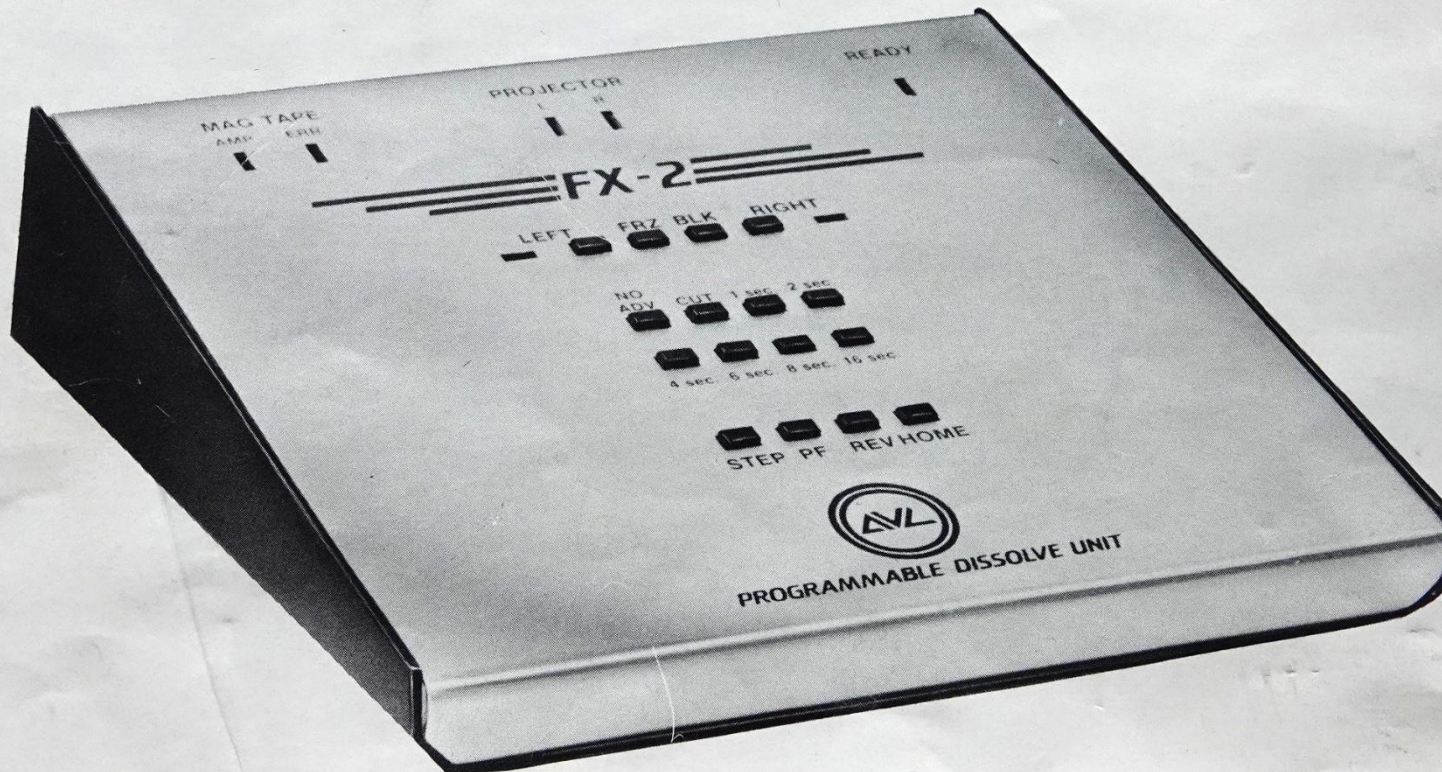




FX-2

OPERATOR'S MANUAL



CONGRATULATIONS!

If you've shopped for a basic audio visual system that would provide you with more for less ... you've made a very wise choice in the selection of the FX-2.

