



NewTek™

TriCaster™

CONTROL SURFACES



HD PORTABLE LIVE PRODUCTION

TriCaster™ TCXD850 CS

TriCaster™ TCXD450 CS

TimeWarp™ 850TW

TimeWarp™ TW-42

LiveControl™ LC-11

USER GUIDE

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TriCaster™ 850 CS
TriCaster™ 450 CS
TimeWarp™ 850 TW
TimeWarp™ TW-42
LiveControl™ LC-11



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1 ABOUT THIS MANUAL



Estimates are that between 60 and 97% of the human race hate reading manuals. Most prefer to jump right in, maybe asking a friend for occasional help ... and who can blame them?

This manual attempts to tell you what you need to know in a friendly, concise way, and also provides a comprehensive reference section you can turn to when you need finer detail.

1.1 MANUAL ORGANIZATION

Even if you hate reading, please take a moment to peruse this section, which explains the manual's organization. You may find you can escape with a minimum of reading (or, if you are a devout reader, you can be the hero others turn to for expert advice).

The manual is structured as follows:

- ❖ **Part I – Getting Started:** Part 1 provides an introduction to TriCaster™ Control Surfaces – a brisk jog through fundamentals including an overview of control surface categories and models, and their installation.

- ❖ **Part II – The Control Surfaces**
 - **TriCaster™ 850 CS & 450 CS:** This section will familiarize you with two very similar control surfaces designed specifically to provide primary control of TriCaster™ 450 and 850 model live production systems.

 - **TriCaster™ 850 TW:** Turn here for everything you need to know about this powerful instant replay control surface designed exclusively for TriCaster™.

- **TriCaster™ LC-11:** A discussion of the primary control surface designed for use with the standard definition model TriCaster Studio™ and TriCaster Broadcast™ live production systems.
- **TimeWarp™ TW-42:** This section wraps up our control surface coverage with a review of the original NewTek TimeWarp™ instant replay controller.

Note: The original TriCaster™ RS-8 (or TriCaster™ VM) control surface is no longer in production and is not covered.

A.1 A CONTROL SURFACE FOR EVERY NEED



Figure 1

This User Guide discusses *multiple* TriCaster™ control surfaces, including TriCaster™ 850 CS and 450 CS, TriCaster™ 850 TW, and several others.

The first two of these (TriCaster™ 850 CS and 450 CS) are virtually identical as respects operations and control layouts, and we will lead off by considering them together in Part II. Subsequent sections of the text will cover other models in turn. We're very confident you'll find one or the other of these devices to be just excellent for your live production needs.

1.2 YES, YOU CAN

In case you were wondering, the heading above answers the question “Can I use my older NewTek control surface with my new TriCaster™ high definition live production system?” From Rev. 3 of the TriCaster™ software for HD systems on, all currently offered control surfaces are supported on any systems.

Of course, a control surface designed specifically for a specific system is the best choice but, with that said, generally speaking if you can plug it in you can use it*.

* Some limitations may be encountered when control surfaces are paired with systems other than those they were designed for.

2 WELCOME AND SETUP



This chapter introduces the different control surfaces offered by NewTek®, helping you to see how they complement your TriCaster™ and bring added ability to your production setup.

The section also includes brief notes on connecting TriCaster™ control surfaces for use with your live production system.

2.1 WELCOME



NewTek TriCaster™ systems provide unrivalled live production power.

With a TriCaster™ control surface in front of you, all of that power is right at your fingertips.

These sleek yet rugged control surfaces deliver precise control over the video layers constituting your program. Quickly and confidently perform your switching operations.



Advanced TriCaster™ control surfaces manage transitions on a per layer basis, govern the background composition, overlay and overlay transitions, multi-layer virtual input configuration

and zoom, control multiple Media Players, record, stream and grab features, Auxiliary output, and even more.

2.2 SOMETHING FOR EVERYONE

TriCaster™ control surfaces can be grouped into two categories offering either primary switcher control or instant replay functionality.

2.2.1 PRIMARY CONTROL

At the time of writing, three devices fall into this category, as follows:

- TriCaster™ 850 CS: A full-function control surface designed to complement TriCaster™ 850 its feature-laden sibling TriCaster™ 850 EXTREME™
- TriCaster™ 450 CS: Similar to the above but, being specifically designed for use with TriCaster™ 450 and TriCaster™ 450 EXTREME™ (which have less inputs), slightly more compact.
- TriCaster™ LC-11: This control surface was designed for use with the standard definition TriCaster™ Studio and TriCaster™ Broadcast models, but can provide basic switcher control for the newer models too.

2.2.2 INSTANT REPLAY

NewTek provides potent instant replay solutions in the form of its dedicated 3Play™ systems, but for less demanding installations many have found their TriCaster-based TimeWarp™ control surfaces (which take advantage of TriCaster's integrated recording and playback capabilities) quite valuable.

- TriCaster™ 850 TW: The perfect complement to either TriCaster™ 850 CS or TriCaster™ 450 CS, this instant replay controller is equally capable of performing as a solo act alongside any high definition TriCaster™ live production system.
- TriCaster™ TW-42: This is NewTek's original TimeWarp™ device. While originally supplied for use with the standard definition TriCaster lineup, it also provides workmanlike instant replay functionality with high definition TriCaster™ models.

2.3 INSTALLATION

2.3.1 MAKING THE CONNECTION

Simply connect the TriCaster™ control surface unit to your NewTek TriCaster™ using the USB cable supplied. There is no need to install driver, or configure the software. Recognition of the control surface is automatic.

POWER CONSIDERATIONS

The power requirements of TriCaster control surfaces vary, but generally speaking are not inconsequential. The power supplied to the surface by the system will be diminished proportionally if you find it necessary to connect the unit using a USB cable longer than the one originally supplied. You should be aware that insufficient power can cause connection or operation failures, or even damage the device.

To avoid problems in such cases, we strongly recommend that the control surface be connected to a powered USB hub using a short USB cable, in turn connecting the USB hub to a USB port on the TriCaster™. (See also Section 3.2.1.)

Important Note: So-called USB extenders are not recommended, having proven less reliable than long USB cables (with powered hub, as discussed above). This is because each added connector in the circuit introduces 'reflections' that can degrade the signal. In this configuration, the control surface may seem reliable for some time, but then fail unexpectedly. (If this should happen, disconnecting and reconnecting the control surface may temporarily restore functionality).

3 TRICASTER™ 850 CS & 450 CS



One of these two control surfaces is the perfect complement to your TriCaster™ 850 and 850 EXTREME™, or TriCaster™ 450 and 450 EXTREME™, respectively.

This chapter provides a quick hands-on tour of the major components and functions of your TriCaster™ control surface, followed by more detailed information. In a very short time, you will be a master of all aspects of its use.



Figure 2

The principle difference between these two proud members of the TriCaster™ family of control surfaces is the number of channels supported by their namesake TriCaster™ live production system. For this reason, TriCaster™ 850 CS is a bit wider than its sibling, providing control for the additional channels offered by TriCaster™ 850. As well, a few control groups are in slightly different locations on the two control surfaces

Apart from these distinctions, the features of both of the control surfaces considered in this chapter correspond very closely, allowing us to treat them simultaneously in our discussion. We'll

begin with a brisk walkthrough to get you up and running, then follow up with the finer detail in ensuing sections.

3.1 WALKTHROUGH

We discussed connecting your control surface to TriCaster™ back in Section 2.3. (Please take time to review this information if your installation requires use of a longer USB cable than the one supplied with your control surface.)

Please open a TriCaster session, and let's proceed to gain some hands-on experience.

3.1.1 SWITCHER ROWS



Figure 3 – TriCaster™ 450 CS

Let us focus our attention on the main *Switcher* rows first. For both TriCaster™ 450 CS and 850 CS, you'll notice that these correspond exactly to their user interface representations on the *Live Desktop*.

Hint: Generally we'll use TriCaster™ 450 CS to illustrate points involving the Switcher rows, for the simple reason that the images can be larger if we do so.

Just like the corresponding *Live Desktop* rows, the *PGM* (Program) and *PVW* (Preview) rows are longer than the *UTIL* (Utility) row, in order to accommodate the *Virtual Input* buttons – four of the latter for TriCaster™ 450 CS, and for its larger sibling.

1. Press the control surface button for *Camera 1* on the *PGM* row (if you don't have live sources connected at the moment, it will be fine to substitute a *Media Player* with a suitable video clip cued up for this exercise).
2. Select *Camera 2* (or a different Media Player) on the *PVW* row.
3. In the *Live Desktop*, add a title page to the *Graphics* (TriCaster™ 450) or *Stills* (TriCaster™ 850) *Media Player* – choose something like a lower third (anything that does not completely obscure the screen will do for now).
4. Add a similar title page to *DDR 2* (TriCaster™ 450) or *Title* (TriCaster™ 450) *Media Player*.
5. Back on the control surface, press *DSK 1* in the *UTIL BUS DELEGATE* control group.
6. Press *Graphics* or *Still* (whichever you used in Step 3) on the *UTIL* row. This assigns the *Stills* module to *DSK 1*.
7. Press the *DSK 2* button in the *UTIL BUS DELEGATE* control group.
8. Press *DDR 2* or *Title* (from Step 4) on the *UTIL* row, assigning it to *DSK 2*.

3.1.2 TRANSITION

Now we're ready now to test the *Transition* controls, to the right of the *Switcher* rows. The *Transition* controls on TriCaster the *control surface* are slightly simplified as compared to the same controls in the user interface.



Figure 4



Figure 5

3.1.3 LOCAL CONTROLS

Let's begin our exploration of switching with the local *video layer* controls.



Figure 6

Notice first that while TriCaster's *Live Desktop* includes *local* transition controls for the *BKGD* (Background) layer, the *Transition* control group on the control surface does not.

9. Click the local *Auto* button for the *DSK 1* layer. Not surprisingly (since the *Still* or *Graphic* module is assigned to *DSK 1*) the currently selected item in its playlist transitions in to appear above the *BKGD* layer on *Program Output*.

Another obvious difference is that the *Live Desktop* shows transition bins for the first three primary video layers, but the control surface does not. Even so, you can adjust the local video layer transition settings in various ways as follows.

