



NewTek

3Play™

REPLAY REINVENTED



USER GUIDE

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3PLAY™



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PART I (GETTING STARTED)

Introducing NewTek 3Play™ – connections and registration, a top-level overview of primary features, and a hands-on tour to get you started.

1 ABOUT THIS MANUAL



Hate reading manuals? If so, you are part of the majority. Estimates are that between 60 and 97% of the human race concur. 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, while also providing a deeper reference section you can turn to when you really need specifics.

Even if you hate reading, please take a moment to peruse at least *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.)

Part I – Getting Started: introduction to NewTek 3Play™ – connecting devices (cameras, monitors, etc.) and registration, ending up with the Live Production Walkthrough – a brisk jog through fundamentals, about 10 pages (if you're a quick study, this may provide all you need).

Part II – Reference: chapters in this section cover every arcane detail related to using 3Play™ (for those who need it, and those who just like to know everything).

Part III – Appendices: leads off with a handy section titled “How do I ...?”, a helpful question and answer section with its own brief index. When you have a specific need, you may well find a quick answer here, along with cross references to more detailed information when appropriate. Appendix B lists shortcut keys. Part III is also home to a comprehensive keyword index.

3PLAY™ MODEL NOTES This User Guide discusses two 3Play™ models, 3Play™ 820 and 425. In most respects, operations and interface are very similar, and a single description will suffice. There are some relatively minor exceptions, however. Wherever these are discussed in the text, they will be flagged in the same manner as this paragraph.

2 INTRODUCTION



Thank you for purchasing NewTek 3Play™. 3Play™ is a member of the NewTek family of video production systems and software, and bears a proud heritage. A bona fide video pioneer, NewTek is justifiably proud of its record of innovation, ongoing commitment to excellence and superb product support.

This chapter provides a quick tour of the major components of your NewTek 3Play™.

2.1 OVERVIEW



Figure 1



Figure 2

NewTek 3Play™ is a multi-channel high definition video device supporting simultaneous recording, display and instant replay of multiple audio and video sources (up to eight of each for 3Play™ 820, and four in the case of 3Play™ 425). Its output possibilities include professional hardware connections capable of conveying two fully independent video streams to external video systems such as live broadcast switching equipment, and of course file export.

Output at any time may consist of any combination of the following:

- I. *Live* video – direct pass-through of an input source
- II. *Delayed* video – output running somewhat behind live input
- III. *Clip* – playback of a ‘bookmarked’ time segment of captured (or imported) media
- IV. *List* – playback of a prepared playlist that may include clips or other imported media and transitions.

Hint: It's important to realize that Delayed, Clip or List playback do not interrupt continuous capture of configured live sources.

Delayed, Clip and *List (Play List)* video streams can also be played back at variable speeds. The standard (NTSC) 3PLAY™ supports NTSC video in HD1080i, 720p, and SD formats. Multi-standard 3Play™ systems support the equivalent formats for NTSC, NTSC-J and PAL video broadcast standards.

2.2 RECORDING, MARKING AND EVENTS

Recording is intrinsic to NewTek 3Play™, and is configured for each incoming a/v source to be captured prior when creating live production session. When *Record* is enabled in the live *Replay Desktop*, configured sources are continuously captured and stored. Typically, each stream might represent a different camera angle. (Other sources supplied to non-recorded inputs can be viewed but will not be captured; thus they are not available for later replay.)

Note: When timecode for a session being recorded reaches 24:00:00.00, a new recording is automatically started. A few frames are lost in this process. Use the 'Subtract 12 hours; feature in Timecode Configuration to avoid problems when necessary – see Section 7.2.5.

2.2.1 WHAT IS AN EVENT?

The operator uses the supplied NewTek 3Play™ external *control surface* to mark *events*. Each event entry appears in the *Clips List* module on the *Replay Desktop* as a single row of clips identified by an *Event ID* number shown in the left-most column, along with related data.

Events can be thought of as timed segments of the recorded video. These are created when you mark *In* and *Out Points* as a live production progresses. The (in and out) *timecode* values are rather like digital bookmarks, in that they identify a specific portion of the recorded footage. Newly-marked *events* are successively added to the *Clips List* for convenient recall.

Remember, an *event* is not merely a *clip*. Think of it as a *bookmarked* section of the recordings from each (captured) source. Each *event* entry denotes a synchronized time 'slice' of *all* recorded video streams (or 'angles', if you like). You can recall and display any *clip* from an *event* instantly. This involves sending the stream from one particular camera to one of the system outputs (*Output A* or *Output B*).

Hint: Two different clips from one or more events can be displayed simultaneously using the two outputs.

Events bear another similarity to literal bookmarks. A bookmark is only a convenient reference to the printed material on the book's pages – it does not comprise the actual text. Adding or removing (or moving) a bookmark does not remove literal pages from a book.

Likewise, NewTek 3Play™ normally captures a complete, uninterrupted record of your production. Just like physical bookmarks, the events listed in the *Clips List* are pointers to this volume of stored information. Add and remove *events* freely with no fear of losing recorded material. You can even add, remove or reorganize *events* during recording, or long after your session ends.

2.3 NEWTEK 3PLAY™ CONTROL SURFACE

A dedicated NewTek 3Play™ external control surface (Figure 3) provides primary operational control – see Chapter 8. (Text editing and other supplementary control is supported using the keyboard.)



Figure 3

Note: If the control surface is not available for any reason, its core functions can be accessed from the compact Dashboard shown at the bottom of the Replay Desktop, or by keyboard shortcuts.

2.4 STARTUP SCREEN

When you power up your NewTek 3Play™ system, the *Startup Screen* appears. This is your command center for initiating most other operations.

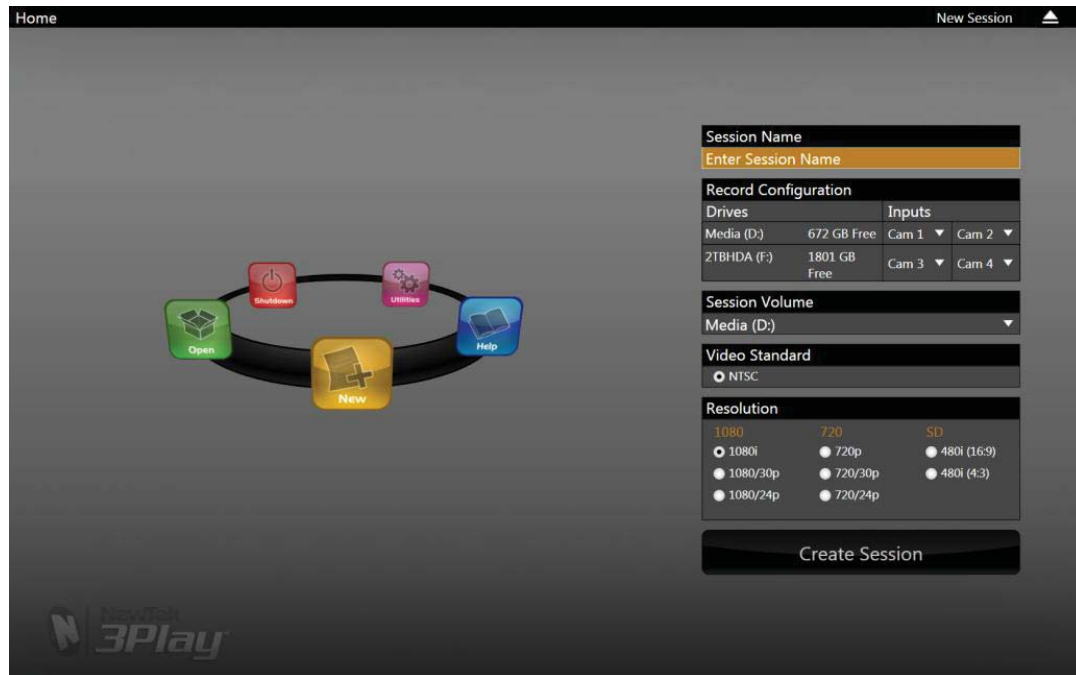


Figure 4

The *Home page* of the *Startup Screen* allows you to define and open *sessions*, essentially custom presets for individual productions or other purposes. Later, when you re-open a *session*, all of its assets and settings are remembered.

After creating a *session* (or opening an existing one), you are taken to the *Sessions page*. Here you can launch the *Replay Desktop*, or perhaps choose to *Import Media* for your *session*, or *Export Media* from an earlier one.

2.5 REPLAY DESKTOP

3Play's live production features are all available from its unique *Replay Desktop*. The various features, controls and modules on the *Replay Desktop* are essentially laid out in three horizontal bands, as seen in Figure 5 (depicting the 3Play™ 820 *Replay Desktop*).

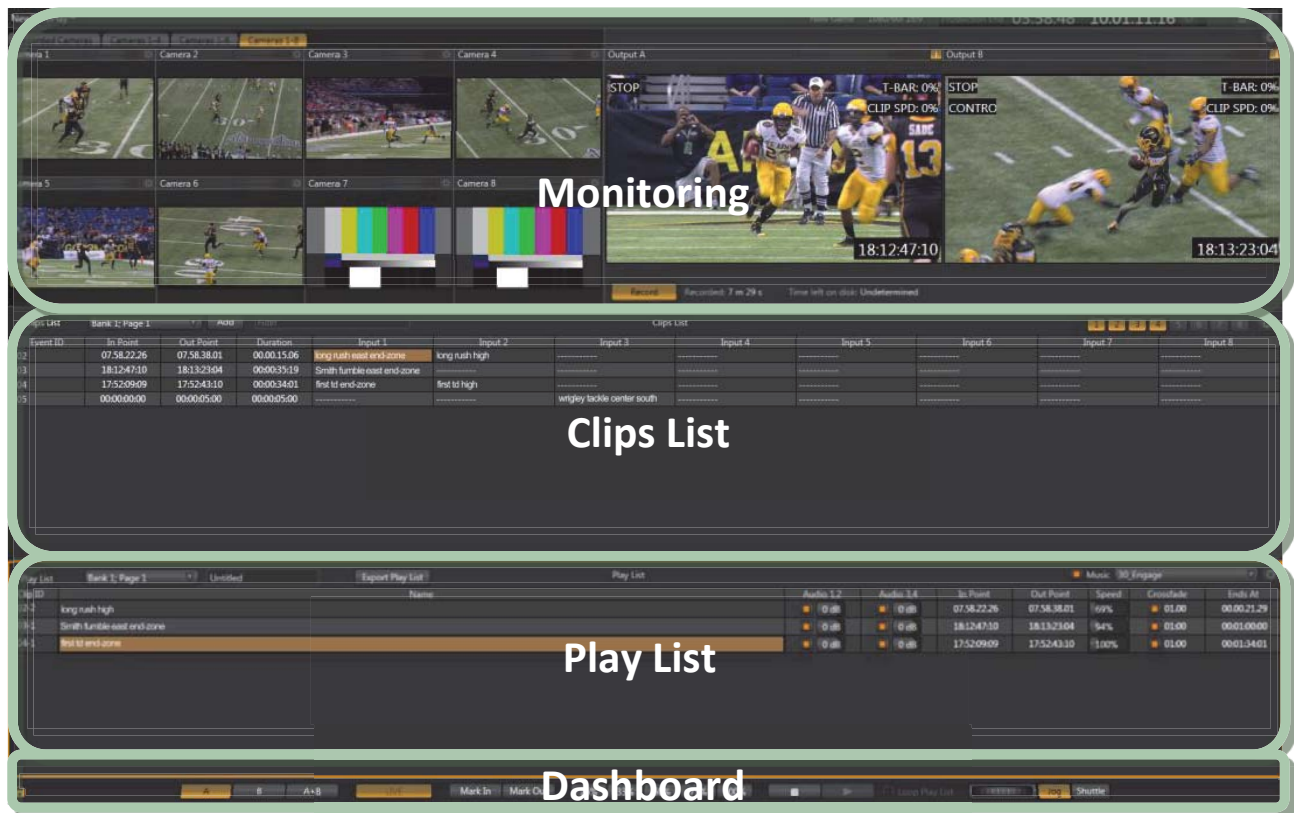


Figure 5

The uppermost area is devoted to monitoring. The spreadsheet-like *Clips List* is centrally located, beneath the monitoring section. Below this you will see the *Play list*, which allows you to create and control more complex sequences (such as highlight reels). A slender *Dashboard* can optionally be shown at the very bottom of the *Replay Desktop*.

2.6 FEATURES

Here's a brief overview of just *some* of 3Play's key features:

2.6.1 PHYSICAL

3PLAY™ 820

- Rugged 4U rack-mount case with redundant power supplies ensures robust and reliable performance in fixed or mobile installations.

- Massive storage capacity – each (of up to four) 2TB hot-swappable drive holds approximately 50 hrs of 1080i (or 155 hours of SD video).

3PLAY™ 425

- Sturdy yet compact 2U rack-mount case
- 40 hours of storage capacity (1080i) (combined internal drive and 1TB removable drive).

2.6.2 INPUT, OUTPUT & CAPTURE



Figure 6 – 3Play™ 820

- All audio and video, monitoring and network connectors are easily accessible from the rear for convenient installation in industry standard 19" rack-mount configurations.
- Audio and video connectors are industry standard (XLR or BNC as appropriate), ensuring broad compatibility and secure, locked connections (headphone output uses a standard 1/4" stereo phone jack, and an HDMI port supplies an added output option).
- Professional BNC video connectors provide increased durability and reliability for camera connections.
- Supply external audio via analog, AES/EBU (AES3) or SDI Embedded audio.
- Balanced XLR audio connectors.
- Multiple simultaneous SDI and analog output connections.



Figure 7 – 3Play™ 425

- Record up to either four or eight sources (audio and video), freely choosing between SDI and analog HD (or SD) cameras.
- Capture and play back 16:9 and 4:3 formats in both HD and SD sessions.
- Output HD sessions as SD (4:3 or 16:9) and HD simultaneously from HD sessions.
- Play list module supports inserting pre-recorded video, sound and imagery into your live productions.
- Send output from 3Play™ to a network connected TriCaster™.

3PLAY™ 820

- Supplemental *Aux* (Auxiliary) Video output to a projection system or secondary monitor at session resolutions up to 1920x1080.

2.6.3 MONITORING

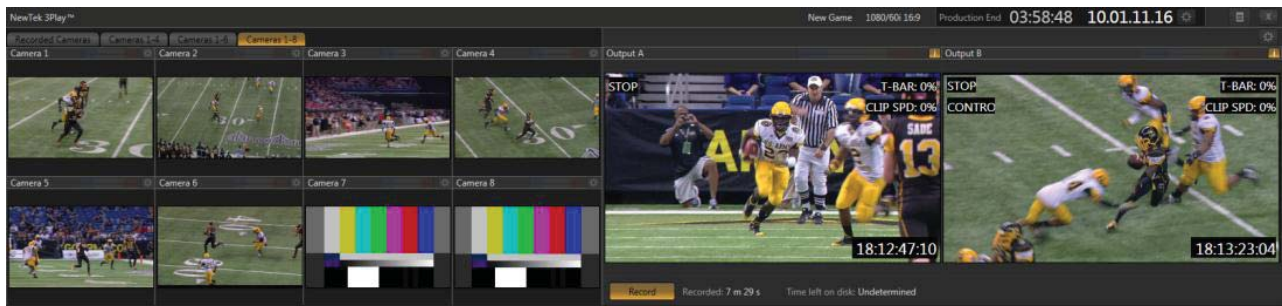


Figure 8

The *Replay Desktop* includes two large output monitors, labeled *Output A* and *B*, with associated controls. Tabs above the monitor group at left allow you to freely toggle between viewing:

- *Recorded Cameras* – onscreen monitors for all sources that are configured for recording (Figure 8, showing 3Play™ 820).
- *Cameras 1-4* – The first four live video sources supplied to 3Play’s video inputs.

3PLAY™ 820

- *Cameras 1-6* – The first six live video sources supplied to 3Play’s video inputs only.
- *Cameras 1-8* – All eight live video sources supplied to 3Play’s video inputs.

2.6.4 VIDEO PROCESSING

Proc Amps allow you to adjust the video signal to preserve pristine image and color fidelity through the entire pipeline to final output.

- Separate controls are provided for *Brightness, Contrast, Hue* and *Saturation* for every video source, along with *White Balance* and *U* and *V Offset*.
- Likewise, individual *Proc Amp* controls are provided for *Output A* and *Output B*.
- Conveniently, Input *Proc Amps* retain independent settings for different *Connection Types*.

2.6.5 RECORDING

Apart from live throughput, virtually all replay output features depends on recorded data.

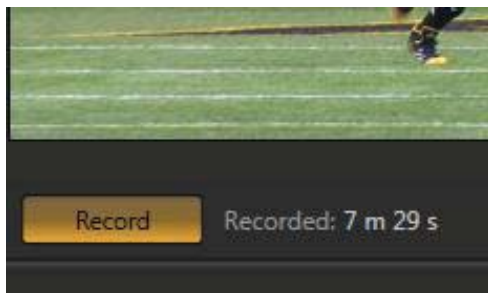


Figure 9

- The *Record button* is located just below the *Output A* monitor on the *Replay Desktop*.
- Useful information about the recording and remaining space is displayed nearby.
- Recording can also be enabled from the NewTek 3Play™ *control surface*.

2.6.6 THE CLIPS LIST

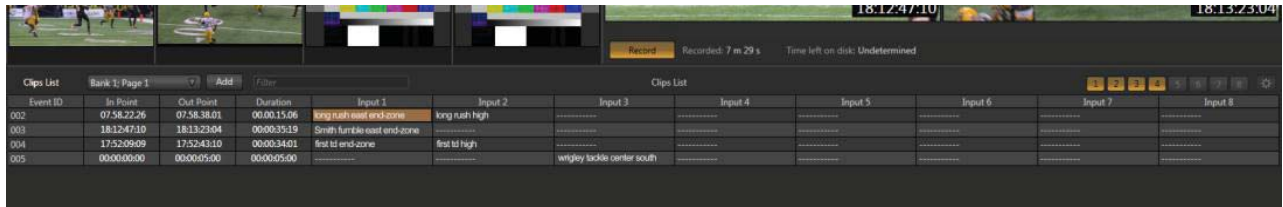


Figure 10

Segments of recorded data are ‘bookmarked’ as individual *events* by setting in and out points. Events and their constituent clips, representing the different recorded sources (or ‘angles’) appear in the *Clips List* (see Section 2.2.1).

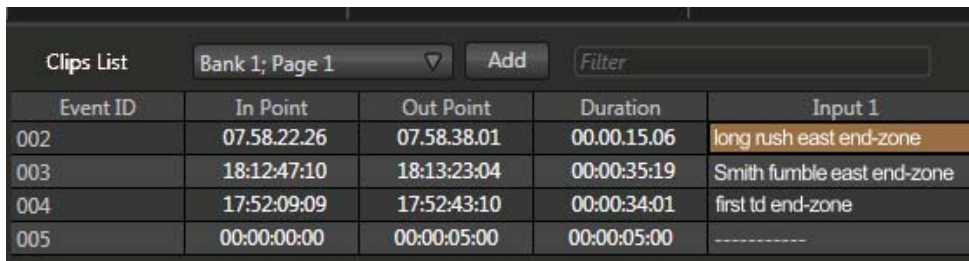


Figure 11

Events can be rearranged and trimmed in the *Clips List*. Memo fields for each clip allow you to enter comments that can be used to quickly locate specific clips for playback or inclusion in playlists.

The Clips List offers four *banks* of four *pages* each to help you manage your recorded content. In addition, the *Clips List* supports the import of other media clips (and still images) for use when preparing playlists for various purposes.

2.6.7 THE PLAY LIST

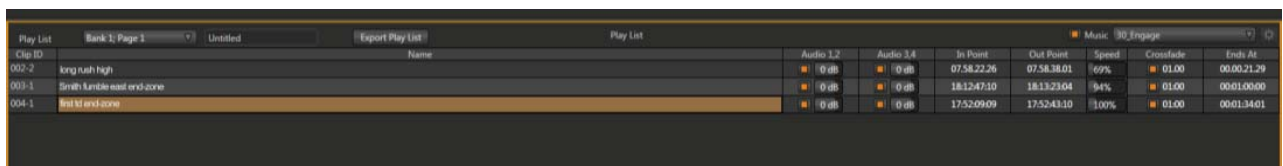
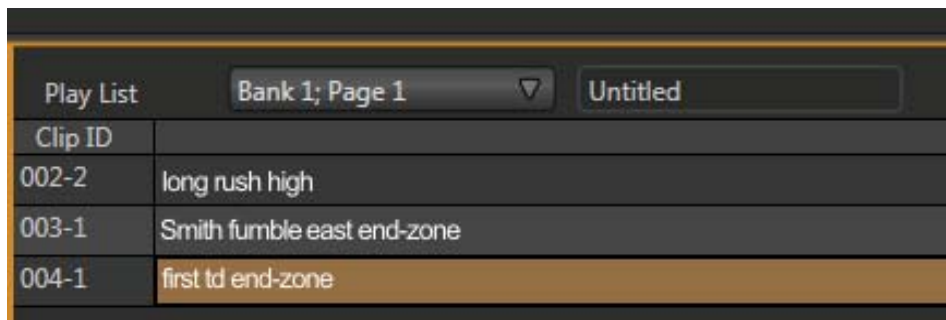


Figure 12

Individual *clips* from *events* appearing in the *Clips List* can be added to the *Play List* pane below.



Clip ID	
002-2	long rush high
003-1	Smith fumble east end-zone
004-1	first td end-zone

Figure 13

The *Play List* plays all entries in sequence, with optional transitions between clips. Like the *Clips List*, the *Play List* pane offers four *banks* of four *pages* each, supports clip re-ordering, comments, trimming, and numerous other features.

2.6.8 THE DASHBOARD

The *Dashboard* replicates major features normally accessed using the NewTek 3Play™ control surface. It is located at the bottom of the *Replay Desktop*, just below the *Play List*, and can serve at least two useful purposes.

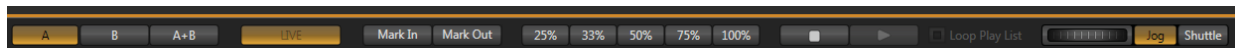


Figure 14

The *Dashboard* can be displayed on demand or full-time. Perhaps you'll find you use it only between live events, when you might not want to connect the control surface while working with recorded data. Or you may prefer to have it in view at all times so that you can see the state of various controls with just a quick flick of the eye to the bottom of the screen.

3 SETTING UP



This chapter explains how to properly connect power, external control devices, monitors and audio visual sources to your NewTek 3Play™ system.

It also reviews registration for warranty purposes and technical support. After completing this short section, you'll be all set to continue into the Walkthrough chapter that follows it.

To begin, let's review 'what came in the box':

- 3Play™ and 3Play™ CS (control surface)
- **3PLAY™ 820** Package of three (3) 2TB hard drives
- **3PLAY™ 425** One 1TB hard drive for the removable drive bay
- A/C power cable(s) and 6' USB cable
- NewTek mouse and keyboard
- 3Play™ Quick Start Guide
- Registration reminder card
- BNC removal tool
- DVI to VGA adapter
- Keys to front panel of rack mount case (2)
- Attachable rubber feet for desktop use (4)
- NewTek TriCaster™ brochure and 3Play™ Welcome letter

3.1 COMMAND AND CONTROL

1. Connect an external computer monitor to the *Interface* DVI port on 3Play's backplate (use an adapter if necessary).

3PLAY™ 425 Use the DVI connectors nearest to the *Video In* group for the interface monitor. DVI connectors located at left below the power supply are normally capped and should not be used.

Note: The user interface for NewTek 3Play™ requires a minimum screen resolution of 1440x900.

2. Connect the mouse and keyboard to USB ports on 3Play™.

3. Connect the A/C power cord(s) from the three-prong connection(s) on 3Play's backplate to an external power receptacle (see *Hint* below).
4. Turn on the computer monitor.
5. Press the *Power switch* located on 3Play's faceplate.

At this point, the blue *Power LED* will illuminate, and the adjacent hard drive activity light should flicker as the device boots up. (If this does not happen, check your connections and retry).

Though not a requirement, we do strongly recommend that you connect 3Play™ using an uninterruptable power supply (UPS), as for any 'mission critical' system. Likewise, consider A/C "power conditioning", especially in situations where local power is unreliable or 'noisy'.

Surge protection is especially important in some locales. Power conditioners can reduce wear on 3Play's power supplies and other electronics, and provide a further measure of protection from surges, spikes, lightning and high voltage.

A word about UPS devices:

'Modified sine wave' UPS devices are popular due to low manufacturing costs. However, such units should generally be viewed as being of low quality and possibly inadequate to fully protect the system from abnormal power events..

For a modest added cost, consider a "pure sine wave" UPS. These units can be relied on to supply very clean power, eliminating potential problems, and are recommended for applications demanding high reliability.

3.2 ACTIVATING & AUTHORIZING WINDOWS™

(Your dealer may have performed this operation for you as part of his pre-delivery service.)
When you see the 'Welcome to Windows' screen:

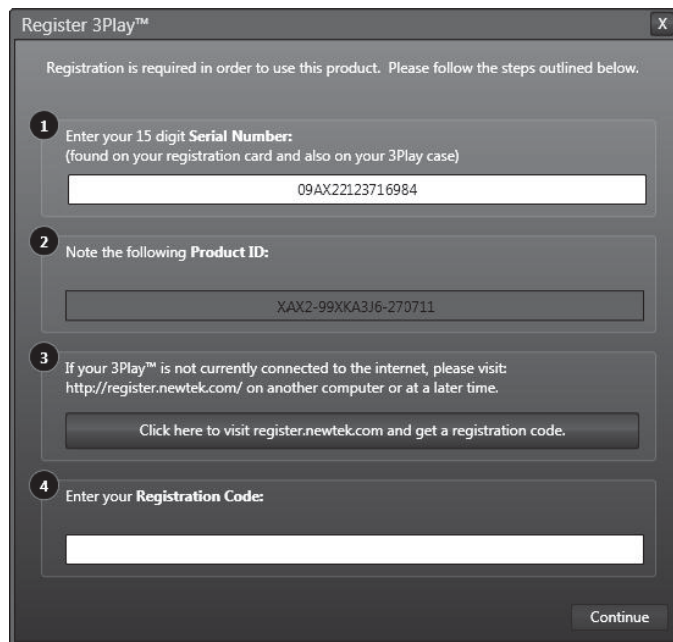
1. Click *Next* at lower right.
2. Choose your time zone.
3. Accept the license agreement.
4. Enter your 25-digit key (on some models, the sticker is on the *bottom* of the case).
5. Decline automatic updates (by clicking "not right now").
6. Give 3Play™ a distinct computer name for networking.

You can authorize your Windows installation by network or by telephone. Assuming you have an Internet connection available, and have connected 3Play™ to it with an Ethernet cable, the Internet is the fastest method of activation. (See Section 3.12 for more on network connections.)

7. Click 'Obtain IP and DNS automatically'.
8. Agree to activate Windows. This activation is permanent, and you won't see these screens again. (Registration with Microsoft is optional).
9. Assign a name to the *administrator* account. You may type your name, company, or perhaps simply "3Play".
10. Click *Finish*, and the system will re-start.

After restarting and accepting NewTek's *User Agreement*, the interface will load automatically.

3.3 LICENSE AND REGISTRATION



Register 3Play™

Registration is required in order to use this product. Please follow the steps outlined below.

- 1 Enter your 15 digit **Serial Number**:
(found on your registration card and also on your 3Play case)
09AX22123716984
- 2 Note the following **Product ID**:
XAX2-99XKA3J6-270711
- 3 If your 3Play™ is not currently connected to the internet, please visit:
<http://register.newtek.com/> on another computer or at a later time.
Click here to visit register.newtek.com and get a registration code.
- 4 Enter your **Registration Code**:
[Empty text field]

Continue

On launch, 3Play™ presents an *End User License Agreement* dialog. After you accept this, the *Registration* dialog shown in Figure 15 is presented. It provides the unique *Product ID* you need to register your system.

If necessary, enter the unique *Serial Number* and *Product ID* for your system. TriCaster's video output will show a watermark until the system is registered and unlocked (by entering the *registration code*).

Figure 15

Hint: If the Serial number doesn't appear automatically, and can't find it on your unit, you can obtain it from the registration webpage mentioned in the next section, or by calling Customer Support Desk (open seven days a week).

You can register and obtain your registration code either by telephone, or online (directly from 3Play™ or from another system connected to the Internet) as described next.

3.3.1 ONLINE REGISTRATION

If you have connected your 3Play™ to the Internet, simply click the button under Step 3 in the registration dialog. This will take you to the *Registration webpage* (<http://register.newtek.com>) in the *Customer Care* section of NewTek's website where you will find further directions.

Hint: More information on connecting to a network can be found in Section 3.12.

Otherwise, you can visit the registration webpage from another system that does have Internet access.

In either case, after registering on the website, enter the resulting *registration code* into the field provided at Step 4 of the dialog.

Hint: It's a very good idea to record the login name and password you choose when creating your website profile and keep them in a safe place. Jot down registration code too; it could come in very handy if you ever need to restore the 3Play™ software to its as-shipped state when you don't have access to the Internet.

3.3.2 REGISTERING BY TELEPHONE

NewTek's Customer Care center can also handle registration requests by telephone, if that is more convenient (when opportunity permits, you should still visit the website as discussed above to gain access to software updates).

Please have your *Product ID* (from the Registration dialog mentioned earlier) handy when you call. The phone numbers for Customer Service follow:

Telephone: (US) 1-800-862-7837

(Outside US) +1-210-370-8000

Fax: 210-370-8001

Note: For Technical Support contact information, please see Section A.6.2.

3.4 INPUT CONNECTIONS

3.4.1 CONNECT A/V SOURCES

External audio and video sources are connected to the appropriate inputs on 3Play's backplate.



Figure 16 – 3Play™ 820



Figure 17 – 3Play™ 425

1. Connect *video* sources to the appropriate connectors in the *VIDEO IN* section (Figure 16), whether *SDI*, *Component*, *Y/C* (S-Video) or *Composite* (may require RCA to BNC adapter).
 - a. *SDI* – Attach the SDI source connectors to BNC connectors marked SDI in the *Video In* group.

Hint: If your equipment supports SDI, this is your best quality I/O option.

- b. *Component* – Attach the appropriate BNC connectors from your sources to all three analog BNC connectors (labeled *Y*, *Pb* and *Pr*) in each column in the *Video In* group.
- c. *Y/C* – If your S-Video equipment and cabling has the usual 4-pin mini-DIN connectors, you will need an *S-Video to dual BNC* adapter. To connect Y/C sources, attach the *Y* (luma) connector of your source to the second analog BNC connector (labeled *Pb*). Attach the source's *C* (chroma) connector to the *bottom* connector (labeled *Pr*).
- d. *Composite* - Attach the composite source's connector (may require an RCA to BNC adapter) to the *second* connector (labeled **Y**).

Note: The video broadcast standard (such as NTSC, NTSC-J or PAL) of all video sources connected for a given session must be the same.

- 2. To input *analog* audio along with the video, connect the external audio sources to the XLR or ¼" connectors in the *Audio In* group box. Two connectors, labeled "a" and "b", are provided for each input group. We'll discuss audio *Connection Type* options a bit later, in Section 3.11.

Digital Audio Note: To connect AES/EBU (a.k.a, AES3) audio source, use the BNC connectors in the Digital Audio (AES) section. SDI video sources with embedded audio do not need a separate audio connection.

3.4.2 GENLOCK CONNECTION

The *Genlock* input on 3Play's backplate is for connection of a 'house sync' or *reference signal* (often a 'black burst' signal intended specifically for this purpose).

Many studios use this method to synchronize equipment in the video chain. Genlocking is commonplace in higher-end production environments, and genlock connections are usually found on professional gear.

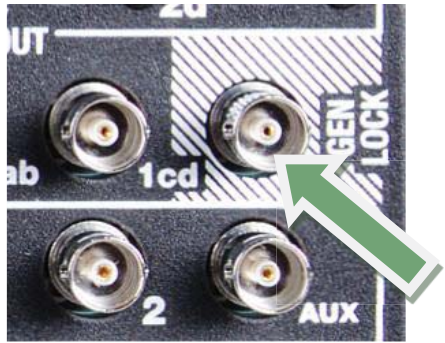


Figure 18 – 3Play™ 820

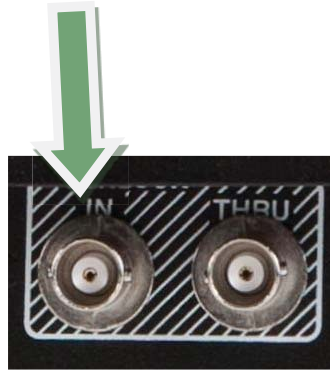


Figure 19 – 3Play™ 425

If your equipment allows you to do so, you should genlock 3Play™ *and* all cameras you configure as sources for it (see your camera manual for details). To do so, supply the reference signal from the ‘house sync generator’ to 3Play’s *Genlock* input connector.

3.4.3 TIMECODE CONNECTION

3Play™ supports external linear timecode (LTC).

3PLAY™ 820

Connect the cable from your timecode generator to one of the connectors in the *Audio Input 7* group.



Figure 20

3PLAY™ 425

Connect the cable from your timecode generator to one of the connectors in the *Audio Input 3* group OR, connect it to either the blue or red 1/8" audio inputs (Figure 21).