No other two-projector programmable dissolve unit provides:

- **more on-screen excitement**
- **more professional presentation quality, and**
- **more simplicity of operation ... for**
- **LESS of an investment**

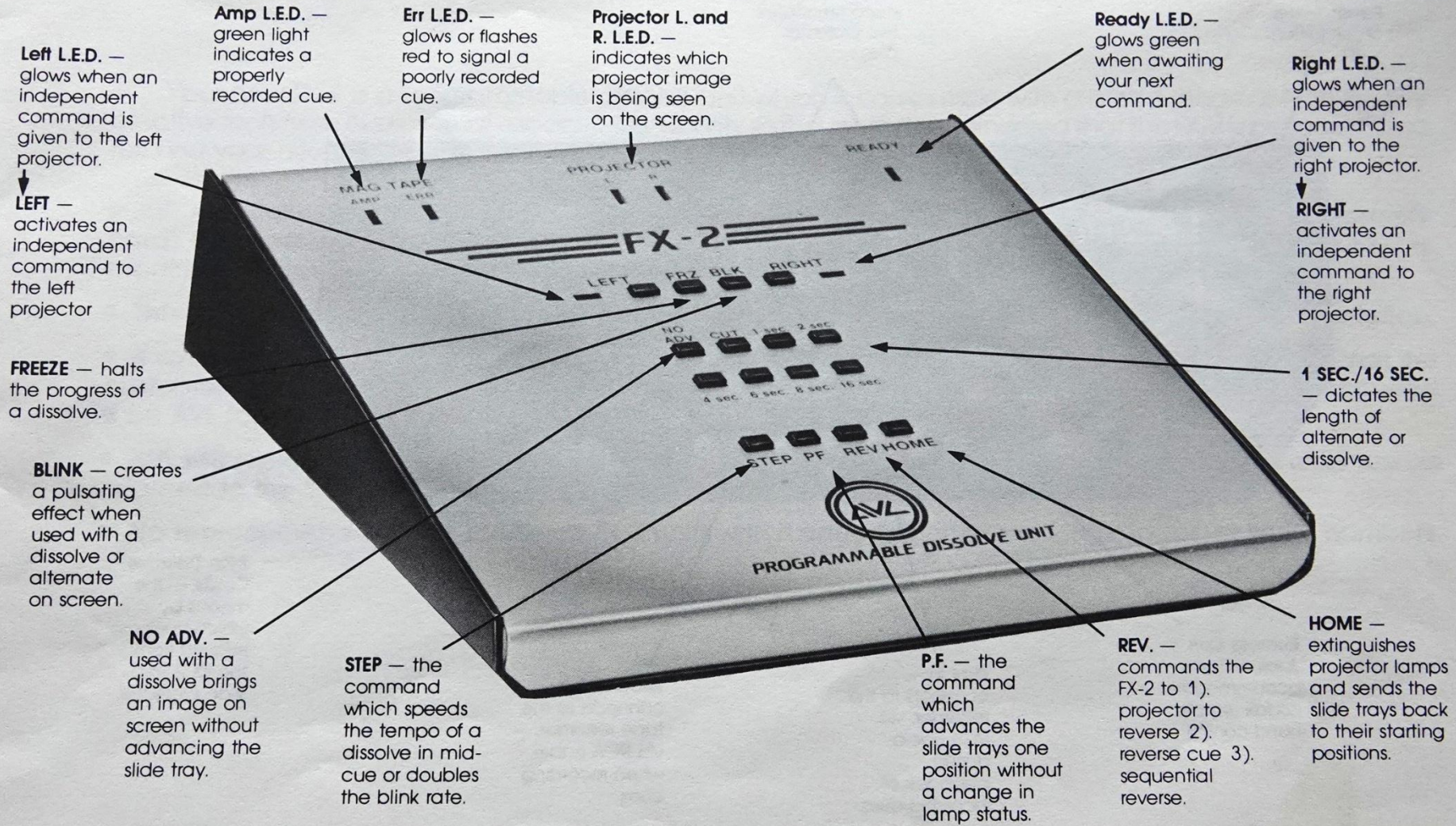
... than the FX-2 from Audio Visual Laboratories.

To thoroughly appreciate the features of your new FX-2, take a few quiet moments reviewing the following pages of your owner's manual. Really getting to know your new FX-2 will pay big dividends in exciting and trouble-free presentations for years to come.