10. Click the *BKGD delegate* button at 'upper-left' in the control surface *TRANSITION DELEGATE* group.
11. Twist the *Select* knob (just above the main *Take* button) to cycle through the current entries in the *BKGD Transition Bin*.
12. Click the *DSK 1* button in the *TRANSITION DELEGATE* group.
13. Again, twist the *Select* knob, and choose a different transition for *DSK 1* – choose one that is in a different numeric place in the bin than the *BKGD* selection below.
14. Now press the *BKGD* and *DSK 1 delegate* buttons together, multi-selecting them.
15. Twist *Select* again, slowly, click by click – observe that the *Transition Bin* selections for *BKGD* and *DSK 1* first 'sync up', and then advance together.
16. Rotate the nearby *Rate* knob (just above the main *Auto* button), and keep an eye on the *Transition Duration* time displays in the *Live Desktop*. Observe that the transition duration for both delegates changes as you do so.
17. Now push the *Rate* knob a few times (as though it was a button). As you do so, watch the *Transition speed* of both selected *delegates* in the user interface. The settings will cycle through the presets (in the *Speed* menu) each time you press *Rate*.

18. In the user interface, click the *Transition Options* button (gear) for the *BKGD* layer to open the settings panel for the currently selected transition.
19. Push the *Select* knob (as though it was a button). Doing so toggles the Normal/Reverse state for this transition; you'll be able to see this in the *Transition Options panel* you opened.
20. At the top (furthest from you) center of the control surface, you'll see *SHIFT*, *CTRL* and *ALT* buttons, just to the left of the *Record group*.

Press *ALT* and continue to hold it down, and watch the *Transition Options* while you push *Select* several times in succession. You should see the *Ping Pong* switch for the current transition toggle on or off each time you push *Select*.

Note: Overlay Transitions, as used to hide or show the two DSK video layers, always Ping Pong. Hence their options panels have no Normal, Reverse or Ping Pong switches.

MAIN CONTROLS

Having seen how local *Transition* controls work, let's move on to their main counterparts.

21. If necessary, adjust the Live Desktop monitoring view to show the *Preview monitor* (next to *Program*).
22. On the control surface, press the *BKGD* button in the *TRANSITION DELEGATE* group, resulting in it alone being selected in the group.
23. Press the main *Auto* button (below *Rate* on the control surface), or operate the T-bar to perform a *BKGD* transition.
24. Earlier, we displayed *DSK 1*, using its local *Auto* button. The *BKGD* transition we just performed did not affect it, so it should still be displayed (if you removed it from view while experimenting, please restore it before continuing).
25. Press the *BKGD*, *DSK 1* and *DSK 2* delegate buttons all together, multi-selecting them.

Take a look at the progress gauge beneath the *Delegate* button for *DSK 1* in the user interface. It currently indicates that *DSK 1* is fully displayed. In contrast, the gauge beneath *DSK 2* tells us that video layer is hidden.



Figure 7

Now cast your eyes over the *Preview* and *Program* monitors (Figure 7), and consider how these displays relate to your current *Transition Delegate* selections:

- The *Program monitor* shows *DSK 1* (which has *Stills* assigned to it) over the current *BKGD* layer.
- The *Preview monitor* shows *DSK 2* (which has *Titles* assigned to it) over the current *Preview row* selection.

The *Look Ahead Preview monitor* (or simply, *Preview*) is showing us the composition that will result if we perform a *Take* or *Auto* operation right now.

26. Press the *DSK 1* and *DSK 2* buttons in *TRANSITION DELEGATE* (so that *BKGD* is no longer selected).

Note that, when you do this, the *Preview monitor* no longer shows the Switcher's *Preview row* selection. Why not?

Having de-selected the *BKGD* delegate, only the *DSK 1* and *DSK 2* buttons remain lit. Thus only those two video layers will be affected by a *main Take* or *Auto*. The end result of either of those operations will be as follows:

- *DSK 1*, currently seen on **Program** out, will be removed from view (but will re-appear on *Preview*).

- *DSK 2* will be displayed on *Program Out* instead.
- The *BKGD* layer will not change; that's why the *Preview* correctly predicts no change to that video layer, instead showing the same *BKGD* in both the *Preview* and *Program* monitors.

The *TRANSITION DELEGATE* feature provides flexible and convenient video layer management, providing complete control over your ultimate *Program output* composition.

One more little detail to note, before we leave the *Transition group* – *FTB*, although not located beside its *TRANSITION DELEGATE* siblings on the control surface, is nevertheless a *delegate* button, just like them.



Figure 8

27. Press *FTB* – note that when you do:
 - a. The other *Transition delegate* buttons are de-selected.
 - b. The *Preview monitor* goes completely black.

28. Press the main *Auto* button, or operate the *T-bar*.

Observe that pressing *FTB* did not *perform* a Fade to Black – rather it *delegated* the main *Take*, *Auto* and *T-bar* controls to control the *FTB* video layer.

29. Press the main *Take* button again, clearing the *FTB* video layer from *Program out*.

3.1.4 MEDIA PLAYERS

Let's take a brief look at the *MEDIA PLAYER* control group.



Figure 9

30. By way of preparation:

- a. Select *DDR 1* on the *Program row*, and select a video or animation clip.
- b. Press *DDR 2* on the *Preview row*, and select another video or animation clip.
- c. Press *BKGD* in the *Transition delegate* group (de-selecting everything else).
- d. If necessary, clear any *DSK* layer displayed on *Program out*, using its local *Take* button.
- e. Click the *DDR 1* and *DDR 2* tabs in the user interface (to let you to see what happens in response to your control surface operations).

31. Press the *DDR 1* button in the *DELEGATE* group under *MEDIA PLAYERS* on the control surface.

32. If *LOOP* for *DDR 1* is not enabled (i.e., its button is not brightly lit on the control surface), press the *LOOP* button once.

33. Press the *DDR 2* button in the *DELEGATE* group.

34. If *LOOP* for *DDR 2* is enabled (its button is brightly lit on the control surface) press the *LOOP* button once to turn it off.
35. Press the *DDR 1* button again – note that the *LOOP* button illuminates, correctly showing the current state for *DDR 1*.
36. Multi-select the *DDR 1 & DDR 2 delegate* buttons.
37. Press *LOOP*. *LOOP* is turned off for both of the delegated *Media Players*.
38. Press *LOOP* again – The *LOOP* feature is enabled for both delegated *Media Players*.
39. Repeat this exercise using the *AUTOPLAY* or *SINGLE* buttons (or both together).

Until this point, we've not done anything to the Media Players that couldn't have been done without the control surface, so try the following simple but powerful step:

40. Press *Play*. Both *Media Players* begin to run simultaneously. Press *Stop*.

3.1.5 POSITIONER

Let's kick it up a notch now, using the *control surface* to perform multiple simultaneous operations.

41. Enable *AUTOPLAY*, *SINGLE* and *LOOP* for both *DDRs* (see Section 3.1.4).
42. Select different video sources on the Switcher's *PGM* and *PVW* rows (see Section 3.1.1).
43. Use the *UTIL* row to assign *DDR 1* to *DSK 1*.
44. Likewise, assign *DDR 2* to *DSK 2*.
45. Select both *DSK 1* and *DSK 2* buttons under *DELEGATE* in the *Positioner* group on the control surface.
46. Press the *POS/SCALE* button just above the *Positioner DELEGATE* buttons (this button group controls the *Joystick mode*).

47. Twist the *joystick* counter-clockwise (as viewed from above) to *Scale* both DSK overlays down at once. Reduce them to 15-20% of the screen size. (Notice that the *Preview monitor* temporarily shows the results of your operation as you do so).
48. Push the *DSK 1* button in the *Positioner DELEGATE* group, and use the joystick to reposition *DSK 1* to the upper-left quadrant of the screen, again using *Preview* to guide you.

(Push forward or back to move the delegated source vertically in the frame, and left or right for lateral movement.)
49. Push the *DSK 2* button in the *Positioner DELEGATE* group, and repeat the step above, positioning *DSK 2* in the lower right quadrant of the screen.
50. Select the *BKGD* button in the *TRANSITION DELEGATE* group, and press *Rate* as many times necessary to set the transition speed for the *BKGD* video layer to F (fast).
51. Multi-select *DSK 1* and *DSK 2* in the *TRANSITION DELEGATE* group, press *RATE* until both *DSK* video layer transitions is set to M (Medium).
52. Multi-select *BKGD*, *DSK 1* and *DSK 2* in the *TRANSITION DELEGATE* group.



Figure 10

At this point, the display on the *Preview* monitor should look something like Figure 10.

53. Push the main *Auto* button. The following will occur:

- a. The *BKGD* transition is performed, swapping the Program and Preview row sources.
- b. Both DSKs transition in above the BKGD layer.
- c. And the two DDRs automatically begin to play.

54. Let this all run for a moment or two to take it all in, then press *Auto* again.

All of the above resulted from your pressing a single button. You can see that the *control surface* allows you to quickly configure complex compositions, and display them with flair.

Multi-selecting delegates provides a great deal of convenience, as we've seen. Consider too that it becomes a simple matter to ensure matching positioning (etc.) for a series of sources, such as title overlays, picture-in-picture setups, and so on. Let's look at an example using Virtual Input layers.

3.1.6 VIRTUAL INPUTS

We'll perform a very simple exercise, but it will quickly impart everything you need to know.

- Turn off both *DSKs*, and press the *BKGD* button in the *TRANSITION DELEGATE* group.

The *Preview monitor* will now show the Switcher's *Preview row* selection (only); and the *Program monitor* will display the current *Program row* selection – this will let you see how subsequent steps affect delegated Virtual Inputs.

- In the onscreen user interface (*Live Desktop*), click the tab labeled *V1*.
- In the tabbed pane that appears, click the *Configure* (gear) button next to the *LiveSet* name for this *Virtual Input*, and select the "Default> A over B LiveSet".
- Repeat these two steps for the *Virtual Input* labeled *V2*.

(We're going to create two matching *Virtual Input* setups. We could just as easily use different LiveSets, but our current purposes don't require that, so we'll opt for simplicity.)



Figure 11



Figure 12

- Multi-select the *V1* and *V2* buttons in the *VIRTUAL INPUT DELEGATE* button group at right.
- Push the *DDR 1* button on the row labeled “A”.
- Push the *DDR 2* button on the row labeled simply “B” in the large *VIRTUAL INPUT* section (above main *UTIL* row).
- Push the *TITLE* button in the *Overlay* row above. Make sure that the *Overlay Take* button to its right is *off* for the moment.
- In the *Positioner DELEGATE* group, press *Virtual A*. This delegates the *Joystick* to control the attributes of the *Input A* layer of currently delegated Virtual Inputs – in this case, *Virtual Input 1*, and *Virtual Input 2* will be affected.



