



**The Helping Friendly
Book**

(Of Video Editing)

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Welcome to CDA Video

This facility has been modeled on an artist's *atelier*, a place that makes tools and space available to people who know how to use it. It is not a service facility that does things for people, nor do we provide basic instruction. Our goal has been to select equipment and configurations that are easy to use without sacrificing accuracy, reliability, and flexibility. This booklet has notes about using our equipment. It is a supplement to the manufacturer's manuals.

There are three S-VHS editing bays. These also play and record standard VHS. There is a transfer bay for copying Hi-8 (or regular 8) to S-VHS or VHS. And an AB roll edit bay that can be configured for mastering to either S-VHS or BETA SP. In addition there is a cassette audio recorder, a CD player, and a small mixer that can be incorporated into any bay as needed.

Sign-Up

If nobody is using a machine, and you are enrolled in a class or doing a CDA project that entitles you to use the room, then you can use an available machine.

There is a sign up book on the file cabinet just inside the door and you can reserve time in specific bays. Many people need to use this room, so please limit your sign up to a 3 hour block, and don't try to book day after day. We have gotten along very well so far on the good will of all the people using the space.

The Cuts Only Editing Bays

These are straightforward, cuts only backspace editors—the type of equipment on which 80% of real world editing is actually done.

The VCRs have a proprietary JVC **control track time code** (if you choose to use it). They are also equipped with SMPTE time code cards and can read and write **LTC** and **VITC** code. (Please see section on time code latter in this manual).

The VCRs have two independent linear audio channels and two HIFI channels that are married to the video. Because the HIFI channels are poorly understood and lead invariably to a great wailing and gnashing of teeth, they have been disabled. (See discussion of audio latter in this manual.)

All three bays have **Videonics character generators** looped through the line input for adding titles.

In these bays you can do the following—

- ♣ Assemble edit.
- ♣ Insert edit any combination of video and two linear audio tracks.
- ♣ Prepare a black tape for insert editing.
- ♣ Make a time code window dub.
- ♣ Add CTL or LTC time code to an original tape
- ♣ Make a submaster of audio or video effects.



Character Generator

Setting up the Edit Bay

Before you start, you should check the following --

Black Burst

Must be **ON**



Generator

Player

Tracking at mid position (noon)

Audio Monitor set to **MIX** and **NORMAL** (unless you deliberately want to monitor
HIFI tracks)

Counter set to **TC** (unless you deliberately want to use Control Track or User Bits).

Remote set to **REMOTE**.



Recorder

Tracking at mid position (noon)

Audio Monitor set to **MIX** and **NORMAL** (unless you deliberately want to monitor HIFI tracks)

Counter set to **TC** (unless you deliberately want to use Control Track or User Bits).

Remote set to **REMOTE**.

Video Input set to **Y/C** for editing or **LINE** for blacking, making window dubs, or using the character generator.

Audio Record Level Normal set at noon to start and adjust as needed



Controller

Counter set to **TC** (unless you deliberately want to use Control Track or



User Bits).

Use pre-blacked tape on the recorder side, and INSERT edits only (the blue and green buttons in the center at the top). Do a few edits on scratch tape first to make sure everything is working before doing anything on an important tape.

VM-41 Box

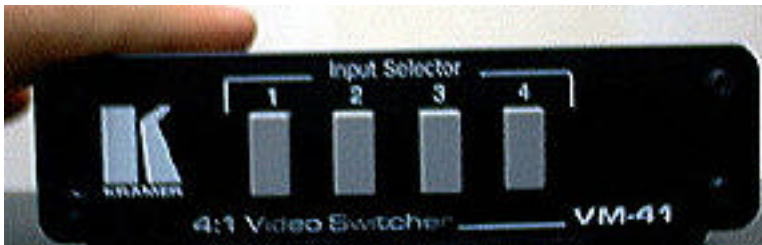
The VM-41 box selects the signal going in to the *video line input*. To select those options set the *Video Input* on the recorder to **LINE**.