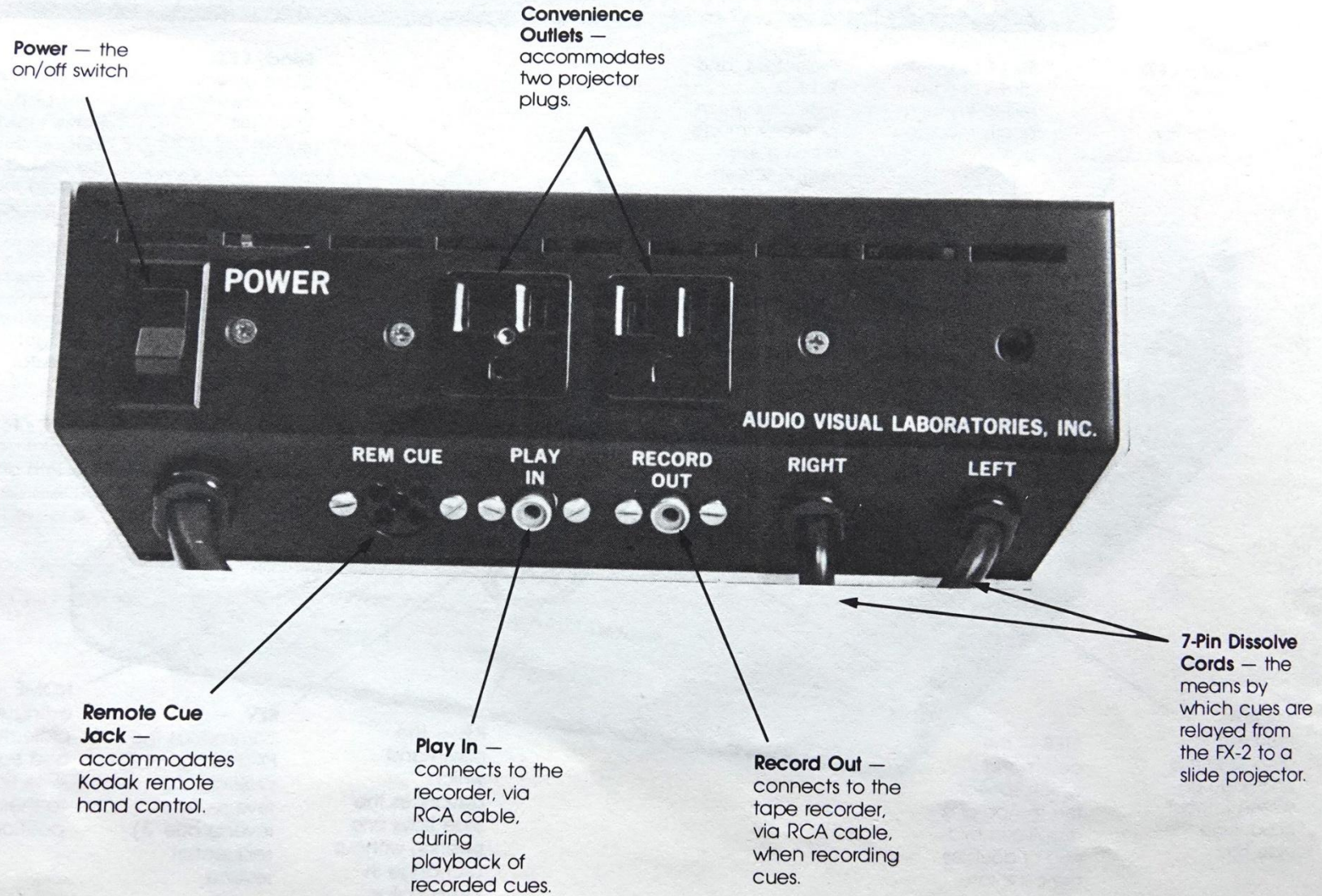
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FX-2 FUNCTIONS



BACK PANEL



YOUR WARRANTY OF QUALITY

Your new FX-2 is a programmable dissolve unit which is compatible with a broad range of high quality creative tools from Audio Visual Laboratories. Quality so thoughtfully engineered that the FX-2 is protected by a full one year new product warranty.

- **AVL warranties the FX-2 for one year from the date of factory shipment (or receipt of verifiable warranty card) from defects in manufacturing, or component failure. This warranty is void, however, if the FX-2 is modified, misused, or damaged.**
- **This warranty covers charges for parts and labor, plus one-way shipment via UPS ground transportation.**
- **If available, AVL will provide a free loaner for FX-2 units undergoing warranty service, providing that the customer pays both the outgoing and returning freight. This warranty does not cover rental charges incurred if an AVL loaner unit is not available, however.**
- **AVL will replace an FX-2 which fails within 90 days of factory shipment, but the defective FX-2 unit must be returned to the Service Department before a replacement will be shipped by AVL.**
- **No replacements can be made on FX-2 units which carry customer markings, logos, or serial numbers.**

