Show Pro V
Version B

Multi-Image AV Computer
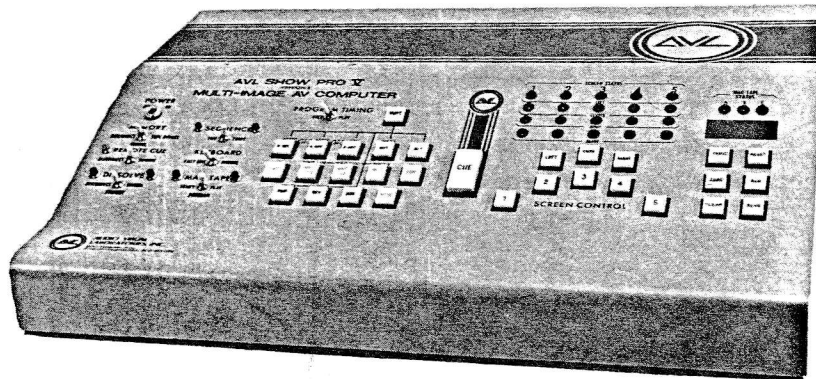
Operator's Manual

The professional team in multi-image programming systems.

INTRODUCTION

Congratulations

As a multi-image professional, you have chosen a system that, by any criteria, is the most significant advance yet made in your field.

Indeed, the SHOW PRO V represents a totally new concept in multi-image programming, one pioneered by AVL with the predecessor to this unit, the SHOW PRO III . . . all dissolves and program operations built into a single computer-controlled package.

With the SHOW PRO V, you now have total control of up to 15 slide projectors at your fingertips. The computer generates all cuts and dissolve blends, and additionall keeps track of all aspects of the program, including slide projector tray positions and lamp status. In effect, the computer does the "bookkeeping," allowing you to spend your time perfecting the artistic and creative elements of a show.

Until recently, a completely computerized programmer/dissolve system was merely an idea entertained by many professionals in the AV field. The prospects for production of such a system remained dim, however, until the introduction of high technology micro-processor integrated circuits.

With their advent, AVL took full advantage of the new technology. As a result, multi-image programs can now be generated, reviewed and edited more simply and far faster than ever before.

The SHOW PRO V is designed to control a number of slide show formats, including five screens with three projectors focused on each, a standard upon which the descriptions in this manual are based.

Our completely new system also has ten auxiliary channels for controlling additional equipment such as supplementary slide projectors, a 16 mm projector, or room lighting.

Each projector in the SHOW PRO V System may be controlled independently, allowing sophisticated split-screen and overlapping image effects. The result: Shows with motion and rich visual effects that an audience may well assume are produced by film . . . produced instead with the simplicity and economy of slides!
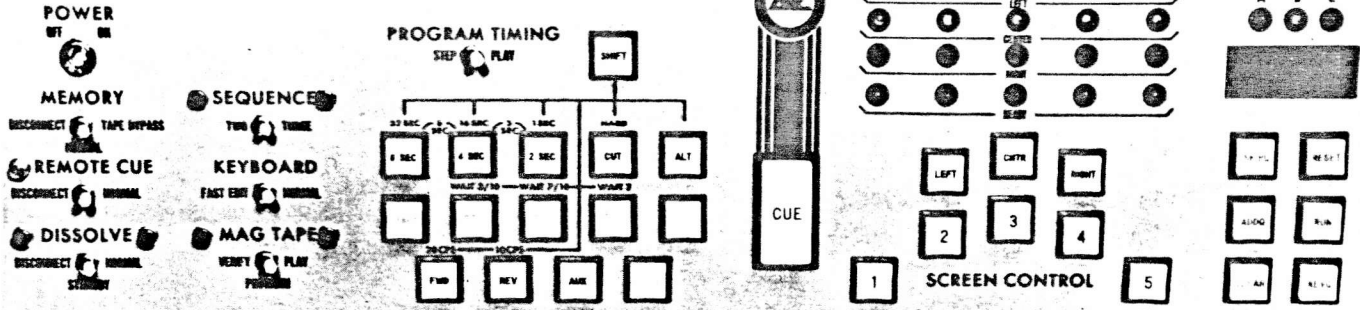
This manual will help familiarize you with the remarkable SHOW PRO V. From that point on, your multi-image programs can soar as high as your own imagination.

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FRONT PANEL

The keyboard controls of your SHOW PRO V are designed for simple trouble-free editing and programming, with all phases of operation apparent at a glance, all command functions at your fingertips. Here are the specific functions of each keyboard control:

CONTROL TOGGLE SWITCHES

Power

Activates the system in the "ON" position. This key switch can be removed from the unit in the on position, a safety feature that prevents accidental interruption of a program.

Memory

This is a three position switch:
- (A) The far left position is "DISCONNECT".
- (B) The center position is "NORMAL".
- (C) The far right position is "TAPE BYPASS".

Normal Position

This position is for:
- (A) Loading memory from keyboard during programming.
- (B) Recording data to magnetic tape from memory after programming.
- (C) Reloading memory from magnetic tape.

Tape Bypass Position

While in this position the SHOW PRO V will execute all cues from magnetic tape, but **will not** enter these cues into memory, nor change the current cue counter position.

For Live portions of your show, cues can be accessed from memory without changing the memory switch position.

The Tape Bypass mode allows the operator to easily transfer from "Canned" show to "Live" show and back as many times as is necessary, maintaining the use of reverse cue in all Live portions.

Disconnect Position

This position prevents keyboard commands and programmed data off magnetic tape from entering memory.

Remote Cue

Should be in NORMAL position during most operations, allowing cue commands by remote control. The red light to the left of the switch will come on whenever a remote hand control is activated, regardless of whether the switch is in NORMAL or DISCONNECT. In DISCONNECT, a remote cue will not activate the programmer.

NOTE: The Remote Cue switch must be in the NORMAL position when interconnecting SHOW PRO V's. Connect the program interconnect plug to the Remote Cue receptacle of the second SHOW PRO V. Simultaneous operation of both units can be achieved from one Remote control. This Remote controller would be plugged into the Remote control receptacle of the first SHOW PRO V.

Dissolve

This is a three-position switch. In DISCONNECT (left position) the switch disconnects all outputs to projectors and auxiliaries. A red light to the left of the switch remains on as a reminder to the operator. Use DISCONNECT with care. When the DISSOLVE switch is in this position. program memory responds to commands as if it's advancing or reversing trays. As a result, it will lose track of projector tray status. In NORMAL (right position) all dissolves are connected and will respond to commands. In STANDBY (center position) all projector lamps are turned off but dissolves are connected and will respond to commands.

SEQUENCE

TWO ( ) THREE

KEYBOARD

FAST EDIT ( ) NORMAL

Sequence

With this switch in the TWO position the programmer will sequence between left and right projectors, although the center projector will be activated if the CENTER Screen Control button is punched. With the SEQUENCE switch in the THREE position the programmer will sequence left-center-right.

Keyboard

This switch primarily governs the editing controls on the SHOW PRO V. When the keyboard switch is in the NORMAL position all editing buttons activate on a one step basis. The Keyboard switch should be in the NORMAL position for all playback situations.

The "Fast Edit" position allows the operator to "Edit" any number of cues in a Block, or "add" any given number of cues in a Block. This position also changes the run control from a hold down position to a Latching situation.

Keyboard "Fast Edit" changes the Reverse "Q" function also, allowing extremely rapid reversing through memory.

For more information on each Editing control, and the "Fast Edit" position for each control, refer to "Editing Controls".

NOTE: When the Keyboard switch is in the "Fast Edit" position the SHOW PRO V will alert the operator by blinking the Red Mag Tape Status Led.

MAG TAPE

VERIFY ( ) PLAY

PROGRAM

Mag Tape Switch

MAG TAPE VERIFY is the far Left position, indicated by a Red Light. In this position a program that has been dumped to magtape may be completely checked without disturbing the contents of the SHOW PRO V memory.

To verify a program that has been dumped to magtape:
   (1)   Set Mag Tape switch to Tape Verify position.
   (2)   Reset the SHOW PRO V memory and rewind magtape.
   (3)   After connecting an Audio cable from Line Out of the recorded track to the Play jack on the back of your SHOW PRO V, start Tape Deck.

Each time a cue is Read back into the SHOW PRO V, it is checked and verified against memory. If the data is correct the cue counter will advance one step. If any cue is incorrect the cue counter will indicate BAD 4.

If all cues are good, the cue counter will indicate the number of good cues. If this count is the same amount as in memory, the dump is assured to be accurate and of high quality.

PROGRAM position is for programming your show and transferring all programmed data to magnetic tape.

PLAY position is for presenting shows from mag tape or memory.

PROGRAM TIMING

STEP ( ) PLAY

Program Timing

This switch will undoubtedly be used more than any other during programming. In the STEP position it allows step-by-step programming. In the PLAY position it allows playback of single cues as well as pre-programmed high speed sequences.

DISSOLVE SPEED CONTROLS
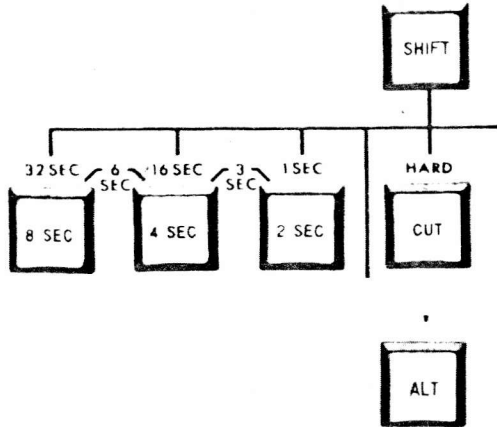
Cut

Commands an instantaneous switch from one projector to another. Any projector going off will automatically advance.

(For further details see High Speed Programming)

2 Second (2 SEC)
4 Second (4 SEC)
8 Second (8 SEC)

These buttons are used to select the timing for blends from one projector to another. Any projector going off will automatically advance.

The combination of buttons 2 SEC and 4 SEC produce a 3 SECOND Dissolve Speed.

The combination of 4 SEC and 8 SEC produces a 6 SECOND Dissolve Speed.

Alternate (ALT)

ALT used in conjunction with a screen number switches lamps between projectors similar to a cut without a Tray advance.

The Alternate button may be combined with any Dissolve speed to perform a dissolve alternate (no tray advance) including the 3 and 6 SEC combination.

Shift Command Feature

Using some control buttons on the SHOW PRO V combined with "SHIFT" adds a host of performance features:

   (A)   SHIFT combined with the Dissolve Speed Controls for additional speeds.
   (B)   SHIFT combined with ALT for high performance screen effects.
   (C)   SHIFT combined with screen numbers for DISSOLVE FREEZE.
   (D)   SHIFT combined with forward for high speed action at 20 CPS (Cues Per Second).
   (E)   SHIFT combined with Reverse for shifting back to normal speed 10 CPS.

If a SHIFT can be combined with a control button this will be pointed out, and the procedure and result explained as we define each control button.

Dissolve Speeds Combined With Shift Button

SHIFT + CUT = HARDCUT. The down going projector begins advancing before the Lamp Status has changed, causing a harder visual effect than the Standard cut.

   SHIFT + 2 SEC = a 1 SECOND Dissolve Speed.
   SHIFT + 4 SEC = a 16 SECOND Dissolve Speed.
   SHIFT + 8 SEC = a 32 SECOND Dissolve Speed.

ALL SHIFT Dissolve Speeds can also be combined with ALT to prevent advance of down going projector.

Shift ALT

The lamp in a Slide Projector does not turn on or turn off instantaneously with the application or removal of power, because the lamp requires fractions of a second to heat up or cool down. This is called "thermal lag" of the lamp. The thermal lag is different for turn on than turn off. The SHOW PRO V automatically compensates for thermal lag differences in all dissolves and alternates. For Cut or ALT, the SHOW PRO V has what AVL calls an "Afterburner" to remove the possibility of any blink effect. This afterburner also has the advantage of allowing visuals to move at 20 CPS and have each visual reach full brilliance. However, a lamp may not be alternated on and off 20 times per second with ALT because the afterburner will hold the lamp on. Hence, the introduction of "SHIFT, ALT" which removes the afterburner and allows flashing a lamp at 20 CPS and/or flying visuals at 20 CPS at less than full brilliance. Additionally, the SHIFT ALT is used in the INTENSITY CONTROLLED ALTERNATE described later in High Performance Screen Affects using SHIFT.

Dissolve Freeze

The new SHOW PRO V can "Freeze" and hold a dissolve at any lamp intensity. You may program this effect by commanding SHIFT with the projector (or projectors) you wish to Freeze, AND NO DISSOLVE SPEED.

You may then release the dissolve in the same direction, or in the opposite direction, at any speed. These effects are explained later in High Performance Screen Effects using SHIFT.