Position 1 – **black burst**, use this to black a tape

Position 2 – **player monitor output**, for recording a window dub of the tape in the Player

Position 3 – player line out through character generator, for titles.

To use the character generator, you need to see its preview output. That is connected to one of the video inputs on the player monitor. You change the monitor input with a small button on the front of the monitor.



Menus

One of the reasons the VCRs are easy to use is that many of the optional settings are controlled with a menu system. Don't mess around with the menu system unless you are can put it all back to normal when you are done. You should not have to change menu settings, with the following exceptions.

♣ **003** VCRs are set up for **external sync** (which increases editing accuracy). The **black burst generator** must be turned **on**. If you do a series of edits and they play back with a pencil line horizontally through the picture that turns into a larger band of black when you push **STILL**, you have a sync problem and those edits will have to be redone. Check that the **black burst generator** is on. If the problem persists, you can change menu 003 to **INTERNAL** on the player and **VIDEO** on the recorder.

♣ **200** The recorder should be set to **HI-FI Audio Record OFF**. If you want to record HIFI, you can turn it on with this menu switch.

♣ **201 Dolby** is **ON**

♣ **202 Audio Limiter** should be **OFF**

♣ 206 This switch goes between audio on channel 2 or LTC time code on channel 2. It should be on **AUDIO**

♣ 207 **Audio Input Select** should be on **HIFI**. That way whatever is fed to the HIFI terminals will be available to both HIFI and Normal tracks. This can be changed to **SEP** for some particular reasons.

♣ 337 **Slow mode** is normally set to **LINEAR**. This way you can hear the sound at jog speed, great for finding the beat. Alternatively you can set it to **STEP** which gives a smooth slow motion effect from which you can record a submaster, but you cannot hear the sound at jog speed.

♣ 418 **VITC.LTC/CTL TC** This selects between *SMPTE time code* and *control track time code*. Should be set to whatever type of code you are using.

♣ 500 This switch turns the screen data display on and off. I usually leave it on unless I am doing titles.

Setting the Menu

- 1 – Press **MENU** on the front of the VCR. The monitor will turn blue with menu selections in white letters.
- 2 – Use the (+/- **shift**) buttons to cycle through the menu items
- 3 – Press **SET** to change the menu item setting.
- 4 – Press **MENU** to exit the menu system.



This is covered in detail in the manuals.

Note About Audio

For 99% of your editing, you will want to use the **normal** output of the player in to the **HIFI** inputs of the Recorder. This will give you a straight normal 1 to normal 1, normal 2 to normal 2 edit. The patch panel should have jumpers from the plugs labeled **Player Normal OUT**, to the plugs labeled **Record HIFI IN**.

The patch panel affords some easy flexibility for other configurations such as –

- ♣ Patching the CD player or audio cassette player directly to the HIFI inputs.
- ♣ Putting the mixer between the player outputs and recorder inputs.
- ♣ Patching 1 KHz reference tone to the recorder inputs.
- ♣ Patching the player monitor out to one of the record inputs.
- ♣ Patching in the HIFI player tracks.

There are a lot of tricks and slights of hand that can be used to enhance sound in a cuts only two machine bay. You can use them all and invent some of your own, as long as you put the patch back to normal when you are finished.



Dubbing Hi-8 to S-VHS

The dubbing bay consists of a Hi-8 VCR, a Time Base Corrector (TBC), and a S-VHS recorder. The time base corrector stabilizes the video signal.

To dub a tape from Hi-8 to S-VHS, turn on the Hi-8 Player, the monitor, the S-VHS recorder, and the TBC (with a switch on the back near the power cord). The patch panel should be set up for the **Hi-8 Audio Out** to go in to **S-VHS HIFI IN**.