Figure 13

- Press the *POS/SCALE* button in the Positioner mode group. Watch the monitors as you *Scale* and position the source assigned to *Input A* (which happens to be *DDR 1*) to approximate Figure 13.

Hint: If Positioner settings have been applied to Inputs A or B previously in either Virtual Input 1 or 2, with V1, V2 and POS/SCALE selected, you need simply press Reset to clear them all to the defaults in one operation.

- Let's do it again – press the *Overlay Take* button beside the *Overlay* row.



Figure 14

- Press the *Virtual Overlay* button in the *Positioner DELEGATE* group, and adjust the title page assigned to *Overlay* to a suitable size and position (Figure 14).

In like fashion, you can easily manipulate the elements of any composition to match perfectly. (You may find this particularly useful, for example, to make sure that station ID ‘bugs’ or lower thirds title overlays appear in exactly the same place for multiple *Virtual Inputs*.)

By this point, the fundamental principles of your TriCaster™ control surface should be clear; with a little bit of practice you’ll be able to control your TriCaster™ with unparalleled ease and confidence. This concludes our walkthrough. If you like, please continue reading for the complete details of every feature.

3.2 FEATURES AND CONTROLS

Your TriCaster™ *control surface* provides superb tactile control over your NewTek live production system. Careful attention to ergonomics and aesthetics in the design are obvious. These attractive yet rugged control surfaces can be configured for either tabletop or in-table mounting.

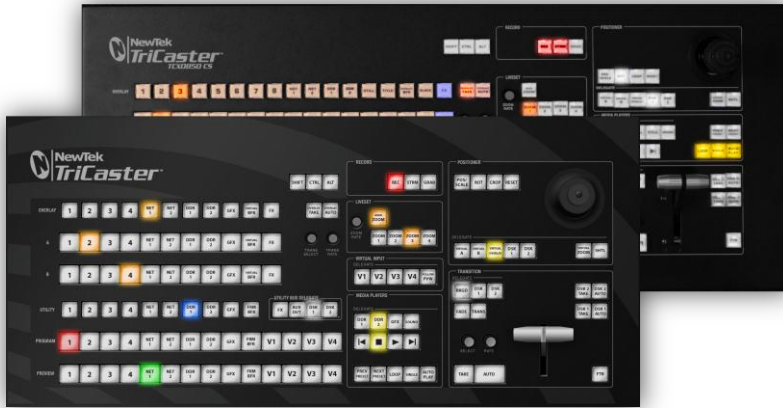


Figure 15

The control layout closely follows that of the TriCaster™ user interface, the principle exceptions being that:

- The *VIRTUAL INPUT* control group on the control surface is located above the main *Switcher* rows (for comfort).
- A single *Position* control group governed by delegate buttons takes the place of multiple controls in the UI.

The controls are comprised of grouped sets including the following hardware types:

- Backlit push buttons
- Twist knobs
- T-bar
- 3-axis joystick
- LED indicators

3.2.1 CONNECTING TO TRICASTER

If your *control surface* is connected to TriCaster using the cable it comes with, no external power is required. If a longer USB cable is required, first connect the control surface to a powered USB hub by a short cable, and then insert the longer USB cable between the hub and TriCaster.

Please be advised that so-called USB extenders are not recommended, having proven less reliable than long USB cables (with powered hub, as above). This is because each added connector introduces ‘reflections’, degrading the signal. Your TriCaster™ CS may seem reliable for some time in this configuration, and then unexpectedly fail. (If this should happen, disconnecting and reconnecting the control surface may serve as a temporarily measure to restore functionality).

3.2.2 DELEGATES AND SYNCHRONIZATION

Both TriCaster’s *Live Desktop* and the control surface supply *delegate* button groups to govern other controls. This is done both to extend the capability of other controls, and to support multi-selections – resulting in simultaneous operations.

When initially selecting multiple delegates, as often as not the settings and states of the individual members selected will vary. For example, when you delegate several *Virtual Inputs* at once, the *Overlay Transition Rate* of each member of the multi-selection could be different.

Generally, wherever it makes sense to do so, when you make adjustments to settings for multi-delegated groups, the settings will be progressively synchronized. For example:

- The *Zoom Rate* for V1 is set to “S”; V2 is set to “M”; V3’s *Zoom Rate* is “F”.
- You multi-delegate these three *Virtual Inputs*.
- You push the *Zoom Rate* button once. The rate for V1 increments to “M”. (V2 and V3 are not affected.)
- You push the *Zoom Rate* button again. The rate for both V1 and V2 are incremented to “F”; the *Zoom Rate* for all three delegated Virtual Inputs is now synchronized.

You will see this synchronization method applied to the following controls:

- Media Players > Loop, Autoplay and Single
- Transition>Rate

- Transition>Select
- Virtual Input >(Overlay) Trans Rate
- Virtual Input >(Overlay) Trans Select
- Virtual Input >Zoom Rate
- Virtual Input >Overlay display state

3.2.3 SWITCHER CONTROLS



Figure 16

PROGRAM AND PREVIEW

The *Program* and *Preview* rows each hold selection buttons as follows:

1. 1 – (4 or 8); Camera inputs
2. NET 1 and NET 2
3. Media Players:
 - a. DDR 1 and DDR 2
 - b. STILL or Graphics
 - c. TITLE (TriCaster™ 850 CS only)
 - d. FRAME BUFFER
 - e. BLACK (TriCaster™ 850 CS only)
 - f. V1 - (V4 or V8); Virtual Inputs

Switcher row buttons are mutually exclusive, and the active selection button remains lit.

Hint: Hold down CTRL when clicking a button on the Preview row to toggle LiveMatte on/off for that source. Likewise, hold ALT while pushing a Preview row button to toggle its Proc Amp.

UTIL (UTILITY) ROW

UTIL row buttons are also mutually exclusive. The subordinate role of the *UTIL* Row is subtly reinforced by the use of slightly smaller buttons. Source options include:

1. 1 – (4 or 8); Camera inputs
2. *NET 1* and *NET 2*
3. *Media Players*:
 - a. *DDR 1* and *DDR 2*
 - b. *STILL* or *Graphics*
 - c. *TITLE* (TriCaster™ 850 CS only)
 - d. *FRAME BUFFER*
 - e. *BLACK* (TriCaster™ 850 CS only)

Press *SHIFT + (UTIL row button)* to access extended source options for the *AUX Out* delegate only:

- f. [SHIFT + 1] – [SHIFT + (4 or 8)] → select *VI BFR 1- (4 or 8)*
- g. [SHIFT + NET 1] → select *Preview*
- h. [SHIFT + NET 2] → select *Program*
- i. [SHIFT + DDR 1] → select *Program (Clean)*
- j. [SHIFT + DDR 2] → select *FX*

UTIL BUS DELEGATE



Figure 17

UTIL BUS DELEGATE (Figure 17) button selections govern which *switcher layers* the *UTIL* row is currently controlling; or – from another perspective – which video layers the selected source is assigned to.

Note: When possible, all related button selections (and illumination state) are updated to show their current state when new delegate selections are first made. This is true for all delegate groups.

(An exception is made when newly selecting multiple delegates with control settings that do not initially match. For example, if DSK1 and DSK 2 have different sources assigned and are newly multi-selected in the delegate group, no buttons on the UTIL row will light.)

3.2.4 TRANSITION GROUP



Figure 18

The controls in this group (Figure 18) are analogous to those in the eponymous group in user interface, performing the same functions in much the same manner.

(In one deviation from the corresponding *Transition* group on the *Live Desktop*, switcher layer positioning is provided by a single, shared set of *Positioner* tools, discussed later.)

TRANSITION DELEGATE

As on the *Live Desktop*, active *delegate* buttons remain lit. Multiple selections can be performed by pressing one or more buttons at the same time. *DELEGATE* buttons determine what *video* layers the main *Take*, *Auto*, and *T-Bar* affect, and the scope of the *Select* and *Rate* knobs.

FTB

Note that *FTB* (Fade to Black), although not located beside the other delegates as it is in the user interface, is a delegate button – not an action button – and works exactly the same manner as its *Live Desktop* twin. Note that *FTB* has no dedicated transition controls; its fade in/out duration is derived from the *BKGD* transition setting.

Hint: When FTB is displayed on Program Out, it obscures all other Switcher activity. To alert you to this important fact, the control surface FTB button flashes for several seconds if you should make a new TRANSITION DELEGATE selection that does not include FTB.

TRANSITION BIN CONTROL

The control surface does not have *Transition Bins* for the different video layers as such, but can nevertheless control the transition selection and attributes for delegated video layers.

SELECT

When a single layer, such as *BKGD*, is selected in the *TRANSITION DELEGATE* group on the control surface, rotating the *SELECT* knob cycles the current transitions in the Transition Bin for that layer.

When multiple video layers have been delegated, turning *SELECT* affects the transitions for all layers as follows:

- When all delegated layers are currently on the same transition bin 'slot', the selection in the corresponding transition bins simply cycles left or right synchronously.
- Otherwise (when the *Transition Bin* slots for multi-delegated layers are *not* aligned vertically), rotating the knob moves the selection layer by layer as the knob turns until the selected slots *are* aligned. From that point, continuing to twist *SELECT* moves the transition selection in lock step.

The *SELECT* knob also acts as a push button:

- Push *SELECT* to toggle the *Reverse* setting for the *BKGD* transition.
- Push *ALT + SELECT* to toggle the *Ping Pong* switch for the *BKGD* transition.

RATE

The *RATE* knob operates in similar fashion to *SELECT*. Rotate the knob to modify the transition Rate for delegated layers. Or press the knob to cycle through the standard Slow, Medium and

Fast presets. Multi-delegate selections are handled the same as for Select (for both twist and push operations).

FADE & TRANS



Figure 19

These two buttons provide a quick way to control the *Transition Bin* selection for the delegated switcher layer(s). The FADE and TRANS (Transition) buttons are mutually exclusive; selecting either one cancels the other, and only the currently active button remains lit.

Pushing *FADE* offers a quick and convenient way to select the Crossfade transition. Push the TRANS button to activate the last-used transition icons for a video layer (or layers). For new sessions, TRANS jumps to the first transition in the bin.

