shooting when less than optimal cameras may be used. Places where you can't control the lighting. Cramped sets which require the talent to be close to the green screen.

#17 Virtual Input Setup

1. How do you make a Virtual Input transition ping pong?

All transitions for DSKs and Virtual Input overlays automatically ping pong.

2. What modifications can be applied to the A, B, or Overlay buses in a Virtual Input?

Scale and Position.

3. What are the three default speeds for a Virtual Input overlay transition?

Slow (60 frames), Medium (30 frames), or Fast (15 frames).

4. Is it possible to use a transition speed other than the three preset speeds?

Yes, click and drag with the mouse on the speed indicator to change the speed.

5. Is it possible to use a live keyed input as an overlay on a Virtual Input?

Yes.

6. Is it possible to use a non-keyed source as an overlay?

Yes, it can be scaled and positioned like a picture-in-picture effect.

7. Are there any types of transitions that work fine with a full-screen graphic but don't look as good on a lower 3rd?

Yes, but this may be a matter of taste.

#18 LiveSet Setup

1. What main switcher channels can be used on Row A of a Virtual Input?

Any of them except the Virtual Inputs.

2. What bus row on a Virtual Input is usually used for the talent in a virtual set?

Row A.

3. What type of external camera control is needed to use the zoom feature in a virtual set?

None, the feature is built in to the Virtual Inputs.

4. 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?

Yes, on the main switcher, just switch to whatever source is being used on Input B in the Virtual Input.

5. What would happen if the camera operator moved or zoomed the camera after the virtual set has been set up?

The talent would not be positioned or framed correctly in the virtual set.

6. Which attributes of the Virtual Input can be changed while that Virtual Input is live without interrupting Program Out?

The zoom preset numbers, the selected Overlay transition, the transition speed.

7. How can you turn on or off the ease-in/out feature of the animated zoom.

You cannot, it is always on.

8. How can you change what's on a virtual set's in-set monitor from the main switcher?

Set the Row B of the Virtual Input to the FX row, then switch the FX row on the main switcher. Now, changing what's on the FX row in the main switcher changes what's on the in-set monitor.

8 Audio Setup

#19 Basic Audio Setup and Controls

1. What is the difference between line level and mic level?
Line level is usually an amplified signal, while mic level is usually not.
2. What are some symptoms of mismatching line and mic levels?
Overdriving or low audio levels.
3. What is phantom power and when would you need to use it?
Phantom power is used to power external microphones and some microphones require it.
4. What does VU stand for?
Volume Unit.
5. What colors are appropriate to see on VU meters for good audio volume?
The loudest sounds should be in the yellow, but not touching the red.
6. What is the difference between the Balance and Trim controls?
The Balance control for a stereo source varies the relative level of the left and right channels. The Trim control provide an overall preliminary volume adjustment allowing you to fine tune the input level. Use Trim to bring the levels for microphone and similar sources into a useful range on the VU meter.
7. What are the sources that can be sent to the Stream audio out?
DDRs, sounds player, internal sounds players as a group, solo selected sources, and groups.
8. When recording, what happens if the Master audio level gets too loud?
It clips and output is distorted. A warning message also appears at the top of the main interface.
9. What are some typical uses of the 3rd and 4th channels of audio for those sources that have them?
Additional languages can be put on channels 3 and 4.
10. How many channels does the Master audio out have?
Two (therefore, the TriCaster 40 cannot use audio from any but the first two channels form those sources that have them).

#20 Check a Microphone During a Production

1. Does it matter what order you do these steps in?

Yes, if you don't mute it first you might hear the test on main Program Out.

2. Give examples of other uses or equipment you might test during a live production using this process.

Mixing board, tape deck, DVD players, VCR's, BlueRay players.

#21 Use Follow

1. What is the effect of enabling Follow for an audio source?

That source is muted unless the associated video source is on Program Out. For the TriCaster 40, video input 1 is associated with the Line audio input, and video input 2 is associated with the Mic audio input.

2. When does a VU meter show in grayscale?

When it is in Follow mode and the audio from that source is not going out Program Out.

3. What are some situations in which you would use audio follow video?

When you want certain audio sources omitted from the output while other sources are active.

9 Network Inputs

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

1. How can you tell on the networked computer that iVGA is running?

An icon of a TV with color bars scrolling across it appears in the icon tray of the interface.

2. How can you tell on the TriCaster that a networked computer is sending its interface to the TriCaster as an input?

Select the computer name from the network inputs dropdown menu and it shows up in the network inputs preview monitor.