Figure 21

External timecode is enabled and configured in the *Replay Desktop* (see Section 7.2.5).

3.5 OUTPUT CONNECTIONS

Next we'll discuss the audio and video output connectors along with relevant settings.

We'll start with video output, not only so you can view your results, but because some aspects are best considered before even beginning a 3Play™ session.

3.5.1 A/V OUTPUT

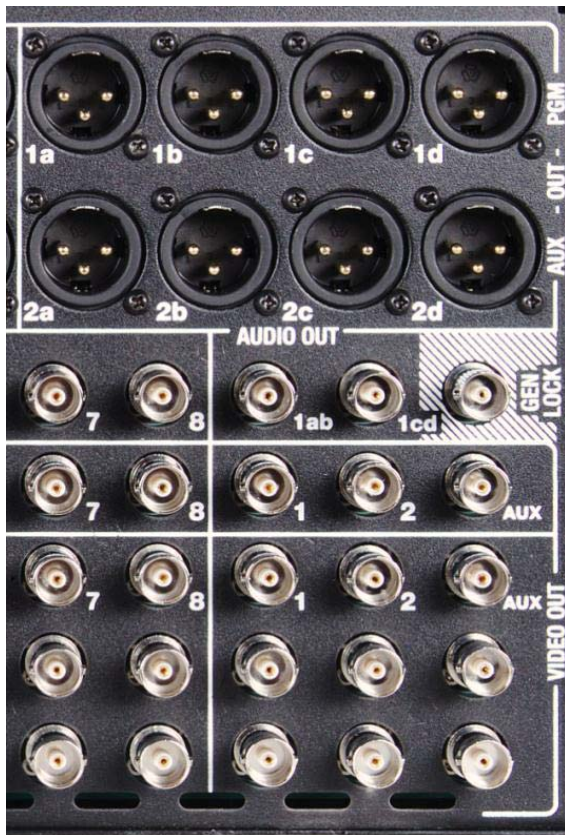


Figure 22 – 3Play™ 820



Figure 23 – 3Play™ 425

3Play™ provides several video and audio output connector groups, and very flexible options for display of your live and recorded video streams. Here are some of the possibilities:

- Simultaneously send two independent outputs to external devices.
- Send 3Play™ audio and video output to a network-connected TriCaster™.
- Simultaneously send output to both analog and digital devices.

- Transmit another output or multi-bridge monitoring layout to a secondary monitor (or projector) via the *Multiview* port.
- An additional output is provided via an HDMI port. This output tracks the active 3Play *Output Mode (A or B)*.

3.5.2 HD AND SD

As mentioned earlier, the *Video Output* section on 3Play's backplate provides vertical columns of four BNC connectors. These represent:

- *Output A* (Row 1)
- *Output B* (Row 2)
- *HDMI* – This output tracks the active 3Play *Output Mode (A or B)*
- **3PLAY™ 820** *Aux* (Row 3) – carries the same signal as either *Output A* or *Output B*, depending on 3Play's current *Output Mode* (see Section 7.1.2).

The output connectors provide either SD or HD video output, according to the format specified for the current session, using any of several different device connection types as discussed next.

3.5.3 CONNECTING DEVICES

1. Connect downstream video devices to the appropriate output connectors in the *VIDEO OUT* section, whether *SDI*, *Component*, *Y/C* (BNC) or *Composite*. Please note that the latter two formats may require RCA (cinch plug) or S-video (4 pin mini-DIN) to BNC adapters, and also that both of these connection options support output at SD resolution only.
 - a. *SDI* – Attach SDI connectors to the uppermost row of BNC connectors in the *VIDEO OUT* connector groups.

Hint: If your equipment supports SDI connections, this is your best quality option.

- a. *Component* – Attach your device to the second, third and fourth BNC connectors (*Y*, *Pb* and *Pr*) in the *VIDEO OUT* connector groups.

- b. *Y/C* – If your S-Video equipment and cabling has the usual 4-pin mini-DIN connectors, you will need an ‘S-Video to dual BNC’ adapter. Attach the *Y* (luma) connector of your device to the second analog BNC connector row (labeled *Pb*). Attach the *C* (chroma) connector to the third analog connector (labeled *Pr*).
- c. *Composite* - Attach the device’s connector to the first (top) *analog* connector.

2. Connect 3Play’s audio outputs:

- a. *Analog audio* – Connect external audio devices to the connectors in the *AUDIO OUT* section.

Note that there are two rows of connectors; Connectors numbered 1a and so on provide *Output A* sound, while 2a etc. are assigned to *Output B*. These two output sections are configured and controlled separately in the *Replay Desktop*.

3PLAY™ 820 *Aux* (Row 3) – carries the same audio as either *Output A* or *Output B*, depending on 3Play’s current *Output Mode*.

- b. **3PLAY™ 820** *Digital audio* – Use the two BNC connectors identified as *1ab* and *1cd* in the *AES* section (below the analog audio outputs) section to connect downstream AES/EBU (AES3) audio devices.

(A separate digital audio connection is not necessary for SDI output with embedded audio.)

Hint: 3Play’s SDI and analog output sections can be used simultaneously. For example, you could use the Component output to view your program on a local analog video monitor at the same time as you use the HD-SDI connection to supply broadcast equipment.

3.5.4 SUPPLEMENTAL VIDEO OUTPUTS

Additional dedicated video outputs make it possible to connect other devices to 3Play™ for a variety of purposes, including program output for IMAG (Image Magnification) installations or flexible monitoring for the convenience of the operator.

HDMI

A labeled *HDMI* connector on 3Play’s backplate tracks the active 3Play™ *Output Mode (A or B)*. Simply connect a suitable device to the *HDMI* connector on the backplane.

NETWORK OUTPUT

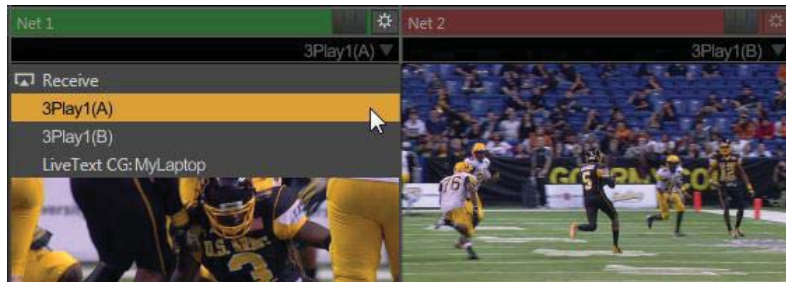


Figure 24

3Play’s *Output A* and *Output B* are available as *Switcher* sources to a network connected TriCaster™. There is nothing to configure on 3Play™. Provided the two units are on the same network (not different subnets), they will appear in the source selector menu for TriCaster’s *Net 1* and *Net 2* inputs as “3Play(A)” and “3Play(B),” where “3Play” is the network name for the system. Conveniently, the output includes embedded audio, freeing up multiple TriCaster a/v inputs for other purposes.

MULTIVIEW

3Play’s *Multiview* output is variously supplied by a DVI connector (3Play™ 820), or HDMI connector (3Play™ 425) located near the interface DVI connector. Again, connect a suitable external monitor or device. The new device should be recognized and enabled by the system automatically. This output offers a variety of optional monitoring layouts that can be selected at any time in the *Replay Desktop*.

Note: For best results, it is important to configure Multiview Output to the native resolution of the external display (monitor or projector) connected.

3.5.5 TALLY LIGHTS

You may notice that 3Play’s backplate connections include a DB-15 port labeled *Tally*. This is intended for future expansion. At the present time, the connector is not active.

3.6 STARTING A SESSION

If 3Play™ is not already running, power it up now to reveal the *Startup Screen*. (If 3Play™ is already running, and is in the *Replay Desktop* or another area of the interface, you may need to click the small [x] button at upper-right to exit, or click the *Back* arrow at upper-left in the *Session Page* to return to the *Home Page*.)

The *Startup Screen* consists of two similar screens – the *Home page* and the *Session page*. Among other things, the *Home page* is where you choose basic 3Play™ session settings (see Section 5.1 for a discussion of sessions).

THE HOME PAGE

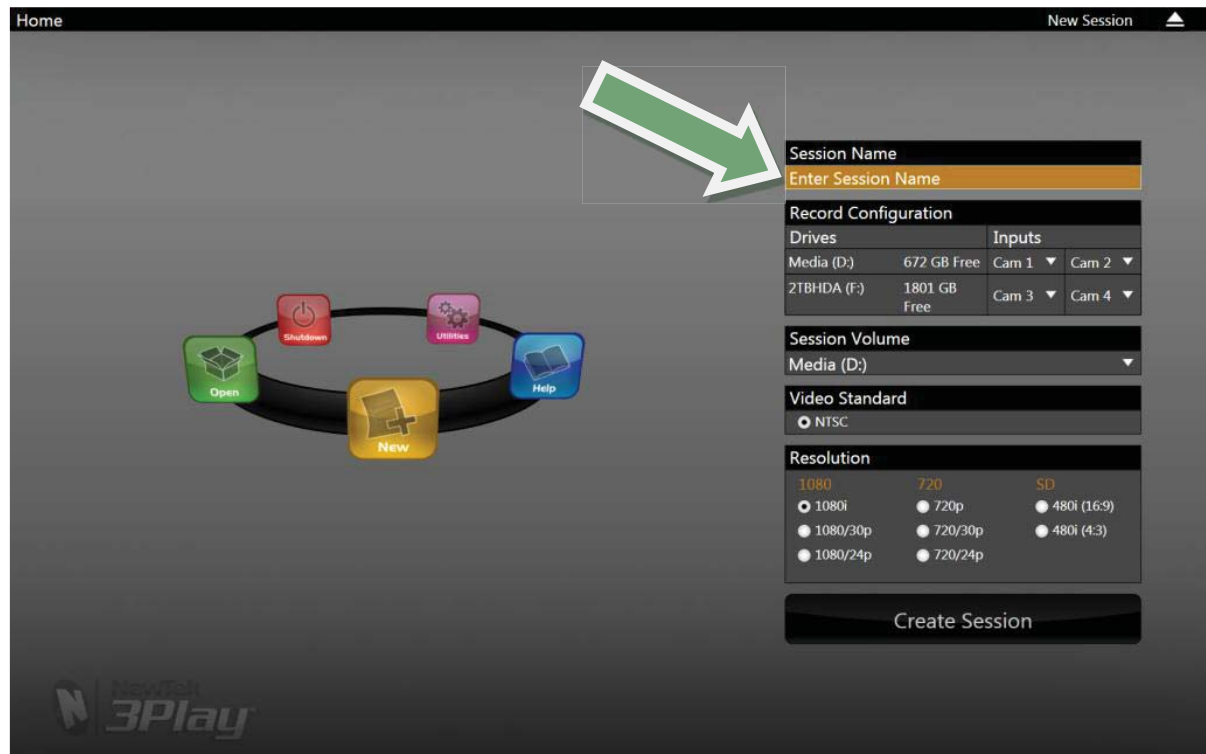


Figure 25

When no previously created sessions exist, the icon ring dominating the *Home page* defaults to *New*, inviting you to create a new session.

A link labeled *Enter Session Name* is shown at the top of the right-hand pane when New is selected on the icon ring. Click in this area to modify the name using the keyboard if you like. (The default name is the current date.)

Note: 3Play™ supports a variety of optional session configurations for live production. You can choose either HD (High Definition) or SD (Standard Definition) operating modes. SD options include both 4:3 and 16:9 (widescreen) image aspects. Multi-standard models permit you to select from three video standards according to your locale – NSTC, NTSC-J (Japan) or PAL.

Continue with session creation by assigning drives to cameras you intend to record.

Qualified storage volumes connected to 3Play™ or mounted in its removable drive bay(s) are listed in the *Drives* column of the *Record Configuration* section (Figure 26). Use the drop-down menus under *Inputs* to assign sources to hard drive. (Notice that the panel layout encourages you to record just two sources to a given drive.)

The hard drives assigned here can be thought of as comprising a ‘drive set’ for the session. The *Session Volume* menu allows you to designate the primary member of the session drive set.

For multi-standard models only, set the *Video Standard* as appropriate for your locale. For the moment, let’s choose 1080i for *Resolution* (even if the cameras you plan to connect are SD 4:3), then click the *Create Session* link below.

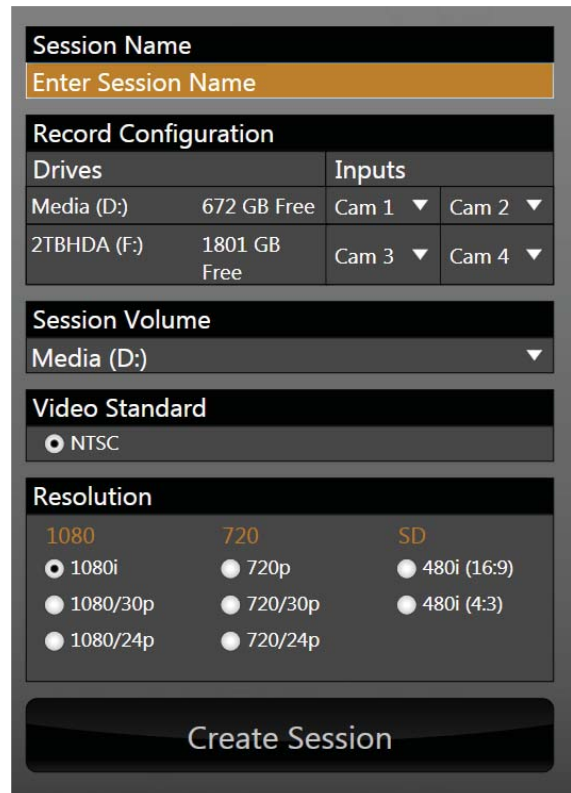


Figure 26

THE SESSION PAGE

Clicking *Create Session* will display the *Session page*.

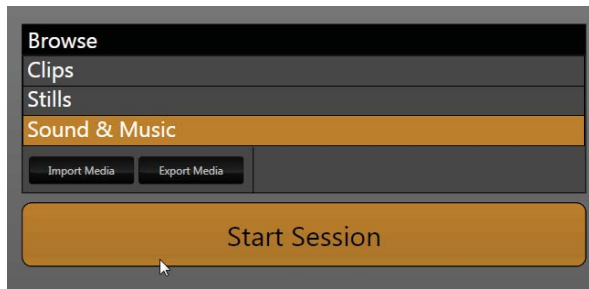


Figure 27

Since our intention at this stage is simply to configure our connections (done in 3Play's *Replay Desktop*), go ahead and click *Start Session* on the icon ring.

This will launch *the Replay Desktop*, which is likely where you will spend most of your time working with 3Play™.

THE REPLAY DESKTOP

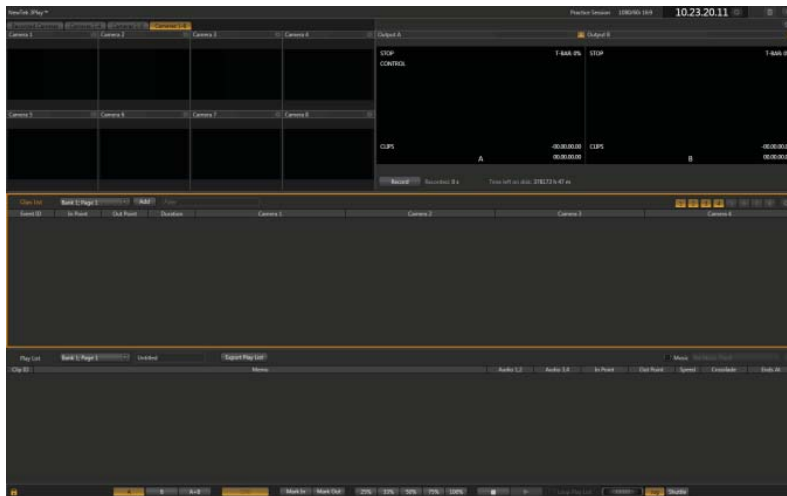


Figure 28

Initially, as you have yet to configure input devices or add content, the *Replay Desktop* will look a bit barren (Figure 28).

We had a brief glimpse at the *Replay Desktop* back in section 2.5 (and we'll examine it more closely in Chapter 4, Live Production Walkthrough), but after a quick look around let's continue to configure your input and output connections.

3.7 CONFIGURE VIDEO OUTPUT

3Play™ provides complete video input monitoring right on the *Replay Desktop*. This allows you to operate it without even connecting downstream video monitors or devices.

Additionally, however, you will likely also connect external devices to the *VIDEO OUT* connectors on 3Play's backplate (see Section 3.5). High definition devices will be connected to either *SDI* or *Component* connections, while other connection types are available for SD devices and sessions.

3.7.1 SD ANALOG CONFIGURATION

For standard definition monitoring, however, several types of analog connections are currently in popular use. These include *Composite*, *Y/C* (also known as S-Video) and – at the upper end of the analog quality range – *Component*. To connect an *analog* standard definition monitor for use in live production, you must specify the connection type in the *Output Configuration* panel.

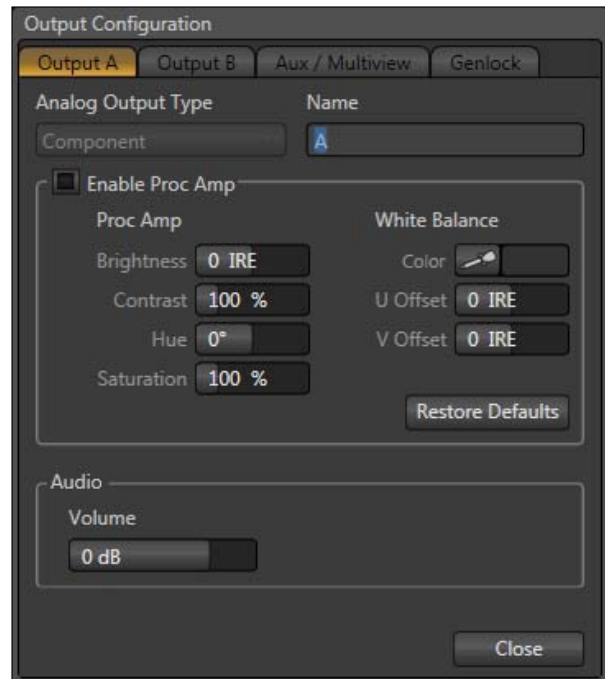


Figure 29 – 3Play™ 820

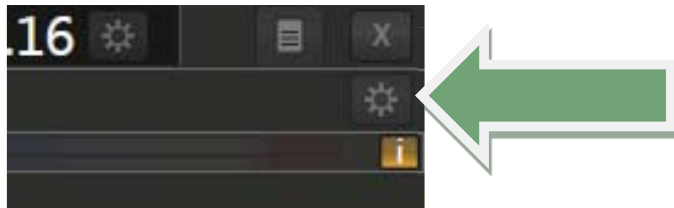


Figure 30

1. Move your mouse pointer over the *Output Configuration* button, identified by a gear icon as shown in Figure 30, and found at upper-right on the *Replay Desktop* just below the *Close* button. Click here to open *Output Configuration*.

The first two tabs in this panel are labeled *Output A* and *Output B*. Located at the top of both of these tabs is a menu allowing you to select the *Analog Output Type* for the associated output channel, A or B (see Figure 29).

For SD sessions, *Component* or *Composite + Y/C Analog Output Type* alternatives are available. For HD sessions, *Component* is the only valid option, so the menu is locked.

Selecting *Composite + Y/C* sends composite video output to the second BNC connector for the corresponding output row (labeled *Y*), and *Y/C* to the third and fourth connectors, which are labeled *Pb* and *Pr*, respectively.

You'll notice output *Proc Amp* (color) controls below in each output tab as well, along with individual output *Audio* level sliders.

The third tab is labeled *Aux/Multiview* (3Play™ 820) or simply *Multiview* (3Play™ 425).

3.8 CONFIGURE MULTIVIEW OUTPUT

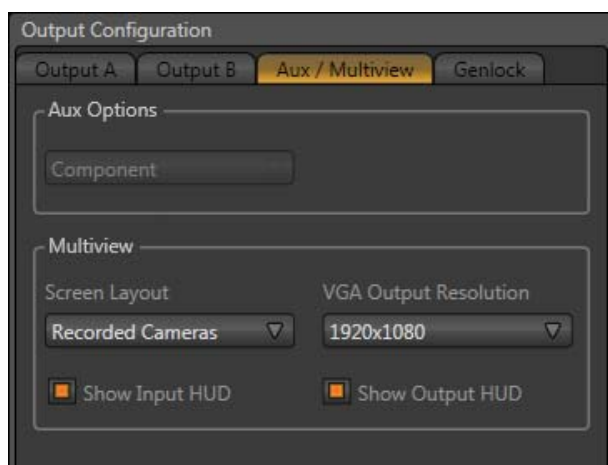


Figure 31

We'll just discuss the *Multiview* control group here (see Section 7.1.2 for a more thorough examination). The *Multiview* output commonly serves supplemental control room monitoring needs, though other possibilities exist, too.

The *Screen Layout* options determine what the *Multiview* output displays. Use *VGA Output Resolution* to select a suitable resolution for the device attached to the *Multiview* connector (if any).

Make appropriate selections for your environment in this panel, and then click *Close*.

3.9 CONFIGURE GENLOCK

1. Click the *Genlock* tab in the *Output Configuration* panel.
2. The default *Reference Type* in the Genlock settings is *SD (Bi-level)*, as this is currently the most common reference signal type. However, if you supply an HD reference signal to the Genlock input, you may want to change the setting to *HD (Tri-level)*.

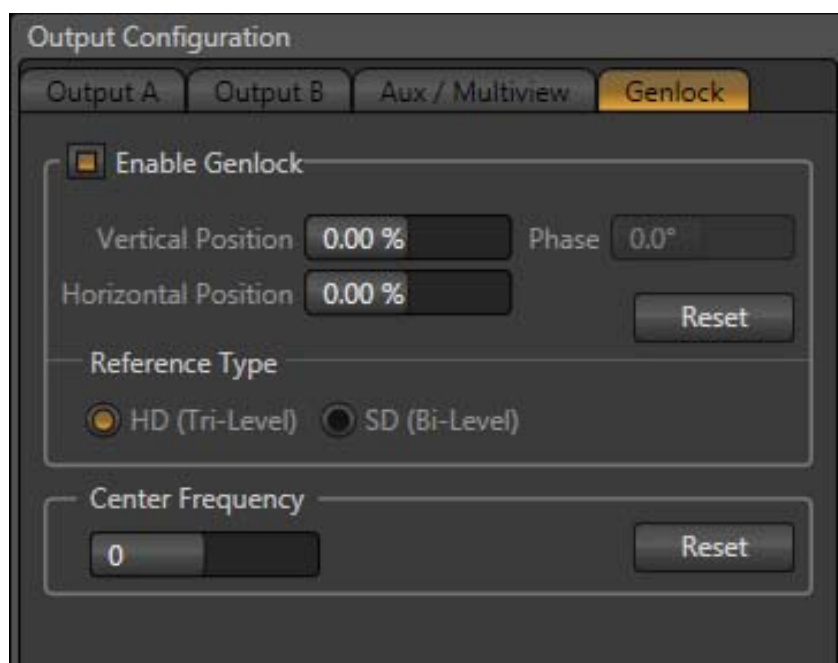


Figure 32

3. With the aid of downstream *Waveform* and *Vector Scopes*, adjust 3Play's *Horizontal* and *Vertical Position* and *Phase* settings.

Again, ideally both the cameras and 3Play™ should be genlocked. If cameras are not genlocked to the same reference signal as the 3Play, a TBC (Time Base Correction) operation is automatically applied. Time Base Correction may drop or insert frames as necessary to maintain sync, hence it is a less desirable approach.

Note: For a deeper explanation of genlocking, please see Section 7.1.3.

3.10 CONFIGURE VIDEO INPUT

Let's continue by configuring the video sources you connected earlier (Section 3.4):

1. With the *Replay Desktop* open, roll your mouse into the titlebar of any input monitor.
2. Notice that a *Configure button* (gear icon) is highlighted at right in the titlebar of the input monitor as you do so.

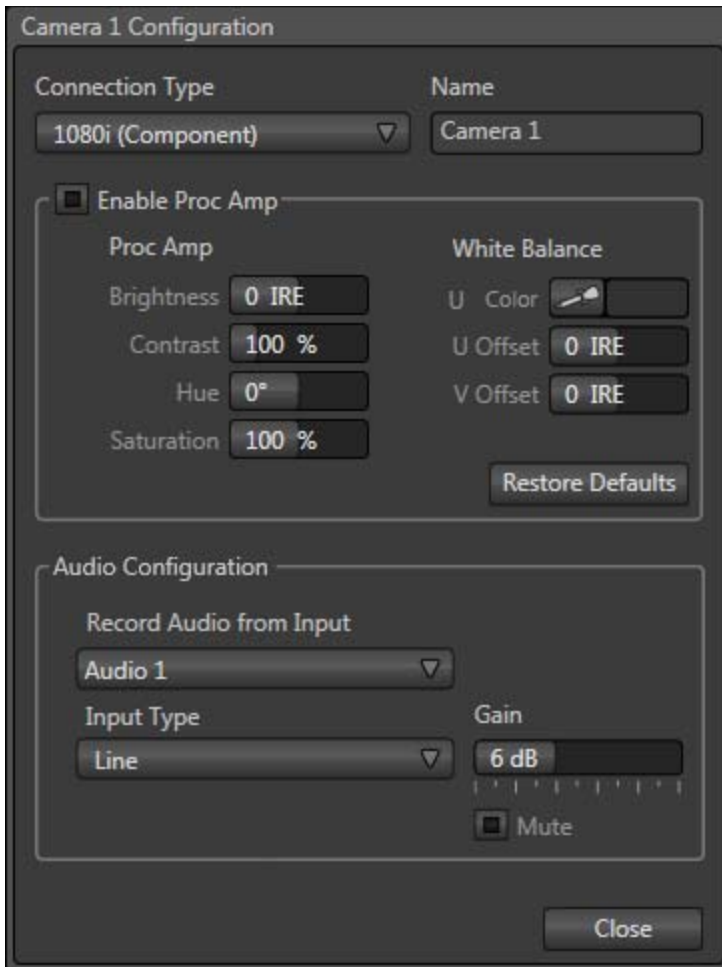


Figure 33

3. Click the *Configuration* button for *Camera 1* to open a settings panel (Figure 33).
4. Click the *Connection Type* menu to reveal a listing of various connection types. Select the correct format, such as *720p (Component)*, or *1080i (SDI)*, etc., for the video source you plan to connect to this input.

At this point you should be able to view the (configured) sources on their respective monitors. Before closing the *Configuration* panel, let's continue to configure the related audio source.

3.11 CONFIGURE AUDIO

The *Audio Configuration* control group in the lower part of the *Configuration* panel has *Input Type* and *Gain* control features for the external audio source in the same input group as the current video input.

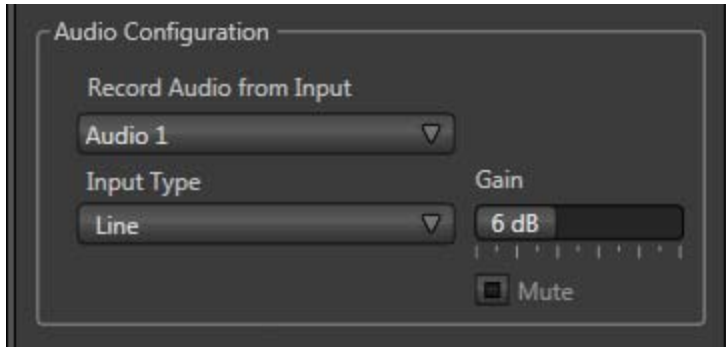


Figure 34

The upper menu permits you to choose a different audio input to be captured with the video clip for this camera. *Input Type* options include *Mic* (with and without phantom power), *Line*, *AES/EBU*, and *SDI Embedded*.

After connecting audio sources to the input connectors the first thing to do is select the desired *Input* and correct *Input Type* using the drop-down menus:

- Select *Mic* for professional grade microphones or other low impedance connections (use the *Mic + Phantom* option for condenser microphones requiring supplementary power)
- Choose *Line* typically for consumer type device connections (such as a CD player, computer audio output or VCR).
- Select *AES/EBU* (3Play™ 820 only) or *SDI Embedded* to connect a digital audio source.

Note: Analog levels conform to SMPTE RP-155. The maximum input/output level is +24 dBu, nominal input level +4 dBu (-20dBFS), and the sample rate is 96 kHz.

The *Gain* slider defaults to their 0dB on first launch. After adding audio sources, slowly adjust the slider to achieve an appropriate signal level (use the VU meters in the titlebar above the monitor as an aid.)

Hint: Most numeric controls in on the Replay Desktop can be reset to their defaults using Shift + double-click on the control knob.

3.12 NETWORKING

Connecting 3Play™ to a *local area network* (LAN) may require additional steps beyond those mentioned back when we discussed Microsoft Windows™ activation (Section 3.2). Here is the basic procedure involved in joining a *workgroup*:

1. Connect a suitable cable from the ETHERNET port on 3Play's backplate to your external network.
2. (If necessary) – close the *Replay Desktop*; click the *Back* arrow to return to the *Home Page*.
3. Click *Shutdown*, then select *Exit to Windows* at right to access the operating system's own desktop.
4. Right-click on the *My Computer* icon, and select *Properties*.
5. Scroll down in the right hand pane of the *System* panel that opens to find the *Computer name, domain and workgroups* settings area.
6. Click the *Change Settings* link at right.
7. Click the *Computer Name* tab of the *System Properties* panel that opens.
8. Click the *Change* button, and enter the name of your local workgroup, as provided by your system administrator.
9. Close the *OK* button.

10. Close the *System* control panel.

11. At this point, the network connection should be functional. If further help connecting is required, please consult your system administrator.

The next section (Chapter 4, Live Production Walkthrough) will guide you through your first experience using 3Play™.

4 LIVE PRODUCTION WALKTHROUGH



This chapter provides a quick hands-on tour of the major components and functions of your NewTek 3Play™. In a very short time, these basics will be second nature to you.

More detailed reference material on all aspects of 3Play™ follows in Part II (Reference).

Having made the essential external connections in the previous section, let's start your first 3Play™ session, and skim through some important fundamentals:

- Startup and Import
- Monitoring and related features
- Recording and marking events
- Playing clips
- Using metadata
- Creating a highlight reel.

4.1 CREATING A SESSION

We ran through the basics of starting new *sessions* and configuring devices back in sections 3.6 through 3.9. If you need to review this information, go ahead and do so now. We'll look at these items individually again later in Part II (Reference), too.



Figure 35

1. On the *Startup > Home page*, click the *New* button on the icon ring, and configure a new 1080i session. Name it “Practice Session” (without quotation marks).

Drives		Inputs	
Media (D:)	716 GB Free	Cam 1 ▼	Cam 2 ▼

Figure 36

2. As part of the session setup process, assign different camera inputs to the individual drives, using the controls in the *Drives* and *Inputs* columns under *Record Configuration*.
3. The *Startup > Session page* will appear when you click the *Create Session* link at right.

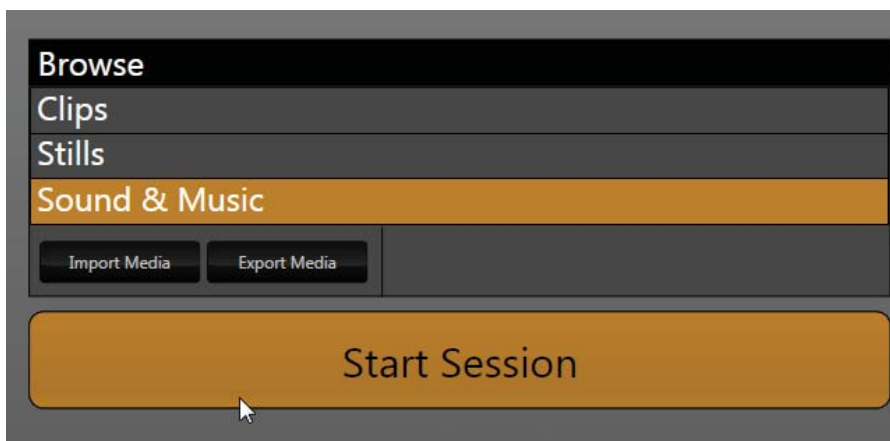


Figure 37

(Glance around this screen, which provides some useful session asset management tools, but we’re going to press on to other features right now.)

4. In similar fashion, click *Start Session* (Figure 37) to leave *Startup* and launch the *Replay Desktop*.

4.2 THE REPLAY DESKTOP

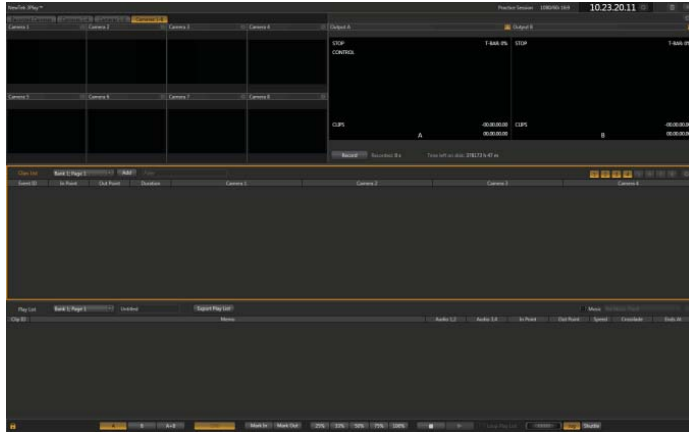


Figure 38

- At this point, you should see the blank *Replay Desktop* (Figure 38).