PREPARING TO OPERATE YOUR FX-2

Preparing your FX-2 for operation is easy... just follow a few simple steps:

- 1 Be certain that the power switch on the rear panel of the FX-2 is in the OFF position. Component damage could result if the power is left on.
- 2 Check that you have an "Ektagraphic" — Type projector with a 7-Pin input.
- 3 Connect each 7-pin dissolve cord to its projector. Left is the top projector — Right is the bottom.
- 4 Insert projector cords into the two convenience outlets located on the rear panel of the FX-2. These outlets, however, cannot accommodate projector lamps of more than 300 watts.
(If a remote hand control is to be used, plug it into the jack labeled "REM CUE" on the rear panel of the FX-2. The jack will accept any standard Kodak remote hand control. A "FWD" command on the hand control will effect a two-second dissolve... a "REV" command will effect a cut... and a "FOCUS" command will effect a sequential reverse.)
- 5 Plug the FX-2 into a wall receptacle designed for a three-prong plug.
- 6 Switch each projector to the FAN setting.
- 7 Now turn the FX-2 power switch to the ON position, and watch for the green READY lamp on the keyboard to light up. Should any other light come on... stop, and immediately refer to the troubleshooting checklist at the rear of the owner's manual.
- 8 Check that all slides are glass mounted and properly inserted into standard 80-slide trays.
- 9 Place trays on projectors, align them on the screen; (alignment slides are available in most photo supply stores). Then focus each projector.
- 10 Set both projector trays to "HOME" position... slot number one, with both projector lamps off.

CREATING PROGRAMS... Without Creating Problems

"Programming"... the very mention of the word strikes fear into the hearts of most people not blessed with an advanced engineering degree.

But it shouldn't.

"Programming" simply means providing clear instructions to a machine enabling it to perform whatever function you desire.

Without the FX-2... presentations are limited by slide projectors which perform only two functions: turning the projector lamps on or off, and advancing (or reversing) the slide trays.

With the FX-2... your presentations can sparkle with over 20 special F.X. (yes, that's where the name comes from!), that can be stored and played back perfectly... on command.

Later pages will explain the memory and playback features of your new FX-2. But first, let's discuss the key to successful FX-2 programming: **simplicity**. All commands for the FX-2 are in plain English, and are clearly labeled on the keyboard. Questions about the language of programming, however, can be quickly answered in the glossary at the rear of your manual.

NORMAL SEQUENCE

This exercise demonstrates the most basic function of the FX-2, advancing each projector in a normal left to right sequence.

STARTING POSITION: Home position (Both projector trays on slot number one, with both projector lamps off).

EXERCISE:

On The Keyboard

- 1 Press "8 SEC."
- 2 Watch for the "READY" light.
- 3 Press "4 SEC."
- 4 Watch for the "READY" light.
- 5 Press "HOME"

On The Screen

- 1 The left projector image will appear on screen with gradually increasing intensity over an 8 second span of time.
- 2 The left projector image is now fully lit.
- 3 Within 4 seconds, the left projector image will gradually dissolve off the screen, while the right projector image simultaneously appears and gains intensity.
- 4 The right projector image is now fully lit.
- 5 The screen goes black while both projector trays go back to slot one.

INDEPENDENT SEQUENCE

Now you'll learn how to override the normal sequence of left projector/right projector activity, allowing you to alter the sequence to suit your needs.

STARTING POSITION: Home position. (Both projector trays on slot number one, with both projector lamps off).

EXERCISE:

On The Keyboard

- 1 Press "RIGHT"
- 2 Pause for a moment.
- 3 Press "CUT"
- 4 Watch for the "READY" light.
- 5 Press "LEFT"
- 6 Pause for a moment
- 7 Press "CUT"
- 8 Pause for a moment.
- 9 Press "HOME"

On The Screen

- 1 No Effect
- 2 No Effect
- 3 The right projector image will appear on screen within one-tenth of a second.
- 4 The right projector image is now fully lit.

PAUSE

- 5 No Effect
- 6 No Effect
- 7 The left projector image will appear on screen within one-tenth of a second.
- 8 No Effect
- 9 The screen goes black while both trays revert to slot one.

THE DISSOLVE

This exercise will demonstrate the FX-2's most basic on-screen effect: causing the image on the screen to appear or disappear gradually ... rather than abruptly flashing from one image to the next.

STARTING POSITION: Home position.