3. Describe the process of using Apple Airplay® as a network input.

Make sure the AirPlay® device is on the same network as the TriCaster. Play media on the iDevice. Using the menu on the iDevice, select the TriCaster network input you want to send the Airplay® output to.

4. Describe the process of using LiveText on a networked computer.

Make sure the computer running LiveText is on the same network as the TriCaster. Create a CG page, then, with that page selected, click the Live button. The page is now available on the network inputs on the TriCaster.

5. Give an example of a use for an audio mix-minus when using a networked computer.

When using a Skype™ call live during a TriCaster production.

6. Where on the system drive is iVGA stored?

`C:\TriCaster\Extras.`

10 Streaming

#23 Stream to the Internet

1. Where is the saved stream stored by default?

On the session drive. If the session drive is D, it is stored in
D:\media\clips\{session name}\saved streams.

2. What determines the file type of the saved stream?

The particular encoder used to stream it. If streaming in Flash®, an .flv is created and if streaming in Windows Media™, a .wmv file is created.

3. Name some possible complications that can interfere with establishing a network connection?

Firewalls, domains within a network, bad cables, too many Wi-Fi networks in one area.

4. How can you verify the TriCaster can access the Internet?

Go to one of the service providers in the streaming panel list and see if their web site comes up.

11 Live Operation

#24 Live Switching

1. What are some reasons why you would want to rename source monitors or buttons?

To help identify which shot is which or who the camera operator is for an input.

2. When a recording is stopped, what makes it immediately show up in a DDR playlist?
Selecting Add to DDR Playlist in the Record Configuration panel.

3. How do you change a transition already loaded in the switcher to a different transition in the same position in the transition bank?

Select the transition, then click the gear to the right of the transition area. Use the popup to select Browse, then choose a new transition.

4. How do you change the direction a transition runs?

Select the transition, then click the gear to the right of the transition area. Choose Normal, Reverse, and/or Ping Pong.

5. How do you get a transition to run in one direction the first time and the reverse the next time?

Set it to Ping Pong.

6. Why is it generally a bad idea to switch Program Out by directly selecting sources on the Program bus?

You won't know what you are switching to since you have not previewed it.

7. Approximately what percentage of transitions in a typical professionally produced production are Takes and Fades?

About 95%; other types of transitions should be used sparingly.

8. Is it generally better to perform a transition with the Auto button or the T-bar?

The Auto button is better since it gives a uniform speed for the whole transition.

9. Give a reason for reversing a transition.

You might want to fly something in and then back out again such as an instant replay in sports.

10. Is it possible to use speeds for a transition other than the default slow, medium and fast speeds?

Yes, click and drag with the mouse on the speed indicator to change the speed.

#25 Use the DSKs

1. Can a source with no alpha channel be used in a DSK? If yes then how?
Yes, any source can be scaled and positioned as an overlay using the positioning controls.
2. How can you tell the positioner is on for a DSK?
The take button for that DSK is lit up.
3. What inputs on the switcher can be used as a source for the DSKs?
Any inputs except the black input and the virtual inputs.
4. Can all the same transitions used to switch between the Program and Preview busses be used as DSK transitions?
Yes.
5. Which is visible “above” the other, DSK 1 or 2?
DSK 1 is below or under DSK 2. If DSK 1 and 2 overlap, then DSK 2 will be on top.
6. Why is there no Reverse option for transition direction on the DSKs?
They automatically Ping Pong.
7. What variables are controllable when using the positioner for the DSK?
Position and scale.

#26 FX Bus

1. What is the stacking order of the four video layers?
Background, DSK 1, DSK 2, Fade to Black.
2. What is the FX bus for?
As a secondary switcher bus which can be used as its own output via AUX out or as a source selector for input B on a Virtual Input.
3. How do you know if Fade to Black (FTB) is currently engaged?
The output is black and the FTB button flashes slowly.
4. What does Fade to Black fade?
Background video, all DSKs and audio.

#27 Grab Frames While Live

1. What is video interlacing?

The splitting of video frames into fields.

2. When is de-interlacing typically used when grabbing frames?

Set frame grabbing to De-interlaced whenever the session is interlaced, and do not use it when the session is progressive.

3. How can you tell whether the current session is an interlaced one or not?

It will have an “i” at the end of the resolution, such as 1080i. The name and resolution of the current session appear in the title bar at the top of the interface.

4. When creating a session, how can you tell whether or not it will be interlaced?

It will have an “i” at the end of the resolution such as 1080i.

5. Where are grabbed frames stored?

On the session drive. If the session drive is D, they are saved to
D:\media\stills\{Session name}\captured.

6. What file format are frames saved in?

JPEG.