PERFORMING TRANSITIONS

Just as in the user interface, the TriCaster™ control surface provides both local and main transition controls.

MAIN T-BAR, TAKE AND AUTO

These controls correspond exactly to their *Live Desktop* counterparts, and affect all currently delegated video layers (*BKGD*, *DSK 1*, *DSK 2*, or *FTB*) at the same time.

Note that two small LEDs are situated near the left side of the T-Bar – one at each extreme of its stroke. When a transition is in progress (or is halted partway), one LED is illuminated. This LED marks which direction to push the T- to complete the current transition.

LOCAL TAKE/AUTO

Local *Take* and *Auto* buttons are provided for *DSK 1* and *DSK 2*, but not *FTB*. These perform a cut or transition respectively, affecting only the corresponding switcher layer.

Hint: When a DSK layer is fully displayed on Program out, its local Take button (on the Live Desktop as well as the control surface) remains lit.

3.2.5 VIRTUAL INPUT GROUP

This section of the control surface corresponds to the *Virtual Input* tabbed panels on the *Live Desktop*. The *VIRTUAL INPUT DELEGATE* button group determines which *Virtual Input* (from the eight available) is being controlled.



Figure 20

In contrast with the *Live Desktop*, your TriCaster™ CS adjusts position attributes for *Virtual Input* video layers using a single set of *Positioner* tools governed by *Delegate* controls (see Section 3.2.6).

VIRTUAL INPUT DELEGATE

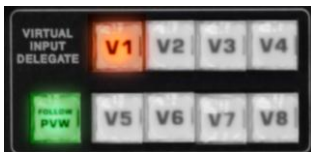


Figure 21



Figure 22

Your TriCaster™ CS provides a *VIRTUAL INPUT DELEGATE* button group to govern which *Virtual Input(s)* are affected by operations. Selected *DELEGATE* buttons are illuminated and, conveniently, multiple selections are supported.

FOLLOW PVW

Enabling the *FOLLOW PVW* button (*VIRTUAL INPUT DELEGATE* group) forces the *DELEGATE* selection to track the Switcher's *PVW row* selection. This can be very valuable, as it automatically ensures that adjustments you make to settings will affect the *Virtual Input* that you plan to display next.

INPUT ROWS

Just as in the *Live Desktop*, the *Overlay* row selection determines the source for the *Overlay* layer of a *Virtual Input*. However, since the control surface supports selection of multiple *Virtual Inputs* simultaneously, operations can affect more than one *Virtual Input* at a time.



Figure 23

Likewise, the *A* (Input A) and *B* (Input B) row selections determine the sources for those layers for delegated *Virtual Inputs*. All three rows provide buttons for all camera inputs, *Net 1*, *Net 2*, all *Media Players* (excluding *Sound*), *Virtual Buffer*, *Black* (TriCaster™ 850 CS only) and *FX*.

Hint: Each Virtual Input has its own dedicated Frame Buffer. As you'd expect, this button references the appropriate Frame Buffer for each delegated Virtual Input, even for multi-delegate selections.

VIRTUAL INPUT OVERLAY TRANSITIONS

OVERLAY TRANSITION SETTINGS

Rotate the *TRANS SELECT* knob to cycle the transition bin selection through transitions currently available in the (*Overlay*) *Transition Bin* in the user interface.

Rotate the *TRANS RATE* knob to modify the transition duration. Press the knob to cycle through the standard *Slow*, *Medium* and *Fast* presets.

OVERLAY OPERATIONS

OVERLAY TAKE shows or hides the *Overlay* layer(s) for currently delegated *Virtual Input(s)*. Similarly, *OVERLAY AUTO* will transition the selected *Overlay(s)* using the individual effects selected for delegated *Virtual Inputs*.

LIVESET ZOOM



Figure 24

The buttons labeled *ZOOM 1-4* selects the active *Zoom Preset* for the currently delegated *Virtual Inputs*. The *ANIM ZOOM* button corresponds to the *Animate Zoom* switch in *Virtual Input* tabs on the *Live Desktop*.

When *ANIM ZOOM* is enabled, pressing an unselected *zoom preset button* initiates a smooth zoom from the current level to the new level. Preset selection applies directly to all delegated *Virtual Inputs*.

If you push a *zoom preset button* a second time at any point, the animated zoom will ease-out and stop. Press it again to re-commence the zoom and complete it.

The duration of animated zooms is determined by the *ZOOM RATE* setting. Rotate the knob to modify the duration of the effect, or push it to jump to a preset duration (Slow, Medium or Fast).

3.2.6 POSITIONER GROUP



Figure 25

POSITIONER DELEGATE

The *Positioner* section allows you to adjust position attributes for different overlays and video layers using the *Joystick*.

The *DELEGATE* group includes seven buttons. In some cases, the scope of application for a *DELEGATE* selection is further modified by button selections in other sections of the control surface.

For example:

- The *VIRTUAL A* and *VIRTUAL B* buttons delegate *Joystick* operations to *Input A* and *Input B* of the *Virtual Input(s)* currently selected in the *VIRTUAL INPUT DELEGATE* group.
- Similarly, the *VIRTUAL OVERLAY* button assigns the *Joystick* to control position attributes for the *Overlay* layer of currently delegated *Virtual Input(s)*.
- Again, selecting *VIRTUAL ZOOM* tells the *Joystick* to control the zoom level of the currently delegated *Virtual Input(s)*. The *joystick mode* buttons (such as *POS/SCALE*, discussed shortly) are not lit when the *POSITIONER DELEGATE* selection is *VIRTUAL ZOOM*.

Use the *joystick* to control *Virtual Zoom* as follows:

- To zoom in:
 - Push the joystick forward (as viewed from above), or twist the joystick clockwise.
- To zoom out:
 - Pull the joystick back (as viewed from above, or twist the joystick counter-clockwise).
- Push *SHUTTLE* to delegate the *joystick* to shuttle the *Media Player(s)* currently selected in the *MEDIA PLAYERS DELEGATE* group. Again, *joystick mode* buttons are not lit when *SHUTTLE* is delegated.

Use the *joystick* to control *Virtual Zoom* as follows:

- To *shuttle* delegated *Media Players*, move the *joystick* horizontally (as viewed from above).
- To *jog* delegated *Media Players*, move the joystick vertically.

The *DSK 1* and *DSK 2* delegate buttons provide direct selection for these video layers, and are *not* modified by selections elsewhere.

Note: Two of the delegates (VIRTUAL ZOOM and SHUTTLE) are set apart from their siblings. This is because neither of these options supports multi-selection (with other Positioner delegates) like the rest. (Nevertheless, you can zoom multiple Virtual Inputs simultaneously when these are selected in the VIRTUAL INPUT DELEGATE group, or shuttle several delegated Media Players.)

JOYSTICK MODES

Generally, changes resulting from joystick operations are governed by the current application mode, or simply *Joystick Mode*. These mode selections are mutually exclusive (only one buttons is illuminated at a time).

Also note that when the active *Positioner DELEGATE* is either *Virtual Zoom* or *Shuttle*, the *Joystick Mode* is irrelevant, and is ignored.

POS/SCALE

- Move the *joystick* horizontally, vertically or diagonally (as viewed from above) to move delegated video source(s) on its X and Y axes.
- Twist the *joystick* clockwise to scale delegated source(s) up, or counter-clockwise to scale down.

Hint: When multi-delegate selections are active for the Positioner, adjustments are generally relative to the current state for individual delegates, as opposed to absolute.

ROT (ROTATE)

When the *POSITIONER DELEGATE* selection is anything other than *VIRTUAL ZOOM* or *SHUTTLE*:

- Move the joystick horizontally (as viewed from above) to rotate delegated sources on the Y axis.
- Move the joystick vertically to rotate delegated sources on the X axis.
- Twist the joystick clockwise/counter-clockwise to rotate delegated sources on the Z axis.

CROP

Except when the *POSITIONER DELEGATE* selection is *VIRTUAL ZOOM* or *SHUTTLE*:

- Twist the *joystick* clockwise (as viewed from above) to crop delegated sources inward on all 4 edges, maintaining the original aspect ratio.
- Twist the *joystick* counter-clockwise to reduce cropping of delegated sources on all 4 edges.
- Move the *joystick* horizontally to crop only the left edge of delegated sources.
- Move the *joystick* horizontally with the *joystick button* pressed to crop only the right edge of delegated sources.
- Move the *joystick* vertically to crop only the top edge of delegated sources.
- Move the *joystick* vertically with the *joystick button* pressed to crop only the bottom edge of delegated sources.

RESET

Despite its location, *RESET* is really an action button (not a *Joystick mode*). Press it to restore all position settings for currently delegated source(s) to their defaults. (This is also why *RESET* does not stay selected when pressed, nor does it change the current *Joystick mode*.)

The two special delegate selections also work differently with *RESET*:

- When *VIRTUAL ZOOM* is delegated, the Zoom preset for delegated *Virtual Inputs*) is reset to the #1 preset.
- When *SHUTTLE* is delegated, selected *Media Players* are reset to the starting point of the current item (or playlist).

MONITORING

While using the joystick in most *POSTIONER DELEGATE* modes, many adjustments are temporarily shown on the Live Desktop's *Preview monitor*. The *Preview monitor* reverts to its default display a few moments after releasing the joystick to its at-rest position.

3.2.7 MEDIA PLAYER GROUP



Figure 26

MEDIA PLAYER DELEGATE

The *MEDIA PLAYER DELEGATE* group contains buttons for TriCaster's *DDR 1*, *DDR 2*, *Graphics* (450 CS), *STILL and TITLE* (850 CS), and *SOUND* modules. This selection determines which *Media Player* is being controlled at the moment. (Support for multi-selection allows you to do things like start and stop both *DDR*s at the identical moment.)

PREV/NEXT PRESET

These two buttons let you to cycle backwards or forwards respectively through existing presets for the delegated *Media Player*.

TRANSPORT CONTROL

- |◀ (Previous Item) – Press this button to go to the previous playlist entry in delegated *Media Players*. (The selection cycles to the last playlist entry when necessary.)
- ■ (Stop) – Push once to end playback for delegated *Media Players*; push a second time to return to the start position (this operation respects the *Single* setting for individual *Media Players*)
- ▶ (Play) – Push to initiate playback for delegated *Media Players*.
- ▶| (Next Item) – Push this button to go to the next playlist entry in delegated *Media Players*. (The selection cycles to the first playlist entry when necessary.)