EXERCISE:

On The Keyboard

- 1 Press "8 SEC."
- 2 Watch for the "READY" light.
- 3 Press "16 SEC."
- 4 Watch for the "READY" light
- 5 Press "HOME"

On The Screen

- 1 The left projector image will appear on screen, gradually becoming brighter within 8 seconds
- 2 No Effect
- 3 Within 16 seconds, the left projector image will gradually dissolve off the screen, while the right projector image simultaneously appears and becomes brighter.
- 4 No Effect
- 5 The screen goes black while both trays reverse to slot one.

THE FREEZE

A very dramatic effect. This exercise will enable you, in the middle of a long dissolve, to temporarily halt the increasing brightness of the lamp, then allow it to continue its progress.

STARTING POSITION: Home position.

EXERCISE:

On The Keyboard

- 1 Press "16 SEC."
- 2 Press "FREEZE"
- 3 Press "FREEZE"
- 4 Press "HOME"

On The Screen

- 1 The left projector gradually begins to build intensity.
- 2 The left projector image ceases to build intensity — or "FREEZES" the brightness of the lamp at that point — until another command is given.
- 3 The lamp now continues to build to full intensity.
- 4 The screen goes black while both projector trays reverse to slot one.

STEP

It happens sometimes.

You've just programmed a 16 Sec. dissolve and suddenly realize you have only 8 seconds to bring up the next slide. What do you do? Step it!

The step function of the FX-2 allows you to speed up the tempo on screen — even in mid-cue — by reducing the amount of time it takes to complete a function down to the next time element.

For instance, if you've already cued a 16 second dissolve, by pressing "STEP", the FX-2 will complete the dissolve in 8 seconds. A 6 second dissolve will be completed in 4 seconds and so on.

STARTING POSITION: Home position.

EXERCISE:

On The Keyboard	On The Screen
1 Press "16 SEC."	1 The left projector image appears, slowly increasing intensity.
2 Press "STEP"	2 The left projector image will now complete the action in 8 seconds.
3 Press "8 SEC."	3 The left projector image begins to fade, while the right projector image begins to appear, slowly increasing intensity.
4 Press "STEP"	4 Both left and right projector will complete their sequences in 6 seconds.
5 Press "HOME"	5 The screen goes black while both projector trays reverse to slot one.

BUT DON'T WAIT ...

IMMEDIATELY ...

PROJECTOR FORWARD

This command sequence allows you to advance either or both projector trays one slot at a time.

STARTING POSITION: Home position.

EXERCISE:

On The Keyboard

- 1 Press "LEFT"
- 2 Press "PF"
- 3 Press "RIGHT"
- 4 Press "PF"
- 5 Press "PF"
- 6 Press "HOME"

On The Screen

- 1 No Effect
- 2 The left projector tray advances one slot, both lamps stay off.
- 3 No Effect
- 4 Right projector tray advances one slot, both lamps stay off.
- 5 Right/left projector tray advances one slot, both lamps stay off.
- 6 The screen stays black while both projector trays reverse to slot one.

REVERSE

Commands either or both projectors to go back one slot in the tray or trays, depending on the sequence which last appeared on screen. This command will result either in a "Projector Reverse" a "Sequential Reverse" or something the engineers like to call "True Reverse Cue".

Since it's a lot easier to demonstrate than describe ... Let's just do it ...

STARTING POSITION: Home position.

EXERCISE: PROJECTOR

On The Keyboard

- 1 Press "LEFT" and "RIGHT"
- 2 Press "CUT"
- 3 Press "LEFT" and "RIGHT"
- 4 Press "REVERSE"
- 5 Press "HOME"
- TRUE REVERSE CUE**
- 6 Press "LEFT" and "RIGHT"
- 7 Press "CUT"
- 8 Press "REVERSE"
- SEQUENTIAL REVERSE**
- 9 Press "REVERSE"

10 Press "REVERSE"

11 Press "HOME"

On The Screen

- 1 No Effect
- 2 Both Projector lamps come on.
- 3 No Effect
- 4 Both trays reverse one slot and both lamps stay on.
- 5 The screen goes to black while both projector trays reverse to slot one.
- 6 No Effect
- 7 Both projector lamps come on.
- 8 Both lamps go off and tray doesn't move
- 9 Right projector tray will reverse and right lamp comes on.
- 10 Right projector lamp goes off, the left projector tray goes back one slot, and the left lamp comes on.
- 11 The screen goes to black while both projector trays reverse to slot one.