SCREEN COMMANDS
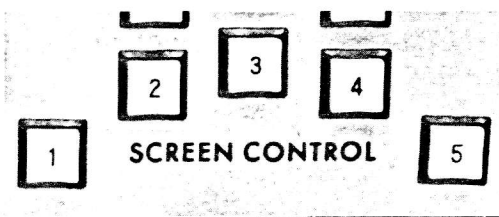
1
2
3
4
5

Designate which "screen" is to receive commands. A "screen" is a projector pair when the SEQUENCE switch is at TWO, or a group of three projectors when the SEQUENCE switch is at THREE. The Screen Command buttons can be operated singly, simultaneously, or in any combination in conjunction with black-lettered command buttons.
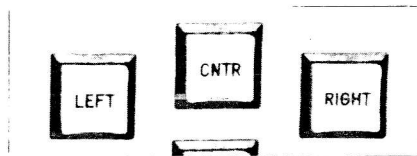
CUE COMMAND

Cue
This button is the final command to execute, and must be cued before the computer will act on any function entered.

INDIVIDUAL PROJECTOR CONTROLS

Left   Center   Right
Designate specific projector(s) to be commanded. These buttons can be used independently or simultaneously with any dissolve speed or pre-set the next projectors to react to command. System logic always starts with the left projector and functions in a left - center - right sequence unless commanded to do otherwise by these individual projector controls. If the SEQUENCE switch is at TWO, system logic will start with the left projector in a left - right rotation unless commanded to do otherwise.

ADVANCE AND REVERSE PROJECTOR CONTROLS
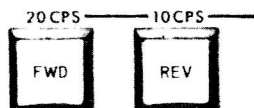
Forward (FWD)
In conjunction with the appropriate Screen Control numbers this button commands all projector trays in a bank to advance simultaneously. Used in conjunction with a Screen Control number and LEFT, CENTER or RIGHT buttons, it will advance only the projector tray(s) selected.

Shift Forward
The command "SHIFT, FWD" shifts the programmer to 20 CPS. The programmer indicates that the cue speed is 20 CPS by lighting the amber Mag Tape Status LED. When 20 CPS cues are played from Mag tape into any AVL computer, the amber LED will light. NOTE: The Mag Tape switch should always be in "Program" when programming.

Reverse (REV)
In conjunction with the appropriate Screen Control numbers, this button commands all projector trays in a bank to reverse simultaneously. Used in conjunction with a Screen Control number and LEFT, CENTER or RIGHT, it will reverse only the projector tray(s) selected.

Shift Reverse
The command "SHIFT, REV" shifts the programmer back to 10 CPS. The new SHOW PRO V automatically shifts back to 10 CPS at POWER ON or following HOME or RESET.

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AUXILIARY FUNCTION CONTROL

Auxiliary (AUX)

There are ten auxiliary channels on the SHOW PRO V. These momentary closures are identified on the rear panel as LEFT 1-2-3-4-5 and RIGHT 1-2-3-4-5. They accommodate connections from peripheral equipment such as additional slide projectors (forward only), movie projectors or room lighting. If AUX 1-2-3-4-5 is cued the left auxiliary channels will respond. With shows programmed on the AVL SHOW PRO III and played back on the SHOW PRO V, AUX 1-2-3 will play back as LEFT AUX 1-2-3.

HIGH SPEED TIMING CONTROLS
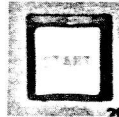
Start

With the PROGRAM TIMING switch in the STEP position, this cue may be entered alone or in conjunction with a screen action to program the start of any high speed run or sequence. With the PROGRAM TIMING switch in the PLAY position the computer will begin a high speed sequence when START is commanded, executing instructions at ten cues per second until WAIT or STOP is commanded.

Wait 1/10
Wait 1/2
Wait 1

These buttons establish waiting time between commands during a high speed run. They can be used simultaneously or consecutively in any combination to set waiting time between screen actions. When a WAIT is commanded the computer hesitates for the designated time, then continues performing at ten cues per second until WAIT or STOP is commanded.

When the SHIFT button is used with the WAIT commands it changes timing:
WAIT 1/10 becomes WAIT 3/10
WAIT 1/2 becomes WAIT 7/10
WAIT 1 becomes WAIT 2

NOTE: When programmer is in the high speed mode a 1/20 SEC WAIT time can be achieved by programming a dummy cue, ie. any AUX channel not in use or a SHIFT FWD.
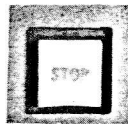
Stop

Dictates the end of a high speed sequence. STOP may be entered alone or in conjunction with the last screen action of the sequence.

PROGRAMMABLE HOME
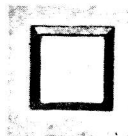
Home

Brings memory and all projector trays to their starting points by the shortest route and leaves the sytem in standby. Similar to RESET except HOME becomes a part of the program and is stored in memory.

EDITING CONTROLS
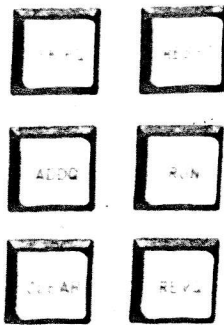
Skip-A-Cue (Keyboard Normal)
Eliminates a cue at any point in the program memory and moves all subsequent cues forward.

Block Skip-A-Cue (Keyboard Fast Edit)
The programmer will continue removing cues as long as the SKIP-A-CUE button is held down. The programmer will automatically "close up" the memory as each cue is removed, hence the Cue counter will not advance. The operator can see each cue as it is being removed by observing the keyboard.

Add-A-Cue (Keyboard Normal)
Inserts new instructions at any point in the program by opening memory and moving all subsequent cues backward.

Block Add-A-Cue (Keyboard Fast Edit)
(A)   SINGLE REPEAT — Imbed a START with the first cue in the sequence. Program the rest of the sequence. If the operator wants each sequence to generate exactly the same screen effect, the Screen Status LED's should be left identical to the Status at the START cue. (This may require one or more set up cues before START). Set the Keyboard switch to Fast Edit. Push Add-A-Cue. The entire sequence will be repeated one time. Each time Add-A-Cue is pushed, the sequence will be repeated one time because the START is imbedded with the first cue in the sequence and the programmer repeats from START. If desired, the starts may be removed easily later by single stepping through the sequences and using the Push-Push operation on the START switch each time it lights.

(B)   DOUBLING REPEAT — When a sequence is to be repeated many, many times the second method of Block Add-A-Cue may be used. Repeat the above procedure **except** insert a START command immediately before the first Cue in the sequence. When Add-A-Cue is pressed, the sequence will be repeated without the START cue. The sequence is now in twice, with the START in front of only the first sequence. Press Add-A-Cue. Both sequences will be repeated, and the sequence will now be in 4 times. The next Add-A-Cue will double to 8, then 16, then 32, then 64, then 128, etc. Obviously, extremely large numbers of repeats can be programmed very rapidly. The operator may desire to put in extra sequences, time out as many as needed, then use Block Skip-A-Cue to remove the surplus.

Clear
(A)   Clears the Keyboard.
(B)   Clear also produces a signal for Level setting prior to recording program to magnetic tape. For more information see High Speed Dumping of Memory.

Reset
Takes computer memory and all projector trays back to start. Similar to HOME, except RESET may be used at any point in the program without affecting program memory. NOTE: If RESET and CLEAR are pushed simultaneously, memory is erased. To return trays to the start position, push RESET only and wait for trays to home, indicated by appearance of green ready lights. Then, to erase memory, push RESET and CLEAR simultaneously.

Run (Keyboard Normal)
Steps program forward to any selected point at a rate of ten cues per second. Tray positions will follow computer memory. Allow time for projectors to catch up, indicated by appearance of green ready lights. This button is also used for a high speed memory dump onto magnetic tape.

Run (Keyboard Fast Edit)
With the keyboard switch in Fast Edit the run function will latch on (the RUN switch will **NOT** remain lighted, however). The programmer will run forward at 20 CPS when the RUN button is pushed. The programmer will continue running forward until the RUN button is pushed a second time or until the end of the program is reached. This feature is convenient for rapidly advancing through large portions of memory, or in dumping memory to mag tape.

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PROJECTOR AND LAMP STATUS LIGHTS

Reverse Cue (Keyboard Normal)

With the PROGRAM TIMING switch in the STEP position, this button reverses CUE COUNTER, trays and lamps one program step each time it is pushed. With the PROGRAM TIMING switch in PLAY position, the button will cause a high speed sequence to reverse to the start of the sequence.

Reverse Cue (Keyboard Fast Edit)

With the Keyboard switch in Fast Edit, the programmer will back up in 256 cue blocks each time the REV Q button is pushed, allowing extremely rapid reversing through memory.
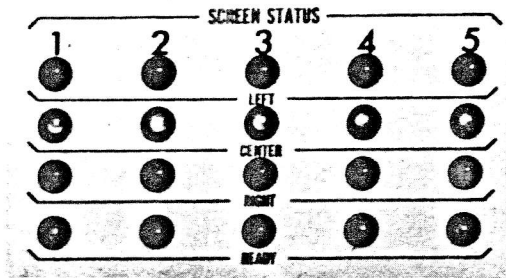
Screen Status

Red lights indicate which of the left or right projectors are on. Yellow lights indicate which center projectors are on. Green lights are true "ready" lights that indicate the previous screen action is completed and additional commands can be given to the corresponding group of projectors.

MAGNETIC TAPE STATUS LIGHTS
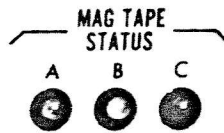
Mag Tape Status (Playback)

Indicate the condition of magnetic tape memory during playback. These status indicators provide a continuous grading of the quality of the magnetic tape.

A (green)	Acceptable
AB (green & yellow)	Acceptable
ABC (green, yellow & red)	Poor
C (red)	Unacceptable

DIGITAL CUE COUNTER

Digital Cue Counter

Records each cue as it is entered, beginning with 0001. At any point in the program the cue counter and control console preview the next cue to be executed. Each time the SHOW PRO V is turned on or its memory is cleared the memory section of the computer is automatically tested. If good, the cue counter will read 0001. If there is a problem, the cue counter will read b A d 1,2 or 3.
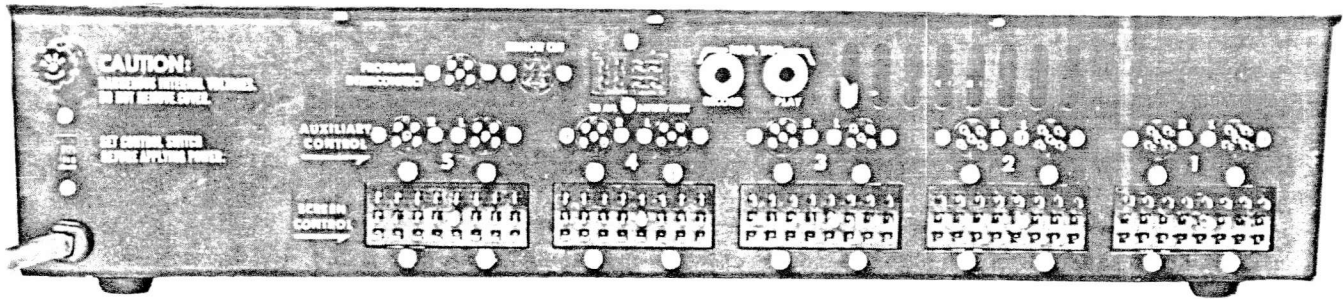
REAR PANEL

Screen Control 5 4 3 2 1
Jones plugs for each screen number (group of projectors). The plugs receive grey MARK VII Power Pack extension cables.

Left and Right Auxiliary Controls 5 4 3 2 1
Momentary closures that accept standard five-pin Kodak cables for peripheral equipment such as additional slide projectors or a 16 mm movie projector. 25 Volt AC/DC, 1 Amp max. Contact closure: Pin 2 to Pin 5.

Remote Cue Input
Receives Kodak remote hand control to remote CUE program each time FORWARD button (Pin 2 to Pin 5) is pushed, or REVERSE CUE each time REVERSE button (Pin 3 to Pin 5) is pushed.

Program Interconnect
Used to interconnect an additional SHOW PRO V or other AVL computer system. Remote cueing the first SHOW PRO V will simultaneously cue the other system.

Mag Tape Receptacles

To Record:
Connect phone plug from Record jack of SHOW PRO V to Line Level In on tape deck.

To Playback:
Connect phone plug from Play jack of SHOW PRO V to Line Level Out on tape deck.

Note:
Both Record and Playback may be connected simultaneously during programming.

International Voltage Change Switch
(Also appears on front of Power Packs)
Changes voltage from 115 to 230.
Important: Always set switches before applying power.

HOOKING UP YOUR SYSTEM

Preparing your SHOW PRO V System for operation requires relatively little time. Here's a step-by-step run-through for the standard five-screen format. To be sure you have everything properly connected, refer to the diagram in Figure 1, Page 12.