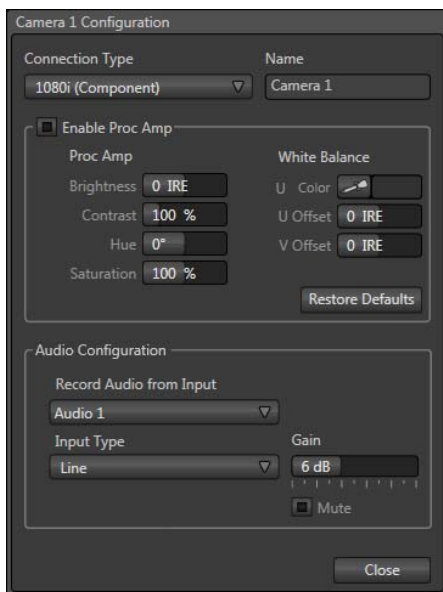


Figure 39

- We discussed configuring input and output connections and devices for new sessions back in sections 3.4 (Input Connections), 3.7 (Configure Video Output), 3.8 (Configure Multiview Output), and 3.11 (Configure Audio). Review these points if necessary, and set up your connections; we're assuming at least 3 cameras are connected below.

By now, you should see live video from the configured connections on the input monitors.

4.3 OUTPUT AND CONTROL MODES

7. Press *A* on the *control surface* to designate the *Output Mode*
8. Press *LIVE* to set the *Control Mode* – see sections 8.4 and 8.5 for explanations of these modes.
9. Push the *P3* button to send the live source from input 3 to the current output (*A*).
10. Push *B* on the *control surface* to update the current *Output Mode*.
11. Press *LIVE* again, to set the *Control Mode* for output B – note that outputs have independent *Control Modes*.
12. Push the *P2* button to send the live source from input 1 to the current output (*B*).

4.4 RECORD AND SPEED

13. Watching *Output B*, push the *Stop* button on the *control surface*.
14. Push the *25% Speed* preset button, then press *Play*, still watching *Output B*.

Well, that was unimpressive. Playback ignored our control surface operations, and continued at full normal speed. Why? This is because we have not yet enabled recording. Stopping or changing the *Speed* of a *LIVE* source would automatically kick playback into *Delayed* mode - if it could. However, this requires 3Play™ to be *recording*.

Let's try that again, enabling recording first. Remember that *Speed* (for *Output B*) is still set to 25% (if you checked, *Output A* would still be at the default speed, 100%)

15. Press the red *REC* (Record) button on the control surface, to enable capture.

16. Notice that the *Record* button on the *Replay Desktop* beside the Record button (just beneath *Output A*) lights up, and a nearby time counter starts keeping track of the total amount of video recorded in the current session.

Note: Recording is automatically initiated if you simply press IN. To end recording, hold ALT down while pressing REC.

17. Press *Stop* – note that video playback on *Output B* is arrested (*Output A* is unaffected and continues playing).
18. Push the *25% Speed* preset button, then press *Play*. Playback on *Output B* resumes in *Delayed* mode, at 1/4 normal speed.

Hint: In this state, the HUD (Heads Up Display) overlaid on Output B shows a new time field, with a negative value. This shows how far behind live the current frame is. As you watch it, the negative offset will continue to grow, because playing at 25% will mean the output is falling progressively further and further behind live. The HUD also shows the T-Bar Speed value – which is 25% just at the moment.

19. Press the *100% Speed* preset button. Notice that the HUD's 'behind live' time display locks, since output (though *Delayed*, not *LIVE*) is no longer falling *further* behind the live input.

4.5 MARKING EVENTS

With recording enabled, continuous capture of inputs configured for capture when creating the session (in *Startup*) is taking place. (Notice that the *Clips List* shows an event row in its tabular pane that tells you when recording commenced.)

4.5.1 TWO –BUTTON MARKING

20. Push the *IN* button, which is how you would set an In Point for an event. Note that when you do this, a new event row is added to the *Clips List*.

This new event can be referred to as an 'incomplete' event, because it has an *In Point* but no *Out Point*.

21. Keep an eye on the *In Point* column for this incomplete event, and push *IN* again. Notice that the *In Point* updates when you do this.
22. Complete the current event in the *Clips List* by pressing the *OUT* button on the *control surface*.

Note that the event now has both an *In Point* and an *Out Point*, and the (calculated) *Duration* for the event is also now shown.

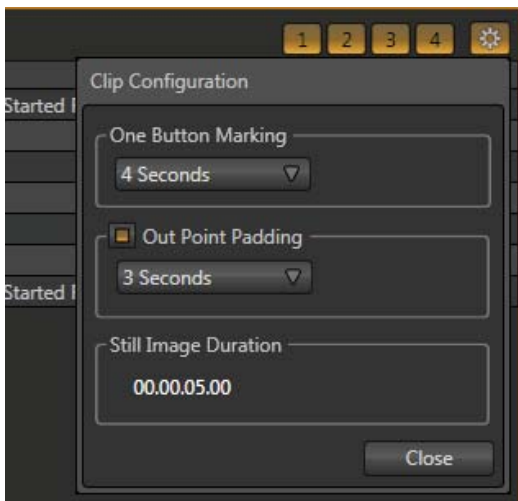


Figure 40

23. Click the small button at the extreme right end of the *Clips List* header. This opens the *Clip Configuration* dialog.
24. Notice the *One Button Marking* menu, which lets you change the default duration value for this handy feature.

Hint: Just below the One Button Marking menu, notice the Out Point Padding switch and associated numeric control. Enter a duration in the numeric field and enable the switch if you want playback to continue past the end point of clips you play, rather than stop immediately when the Out Point is reached.

25. Click the *Close* button to dismiss the *Clip Configuration* dialog.

4.5.2 ONE-BUTTON MARKING

26. Finish marking any incomplete event, if necessary, by pressing *OUT*.
27. Wait for a few more seconds to elapse, and then press *OUT* only – without pressing *IN* first.
28. Repeat this step a few times, allowing a few moments to pass between repetitions.

Notice that even though you haven't pressed *IN* first, new 'complete' events have been added to the Clips List. By default, the duration for each of these new events is four seconds. The *Out Point* was set when you pressed *OUT*, and a suitable *In Point* is assigned as required.

4.6 CLIPS LIST NAVIGATION

29. Hold down *ALT*, and press the ►| (*Next*) button.

Nothing happens. This is because you are still in *LIVE* mode.

30. Press the *CLIP LIST* control mode button. A bright border is added to the *Clips List* module, and the *HUD* for *Output B* also updates (to *CLIPS*). Both of these are indicate that *Output B* is now in *Clips* control mode.
31. Hold down *ALT*, and press the ►| (*Next*) button again. You'll see that the view on the current *output* updates to show the second camera angle, and the gold highlight in the *Clips List* moves to the *Memo* column for the second clip in the event row.
32. Hold *ALT* down again, and press |◀ (*Previous*) to return to the first camera angle. (Press *Previous* or *Next* without *ALT* to move up or down in the *Clips List*.)

4.7 ADDING A MEMO

33. Press *F2* (or alternatively, the *Enter* key) on the keyboard. Note that this places the currently highlight *Memo* field into *text edit mode*.

34. Type “touchdown” into the *Memo* field for the current clip (typically comments on the nature of the action captured).
35. Press *Next* or *Previous* to move to another event, then use *ALT + Next* to move to the *Memo* field for a different camera angle. (Note that moving the highlight to another field concludes *text edit mode*.)
36. Press *F2* again, enter the text “penalty” into the *Memo* field, and press *Enter*.
37. Press *F3* - the cursor jumps into the *Filter* text field in the *Clips List* titlebar.
38. Start to type the word “penalty” – notice that even before your are done typing, the *Clips List* view is ‘filtered’ to show only events with matching criteria in their memo fields.

Hint: Of course judicious use of Memo entries and the Clips List Filter make it easy to find events for Play List construction or other organizational purposes.

39. Press *Backspace* on the keyboard a few times to clear the *Filter* criteria, resulting in the *Clips List* once again displaying all existing events.

4.8 TRIMMING EVENTS

40. Using *ALT + Previous*, move the *Clips List* highlight into the *In Point* for an event.
41. Hold down the *EDIT* button on the control surface, and rotate the large *Jog Wheel*, watching the *In Point* value change as you do so.

Hint: The same method allows you to edit the Out Point or Duration values. Alternative, you can either simply drag left or right with the mouse over a numeric field, or press either Enter or F2 to use direct text entry mode to modify the value in a highlighted numeric field.

42. Here’s yet another method to change the timing of a marked event:
 - a. Display a clip for the event on the *output monitor*
 - b. Rotate the *Jog Wheel* until you find a frame that would make a good *In Point*
 - c. Then press *ALT + IN* to update the current *In Point*.

- d. Rotate the *Jog Wheel* again to locate a suitable Out Point, and press *ALT + OUT*.

4.9 MANAGING EVENTS

43. With the mouse, drag either the *Event ID* column entry or the *Memo* field for any clip in an event up or down to re-order the events in the *Clips List*.
44. Right-click in the same locations (*Event ID* or *Memo* field) to show a context menu with *Cut*, *Copy*, *Paste* and *Audio Level* options. Alternatively, you can use the standard shortcut key methods (Ctrl + x, Ctrl + c, and Ctrl + v).
45. Multi-select several events, using either *SHIFT* with control surface *Previous* and *Next*, or mouse selection with keyboard Shift or Ctrl.
46. Copy the selected events (into the copy buffer) using the context menu or Ctrl + c.
47. Press *P2* to display the second page of the current *Clips List* bank (each *bank* has four pages for your use).
48. Press (keyboard) *Ctrl + v* to paste the copied events into page two of the Clips List.

4.10 PREPARING A PLAY LIST

49. Press *P1* to return to *Page 1* in the *Clips List*.

4.10.1 ADDING CLIPS

50. Use *Previous* and *Next* (with or without *ALT* as necessary) to highlight the *Memo* field for a clip, and then press *Add to Play List* on the *control surface*..
51. Repeat these steps until several clips appear in the *Play List* table.

Let's try a different method of adding clips to the Play List pane:

52. Hold down *Shift* on the keyboard, and use the left and right arrow keys to multi-select several clips (by highlighting their *Memo* fields). Press *Add to Play List*.

Let's use yet another approach to add the clips for all recorded camera angles of a single marked *Clips List* event to the *Play List* in consecutive order?

53. Using the mouse, drag the *Event ID* field for the event of interest onto the *Play List* pane. Clips from all camera angles for the event are added to the *Play List* in order.
54. Let's clear out the current *Play List* before continuing:
 - a. Press the *PLAY LIST* control mode button on the *control surface*.
 - b. Press keyboard *Ctrl + A* (select all).
 - c. Press control surface *REMOVE*, or keyboard *Del*.
55. Hold down *Ctrl* on the keyboard, and use the mouse to click two *Event ID* fields that are not next to each other in the *Clips List* (or if you prefer, several non-neighboring *Memo* fields).
56. Drag the highlighted fields onto the *Play List* pane.

4.10.2 EDITING AND PLAYBACK

57. Use the controls in the *Audio* columns of the *Play List* to adjust audio levels for the clips, and if you wish, adjust the *Crossfade* timing as well.
58. Roll the *Jog wheel* to move through the *Play List* sequence, and watch the output monitor. As play moves from the *Out Point* of one clip to the *In Point* of the next, note that the red 'currently playing' highlight in the *Clip ID* column at left tracks the current playback position.
59. Press *Play* (or keyboard *Spacebar*), and notice that playback commences from the current position.
60. Press *Stop*, then *Previous*. The play position is reset to the first frame of the first clip in the *Play List*.
61. Push *Fast Jog* (to enable it) and use the *Jog wheel* to advance through the clips until the red play indicator is 3 or 4 clips from the beginning of the playlist again.

62. With playback stopped, press *Stop* once. The play position is again reset to the first frame of the first clip in the *Play List*. (Had playback been underway, pressing *Stop* twice in succession would have accomplished the same thing.)

Hint: Note that the Play List (like the Clips List) has four banks of four pages each. In addition, Play List pages can be individually labeled using the Name field in the Play List header.

4.10.3 SPEED CONTROL

You can set *Speed* independently for each clip in the *Play List*, in similar fashion to adjusting the Audio levels. But you can also make interactive Speed adjustments even during playback when necessary.

63. Press *Play*, and then slowly move the T-Bar towards you while watching the output monitor.

You'll observe that that the *T-Bar* (and *Speed* preset) settings are applied to the setting established for each *Play List* clip in its own individual Speed column. For example, if the clip's *Speed* in the *Play List* table is set to 50%, and the *T-Bar* is also at 50%, the actual playback rate will be 25%.

Hint: Note that although the maximum Speed you can set using presets or the T-Bar is 100%, but the Play List control let you set Speed all the way up to 400%.

4.11 RENDERING A PLAY LIST

64. Click the *Export Play List* button in the *Play List* titlebar.

Selecting this menu item adds a new clip to the *Clips List* (and shows the file path to the resulting clip in a dialog while doing so). The exported clip is an exact duplicate of the complete *Play List*, in one file.

Note: Rendered Play Lists, like other Clips List entries, can be exported (to various popular file formats or as-is) using the Export Media feature in the Sessions page in Startup. See Section 5.3.1.

65. As we've reached the end of our introductory walkthrough, press *ALT + REC* to stop recording.
66. Then click the *Exit* button at the right hand end of the *Replay Desktop* titlebar. This takes you back to the *Session* page in *Startup*.
67. Press the large 'arrow icon' at upper left to return to the *Home page*, then click the *Shutdown* icon
68. Select *Shutdown 3Play™* to power the unit down.

PART II (REFERENCE)

A thorough examination of the various aspects of your NewTek 3Play™; every button, menu item, feature and control is considered in this section so you can take full advantage of your system.

5 THE STARTUP SCREEN



The *Startup Screen* is the gateway to your NewTek 3Play™ functionality, and also home to *session* management and system maintenance features.

Icons in the left-hand pane of the *Startup Screen* provide access to various functions. We'll discuss each of these in the pages that follow, beginning with a review of the concept of sessions.

The *Startup Screen* appears whenever you launch NewTek 3Play™. From here, you create, configure, manage and launch 3Play™ sessions by making selections from the icon ring.

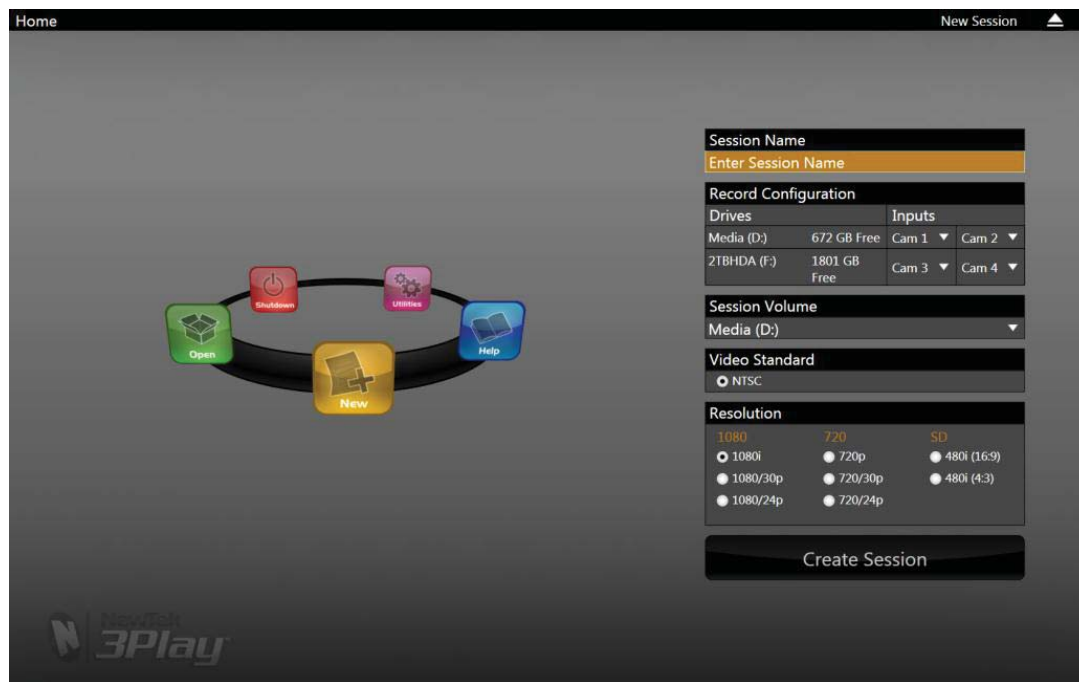


Figure 41

Your intention may be to participate in a live production, or perform asset management functions within an existing session. In either case, let's consider a fundamental concept – the *session*. What is a session, and why are sessions both important and valuable to you?

5.1 INTRODUCTION TO SESSIONS

Whenever you work with your 3Play™ system, you provide certain information about the production environment:

- What broadcast standard is used in your locale? Is it PAL, common in Europe among other places, or perhaps NTSC, standard throughout North American regions?
- Are your cameras or other live sources HD, SD or a mixture of both?
- How are cameras connected (are you using component or SDI connections, or a combination of several types)?

As you continue, you may make other adjustments relevant to your current production requirements:

- You might calibrate your cameras individually using the *Proc Amp* settings in the Input Configuration panels.
- Perhaps you will also use output *Proc Amps* to adjust output display characteristics.
- What are your output device connection preferences? For example, will you send video from Output A to a local reference monitor using component cabling, or perhaps another connection type? Will you connect a downstream switcher to Output B using HD-SDI? What external audio connections and adjustments are required?
- You might create *Play List* pages of clips and other content, along with pages full of recorded events in the *Clips List*.

The list of adjustments, activities and assets involved in a specific production goes on, but the main point to grasp here is that the *session* entails of all of the above, collectively. Assuming you do not deliberately delete the session, all of your media and all of your settings are ready for immediate recall.

When you re-open an existing session, it's just as if you were continuing an earlier event. Thus, if you return to the same venue another day under basically similar conditions, you can opt to simply re-open your prior session and be virtually ready to go. (Professional wisdom, of course, calls for testing everything before actually beginning the event.)

Naturally, you can store multiple sessions and load any session freely. This greatly simplifies business models that involve regular trips to several venues, a number of similar consecutive events, or different users with their own specific needs.

5.2 THE HOME PAGE

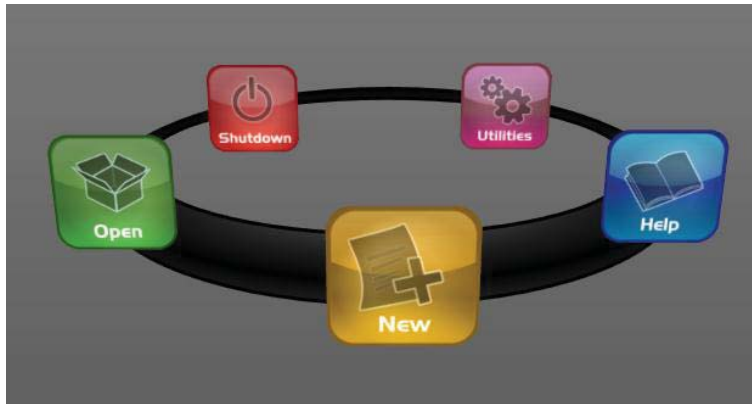


Figure 42

This primary screen is the first thing you encounter on launching the system. Figure 42 shows the icon ring that dominates it.

When you click an icon on the ring (such as *New* or *Open*), that item advances to the front-most position.

Hint: Alternatively, you can use the keyboard's arrow keys to cycle through the icons on the ring.

When you choose an icon from the ring, the right-hand pane of the *Home page* updates to provide more options related to your choice.

For example, the first thing you will generally do is create a *session*. In anticipation of that, the *New* icon is pre-selected automatically whenever no existing sessions are detected.

Having discussed sessions, let's go on to consider how you create sessions, and choose which one to work on. This and a few other top level functions are found in the 3Play's *Home page*.

Drives		Inputs	
Media (D:)	716 GB Free	Cam 1 ▼	Cam 2 ▼
HD_2 (F:)	828 GB Free	Cam 3 ▼	Cam 4 ▼

Figure 43

This results in the corresponding session options pane being displayed, as shown in Figure 43 (Multi-standard model options shown).

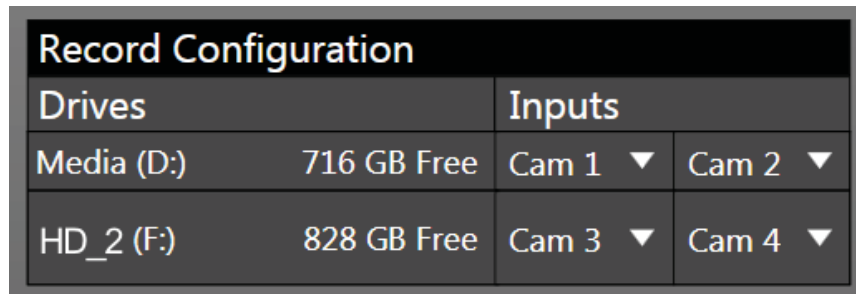
5.2.1 NEW (SESSION)

As just mentioned, clicking *New* on the icon ring populates the pane at right with related options. Principally, for each session you must designate (by selecting switches) your local video standard (Multi-standard model only – select NTSC, PAL or NTSC-J) and session format –1080i, 1080/24p, 1080/30p, 720p, 720/30p, 720/24p, 480/30i (16:9) or 480/30i (4:3). Multi-standard models offer PAL format equivalents.

SESSION NAME

You will see a name entry field above the session options in the pane at right. Click in this name field to provide a suitable name using your keyboard.

RECORD CONFIGURATION



Record Configuration			
Drives		Inputs	
Media (D:)	716 GB Free	Cam 1 ▼	Cam 2 ▼
HD_2 (F:)	828 GB Free	Cam 3 ▼	Cam 4 ▼

Figure 44

Beneath the *Session name* you entered, you will notice a control group labeled *Record Configuration*. In this section, you assign one or more storage devices to the session for replay clips you will record and other assets associated with the session.

Hint: The titlebar of the Home page has an Eject button to allow you to disconnect and remove storage media.

Suitable hard drives added to a removable drive bay or otherwise connected are listed in the *Drives* column. Use the drop-down menus under *Inputs* to assign inputs for recording to the hard drive listed in the same row. (See also Section 10.1, Record Configuration – New Session.)

Note: External drives, while suitable for backup and restoration operations, are not recommended for recording applications. To ensure adequate data throughput for capture, the Inputs layout lets you assign two inputs to any single storage volume. Regarding hard drive specifications for use in 3Play’s removable drive bays, see Section A.1.7.

VIDEO STANDARD AND RESOLUTION

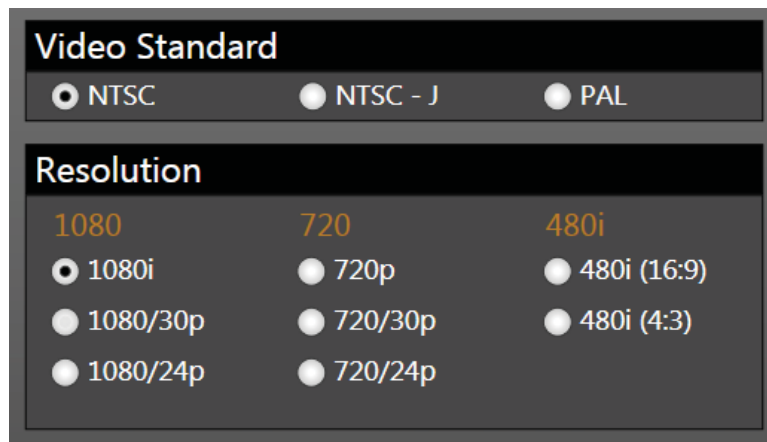


Figure 45

The format of video output by 3Play™ varies according to the session type. The session settings also affect capture. For example, if your session format is SD 4:3, this is the format captured by the *Record* function, even when the input *Connection Type* might be HD, to match a specific camera; the converse is also true. The frame is scaled and cropped as required to properly match the session setting, regardless of input type.

Multi-standard 3Play™ units show the *Video Standard* option buttons, allowing you to choose *NTSC*, *NTSC-J* or *PAL* for your session, according to your local regional requirements.

The *Resolution* radio button groups allow you to further configure the recording and output format for the new session.

Note: See Section 7.1 for more information on Video Output configurations.

Having made your selections, you would normally click the *Create Session* button at lower right (then *Start Session* to launch the *Replay Desktop*), but first let's explore the features of the *Home page* a bit more.

5.2.2 OPEN (SESSION)

If there are existing sessions on any currently mounted drive(s), the icon ring on the *Home Page* will default to the *Open* icon (Figure 46).

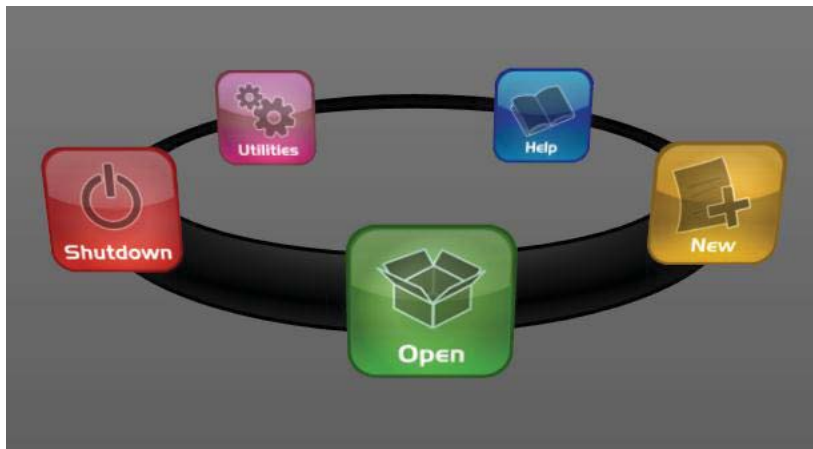


Figure 46

Selecting *Open* causes the *Sessions List* to appear at right. This pane shows all sessions stored on currently mounted drives. The *Session Name* and video format for each is listed separately under a header named for the storage volume they are located on (Figure 47).

Media (D:)	
Green vs. Orange	1080/60i

Figure 47

Note: Media configured as Read-only is not shown for the New or Open (session) features, since they cannot be used for sessions. However, Read-only media can be used for import purposes.

CONTEXT MENU

Right-click a session name to open a context menu with two items listed in it: *Rename* and *Delete*. The *Delete* function should be used thoughtfully, as it cannot be undone.

All content stored in the named session's folders on currently mounted drives will be deleted. This will include clips, images and audio files associated with the session.

Note: Content that is not local to the session but which was used in it is not deleted. For example, you may have added still images to your Play List directly from a USB thumb-drive, doing so without actually importing the files into the session. Those external files will not be deleted.

OPENING A SESSION

Just as you were able to select an icon on the ring using the left and right arrow keys, you can highlight a name in the *Session List* using the keyboard Up and Down arrows – then press the Enter key to open the session (or simply click the session name with the mouse to open it immediately). Selecting a session takes you away from the *Home page* to the *Session page*.

Let's look at the other *Home page* features briefly before we go on to open a session, though.

5.2.3 SHUTDOWN

This selection provides *Restart 3Play*, *Shutdown 3Play*, and *Exit to Windows* links in the right-hand pane. Click a selection to perform the named action in the usual manner. (In the case of the last-named function, you can return to the 3Play™ environment later by double-clicking the desktop icon named *3Play™*.)

5.2.4 UTILITIES



Figure 48

Selecting *Utilities* on the *Home Page* icon ring (Figure 48) presents a list of functions at right that have to do with the 3Play™ system (Figure 49).

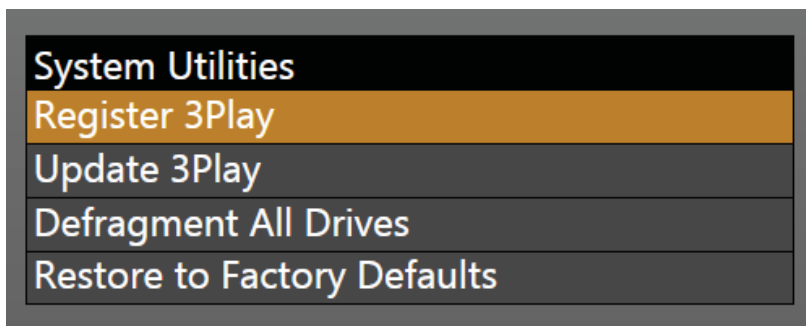


Figure 49

REGISTER 3PLAY

Registration is required to remove the watermark from output, in part to encourage you to register early. Among other reasons, doing so will serve to identify the unit to NewTek as yours in case of theft, and will also allow you to check for software updates that may have been recently released. (The steps in the Registration process were outlined back in Section 3.3, so we won't repeat them here.)

UPDATE 3PLAY

Periodically, NewTek may provide software updates for your 3Play™. Updates can enhance performance, security or even add useful new features.

If the system is connected to the internet, clicking *Update 3Play™* will automatically access the appropriate webpage so you can check for new software patches or other downloads provided by NewTek.

Use the login details you provided when registering 3Play™ to enter your personal product page, click the “my downloads” link at the top of the page, and install any new updates. This way you can be sure the very latest version of the software for your system is installed.

1. Click *Update 3Play™*.
2. Login to the NewTek update webpage, locate the latest update and click on it.
3. At the dialog popup, choose *Run*.
4. Comply with any onscreen prompts that follow.

Hint: If you wish, you can instead access the same webpage from a second computer connected to the internet, then transfer update files to 3Play™ using a network connection or perhaps a USB thumb-drive.

DEFRAGMENT ALL DRIVES

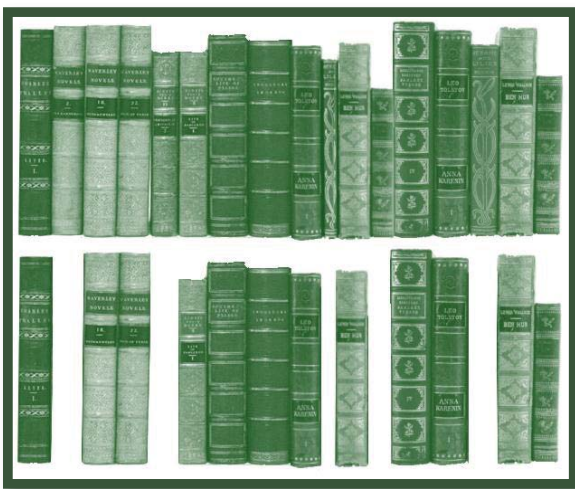


Figure 50

Over the course of time, storage volumes devoted to audio and video storage can become fragmented. Eventually, this can degrade playback performance. Defragmenting corrects this condition.

You could think of your hard drive as being like a shelf in your library. As time goes along, the shelf fills with books (data). Some are large while others are small, just as 3Play™ session content may be larger or smaller.

To make room for new additions, you decide to remove books you have finished with from the shelf. You remove a book here, another there, opening up gaps between the remaining books. This makes some shelf space available, but does so in the form of gaps separated by the remaining books. Sadly, when you obtain another large book, it may be too big to fit in any one of the gaps. A foolish librarian might tear the new book into sections just big enough to fit into the open spaces on the shelf. This would obviously be unwise. When you wish to refer to the book later you will lose a lot of time locating and assembling its sections before you can read it. How much better it would be to slide the remaining books closer together, combining all the free space first. Unfortunately, computers are ‘foolish librarians’. They tend to want to fill in all the gaps in their storage areas, even if it means literally shredding your ‘book’ (in reality large video files from your sessions) into tiny fragments.

Defragmenting the storage volume has the same effect as sliding the books together, resulting in less and larger gaps. The end result is that 3Play™ doesn’t have to frantically search in many different places to assemble the video data you have recorded. This process (defragmentation) can take considerable time, so it’s not something you want to begin just before an important event.

RESTORE TO FACTORY DEFAULTS

A complete system restore function is available in the event of an unforeseen problem. This does not merely restore the operating system, or other data files. Rather, it restores the system to an ‘as-shipped’ software state. Please refer to Section A.5.6 in Appendix A for full details and usage notes.

5.2.5 HELP



Figure 51

- Click the *3Play™ User Guide* link to open the manual.
- Click the *License Agreement* link to review the 3Play™ end user license.
- Click *About 3Play™* to list version information, credits and acknowledgments.