MEDIA PLAYER OPTIONS

LOOP, *SINGLE*, and *AUTOPLAY* are mode buttons, and toggle the respective settings for all delegated *Media Players* as appropriate (for example, *Sounds* has no *Autoplay* feature, so logically *AUTOPLAY* does not affect it).

3.2.8 RECORD GROUP



Figure 27

Three buttons labeled *REC*, *STRM*, and *GRAB* are located in the *RECORD* group.

- *REC* – Pressing this button enables TriCaster's *Record* feature. As a safety measure, pressing the *REC* button when recording is underway does not stop recording. Instead, the *CTRL* button flashes to remind you that you must hold the *CTRL* button down while pushing *REC* to end recording.
- *STREAM* – Push to enable or disable TriCaster's live streaming feature.
- *GRAB* – Push to store a snapshot of Program output using TriCaster's *Grab* feature.

3.2.9 QUALIFIER BUTTONS



Figure 28

The *SHIFT*, *CTRL* and *ALT* buttons provided on the control surface support extended features and future expansion.



This chapter discusses the use of a NewTek TimeWarp™ control surface, explaining how it integrates into your TriCaster live production system.

Full details of all of the controls and functions on the control surface follow the short walkthrough section.

This chapter discusses the use of two NewTek TimeWarp™ control surfaces in two variants. Both models (TriCaster™ 850TW and its predecessor, TW-42) add convenient slow motion instant replay to the already potent capability of your TriCaster™ system.



TriCaster™ 850TW has the same sleek profile as TriCaster™ 450 CS and TriCaster™ 850 CS, making it the perfect complement to one of these control surfaces. Of course it delivers the same precise control over TriCaster's instant replay recording and live playback when used alone.

The earlier TW-42, though designed for use with SD format TriCasters, continues to provide great functionality when connected to the newer HD TriCasters (including TriCaster™ 300, 450 and 850).

For the most part, both TimeWarp™ models have similar controls, with similar labels, and perform in much the same manner. For that reason, in the discussion which follows we will focus on the newer TriCaster™ 850TW, simply giving you a friendly heads-up whenever we discuss an item where TW-42 varies from its newer sibling.

TW-42 NOTES Wherever items of special interest to TW-42 users appear in this chapter, they will be flagged in the same manner as this paragraph.

4.1 WALKTHROUGH

We discussed connecting your NewTek control surface to TriCaster™ back in back in Section 2.3. (Please take time to review this information if your installation requires use of a longer USB cable than the one supplied with your control surface.)

Please open a TriCaster™ session, and let's proceed to gain some hands-on experience.

4.1.1 SETTING UP

TRICASTER SETUP

- 1) Connect a suitable video source to a camera input on your TriCaster™ live production system.
- 2) Select that source on the Switcher's *Program* row.
- 3) Open TriCaster's *Record Configuration* panel and set the source (or the *Primary Source*, for EXTREME™ models) to the *Program* option.
- 4) Select a suitable *Encoding* format and *Destination* for the captured files.
- 5) Turn on *Add Source to DDR*.

BASIC TRICASTER™ 850 TW CONTROLS

- 6) Press the *DDR 1* button in the *DDR Delegate* control group – see Section 4.2.2. (TriCaster™300 has just one *DDR*.)
- 7) Press the *Autoplay* button (*DDR options* group, Section 4.2.8).
TW-42 NOTES It is necessary to turn Autoplay on or off in the interface, since TW-42 does not have this button.

- 8) Press the *50%* button in the *Play Speed* group (Section 4.2.4), presetting playback to a suitable slow motion playback rate).

4.1.2 RECORDING AND PLAYING REPLAYS

- 9) Click the *REC* (Record) button on TriCaster™ 850 TW to commence live replay recording.
TW-42 NOTES There is no *REC* button on TW-42, but the next step will automatically enable *Record* anyway.
- 10) Watch your live program for a suitable event, and press the *IN* button (*Marking group*, Section 4.2.5).
- 11) Wait 10-15 seconds, and press *OUT* (*Marking group*, Section 4.2.5)
- 12) Select *DDR 1* on the Switcher's *Preview* row.
- 13) Click *Take* (or press the keyboard *Enter* key).

Your instant replay will automatically be displayed on TriCaster's *Program Output*, replacing the live video feed. The replay clip will play through once at half-speed, and then the live source will be restored to output.

Hint: Really, these last few steps are 'The Big Ones' – say them with me: "IN, OUT, DDR and Enter". Repeat this mantra over and over for the next four hours (or less, if you're really confident you have committed them to memory.

4.2 FEATURES AND CONTROLS

TriCaster™ 850 TW is quite straightforward to use, especially true if you are already familiar with common TriCaster controls and features.

In this section, we'll discuss each part of the control surface, explaining how the various controls operate and what effect they have, revealing a few little tricks that you may find helpful along the way.

4.2.1 OVERVIEW

TriCaster™ 850 TW provides convenient control over TriCaster's two *DDR*s as well as the recording of the *Primary* source configured for capture (*Secondary* recording on TriCaster™ EXTREME™ models is unaffected by clip marking operations).

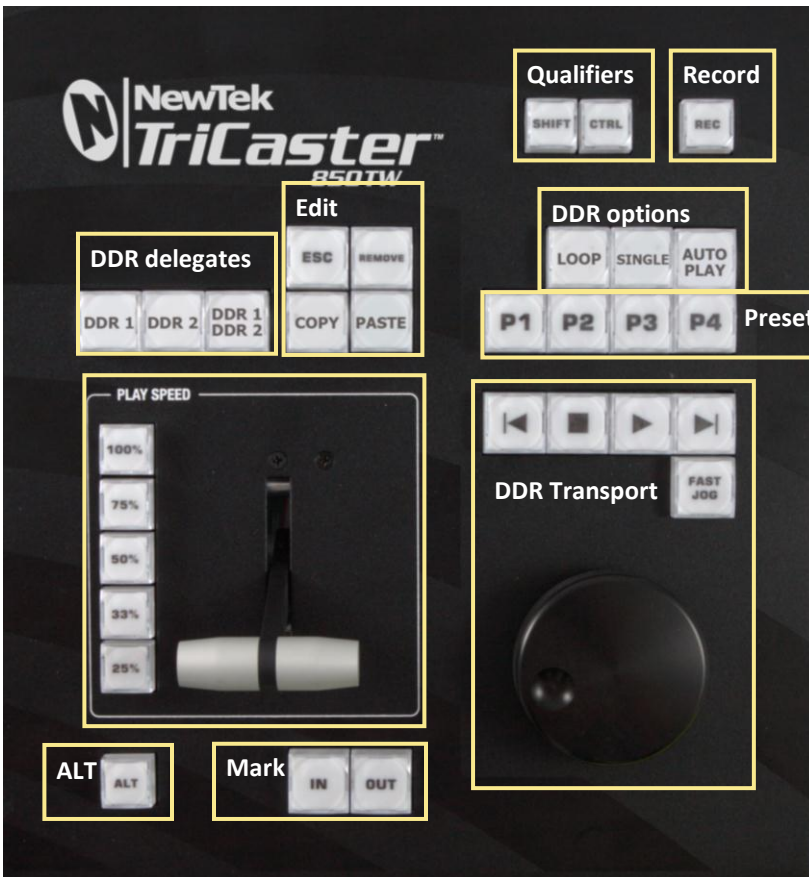


Figure 29

For convenience, related controls and buttons are grouped together on the control surface. We will discuss the features and operations supported by each group in the pages that follow.

The layout includes the control groups listed below (as shown in Figure 29):

- DDR Delegates
- Edit group (modify playlist content)
- Play Speed (T-bar and presets)
- Mark (replay clip creation buttons)
- ALT and Qualifiers (which modify the operation of other controls)
- Record toggle
- DDR options
- Preset (DDR Playlist)
- DDR Transport (clip playback and position controls)

Let's take a closer look at the members of each control group and their purpose.

The DDR 1 and DDR 2 buttons are 'radio button' controls. This means that they operate just like the 'Favorite' buttons provided on a car radio to let you jump to a preset station.

Pressing a button produces an immediate change of state, and your selections are mutually exclusive.

4.2.2 DDR DELEGATE



Figure 30

Much of the functionality of your TriCaster™ 850 TW relates to clip playback, navigation, and the like. These are essentially *Media Player* functions, controlling one or another of TriCaster's *DDR*s. The first two buttons in this group (*DDR 1* and *DDR 2*) basically delegate the other controls to the service to the named *DDR* (TriCaster™ 300 is, of course unique in having just one *DDR*).

Note: These buttons only relate to TriCaster™ 850 TW operations, and do not interact with the Switcher (or TriCaster™ 850 CS) delegate buttons.

The third button in this group button is *not* a delegate button (nor is it a radio button). The *DDR 1/DDR 2* button is a toggle switch. When enabled, it tells the control surface to apply *DDR Transport* control group operations to both *DDR*s (see Section 4.2.10).

TW-42 NOTES There is no corresponding *DDR 1/DDR 2* button on TW-42. Multi-delegating DDRs is not supported with this control surface.

4.2.3 EDIT GROUP



Figure 31

In general, these buttons operate on selected playlist content in the currently delegated *DDR* (see Section 4.2.2).

- *Remove* – Push to remove currently selected entries from the delegated *DDR*'s playlist (selected items are not deleted from the hard drive, however).

TW-42 NOTES The *Remove* button is labeled *RMV* on TW-42.

- *Copy* – Push to copy currently selected playlist items into the Paste buffer.
- *Paste* – Push to insert Paste buffer content into the playlist of the delegated *DDR*
- *Esc* – close any popup dialog or text entry item.

Hint: These four buttons are also 'action buttons' – that is, pushing one of them has an immediate effect (but unlike a radio button, the operation is complete on release, and does not remain in force).

TW-42 NOTES There are no *Copy*, *Paste* or *Esc* buttons on TW-42.

4.2.4 PLAY SPEED

As you would expect, the speed preset buttons in this group (marked 25%, 33%, 50%, 75% and 100%) govern the playback rate of the active *DDR*.

Speed preset buttons are mutually exclusive, and establish a playback *mode*. They do not initiate playback; rather, the playback speed you choose is applied when subsequently press *Play*.



(If a *DDR* is already playing, pushing a speed preset button alters the current playback speed immediately.)