1. The SHOW PRO V System incorporates up to five MARK VII Power Packs, one for every three projectors. Each Power Pack has three black cords with seven-pin plugs. Insert left plug into rear of the left projector, the center plug into the rear of the center projector, and the right plug into the rear of the right projector. Then plug the projectors' AC cords into the AC outlet of the respective Power Packs. If you are running only two projectors per screen and have the SEQUENCE switch at the TWO position the center seven-pin plug can be left out.

2. Now take the grey extension cables from the Power Packs and plug them into the proper screen control outlets on the rear panel of the SHOW PRO V.

3. There's a voltage control switch near the On/Off switch of each Power Pack. Check to be sure it's set for either 115 or 230 according to the voltage being used. (230 is common in Europe).

4. Plug MARK VII Power Pack AC cords into power outlet.

5. Now check the voltage control switch on the rear panel of the SHOW PRO V to be sure it, too, is in the proper position.

6. Plug the SHOW PRO V's AC cord into a power outlet.

7. Now turn the Power switch to the right or ON position. Lights will flash momentarily on the keyboard and then clear. The Digital Cue Counter will indicate 0001. The Screen Status red and yellow lights will be off, green ready lights will be on.

8. With your projectors in the fan position move the Power Pack On/Off switches to the ON position.

9. That's it. Your SHOW PRO V System is hooked up and ready to use.

SCREEN FORMATS

Because of the SHOW PRO V's flexibility and independent projector control, you have a wide choice of screen formats for your shows. The programmer controls up to 15 projectors on dissolve, and ten auxiliary projectors can be added. To simplify, we present layouts for two of the most popular formats.

The standard format consists of two or three projectors focused on each of five or less screens. (Figure 1, Page 12.)

The second is an overlapping screen format using masked slides. (Figure 2, Page 13.)

SCREEN 1　　　SCREEN 2　　　SCREEN 3　　　SCREEN 4　　　SCREEN 5

KODAK　AC POWER　KODAK　AC POWER　KODAK　AC POWER

L C R
MARK VII
POWER MODULE

AC POWER　　GRAY INTERCONNECT CORD

SHOW PRO V

10 AUXILIARY CHANNELS AS REQUIRED

AC POWER

Figure 1

Figure 2

SCREEN 1 SCREEN 2 SCREEN 3 SCREEN 4 SCREEN 5

KODAK AC POWER

MARK VII POWER MODULE

AC POWER GRAY INTERCONNECT CORD

SHOW PRO V

10 AUXILIARY CHANNELS AS REQUIRED

AC POWER

13
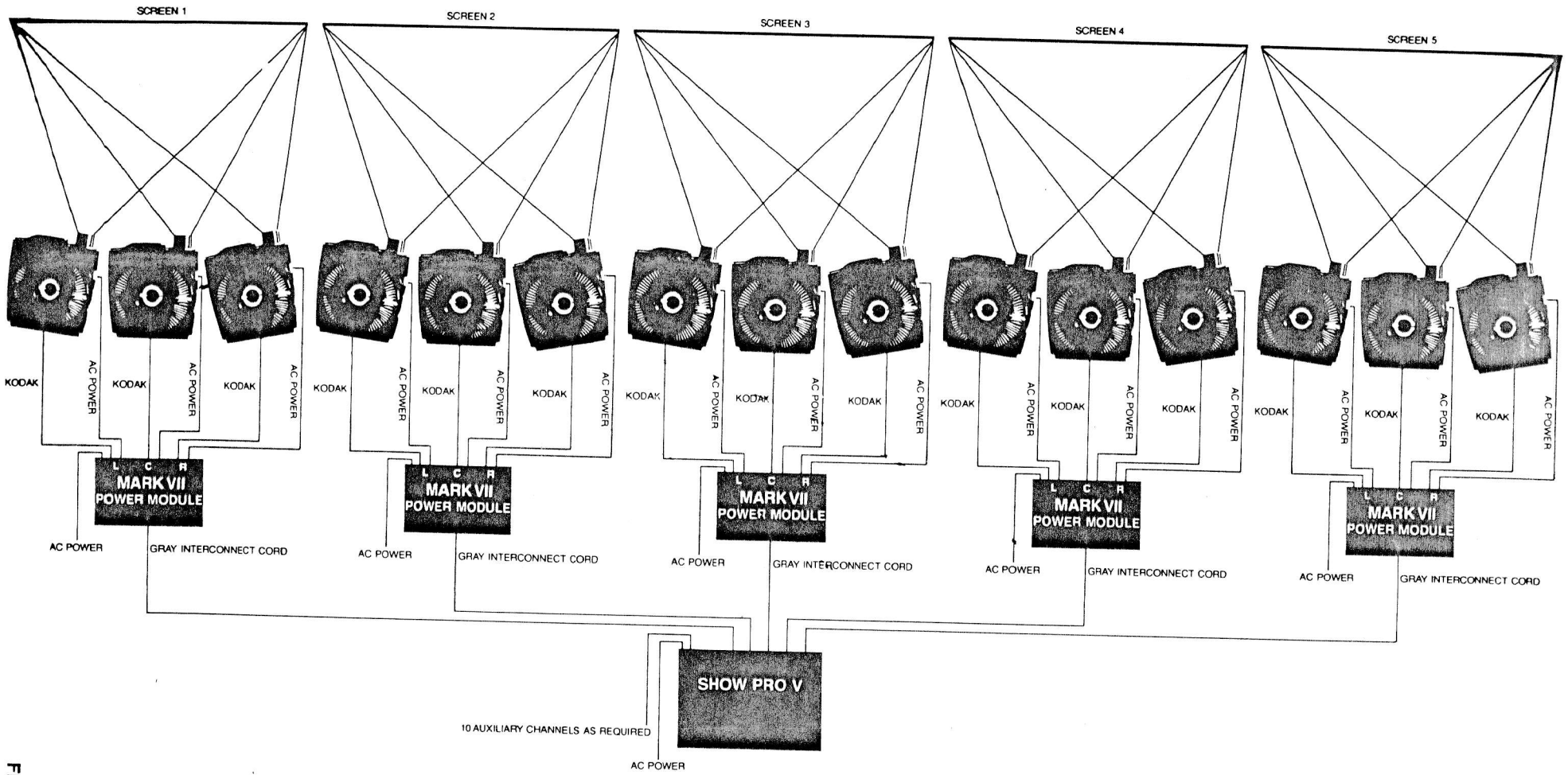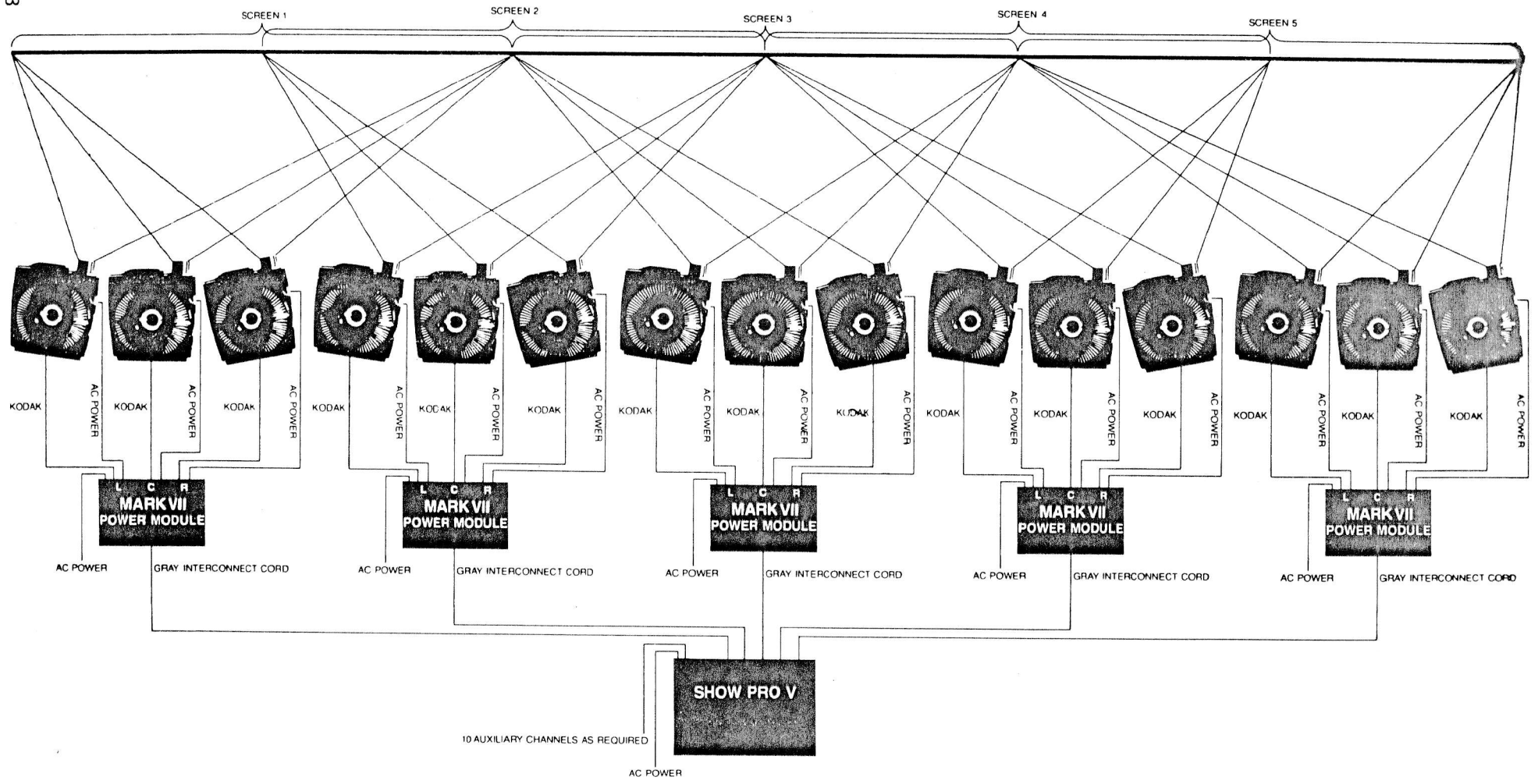
"A GET ACQUAINTED" PROGRAM

Perhaps the best way to become familiar with programming techniques on your SHOW PRO V is to run through a simple, normal speed program using all the dissolve speeds. A normal speed program will not call for the use of the START, WAIT or STOP buttons. Here is how you proceed, step by step. (Note: If your System doesn't have five MARK VII Power Packs you should still include the commands given to the additional screens):

STEP	ACTION		PROJECTOR STATUS	LIGHTS	CUE COUNTER READS
1	Push	8SEC 1 2 3 4 5 CUE	All left projectors dissolve on in eight seconds	Red status lights show left projectors on; green ready lights come back on, indicating the System is ready for your next command	0002
2	Push	4SEC 1 2 3 4 5 CUE	Left projectors dissolve off as center projectors dissolve on in four seconds.	Yellow status lights show center projectors on. After the left or downgoing projectors advance, green ready lights come on	0003
3	Push	2SEC 1 2 3 4 5 CUE	Center projectors dissolve off as right projectors dissolve on in two seconds.	Red status lights show right projectors on. After center or downgoing projectors advance, green ready lights come on	0004
4	Push	CUT 1 2 3 4 5 CUE	Right projectors cut off as left projectors cut on	Red status lights show left projectors on. After downgoing projectors advance, green ready lights come on	0005
5	Push	ALT 1 2 3 4 5 CUE	Left projectors cut off as center projectors cut on	Yellow status lights show center projectors on. Note that no trays advance on ALT and ready lights remain on since there is no projector advance	0006
6	Push	4SEC ALT 1 2 3 4 5 CUE	Center projectors dissolve off as right projectors dissolve on	Red status lights show right projectors on. Any dissolve may be pushed with ALT to get a dissolve ALT, **and** note that no tray advances on dissolve ALT, and green ready lights come on after the dissolve. In a dissolve ALT the downgoing projectors do not advance	0007

These were all normal dissolves, cuts, alternates and dissolve alternates. Now we'll use the SHIFT button to change dissolve speeds. Using the SHIFT button with dissolve speeds creates these changes:

SHIFT 8SEC = 32 seconds
SHIFT 4SEC = 16 seconds
SHIFT 2SEC =   1 second
SHIFT CUT   = Hard Cut

STEP	ACTION		PROJECTOR STATUS	LIGHTS	CUE COUNTER READS
7	Push	SHIFT 8SEC 1 2 3 4 5 CUE	Right projectors dissolve off as left projectors dissolve on in 32 seconds	Red status lights show left projectors on. After advance of the downgoing projectors, green ready lights come on	0008
8	Push	SHIFT 4SEC 1 2 3 4 5 CUE	Left projectors dissolve off as center projectors dissolve on in 16 seconds	Yellow status lights show center projectors on. After downgoing projectors advance, green ready lights come on	0009
9	Push	SHIFT 2SEC 1 2 3 4 5 CUE	Center projectors dissolve off as right projectors dissolve on in one second	Red status lights show right projectors on. After downgoing projectors advance, green ready lights come on. Note the very fast but smooth effect, unlike a cut that is fast but "harder"	0010
10	Push	SHIFT CUT 1 2 3 4 5 CUE	Right projectors cut off as left projectors cut on	Red status lights show left projectors on. After downgoing projectors advance, green ready lights come on. Note that this cut has a "harder" look than the normal cut, and that the ready lights come on sooner than the normal cut.	0011
11	Push	SHIFT 2SEC ALT 1 2 3 4 5 CUE	Left projectors dissolve off as center projectors dissolve on in one second	Yellow status lights show center projectors on. Because we used ALT there was no projector advance and after the dissolve the green ready lights come on	0012

As you went from Step 1 to Step 11, you started with all lamps off. With the first command (8SEC, 1, 2, 3, 4, 5, CUE), the left projectors came on. Your next two commands moved you to the center, then the right projectors in turn. All subsequent commands continued this left-center-right sequence. The SHOW PRO V will automatically operate in this left-center-right sequence unless you command it to do otherwise by using your LEFT-CENTER-RIGHT buttons.