5.3 THE SESSION PAGE

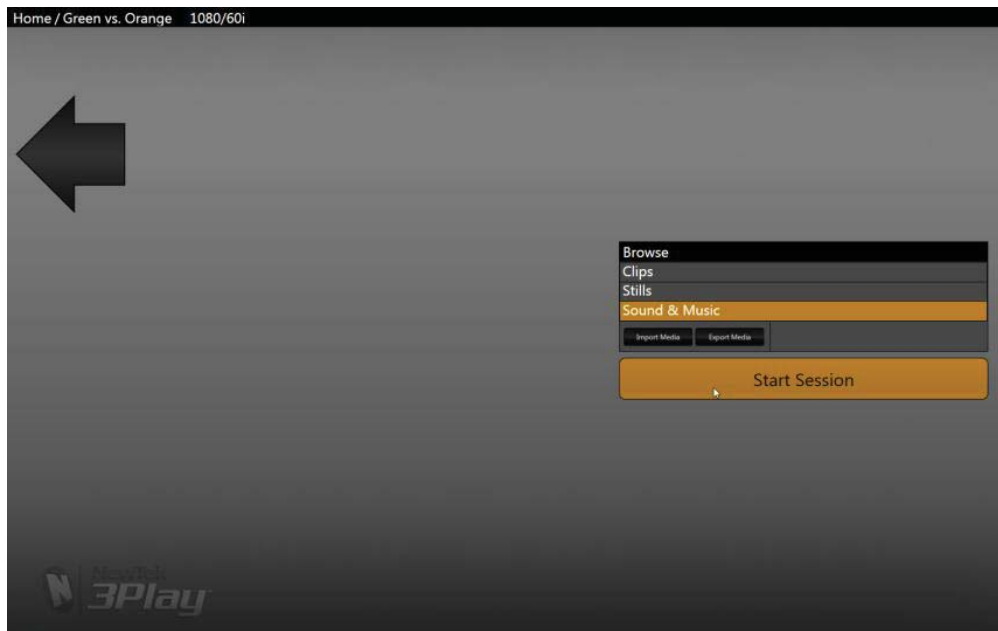


Figure 52

Opening a session from the *Home page* (whether using *Open* or *New*) takes you to the *Session Page*, providing a new set of options as links at right.



Figure 53

The name of the current session is shown in the top-left corner of the screen. The session is displayed in the form "*Home/session name*". If you wish to leave the current session and return to the *Home page*, you can click the large *Back Arrow* displayed beneath the session name, or the word "*Home*" in the session name label.

5.3.1 ASSET MANAGEMENT

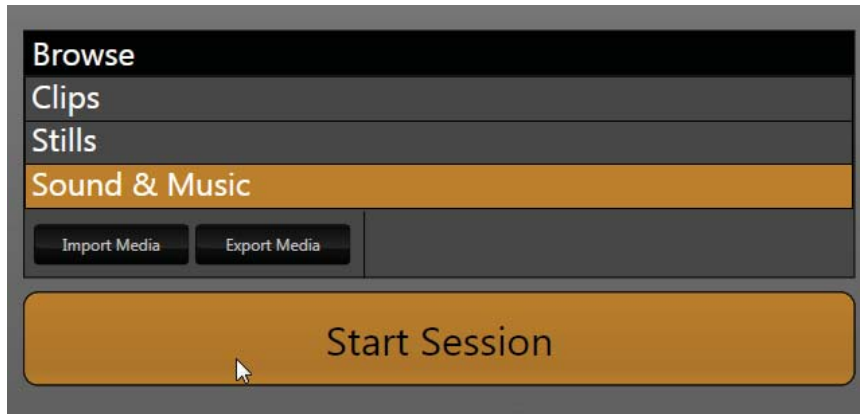


Figure 54

At times you may find it useful to be able to quickly access the various files associated with the current session. The links at right on the *Session page* under the heading *Browse* provide access to default session folders.—Clicking one of these links (or selecting it with the up/down arrow keys and pressing Enter) opens a system file explorer.

You can use the familiar features and shortcut keystrokes in these windows (Cut, Copy, Paste, Rename, Delete and so-on) to manage session assets.

Hint: Of course, you can open several of these folders simultaneously, and navigate these file windows to other locations as well. For example, you might copy files from one session into a folder for another.

Several other important features are found here, including *Import Media* and *Export Media* as discussed next.

IMPORT MEDIA

Clicking the *Import Media* link opens a custom import panel offering batch import of files for use in 3Play's *Clips List* and *Play List*. It even allows you to transcode files to appropriate high quality 3Play-friendly file formats at the same time if you wish.

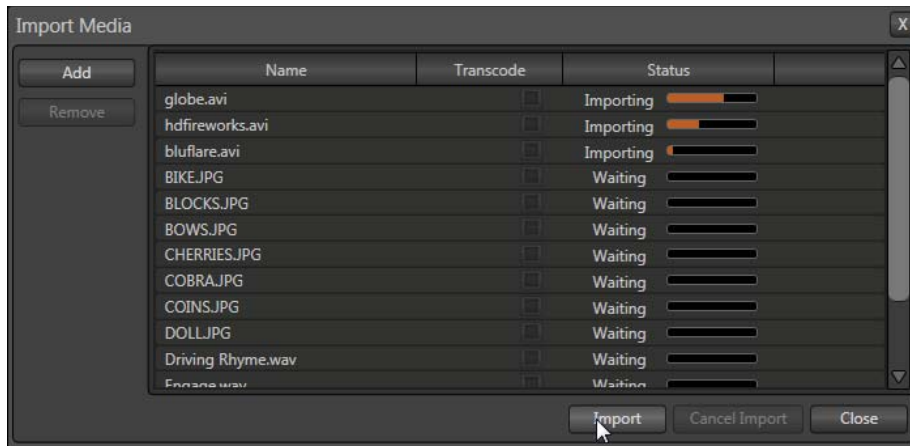


Figure 55

Import Media's quick processing makes this the fastest and most convenient way to prepare production assets for a session.

Click *Add* to open a standard system file window, and select (or multi-select) items to build a list in the *Import Media* file pane.

Some highly compressed video files may not be well suited to live playback. Enable switches in the *Transcode* column for files you wish to convert to a friendlier format on import. Files can be re-ordered by dragging their entries up or down with the mouse, or removed from the list by highlighting them and clicking *Remove*.

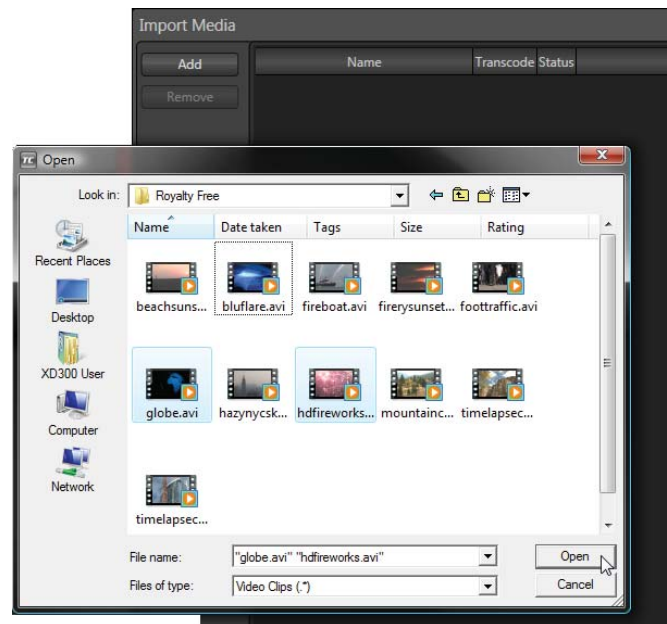


Figure 56

Once the batch import list is prepared, click *Import* to complete the operation. Files are processed quickly, and are automatically added to Import folders properly located according to type for easy access in different modules as required during live production.

Hint: Sections 12.1.2, A.4.2 and A.4.3 discuss other aspects of importing media files.

EXPORT MEDIA

Clicking the *Export Media* link opens a new panel - Figure 57.

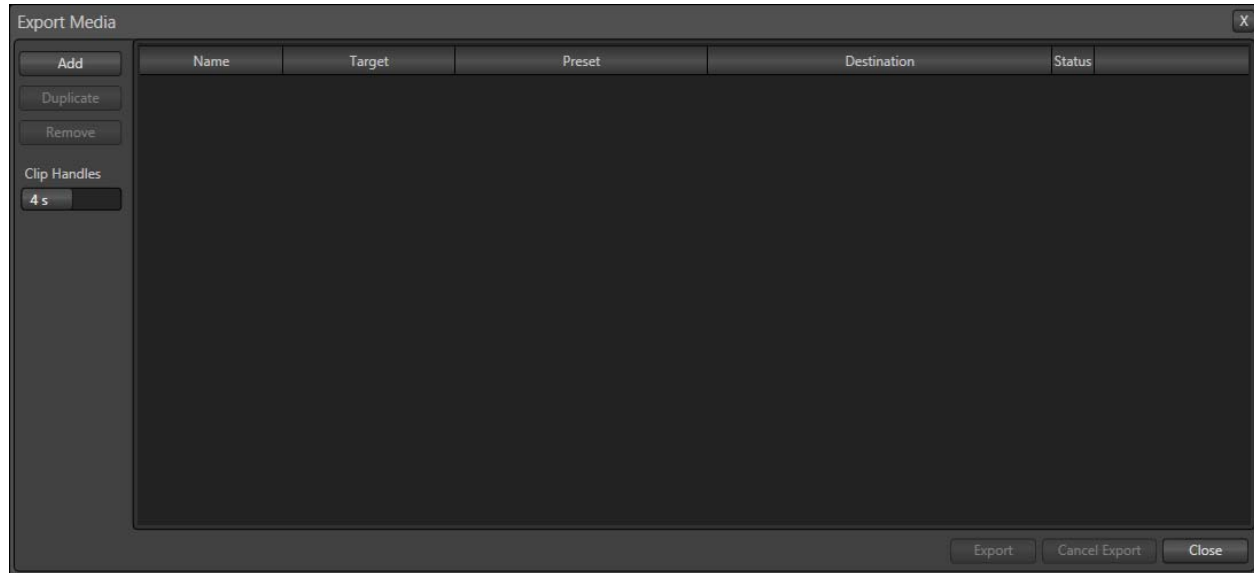


Figure 57

The *Export Media* module allows you to create a list of video clips for export, even selecting a new file format for these exports to be converted to (on a per file basis), and designating where to send them.

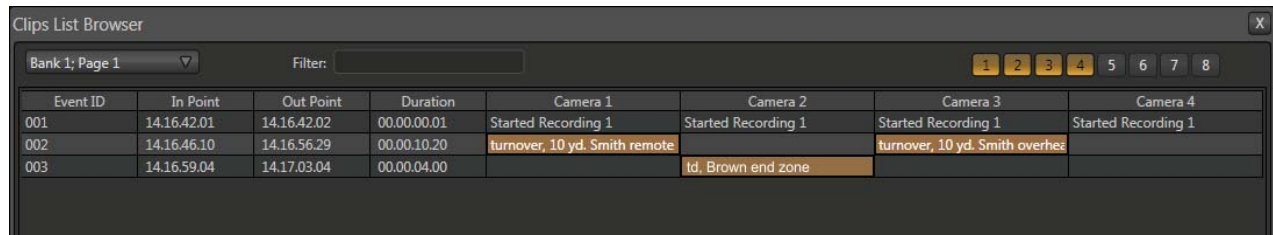


Figure 58

Click the *Add* button at upper left to open a custom *Media Browser* (Figure 58). Use this pane to locate and select (or multi-select) video clips for export, choosing from the *Clips List* entries for the current session (see Section 12.1.2 for browser details). Multi-clip selections are supported.

Hint: The Export Media panel can be resized by dragging its edges or corners with the mouse.

After selection, click *OK* to add the clips you chose to the *Export Media* file pane. The file pane is much like a spreadsheet table, listing all files in the current export batch in its first column, then the current settings for each file in other columns on the same row. A *Status* column shows the current export status or progress for each file in the list.

TOOLS

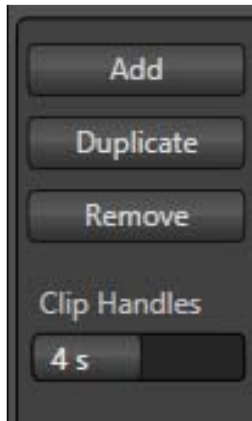


Figure 59

Note that the *Export Media* file list pane also supports multi-selection. When a file (or group of files) is selected, you may use the *Duplicate* and *Remove* buttons at right to either clone or delete entries in the list.

The *Duplicate* feature is very useful for cases when you wish to export a file to multiple target file formats to be used for different purposes or in different applications.

The *Clip Handles* control is a numeric slider that allows you to pad the exported clips beyond the limits of their current in and out point (presuming the recorded frames to support this feature exist). This is often useful for post-production purposes (the value is in seconds.)

Hint: Once files have been added to the export list, you can multi-select using standard Shift-click or Ctrl-click techniques, then apply options to all selected files in one operation.

TARGET, PRESET & DESTINATION

Having prepared the file list, click the triangle button in the *Target* column to open a drop-down menu listing broad categories of export format presets you can choose. A similar *Destination* button opens a system file browser to let you designate (or create) a location for file output.

Hint: It is possible to selected mapped network locations (with a drive letter assigned) as the Destination, saving time later.

Each file to be exported can have its own *Target*, *Preset* and *Destination* settings. The export presets shown vary, according to what is appropriate for a given session format.

Name	Target	Preset	Destination
turnover 10 yd Smith	Avi	DV/DVCPPro (.avi)	D:\Media\Clips\Exports
turnover 10 yd Smith	Avi	DV/DVCPPro (.avi)	D:\Media\Clips\Exports
td, Brown end zone	Avi	DV/DVCPPro (.avi)	D:\Media\Clips\Exports
turnover 10 yd Smith	Quicktime	Renderless conversion (.mov)	D:\Media\Clips\Exports
turnover 10 yd Smith	Application	Avid Media Composer® (.mov)	D:\Media\Clips\Exports
td, Brown end zone	Avi	Adobe Premiere Pro®	D:\Media\Clips\Exports
	DVD		
	Flash		
	Flash 9		
	Mobile Devices		
	Mpeg		
	Quicktime		
	Same as Source		
	Video Server		

Figure 60

Available export file formats are updated from time to time to include popular new formats. Here are some examples, as they appear for an HD session (formats and details subject to change):

- *Application*
 - *Adobe Premiere Pro®* - high quality MPEG-2 Program Stream, full raster, 4:2:2 sub-sampling, variable bitrate (100 Mbps nominal).
 - *Apple Final Cur Pro® (.mov)* – very high quality M-JPEG encoding, full raster, 4:2:2 sub-sampling, high compatibility.
 - *Grass Valley Edius®* – high quality HD encoding, full raster, 4:2:0 sub-sampling, high bitrate (up to 100 Mb/s).
 - *NewTek SpeedEDIT™* – high quality MPEG-2 Program Stream, full raster, 4:2:0 sub-sampling, variable bitrate (up to 100 Mb/s).
 - *Sony Vegas®* – high quality MPEG-2 Program Stream, full raster, 4:2:0 sub-sampling, variable bitrate (up to 100 Mb/s).

- *AVI*
 - *DV/DVCPPro (.avi)* – moderate quality, SD only (NTSC 720x480, PAL 720x576), 25Mbit/s, 4:1:1 (NTSC) or 4:1:0 (PAL) sub-sampling, very broad compatibility.
 - *MJPEG (.avi)* – moderate quality, SD or HD capable, 4:2:0 sub-sampling, broad compatibility.

- *DVD*
 - *(x) minutes (.mpg)* – SD-only MPEG 2, quality presets up to 9MB/sec bitrate (≈60 minutes) with 4:2:2 sub-sampling.

- *Flash/Flash 9*
 - A diverse collection of presets suitable for playback in newer or legacy Flash® players.

- *Mobile Devices*
 - Presets suitable for use with *Android™, iPad™, iPhone™* or *iPod Touch™*.

- *Quicktime*
 - *Renderless Conversion* – high quality ‘wrapped’ Quicktime file.
 - *DV/DVCPPro (.mov)* – moderate quality, SD only (NTSC 720x480, PAL 720x576), 25Mbit/s, 4:1:1 (NTSC) or 4:1:0 (PAL) sub-sampling, very broad compatibility.
 - *h.264 Highest Quality (.mov)*
 - *h.264 Very Good (.mov)*
 - *MJPEG (.mov)*

- *Same as Source* – file copy (no re-rendering)

- *Video Server*
 - *Leightronix NEXUS\Ultra NEXUS* – SD (NTSC 720x480, PAL 720x576), high quality, MPEG2 Program Stream, 9Mb/s variable bitrate, 4:2:2.
 - *TeIVUE Princeton* – SD (NTSC 720x480, PAL 720x576), high quality MPEG2 Program Stream, 9Mb/s variable bitrate, 4:2:2, NTSC 720x480 (PAL 720x576).

Hint: The time an export takes is affected by numerous factors – the number, duration and resolution of the selected files, the speed of the device selected as target for the files, the designated format, and so on.

It is generally unwise to commence a file export shortly before a live event, since you cannot launch 3Play’s Replay Desktop during export. If necessary, you can cancel the current export operation.

Next, use the *Destination* field drop-down to designate a target folder for exported files to be sent. A progress gauge is shown during file processing. Click the *Export* button at the bottom of the dialogue to begin batch export processing.

FORMAT NOTES

When export presets that do not support HD are selected during an HD session, the clip is automatically scaled to fit the selected file format. This is a convenience, but be sure to select a preset suitable for your ultimate needs.

In a somewhat related matter, note that 3Play™ records files from external sources in their native formats – which may or may not match the session format. For example, an SD camera recorded by 3Play™ during an HD session is nevertheless recorded as SD. When exported, the recorded SD clip will export as SD.

Finally, note that clips you imported into a session are simply exported as-is (that is, without transcoding) if added to the file list in *Export Media*.

6 REPLAY DESKTOP OVERVIEW



The *Replay Desktop* serves as the principal control center for your production. It provides control over input and output configuration, recording, clip marking, Play List preparation and playback, and so on.

This chapter provides a top-level view of the *Replay Desktop*, with more detailed information following in subsequent chapters.

The *Replay Desktop* is launched by creating (or opening) a session in the *Startup Screen*, then clicking the large *Start Session* button.

6.1 DISPLAY REQUIREMENTS

The *Replay Desktop* requires a minimum screen resolution of 1440 x 900.

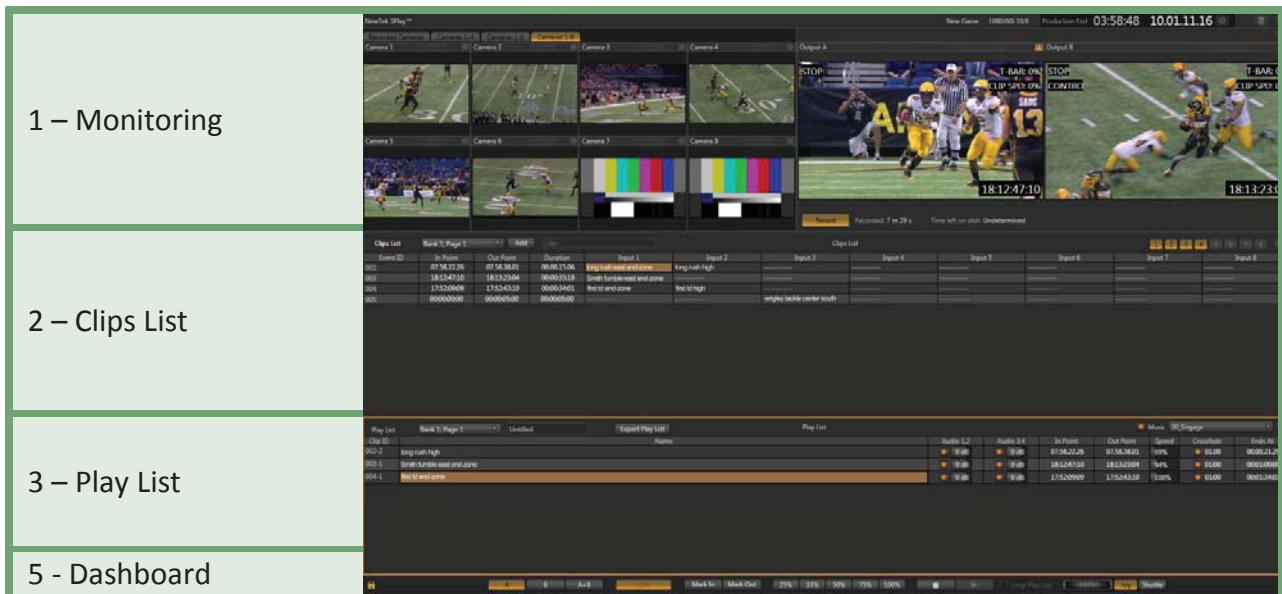


Figure 61

6.2 OVERVIEW

The *Replay Desktop* provides visual feedback for operations, including monitoring features, clip marking, and so on. It is divided into four horizontal bands (Figure 61).

From top to bottom, these are:

1 - Monitoring

- Input Monitors - monitor all inputs, or a sub-set
- Output Monitors - large full-time monitors of *Output A* and *B*, with optional information overlay s(heads-up display)
- Configurable *Multiview* display on secondary monitor

2 - Clips List

- Spreadsheet style event management pane, listing user-marked events as rows with *In Point*, *Out Point* and *Duration*
- Supports instant playback of marked clips
- Add unique comments for individual clips (camera angles)
- Filter the list by comment entries
- Clip management (trim, re-order and organize events into 'banks' and 'pages')

3 - Play List

- Add clips and other content to create highlights reels, complete with optional transitions and music


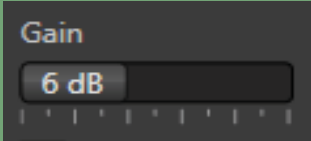
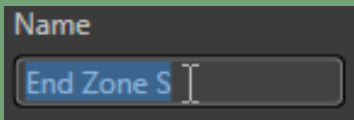
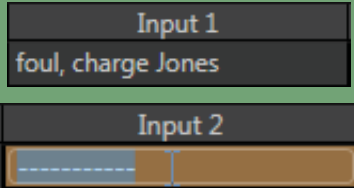
4- Dashboard

- Auxiliary controls for output, playback, speed and marking supplement the control surface

6.3 A FEW HINTS

You will find various types of user controls in the *Replay Desktop*. Some examples are shown in the table below. Several convenience features are associated with these controls.

- As you would expect, all slider controls (whether their motion is vertical or horizontal) can be set to a new value by holding down the left mouse button and dragging in the direction of the control orientation.
- Hold down the keyboard *Shift* key and double-click most controls to reset the associated value to its factory default.

Control Type	Type	Examples	Usage
	Numeric Field	In Point, Out Point, Duration, Crossfade	<p>Drag in line with the control orientation to raise or lower the current value.</p> <p>Double-click, or click and either press Enter or F2 to type a new value directly.</p>
	Numeric Slider	Audio Gain, Proc Amp controls, etc.	<p>Drag in line with the control's orientation to raise or lower the current value.</p> <p>Click to directly type in a new value.</p>
	Text Field	Input and Output Configuration panels	Click the field to activate it, and then type. (Keyboard shortcut for Clips List Filter, F3.)
	Text Field, Clips List and Play List	Clip Comment	Navigate to or click the field, and then press Enter (or F2) to enable Text Entry mode, and ESC to cancel.

Hint: To make very fine adjustments to slider values, hold down the Ctrl key on your keyboard while dragging with the mouse (this increases accuracy by a factor of 10.)

6.4 CUSTOMIZING THE REPLAY DESKTOP

The *Replay Desktop* offers several convenient provisions for tweaking the user interface to suit your particular needs.

6.4.1 RENAME

As charming as descriptive names like *Camera 1*, *Camera 2* and so on are, we must admit that it's possible you might wish to change these default labels to something localized.

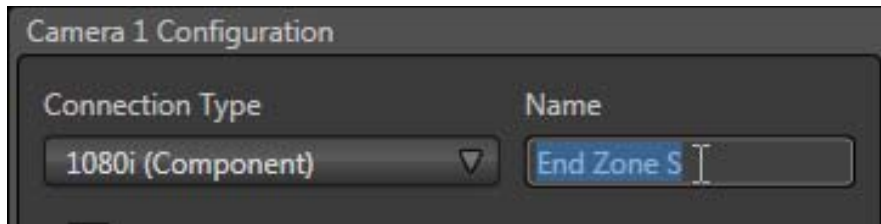


Figure 62

To do so, click the *Configuration* button (gear icon) at right in the monitor titlebar for a given input. The *Input Configuration* panels have editable *Name* text fields.

6.4.2 DUAL DISPLAYS AND MONITORING

The *Replay Desktop* monitor tabs and *Multiview* options can be flexibly combined to show what you want to see, where you want to see it.

For example, open the *Output Configuration* panel by clicking the *Configuration* button (gear icon) at right in the titlebar – above *Output B*. Click the *Multiview* tab, and select *All Inputs* in the *Screen Layout* menu. Then position the mouse pointer over the horizontal *drag bar* between the monitors section of the *Desktop* and the *Clips List*. The mouse pointer becomes a double-headed arrow. Click and hold the mouse button down, and then drag the pointer all the way to the top of the screen.

This provides a useful full-screen *Clips List* and *Play List* view, while still being able to monitor input and output on the *Multiview* display. Likewise, you can drag the horizontal divider between the *Clips List* and *Play List* to re-size them to taste.

6.4.3 THE DASHBOARD

The *Dashboard* can alternatively be locked in place, or pop up when you roll your mouse to the bottom of the screen, using the padlock icon at left.

6.5 TITLEBAR TIPS



Figure 63

An information display section at right in the *Replay Desktop* titlebar (Figure 63) provides useful data. Displayed info includes:

- *Session Name*
- *Session format*
- *Event Start/Event End* (optional time display, counts down to corresponding times set in the *Timecode Configuration* panel) – not illustrated.
- *Timecode* (from external timecode input or system clock)
- *Timecode Configuration* button (gear icon)
- *QR Code* – scan with a suitable mobile device to download and read this manual on its screen.
- *[x]* – Exit button

6.5.1 STATUS BAR

An information display is conveniently located just above the twin output monitors. From time to time this bar displays information pertaining to operations or system status, including any cautionary indications.

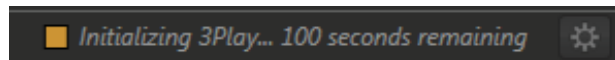


Figure 64

For example, a brief initialization is required following a system start (or restart) for video playback to stabilize. During this warm-up period, an *initialization countdown* is displayed (Figure 64) in the *Status Bar*.

Hint: Status messages disappear on their own after a little while, but you can manually dismiss them by clicking the square icon shown to the left of the text message.

7 I/O CONFIGURATION



NewTek 3Play™ provides extensive control over your video signal at both input and output stages. In addition to broad format and connection options for audio and video inputs, each video source has its own realtime Proc Amp. As well, independent Proc Amps are provided for both outputs.

Other important options include Multiview support on a secondary monitor, external timecode and genlock configuration.

It is very useful to be able to configure each source and also the outputs independently. Source configuration options ensure that you can match camera inputs to each other, and that their signals fall within legal ranges, and even mix and match different types of camera (to a point). Output *Proc Amp* settings allow you to make adjustments for special purposes.

Let's begin with a consideration of *Output Configuration* tools.

7.1 OUTPUT CONFIGURATION

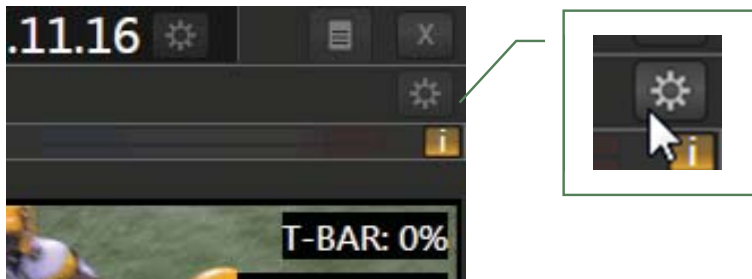


Figure 65

Roll the mouse pointer over the *Configure* button (Figure 65) above the top-right corner of the monitor for *Output B*, and click it to open the *Output Configuration* panel (Figure 66).

Output Configuration has four tabbed panes (Figure 66). Two tabs are labeled *Output A* and *Output B*, and contain identical controls discussed momentarily.

The *Aux/Multiview* tab relates to optional secondary display(s) for monitoring purposes, while the *Genlock* tab is home to important video timing calibration controls.

7.1.1 OUTPUT A AND B

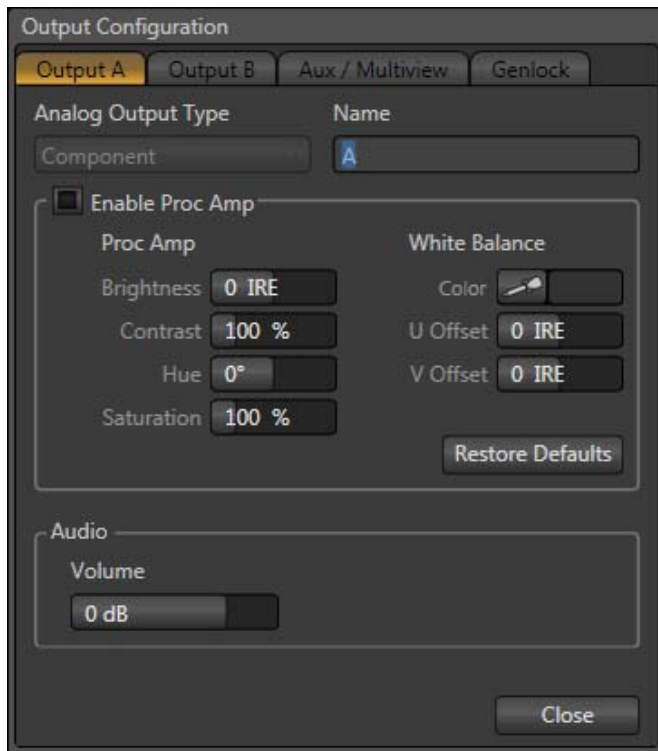


Figure 66

The video format for NewTek 3Play™ video *Outputs A, B* (and *Aux* on 3Play™ 820) is identical to the session format. Digital video output is supplied to the SDI output connectors in the corresponding format – HD for HD sessions, and SD for SD sessions.

ANALOG OUTPUT TYPE

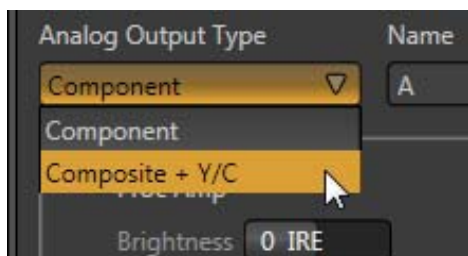


Figure 67

For HD sessions, the only suitable *Analog Output Type* in popular use is *Component*, so options are not provided in this case. The three analog connectors in the *VIDEO OUT* rows for a given output on the system backplate are supplied with the (component) Y, Pr and Pb signals. For SD sessions, however, you can choose between *Component* or *Composite + Y/C*.

This selection sends a composite video signal to the first analog connector (labeled Y) in the *VIDEO OUT* rows on the system backplate, and simultaneously sends a Y/C video signal to the two connectors in the same output row labeled Pb and Pr, respectively.

The following table lists the signal types for each connector in the video output section:

Connection Type	BNC 1 (SDI)	BNC 2 (Y)	BNC 3 (Pb)	BNC 4 (Pr)
Component	SDI	Y	Pb	Pr
Composite + Y/C	SDI	Composite	Y	C

NAME

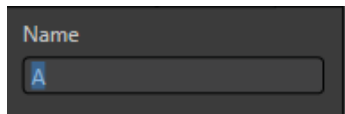


Figure 68

The *Name* field (next to *Analog Output Type*) is editable, allowing you to enter a custom name for each output. The name supplied will appear in the *HUD* (Heads-Up Display).

PROC AMP

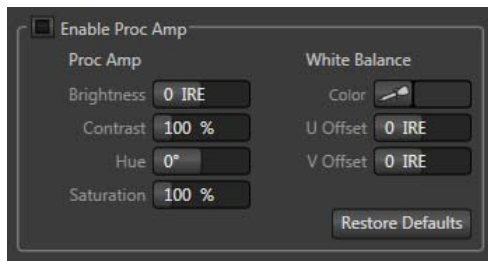


Figure 69

Proc Amp adjustments can be toggled on and off using the *Enable Proc Amp* switch at upper left, or reset by clicking the *Restore Defaults* button.

Hint: When the Proc Amp is enabled for a specific source, a small yellow indicator is displayed in the upper-right corner, just above the corresponding monitor in any of the three main monitor tabs. (This indicator is itself also a toggle switch.)

Each *Proc Amp* has numeric slider controls for:

- *Brightness*: Adjustment range from -50 to +50 IRE (the default being 0). As reference, the full luminance range of a video signal can be thought of as '100 IRE units' (named for the Institute of Radio Engineers) – ignoring minor regional variations.
- *Contrast* – Adjustment range from 25 - 400% (default 100%).
- *Hue* – Adjustment range from -180° to +180°. Adjusts the master color of the video signal from the attached source, swinging the entire image through the color wheel's spectrum.
- *Saturation* – Adjustment range from 0-500%. Zero saturation results in a 'black and white' picture; increased saturation results in richer colors. High saturation values can exaggerate the color portion of the signal.

(You should be aware that over-saturated colors are considered illegal for broadcast transmission, and may result in display problems on some devices.)

Note: The input and output Proc Amps are very useful. However, keep in mind that, whenever possible, it is best to perform color adjustments at the source or target device.

For example, it is preferable to calibrate a camera's colors at the camera, before sending the signal to the 3Play™ system. Doing so will yield higher color precision. Similarly, it's often better to adjust output color using controls on down-stream monitors. (The output Proc Amps can never completely compensate for a badly calibrated monitor.)