THE QUICK BLINK

The Quick Blink uses the step for a two-speed effect on screen: a blink begins to pulsate on screen ... and then speeds up to double the pace for increased emphasis...

STARTING POSITION: Home position.

EXERCISE:

On The Keyboard

- 1 Press "LEFT" and "BLINK"
- 2 Press "LEFT"
- 3 Press "CUT"
- 4 Press "STEP"
- 5 Press "BLINK"
- 6 Press "HOME"

On The Screen

- 1 No Effect
- 2 No Effect
- 3 The left projector image comes up blinking.
- 4 The blinking increases speed on screen.
- 5 Left screen blinking stops. Projector lamp goes to black.
- 6 The screen stays black. No projector movement.

NOTE: The projector lamp must reach full intensity before programming a Quick Blink command ... a Quick Blink cannot be programmed mid-way through a dissolve.

THE BLINK

Whether to add a bit of animation, or to rivet the viewer's attention to a particular point, or simply to build drama into the overall presentation, you'll find the Blink to be an unusually versatile effect on screen. The FX-2 allows you to create any of three separate Blink patterns: Alternate, Simultaneous, or Independent.

STARTING POSITION: Home position.

EXERCISE:

On The Keyboard		On The Screen
1 Press "LEFT" and "RIGHT"	ALTERNATE BLINK	1 No Effect
2 Press "CUT"		2 Left and right images appear.
3 Press "BLINK"		3 First the left, then the right screen images pulsate rapidly.
4 Press "BLINK"		4 Both images stop pulsating, both projector lamps remain lit.
5 Press "LEFT" and "RIGHT"	SIMULTANEOUS BLINK	5 No Effect
6 Press "BLINK"		6 Both screen images begin pulsating together.
7 Press "BLINK"		7 Both images stop blinking, and both projector lamps remain lit.
8 Press "LEFT"	INDEPENDENT BLINK	8 No Effect
9 Press "BLINK"		9 Left screen image begins to pulsate.
10 Press "BLINK"		10 Left screen image stops blinking and projector lamps stays on.
11 Press "HOME"		11 The screen goes black while both projector trays revert to slot one.

NOTE: Always remember to disengage the blink effect by pressing the "BLINK" command a second time when the pulsating effect is no longer required.

RECORDING, PLAYBACK & EDITING

INTRODUCTION

As your own experience will confirm, the audio or sound portion of a show can make it or break it. It's the familiar tape recorder which adds another dimension to the on-screen excitement.

But there's another dimension to audio tape, as well. Many people don't realize that the same audio tape which plays music, narration, and sound effects — also acts as the memory function for your FX-2. Just as your magnetic audio tape will remember and play back a favorite piece of music on command, it can also "remember" and play back projector cues to your FX-2, on command.

To understand how magnetic tape can accomplish all this, imagine standing between two railroad tracks. On your tape, the left track may be utilized to record music, narration, or even sound effects, leaving the right track available for later recording of programming cues. After recording both tracks properly, however, your audio cassette recorder will distinguish between the two, playing back music for the audience and cues for your FX-2, all at the proper instant.

CHOOSING THE PROPER AUDIO EQUIPMENT

Recorder: Because of their almost universal popularity, most standard stereo cassette recorders available in homes and offices are appropriate for recording and playback with your FX-2.

To be certain, check that your stereo recorder features:

- 1 Separate "RECORD" and "PLAYBACK" controls for each channel
- 2 "VU" meters which indicate decibel levels
- 3 Adjustable gain for input and output
- 4 Automatic "STOP", "PLAY", "FAST FORWARD", and "REWIND" functions
- 5 A noise reduction (or dolby) function which can be disengaged during recording and playback of FX-2 cues.

Cassette: Most compact cassettes, often called "Phillips" cassettes, are appropriate.

Before purchasing, note the designation printed on the package, most often C-30, C-60, or C-90. The numerals after the letter "C" indicate the playing length on each side of the tape (assuming a standard speed of $1\frac{7}{8}$ inches per second). Purchase the cassette which is closest to the length of your show to assure a multitude of perfect showings.

PREPARING TO RECORD A PRESENTATION . . . ON PAPER

The recording of your presentation through the FX-2 will be far easier if you've prepared a "game plan" on paper, and in advance.

If the presentation requires an audio script . . . now's the time to have it at hand. If you haven't done that already, first organize the key ideas for presentation into outline form. A script will almost write itself when the ideas are organized in advance.