Want to see what you've programmed so far? Here's how: Push RESET. Wait for the projectors to home, indicated by the green ready lights. Now repeat your program simply by pushing the CUE button one step at a time. When the downgoing projectors are off you can continue without waiting for the ready lights to tell you the next projectors are ready . . . you are using three projectors per screen and the extra projectors have already advanced.

When your Cue Counter reaches 0011 the center projectors will be on and you're ready to proceed with further programming.

STEP	ACTION		PROJECTOR STATUS	LIGHTS	CUE COUNTER READS
12	Push	RIGHT 2SEC 1 2 3 4 5 CUE	Right projectors dissolve on while the center projectors remain on	Yellow and red status lights show center and right projectors on. After the dissolve, green ready lights come on	0013
13	Push	LEFT RIGHT 2SEC 1 2 3 4 5 CUE	Right projectors dissolve off as left projectors dissolve on. Center projectors remain on since we have not called on them	Red and yellow status lights show left and center projectors on. After downgoing projectors advance, green ready lights come on	0014
14	Push	LEFT CENTER 4SEC 1 2 3 4 5 CUE	Left and center projectors dissolve off	Red and yellow status lights show all projector lamps off. Green status lights come on after advance of downgoing projectors	

The LEFT, CENTER and RIGHT buttons can be used singly, together or in any combination in conjunction with any of the dissolve speed buttons to command any projector or group of projectors on or off at any rate selected.

The LEFT, CENTER and RIGHT buttons can also be used in any combination with screen numbers in order to pre-set, if necessary, the next screen action. As an example, if you end up with the left projector on Screen 1, the center projector on Screen 2 and the right projector on Screen 3, you could make them dissolve off together by programming LEFT, 1, CUE; CENTER, 2, CUE; RIGHT, 3, CUE; 2SEC, 1, 2, 3, CUE.

The LEFT, CENTER and RIGHT buttons can also be used with FWD and REV to cause any projector or group of projectors to move trays forward or backward. LEFT and RIGHT buttons are also used in conjunction with the ten auxiliary channels.

VALID COMBINATIONS

CUT	With any combination of 1 2 3 4 5
2SEC	With any combination of 1 2 3 4 5
4SEC	With any combination of 1 2 3 4 5
8SEC	With any combination of 1 2 3 4 5
ALT	With any combination of 1 2 3 4 5
2SEC 4SEC	With any combination of 1 2 3 4 5
4SEC 8SEC	With any combination of 1 2 3 4 5
ALT 2SEC	With any combination of 1 2 3 4 5
ALT 4SEC	With any combination of 1 2 3 4 5
ALT 8SEC	With any combination of 1 2 3 4 5
ALT 2SEC 4SEC	With any combination of 1 2 3 4 5
ALT 4SEC 8SEC	With any combination of 1 2 3 4 5
SHIFT CUT	With any combination of 1 2 3 4 5
SHIFT 2SEC	With any combination of 1 2 3 4 5
SHIFT 4SEC	With any combination of 1 2 3 4 5
SHIFT 8SEC	With any combination of 1 2 3 4 5
SHIFT ALT	With any combination of 1 2 3 4 5
SHIFT ALT 2SEC	With any combination of 1 2 3 4 5
SHIFT ALT 4SEC	With any combination of 1 2 3 4 5
SHIFT ALT 8SEC	With any combination of 1 2 3 4 5
SHIFT (No Dissolve)	With any combination of 1 2 3 4 5
ANY DISSOLVE	With any combination of 1 2 3 4 5
LEFT	With any of the above commands plus Screen Number(s)
CENTER	With any of the above commands plus Screen Number(s)
RIGHT	With any of the above commands plus Screen Number(s)
LEFT	With any Screen Number
CENTER	With any Screen Number
RIGHT	With any Screen Number
FORWARD	1 2 3 4 5
FORWARD	With any combination of L C R and 1 2 3 4 5
REVERSE	1 2 3 4 5
REVERSE	With any combination of L C R and 1 2 3 4 5
SHIFT FORWARD	No screen numbers
SHIFT REVERSE	No screen numbers
LEFT AUX	With any combination of 1 2 3 4 5
RIGHT AUX	With any combination of 1 2 3 4 5
START	With any combination of above commands Except Dissolve Freeze and Dissolve Release
STOP	With any combination of above commands Except Dissolve Freeze and Dissolve Release
START	alone
STOP	alone

Only valid combinations can be cued on the SHOW PRO V. If an invalid combination is entered, the last button pushed will clear the invalid portion of the command. If a valid combination is incomplete, the SHOW PRO V will reject the cue or clear the keyboard.

START and STOP can be programmed together with any black-lettered button or as separate commands

The HOME button must be programmed alone.

The Timing buttons (WAIT 1/10, WAIT 1/2, WAIT 1) may be cued alone or in any combination. Use of the SHIFT button changes timing as follows:

SHIFT WAIT 1/10	=	WAIT 3/10
SHIFT WAIT 1/2	=	WAIT 7/10
SHIFT WAIT 1	=	WAIT 2

These may also be cued in any combination. All WAIT buttons are used exclusively during high speed programming as explained in the next section.

HIGH SPEED PROGRAMMING

Now let's look at high speed programming and your SHOW PRO V's capacity to produce sophisticated screen effects. In normal speed programming, each cue is a single step, and you provide synchronization through use of the CUE botton. High speed is also programmed a step at a time. The big difference between the two programming modes is the fact that in high speed the SHOW PRO V will automatically activate cues at speeds up to ten or twenty per second!

A high speed sequence is begun by pushing the START button, concluded by pushing the STOP button. Timing within the sequence is dictated by your use of the WAIT buttons. When the START cue tells the SHOW PRO V a high speed sequence is about to be entered, the programmer is prepared to accept ten cues per second. But you still determine the intervals between screen actions by means of the WAIT cues you enter.

When the SHOW PRO V is playing back a high speed section or synchronizing a high speed portion, the CUE button is pushed at the beginning and the programmer automatically performs the timing until it reads a stop.

In regard to timing, it's important to note that when commands are given to a specific screen (group of projectors), timing must be added to allow for the transition time of the dissolve plus time for the down-going projector to advance before returning to that projector (projector advance time = 1 second). The SEQUENCE switch in the THREE position allows you to go faster than the TWO position because, as you go from left to center projector the right projector is advanced and waiting. With all projectors ready any two moves may be made 1/10 second apart, but you must wait the prescribed time for repetitive commands. Waiting times to be added between cues for smooth visual-to-visual transitions on a screen are as follows:

A new HARD CUT	add	1/2 second
CUT	add	7/10 second
1SEC	add	1 second
2SEC	add	1-1/2 seconds
4SEC	add	3-1/2 seconds
8SEC	add	7-1/2 seconds
16SEC	add	15-1/2 seconds
32SEC	add	31-1/2 seconds

After ALT there's no need to make allowance for a time interval. Alternates can be cued as rapidly as ten times a second because they don't involve the advance of the downgoing projector.

With the SEQUENCE switch in the TWO position, the proper waiting time to be added between cues on a screen is:

HARD CUT	add	7/10 second
CUT	add	1-6/10 seconds
1SEC	add	2 seconds
2SEC	add	3 seconds
4SEC	add	5 seconds
8SEC	add	9 seconds
16SEC	add	17 seconds
32SEC	add	33 seconds
ALT	add	0

Ready to try your hand at high speed? Here's a program prepared to familiarize you with some SHOW PRO V features.

A "GET ACQUAINTED" HIGH SPEED PROGRAM

We'll begin with basic set-up, just as we did in normal speed programming.

- Place your slide trays on projectors, align and focus
- Set all trays in home or starting position . . . first slides in left gates, second slides in center gates, third slides in right gates
- All keyboard toggle switches to right except PROGRAM TIMING, which should be in the left or STEP position, and MAG TAPE, which should be in the PROGRAM position.

OK, you're ready to program.

1.   Push START, 8SEC, 1, 2, 3, 4, 5, CUE
2.   Push SHIFT, WAIT 2, WAIT 7/10, WAIT 3/10, CUE
3.   Push SHIFT, WAIT 2, WAIT 7/10, WAIT 3/10, CUE
4.   Push WAIT 1, WAIT 1/2, CUE
5.   Push 4SEC, 1, 2, 3, 4, 5, CUE
6.   Push SHIFT, WAIT 2, WAIT 7/10, WAIT 3/10, CUE
7.   Push WAIT 1/2, CUE
8.   Push 2SEC, 1, 2, 3, 4, 5, CUE
9.   Push WAIT 1, WAIT 1/2, CUE
10. Push SHIFT, 1SEC, 1, 2, 3, 4, 5, CUE
11. Push WAIT 1, CUE
12. Push CUT, 1, 2, 3, 4, 5, CUE
13. Push SHIFT, 7/10, CUE
14. Push SHIFT, CUT, 1, 2, 3, 4, 5, STOP, CUE

Cue Counter Reads 0015

This is a good point at which to check results. Here's how to review:

- Move the PROGRAM TIMING switch to PLAY position

- Push REVQ. Notice all projectors are going back to the starting position. With the Program Timing switch in PLAY, REVQ reverses program memory and all projectors to the last START cue. Green ready lights tell you when projector trays have reached the starting point.

- Push CUE

Result: Left projectors dissolve on in eight seconds, then dissolve off with center projectors coming on in a four-second dissolve. After three and a half seconds the center projectors dissolve off with right projectors coming on in a two-second dissolve. A second and a half later, the right projectors dissolve off with left projectors coming on in a one-second dissolve. One second after the start of the one-second dissolve the left projectors cut off, the center projectors cut on. Seven-tenths of a second after the cut to the center projectors they hard cut off as the right projectors hard cut on and the programmer stops.

We've programmed several dissolves and cuts with intervals that allow smooth transitions. More time can be added to slow the program down by putting additional timing codes between actions, or timing may be added in some areas and deleted in others as long as timing is allowed for the downgoing projectors to advance before their respective lamps are turned on. Now that you've programmed to this point, let's continue. The next commands will create several screen wipes. To keep it simple, we'll work with just the first three screens.

Put PROGRAM TIMING switch to STEP.

1.   Push START, 4 SEC, 1, CUE
2.   Push SHIFT, WAIT, 2, CUE
3.   Push 4SEC, 2, CUE
4.   Push SHIFT, WAIT, 2, CUE
5.   Push 4SEC, 3, CUE
6.   Push SHIFT, WAIT, 2, CUE
7.   Push 2SEC, 1, CUE
8.   Push WAIT 1/2, CUE
9.   Push 2SEC, 2, CUE
10. Push WAIT 1/2, CUE
11. Push 2SEC, 3, CUE
12. Push WAIT 1, CUE
13. Push SHIFT, 1SEC, 1, CUE
14. Push SHIFT, WAIT 3/10, CUE

Review time again:

- PROGRAM TIMING switch to PLAY
- Push REVQ, wait for green ready lights
- Push CUE

Result: Screen 1 dissolves from right to left projector in a four-second dissolve. Two seconds later, Screen 2 dissolves from right to left projector in a four-second dissolve. Two seconds later Screen 3 dissolves from right to left projector in a four-second dissolve. In another two seconds Screen 1 starts a two-second dissolve from left to center projector. A half second later, Screen 3 starts a two-second dissolve from left to center projector. A one-second interval and Screen 1 starts a one-second dissolve from center to right projector. In another 3/10 of a second Screen 2 starts a one-second dissolve from center to right projector. Another 3/10 second and Screen 3 starts a one-second dissolve from center to right projector. A final 7/10 second interval sees Screen 1 cut to the left projector, followed by Screens 2 and 3. Then the programmer stops.