The Proc amps are especially useful for occasions when no external options are available (many cameras lack built-in color controls; at other times, the physical placement of a device can make access inconvenient).

WHITE BALANCE

A secondary group labeled *White Balance* adds *U Offset* and *V Offset* controls (Figure 70).

- The U portion of the video signal carries blue and green color information. When you adjust the *U Offset*, the change affects only the blue/yellow portion of the video signal.
 - Rotate *U Offset* clockwise to shift the signal toward blue and counter-clockwise to shift the signal toward yellow.
- The V portion of the video signal carries the red and green color information. Adjusting it affects only the red/green portion of the video signal.
 - Rotate *V Offset* clockwise to shift the signal toward red and counter-clockwise to shift the signal toward green.

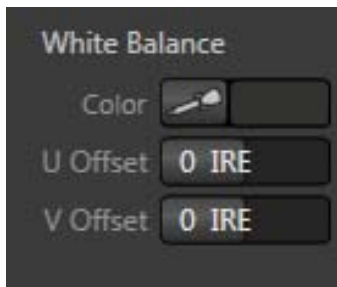


Figure 70

- To automatically white balance – click and hold the mouse button over the *Color* (eyedropper) button, and then slide the pointer on the monitor for the corresponding source. Release the mouse button over a part of the image that should be white.

7.1.2 AUX/MULTIVIEW

The next tabbed pane in the *Output Configuration* panel combines controls for two distinct outputs – *Aux* output (3Play™ 820 only) is a supplemental video output with the same set of video connectors as *Output A* and *B*; *Multiview* supports a ‘multi-bridge’ or supplemental monitoring layout connected by a DVI cable.

AUX OUTPUT

The third connector row in the *VIDEO OUT* group on 3Play's backplate is *AUX*. As for the other two outputs, there are no configuration options for *AUX*. For SD sessions, the *Component* or *Y/C + Composite* connection type options are available. The video stream displayed on *AUX* is determined by the active *Output Mode* (*A* or *B* – see sections 8.4 and 11.1). That is, whatever is on the output with control is also sent to *Aux*.

MULTIVIEW OUTPUT

The *Multiview* connection supports a secondary display monitor for the 3Play™ operator or other control room display purposes. The *Multiview* control group offers *Screen Layout* and *VGA Output Resolution* options, along with *HUD* (Heads Up Display) switches.

Hint: See Section 7.2.5 for details on the time shown in Multiview layouts with clocks.

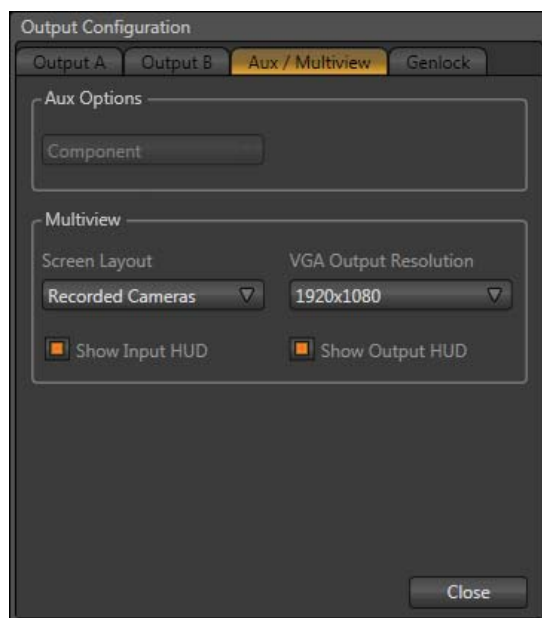


Figure 71

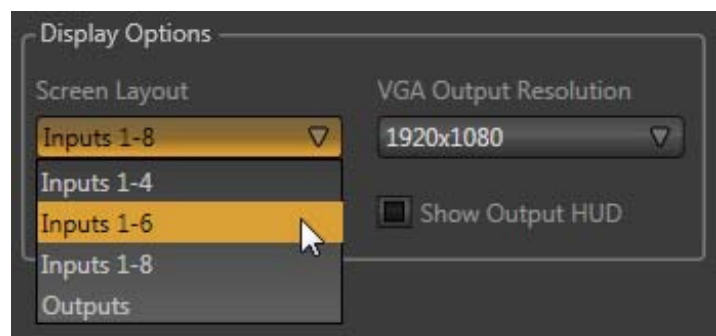


Figure 72 – 3Play™ 820

Note: Changing Multiview output options can cause frames to be dropped briefly. Changing these settings during live production is not recommended.

The *Screen Layout* menu offers a list including several displays as follows:

- *Recorded Cameras*: Shows cameras that are configured to be captured only, with clocks
- *Inputs 1 – 4*: The first four inputs plus large *Output A* and *Output B* monitors and clocks
- **3PLAY™ 820**
 - *Inputs 1 – 6*: The first six inputs plus large *Output A* and *Output B* monitors and clocks
 - *Inputs 1 – 8*: All inputs plus large *Output A* and *Output B* monitors and clocks
- *Outputs*: Large *Output A* and *Output B* monitors plus clocks

Hint: The layouts complement Replay Desktop monitor tab options, and can be used to provide monitoring solutions when the primary monitor is entirely devoted to the Clips List and Play List.

The *VGA Output Resolution* menu provides a long list of popular and useful options to allow you to configure *Multiview* output to conform to your downstream external device. Note that it is important to select the native resolution of the external display device for best results.

SHOW INPUT/OUTPUT HUD

The *Show Input HUD* and *Show Output HUD* switches toggle the *Heads-Up Displays* on the secondary *Multiview* output. See Section 9.2.1 for more on the Heads-Up Display.

7.1.3 GENLOCK

The *Genlock* feature allows the NewTek 3Play™ system to ‘lock’ its video output to a reference video signal (house sync, such as ‘black burst’) supplied to its Genlock input connector. This allows 3Play™ output to be synchronized to other external equipment that is locked to the same reference. Genlocking is not an absolute *requirement* in most cases, but is recommended if you have the capability.

Hint: “Genlock” refers to “generator locking”. Professional video devices often provide a “genlock input”, which allows an external reference signal (often referred to as ‘house sync’) to control its video timing. The output of video devices connected in this manner is synchronized to the reference signal, and they are referred to as ‘genlocked’.

The 3Play™ system accepts input from multiple video sources. Miniscule local timing differences between these may result in tiny delays during downstream switching operations. Serving the same reference signal to i) the system’s Genlock input and ii) other video devices in the chain is

the best approach, and ensures a match between 3Play™ system output and any downstream video devices required to handle both it *and* any other (genlocked) sources.

VERTICAL POSITION, HORIZONTAL POSITION AND PHASE

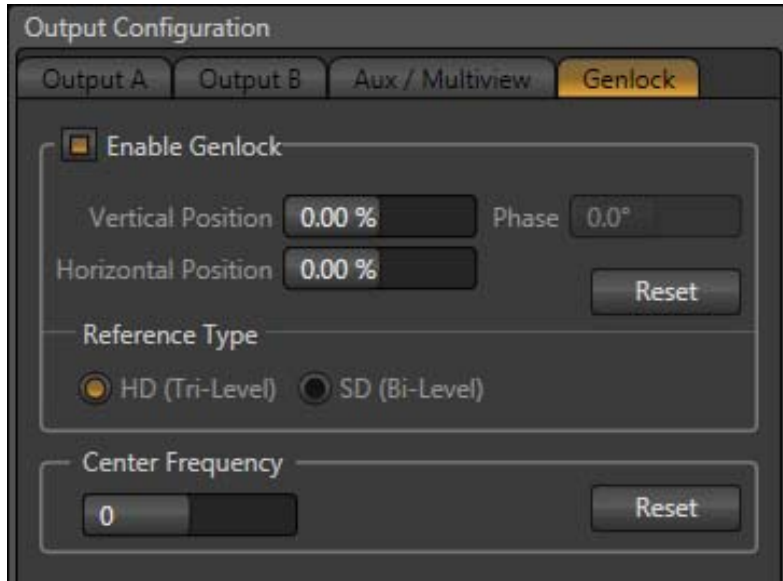


Figure 73

Locking all devices to house sync is important, but this alone does not actually ensure a perfect downstream match. Consider an army marching along: each step the soldiers take occurs at precisely the same moment, so we could say their timing is synchronized.

Even so, problems result if one soldier leads with the left foot while everyone else is on the right. Or perhaps everyone is evenly spaced and perfectly aligned but for one misfit who ‘tailgates’ the soldier ahead of him and keeps stepping on his heels.

This is essentially why the *Genlock* tab provides several settings. The *Horizontal* and *Vertical Position* settings pin the image in the proper space in the frame, and in doing so could be likened to making sure each marching soldier is in position relative to his fellows (as viewed from above). The *Phase* setting ensures proper color alignment, corresponding to making sure everyone is on the left or right foot at the same time.

Thus, the *Vert Position*, *Horiz Position* and *Phase* settings allow you to tweak synchronization to arrive at an optimum match between devices. (Typically, these settings are fine-tuned with the aid of downstream vectorscope and waveform monitors.)

A discussion of these adjustments goes beyond the scope of this manual, but a quick online search for the keywords “genlock” and “adjust” turns up a number of excellent references.

REFERENCE TYPE

The ‘bi-level’ reference signal long used for standard definition television is often used for genlocking both SD and HD installations. However, if you are supplying an HD reference signal to the *Genlock* input (and your other equipment), select the *HD (Tri-level)* switch in the *Reference Type* area of the *Genlock* tab.

Note: Reference Type options do not appear for SD sessions.

7.1.4 CENTER FREQUENCY

This setting is applied when a Genlock reference signal is *not* in use. To adjust the setting, supply color bars to an input, pass that through to a video output, and then to a downstream vectorscope. The vectorscope display is completely stable when *Center Frequency* is properly adjusted.

7.2 INPUT CONFIGURATION

The input preview monitors also have contextual tools that appear when you roll the mouse pointer over them (Figure 74).



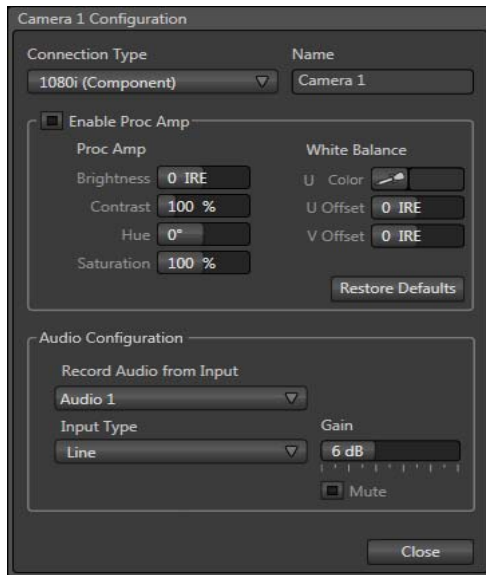
Figure 74

The *Configure button* (gear) in the titlebar for an input monitor brightens when you roll the mouse pointer over it. Clicking it opens the *Configuration* panel for a specific source (Figure 75).

The upper portion of input configuration panels is devoted to video-related settings, while the lower part has audio controls.

7.2.1 CONNECTION TYPE

The *Configuration* panel for the *Camera 1-8* inputs features a *Connection Type* menu at the top. The available source type options vary depending on the format for the session.



Multi-standard systems provide PAL and NTSC-J options according to session type, in addition to NTSC: The *Connection Type* menu options for a PAL session list PAL HD and SD format options.

Choosing NTSC as the session video standard results in a *Connection Type* list with appropriate formats, and it is similar for NTSC-J. Changing from one video standard to another requires opening a new session.

Figure 75

Hint: All connected cameras must conform to the video standard of the current session.

The standard options are:

1080i (Component)

- Analog source, high definition, interlaced
- 1080/60i or ¹1080/50i
- 1920x1080 pixels, 16:9 picture aspect
- Connected to 3Play by Y, Pr and Pb input connectors

1080i (SDI)

- Digital source, standard definition, interlaced
- 1080/60i or ¹1080/50i
- 1920x1080 pixels, 16:9 picture aspect
- Connected to 3Play by SDI input connectors
- Optionally carries embedded audio

1080/30p (SDI), 1080/24p (SDI), ¹1080/25p (SDI)

- Digital source, standard definition, progressive scan
- 1920x1080 pixels, 16:9 picture aspect
- Connected to 3Play by SDI input connectors
- Optionally carries embedded audio

720/60p (Component), ¹720/50p (Component)

- Analog source, high definition, progressive scan
- 1280x720 pixels, 16:9 picture aspect
- Connected to 3Play by Y, Pr and Pb input connectors

720/60p (SDI), 720/30p (SDI), 720/24p (SDI), ¹720/50p (SDI), ¹720/25p (SDI)

- Digital source, high definition, progressive scan
- 1280x720 pixels, 16:9 picture aspect
- Connected to 3Play by SDI input connectors
- Optionally carries embedded audio

The standard definition options listed below are provided in both 4:3 and 16:9 versions:

480/30i (Component)

- NTSC analog format, standard definition, interlaced
- 720x480 pixels, 4:3 picture aspect or anamorphic 16:9 picture aspect
- Connected to 3Play by Y, Pr and Pb input connectors

480/30i (SDI)

- NTSC digital format , standard definition, interlaced
- 720x480 pixels, 4:3 picture aspect or anamorphic 16:9 picture aspect
- Connected to 3Play by SDI input connectors
- Optionally carries embedded audio

480/30i (Y/C)

- NTSC (S-Video) analog format , standard definition, interlaced
- 720x480 pixels, 4:3 picture aspect or anamorphic 16:9 picture aspect
- Connected to 3Play by Y and Pb input connectors

480/30i (Composite)

- NTSC analog format , standard definition, interlaced
- 720x480 pixels, 4:3 picture aspect or anamorphic 16:9 picture aspect
- Connected to 3Play by Y input connector

1576/25i (Component)

- PAL analog format, Standard definition, interlaced
- 720x576 pixels, 4:3 picture aspect or anamorphic 16:9 picture aspect
- Connected to 3Play by Y, Pr and Pb input connectors

1576/25i (SDI)

- PAL digital format , standard definition, interlaced
- 720x576 pixels, 4:3 picture aspect or anamorphic 16:9 picture aspect
- Connected to 3Play by SDI input connectors
- Optionally carries embedded audio

¹576/25i (Y/C)

- PAL (S-Video) analog format , standard definition, interlaced
- 720x576 pixels, 4:3 picture aspect or anamorphic 16:9 picture aspect
- Connected to 3Play by Y and Pb input connectors

¹576/25i (Composite)

- PAL analog format , standard definition, interlaced
- 720x576 pixels, 4:3 picture aspect or anamorphic 16:9 picture aspect
- Connected to 3Play by Y input connector

¹ Multi-standard systems only.

7.2.2 NAME

The *Name* field (next to *Connection Type*) is editable, allowing you to enter a custom name for each input. The name supplied will appear elsewhere in the user interface, including in the *HUD* (Heads-Up Display).

7.2.3 PROC AMP

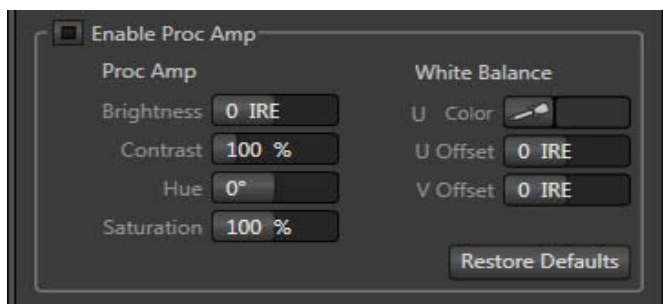


Figure 76

The largest portion of input configuration panels holds *Proc Amp* settings. These settings are identical to those discussed in Section 7.1.1.

Of course, these settings are applied to the individual *inputs*, thus before *output* Proc Amp settings (which affect all sources equally).

Hint: When the Proc Amp is enabled for a specific source, a small yellow indicator is displayed in the upper-right corner, just above the corresponding monitor in any of the three main monitor tabs. (This indicator is itself also a toggle switch.)

7.2.4 AUDIO SETTINGS

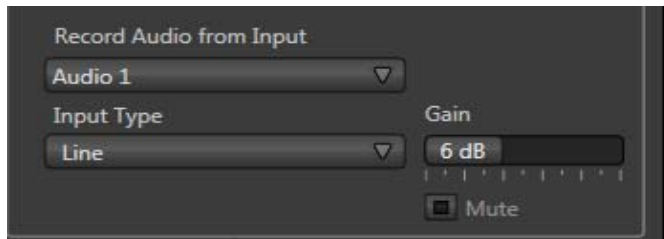


Figure 77

The lower part of the *Input Configuration* panel is devoted to *Audio Configuration*.

The *Input Type* menu offers the following audio connection options:

- *Mic*
- *Mic + Phantom*
- *Line*
- *SDI Embedded* (shown only when the video connection is SDI).

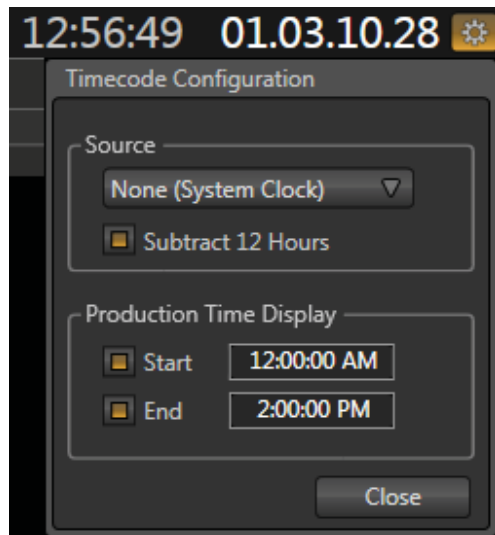
The neighboring *Gain* slider adds a range of adjustment beyond the basic level established by the *Input Type* selection, permitting you to benchmark individual sources. Finally, the *Mute* switch prevents the audio source from being heard at all in captured files or on output.

Note: The Input Type menu for Input 7 is ghosted when the input is in use for timecode (LTC) input (see Section 7.2.5).

The audio *VU meters* (VU stands for Volume Unit) above each of the video input monitors serve several purposes. At the simplest level, as you record audio with your video (or pass it through to output), the input meters assure you that audio is arriving at the audio inputs.

Likewise, the output *VU meters* provide confidence that you are supplying audio to the outputs. More importantly, you can monitor audio levels to be sure you are not overdriving the system, which would result in clipping of the signal.

7.2.5 TIMECODE CONFIGURATION



NewTek 3Play™ can supply timecode from its internal system clock, or can refer to an external *LTC* (Linear Timecode) source supplied to 3Play™ inputs (see Section 3.4.3).

This timecode is embedded in video files captured during the session. A *Configuration button* (gear) beside the *Timecode* display in the *Desktop's* titlebar opens the *Timecode Configuration* panel.

Figure 78

SOURCE

The *Source* control group holds a menu allowing you to select between timecode sources labeled as follows:

3PLAY™ 820

- *None (System Clock)*
- *External LTC (Input 7 Mic)*
- *External LTC (Input 7 Line)*

3PLAY™ 425

- *None (System Clock)*
- *External LTC (Input 3 Mic)*
- *External LTC (Input 3 Line)*
- *1/8" Mic (Mic Level, Red)*
- *1/8" Mic (Line Level, Blue)*

Hint: If the LTC source fails, the system automatically reverts to Internal (System Clock) after a moment or two (an error flash message is displayed in the Status Bar – see Section 6.5.1).

Another switch in the *Source* group allows you to optionally *Subtract 12 Hours* from the system timecode. This permits you to avoid confusion that might arise later when sequencing files based on timecode that ‘wraps around’ past midnight.

Otherwise, for example, a video frame recorded one minute *before* midnight would be assigned the timecode 23:59:59.00, while frames recorded one minute or more later would have timecode \geq 01:00:00.00 – seemingly a *lower* (i.e., ordinarily *earlier*) timecode value.

Note: The 3Play™ system assumes the external LTC signal matches session frame rate and timecode format. For example, NTSC 29.97 and 59.97 sessions result in drop-frame timecode internally (all others are NDF). Similarly, in a 24fps session LTC is treated as 24fps.

PRODUCTION TIME DISPLAY

Situated beneath the *Source* group, the control group labeled *Production Time Display* allows you to enter time values that are specific to the current event.

When the *Start* switch is lit, the time you set in the numeric field at right is used to supply the *Production Start* time display in the *Replay Desktop* titlebar (and many *Multiview* screen layouts). This provides a convenient warning as the time for your event nears.

In similar fashion, enabling the *End* switch and entering an appropriate time causes the titlebar to display a countdown to the end of the event (shown once the *Start* time is surpassed).

Hint: You can modify these time values by clicking on them and typing, or by dragging the mouse point left or right over them.

Conveniently, you can ignore timecode punctuation when entering numbers if you like: simply type the key digits using 24 hour notation. (For example, to set the time to 5:00.00 AM, press “5”, and then Enter. Or to set the time to 3:30 PM, type “1530” and press Enter.)

8 CONTROL SURFACE



During operation, your principal contact with the NewTek 3Play™ system will normally be through the use of the control surface. Using its buttons and other controls, you can perform the great majority of necessary functions.

This chapter describes the features of the control surface. Further references to the control surface are made in context in subsequent chapters, as well.

8.1 OVERVIEW



Figure 79

The NewTek 3Play™ control surface is specifically designed to provide all of the commonly used production functions of the system, without unnecessary complexity.

This apparent simplicity is very deliberate, and makes using your NewTek 3Play™ straight forward and trouble free.

In the sections that follow, we'll review the controls in each group on the control surface.

8.2 QUALIFIER BUTTONS

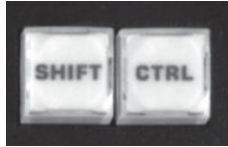


Figure 80



Figure 81

SHIFT, CTRL, AND ALT

SHIFT, *CTRL* (Control) and *ALT* are qualifier buttons, similar to their familiar keyboard equivalents. When pressed (and held down), they modify the outcome of other actions, typically providing alternate or extended operations. (These combination operations are described in context as they arise in this section.)

8.3 RECORD



The *Record* button toggles capture of a/v data to file(s) on mounted storage volumes on or off. The specific sources to be recorded are configured in *Startup* when creating the session (see Section 10.1, and also 10.2.3).

Figure 82

Hint: Whenever you enable recording, a special 'record event' row is added to the Clips List, as a helpful reminder.

8.4 OUTPUT MODES (A, B, A+B)



Figure 83

Pressing the buttons labeled *A* or *B* switches control to the corresponding *Output Mode* (see also sections 8.4 and 11.1). These two buttons are mutually exclusive – that is, at any given moment, only one can be active.

The active *Output Mode* selection – again, *A* or *B* – determines i) what is shown in the *Clips* and *Play List* panes on the *Replay Desktop*, ii) the selection states in those modules, as well as iii) the state of various control surface and *Dashboard* buttons and settings. All of these attributes are stored independently for each of the two *Output Modes*.

Hint: It can help to think of the system as consisting of two virtually independent replay devices, with access to the same media. The larger portion of the Replay Desktop displays just one or the other at any given time – i.e., A or B – according to the current Output Mode.

In contrast, enabling *A + B* does not really alter the current *Output Mode*; that is, it does not turn either *A* or *B* on or off. Rather, the *A+B* button toggles a special ‘linked’ mode. When enabled, certain controls (notably clip transport controls) operate in tandem for both outputs. (The *A + B* button is somewhat like the Caps Lock key on your keyboard, in that it remains active until you press it again.)

8.5 CONTROL MODES



Figure 84

The three *Control Mode* (see Section 11.2) buttons are likewise mutually exclusive, and your selection determines several things as follows:

- Which source is sent to the currently active output (*A* or *B*)
- Which module – a *LIVE* source from an input, or *CLIPS LIST* or *PLAY LIST* content you are interacting with at the moment

8.5.1 CLIPS MODE

While the *CLIP LIST* mode button is active, your control surface (or keyboard/*Dashboard*) operations are directed to the *Clips List*. A gold outline around the *Clips List* confirms this, as does the *HUD* (Heads Up Display – see section 9.2.1) when displayed.

Hint: Another way to activate Clips mode is to simply click the mouse in the Clips List.

In this *Control Mode*, the item currently selected in the *Clips List* is automatically displayed on the active output.

8.5.2 PLAY LIST MODE

While the *PLAY LIST* mode button is active, your control surface (or keyboard/*Dashboard*) operations are directed to the *Play List* module. Again, a gold outline around the *Play List* module confirms this, as does the *HUD* (Heads Up Display – see section 9.2.1) when displayed.

Hint: Another way to activate Play List mode is to simply click the mouse in the Play List.

In this mode, the item currently selected in the *Play List* is automatically displayed on the active output.

TOGGLE PLAY LIST LOOP

Press *Ctrl + the PLAY LIST mode button* to toggle the *Loop* (Play List) switch in the *Dashboard* on the *Replay Desktop*. When this switch is enabled, playback will begin again when the end of the current playlist is reached, and continue until manually stopped.

8.5.3 LIVE

While *LIVE* mode is active, as you doubtless expect, you control a live source from the system inputs, and pass it through to the current output (*A* or *B*).

Note that some operations (such as *Stop* or using the *Jog wheel* to move the video output back in time) can only be done in *Live* mode if *Record* is enabled. (In such cases, output is actually no longer truly *live*, but rather is *Delayed*. In this case, no *Control Mode* button is highlighted.)

Hint: In this Control Mode, select a specific live source for output by clicking its representative input monitor.

8.6 PAGE AND BANK (P1-P4)



Figure 85

Both the *Clips List* and *Play List* modules feature four banks, each with four pages, a total of sixteen discreet repositories each in which to organize your media. According to the *Control Mode* that is operative (*Clips* or *PLAY LIST*), pressing a button with present the corresponding page, numbered 1 through 4. To change banks in the currently active module, hold down *ALT* when pressing one of the four *Page* buttons.

In *LIVE* mode, press *P1 - P4* to send the corresponding numbered input to the current output (A or B). Use *ALT + (P1 - P4)* for inputs 5 - 8.

8.7 TRANSPORT

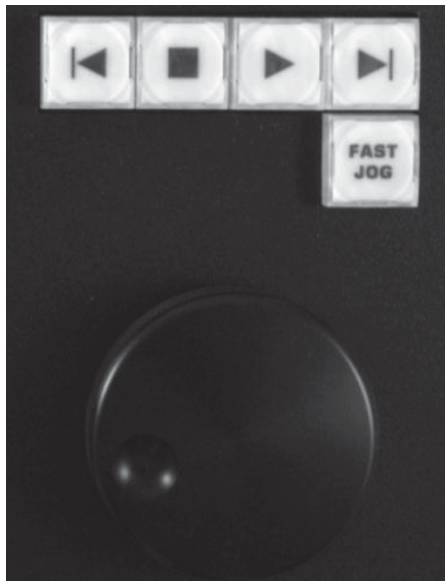


Figure 86

The VCR-style controls in this group are familiar at a glance to most, and provide easy to use transport through your media.

8.7.1 PREVIOUS

|◀ The first button in the upper row selects the previous clip in the *Clips List* or *Play List* (when possible, of course.) When *SHIFT* (see section 8.2) is pressed and held at the same time, pressing the *Previous* button can multi-select neighboring clips as well.

8.7.2 NEXT

▶| The *Next* button makes its appearance at the opposite end of the same row in the *Transport Control* group. Push it to select the next clip in the *Clips List* or *Play List*. When *SHIFT* (see Section 8.2) is pressed and held at the same time, pressing the *Next* button multi-selects neighboring clips as well.

8.7.3 STOP

■ A single-press of the *Stop* button stops playback, if it is underway. Press *Stop* again to jump to the first frame of the current clip (or double-press *Stop* during playback to do this).

In *Play List Mode*, pressing *Stop* a third time jump the playhead to the *In Point* of the first clip in the current playlist.

8.7.4 PLAY

▶ Pushing *Play* initiates playback of the currently selected source – whether a clip in the *Clips List* or *Play List*, or even a *Delayed* video source.

8.7.5 FAST JOG

The *Fast Jog* button is a toggle. Press it to turn the feature on, and press it again to disable it. When enabled, the transport effect of the *Jog Wheel* (discussed next) is multiplied eight times so that you can traverse the frames in your media more quickly.

8.7.6 JOG WHEEL

Rotate the *Jog wheel* to navigate back and forth through the frames of the current a/v selection.

Hint: Inside Media Browser, you can scroll through the File Pane using the Jog Wheel.

8.8 PLAY SPEED (T-BAR SECTION)



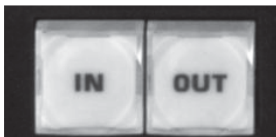
This group of controls contains *Speed Preset* buttons (25%, and so on), and a *T-Bar*.

Pressing a *Speed Preset* buttons immediately sets the media playback rate to the specified speed. Likewise, making an adjustment to *T-Bar* position sets playback speed.

These controls work together; whether you punch a preset button or use the *T-Bar*, the current *Speed* setting is replaced by your action.

Figure 87

8.9 IN/OUT (MARKING)



Marking events is, of course, the core business of NewTek 3Play™. These two simple buttons will see a lot of use. Their roles are not complicated, but it would be good to review them anyway.

Figure 88

8.9.1 IN

Pressing the *IN* button adds a new event (row) to the *Clips List*. The current timecode supplies the *In Point* for the event. Of course, marking events would be rather pointless without recording audio visual data, so pressing the *IN* button automatically enables *Record*, when necessary.

ALT + IN

Hold down *ALT* while pressing *IN* to update the *In Point* for the selected event in the *Clips List*, or, when the *Play List* is displayed on the active output (*A* or *B*), the selected clip. The timecode for the *In Point* is revised to match that of the frame that is currently displayed.

8.9.2 OUT

Naturally, if you have pressed the *IN* button to create a new event, setting an *In Point*, you realize that you can complete this operation by pressing the *OUT* button. In this case you set the event's *Out Point* to the current timecode value, and as a further consequence, establish the *Duration* for the event.

Hint: If for some reason you choose to end recording when an event is incompletely marked – i.e., OUT was not pressed – an Out Point is supplied automatically.

ONE BUTTON MARKING

You can also add new events to the *Clips List* without ever pressing *MARK IN*. If no *In Point* has been set (by pressing *IN*), pressing the *OUT* button will:

- I. Create a new event.
- II. Automatically assign both an *In Point* and an *Out Point* to it.

By default in such cases, the *In Point* is set four seconds before the current time when you pressed *OUT*. *One button marking* thus permits you to easily create a series of events just by pressing the *OUT* button only when you observe noteworthy occurrences.

Hint: The default duration for these events can be set to a custom value from the One Button Marking menu found in the Clip Configuration panel (see Section 12.1.5).

ALT + OUT

Again, just as for the *IN* button, pressing *ALT* in conjunction with *OUT* updates the *Out Point* for the current *Clips List* event or *Play List* clip, using the timecode from the currently displayed frame for the active output (*A* or *B*) accordingly.

8.10 UTILITY BUTTONS



Figure 89

8.10.1 ESC

Press the *Esc* (Escape) button cancels a popup dialog, or exits from text input without applying changes.

8.10.2 REMOVE

Push the *Remove* button to remove selected events from the *Clips List*, or selected clips from the *Play List*.

8.10.3 EDIT

When held down while operating another control, the *EDIT* button may provide access to a secondary function. Generally, it is currently implemented to offer another convenient method to modify the value of most numeric controls, as follows:

- Navigate to a numeric control in the *Clips List* or *Play List*.
- Press *Edit* and continue to hold it down.
- Rotate the *Jog* wheel to modify the current value (for the *Speed* control in the *Play List*, you can optionally use the *T-Bar* rather than the *Jog* wheel to change settings).

Another useful application of the *EDIT* button is to change a playlist entry to a different camera angle (clip). Navigate to the *Clip ID* field, then hold down the *EDIT* button on the control surface and rotate the *Jog* wheel to cycle through the available clips for the current time.

8.10.4 ADD TO PLAY LIST

Push *Add to PLAYLIST* to insert the currently selected clips from the Clips List to the current *Play List* page. (The operation only proceeds if the *Operating Mode* is set to *Clips* when the button is pressed.)

9 DESKTOP MONITORS



The word “monitor” comes from the Latin “monēre”, meaning ‘to warn’. The word has taken on additional meaning since Roman times.

As a verb, “monitor” includes such connotations as ‘keeping an eye’ on something, and ‘checking continually’, as when monitoring a process. As a noun, we understand it to mean devices that permit one to do just that. 3Play™ provides ample monitoring features, as described herein.

Fittingly, NewTek 3Play™ provides monitoring features that are just what you need to prepare and control video replays in your productions.

Note: A number of important controls and features are located in the monitoring section for convenience. Among others, these include the Source Connection Type, Proc Amp, Genlock, and Audio controls. To give these features their due, they were treated individually in Chapter 7, which is entitled I/O Configuration.