Figure 32

Hint: If you use an onscreen speed control to change to a new playback speed, the control surface button selection state follows when possible (in cases where no button corresponds exactly to the newly established speed, no preset button will be illuminated).

The speed *T-Bar* works in similar fashion to the preset buttons, but provides a smoothly variable approach to setting playback speed.

TW-42 NOTES There is no *Speed T-bar* on TW-42.

4.2.5 MARKING GROUP



The *IN* and *OUT* buttons in this group allow you to indicate the *In points* and *Out points* for events you wish to record for later replay.

Figure 33

(MARK) IN

Pressing *IN* actually performs several related functions. First, remember that TriCaster™ must be in *Record* mode for any instant replay marking purpose.

For this reason, if you should happen to push the *IN* button before enabling recording, it is enabled automatically (illuminating the interface Record button just as if you had pressed it on the screen).

With *Record* active, an *In Point* is set for the current clip that will eventually be stored (when you press *OUT*) in the currently delegated *DDR* (see Section 4.2.2).

Hint: Actually, the IN button can also be thought of as a 'reset In Point' function. Pressing it updates the In Point, discarding any incomplete clip (i.e., one for which an Out Point had not been set. The partially recorded data up to that time is simply dropped (and is not added to the DDR playlist).

ALT + IN



A *different* operation results when you hold down *ALT* (see Section 4.2.6) at the same time as you push *IN*. This operation updates the *In Point* of the active clip in the currently delegated *DDR* to the frame currently displayed.

Figure 34

TW-42 NOTES This feature is not supported on TW-42.

Hint: This represents a non-destructive edit of the playlist clip, equivalent to dragging the trim handle at the left-hand end of the DDR scrub bar.

(MARK) OUT

Pushing the *OUT* button likewise performs a short series of several actions:

- The clip currently being recorded (if any) is ended.

- In this case, and if the *Add Source to DDR Playlist* is enabled in the *Record Configuration* panel, the new clip is added to the end of the playlist (of the active *DDR*).
- Recording recommences using the current time as the *In Point*.

Hint: The OUT button might also be thought of as a ‘chop’ feature. If you wish, you can simply keep pressing it at any time, without ever touching IN. This effectively sub-divides your entire program into consecutive clips (a frame or two may be lost between neighboring clip, however).

ALT + OUT



A *different* operation results when you hold down *ALT* (see Section 4.2.6) at the same time as you push *OUT*. This operation updates the *Out Point* of the active clip in the currently delegated *DDR* to the frame currently displayed.

Figure 35

TW-42 NOTES This feature is not presently supported on TW-42.

Hint: This is a non-destructive edit of the playlist clip, equivalent to dragging the trim handle at right-hand end of the DDR scrub bar.

ONE BUTTON MARKING

Another handy method of creating clips for instant replay is referred to as ‘one button marking’. With *Record* enabled, watch for notable events, and simply press *OUT* whenever one occurs (no need to press *IN* beforehand in this case). This creates a new clip with an *Out Point* at the current frame, automatically setting the *In Point* to the first frame of the current clip (i.e., the last time you pressed *OUT*).

4.2.6 ALT AND QUALIFIERS

For ergonomic reasons, *ALT* is in a special location by itself just below the *Play Speed* control group. It, along with *SHIFT* and *CTRL* (Control) are what are termed ‘qualifiers buttons’, in that (like their keyboard equivalents) they qualify, or modify the outcome of operating some other control.

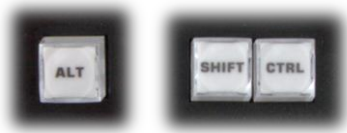


Figure 36

We've discussed one use of *ALT* in Section 4.2.5; see also Section 4.2.7. At the time of writing *SHIFT* and *CTRL* are reserved for as yet unspecified future purposes.

4.2.7 RECORD TOGGLE



Figure 37

It's probably no surprise at all that pressing the *REC* (Record) button enables TriCaster's own *Record* feature. It's worth mentioning though, that *REC* is not a simple toggle button (as it is on the user interface). Simply pressing *REC* again does *not* turn *Record* off.

TW-42 NOTES There is no *REC* button on TW-42. Even so, pushing the *Replay In* button will automatically enable *Record*.

Recording is such an important function, we are sure you agree you don't want anyone to be able to accidentally disable it. (This is especially true for TriCaster EXTREME™ systems, as doing so would also interrupt concurrent recording of any *Secondary* sources you have configured in the *Record Configuration* panel).

For these very important reasons, you must use *ALT + REC* (hold down *ALT* while pushing *REC*) to turn recording off. This makes disabling recording a very deliberate operation, and not one that is at all likely to have been unintentional (as perhaps by some hapless passerby coming in contact with the control surface while looking over your shoulder).

4.2.8 DDR OPTIONS



The *LOOP*, *SINGLE* and *AUTOPLAY* buttons toggle their namesake features for the currently delegated *DDR*.

Figure 38

TW-42 NOTES There is no *Loop* or *Autoplay* button on TW-42. While there is no *Single* button either, TW-42's *Sel* (Select) and *List* buttons turn *Single* mode on and off for the current *DDR*.

4.2.9 PRESET (DDR PLAYLIST)



“P” is for “preset” ... or “playlist”, if you prefer. However you choose to view it, the buttons labeled *P1* – *P4* allow you to quickly access any of the first four *playlist presets* for the currently selected *DDR*.

Figure 39

TW-42 NOTES Preset selection is not supported by TW-42.

4.2.10 TRANSPORT (CLIP CONTROLS)



This group of controls provides a variety of convenient clip transport and navigation tools. The dominant feature is a large, smoothly operating *Jog Wheel*. This oversize knob permits you to traverse the current clip in the delegated *DDR* in frame-accurate increments.

The *Jog Wheel* can be a real boon when coupled with the *ALT + IN/OUT* method of trimming already captured clips (Section 4.2.5), or can allow you to review an event by scrubbing through it manually even while it is displayed live.

Figure 40

The *Jog Wheel* is supplemented by the nearby *Fast Jog* button. Press this control to toggle a high-speed jog mode, which skims through the clip at eight times the normal rate.

TW-42 NOTES The *Jog* wheel on TW-42 works similarly, but is augmented by an outer *Shuttle* ring that can be used to move quickly through a clip or playlist.

The other buttons in this control group are labeled with familiar VCR-style icons, and work as follows:

- *Previous (Clip)* – Push to highlight the prior clip in the playlist of the delegated DDR.
- *Stop*
 - Push to end playback at the current frame.
 - When already stopped, push again to go to the first frame of the current clip (or playlist, when Single mode is off for the DDR).
- *Play* – Push to play the current clip in delegated DDR, beginning at the current frame.
- *Next (Clip)* – highlights the next clip in the playlist of the delegated DDR.

TW-42 NOTES

- Press *ALT + Next* to jump the play head 1 sec. forward from its current position in the clip.
- Press *Alt + Prev* to jump the play head 1 sec. back from its current position in the clip.

TW-42 has additional buttons in its *Transport* group, namely *Fast Forward* and *Rewind*. Both of these controls have alternate functions, too, as follows:

- Press *ALT + FF* to start playback five seconds into the current clip.
- Press *ALT + RW* to start playback five seconds before the end of the current clip.

4.2.11 TIPS AND TRICKS

- *Primary and Secondary* – TriCaster EXTREME’s IsoCorder™ technology supports multi-source capture. TriCaster™ 850 TW depends on the *Primary* recording function, but you can continue to use the *Secondary* capture features for all manner of other purpose, without interruption by your instant replay operations.
- *Audio Control* – Remember that you can reduce (or *Mute*) the audio for replays individually using the local playlist pane audio controls in a *DDR*, or with the *DDR* level controls provided in TriCaster’s *Audio* tab(s).
- *DSKs and LiveSet* - TriCaster provides a great deal of creative versatility in connection with instant replays. For example, a *DDR* with replay clips that is assigned to the *Overlay* channel of a *Virtual Input* can be quickly displayed or hidden (with its own transition effect). And, of course, something similar can be achieved with either of the primary *DSK* layers.
- *Zoom, Crop (etc.)* – Use the *Position* tools for *Overlay* and *DSK* layers to zoom in on the action in a replay.
- *Clip Organization* – It can be helpful, at times, to assign a custom *Location* in TriCaster’s *Media Browser* for the *Destination* you have assigned your *Primary* recording to (in *Record Configuration*). This makes it easy to locate replay clips later when creating a highlights package for a recap. Alternatively, you can use the *DDR* playlist preset feature to accomplish something similar.



TriCaster™ LC-11 is designed to augment the SD model TriCaster™ lineup, but has been adapted for service with NewTek's TriCaster™ live production systems as well.

In this chapter we will detail how TriCaster™ LC-11™ control surface provides functionality for TriCaster™ Studio, Broadcast, or one of Newtek's family of HD live production systems.

5.1 OVERVIEW

The LC-11™ external control surface hosts a bevy of convenient and important buttons and controls. This chapter explains each button and control in turn. It discloses their functions and their relationship to various components of your NewTek live production suite.

In large measure, LC-11 physically replicates the Switcher and related controls of your NewTek live production system. (This is no great surprise, since the virtual controls in the interface were cleverly designed to mimic the appearance and behavior of familiar live production equipment.)

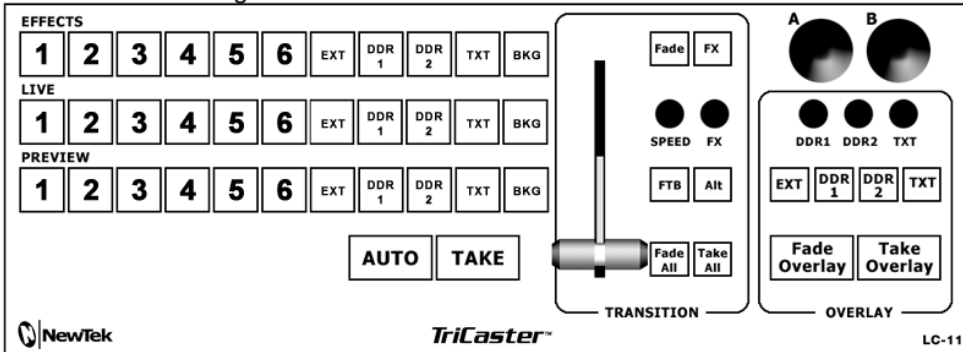
LC-11's controls primarily fall into three groups, each corresponding to specific software modules. The various buttons, knobs, etc., provide tactile control over their virtual counterparts. (In addition, the upper-right corner boasts two joysticks, discussed separately.)