Now that you've reviewed screen wipes, let's try some alternates on three screens.

Put PROGRAM TIMING switch to STEP.

15. Push SHIFT, 1SEC, 2, CUE
16. Push SHIFT, WAIT 3/10, CUE
17. Push SHIFT, 1SEC, 3, CUE
18. Push SHIFT, WAIT 7/10, CUE
19. Push CUT, 1, CUE
20. Push CUT, 2, CUE
21. Push CUT, 3, STOP, CUE

Cue Counter Reads 0036

1. Push START, ALT, 1, 2, 3, CUE
2. Push WAIT 1/2, CUE
3. Push ALT, 1, 2, 3, CUE
4. Push WAIT 1/2, CUE
5. Push ALT, 1, 2, 3, CUE
6. Push WAIT 1/2, CUE
7. Push ALT, 1, 2, 3, CUE
8. Push WAIT 1/2, CUE
9. Push ALT, 1, 2, 3, CUE
10. Push WAIT 1/2, CUE
11. Push ALT, 1, 2, 3, CUE
12. Push SHIFT, WAIT 3/10, CUE
13. Push ALT, 1, 2, 3, CUE
14. Push SHIFT, WAIT 3/10, CUE
15. Push. ALT, 1, 2, 3, CUE
16. Push SHIFT, WAIT 3/10, CUE
17. Push ALT, 1, 2, 3, CUE
18. Push SHIFT, WAIT 3/10, CUE
19. Push ALT, 1, 2, 3, CUE
20. Push SHIFT, WAIT 3/10, CUE
21. Push ALT, 1, 2, 3, CUE
22. Push SHIFT, WAIT 3/10, CUE
23. Push ALT, 1, 2, 3, CUE
24. Push WAIT 1/10, CUE
25. Push ALT, 1, 2, 3, CUE
26. Push Wait 1/10, CUE
27. Push ALT, 1, 2, 3, CUE
28. Push WAIT 1/10, CUE
29. Push ALT, 1, 2, 3, CUE
30. Push WAIT 1/10, CUE
31. Push ALT, 1, 2, 3, CUE
32. Push WAIT 1/10, CUE
33. Push ALT, 1, 2, 3, CUE
34. Push WAIT 1/10, CUE
35. Push ALT, 1, 2, 3, CUE
36. Push ALT, 1, 2, 3, CUE
37. Push ALT, 1, 2, 3, CUE
38. Push ALT, 1, 2, 3, CUE
39. Push ALT, 1, 2, 3, CUE
40. Push Cut 1, 2, 3, CUE
41. Push CUT, 1, 2, 3, STOP, CUE

Cue Counter Reads 0077

OK, let's review that section

- Put PROGRAM TIMING switch to PLAY

Push REVO, wait for green ready lights
Push CUE

Result: Screens 1, 2, and 3 begin alternating every half second. After six half-second alternates, the pattern repeats with only 3/10 second between each, then repeats again with 1/10-second intervals. This is followed by five alternates at the rate of ten per second. The sequence ends with cuts and advancement of the center and right projectors and the programmer stops.

Now let's use a mix of dissolves, independent projectors, cuts and dissolve alternates.

Put PROGRAM TIMING switch to STEP.

1. Push START, 2SEC, 1, 2, 3, CUE
2. Push SHIFT, WAIT 2SEC, CUE
3. Push SHIFT, WAIT 2SEC, CUE
4. Push 2SEC, RIGHT, 1, 2, 3, CUE
5. Push SHIFT, WAIT 2SEC, CUE
6. Push SHIFT, WAIT 2SEC, CUE
7. Push SHIFT, 1SEC, ALT, LEFT, RIGHT, 1, 2, 3, CUE
8. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
9. Push SHIFT, 1SEC, ALT, LEFT, RIGHT, 1, 2, 3, CUE
10. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
11. Push SHIFT, 1SEC, ALT, LEFT, RIGHT, 1, 2, 3, CUE
12. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
13. Push SHIFT, 1SEC, ALT, LEFT, RIGHT, 1, 2, 3, CUE
14. Push SHIFT, WAIT, 2SEC, 7/10, 3/10, CUE
15. Push SHIFT, 1SEC, LEFT, RIGHT, 1, 2, 3, CUE
16. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
17. Push 4SEC, LEFT, CENTER, RIGHT, 1, 2, 3, CUE
18. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
19. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
20. Push SHIFT, CUT, 1, 2, 3, CUE
21. Push SHIFT, CUT, 1, 2, 3, CUE
22. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
23. Push SHIFT, WAIT 2SEC, CUE
24. Push 4SEC, LEFT, 1, 2, 3, CUE
25. Push SHIFT, WAIT 2SEC, CUE
26. Push 2SEC, RIGHT, 1, 2, 3, CUE
27. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
28. Push SHIFT, WAIT 2SEC, CUE
29. Push SHIFT, 16SEC, LEFT, 1, 2, 3, CUE
30. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
31. Push SHIFT, WAIT 2SEC, CUE
32. Push 8SEC, CENTER, 1, 2, 3, CUE
33. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
34. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
35. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
36. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
37. Push SHIFT, WAIT 2SEC, 7/10, 3/10, CUE
38. Push SHIFT, 32SEC, RIGHT, 1, 2, 3, STOP

Cue Counter Reads 0115

Let's review this section. We started with a two-second dissolve of screens 1, 2 and 3 to the center screens. After a four-second wait we dissolved up the right projectors in a superimposition. Another four-second wait was followed by a one-second alternate between left and right projectors while holding center projectors, with three-second intervals between actions. The one-second alternates were repeated twice, followed by a one-second dissolve off of left projectors, a one-second dissolve on of the right. We added three seconds timing, then did a one-second dissolve off of right projectors and dissolve on of the left, adding another three-second time span. Next we performed a four-second dissolve off of left and center projectors while we dissolved on the right projectors, adding six seconds of timing. Then two consecutive hard cuts were followed by five seconds timing. Now, after a four-second dissolve up of the left projectors and a two-second dissolve up of the right, all nine projectors were on. We waited five seconds before a 16-second dissolve off of the left projectors, then another five seconds before an eight-second dissolve off of the center projectors, and 15 seconds later we did a 32-second dissolve off of the right projectors and stopped the program.

Now let's review from the start:
- Push RESET
- Wait for projectors to home, indicated by green ready lights
- Put PROGRAM TIMING switch to PLAY
- Push CUE, and continue doing so each time the programmer stops

There. You've programmed . . . and seen . . . a very small sample of the effects possible with your SHOW PRO V. Remember you have total control of each projector. And don't be afraid to experiment. Because nothing you do is necessarily final. Any effect entered can be erased or modified by editing, the subject of our next section.

PROGRAM EDITING

The editing controls of the SHOW PRO V are the red-lettered buttons at the far right of the keyboard. The specific function of each button is explained in the Editing Controls section of the manual, page 6.

Editing is the process of making revisions, additions or deletions in a program sequence that's been entered into memory. To reach the point you wish to edit you simply place the PROGRAM TIMING switch in the STEP position, then

Move forward one cue each time you press the CUE button - or -

Move forward rapidly by pushing the RUN button, which advances cues at a rate of ten per second

To reverse a cue at a time, push the REVERSE CUE button

Using the cue-at-a-time procedure, you'll notice that the keyboard previews your next screen action or timing code. And if the DISSOLVE SWITCH is in NORMAL, the slide projectors will also move forward or backward with the program memory.

After using the RUN button, be sure to allow time for the projectors to catch up with memory, indicated by the green lights.

The best way to understand editing is by entering a brief program into memory, then making changes.

1. All keyboard switches to the right except PROGRAM TIMING switch to STEP and MAG TAPE switch to PROGRAM. Put all trays to starting points and clear MEMORY. To make our editing job easier to follow, we'll use Screens 1, 2 and 3 only.
2. Push 8 Sec, 1, 2, 3, CUE
3. Push 4 SEC, 1, 2, 3, CUE
4. Push 2SEC, 1, 2, 3, CUE
5. Push CUT, 1, 2, 3, CUE
6. Push 4SEC, 1, 2, 3, CUE
7. Push 2SEC, 1, 2, 3, CUE
8. Push CUT, 1, 2, 3, CUE

CUE COUNTER Reads: 008

9. Push RESET

Note that memory and all projectors return to the starting position. The keyboard is previewing your first cue (8 SEC, 1, 2, 3).

10. Push CUE

Result: The left projectors dissolve on in eight seconds and the keyboard previews the next screen action (4 SEC, 1, 2, 3).

Now let's change the 4 SEC, 1, 2, 3 to a CUT, 1, 2, 3.

Push CUT. Notice that 4 SEC cleared and the keyboard now reads CUT, 1, 2, 3.

Push CUE. Result: You've changed the 4 SEC, 1, 2, 3 to a CUT, 1, 2, 3.

Want to change only the speed of a dissolve? Pushing the new dissolve speed clears the old. These changes are typical of basic editing, requiring none of the red editing buttons.

Now that you've changed the 4 SEC, 1, 2, 3 to CUT, 1, 2, 3, you're previewing cue 003, a 2 SEC, 1, 2, 3. Change it to a 2 SEC, 2 only by doing the following:

Push CLEAR

Push 2 SEC, 2 CUE

Result: When you pushed CLEAR you cleared the keyboard, allowing you to change cue 3 to a two-second dissolve on Screen 2. Use CLEAR when you wish to change the Screen Numbers, or to change Left, Center or Right, since they do not automatically cancel each other out.

Alternate Method

Using Push-Push feature. To clear any lighted switch, simply Push it. It clears automatically.

You've now previewing cue 004 (CUT, 1, 2, 3). At this point you want to "Add a cue" before doing CUT, 1, 2, 3 . . . says a four-second dissolve on Screens 1 and 3

Push CLEAR

Push 4 SEC, 1, 3

Push ADDQ

Result: Cue 004 has now become 4 SEC, 1 and 3, and this cue has been inserted between cue 003 (2 SEC, 2) and what used to be cue 004 (CUT, 1, 2, 3). The cue you added (4 SEC, 1 and 3)) has become cue 004 and CUT, 1, 2, 3 . . . now previewing . . . has become cue 005.

Let's continue by keeping cue 005 (CUT, 1, 2, 3).

Push CUE

Result: CUT, 1, 2, 3 stays in your program. You are now previewing cue 006 (4 SEC, 1, 2, 3).

Now eliminate cue 006 from your program. Here's how:

Push SKIPQ

Result: The keyboard is now previewing cue 006 (2 SEC, 1, 2, 3). You have taken the old cue 006 out of your program and moved all other cues forward one slot, converting 2 SEC, 1, 2, 3 into cue 006.

Keep the new cue 006 by doing the following:

Push CUE

Result: 2SEC, 1, 2, 3 stays in your program and you are previewing cue 007 (CUT, 1, 2, 3), the last cue in your program. Notice all the center projectors are on. To end the program, change cue 007 (CUT, 1, 2, 3) to a dissolve, and fade the projectors off in a four-second dissolve.

At this point stop and look at your keyboard. Try to figure out how to do it. Have you got it? If not, ask yourself this question: What do I want to happen? Answer: I want the center to go off in a four-second dissolve on all screens. And you do it this way.

Push 4SEC

Push CENTER

Push CUE

Result: The center projectors fade off in a four-second dissolve. When you pushed the 4SEC button it cleared the CUT button. Then because you

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did not want them to dissolve to the right projectors, you pushed CENTER, thereby telling the center projectors only to dissolve off.

Now let's look at your edited show.

Push RESET

Result: Memory and all projectors go to the starting point. Now . . . waiting for the green ready lights each time . . . push the Cue button when you want to see the next screen action.

Ready for more editing? Push RESET again and wait for your projectors to home. Then push RESET and CLEAR together. This clears the programmer's memory so you can start a new program.

One of the most significant advantages of your SHOW PRO V System is its capability to edit while keeping track of memory and projector status. It means changes can be made while you're programming. And instant replay of a high speed sequence can tell you if an effect you programmed is what you really want. If not, it can be changed immediately. Each section of a show can be programmed, reviewed and edited before you continue. And it's all done without ever touching a slide projector.

OK. Here's our new program.

1. All switches to the right except PROGRAM TIMING switch to STEP and MAG TAPE switch to OFF.
2. Push 4SEC, 1, 2, 3, CUE
3. Push START, 2SEC, 1, CUE
4. Push WAIT 1/2, CUE
5. Push 2SEC, 2, CUE
6. Push WAIT 1/2, CUE
7. Push 2SEC, 3, STOP, CUE

Cue Counter Reads 0007

Result: You have programmed a dissolve up of the left projectors followed by a two-second dissolve wipe on three screens. Since you've programmed this wipe effect one step at a time, you're not sure if it's the exact effect you wanted. Check by doing this.