9.1 INPUT MONITORS

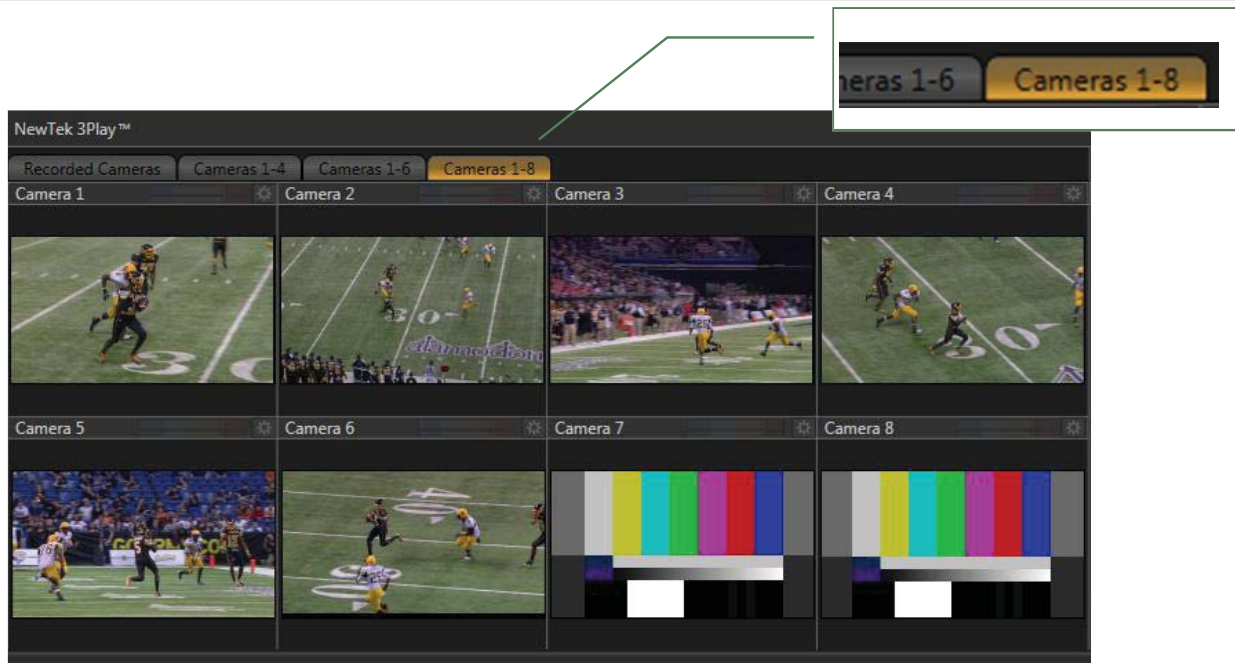


Figure 90 – 3Play™ 820

Clicking a tab labeled *Cameras 1-x* at left near the top of the screen reveals a group of video preview windows, each representing one input. These previews (often referred to as ISO, or Isolation monitors) display live video sources that are currently connected and configured.

Hint: Depending on your selections when creating the session, the sources displayed may or may not be captured to disk when you enable recording. See Section 10.1 for details.

3PLAY™ 820 Tabs labeled *Cameras 1-4* and *Cameras 1-6* are very similar, but display correspondingly fewer (and thus larger) monitors. These alternatives are convenient for use when a production does not require the use of the full complement of inputs. The *Recorded Cameras* tab shows only those sources configured for capture, and can be at once useful and space-saving.

9.1.1 TITLEBAR FEATURES

Several useful features are located in the titlebar of each *Input Monitor*.

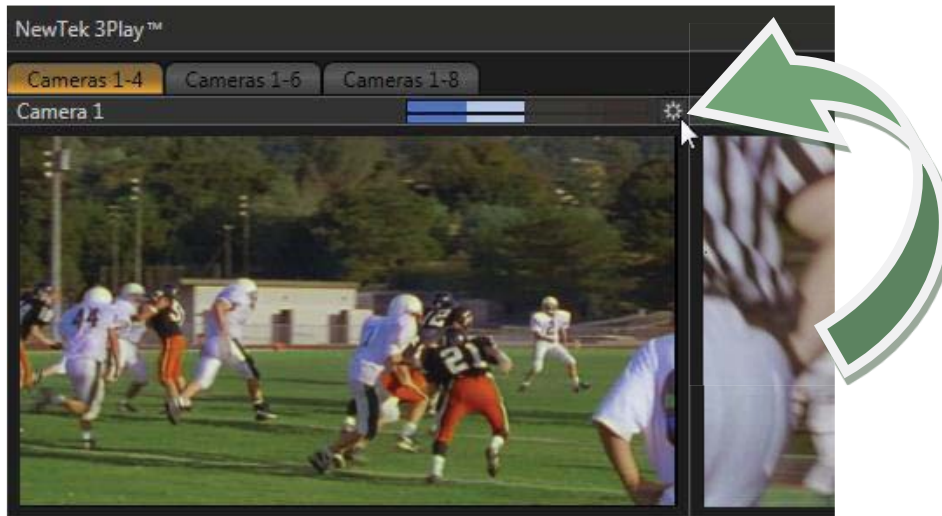


Figure 91

When you move your mouse pointer over an *Input Monitor*, the *Configure button* (gear) in the titlebar brightens. Click this button to open the *Input Configuration* panel for that input (see Section 7.2). Among other things, you can supply a custom name for the input in this panel; it also holds *Proc Amp* and *Audio* settings.

Hint: Drag the horizontal divider between the monitoring panes and Clips List pane to re-size the monitors.

Input monitor titlebars also provide handy audio *VU meters*. These are useful when initially adjusting levels, as well as to ensure that excessive audio levels during production don't cause clipping in captured files.

9.1.2 INTERACTIVE CONTROL

The input monitors themselves are also actually interactive production controls. You can click a monitor to send it live to the current output. If necessary, doing this will change the *Control Mode* (see Section 11.2) for the dominant output to *Live*.

Alternatively, when the *Control Mode* is already *LIVE*, press 1 - (4 or 8) on the keyboard number pad (or control surface P1 - P4, cameras 1 - 4; ALT + P1 - P4, cameras 5 - 8, 3Play™ 820) to select the corresponding input for display.

Note: Input Monitors on the Replay Desktop do not show a HUD (Heads-Up Display), but their equivalents on the Multiview screen can optionally do so (see Section 7.1.2).

9.2 OUTPUT A AND B

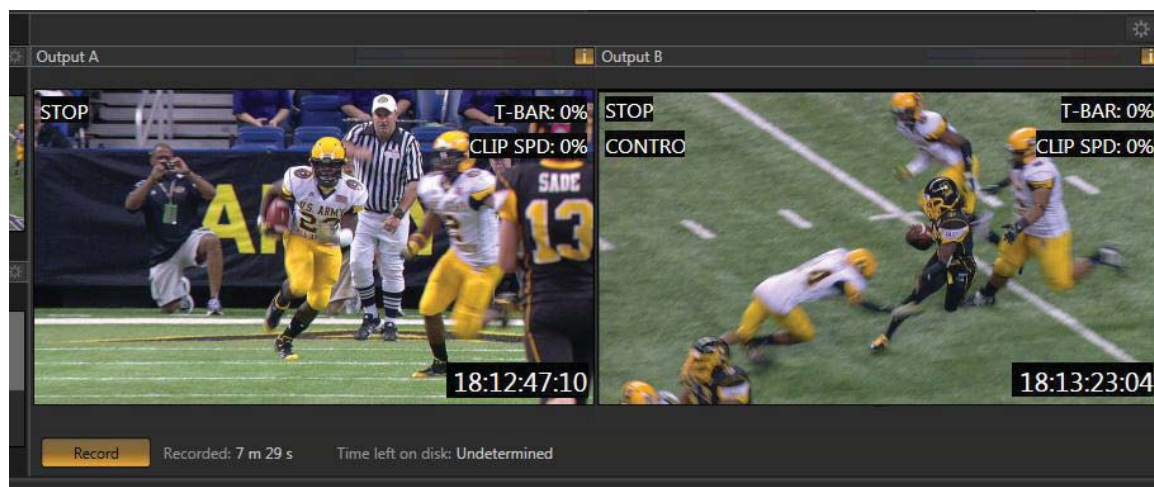


Figure 92

NewTek 3Play™ supports two fully independent video and audio output sections, referred to as *Output A* and *Output B*. The corresponding output monitors could hardly be more important. They show what you are displaying to your viewing audience at any moment.

At right, just above the monitor for *Output B*, there is a *Configure button* (gear). Clicking this button opens a tabbed panel titled *Output Configuration*. This panel that contains video and audio controls and options for *Output A* and *B*, *Aux* (*Auxiliary Output*), and the secondary *Multiview* output, and the *Genlock* input – see Chapter 7 for details.

When the *A* or *B* button is lit (on the control surface or *Dashboard*), your actions determine which source is assigned to the corresponding output. For example, if *A* is lit and you click an input monitor, that source is sent to *Output A*. When play is stopped, clicking a clip in the *Clips List* or *Play List* has two consequences – first, the clip is shown on the current output, and second, the *Control Mode* is set to *Clips* or *Play List* respectively. Similarly, pressing the *LIVE*, *CLIPS*, or *PLAY LIST* mode button sends the currently selected item from the corresponding source to output.

9.2.1 HEADS-UP DISPLAY

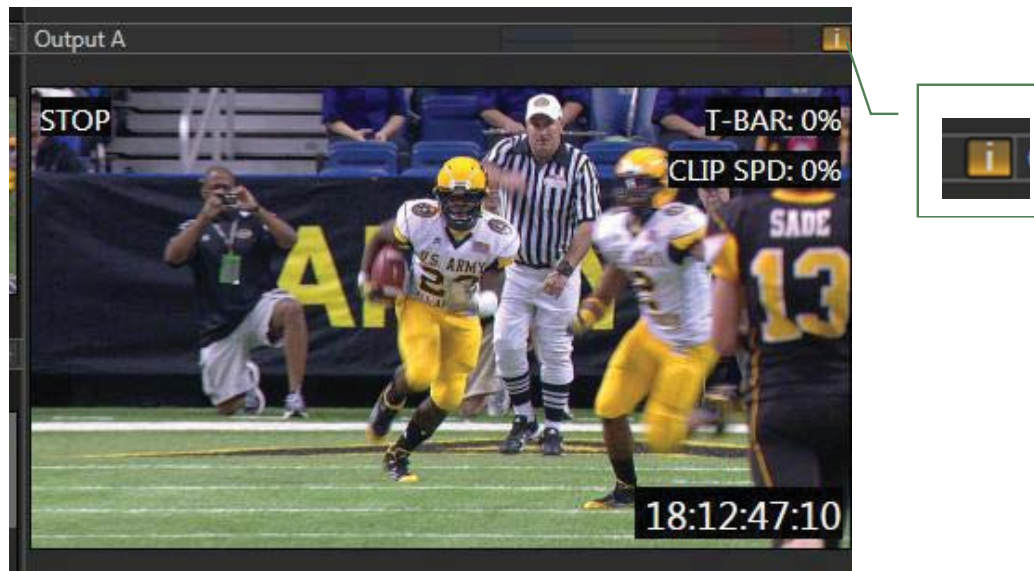


Figure 93

At right above both output monitors is a small button labeled “i” (for ‘info’). These buttons toggle the *Replay Desktop HUD* (Heads-Up Display) for each monitor.

The output *HUD* provides a wealth of useful information about the video stream assigned to the monitor. It may include any of the following tags:

- *Name* – the output name, as supplied in *Output Configuration* (see Section 7.1.1).
- *CONTROL* – When this label appears, it indicates whether *A*, *B*, or *A+B* buttons are pressed on the control surface. In turn, this serves as a reminder as to which of the two independent outputs is being controlled at the moment, or whether both are. (See Section 8.5 for more on Control Modes.)
- Current transport mode (always shown) – one of the following:
 1. *PLAY*
 2. *LIVE*
 3. *DELAYED*
 4. *STOP*
- *Clips List* or *Play List* details:
 1. *CLIPS* mode
 - *Clip ID# and Memo*
 2. *LIST* mode
 - *Clip ID# and Memo*
- Time display:
 1. *LIVE* or *DELAYED* mode (*Live* button on control surface is pressed):
 - *Timecode* at the current frame
 - *Or Behind Live* time (*Delayed* mode only)
 2. *CLIPS* mode (*Clips* button on control surface is pressed):
 - Countdown to playback end.
 - (Recorded) Timecode at current frame
 3. *PLAY LIST* mode (*PLAY LIST* button on control surface is pressed):
 - Countdown to playback end.
 - Timecode at current frame (from file)
- *Speed*: Shows the T-bar position during play, as a percentage.

10 RECORD AND MARKING



Recording audio and video from its inputs, and marking timed segments of this data for review, instant replay or other purposes are the core functions of your NewTek 3Play™ system.

This section will explain recording and various approaches to event marking in fine detail, showing how these important operations can be performed using control surface, Replay Desktop controls, or using keyboard shortcuts.

We've previously mentioned marking *events* – timed (or, if you like, 'bookmarked') segments of your audio video data (see Sections 2.2 and 8.9). Managing and playing clips from events will be covered in Chapter 12 (The Clips List) and 13 (The Play List).

Live, or previously recorded audio/video data, can be sent to 3Play's outputs when *Record* is off; but as event marking is dependent on recording, let's expand on that matter first.

10.1 RECORD CONFIGURATION – NEW SESSION

The first step toward recording is deciding which live inputs will be captured, and on which hard drives the data from various inputs will be stored. These important decisions are made in the *Startup Screen* at the time of first creating a new session.

The screenshot shows the 'Record Configuration' screen. At the top, there is a 'Session Name' field with a text input area containing 'Enter Session Name'. Below this is a table with two columns: 'Drives' and 'Inputs'. The 'Drives' column lists 'Media (D:) 716 GB Free' and 'HD_2 (F:) 828 GB Free'. The 'Inputs' column lists 'Cam 1', 'Cam 2', 'Cam 3', and 'Cam 4', each with a dropdown arrow next to it.

Session Name			
Enter Session Name			
Record Configuration			
Drives		Inputs	
Media (D:)	716 GB Free	Cam 1 ▼	Cam 2 ▼
HD_2 (F:)	828 GB Free	Cam 3 ▼	Cam 4 ▼

Figure 94

Note: The Record Configuration options you choose are retained with the session, and cannot be altered after launching it. To work with a different Record Configuration, create a new session.

The *Record Configuration* options controls (Figure 94) list storage volumes that are currently mounted on the system and available for capture purposes. The list may include external drives along with those inserted in the 3Play™ system’s removable drive bay(s).

Drives that are clearly too small (or too full to accommodate further capture) are not shown. Note that drives *may* be shown that are unsuited for capture purposes because of low transfer or disk speed, or perhaps for other reasons. It is up to you when configuring external drives to ensure that the drive (and the connection method it relies on) is suitable for capture.

Drives		Inputs	
Media (D:)	716 GB Free	Cam 1 ▼	Cam 2 ▼

Figure 95

Two columns at right (under the *Inputs* label) allow you to freely assign different sources (from Cam 1 to Cam 8) to a specific drive. This layout permits one or two cameras, but not more, to be assigned to any qualified hard drive. This means that with only one hard drive attached (not counting the internal system drive) you can record two inputs at most. With two drives, four inputs can be recorded, and so on.

Note: Simply configuring inputs for capture in the Startup Screen does not engage recording. Recording is active only when the Record button on the Replay Desktop is lit.

10.2 RECORDING AND THE DESKTOP

It’s worth noting that you aren’t forced to record *all* active video inputs. (Sometimes, you may wish to supply an input with video for some reference purpose that does not call for it to be captured.) The *Input Monitors* tabs on the *Replay Desktop* (and *Multiview*) show connected sources, whether they are configured for capture or not.

This may raise a question in your mind, though. If your configuration includes some sources that are not recorded, how can you distinguish between these ones and sources that are captured?

The *Replay Desktop* provides several clues to help you do so. Understanding these matters will help you comprehend other ramifications of your *Record Configuration* decisions as well.

10.2.1 CLIPS LIST

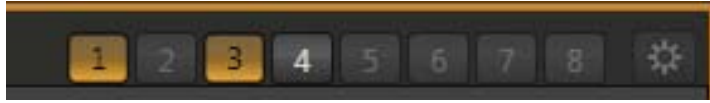


Figure 96 – 3Play™ 820

One way to tell which inputs are configured for recording is to observe the *Show/Hide Column buttons* located in the *Clips List* titlebar. The numbered buttons for inputs that are simply being passed through but are not configured for recording are ghosted (disabled).

- In Figure 96, the second button (Cam 2) is ghosted, as are the buttons for Cam 5 through Cam 8. This indicates that these inputs are not configured for capture. That's the reason why they cannot be shown in the *Clips List* table below.
- The buttons for Cam 1 and Cam 3 are lit, indicating that they are visible in the table. Recording is configured for these cameras.
- Pressing the button for Cam 4 (which is un-lit, but not ghosted) would display a column for it in the *Clips List*. Even though the column is not displayed at the moment, the fact that it can be tells us recording is also configured for Cam 4.

10.2.2 RECORDED CAMERAS



Figure 97 – 3Play™ 820

An arguably easier way to quickly see which cameras are configured for recording is to click the *Recorded Cameras* monitor tab. Located at upper left on the *Replay Desktop*. The only inputs shown in this tabbed pane are those you can record.

Figure 98 shows the *Recorded Cameras* tab content for the same session configuration discussed in the previous section (10.2.1). As you can see, the monitors display previews for Cameras 1, 3, and 4 (even though the column for Camera 4 in the *Clips List* is currently hidden).

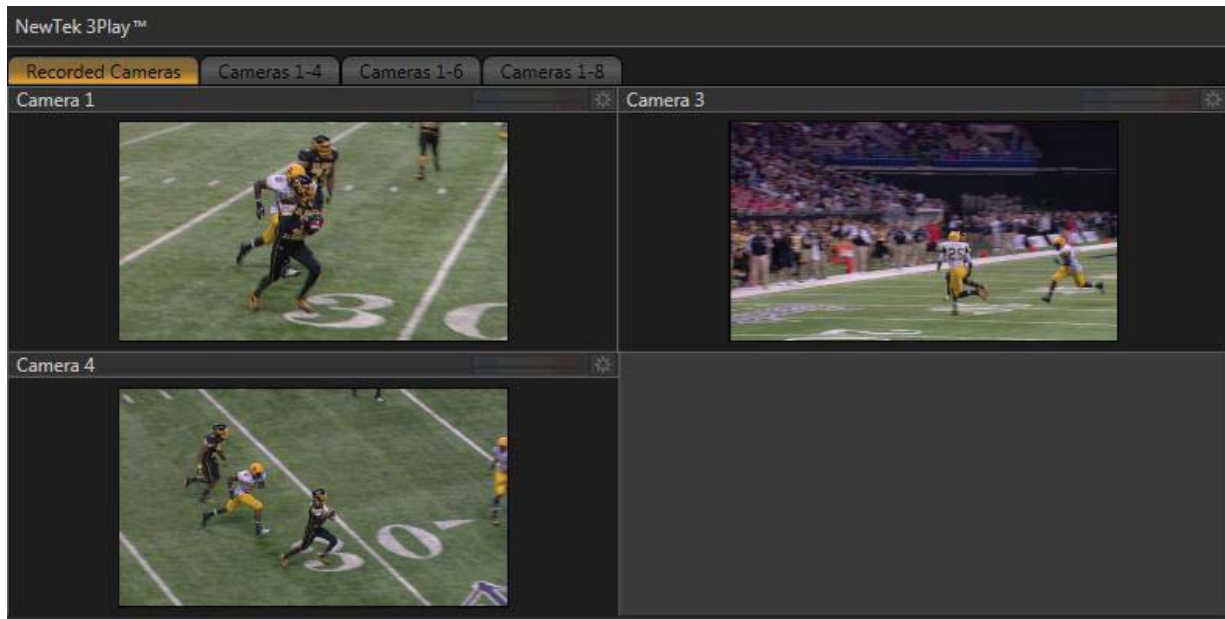


Figure 98 – 3Play™ 820

Likewise, the *Recorded Cameras* layout for the *Multiview* output shows only those sources configured for recording.

10.2.3 RECORD ON/OFF

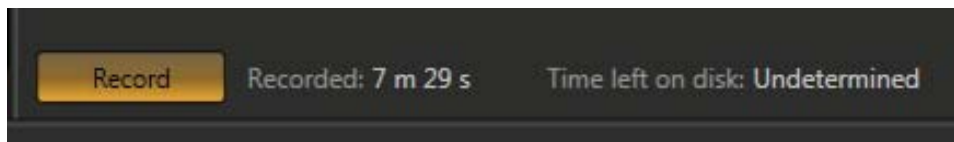


Figure 99

Both the *Replay Desktop* (Figure 99) and control surface (Figure 100) provide *Record* buttons. As you'd expect, these controls do the same thing – toggle recording of audio visual data from selected inputs on and off (hold down *ALT* when pushing *RECORD* on the control surface to end capture).



Figure 100

Note: For any single session, recording stops and restarts automatically after 24 hours, to create a new sequential file. Roughly 5 frames may be dropped during this process. (Timecode dropouts may also result in a break in the recorded files.)

INFORMATION DISPLAYS

The *Replay Desktop* version of the *Record* button is accompanied by two useful data displays, *Recorded* (time) and *Time left on disk*.

The former keeps track of the duration of all material recorded for the current session. The latter shows an estimate of space remaining on the ‘most full’ hard drive which is currently assigned to recording duties (this display takes a moment or two to initialize when recording is started.)

AUTOMATIC RECORDING

Normally, you would manually enable *Record* when your production begins. In the event you overlook doing so for any reason, however, certain operations can automatically enable recording – for example, pressing the (mark) *IN* or *OUT* buttons enables *Record* when necessary (see Section 8.9).

Reminder: Previously recorded data can be sent to 3Play™ outputs even with Record off; but for live sources, operations such as Stop, or Speed changes can only be applied when Record is enabled, since this permits the system to automatically switch to Delayed playback mode.

‘RECORD EVENTS’

Each time *Record* is newly enabled, a special event is automatically added to the *Clips List*. This ‘record event’ simply provides a convenient reference, and is given a single frame *Duration*.

Hint: The notations in the Memo columns of record events can be edited in the standard manner (highlight the field and press Enter on the keyboard to enable text edit mode).

10.3 MARKING EVENTS

The *Dashboard* (Figure 101) and control surface (Figure 102) each provide event marking features, as well.

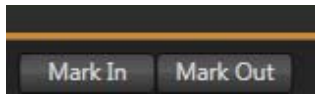


Figure 101

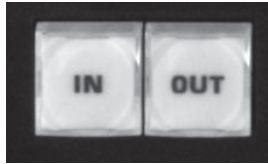


Figure 102

The *IN* and *OUT* buttons on the control surface perform identically to the *Mark In* and *Mark Out* buttons in the *Dashboard* at the bottom of the *Replay Desktop*. See Sections 8.9 and 14.5 for full details.

Reminder: In addition to creating events in the Clips List, and setting their In Points and Out Points, these controls can be used to revise the existing Clips List event or Play List clip start and end times as well, using ALT (or, for the Dashboard version, the Alt key) when pressing the button.

11 OUTPUT & CONTROL MODES



An understanding of the NewTek 3Play™ system's Control and Output Modes is fundamental to its operation. A review of these concepts provides the foundation for understanding the system and its workflow.

For that reason, we'll consider them right away, before proceeding to examine other features and operations.

11.1 OUTPUT MODES

In many ways, it would not be incorrect to think of your NewTek 3Play™ system as not just one, but two conjoined playout devices. The system features two independent audio/video output sections – *Output A*, and *Output B*.

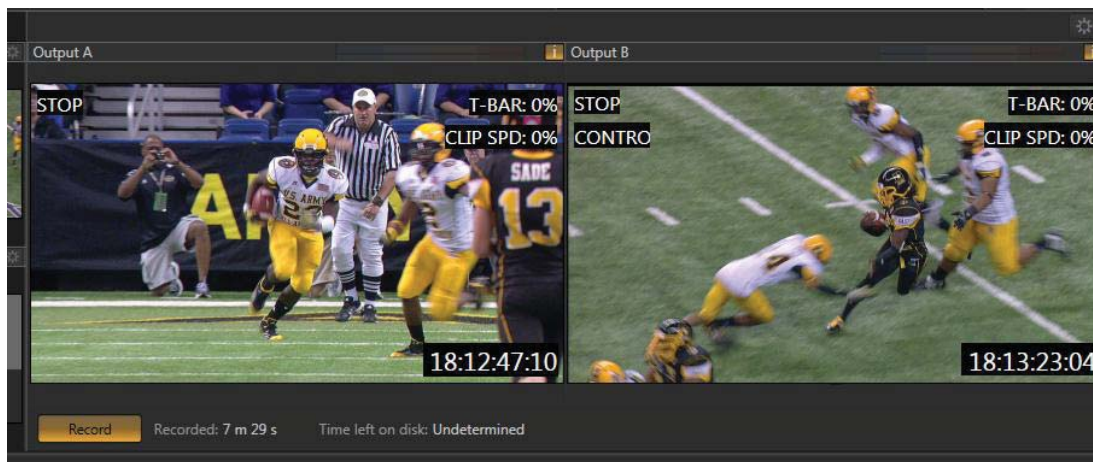


Figure 103

Each output is capable of functioning completely independently of the other, and either can be directed to transmit any available audio/video source, whether live or recorded.

Physically, the main video outputs (along with their corresponding audio connections) appear on the system's backplate for connection to downstream devices as output 1 (3Play's *Output A*) and 2 (*Output B*). During live production, both are represented on the *Replay Desktop* by individual output monitors (Figure 103).

Activities such as *Play*, *Stop*, and many other operations normally affect just one output or the other, as determined by the *Output Mode* you choose.

In most cases, the current *Output Mode* is selected using the *control surface*, although you may use either the *Dashboard* controls located at the bottom of the *Replay Desktop* or equivalent keystroke shortcuts (see Appendix B, *Keystroke Shortcuts*), as well.



Figure 104



Figure 105

As you would expect, pushing the control surface button labeled *A* causes ensuing operations to govern *Output A*. Likewise, pushing *B* directs operations to *Output B*.

Note: Conveniently, a supplementary output section labeled AUX (Auxiliary) automatically updates to show the display for your current Output Mode – A or B.

It's also possible to engage both primary outputs at once, by pressing "*A + B*". This button behaves rather like the Caps Lock key on your keyboard, continuing in force until pressed again.

We'll discuss *A + B* mode further momentarily, but first let's consider an equally important matter – *3Play's Control Modes*.

11.2 CONTROL MODES

We've seen how to tell the 3Play™ system which output we wish to control, but we've yet to discover how to tell it which audio/video source we want the current output to display. That's where the *Control Mode* comes into play.

Your NewTek 3Play™ can deliver audio/video output from one of three possible sources:

- *Clips List*– the currently selected clip (angle) in the *Clips List*
- *Play List* – output from the *Play List*
- *Live* – the live (or *Delayed*) signal from one of the system inputs

At a given moment, one of these three sources is always assigned to *Output A*. At the same time, another, different source (*Clips List*, *Play List* or *Live*) is also assigned to *Output B*. *Output B* may transmit the same source as is displayed on *Output A*, or any other valid alternative.

In similar fashion, the transport controls (*Play*, *Stop*, *Jog*, etc.) on the control surface will variously affect the current clip in the *Clips List*, or the *Play List*, or even the live signal from the system's inputs, according to the current *Control Mode* – which can be *Clips*, *Play List* or *Live*.



Figure 106

Thus both of these related matters – which source is displayed on output *and* governed by control surface manipulations – are determined by the current *Control Mode*. And different *Control Modes* can be operative for *Output A* and *Output B* at the same time. Simply make the appropriate *Output Mode* selection on the control surface, and then push one of the *Control Mode* buttons labeled *Clips*, *PLAY LIST* or *LIVE* (Figure 106).

Hint: Another way to modify the Control Mode is to click the mouse in the Clips List, Play List or on a live input monitor.

Again, the two outputs can (and often will) have different control modes and states. *Output A* may be in *Clips* mode, playing a certain clip from the *Clips List*; meanwhile, *Output B* can play the same clip in slow motion, or display something else altogether – really any source, in any state of play. 3Play™ stores the *Control* and *Output Mode* states for *Output A* and *B* independently, along with other important parameters – including the *Clips List* or *Play List* page, selection state, playhead position, and so on. When you select an *Output Mode* (*A* or *B*), the *Replay Desktop* updates to show the data that is appropriate for your choice.

This brings us back to the *A + B Output Mode*. You may wonder what effect different controls will have in this special ‘tandem mode’, and what will be displayed on the *Replay Desktop*.

11.2.1 CONTROL AND A+B MODE

In broad terms, the special *A + B* mode causes transport control operations (*Play*, *Stop*, etc.) to occur in tandem, while other operations – such as changes to *Control Mode*, clip selections, and the like – apply exclusively to the dominant (or *visible*) output.

For example, when *A* is lit along with *A + B* on the control surface or *Replay Desktop*:

- The *Replay Desktop* displays the operational state for *Output A*.
- Pressing *Stop* or *Play* affects the sources on both *outputs.
- Selecting a different clip (or *Clips List /Play List* page) affects the visible output only – in this example, *Output A*.

** For Live video sources, transport control operations are invalid when Record is disabled, and will have no effect.*

12 THE CLIPS LIST



The core functionality of your NewTek 3Play™ is to capture multiple views of live events, and allow you to quickly recall and display any portion of that recorded footage with ease and accuracy.

The Clips List is first stop for newly recorded media, and also serves as the library where production assets are organized and managed. It provides a wealth of convenient features to help you find and display the perfect clip on a moment's notice.

The central band of the *Replay Desktop* – between the upper monitoring section and the *Play List* pane below – is home to the *Clips List*, along with related controls and features (Figure 107).

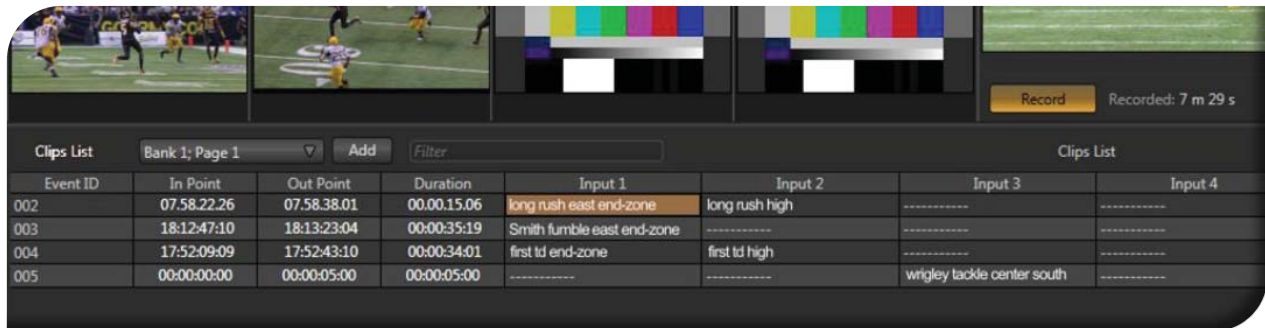


Figure 107

The *Clips List* is the receptacle for marked *events*. It presents all of the different camera views for each event (marked by an *In Point* and an *Out Point*) on one row of a spreadsheet style table.

12.1 TITLEBAR FEATURES

The *Clips List* titlebar contains a number of important tools and features, discussed next.

12.1.1 BANK & PAGE

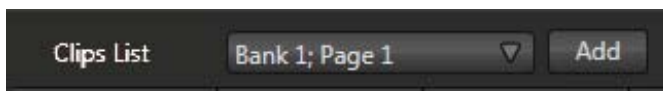


Figure 108

The first control at left in the titlebar is the *Page Selector* (Figure 108), a drop-down menu allowing you to choose which of sixteen clip pages you wish to work with. Clip *pages* are grouped in four *banks*, with four discreet pages in each bank.

Hint: Naturally, newly marked events are always added to the current (visible) page.

To display a specific clip page within the current bank, with the *Control Mode* set to *Clips*, press the corresponding control surface button (*P1 – P4*). Hold down *ALT* (keyboard *Alt*) at the same time to select the clip bank.

12.1.2 ADD MEDIA

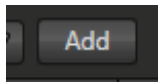


Figure 109

It is possible to include video clips (and still images) in the *Clips List*. Such files may have been imported into the session using the *Import Media* feature in *Startup* (see Section 5.3.1), or perhaps is stored on another currently mounted volume such as an external drive.

An *Add (Media)* button sits right beside the *Page Selector* in the *Clips List* titlebar. This button is identified by an icon displaying a *folder* with a *+ sign* (Figure 109). Click the button to open 3Play's custom *Media Browser*, which can be used to add video clips and still images to the current *Clips List* page.

Note: Startup's Import Media stores files in session folders, but does not insert them into the Clips List. Use the Media Browser to add them as described above. Media added in this manner can be played directly from the Clips List, or be used in a Play List.

The keyboard shortcut to open the *Media Browser* is *F5*.