5.1.1 LC-11 VARIANTS

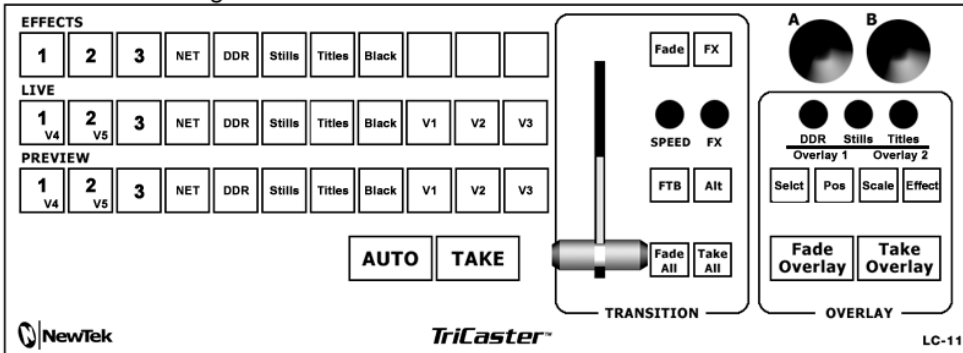
To support various NewTek live production systems, LC-11 currently ships in more than one configuration.

You may have purchased LC-11 for use with an SD-only model TriCaster™ (or VT[5]™). On the other hand, perhaps your control surface will be connected to an HD model TriCaster™. The button caps installed on your unit may differ accordingly.

TriCaster Studio Configuration



TriCaster 300 Configuration



TriCaster 850 Configuration

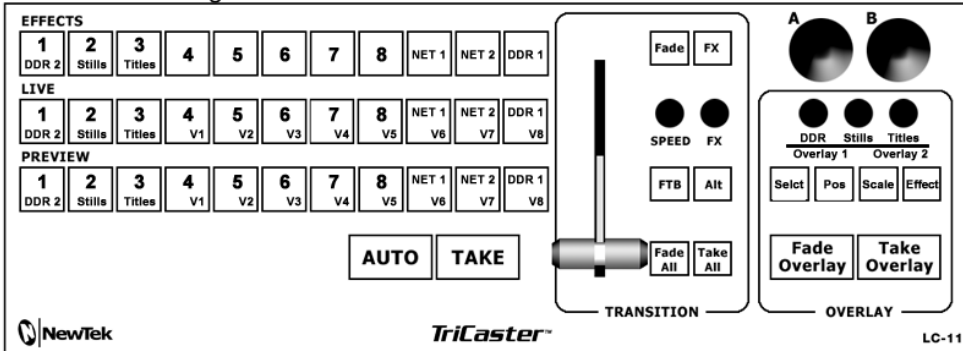


Figure 41

As you'd expect given the different control labels, in certain cases LC-11's buttons and controls will behave differently depending on which model is connected.

For example – the (SD) TriCaster™ Broadcast system has just one *Overlay* (DSK) channel, while HD models have two; TriCaster™ 300 has one *DDR*, while 450 and 850 models have two, and so on. Figure 41 illustrates LC-11 in various configurations.

Note: The labels for some buttons list secondary functions. For example, the Net 1 button in the LIVE and PREVIEW rows in the third drawing in Figure 41 shows V6 (Virtual Input 6) as a secondary option. Holding down ALT along with a button activates its alternate assignment.

Your LC-11 may have arrived with multiple button cap sets. To change button caps to match any of the illustrations above, pry the installed cap off *gently* using a thin, flat bladed screwdriver (or similar implement), then firmly press the new cap into place.

5.2 SWITCHER SECTION

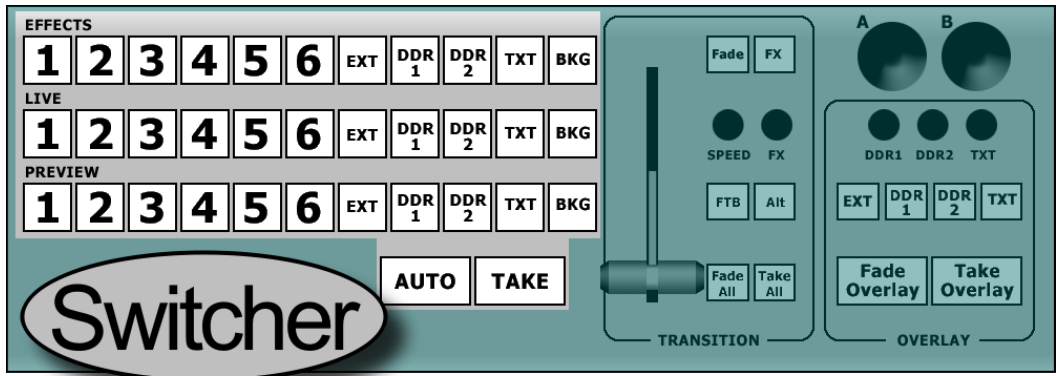


Figure 42

The largest of the three main sections of the LC-11 control surface corresponds to your live production system's Switcher, as you can see in Figure 42.

5.2.1 SELECTING SWITCHER SOURCES

TRICASTER™ SD MODELS

The *Switcher* panel of TriCaster™ Studio and Broadcast models corresponds quite closely to the LC-11 layout. Some earlier SD TriCasters lack the upper (Effects) row of selection buttons. The corresponding row of buttons in LC-11's *Switcher* section is thus functional only when connected to suitable TriCaster™ systems.

TRICASTER™ 300

- *Effects row:* TriCaster™ 300's *Effects* row has eight channels, but LC-11 has eleven buttons in its Effects row. The last three buttons in LC-11's *Effects* row are unassigned.
- *Program and Preview rows:* The eleven buttons in each row on LC-11 operate the first eleven buttons in the corresponding *Switcher* rows. Then, counting begins again at the left-most button in the corresponding rows. Thus the first two buttons have optional functions to accommodate the extra buttons in the onscreen *Switcher* rows. To select *V4* (Virtual Input 4), hold *Alt* 11 while pressing the first button. Press *Alt* + the second button to select *V5*.

TRICASTER™ 450 AND 450 EXTREME™

- *Utility Row:* The LC-11 adaptation for TriCaster™ 450's *Utility* row largely conforms to the TriCaster™ 850 configuration illustrated in Figure 41 (the fifth through eight buttons, used for cameras 5-8 on TriCaster™ 850, are unassigned). Buttons 1, 3 and 4 perform dual duties. When *ALT* is pressed at the same time, they select *DDR 2*, *Graphics* and *FRM BFR* respectively. For the *AUX Out* delegate only, additional extended selections are supported. Hold down *ALT* while pressing buttons 5 – 8 to assign *Preview*, *Program*, *Program (Clean)* and *FX*, respectively, to *AUX Out*.
- *Program and Preview rows:* The eleven buttons in each row on LC-11 operate TriCaster's corresponding *Switcher* row buttons in natural order. Some buttons also have optional functions. Hold *ALT* while pressing the first button to select *V2*, *ALT* plus the second button for *V3*, and so-on.

TRICASTER™ 850 AND 850 EXTREME™

- *Utility Row:* TriCaster™ 850's *Utility row* has sixteen buttons. To accommodate this higher number, the first 4 buttons in LC-11's *Effects row* have alternate assignments. Hold down *ALT* while pressing buttons 1-4 to access the following sources respectively: *DDR 2*, *Still*, *Title*, *FRM BFR*, *BLACK*. For the *AUX Out* delegate only, an extended selection of sources is supported. Hold down *ALT* while pressing buttons 5-9 to assign *Preview*, *Program*, *Program (Clean)* and *FX*, respectively, to *AUX Out*.

Program and *Preview* rows: The eleven buttons in each row on LC-11 operate TriCaster's corresponding *Switcher row* buttons in natural order. All eleven buttons also have optional functions to accommodate the additional buttons in TriCaster's *Switcher* (see Figure 41). Hold *ALT* while pressing the first button to select *DDR 2*, *ALT* plus the second button for *Still*, and so-on.

5.2.2 AUTO AND TAKE

TriCaster's primary *Auto* and *Take* buttons are located near the *T-Bar*. The same is true for LC-11, where they are located left of the *T-Bar* just beneath the *Switcher* rows. Functionality remains unchanged, of course. *Auto* swaps between the video source that is selected on the *Program row* (or the *Live row*, for SD model TriCasters) and the one from the *Preview row*, using the current transition. *Take* does the same thing, but performs the swap as a hard cut between sources.

LC-11's *Auto* and *Take* buttons perform brief actions, so don't light up when pressed. Of course the buttons on the *Switcher* rows update to correctly reflect the revised source selections.

TRICASTER™ 300, 450 AND 850

It is good to note that, unlike controls in LC-11's *Transition group* (discussed next), the main *Auto* and *Take* buttons ignore the TriCaster's *Transition Delegate* settings. However the *Take All* and *Fade All* controls (in LC-11's *Transition group*) do respect the *Delegate* settings.

5.3 TRANSITION SECTION

The most obvious component of the *Transition* section is the *T-Bar*, which works just like the one in the software version. LC-11 also provides some other buttons and knobs that do not have exact equivalents in the onscreen display, as discussed next.

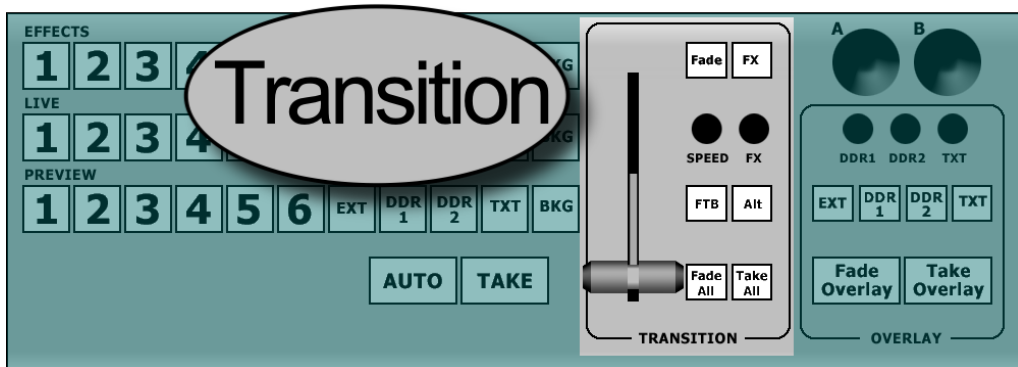


Figure 43 - Transition section

TRICASTER™ 300, 450 AND 850

Note that controls in this group respect the current *Transition Delegate* selection in the user interface of TriCaster TCXD850 v.2.