Put PROGRAM TIMING switch to PLAY
Push REVQ

Result: Program memory and projectors go back to start, cue 0002.
Push CUE and watch the screen effect.
Now that you've seen it, let's say you don't like it. You decide to substitute a four-second dissolve wipe with longer intervals between screen changes. Here's the way to do it.

1. Push REVQ
2. Put PROGRAM TIMING switch to STEP
3. Push 4SEC (Changing the 2SEC to a 4SEC)
4. Push CUE (Entering the 4SEC into memory)
5. Push WAIT 1 (Making the waiting time 1 - 1/2 seconds)
6. Push CUE (Entering your new timing)
7. Repeat steps 3 and 4
8. Repeat steps 5 and 6
9. Repeat steps 3 and 4 (Keeping the STOP cue)

Result: You've changed the two-second dissolves to four-second dissolves and the waiting time between dissolves to one and a half seconds.

Now review the change.

Put PROGRAM TIMING switch to PLAY
Push REVQ

Result: Again memory and projectors go back to the start cue
Push CUE and watch the screen effect
Let's say now your effect is fine. (If you wanted to try others you could continue editing). Here's additional input for your program.

1. Put PROGRAM TIMING switch to STEP
2. Push START, ALT, 1, 2, 3, CUE
3. Push SHIFT, WAIT 3/10, CUE
4. Push ALT, 1, 2, 3, CUE
5. Push SHIFT, WAIT 3/10, CUE

Result: Starting with the center projectors you've alternated center-right-left, with 3/10-second waits between alternates, ending on the right projectors. To review, do this:

Put PROGRAM TIMING switch to PLAY
Push REVQ
Push CUE

After reviewing, you want to increase the delay between alternates by 1/10 of a second. Edit this in this way.

Continue stepping through your program and after entering each WAIT 3/10, push WAIT 1/10, ADDQ until you come to the end. Note your cue counter now reads 0043. You have added 11 WAIT 1/10 cues.

To review.

Put PROGRAM TIMING switch to PLAY
Push REVQ
Push CUE

OK, let's do a bit more programming.

Let's review.

Put PROGRAM TIMING switch to PLAY
Push REVQ (Wait for ready lights)
Push CUE

After reviewing, let's say we want to speed up this section by 1/10 second. Do this.

6. Repeat steps 4 and 5, in order, ten times
7. Push ALT, 1, 2, 3, STOP, CUE
Cue Counter Reads 0032

1. Push REVQ
2. Put PROGRAM TIMING switch to STEP
3. Push CUE (Keeping the START, ALT 1, 2, 3)
4. Push CUE (Keeping the 3/10 WAIT). Note your keyboard is previewing your next move, ALT, 1, 2, 3. But you want to increase your delay another 1/10 second. Do this.
5. Push WAIT 1/10 (This clears the ALT, 1, 2, 3 and your keyboard now reads WAIT 1/10)
6. Push ADDQ. Note that this added another 1/10 second to the wait and your keyboard again reads ALT, 1, 2, 3
7. Push CUE (Entering ALT, 1, 2, 3 into memory)
8. Push CUE (Entering your 3/10 wait into memory)
9. Push WAIT 1/10, ADDQ (Clearing the ALT, 1, 2, 3 and entering an additional 1/10 wait)

1. Put PROGRAM TIMING switch to STEP
2. Push START, CUT, 1, 2, 3, CUE
3. Push SHIFT, WAIT 7/10, CUE
4. Push WAIT 1/10, CUE
5. Push CUT, 1, 2, 3, CUE
6. Push SHIFT, WAIT 7/10, CUE
7. Push WAIT 1/10, CUE
8. Push CUT, 1, 2, 3, CUE
9. Push SHIFT, WAIT 7/10, CUE
10. Push WAIT 1/10, CUE
11. Push CUT, 1, 2, 3, CUE
12. Push SHIFT, WAIT 7/10, CUE
13. Push WAIT 1/10, CUE
14. Push CUT, 1, 2, 3, STOP, CUE

Cue Counter Reads 0056

1. Push REVQ
2. Put PROGRAM TIMING switch to STEP
3. Push CUE (Entering your START, CUT, 1, 2, 3)
4. Push CUE (Entering your WAIT 7/10). Note you're now previewing WAIT 1/10

26

6. Push CUE (Entering CUT, 1, 2, 3, STOP

Cue Counter reads 0052

Once again, let's review.
    Put PROGRAM TIMING switch to PLAY
    Push REVQ (Wait for green ready lights)
    Push CUE

These exercises have introduced you to a few editing features. They demonstrate that it's not only easy to change dissolve speeds, but also to insert new cues or delete cues from your program using the ADDQ and SKIPQ buttons.

You will find these buttons most helpful in changing timing during high speed sequences. Here again, remember your SHOW PRO V System has a basic logic. Each button does exactly what it says. So when programming or editing, ask yourself the question, "What do I want to do?" Once you answer it, you should be able to push the right buttons. And if you should make a mistake, don't worry, your REVQ will back up through mistakes as well as it does through good cues.

Now you've used the SKIPQ, ADDQ, CLEAR, RESET, and REVQ buttons. What about the RUN button? This button advances memory at ten steps per second to any cue number and also brings the slide projectors to that spot in the program automatically.

At this point you have 52 cues in memory. Remember the slides you have on the secreen at cue 0052. Then do this.

    Push RESET
    Put PROGRAM TIMING switch to STEP
    Wait for all projectors to home
    Push RUN and hold it down until the counter gets to 0052 again

Result: When the Screen Status ready lights come on, the visuals that were on for cue 0052 have reappeared. This technique lets you get to any cue number very quickly. If you pass the number you want, use the REVQ to get back. If you don't want the projectors to flash on the screen while you're reaching a point, put the DISSOLVE switch to STANDBY.

High Performance Screen Effects Using Shift

Dissolve Freeze

Although imperceptable on the screen, the SHOW PRO V creates dissolves and fades by using hundreds of tiny descrete steps. The new SHOW PRO V allows new creative freedom by enabling the operator to stop the stepping action and "Freeze" a dissolve at any point. The lamp then may be held indefinitely at that intensity, or the dissolve may be resumed either up or down at any dissolve speed. The dissolve is frozen by simply programming SHIFT plus SCREEN and PROJECTOR number (with NO dissolve speed specified.) The dissolve may be resumed at the same speed and same direction latter by repeating the SHIFT cue. The first SHIFT freezes the dissolve, the second SHIFT releases the freeze, the third SHIFT would freeze the dissolve again at a new intensity, etc.

When a dissolve is frozen, it may be resumed in the same direction at a new speed by simply programming the new speed with no screen or projector number. This command will release all the dissolves which are frozen and change the speed on only those dissolves, without affecting any other screen actions.

Likewise, the dissolve may be resumed at a new speed in the opposite direction. To achieve this, simply program in the new dissolve speed PLUS screen and projector numbers.

The following graph will show how easily complex dissolve effects may be created:
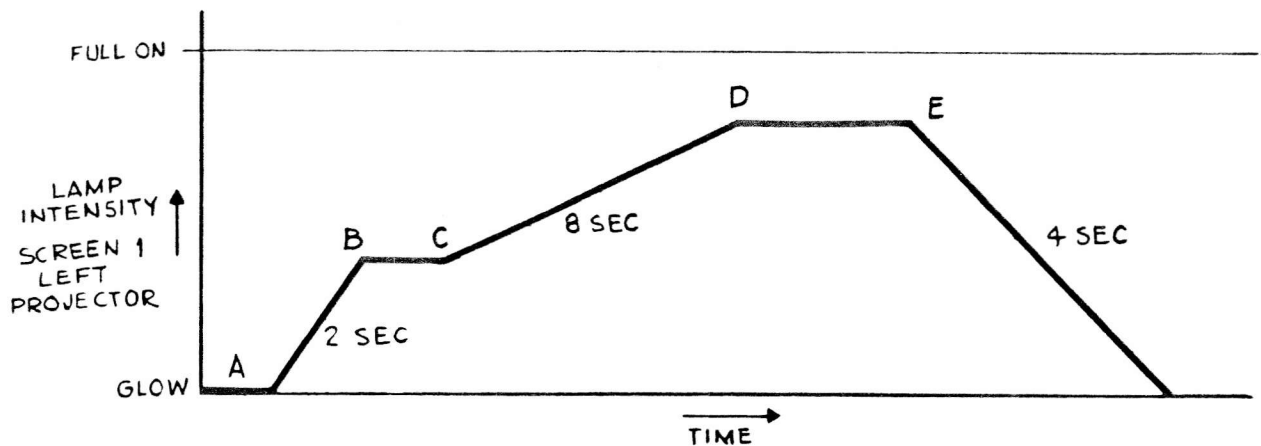
	PROGRAM	EFFECT
A)	2 SEC LEFT 1	Start 2 SEC up
B)	SHIFT LEFT 1	FREEZE DISSOLVE
C)	8 SEC	Resume Upward Dissolve at 8 SEC rate.
D)	SHIFT LEFT 1	Dissolve Down at 4 SEC
E)	4 SEC ALT LEFT 1	Rate with No Projector Advance

Experienced operators may notice that the new SHIFT feature not only allows FREEZING of dissolves, but also smooth changes of speed and/or direction.

Intensity Controlled Alternate

It has always been AVL policy to make basic programming as simple and logical as humanly possible. In addition, we have sought to advance the limit of creative sophistication. The new SHOW PRO V fills both require-ments. It remains a remarkably easy unit to use and yet offers screen effect possibilities to challenge the most advanced operator. The most dramatic new effect is the Intensity Controlled Alternate (or Envelope Alternate). This new feature allows the control of a changing intensity (or Envelope) while simultaneously alternating lamps between glow and the controlled intensity. We recommend that the operator become familiar with all other features of the new SHOW PRO V before tackling this new effect. When the operator is comfortable with advanced pro-gramming techniques, then the Intensity Controlled Alternate will follow rather easily.

One example of a use for this new feature is fading up a rotating marque from black to full intensity. The marque effect is generated by using three different slides in the LEFT, CENTER, and RIGHT projectors on Screen 1 and sequencing between them. For simplicity, we show the intensity of the LEFT projector only on the following figure:
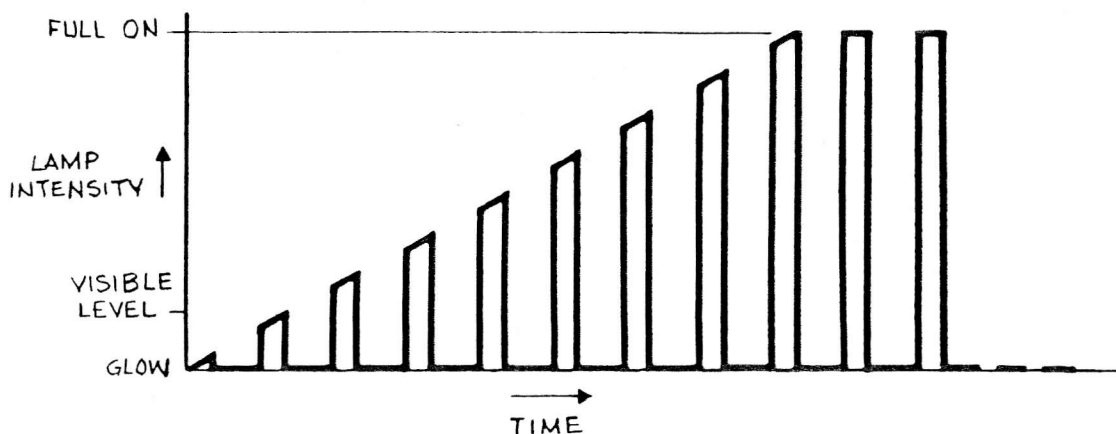
PROGRAM	EFFECT
1) 8 SEC L, C, R, 1	All Lamps Start Up
2) SHIFT, ALT, L, C, R, 1	All Lamps Shut Off Before they become visible
3) SHIFT, ALT, L, 1	Left Lamp Comes On
4) SHIFT, ALT, L, C, 1	Left Goes Out, Center Comes On
5) SHIFT, ALT, C, R, 1	Center Goes Out, Right Comes On
6) SHIFT, ALT, L, R, 1	Right Goes Out, Left Comes On
7) REPEAT STEPS 4 thru 6 as many times as desired	The MARQUE continues to rotate and get brighter for 8 SEC until it reaches full intensity then rotates at full intensity

Note a number of significant aspects:

(1)   The 8 SEC dissolve describes the maximum intensity

(2)   The SHIFT ALT allows the maximum intensity to continue fading up, while switching the lamp between glow and the controlled intensity.

(3)   Always use the independent controls L, C, and R to absolutely describe the sequence of lamps while using SHIFT ALT in this effect.

(4)   Step 7 would be an ideal time to use DOUBLING ADD-A-CUE if a START were programmed between Step 3 and Step 4.

(5)   When the dissolve is finished (going up or going down), the SHIFT ALT then returns to a normal effect of switching between glow and full intensity.