- 1 -- Cue up the Hi-8 tape to the point you want to start and **PAUSE** it.
- 2 -- Push **PLAY** and **RECORD** on the S-VHS and you will begin recording.
- 3 -- Wait 10 seconds and then release **PAUSE** on the Hi-8.

Check your Audio levels.

If the S-VHS is set to TC, it will record either CTL or VITC time code. In general set the menu item 418 to VITC.LTC and record vertical interval SMPTE time code. To read this, the player has to also be set to **VITC.LTC** on menu item 418

If you need to dub selected portions of a Hi-8 tape, you can push **PAUSE** on the S-VHS deck, cue up the next Hi-8 segment, then push **RECORD** and **PLAY**. The time code should continue from where you left off, but it probably won't, so when you start to edit, you will have to reinsert it in the edit bay.

Time Base Corrector Notes

When you turn the TBC on (with the switch at the back), it resets itself to unity position which is good for 99% of what you want it to do. Unless you know a lot about video signal processing, you are ahead of the game to leave it alone.

If you have a bad source tape and need to tweak it, I can set up a waveform monitor in the video chain and you can make some adjustments with the proc amp on the TBC. This is risky because the monitor is not very accurate or indicative of what is actually going on the tape and you can really mess up your signal.

For uneven source tapes, you can set the TBC to AGC (Automatic Gain Control) by holding up the 5th and 1st levers from the left (this turns AGC on: 5th up, 1st down turns AGC off). This is in the manual.

If somebody has been messing with the TBC, you can reset it to unity by simultaneously depressing the 2nd and 3rd levers.

Time Code Notes

Precise logging and editing of video and audio tape is accomplished with time code on the tape which identifies every frame with a unique *hours:minutes:seconds:frames* address.

The JVC VCRS have a proprietary time code that is written in the control track area of the tape. It is called **CTL** or *control track time code*. Its advantage is that it does not take up any other tape real estate, and can be added after the recording has been made (you can shoot a tape and code it later). The disadvantage is that it only works on JVC machines, and so the code used in this room will not often be useful when you go to another facility or need to interface with digital audio or video equipment.

Our machines also have SMPTE time code cards. SMPTE is an industry standard, and tapes with SMPTE time code will interface with any outside facility.

VITC is *vertical interval time code*. It is recorded in the video in the space between frames. It must be recorded at the time the video is recorded.

LTC is *linear time code*, and is recorded on one of the linear audio tracks, which then cannot be used for audio. It can be post-striped on a previously recorded tape.

There are dozens of ways to use time code. The key to success is figuring out the pathway your project will take and choosing the appropriate code.

Adding CTL (or LTC SMPTE) Time Code to Recorded Tapes

It is possible to add Control Track Time Code to your original tapes using the controller and the record deck. (Alternatively, you can add LTC SMPTE time code to audio track 2 which would replace track 2 audio. I don't recommend this unless you have a specific reason to do so)

- 1 -- Put original tape in the RECORD deck and rewind it to the start
- 2 -- Play it for ten seconds and then push STILL. (This gives you pre-roll space. you cannot do an edit at the very beginning of a tape because you need five seconds of pre-roll. If you don't have it, the machine will freeze.)
- 3 -- Press TC-Hold/Preset on the controller. The display should then read 00:00:00:00. (You can set another time, it is in the manual.)
- 4 -- Press SHIFT and TC-Hold/Preset at the same time
- 5 -- Press the red RECORD button to confirm that 00:00:00:00 has been entered as the preset.
- 6 -- Press SHIFT and AUD-2 at the same time to put the editor in the correct mode to insert time code. The red light above the AUD-2 button should blink rapidly. (If it doesn't, then you will be erasing audio track 2 instead of recording time code.)
- 7 -- Press AUTO EDIT, the screen display will say "insert".
- 8 -- At the end of the tape, press ALL STOP

BLACKING A TAPE

Make sure there is black burst input to the record deck. Set input to LINE and VM-41 to position 1

Set COUNTER to TC

Rewind tape to the start

Press RECORD and PLAY

Screen should be black and the time should be counting up.