When the audio script is completed, you should prepare a "video script," or story board. These rough sketches of on-screen images, when put into proper sequence, act as a road map to indicate the proper slide to appear on screen at every point in the presentation. Finally a cue sheet listing the cues and effects used in the presentation can be assembled from the script and story board. It will be your ultimate guide in programming cues into the FX-2.

With both audio and video segments mapped out on paper, and all of your cues listed, only one step remains before you begin to set up the equipment to record program cues. If the presentation calls for a sound-track (often a musical background), pre-record that sound track on the left audio channel of your cassette.

EQUIPMENT SET UP

The proper line up of equipment for recording FX-2 cues is simple. In addition to your two projectors, the FX-2 unit, and your stereo cassette deck, you'll need only a simple "RCA cable" available at any electronic equipment retailer.

- 1 Press the "HOME" command on the FX-2 keyboard, and wait until both projector lamps are extinguished, and both trays have returned to slot one.
- 2 Connect one end of the cable to the "record out" jack on the rear panel of the FX-2, and the other end to the "line input" jack on your tape recorder.
- 3 Disengage any "dolby" or "DBX" controls on your tape recorder, and set the tape recorder to the "record" function.
- 4 Press "16 Sec." on the FX-2, and while the dissolve is taking place, check the VU meter on your recorder to assure that the input levels are being received in a range between +1 and +3 decibels.
- 5 Press "HOME" on the FX-2 keyboard.

RECORDING

Now with preparation complete, actual recording of cues is the simplest process of all.

- 1 Set the recorder to "Record" on the right channel
- 2 Turn on both recorder and FX-2
- 3 Follow your cue sheet, executing commands on the FX-2 keyboard with the proper spacing of time between each cue.

PLAYBACK

CONGRATULATIONS! You've just recorded the first of many presentations on your new FX-2

Now you'll want to assure that the show is in sync ... that is, that the audio is properly timed to what's happening on screen. To do that — and to be certain that you have a good crisp recording of all your cues — follow this simple procedure:

- 1 Press "Home" on your FX-2 keyboard.
- 2 Utilizing your RCA cable, connect one end to the "line out" jack of your tape deck, and the other to the "play in" jack of your FX-2.
- 3 Now re-wind, and start to playback the tape, keeping one eye on the upper left corner of your FX-2. That area, marked "MAG TAPE" is designed to assure that your cues have been properly recorded.
 - A green signal from the "AMP" light means a properly registered cue. Continue playback.
 - A **flashing** red signal from the "ERR" light indicates that the tape has only partially received the proper signal. Stop, double check your recording procedure, and re-record if necessary.
 - A **constant** red signal from the "ERR" light indicates that the cue has been completely missed. Re-check that the VU meter is set to the +1 to +3 decibel range, adjust if necessary, and re-record.
- 4 **The FX-2 keyboard is automatically locked while your tape is playing back** so that additional cues can't be accidentally entered during a presentation.

Your FX-2 is engineered with AVL's exclusive Posi-trak feature which locks your program to the audio; during a show if your presentation comes out of sync, Posi-trak will automatically re-sync it for you. This feature also allows you to fast forward or rewind a tape; making editing easier and worry-free.

EDITING

Editing with your FX-2 is a breeze if you'll remember to record one section of your presentation at a time.

When you decide to change a cue that's already been recorded, simply play the tape up to just before that cue where change is necessary, and re-record from that point on to the desired position (Don't worry, Posi-trak will keep your projectors in sync!). In the case of multiple presentations great care must be taken if they have the same beginning point, if both shows start at zero, as the Posi-trak would return to zero when playing back the second show.

SPECIFICATIONS:

- 1 Controls:** Real time, two projector
- 2 Power Requirements:** A.C. 115 volts, 50/60 Hz or 220 volts, 50/60 Hz.
- 3 Power Consumption:** 30 watts, excluding projectors
- 4 Convenience AC Outlets** (rating 300 watts each)
- 5 Projector Lamps:** A maximum of 1200 watts (115 VAC)
- 6 Remote Control:** Compatible with Kodak 3-function hand control
- 7 Play in:** Compatible with RCA cable, and all AVL programmable equipment, for incoming mag tape data.
- 8 Record out:** Compatible with RCA cable for outgoing mag tape data. Time divisions multiple signal (Digital). Multiple passes with CRC and Posi-trak for reliability.
- 9 Dimensions:** 8.3 inches x 8.75 inches x 3.25 inches.
- 10 Weight:** 5 lbs., 5 oz.
- 11 Origin:** Manufactured in Atlantic Highlands, N.J., U.S.A.
- 12 Time table for Cues** (in seconds): Dissolve Time and Advance Time for projector.