(6)   On the SHOW PRO V, the Screen Status LED's follow the alternating intensity to assist the operator in programming the sequence.

The Intensity Controlled Alternate may similarly be used to fade a Marque down, with one programming distinction. The 8 SEC command starts the lamp fading down and the Status LED goes out immediately even though the projector lamp is still "ON" fading towards "OFF". The SHOW PRO V uses the first SHIFT ALT as a book keeping move to light the Screen Status LED with no effect on the projector lamp intensity. The LED then corresponds with the true lamp intensity and hence is useful to assist the operator in programming the sequence. All following SHIFT ALT's then turn the corresponding projector lamp's and LED's on and off simultaneously. The Marque should be timed to stop rotating just before the dissolve finishes, because after the dissolve completion the lamps will return to the normal screen effect of alternating between glow and full intensity.

Dissolve Freezes, changes, etc., may also be used with the SHIFT ALT. Thus, the rotating Marque could be dimmed up, held, dimmed further up, then dimmed off if desired. This is a true challenge for the experience professional operator. If you are so inclined to accept the challenge, then we offer a hint. Always use an even number of SHIFT ALT's following a freeze before resuming the dissolve. The LED STATUS then corresponds with the beginning dissolve direction and the lessons learned under the paragraph titled DISSOLVE FREEZE, will apply directly.

HIGH SPEED DUMPING OF MEMORY ONTO MAGNETIC TAPE

The SHOW PRO V System lets you store program memory on magnetic tape by means of high speed dump of the information, or by synchronizing information stored in memory to a sound track. The information can be replaced in memory by playing back the recorded tape. So you can store memory temporarily during programming, or permanently for a "canned" show. And changes can still be made by re-entering memory into the programmer.

Here's how to store your program ... temporarily or permanently ... on magnetic tape.

1. Push RESET. Wait for memory and projectors to home, indicated by green ready lights.

2. All switches to the right except MAG TAPE, which should be in PROGRAM position. Be sure, too, that the SEQUENCE switch is the position that coincides with your program. If you want projectors to remain home, put DISSOLVE switch to DISCONNECT.

3. Interconnect from Record Mag Tape Receptacle on rear panel of programmer to Line Level In on tape deck.

4. Put tape deck in Record and start.

5. Push CLEAR. A tone is generated to set tape deck level, which should play back at zero VU. We have found many tape decks recording at +3 DB will play back at zero. To check your tape deck, play back the tone recorded. If it reads approximately zero, proceed with the next step. If it does not, change the record level and try again. Once you have established a record level, you should not have to change the setting during programming.

6. After level is set, return KEYBOARD switch to FAST EDIT.

7. Push RUN. WAIT until DIGITAL CUE COUNTER stops. Your program is now recorded on magnetic tape at 20 cues per second.

Note: Do not enter a HOME cue at the end of a program when high speed dumping or it will cause the program to record continuously.

8. Stop tape deck.

MEMORY RE-LOADING FROM MAGNETIC TAPE

1. All switches should be to the right except the DISSOLVE switch, which should be in DISCONNECT. Be sure that the SEQUENCE switch is in the position that coincides with your program.

2. Interconnect from the Playback Mag Tape Receptacle on the rear panel of the programmer to Line Level Out on the tape deck.

3. Find the level-setting tone on the tape. This can be determined by by tape deck counter or the appearance of a steady green MAG TAPE STATUS light on the keyboard.

4. Run tape deck. DIGITAL CUE COUNTER will show program cues loading and keyboard lights will flash

5. When Cue Counter stops, program is loaded in memory.

6. Stop tape deck.

7. Push RESET.

8. Move the DISSOLVE switch to NORMAL.

Now memory is loaded back into the programmer, and all projectors, as well as memory, are in home position.

RECORDING CUES TO SOUND TRACK

1. Push RESET. Wait for memory and projectors to home, indicated by green ready lights on keyboard.
2. All switches should be to the right except MAG TAPE which should be in PROGRAM position.
3. Interconnect from Record Mag Tape Receptacle on rear panel of programmer to Line Level In on the #2 track of the tape deck.
4. Put tape deck in Record on #2 track and Play on #1 track and start.
5. If you have not set your record level, see Step 5 of High Speed Dumping section. If you have previously set your record level, proceed immediately with the next step.
6. After level is set, move KEYBOARD switch to NORMAL.
7. Now you're ready to cue your show to the sound track. This is done by pushing the CUE button at the point in the sound track at which you wish the next screen action to occur.
8. Continue until entire show is recorded to sound track.
9. Stop tape deck.

PLAYING BACK YOUR SYNCHRONIZED, RECORDED SHOW

1. Push RESET. This brings memory and projectors to home.
2. All switches should be to the right. SEQUENCE switch should be in the position that coincides with your program. Put MEMORY switch to DISCONNECT unless you intend to re-load memory.
3. Interconnect from Mag Tape receptacle on rear panel of programmer to Line Level Out on tape deck. Both Record and Playback cords may be connected during programming if desired.
4. Set both tracks of tape deck to Play. Find line level override tone on tape. This can be determined by tape deck counter or appearance of steady green MAG TAPE STATUS light.
5. Let tape deck run.
6. Your show should now run exactly as programmed. If your MEMORY switch was in NORMAL, note that your program has also been loaded into memory in case you want to edit and re-cue.
7. At end of recorded show, stop tape deck.

SHOWING A "MIXED" SHOW

There may be times when you want to incorporate a "live" speaker or narrator into your "canned" show, or to inject a manually-controlled segment. The SHOW PRO V System makes it easy to do, because it lets you pre-load memory for the live portion, then switch to canned at the appropriate time.

(A)   Loading Memory

1. All switches should be to the right except DISSOLVE, which should be on DISCONNECT and SEQUENCE must be in proper position.
2. Start tape deck and load memory.
3. Stop tape deck after memory load.
4. Push RESET.

(B)   Playing "Canned" Show

1. Move DISSOLVE switch to NORMAL.
2. Move MEMORY switch to TAPE BYPASS.
3. Start tape deck for canned portion.
4. Stop tape deck at end of canned portion.

(C)   Cueing The Speaker

1. Push CUE as appropriate.

NOTE: You may then restart tape deck for a latter canned portion
          if desired without moving any switches on the new SHOW
          PRO V.

CONCLUSION

Now you have some idea of where your SHOW PRO V System can take you.

As you become increasingly familiar with it, and more confident in your use of it, you'll find the SHOW PRO V will encourage your best creative efforts.

You doubtless already recognize that its capacities are such as to motivate your search for techniques and effects previously untried.

So don't hesitate to experiment. The system's tolerant of errors. And its range of capabilities is beyond the scope of any manual.

If you have comments or questions, or need assistance of any sort, contact us.

In the meantime, your SHOW PRO V System is your means of exploring a whole new universe of multi-image possibilities.

Explore boldly. And enjoy it.
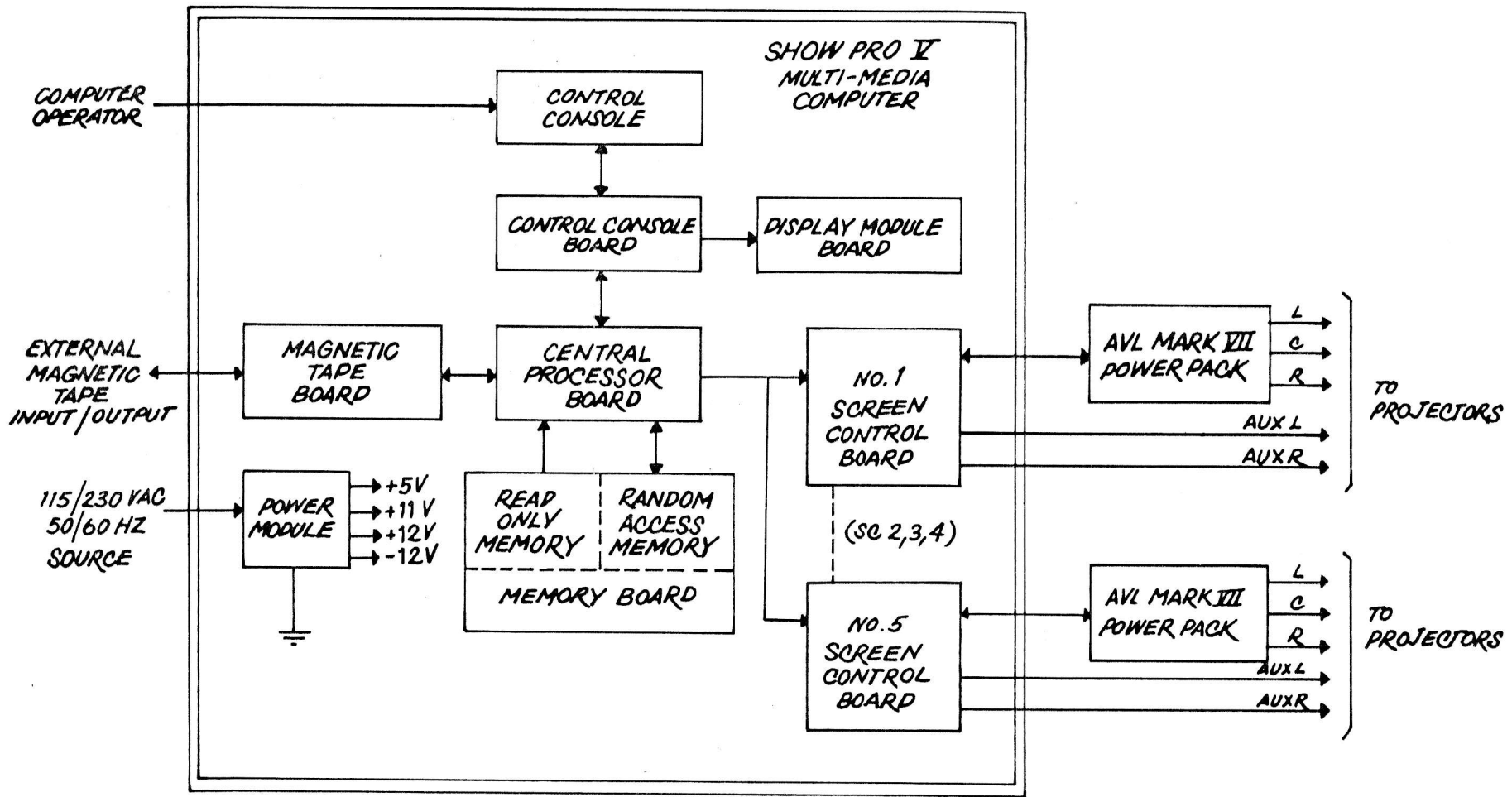
SHOW PRO V
MULTI-MEDIA
COMPUTER

COMPUTER OPERATOR → CONTROL CONSOLE

CONTROL CONSOLE BOARD → DISPLAY MODULE BOARD

EXTERNAL MAGNETIC TAPE INPUT/OUTPUT → MAGNETIC TAPE BOARD ↔ CENTRAL PROCESSOR BOARD

115/230 VAC 50/60 HZ SOURCE → POWER MODULE
+5V
+11 V
+12V
-12V

READ ONLY MEMORY   RANDOM ACCESS MEMORY

MEMORY BOARD

NO.1 SCREEN CONTROL BOARD
AUX L
AUX R

AVL MARK VII POWER PACK
L
C
R
TO PROJECTORS

(SC 2,3,4)

NO.5 SCREEN CONTROL BOARD
AUX L
AUX R

AVL MARK VII POWER PACK
L
C
R
TO PROJECTORS

AVL   D 15 99 002

SPV POWER CIRCUIT

115/230V 50/60HZ SOURCE — BLK / WHT / GRN — FUSE 2A — BLK-16 / RED-16 / WHT-16 / GRN-16 — BLK-16 / RED-16 / WHT-16 / GRN-16 (LOGIC)

CHASSIS GROUND — MOLEX CONNECTOR — POWER SWITCH — FAN (M)

115/230V SWITCH

T1 (EG-495) — T2 (P-637B)

MDA 950-1 BRIDGE — POWER MODULE (MDA 980-1 BRIDGE)

SCREEN CONTROL CONNECTIONS (TYP) NOTE 6
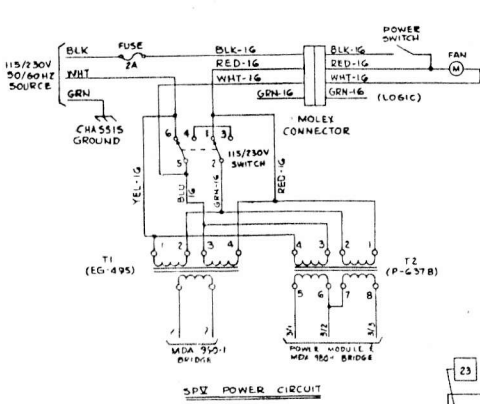
JONES PIN NO.	FUNCTION	SCJ CABLE PIN NO.	SCE CABLE PIN NO.	CONNECT TO
1	FORWARD LEFT	2	16	
2	FORWARD CENTER	16	1	
3	FORWARD RIGHT	7	15	
7	REVERSE LEFT	3	2	NO CONNECTION
8	REVERSE CENTER	12	14	
9	REVERSE RIGHT	8	3	
14	FORWARD GROUND	1	13	
16	+28VAC	9	4	
18	-28VAC	10	12	
19,20,22	+30VDC	11	5	AUX L-2
21	FIRE RIGHT	13	11	NO CONNECTION
23	FIRE CENTER	14	6	AUX L-5
24	FIRE LEFT	15	10	NO CONNECTION
4,5,6	NO CONNECTION		7	AUX R-2
10,11,12,		4,5,6	9	NO CONNECTION
13,15,17			8	AUX R-5

NOTES:

1. **CAUTION** - THIS ASSEMBLY CONTAINS MOS-TYPE DEVICES WHICH ARE SUBJECT TO ELECTROSTATIC (STATIC) CHARGES. INDIVIDUALS AND TOOLS SHOULD BE GROUNDED BEFORE COMING IN CONTACT WITH THE ASSEMBLY OR DEVICE. BOARD ASSEMBLIES MUST BE WRAPPED IN METALLIC FOIL FOR HANDLING AND/OR STORAGE.