When finished blacking tapes, reset input to Y/C.

Using menu item 418 you can choose between recording CTL or VITC code.

MIXER NOTES

The Mackie 1202VLZ mixer is a wonderful tool. It can do many things.

It takes the input of a reference tone, a microphone, a VCR, the CD player, and the cassette player; lets you set the EQ and level on any combination; and then outputs to the normal and HIFI tracks on the S-VHS VCR.

The first four faders (from the left) are mono and have mike preamps. The other four are stereo faders and handle right and left together.

EACH FADER (from the top down)

AUX1 AUX2 -- These are not connected to anything.

EQ (HI, MID, LO) -- You should start with these in the unity position (U). They increase or decrease the sensitivity of the high, middle, and low ranges of the audio spectrum and can be used, for example, to roll off tape hiss or high room tone, or take out the rumble of wind or heavy machinery. They can also be used to boost the mid tones of many voices. Use headphones to evaluate equalization, you can get into trouble fast.

PAN -- In unity (U) position, the signal goes equally to the right and left channels. You can use this pot to send it all to the right, all to the left, or any balance in between.

MUTE -- When this button is depressed, the fader is muted; when it is up, the fader is live.

PRE-FADER/SOLO -- Your guess is as good as mine.

GAIN -- This sets the relative level of the fader. If you are mixing several sources, this is what you use to make it louder softer relative to the other sources.

THE RIGHT LOWER QUADRANT

SOURCE—depress the button for main mix, all others should be up

HEADPHONE GAIN -- This sets the volume for the headphones.

MAIN MIX -- This sets the overall level of the mix. You can leave it at unity (U) and set the levels with the fader pots, or you can set the relative loudness of each source on the fader pots and the level of the whole mix with the MAIN MIX. You want to avoid setting the fader pot very low and the MAIN MIX pot very high, or conversely the fader very high and having to squelch it with the MAIN MIX pot.

SET UP

The Black Burst Generator outputs a 1 KHz reference audio tone which can be plugged into a fader (e.g. #1).

All mutes should be down except #1 which is up

Set MAIN MIX to UNITY, adjust fader pot so meter reaches 0

Adjust VCR NORMAL AUDIO RECORD levels so meters are at 0

Adjust HIFI AUDIO Record levels on the VCR so the meters are at 0 (if you are recording on the HIFI tracks)

The meter on the mixer now reads the same as the ones on the VCR, except that the mixer measures peaks, and the VCR averages, so you can run the mixer a little hot.

Push the channel 1 mute button off

Select a sound source and patch it in to one or more faders and un-mute those channels with the mute buttons. If you are recording sound only, use LINE on the video input and record video black with your audio. This is important.

Dubbing a CD or Cassette to S-VHS

Set video input to **LINE** (you need to record black with your sound).

If you wish, you can record 30-60 seconds of reference tone on your tape. This is essential if you are going to send it out for dubbing—without tone at the head they can't accurately set the level for the dubs. It also makes it easier to set recording levels during editing. You do this by patching the **TONE** output on the patch panel to the **HIFI** inputs.

Patch the CD player or audio cassette player outputs to the **HIFI** inputs on the patch panel. (You will have to disconnect whatever is already connected.)

Play the source and set the levels on the recorder.

Cue up the source, press **REC** and **PLAY** on the S-VHS deck

Start the source

Recording narration with a microphone

We don't have a mike, but you can bring in your own (with a 1/8" plug), and insert it in the lower left front of the recorder. Then set the level on Audio 2. It does not record on audio 1. As with CDs and cassettes, you need to record video black at the same time.

Copying a VHS or S-VHS Tape

- 1 – Put blank tape in the recorder, and rewind to beginning
- 2 – Put source tape in the player and cue to start point and PAUSE
- 3 – On the controller, select Recorder and push REC and PLAY
- 4 – On the controller, select Player and after 10 seconds, push PLAY

The blank tape does not have to be blacked before doing this.