For example, the *SPEED* and *FX* knobs simultaneously affect the transition settings for *all* delegated video layers. Likewise pushing the *Fade* button activates the *Crossfade* transition for *all* delegated video layers.

5.3.1 FADE AND FX

Pressing the *Fade* button selects the standard *Crossfade* transition (found in the first well of TriCaster's Transition bins. Note that pressing *Fade* only *selects* the transition – it does not *perform* the transition between video sources (you still need press *Auto* to do that).

The *FX* button re-selects the last transition selected other than a *Crossfade*, cueing it up for the next *Auto* operation.

5.3.2 SPEED AND FX

Just beneath the *Fade* and *FX* buttons are two knobs labeled *SPEED* and *FX*. These knobs each have two distinct functions – one associated with rotation and the other accessed by pressing the knob (just like a button). The knobs have rotational detents to provide confidence while making adjustments.

Rotating the *SPEED* button modifies the duration of the *Transition*. Pressing it cycles through the preset speeds (*Slow*, *Medium* and *Fast*).

Twirling the *FX* knob changes the selected *Transition* effect, cycling back and forth through the representative thumbnail icons loaded in TriCaster’s *Transition bin*.

TRICASTER™ 300, 450 AND 850

For these models *only*, press LC-11’s *FX* knob (as though it were a button) to toggle the *Reverse* (Transition) switch. Press *ALT + FX* to toggle the *Ping Pong* (Transition) switch.

5.3.3 FTB AND ALT

FTB stand for “Fade to Black”. Unlike the two buttons discussed earlier, *FTB* is an action button; pressing it *does* perform a transition, in this case to a computer-generated black background.

There are some exceptions to note, however:

- TriCaster™ Studio and Broadcast – *when operating in 6-camera mode*, these models do not feature a dedicated *Black* generator. Instead, *FTB* uses the background you design in the system’s internal *Color Background* tab.
- TriCaster™ 300, 450 and 850 – the *Fade to Black* feature on these models does not require TriCaster to perform a switch between the sources assigned on *Program* and *Preview*.

Instead, the display on *Program* output simply fades to or from black. Note that TriCaster’s *FTB* is momentarily delegated during an (LC-11) *FTB* operation, but does not remain active when it ends.

ALT is used with other buttons to provide alternate operations as noted occasionally in this manual.

5.3.4 FADE ALL & TAKE ALL

Fade All and *Take All* perform much like the standard *Auto* and *Take* respectively (see Section 5.2.2), with one additional aspect:

TRICASTER™ STUDIO AND BROADCAST

Fade All and *Take All* simultaneously perform either a *Fade Overlay* or *Take Overlay*, timed to match the established transition speed. The total effect then, is to swap the *Live* (Program) video source with the *Next* (Preview) one, at the same time either removing or displaying the assigned *Overlay*, depending on its display status at the moment. (This is, of course, very useful for introducing a new scene with an identifying lower third graphic, for example.)

TRICASTER™ 300, 450 AND 850

The TriCaster™ models have *two* downstream *DSK* (Overlay) channels. LC-11 respects the current *Transition Delegate* selection in the user interface when either *Fade All* or *Take All* is pressed.

Also noteworthy, different *Overlay Effects* can be assigned to either of the DSK channels. *Fade All* respects the individual selections for each DSK channel.

5.4 OVERLAY SECTION – TRICASTER SD

LC-11's *Overlay* group operation differ quite a bit depending on whether the panel is connected to an model TriCaster™ or a TriCaster™ 300, 450 or 850. For that reason, we'll consider these configurations separately.

LC-11's *Overlay* section contains two joysticks, three knobs, and two rows of buttons. We'll consider the standard configuration first.

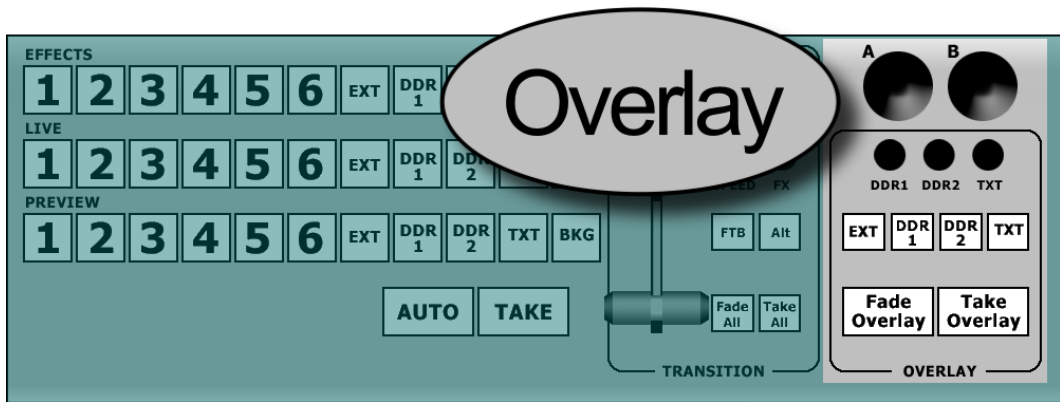


Figure 44 – Overlay Section

5.4.1 THE JOYSTICKS

There are two joysticks, labeled *A* and *B*. *Joystick A* has no assigned function currently. *Joystick B* acts as a *Shuttle* control for any *DDR* module selected on the *Preview* row. Move it left or right to scan backward or forward in the current clip. The scan rate is controlled by the pressure you apply to the joystick.

5.4.2 DDR1, DDR2 & TXT KNOBS

Twirling the *DDR 1* or *DDR 2* knobs scrolls through the clips listed in the corresponding *DDR* module. Rotating the knob labeled *TXT* cycles through the current list of text pages loaded in the *Titles* tab.

Pushing a *DDR* button (once) toggles *Play* and *Pause* for that *DDR*. Pushing twice in quick succession (during playback) performs a ‘double-Stop’ – *DDR* playback halts and the play position returns to the start of the clip.

5.4.3 EXT, DDR 1, DDR 2 AND TXT BUTTONS

For standard definition TriCaster models these four buttons correspond to the *Overlay* source selection buttons shown in Figure 45 – press one to select the named *Overlay* source.



Figure 45 – TriCaster Overlay source selections

5.4.4 FADE & TAKE (OVERLAY)

These last two buttons in this group correspond exactly to their onscreen counterparts, *Fade* and *Take*. They toggle the current overlay on or off as either a Crossfade or Cut respectively.

5.5 OVERLAY SECTION – TRICASTER™ 300, 450 AND 850

5.5.1 JOYSTICKS

When used alone (unmodified by other buttons, moving either of the two joysticks invokes their primary function – *LiveSet™* zooming. (Secondary functions assigned to joysticks when used in conjunction with other buttons are described in the following sections.)

- *Joystick A* – assign a *Virtual Input* to the *Preview* row, and tilt the joystick towards or away from you to zoom it in or out.
- *Joystick B* – assign a *Virtual Input* to the *Program* row, and tilt the joystick towards or away from you to zoom it in or out.

5.5.2 DDR, STILL AND TITLES KNOBS

These three knobs provide multiple functions. First, they allow you to scan through *Media Player* playlists, as described below. They also serve as *Play/Stop* controls for the *Media Players*.

In addition, the *DDR* and *Titles* knobs have secondary functions as indicated by their subordinate labels – *Overlay 1* and *Overlay 2* (these functions are described in the next section).

- Twirl these knobs to click one by one through the playlist items for the corresponding *Media Player*.

- Press *ALT* while twirling the *DDR* knob to click one by one through the playlist items for *DDR 2* (TriCaster™ 450 and 850 only) .
- Press (click once) a knob to toggle *Play/Stop* for the respective *Media Player* (use *ALT* while clicking the *DDR* knob to control *DDR 2* when provided).
- Double-click a knob to stop play and reset the current play position to the beginning of the current playlist item.

5.5.3 MODE BUTTONS

The *Select* (Select), *Pos* (Position), *Scale* and *Effect* buttons are modifiers – holding one of these buttons down affects the resulting action when you use one of the joysticks or knobs above.

SELECT (SELECT)

Press and hold the *Select* button as described next to assign sources for *DSK* channels.

PICK OVERLAY CHANNEL SOURCE

1. Press and hold the button labelled *Select*.
2. Twirl the *Overlay 1* or *Overlay 2* knob above to click one by one through the list of available overlay sources.

POS

Press and hold this button as described next to adjust the positioning for *DSK* channels.

ADJUST OVERLAY POSITION

1. Press and hold the button labelled *Pos*.
2. Adjust the (X/Y) position of *DSK 1* or *DSK 2* using the respective joystick.

RESET OVERLAY POSITION

1. Press (click once) the *DSK 1* or *DSK 2* knob to reset the *Position* settings for the corresponding channel.

SCALE

ADJUST SCALE (ASPECT LOCKED)

1. Press and hold the button labelled *Scale*.
2. Twirl the *Overlay 1* or *Overlay 2* knob to adjust the scale of the corresponding *DSK* channel on both axes simultaneously.

FREELY ADJUST SCALE

1. Press and hold the button labelled *Scale*.
2. Use the *Overlay 1* or *Overlay 2* joysticks to independently adjust the scale of the corresponding channel on either axis.

RESET SCALE

1. Press and hold the button labelled *Scale*.
2. Press (click once) the *Overlay 1* or *Overlay 2* knob to reset the scale of the corresponding channel.

EFFECT

Press and hold the *Effect* button while twisting either the *Overlay 1* or *Overlay 2* knob to cycle through the list of *Overlay Effects* currently available in the dropdown menu for the respective channel.

5.5.4 FADE & TAKE (OVERLAY)

These last two buttons correspond to the local *Auto* and *Take* buttons for the two *DSK* channels on the Live Desktop. When the button is pressed while *ALT* is held down, the action is applied to *DSK 2*; otherwise, *DSK 1* is affected).

As you would expect, pressing *Take* toggles the current overlay on or off as using a *Cut*, while the *FADE* button uses the currently assigned *Effect* to display or hide the *DSK* channel source.

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