	60 Hz	50 Hz
Cut	1.5	2.1
1 Sec.	2.3	2.3
2 Sec.	3.3	3.3
4 Sec.	5.3	5.3
6 Sec.	7.3	7.3
8 Sec.	9.3	9.3
16 Sec.	17.3	17.3

MULTI-IMAGE GLOSSARY

Alternate Visually like a "CUT" on screen except that the tray does not advance.

Assignment The designation of which projector the action will occur on.

Blink Creates a pulsating effect when used with a dissolve on screen.

Cut A keyboard command which turns a projector lamp on or off instantaneously. If the lamp has been on, a "CUT" command will turn it off and advance the tray one position. If the lamp has been off, "CUT" will bring the lamp on.

Data Channels Those segments of magnetic audio tape which are designated to carry digital data cues to the projectors.

Dissolve A command which causes a projector lamp to be turned fully on or fully off in a designated time (1 sec., 2 sec., 4 sec., 6 sec., 8 sec., or 16 sec. on the FX-2) thereby creating a fade-on; or fade-off effect. The tray will be advanced one position after a projector lamp is fully off.

Dissolve Alternate Same as dissolve command, without a tray advance.

Freeze A command which halts the progress of a dissolve at mid-point, until a second "FREEZE" command allows the dissolve to continue.

Home The command which causes all projector lamps to be extinguished, and all trays to travel back to their original starting positions via the shortest possible route.

Independent The function which allows the FX-2 to over-ride the normal left/right sequence of projector operation, enabling the projector to be accessed in any desired order.

Mag Tape Any brand of magnetic audio tape used to record data cues and/or audible material such as music, voice or sound effects (**high bias, low noise, 70 micro-sec., EQ**).

Posi-trak The unique AVL feature which automatically maintains synchronization between the audio and video segments of the presentation.

Projector Forward The command, indicated as "PF" on the FX-2 keyboard, which causes the designated projector tray to advance one position without change in the lamp status.

Projector Reverse Indicated as "REV" on the FX-2 keyboard, this command causes the designated projector tray to revert to its last position.

Step The command which allows the operator to speed the tempo on-screen, in mid-cue, by bringing a new slide up and/or old slide down, in the next fastest time increment.

Sync Channel Same as data channel.

TROUBLE SHOOTING CHECKLIST

It happens to the best of us... and usually at the worst possible time.

Sometimes under pressure, frequently fatigued, and often just before show time... something isn't working. Before allowing panic to set in, sit down with a cup of coffee and review the following checklist. Chances are you'll finish off the problem long before you finish the coffee.

- **No Ready Light, Check:**
 - ☐ Power cord connection
 - ☐ Power switch is on
 - ☐ Wiring of the wall outlet
 - ☐ Fuse located inside the unit
 - ☐ Proper grounding in the building
- **MT Error Light, Check:**
 - ☐ Play-in connector is secure
 - ☐ Length of the data cable (you may require an AVL Data Booster)
- **Constant MT AMP Light, Check:**
 - ☐ Record and play cable. Use only one at a time.
- **No Projector Action, Check:**
 - ☐ AMP L.E.D. signal light for proper data link
 - ☐ Connection of projector cables
- **Projector Lamps won't turn off, Check:**
 - ☐ Projector power switch. Must be on Fan
 - ☐ Projector cables plugged into FX-2
- **No Posi-trak, Check:**
 - ☐ If connected to Roadrunner or Eagle, check "POF" (Posi-trak output off). Can be cancelled by command "PON" (Posi-trak output on).
- **No Dissolve Action, Check:**
 - ☐ Incoming cue signal. May have turned keyboard off.
- **No Hand Control Function, Check:**
 - ☐ That it's a standard Kodak projector hand control.
- **Reduced High Frequency Response, Drop Out, Or Loss of Data, Check:**
 - ☐ Dirty playback heads on tape recorder. Clean if necessary.
 - ☐ Magnetized playback heads on tape recorder. De-magnetize.

**If after careful troubleshooting with this checklist,
the problem still persists, call the AVL Service Department:**

East of the Mississippi — (201) 291-4400

West of the Mississippi — (714) 957-8155



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