BUYING TAPE

This is Hollywood, and video tape of all sorts is widely available from a wide range of vendors. These are some of the ones we have used.

Lu Valle bookstore has been stocking S-VHS tape, as well as 30 minute VHS tapes for editing. They also stock Hi-8 and S-VHS-C. They are five minutes walk from the CDA and have very fair prices.

Bel-Air Camera in Westwood also sells Hi-8 and S-VHS locally.

If you are buying five or more units, try Steadi Systems in Hollywood (1014 North Highland, just south of Santa Monica Blvd.). Phone (213) 461 6868. Ask for Ben and say you are UCLA student working with John Bishop and would like a discount.

Videotape Products (213) 664 1144 has very good prices if you are buying more than a few tapes.

Glossary

Assemble edit – An edit in which the incoming video and audio hook on to existing video. New control track is laid down in an assembly edit and consequently the out point is dirty. If you do an assemble edit in the middle of a program, you will make an irreparable hole in the control track.

Black burst – This is the video color black. It is used as a reference to keep the sync working together on video equipment, and as a source of video for pre-blackening a tape to prepare it for video editing.

Black burst generator – A device that produces video black. There is one at each edit bay and it must be turned on.

Black tape – A videotape that has black recorded continuously from head to tail. Such a tape is needed to do insert editing.

Character generator – A device for putting titles on video.

Controller – A device that controls both the player and recorder for making edits.

Control track – This is an electronic pulse on the edge of the tape used to control its speed and position in relation to the rotating video heads. It is a bit like sprocket holes on film.

Control track time code – The JVC decks have a proprietary time code which is recorded in the space used by the control track pulses.

CTL -- (see control track time code)

Cuts-only – A simple editing system consisting of a player, an editing recorder, and a controller. It cannot do dissolves and other special effects between shots.

Hi-8 – A standard recording medium for consumer video. It will not play back on regular 8 VCRs or camcorders. It has higher resolution and cleaner color than regular 8.

HIFI audio – A high fidelity recording system for audio that is written by the rotating video heads. It is an enormous pain in editing and has been turned off on our machines

Insert edit – An edit of either video, audio, or both that is made in the middle of existing video (such as a black tape).

Line – One of the two video inputs on the Recorder. It is selected by the VIDEO INPUT switch on the front of the Recorder. Our machines are set up so that LINE is attached to the VM-41 box.

Linear audio – (see normal audio)

Linear time code – This is a standard time code made up of audio pulses and recorded on a standard or normal audio sound track. It can be recorded on track 2 with our machines, but doing so means you can't use that track for audio.

LTC -- (see linear time code)

Player – A VCR that only plays back, and does not record .

Recorder – A VCR that can both play and record. It has more buttons on the front.

Regular 8 – One of the consumer video formats. Regular 8 tapes will play on Hi-8 equipment, but Hi-8 will not play on regular 8.

SMPTE time code – This is the industry standard time code that is compatible among all audio and video equipment. All our VCRs have SMPTE time code capability in addition to CTL time code.

S-VHS – A high resolution version of VHS tape. S-VHS will not play on regular VHS VCRs but regular VHS will play on S-VHS machines

Vertical interval time code – SMPTE time code recorded as video pulses in the invisible part of the picture between frames.

VHS – One of the consumer video formats.

Visible time code window dub – (see window dub)

VITC – (see vertical interval time code)

VM-41 Box – This box is used to select the input to the Lien connector on the Recorder.

Window dub – A copy of a videotape in which the time code information has been made visible and recorded in the picture. They allow you to easily write down the time code information as you edit, particularly if you are editing on equipment that does not display the hidden time code.

Y/C – This is a connection on the VCRs in which the black and white picture and color information are separated. It is a cleaner signal than the composite signal that goes in through the Line input. For all straight editing, the Y/C position on the Video Input should be used.