MEDIA BROWSER

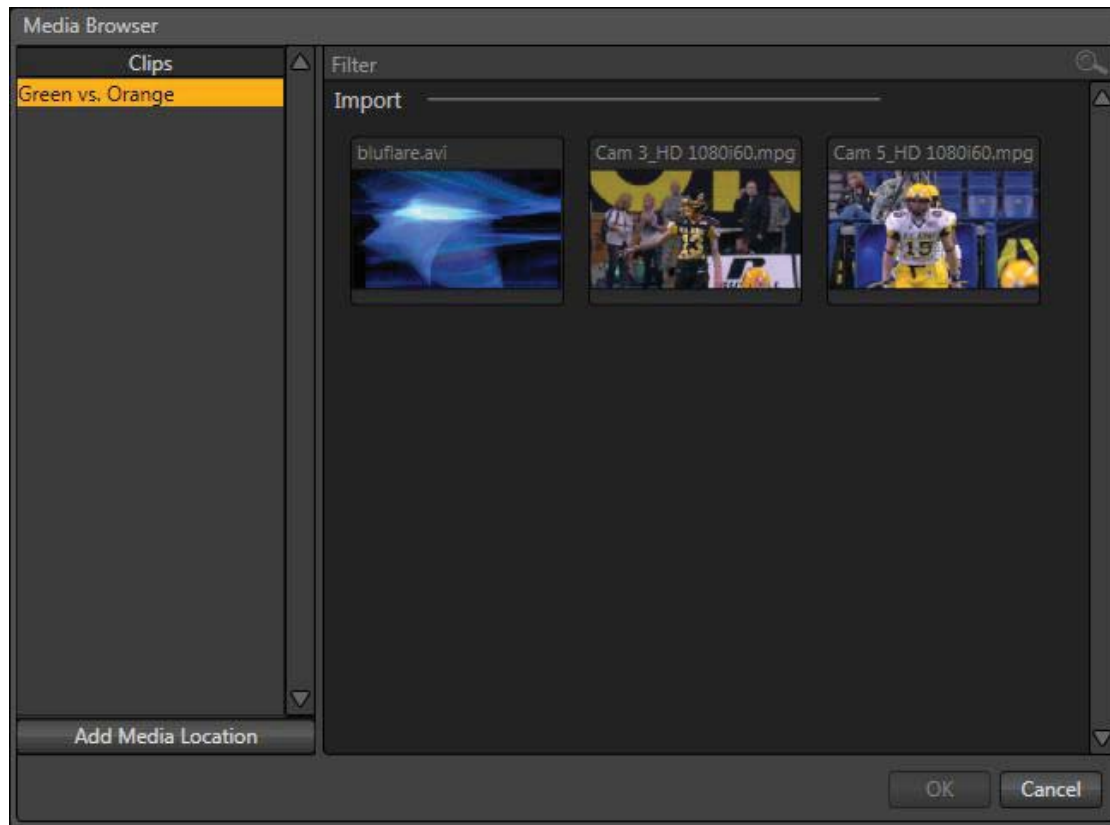


Figure 110

The left and right panes of the *Media Browser* are the *Location List* and *File Pane*, respectively.

Hint: Press the keyboard Tab key to cycle between the Location List, Filter and File Pane.

LOCATION LIST

The *Location List* is a column of favorite “locations”, grouped under the headings *Clips*, *Stills*, and *My Media Locations*. A list of sub-headings corresponding to named sessions or other content locations (discussed momentarily) can appear under these main headings.

Media files that were imported from the *Startup Screen* will be shown in the *File Pane* at right when you select a *Location* sub-heading under *Clips* or *Stills*. The third main header in the *Location List* is somewhat special.

EXTERNAL LOCATIONS

Clicking the *Add Media Location* button (Figure 111) at the bottom of the *Location List* opens a standard system folder selector.

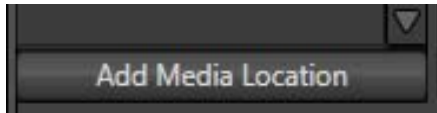


Figure 111

The name of any folder you select using this button is added to the Media Browser's *Location List* under the main-heading *My Media Locations*. (These custom locations can be accessed in others sessions opened by the same user as well.) File recursion for listings under *My Media Locations* is limited to one sub-folder below the folder (sub-heading) selected in the *Location List*.

Note: Adding a custom Location or adding a clip or image to the Clips List does not import content (copy it into a session folder). Rather, external files are added as linked media. Be aware that large linked files, highly compressed video clips, or media storage devices with slow transfer speed can degrade system performance. It's always best to import files beforehand when the opportunity exists.

FILE PANE

Icons appearing in the *File Pane* represent content located in folders under the sub-heading selected at left in the *Locations List*.

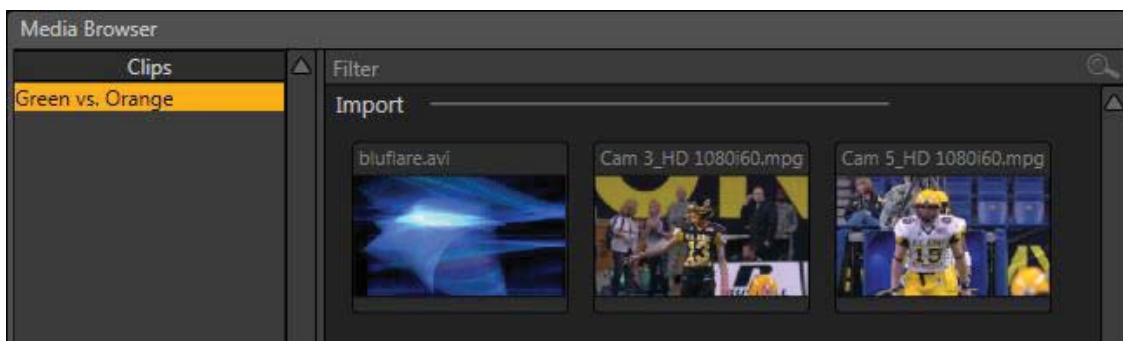


Figure 112

These are grouped under horizontal dividers named for sub-folders in the *File Pane*, which allows related content to be organized conveniently. Double click a file (or press *OK*, to append it at the end of the current *Clips List* page. Conveniently, the *File Pane* supports multi-selection as well.

Filenames for media added to the *Clips List* are initially shown in the *Memo* field columns for all camera angles. Since the *Memo* field is editable, you can modify these entries without breaking the link to the file. (This allows the *Memo* entry to serve as an alias if so desired).

The *In Point* for a video file is initially 00:00:00.00, unless the file has embedded timecode (in which case the clip's start timecode serves as for the *In Point*). The *Out Point* and *Duration* initially reflect the full duration of the file on disk.

Still image duration is initially set to the value selected in the *Clip Configuration* panel (default, 5 seconds) – see Section 12.1.5.

FILE FILTERS

The *File Pane* view is filtered to show only relevant content. For example, the *Media Browser* is also used in the *Play List* (discussed later) to let you choose a music file. In this case, only audio files are shown.

An additional *user-configured* filter appears above the *File Pane*. This is a 'smart filter' which quickly locates files matching criteria you enter, doing so even as you type. If you enter "goal" into the filter field, the *File Pane* displays all files at the current location with that text string in their filenames, and so on.

CONTEXT MENUS

Right-click a *Location* listed under *My Media Locations* to show a context menu with just one item in it. *Remove* de-lists the location (but does not delete the folder and its contents from the hard drive or other volume where it is located).

Note: this menu is exclusively for use in the "My Media Location" section, and is not available for other headings in the Location List.

Right-click on a file icon in the *right-hand* pane to show a menu providing *Rename* and *Delete* options. Be warned – *Delete* really *does* remove content from the hard drive (this menu is not shown if the selected item is write-protected).

12.1.3 FILTER

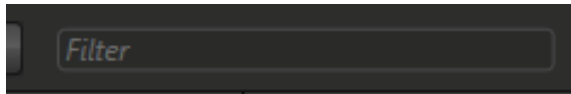


Figure 113

Getting back to the *Clips List* (after our detour into the *Media Browser*), another valuable titlebar feature is the *Filter*. Entries here delimit the events shown below in the *Clips List* table. The *Memo* columns for each recorded camera allow you to enter notes about clip content, etc. The *Filter* allows you to display only events that have one or more matching entries in their *Memo* fields (clear the field to display all events again).

12.1.4 SHOW/HIDE COLUMNS



Figure 114 – 3Play™ 820

A group of buttons located at the right-hand end of the *Clips List* titlebar allows you to selectively show or hide the columns associated with the clips recorded from different inputs.

Hint: The Clips List never shows columns for un-recorded inputs. For example, if you are recording only from inputs 1-4, columns will not appear for cameras 5-8, and the Show/Hide buttons for those columns will be grayed out during the session.

When a numbered button is lit, a *Memo* column for that input is displayed in the *Clips List* table. Click the button to toggle visibility for a column. The clips for the input are not affected by this operation, of course.

12.1.5 CLIP CONFIGURATION

The final titlebar control to discuss is the *Clip Configuration* button, represented by a ‘gear’ icon that brightens when you roll the mouse pointer over it. Click this button to open a dialog (Figure 115) that allows you to set several useful default values.

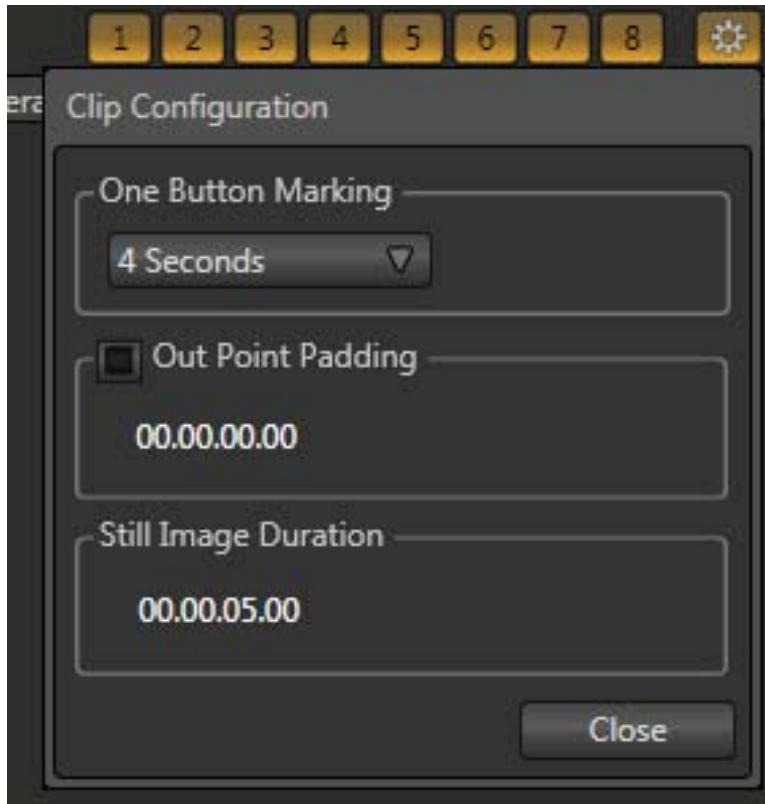


Figure 115 – 3Play™ 820

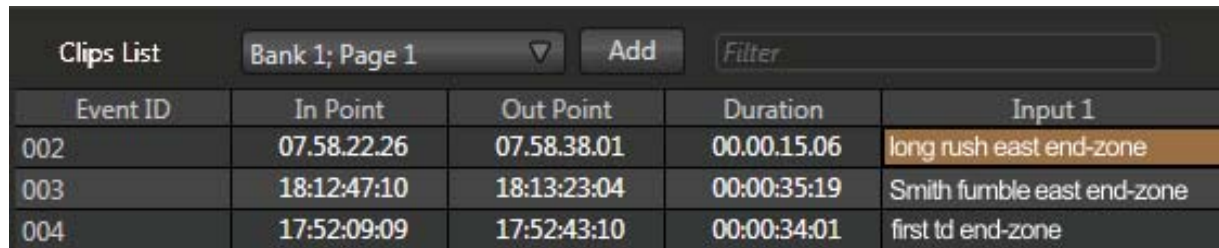
The *One Button Marking* menu allows you to set the standard time value employed for marking when using the ‘one-button marking’ method – see Section 8.9.2 for more information on this useful feature.

Out Point Padding, when checked, plays the set distance past the *Out Point* during *Clips List* playback. Beneath this you will see the default duration assigned to still images when these are added to the *Clips List*. You can click in the time field to edit the value shown, or drag left-right on it. Press and hold the Shift key, and then double-click the field to reset it to the default value.

12.2 CLIPS LIST TABLE FEATURES

By way of reminder (as discussed in depth back in Section 2.2.1), an event is not merely a ‘clip’. Rather it can be compared to a *bookmarked* section of the complete recording, a synchronized time slice of all of the captured a/v streams.

The *Clips List* provides information about the events that have been marked, along with numerous event organization and management features.



Event ID	In Point	Out Point	Duration	Input 1
002	07:58:22.26	07:58:38.01	00:00:15.06	long rush east end-zone
003	18:12:47:10	18:13:23:04	00:00:35:19	Smith fumble east end-zone
004	17:52:09:09	17:52:43:10	00:00:34:01	first td end-zone

Figure 116

The *Clips List* is laid out in a spreadsheet-style table comprised of rows and columns. Labels in the header above the table identify the columns below.

The columns, in order from left to right, are as follows:

- *Event ID* – a non-editable display field showing the numeric event identifier.

Hint: Each clip for an event is also numbered, in the format ‘Event ID - camera angle’ – e.g., “025-7”. The Event ID column in the Clips List shows the event prefix (its first 3 digits), while the Play List displays the entire Clip ID in its first column.

- *In Point* – timecode when the marked event begins
- *Out Point* – timecode when the marked event ends
- *Duration* – the total time for the marked event
- (*Camera 1 – Camera x*) – the *Memo* fields for recorded clips

12.2.1 IN/OUT POINTS, DURATION (AND TRIMMING)

The initial values in timecode fields are established by your marking operations (*Mark In* and *Mark Out*). Afterward, they can be modified (within the bounds of actually recorded footage) in several different ways:

- You can simply drag the mouse pointer left or right above a timecode field.
- Or, double-click it to engage direct text entry using the keyboard.
- Or, click (or otherwise navigate to) the field and press either Enter or F2) to engage direct text entry using the keyboard.

Another approach to trimming is to *Jog* (using the control surface or *Dashboard*) or *Shuttle* (*Dashboard* only) to a different timecode, and then hold down *Alt* while pressing *Mark In* or *Mark Out* to update the current *In Point* or *Out Point* respectively. (See also Section 12.3, Clip Transport.)

Of course, changing the value of the *In Point* or *Out Point* will have an effect on *Duration*, and vice versa. (Editing *Duration* normally affects the *Out Point*, providing the desired length can be achieved by doing that alone; in rare cases when the *Out Point* reaches the end of the recorded footage, the *In Point* is adjusted as required).

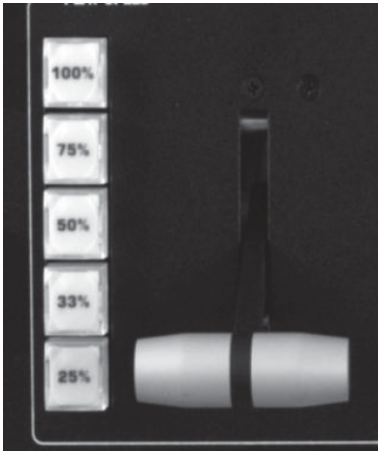
Hint: The Jog control is normally restricted to the established length of the clip, as established by its In Point and Out Point. If you wish to Jog to frames outside of this range, hold down ALT while jogging.

Naturally, all clips for the current event are affected by trimming operation as above. In the case of multi-selected events, only the displayed clip and associated clips for the same event are trimmed.

Hint: Individual clips that have been added to a Play List can be trimmed independently, without altering the timing of the original event in the Clips List, or other Play List clips originally added from the same event.

12.2.2 MEMO FIELDS

Memo fields allow you to insert text notes to any clip for an event. These can serve to identify a player and team, the type of event, or provide any other sort of information that is useful to you.



Activating the *Memo* field for text editing can be accomplished in one of two ways – navigate to the field to select it, and then press either Enter or F2 on the keyboard. This will open a text entry field to allow direct keyboard entry. If text edit mode is activated when text already exists in the *Memo* field, the text is entirely selected initially, and the cursor is placed to the right of the last character. This allows you to overwrite the current comment easily.

To conclude text editing, press Enter again, or navigate to a different field on the *Desktop*. To cancel without accepting changes, press the Esc key.

Figure 117

Hint: Remember that events can be shown or hidden based on text values in Memo fields using the Clips List Filter.

12.2.3 MANAGING EVENTS

Events can be trimmed and named as described in prior sections. They can also be re-ordered easily, by clicking anywhere in their row and dragging up or down (you cannot drag an event above the top-most entry).

Cut, *Copy* and *Paste* functions using keyboard shortcuts (Ctrl + x, Ctrl + c, and Ctrl + v) work just as you would expect (this is how you move events into other *Clips List* pages). Alternatively, you can access these features from a context menu opened by right-clicking (Figure 118).

This menu also provides *Audio Level* settings for the recorded *events* (that is entire *rows*, as opposed to individual clips).

The *Clips List* table supports multi-selection as well. Press Shift when clicking an item to select all items between the existing and newly selected item, or hold down Ctrl while clicking non-adjacent items to select only those individual entries.

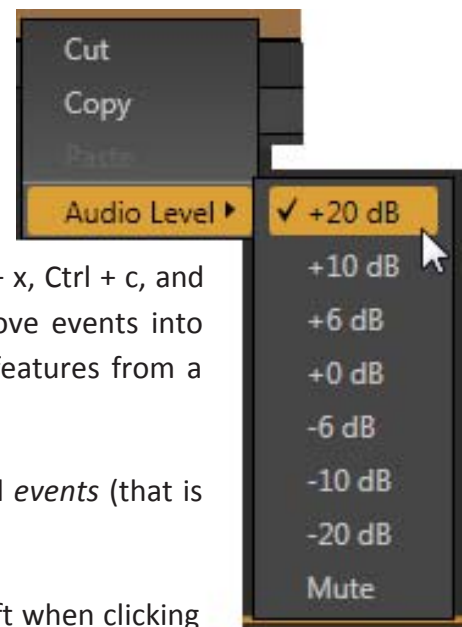


Figure 118

Selected items are highlighted. Paste operations within the *Clips List* (and *Play List*) will be inserted below the currently selected event, or at the end when no item is selected (as when pasting into new, empty pages). When dealing with multi-selected items, insertions are in order of selection. If a *Clips List* asset is unavailable for any reason, it is shown with a red border.

Hint: Another way to remove selected events from the Clips List is to press the Remove button on the control surface, or the Del key on the keyboard.

12.3 CLIP TRANSPORT

You can move through the currently displayed clip by pressing *Play* (and *Stop*), or by using the *Jog Wheel* on the control surface or *Dashboard*. Clip playback can also be initiated by double-clicking the *Memo* field for a clip, or by pressing the keyboard *Spacebar* (press again to halt play).

Transport within a clip is normally constrained by the *In Point* and *Out Point* timecode values. Hold *Alt* while using the *Jog/Shuttle* controls to move to a position prior to the current *In Point*, or past the current *Out Point*. This may be useful when you wish to update the *In Point* or *Out Point* using *Alt + Mark In/Out* as described in the prior sub-heading.

12.3.1 PLAY SPEED

Play Speed is governed by the control surface *T-Bar* position, *Speed Preset* (25%, 33%, etc.) selection, and their *Dashboard* equivalents.

Selecting a preset (or adjusting the *T-Bar* position) sets the speed for playback, but does not initiate it. During play, however, *Play Speed* changes are applied immediately. This selection is a top level system playback setting, and is applied to all sources (with the exception noted below), as opposed to a setting that applies just to the current clip.

Note: Live playback is always at 100% Play Speed (i.e., actual speed) when Record is in-operative.

PLAY SPEED AND OUTPUT MODES

The *Play Speed* settings for *Output A* and *Output B* are independent of one another, except in cases when the *A + B* mode is selected. In that case, new settings apply to both *Output A* and *Output B*. They both respect the current *Speed* setting.

12.4 SELECTION & DISPLAY

Generally, the highlighted clip in the active event row is shown on the current output (*A* or *B*). In the case of multi-event or multi-clip selections, the last-selected clip is the one displayed on output.

12.4.1 PLAY INDICATOR

Clip selection (and consequently, display on output) normally follows *Memo* field selection, whether by control surface, keyboard or mouse operation – when no clip is playing. Moving into a timecode field using the arrow keys or control surface Previous/Next buttons results in the clip viewed being the one from the first camera in the Clips List table.

It is different when a clip is already playing. In this case, the new selection does not usurp the output display. To make it clear which clip will be affected by transport operations at any time, the ID field for a playing clip (or clip that *would* play if you pressed Play) always has a red background.

To view a different clip for the current event without jumping to the first frame of the clip (staying at the current timecode), navigate using ALT + Previous/Next, or press 1 - (4 or 8) on the keyboard Numpad.



Figure 119

The current selection state is stored for both *Output Modes* (*A* and *B*).

For example, if you select a certain clip when the *Output Mode* is *A*, then press *B* and select a different clip, when you reset the *Output Mode* to *A* the original clip for that mode is still highlighted.

12.5 ADD TO PLAY LIST

Selected clips can be added to the current Play List pane in several ways:

- Press the *Add to Play List* button on the control surface.
- Drag a clip selection onto the *Play List* pane with the mouse.

Hint: You can also add all clips from one or more events to a Play List in their natural order in one easy operation. Simply select the Event ID field(s) and proceed as above.

The target insertion point for clips added to the *Play List* by dragging is shown by a white line before releasing. The other methods insert the new clips below the currently select *Play List* entry.

13 THE PLAY LIST



At times you will likely wish to assemble and play a compilation of clips forming a highlight reel, or prepare such a sequence for other purposes. The Play List module supports these special playback features and more.

Multiple Play List banks and pages let you organize and switch from one compilation to another with alacrity. Play Lists can include imported media and music, content can be re-ordered, trimmed, have its speed and audio levels adjusted, and be rendered as a clip.

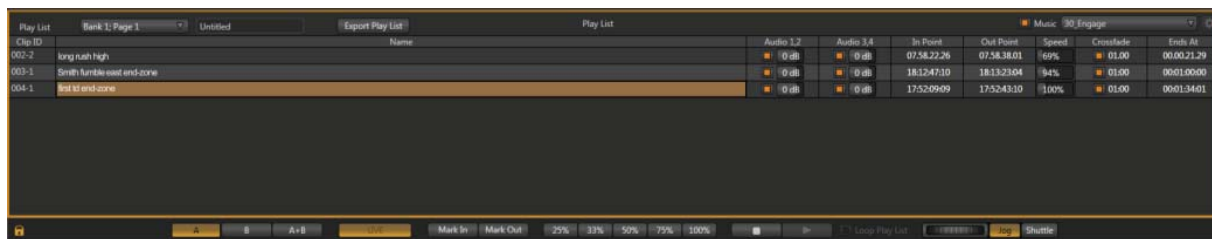


Figure 120

The *Play List* is similar to the *Clips List*, but offers a number of additional features and has a different columnar layout. The *Play List* is outlined by a gold border when it has control (see Section 11.2).

Hint: Drag the upper border of the Play List up or down to show more or less rows.

13.1 TITLEBAR FEATURES

13.1.1 PLAY LIST PAGES



Figure 121

Also like the *Clips List*, the *Play List* module offers four banks, each with four pages, for a total of sixteen independent playlists.

Pages can be assigned custom names, making it easier to locate just the right one. Click in the *Name* field (Figure 121) in the *Play List* titlebar to edit the default page name using the keyboard.

Note: There is just one set of Play List Banks and Pages, referenced for both Output A mode and Output B mode. In other words, if you select Play List Bank 1, Page 3 and edit the playlist content while in Output A mode, then enable Output B and access the same page, it will reflect the modifications you made previously.

13.1.2 EXPORT PLAY LIST

The *Export Play List* button allows you to flatten the entire playlist, including audio, down to a single clip. This clip is then appended to the current *Clips List* page.

13.1.3 MUSIC TOOLS

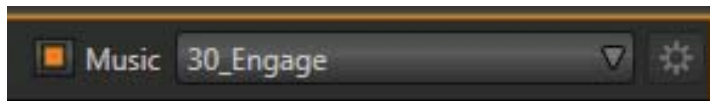


Figure 122

At the opposite end of the *Play List* titlebar you will see controls that allow the addition of a background music track for highlight reels. The common WAVE and MP3 audio file formats are supported.

Enable the *Music* switch, and select *Browse* from the drop-down menu to open the custom *Media Browser*. (The menu also lists your most recent selections for convenience.

The features of the *Media Browser* were discussed back in Section 12.1.2, so we won't review them again here.

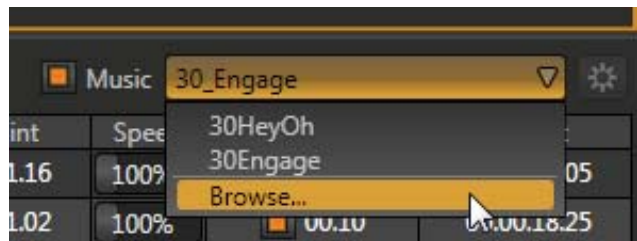


Figure 123

Hint: One useful thing to note is that because the Media Browser is context sensitive, when opened from the Music menu it automatically points to Audio locations in its left column (the Locations List).

A switch at left of the *Music menu* allows you to toggle playback of your selection on or off. More elaborate controls are located in the *Music Configuration* dialog (Figure 124).

MUSIC CONFIGURATION

To open the *Music Configuration* panel, click the configuration (gear) button just to the right of the Music menu. The panel contains two controls, and one purely informational display, discussed next.

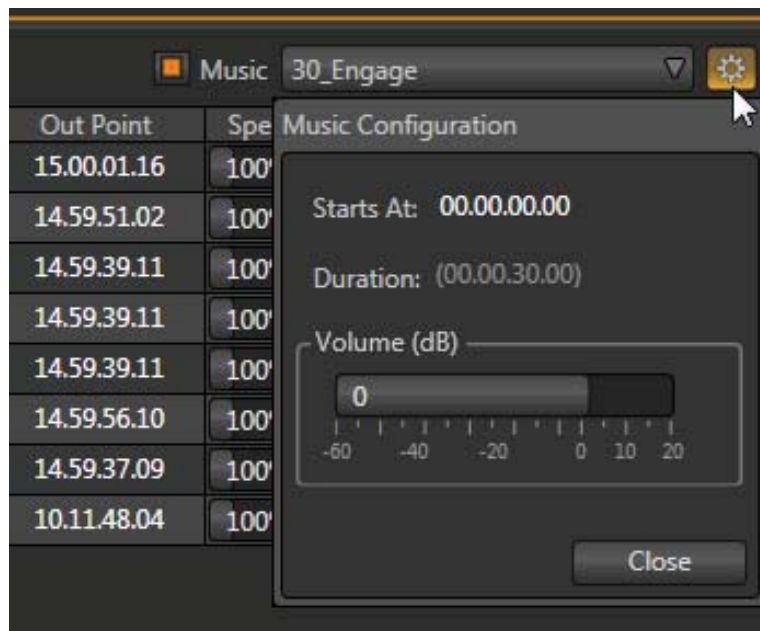


Figure 124

- The numeric field labeled *Starts At* allows play of the selected music file to be delayed until a set time elapses from when *Play List* playback is first initiated.

This can be useful when, for example, an imported 'bumper' clip with its own audio precedes the clips comprising a highlights reel. Click in the number field to manually edit it using the keyboard, or simply drag the mouse pointer left or right above it.

- The *Duration* time value lets you know the length of the selected audio file, for comparison against the length of the playlist. It is not editable.

Hint: Playback of files that are longer than the playlist duration will be automatically truncated (and faded out) when Play List playback ends.

- Finally, a *Volume* control allows you to adjust the output level of the selected music file.

13.2 THE PLAY LIST TABLE

Unlike *Clips List* rows, each *Play List* row contains only one clip. As you would expect, playback progresses from clip to clip, playlist-style, beginning at the currently selected row and proceeding until the end of the playlist (or manual interruption).

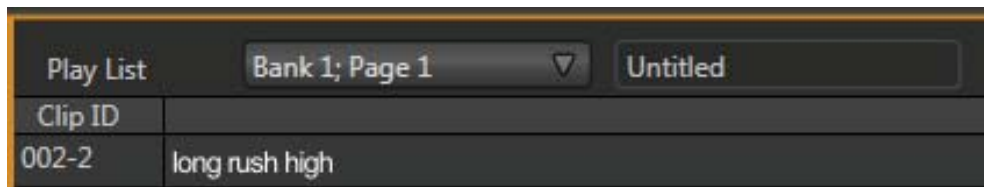


Figure 125

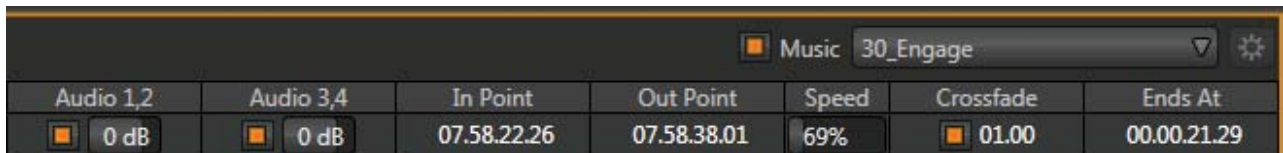


Figure 126

The columns, from left to right (Figure 125 and Figure 126), are labeled as follows:

- *Clip ID* – a non-editable display field showing the numeric clip identifier. The hyphenated digit identifies the input the clip represents.
- *Memo Field* – an editable name or comment field.
- *Audio 1, 2* – this column contains a switch allowing you to enable or disable the audio from audio channels 1 and 2 recorded with the clip, and a *Volume* slider that allows you to adjust its level.
- *Audio 3, 4* – as above, but for audio channels 3 and 4.
- *In Point* – timecode field showing the In Point for the clip.

- *Out Point* – timecode when the clip will end.
- *Speed* – a numeric slider allowing you to preset the speed at which the clip will play back.
- *Crossfade* – an on/off toggle switch for a crossfade type transition to the next clip in the playlist, and a numeric input field allowing you to specify the time for the crossfade.
- *Ends At* – the total time for the playlist until the end of play for the clip in the current row.

13.3 PLAY LIST PREPARATION

Clips are added to a *Play List* page in any of several methods, as discussed in Section 12.5. Once in the list, they can be freely re-ordered by dragging them up or down. The standard *Cut*, *Copy* and *Paste* shortcut keys (Ctrl + x, Ctrl + c and Ctrl + v, respectively) allow you to move clips from one Play List page to another, or within the same page.

13.3.1 CLIP SELECTION

A clip can be selected (highlighted) by navigating to it using the control surface, keyboard, or direct mouse click, and multi-selection is supported as follows:

- Hold down Shift while navigating (by any means) to another clip to select both clips and all others between them.
- Select a clip, then press and hold Ctrl while clicking another to multi-select clips that are not near one another.

Hint: When clips are multi-selected, many operations will affect all selected clips at once. For example, you can turn the sound on or off for a number of clips in this manner.

PLAY INDICATOR

Similar to the *Clips List*, the *Play List* shows a red background in the *Clip ID* field to indicate the current playback position in the list.

13.3.2 CHANGING A CLIP

Perhaps, after adding a clip to a playlist, you decide you want to show the same event from a different camera angle. You could go back to the *Clips List*, locate the event, and add a different clip to the playlist. There is a better way to change clips though.

To do so, navigate to the *Clip ID* field, then hold down the *EDIT* button on the control surface and rotate the *Jog* wheel to cycle through the available clips for the current time.

Hint: Copy and paste a clip, then edit the copy in this fashion to insert a clip from the same time segment into the playlist without removing the original.

13.3.3 MEMO FIELD

Initially, newly added clips show the same *Memo field* content as the corresponding *Clips List* entry. *Play List* clips are independent once added, however. Comments can be changed (and the clips can be trimmed) without affecting the original source event.

13.3.4 AUDIO 1, 2 – 3, 4

You'll recall that we discussed the music features offered by the *Play List* back in Section 13.1.2.

These two *Audio* columns hold controls governing any audio embedded in the clip on the corresponding row in the *Play List*. The controls in the first column affect the first two audio channels, while the second column relates to channels 3 and 4.

Both columns have switches allowing you to enable or disable the associated channels, and an adjustable volume slider.

Hint: Multiple selections are supported for toggling sound on and off, as well as for direct keyboard level adjustments (remember to press Enter to engage Text Entry mode and conclude edits).

13.3.5 IN AND OUT POINTS (TRIMMING CLIPS)

To change the timing of clips in the *Play List*, you can use the same methods described earlier for the *Clips List* – see Section 12.2.1. The value in the *Ends At* field cannot be directly edited. It is a calculated field only, showing the cumulative duration for the current clip and those above it.

13.3.6 SPEED

Each clip can be played at its own speed – the range for the control is from 10% to 400%. The numeric slider in the *Speed* column can be modified in the same ways as the similar audio value control.

When playback is *stopped*, you can use either the control surface *Jog* wheel or *T-bar* while holding down the *Edit* button to change the *Speed* for selected clip(s).

Hint: Multiple selections are supported for direct keyboard adjustments (remember to press Enter to engage Text Entry mode and conclude edits).

If *Play List* playback is underway, you can use the *T-bar* or *Speed Presets* on the control surface to further modify *Speed* interactively. (This does not overwrite established clip speed settings in the playlist).

Hint: Adjustments made during playback are applied as multipliers for the set playlist clip speed. For example, if the set speed for a Play List clip is 50%, and you further reduce speed by pressing the 50% Speed Preset on the control surface, the actual playback rate is 25%.

13.3.7 CROSSFADE

Like the two *Audio* columns, the *Crossfade* column controls allow you to switch the transition to the next clip on or off, and set a value (in the by now familiar ways) – in this case, for the transition duration. When the *Crossfade* time is 00.00 (or the switch is off) a hard cut is performed when playback of the current clip ends and the next one begins.

Hint: Multiple selections are supported for toggling the effect on and off, as well as for direct keyboard effect duration adjustments (remember to press Enter to engage Text Entry mode and conclude edits).

13.4 CLIP CONTEXT MENU

The *Play List* also features a context menu (Figure 127). Not unlike its *Clips List* equivalent, the menu provides access to Cut, Copy and Paste (also available using the standard keyboard shortcuts). It also has one important additional item.

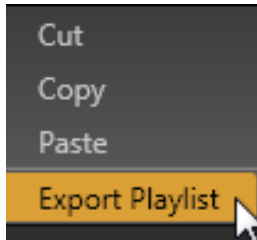


Figure 127

The *Export Play List* option flattens the entire playlist, including audio, down to a single clip which is appended to the current *Clips List* page. (This is the same feature discussed back in Section 13.1.2.)

13.5 PLAYBACK

To initiate *Play List* playback, select a clip and press *Play* (control surface, dashboard, keyboard *Spacebar*), or double-click a clip's *Memo* field.



Figure 128

See Section 13.3.6 regarding the making of *Speed* adjustments during playback.

13.6 PLAY LIST EDLS

On exiting a session, 3Play™ creates an *EDL* (Edit Decision List) file for each existing playlist. These files can be used to reconstitute a playlist in NLE (non-linear editing) applications with EDL file import support.

3Play's EDL files are created on the master *Session Drive* for the session, in a folder located at *drivename:\Media\EDL\session name*.

14 THE DASHBOARD



On occasion you may find it useful to control your NewTek 3Play™ using the mouse for functions normally invoked using the control surface. The Dashboard, located at the bottom of the Replay Desktop, makes this possible.

In addition, the Dashboard offers visual feedback of control surface operations, Speed settings, and the like, which you may just appreciate at any time. This section explains its use.

14.1 DISPLAYING THE DASHBOARD



Figure 129

By default, the *Dashboard* appears on the *Replay Desktop* when you launch it for a new session. You should see it spanning the bottom of the screen.

At the far left end of the *Dashboard*, note a small 'padlock' icon. This is a visibility switch, providing two modes of operation. When highlighted (gold) the *Dashboard* is locked in place at the bottom of the screen, and will always be visible. Unlocked, the *Dashboard* pops into view only when you move your mouse pointer to the lower edge of the *Play List*.

14.2 SPEED PRESETS

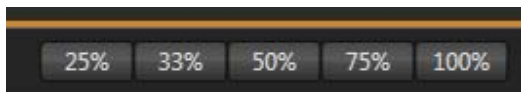


Figure 130

The *Speed Preset* buttons on the *Dashboard* mimic their counterparts on the control surface. Generally, think of these controls as speed settings rather than buttons that directly perform an action – they do not initiate playback.

If playback* is underway, selecting a *Speed Preset* changes the play rate the selected speed. Otherwise, they establish the speed for the *next* playback operation.

* *Live throughput is always 100% Speed; if recording is enabled, selecting a lesser Speed value initiates Delayed playback.*

Thus selecting an event and setting *Speed* to 50% does not begin slow motion play immediately; but when you subsequently engage *Play* the clip runs at half the normal rate. However, *Speed* changes you make during playback of either delayed video or recorded clips are applied immediately. This means that you can adjust playback speed on the fly in these cases by clicking a *Speed* button in the *Dashboard*.

When newly selected, these buttons override the current *T-Bar* setting, setting the rate to the indicated speed. If the T-Bar is moved it reasserts control.

14.3 OUTPUT MODE

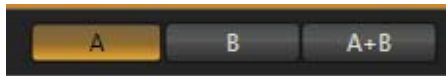


Figure 131

Just as for the *Speed* buttons, the *A*, *B* and *A + B* buttons can stand in for their equivalents on the control surface. They operate just like the *Output Mode* buttons, and also show the current state of those controls. See Section 11.1 for more information about *Output Modes*.

14.4 LIVE MODE



Figure 132

In a departure from the control surface, the only *Control Mode* button provided in the *Dashboard* is *LIVE*. Clicking this button has the same result as pushing the *LIVE* button on the control surface.

Dashboard equivalents for the other two familiar *Control Modes* (*Clips* and *Play List*) are not provided, but you can easily enable either mode by clicking the mouse in the *Clips List* or *Play List*, respectively.

Hint: You can also send a given live input directly to the current output (A or B) by clicking the mouse on the corresponding input monitor; but, this being slightly less obvious, Live mode is supplied with a Dashboard button.

14.5 MARK IN/OUT

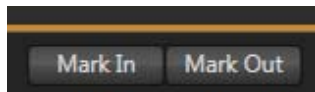


Figure 133

The *Dashboard* buttons labeled *Mark In* and *Mark Out* correspond to the *IN* and *OUT* buttons on the control surface, and perform the same functions. See Section 10.3 to review these vital features.

Note: The Dashboard does not provide an ALT button (since the mouse would have to be in two places at once if it did). The keyboard Alt key serves as a stand-in when you wish to update the In Point or Out Point of a Clips List event or Play List clip using Alt + Mark In/Out.

14.6 TRANSPORT BUTTONS

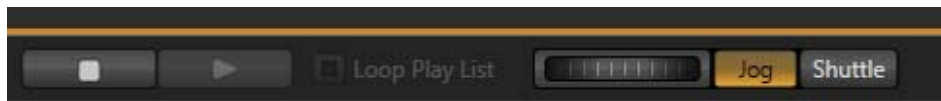


Figure 134

The *Stop* and *Play* buttons in the *Dashboard* mimic the functionality of their control surface equivalents.

Likewise, the knurled wheel next to play performs much like the physical *Jog* wheel. You may, however, notice a difference. While the physical *Jog* control is supplemented by a *FAST JOG* mode button, the *Dashboard* wheel is accompanied by *Jog* and *Shuttle* buttons instead (shuttling is often preferable to jogging when using a mouse for input).

14.7 PLAY LIST LOOP

When the *Loop* switch in the *Dashboard* is enabled, *Play List* playback will begin again when the end of the current playlist is reached, and continue repeatedly until manually stopped.

Hint: Press Ctrl + the PLAY LIST mode button to toggle the Loop (Play List) switch in the Dashboard on the Replay Desktop.

PART III (APPENDICES)

A time-saving question and answer section, followed by an extensive listing of Shortcut Keys and keyword index ...



In this section, we'll consider the most common questions NewTek 3Play™ operators may have (and of course we'll provide the answer, too).

The answers are intentionally brief – perhaps just a reminder of one or two steps required to perform some operation. For this reason, we'll also point you to explanatory information elsewhere in this manual whenever that would be useful.

If you've largely mastered your NewTek 3Play™ system, but have a specific question, this may be the best place to look first. The headings that follow list related questions and answers together, along with cross-references and other helpful remarks.

Hint: The NewTek website includes a comprehensive FAQ database containing a wealth of useful information on all of its products – please see <http://www.newtek.com/faq/>

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A.1 CONNECTIONS

A.1.1 CONNECT CAMERAS?

1. Connect video sources to the appropriately labeled BNC input connectors on the NewTek 3Play™ *backplate*, according to your camera’s connection type – see Section 3.4. You may find the BNC removal tool shipped with your system helpful.
2. Open a 3Play™ *session* (or create a new one) from the *3Play Startup Screen*, and launch the *Replay Desktop*.
3. Click the *Cameras 1- (4 or 8)* tab at the top of the *Replay Desktop*, roll the mouse pointer over the preview monitor for the source you want to set up, and click the *Configure* (gear) button that appears above it.
4. Choose an appropriate *Connection Type* for your camera in the *Input Settings* tab (see Sections 3.4 and 7.2.1).

A.1.2 COLOR CORRECT MISMATCHED CAMERAS?

Your 3Play™ system permits the use of sources that do not match the current session format. You might connect an SD camera during an HD session, for example. The official broadcast standard for SD video is Rec. 601, but HD video conforms to Rec. 709 – and NewTek 3Play™ output color space is governed by the session format.

When the natural color space for a connected source does not match the current output specification (in this example, Rec. 709), 3Play™ automatically attempts to compensate – but it's always best to refer to downstream scopes for critical accuracy.

1. As required, connect external Waveform and Vectorscope monitors to 3Play™ outputs
2. Disable *Output Proc Amps* (Section 7.1.1) or set them to defaults to adjust input settings.
3. Your downstream scopes should be configured to conform to the broadcast color specification for your current session.
4. Calibrate your sources one by one using the *Proc Amp* tools for individual inputs (see Section 7.2.3.)

A.1.3 CONNECT MONITORS?

REPLAY DESKTOP MONITOR

With the power off, connect an external computer monitor to the *Interface* DVI port on the NewTek 3Play™ system backplate. Use a suitable adapter if necessary for your monitor.

MULTIVIEW (SECONDARY) MONITOR

The secondary monitor output on the backplate is for the *Multiview* output feature.

5. Connect the external device to the *Multiview* output on the backplate using an appropriate cable (and/or adapter, if required) – see Section 3.5.4.
6. Launch a 3Play™ session (or create a new one) from the *Startup Screen*.
7. Roll the mouse pointer into the header above the output monitors, and click the *Configure* (gear) button that appears at right.
8. In the *Output Configuration* panel's *Multiview* tab, set *VGA Output Resolution* to match the native resolution of the external device.
9. Select your preferred display from the *Screen Layout* menu.

NOTE: Changing Output Resolution can cause frames to be dropped briefly. We do not recommend changing this setting during live production.

OUTPUT VIDEO MONITORS/DEVICES

Downstream video devices you wish to send 3Play™ output to must be compatible with the video broadcast standard (such as NTSC or PAL) and format (SD or HD) of the current 3Play™ session.

1. Connect cables between downstream devices (whether monitors or other devices) and appropriately labeled video output connectors on the backplate (see Section 3.5.1).
2. Open a 3Play™ *session* (or create a new one) from the 3Play *Startup Screen*.
3. For *SD* sessions and display devices, you may need to adjust the connection options found in *Output Configuration*:
 - a. Move the mouse over the output monitors, and click the *Configure* button (gear) that appears at above right to open *Output Configuration*.
 - b. Click the appropriate output tab (*A* or *B*), and select either '*Composite + Y/C*' or *Component*, according to the connection type used by your device. (Please see Section 3.7 for more information.)

A.1.4 IMPROVE THE QUALITY OF MULTIVIEW OUTPUT?

3Play's *Multiview* video output is very high quality, but it is possible for you to manually choose certain settings that will have a negative effect on it. For best quality, be sure that the *VGA Output Resolution* you choose corresponds to that of the monitor connected.

NOTE: Changing Output Resolution can cause frames to be dropped briefly. Thus we do not recommend changing this setting during live production.

A.1.5 CONNECT THE GENLOCK REFERENCE SIGNAL?

1. Connect the reference signal to the *Genlock* input (BNC connector) on the backplate.
2. See Section 3.9 for details on configuring *Genlock* settings.

A.1.6 CONNECT THE 3PLAY™ CONTROL SURFACE?

Connect the USB cable from the control surface to one of your NewTek 3Play's USB ports.

SUPPLEMENTARY QUESTION:

Q: My system has suddenly stopped responding to the control surface. What can I do?

A: The foremost reason this might happen is if the cable (or extender cable) you are using between the control surface and NewTek 3Play™ failed to deliver sufficient current consistently. In the short term (if you are in the middle of a show), you can generally resolve this issue by simply unplugging and re-plugging the control surface.

However, please note that the use of so-called "USB extenders" is not recommended. Whenever possible, use a single USB cable of the correct length. Each added connector on the signal path is a potential connection problem, and also causes signal 'reflections'. Such an arrangement may seem to work for a while, then fail unpredictably.

If you are using a very long USB cable (or a poor quality cable), you should supply a powered hub at the end of the cable nearest the control surface, then complete the connection with a short USB cable from the hub to the control surface (an unpowered hub will be of no help).

A.1.7 INSERT/REMOVE A DRIVE FROM A REMOVABLE DRIVE BAY

1. If the system is running, and if applicable – Eject the hard drive you wish to remove (see Section A.1.9).
2. Drop the front panel on your NewTek 3Play™ down.
3. Open the removable drive bay door.
4. Pull the hard drive currently in the drive bay (if applicable) to remove it.
5. Insert the new hard drive ('connector end' first)



Figure 135 – 3P lay™ 820

6. Close the drive bay door.
7. Close the front panel.

SUPPLEMENTARY QUESTION:

Q: *What hard drives are recommended for removable drive bays?*

A: NewTek Sales offers additional hard drives for use in the removable bays. NewTek supplied storage media has been carefully tested to meet exacting specifications, and can be expected to provide optimal performance and reliability.

Of course, you are free to purchase storage media from other sources. Keep in mind that manufacturer specifications and reviews may highlight favorable statistics, focusing on results from ‘typical’ (i.e., less demanding) operating environments. Naturally, NewTek cannot guarantee that hard drives obtained from such sources will provide performance adequate to meet operational requirements. Here are some guidelines to keep in mind if you employ hard drives purchased from other sources:

- All else being equal, larger drives are normally faster – try to use 1TB drives or above.
- Use SATA 3.0GB/s drives with rotational speed of 7200 R.P.M. (or better).
- Drives should have a larger onboard cache (32Mb or better is recommended).

A.1.8 CONNECT AN EXTERNAL HARD DRIVE?

Connect a suitable cable from the external hard drive to a matching port on the backplate. Note that in general, for use with large video files the hard drive should be formatted using the NTFS file system (the FAT file system chokes on exported files exceeding 4 Gigabytes, as will often be the case).

3PLAY™ 820 The eSATA port provided on the backplate supports transfer speeds that are fast enough for live recording to suitable external media. The (slower) USB ports should not be used for recording, but may be useful for transferring files to and from the system (it is always best to import media for use in live sessions).

3PLAY™ 425 The USB ports provided on the backplate do not support transfer speeds that are suitable for live recording to external media, thus should not be used for recording. These connections may be useful for transferring files to and from the system, however (it is always best to import media for use in live sessions).

A.1.9 EJECT A HARD DRIVE?

Click the *Eject* gadget in the *Home page* titlebar in 3Play's *Startup* screen for the hard drive you wish to safely disconnect.

A.1.10 CONNECT TO A NETWORK?

Please refer to Section 3.12.

A.1.11 ENABLE TERMINATION FOR VIDEO INPUTS?

NewTek 3Play™ provides full-time video termination. If you need to loop through (or t-off from) upstream video devices (such as an external monitor) in your video pipeline, you should ensure termination is turned OFF for earlier devices.

A.2 SESSIONS

SUPPLEMENTARY QUESTION:

Q: *What is a session?*

A: Sessions can be thought of as ‘top-level presets’. They store all of the settings, playlists, device configurations, and so on for a given live production. See Section 5.1.

A.2.1 DELETE A SESSION (AND ITS CONTENT)?

1. Right-click the name of the session in the *Home* page of the *Startup screen*.
2. Select *Delete* from the menu.

This will delete the session, and any content that is local to the session (external data that has not been imported and data on drives that are not mounted at the time will not be deleted). See Section 5.2.2 for more information.

A.2.2 RENAME A SESSION

1. If necessary, close the *Replay Desktop* by clicking the [x] button at the right-hand end of the titlebar.
2. Return to the *Home page*.
3. Right-click the name of the session you want to rename in the list shown at right to open the context menu.
4. Choose *Rename* from the menu that appears.

A.2.3 MANAGE SELECTED CONTENT INSIDE A SESSION?

1. Click the name of the session containing the content you wish to delete in the *Home page* of the *Startup Screen*.

2. Under *Browse* at (right on the *Session* page), click the link for the type of content you wish to manage (see Section 5.3.1).

A.3 EVENTS AND RECORDING

A.3.1 START RECORDING?

1. Press the *REC* button on the *control surface*.
or ...
2. Press the *IN* button on the *control surface*.
or ...
3. Press the *Record* button beneath the Output A monitor on the *Replay Desktop*.

A.3.2 END RECORDING?

1. Press ALT + *REC* on the *control surface*.
or ...
2. Press the *Record* button beneath the Output A monitor on the *Replay Desktop* a second time.

A.3.3 MARK AN EVENT?

There are two principle methods for marking events:

ONE-BUTTON METHOD

1. Watch the input monitors, and press the *OUT* button on the control surface whenever a notable event occurs (see Section 8.9).
2. This creates a new event in the *Clips List*, setting an *Out Point* at the current timecode, and an *In Point* as required to fulfill the default *Duration* (see Section 13.4). Of course, you can trim the event afterward any time you wish.

TWO-BUTTON METHOD

1. Press the *IN* button on the control surface at any convenient time. This creates a new 'incomplete' event in the Clips List.
2. (Optional) If nothing noteworthy occurs in the next while, feel free to press *IN* again from time to time, updating the In Point of the event.
3. Press *OUT* to complete the event when something interesting occurs (see Section 8.9).

A.3.4 CANCEL AN INCOMPLETE MARKING OPERATION?

1. Press *ESC* on the control surface (or Esc on the keyboard).

A.3.5 PLAY A CLIP?

1. In the *Clips List*, double-click the *Memo* field for the input (clip) you want to play
or ...
2. Navigate to a clip using the control surface (see Section 8.7) or keyboard and press *Play*.

RELATED QUESTIONS:

Q: I pressed Play, so why is my output frozen?

A: Check to see if the control surface T-Bar is at the 0% position (stopped).

A.3.6 PLAY A CLIP IN SLOW MOTION?

Slide the *T-Bar* to set the desired playback speed, or choose a *Speed Preset* (25%, 50%, etc.), and then press *Play*.

A.3.7 PREPARE A HIGHLIGHT REEL?

1. Select clips for events you want to include in the *Clips List* and press *Add to Play List* to add them to a page in the *Play List* module.
2. Drag clip entries up or down in the *Play List* table as necessary to place them in the order you want them to play.
3. Optionally, re-trim the clips, to taste.
4. Adjust level controls for embedded audio in the *Audio* columns (see Section 13.3.4), *Crossfade* times (Section 13.3.7) and *Speed* (13.3.6) for individual or multi-selected clips.
5. (Optional) Enable the *Music* switch in the Play List titlebar and load a music file using the nearby menu (see Section 13.1.2). Adjust its level by clicking the *Music Configuration* button (gear) at right.

A.3.8 SELECT A DIFFERENT PLAYLIST CLIP FOR THE SAME TIME PERIOD?

1. Navigate to the Clip ID field in the Play List
2. Hold down the *EDIT* button on the control surface
1. Rotate the *Jog* wheel to cycle through the available clips for the current time segment.

A.4 FILES

A.4.1 MANAGE FILES?

Please refer to the item (How do I) Manage Selected Content inside a Session? (Section A.2.3).

A.4.2 IMPORT MEDIA FILES?

Importing files implies copying them into the session folders, making them *local* (rather than *external*) to the system and session. To import media files:

1. Open (or create) a 3Play™ session.
2. Click the *Import Media* button (below the *Browse > Sound and Music* link at right).
3. Click *Add*, and use the system file explorer that opens to select the file(s) you wish to import into the current session; then click the *Open* button.

Selected files are automatically copied to the appropriate folder (Clips, Stills, etc.) according to their file type (see Section 5.3, Import Media).

Hint: External files can be used in a session without being imported, by adding them to Clips List using the Add feature and Media Browser – see Section 12.1.2. However, it should be noted that the transfer speed of many external devices is too slow for reliable playback of media content, making it wise to use the Import feature instead whenever possible.

A.4.3 PREPARE CLIPS FOR THE PLAY LIST USING APPLE® FINAL CUT PRO?

We are often asked what format to use for export from Final Cut for best compatibility in 3Play, especially for HD clips. Here are recommended steps:

1. Click on Final Cut's *File* menu and choose *Send To > Compressor* (Compressor will open automatically).
2. Select your encoder setting as follows:
 - a. Inside *Compressor*, click on the *Settings* tab (in the bottom left panel).
 - b. Find the *Program Stream* setting from the *Apple/Formats/Mpeg-2* folder.
 - c. Drag this setting and drop it onto your *Sequence*.
3. Set your destination setting as follows:
 - a. Click on the *Destinations* tab (in the bottom left panel).

- b. Drag the destination of your choice onto your *job item*.
4. Click *Submit*.

A.4.4 ADD AN EXTERNAL FILE LOCATION TO THE MEDIA BROWSER?

1. *Open* a 3Play™ session.
2. Click the *Add Media* button in the *Clips List* titlebar.
3. Click the *Add Media Location* button at bottom left in the *Media Browser*.
4. Select the folder you wish to list as a custom location, and click *OK*.
5. (Optional) Enable the Transcode switches for each item added to ensure smooth playback.

(See External Locations in Section 12.1.2)

A.4.5 REMOVE A LOCATION FROM THE FILE BROWSER?

1. Click the *Add Media* button in the *Clips List* titlebar.
2. Right-click the name of the location you wish to remove from the list, and select *Remove* in the menu that opens.

(See the sub-heading Context Menus in Section 12.1.2)

A.4.6 EXPORT FILES TO AN EXTERNAL DRIVE?

There are several approaches to exporting media files from within 3Play™ sessions. By far the simplest is to use the *Export Media* feature in *Startup* – see the *Export Media* sub-heading in Section 5.3.1. (The steps are similar to those described in section A.4.4, but you will select clips for export using a special browser pane that is not unlike the *Clips List* table).

A.4.7 EXPORT FILES FOR USE IN APPLE® FINAL CUT PRO?

At the time of writing, importing 3Play's MPEG-2 files into Final Cut requires a few extra steps. There are several approaches – pick the one that suits your need best.

METHOD 1

1. *Open* the session containing the recorded files you are interested in.
2. Click the *Export Media* button, and then click *Add* to add clips to the export batch list.
3. Use the *Target* drop-down to select *Application*.
4. In the *Preset* column, select Apple Final Cut Pro® (.mov)
5. Click the *Destination* gadget (triangle) and choose a target location for the exported file(s).
6. Click the *Export* button to commence export. (Please see the sub-heading entitled *Export Media* in Section 5.3.1 for more on this feature.)

METHOD 2

7. At step 3 above, Choose *Quicktime* for the *Target*, then select *Renderless conversion (.mov)* as the *Format* for the files you add.
8. Click the selection gadget (triangle) and choose a target location for the output file(s).
9. Click the *Export* button to commence transcoding. (Please see the sub-heading entitled *Export Media* in Section 5.3.1 for more on this feature.)

A.4.8 IMPORT/EXPORT FILES LARGER THAN 4 GIGABYTES?

This question may arise if you are using external media, perhaps portable hard drives or USB 'thumb' drives. These are commonly prepared using the FAT32 file system, which does not

support files larger than 4GB. As video files will often exceed this size, FAT32 is not very suitable for use in that context.

You should reformat these drives using the NTFS system to eliminate this limitation (or you might consider transferring larger files over a network connection).

A.4.9 AVOID THE ERROR “... COPY THIS FILE WITHOUT ITS PROPERTIES?”

Windows shows this error message when you export a media file to an external volume that does not use the NTFS file system. The warning is not really a concern (although we highly recommend using NTFS formatted storage, as noted in Section A.4.8). The files will copy just fine regardless.

NewTek 3Play™ generates metadata attributes for media files for internal use. This metadata is only retained when you export to storage formatted as NTFS. That being said, the metadata is automatically regenerated if you use the files with NewTek 3Play™ again later, so its loss poses no issue.

A.5 SOFTWARE, MAINTENANCE AND UPDATES

A.5.1 IMPROVE PERFORMANCE?

1. Click the *Utilities* icon on the *Home page* in *Startup*.
2. Click the *Defragment Hard Drive* link at right (see Section 5.2.4), and follow further directions provided. This process can take considerable time, so it’s best not to commence unless time (before a production) permits.

A.5.2 RESOLVE SERIOUS INSTABILITY OR DROPPED FRAMES?

If the system should ever become seriously unstable or drop frames (after the warm-up period), consider a full 3Play™ Restore operation – see item A.5.6.

A.5.3 UPDATE NEWTEK 3PLAY™ SOFTWARE?

1. Connect 3Play™ to a valid Internet connection.

2. Click the *Utilities* icon on the Home page in *Startup*.
3. Click *Update 3Play™*, and follow directions provided (see Section 5.2.4).

A.5.4 INSTALL VIRUS PROTECTION?

Virus and malware protection applications can dramatically impact system performance (this is true even for Windows Defender™, which is deliberately disabled for this reason). In general, once additional software or services are enabled on the system, real-time performance cannot be guaranteed. In a perfect world, we'd love to recommend that you do not install virus and/or malware protection software on NewTek 3Play™. Certainly you should *always* take sensible precautions to avoid introducing infected files by rigorously virus-checking media you plan to connect or import before ever connecting it to 3Play™.

Realistically though, in some settings you may feel the need for protection outweighs the risk. If you really feel you *must* install virus protection, switch all of its 'active scanning' operations off so that nothing can occur in the background during live production. Anything that provides full-time protection will dramatically reduce memory and disk speed on your system, so you should disable those features. Then, only when you need to do so (perhaps on a daily or weekly schedule), perform a manual scan.

Never let scanning continue into a live switching event, and do not assume that you can now omit pre-checking files and external media for nasty surprises.

Hint: In the unfortunate event that malware ever does evade defensive measures you employ, you can always use the Restore function to completely rehabilitate your system.

A.5.5 INSTALL MY FAVORITE SOFTWARE (OR CODEC)?

NewTek 3Play™ is not a 'general purpose' computer. The installed software suite is finely tuned to provide reliable performance and amazing features. Anything you install apart from official updates places these important goals at risk. Doing so is strongly discouraged.

Regarding codecs, NewTek 3Play™ supports many popular image, audio and video formats for playback. That said, hardly a day passes without another new one appearing on the scene. If a

file you would like to use does not play back well (or at all), consider converting it to a friendlier format. The *Import Media* module makes this very easy to do.

If you feel the format is so popular that it should be supported, please submit the details as a feature request.

A.5.6 RESTORE THE SYSTEM TO ORIGINAL 'AS-SHIPPED' CONDITION?

We firmly expect you will never need it, but isn't it good to know that a complete *3Play™ Restore* function is available in the event of an unforeseen problem? You can use one of two methods to restore your system, depending on your situation.

To restore your 3Play™ system software *after the system launches normally*:

1. Click the *Utilities* icon in *Startup*.
2. Select the link labeled *Restore to Factory Defaults*, and follow prompts.

If your NewTek 3Play™ should ever fail to boot up properly, you may need to try a different approach to restoring your software, as follows:

1. Select the menu item labeled *Reset to Factory Defaults* from the black boot screen that appears shortly after powering up. (If this screen does not automatically appear, reboot and press F8 a few times in quick succession, say once per second, immediately after powering up.) Follow prompts to complete the process.

Note: Following a 3Play™ Restore operation, the Windows™ system software must be re-activated. To do this, you will need the operating system serial number, which you will find on a sticker affixed to the exterior of your NewTek 3Play™ system.

This procedure restores your system drive ("C:") to its 'as-shipped' state. Other drives, which may hold content and sessions won't be modified. However any 3Play™ system software updates you have performed will be overwritten – so use this function only if you truly find it necessary (a call to NewTek's excellent Tech Support staff first may often be fruitful – see Section A.6.2). When you do restore, remember to update the 3Play™ system software afterward.

A.6 REGISTRATION AND TECH SUPPORT

A.6.1 REGISTER THE NEWTEK 3PLAY™ SYSTEM ?

Please refer to Section 3.3, License and Registration.

A.6.2 CONTACT TECHNICAL SUPPORT?

Visit the NewTek Website, at www.newtek.com and select *Technical Support* from the main *Customer Care* menu at the top of the page. This page always contains the latest support information for your NewTek products, including *FAQs* for all products. It also lists the Technical Support Department's hours of operation and contact details.

A.6.3 FIND HARDWARE/FIRMWARE REVISION NUMBERS?

Click the *Help* icon and select *About 3Play™* in *Startup*. Doing this opens an information panel that lists significant version numbers (at the bottom).

A.7 MISCELLANEOUS

A.7.1 SET UP REMOTE DESKTOP CONTROL OF 3PLAY?

Attempts to run screen sharing or remote desktop software on 3PLAY™ are strongly discouraged (this includes NewTek's own iVGA client). Applications of this type require *significant* system resources. At the same time, 3PLAY's *primary* functions require unhindered CPU and GPU access. Adding the resource demands of additional software of this type would almost certainly cause 3PLAY™ to drop frames on output, and should simply never be done.

A.7.2 DEAL WITH CLIPS OR IMAGES THAT SEEM BLURRY?

When paused or stopped, the system performs motion removal (to avoid unwanted flicker). This can make the image seem slightly blurred when paused, but it should look perfect during playback.

A.7.3 ACCESS WINDOWS™?

1. If necessary, close the *Replay Desktop* by clicking the [x] button at the right-hand end of the titlebar.
2. Click the *Shutdown* icon on the icon ring in *Startup*.
3. Click the *Exit to Windows* link at right (and confirm the warning dialog).

A.7.4 RETURN TO THE STARTUP SCREEN FROM THE WINDOWS™ DESKTOP

Double-click the *3Play™* icon on the *Windows™* desktop to return to 3Play's *Startup* screen.

A.8 MORE QUESTIONS AND ANSWERS

A.8.1 WHY IS MY POWER SUPPLY BEEPING?

NewTek 3Play™ 3PXD820 has redundant, replaceable power supply units. When you i) disconnect or ii) power down just one of the modules, or iii), if a PSU should fail, a beep is sounded to alert you. If you wish, you can mute the alert by pressing the green button on the back of the unit.

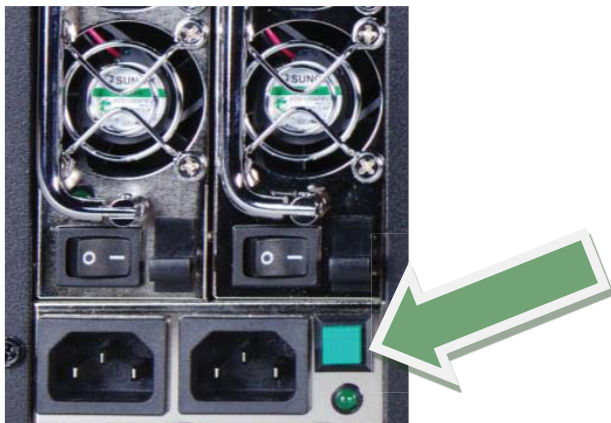


Figure 136

SUPPLEMENTARY QUESTION:

Q: *Where can I obtain replacement or spare Power Supply modules?*

A: Contact NewTek Sales for purchase information for spare components.

A.8.2 WHY ARE MY CLIP DURATION AND COUNTDOWN TIMES DIFFERENT?

At times, the duration shown for a clip in the Clips List may not perfectly match the HUDs countdown timecode. This *Duration* value is based on the original clip framerate. However the *HUD* countdown timecode is based on the project framerate.

B KEYSTROKE SHORTCUTS

Previous row (Clips List and Play List)	Up arrow
Next row (Clips List and Play List)	Down arrow
Previous table cell (Clips List and Play List)	Left arrow
Next table cell (Clips List and Play List)	Right arrow
One page up in table (Clips List and Play List)	Page Up
One page down in table (Clips List and Play List)	Page Down
First cell in row (Clips List and Play List)	Home
Last cell in row (Clips List and Play List)	End
First cell in table (Clips List and Play List)	Ctrl + Home
Last cell in table (Clips List and Play List)	Ctrl + End
Cut	Ctrl + x
Copy	Ctrl + c
Paste	Ctrl + v
Remove event (Clips List) or clip (Play List)	Del
Engage text edit mode	Enter
End text editing	Enter
Exit text edit without saving changes	Esc
Activate Clips List filter field (for text entry)	F3
Add Media (to Clips List)	F5
Send input or camera # to output (LIVE or Clips mode)	Numpad 1- (4 or 8)

C RELIABILITY TESTING

We know our products play vital roles in the productions of our customers. Durability and consistent, robust performance are much more than just adjectives for your business and ours.

For this reason, all NewTek products undergo rigorous reliability testing to ensure they meet our exacting test standards. For NewTek 3Play™, the following standards are applicable:

Test Parameter	Evaluation Standard
Temperature	Mil-Std-810F Part 2, Sections 501 & 502
Ambient Operating	0°C and +40°C
Ambient Non-Operating	-10°C and +55°C
Humidity	Mil-STD 810, IEC 60068-2-38
Ambient Operating	20% to 90%
Ambient Non-Operating	20% to 95%
Vibration	ASTM D3580-95; Mil-STD 810
Sinusoidal	Exceeds ASTM D3580-95 Paragraph 10.4: 3 Hz to 500 Hz
Random	Mil-Std 810F Part 2.2.2, 60 minutes each axis, Section 514.5 C-VII
Electrostatic Discharge	IEC 61000-4-2
Air Discharge	8K Volts
Contact	4K Volts

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This product uses the following libraries, licensed under the LGPL license (see link below). For the source, and the ability to change and recompile these components, please visit the links provided:

- FreeImage library <http://freeimage.sourceforge.net/>
- LAME library <http://lame.sourceforge.net/>
- FFmpeg library <http://ffmpeg.org/>

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