2. ⌐ DENOTES PIN 1 OF A DEVICE OR CABLE PLUG

3. ITEM NUMBERS 1 THRU 14, DESIGNATED WITH ○ ARE AC POWER COMPONENTS.

4. ITEM NUMBERS 20 THRU 27, DESIGNATED WITH □ ARE LOGIC LEVEL COMPONENTS.

5. APPROVED ALTERNATE MANUFACTURERS:

6. THE (SCJ) CABLE CONNECTS A SCREEN CONTROL BOARD WITH THE CORRESPONDING 24 PIN OUTPUT CONNECTOR. THE (SCE) CABLE CONNECTS A SCREEN CONTROL BOARD TO THE CORRESPONDING (L) AND (R) AUXILIARY OUTPUT CONNECTORS.

7. THESE SPECIFICATIONS ARE FOR DOMESTIC UNITS. REFER TO D15 99 003 FOR IEC MODEL SPECIFICATIONS

BASE ASSEMBLY

PLAY REC REMO P.I — SCE SCJ (×5)

FUSE — 115/230V — PWR

POWER MODULE (15 33 010)

BOARD STACK — (TOP) MEMORY / CENTRAL PROCESSOR / MAGNETIC TAPE / (BOT) CONTROL CONSOLE

T2 — T1 — C2 34,000 µf — C1 21,000 µf

SCREEN 1 CONTROL BOARD / SCREEN 2 CONTROL BOARD / SCREEN 3 CONTROL BOARD / SCREEN 4 CONTROL BOARD / SCREEN 5 CONTROL BOARD — RELAYS — SCJ SCE

MALE — TO (N.O.) RELAY CONTACT — (L) & (R) AUXILIARY (WIRING SIDE)
MALE — PROGRAM INTERCONNECT (WIRING SIDE)
FEMALE — REMOTE CUE (WIRING SIDE)

POLARIZING (GROUND) TERMINAL (FAR SIDE) — TYPICAL (SCJ) PLUG 24 PINS - WIRING SIDE

MEMORY (15 33 002) SEE NOTE 1 — TO POWER MODULE — RED / BLK

V1 MOVE JUMPER (SPV ONLY)

CENTRAL PROCESSOR (15 33 000) SEE NOTE 1 — TO POWER MODULE

MAGNETIC TAPE (15 33 001) SEE NOTE 1

CONTROL CONSOLE (15 33 002)

TO COVER ASSEMBLY

COVER ASSEMBLY

FAN (M) — A2 CABLE — A1 CABLE — TO COVER POWER AND GROUND BUSSES — BLK / RED — A2 — A5 CABLE — POWER — DISPLAY MODULE (15 33 008)

MEMORY / SEQUENCE / STEP/PLAY / SHIFT — REMG / KEYBOARD — DISSOLVE / MAG TAPE

SCREEN CONTROL (15 33 001) — TO POWER MODULE — RED / BLK — TO E3 ON NEXT SCREEN CONTROL BD (INSULATE PLUG ON SCS WITH TAPE - NO CONNECTION REQD)

SCREEN CONTROL BOARD (TYPICAL OF 5 BOARDS) — SCJ SCE

SHOW PRO V SPECIFICATIONS DOMESTIC UNIT (NOTE 7)

ITEM NO.	PART NUMBER	MANUFACTURER	DESCRIPTION	NOTE
30				
29				
28				
27	CM7-7945	CHICAGO MIN LAMP	BULB, INCAN (PUSH SWITCHES)	4
26	CM-345	CHICAGO MIN LAMP	BULB, INCAN (CUE SWITCH)	4
25	3416-0000	3M CO.	CONNECTOR, RIBBON CABLE	4
24	3365-16	ALPHA	CABLE RIBBON 16 COND.	4,5
23	119-5M	EBY	PLUG, MALE, 5 PINS	4
22	HHS-275	H.H. SMITH	JACK, AUDIO	4
21	119-5F	EBY	JACK FEMALE 5 PINS	4
20	P-324-AB	VERNITRON	PLUG, MALE, 24 PINS	4
19				
18				
17				
16				
15				
14	MDA 980-1	MOTOROLA	BRIDGE RECTIFIER	3
13	R18-GF5	THOMAS & BETTS	TERMINAL LUG SPADE, CRIMP	3
12		ALPHA	WIRE, 16 AWG, STRANDED	3
11	LL-123		SWITCH, TOGGLE, SPDT	3
10	BT 2A-1	ROTRON	FAN	3
9	12503	VERNITRON	TERMINAL STRIP, BARRIER, 8 POS	3
8	AGC-2	BUSSMAN	FUSE, 2 AMPERE	3
7	LF-342004	LITTLEFUSE	FUSEHOLDER	3
6	46256 LFR	SWITCHCRAFT	SLIDE SWITCH, DPDT	3
5	17419	BELDEN	POWER CORD	3
4	P-637B	STANCOR	TRANSFORMER	3
3	EG-495	ELEC WINDINGS	TRANSFORMER	3
2	MDA 950-	MOTOROLA	BRIDGE, RECTIFIER	3
1	03-09-1047 (03-09-2048)	MOLEX	CONNECTOR, 4 POS	3

AUDIO VISUAL LABORATORIES, INC. ATLANTIC HIGHLANDS, NEW JERSEY 07716

DATE 1/21/77

D 15 99 002 — REV B

REV B 8/8/77 MISC MODIFICATIONS
REV A 21/77 REV POWER CKT

U.S. / EURO

POWER CORD TO MAINS

CONNECT AS SHOWN
GREEN = YELL/GRN
WHITE = BLUE
BLACK = BROWN

YELLOW/GREEN

FOR S·AV 2000 APPLIANCE CORD IS SUBSTITUTED FOR OUTLET

BLUE — S 3020 6/250 — BROWN

EKTAGRAPHIC / S-AV 2000

CONTROL: BLACK, GREEN, YELLOW, WHITE, BROWN
LAMP: RED, BLUE
AC: BLACK, WHITE

A12 DIN 41622

TO LEFT PROJECTOR (TYPICAL)

LEFT ACCESS (LA) REFER TO RIGHT ACCESS AND TABLE BELOW FOR WIRING DETAILS

RIGHT ACCESS (RA) KODAK CORD WIRING ONLY SHOWN REFER TO TABLE BELOW FOR CONTROL WIRING

FOR MARK VII CENTER ACCESS (CA) SEE TABLE BELOW KODAK CORD WIRING SAME AS RIGHT ACCESS

TO CONTROL CABLE

TO RIGHT PROJECTOR

FOR REPLACEMENT PARTS SEE REFERENCE DESIGNATIONS ON A 07 53 002 FOR BOTH MARK IV AND MARK III

POWER LAMP (REPLACE WITH TYPE 18/9.6/LAMP)

POWER SWITCH

SELECT 115/230

TRIAC WIRING (TYPICAL) IV - 2 TIMES III - 3 TIMES

TO CONTROL CABLE

TO P1 CONTROL CABLE WIRING MARK IV - 9 PAIR BELDEN 8744

MARK VII 11 PAIR BELDEN 8753

TERMINATION IN MARK III POWER PACK	WIRE COLOR	JONES PLUG PIN#
CONTROL CABLES + JUMPER ON MATE		
LA-5 COMM LEFT	BLACK	1
RA-5 COMM RIGHT	BLACK	3
LA-4 FOCUS LOCK	BLACK	4
RA-4 FOCUS LOCK	BLACK	6
LA-3 REV LEFT	RED	7
RA-3 REV RIGHT	YELLOW	9
LA-1 FOCUS	WHITE	10
RA-1 FOCUS	ORANGE	12
FWD GND (RA-2/LA-2)	WHITE	14
28 VAC FROM DS1	GREEN	16
28 VAC FROM DS1	BLACK	18
+30 VDC TO T1	BLACK	19*
FIRE RIGHT TO T1	BLUE	21
+30 VDC TO T2	BLACK	22#
FIRE LEFT TO T2	BROWN	24
3 WIRES UNUSED	GREEN/ORANGE	N.C.
ADDITIONAL FOR MARK VII POWER PACK	WIRE COLOR	JONES PLUG ADD. PIN#
CA-5 COMM CENTER	RED	2
CA-4 FOCUS LOCK	RED	5
CA-3 REV CENTER	YELLOW	8
CA-1 FOCUS	BLUE	11
NO. CONNECTION	–	13
NO. CONNECTION	–	15
NO. CONNECTION	–	17
+30 VDC TO T3	RED	20*
FIRE CENTER TO T3	ORANGE	23

TO RIGHT & LEFT ACCESS PLUGS

TO DS1
TO T1
TO T2

POWER INPUT - MARK III (J3 OMITTED ON MARK IV)

28 VAC TO CONTROL MODULE

FIRE SCHEMATIC (TYPICAL: 2 TIMES IV : 3 TIMES III)

FROM CONTROL — R1 — R4 — R8 — L-1 — C1 TO PROJECTOR LAMP

AVL c 07 53 001

SHOW PRO V SPARE PARTS LIST

MECHANICAL PARTS

ITEM NO.	QTY.	DESCRIPTION
1	1	Transformer, EG - 495
2	1	Transformer, P -6378
3	1	Capacitor, 36,000 uf, Sprague 36D or Mallory CGS (Specify)
4	1	Capacitor 21,000 uf, Sprague 36D or Mallory CGS (Specify)
5	1	Rectifier Bridge, MDA - 980 - 1
6	1	Rectifier Bridge MDA - 990 - 1
7	1	Transistor, Power Tip - 35 (Incl. Mtg. Pkg.)
8	1	Plug, P324 - AB (24 Pin Males)
9	1	Plug, 119 - 5F (5 Pin Females)
10	1	Plug, 119 - 5M (5 Pin Male)
11	1	Fuseholder, LF - 342004
12	1	Jack, Audio, HHS - 275
13	5	Fuse, AG - 2 (2 Amp)
14	1	Switch, 3 Position, JMT - 121
15	1	Switch, 2 Position, JMT - 123
16	1	Switch, Power, LL - 123
17	1	Switch Pushbutton, LUS - 05 - 1
18	10	Bulb, Incandescent, CM - 7 - 7945
19	2	Bulb, Incandescent, CM - 345 (Cue Switch Only)
20	1	Fan, BT2A - 1
21	2	Clip, Flat Cable, 4J10
22	4	Spacer, 88 - 4344/FF
23	4	Spacer, 18 - 4343/MF
24	1	Lamp, Led Assembly, 2L5SRTL - FL5/35 (Red)
25	1	Lamp, Led Assembly, 2A5SATP - FL5/33 (Amber)
26	1	Lamp, Led Assembly, 2G5SGTP - FL5/33 (Green)
27		Assorted Hardware Package

PRINTED WIRING BOARD

PART NO.	QTY.	DESCRIPTION
13 33 001	1	Magnetic Tape PWB Assembly
13 33 002	1	Control Console PWB Assembly
13 33 003	1	Display Module PWB Assembly
15 33 002	1	Memory PWB Assembly
15 33 001	1	Screen Control PWB Assembly
15 33 003	1	Central Processor PWB Assembly
15 33 014	1	Power Module PWB Assembly

SHOW PRO V SPECIFICATIONS

DISSOLVE CONTROL: One 24 pin Jones plug for each of five MARK VII Power Packs. Each Power Pack controls 3 slide Projectors.

AUXILIARY CHANNELS: Ten momentary, electrically isolated, 25 volt AC on DC, 3-amp Carousel type male receptacles.
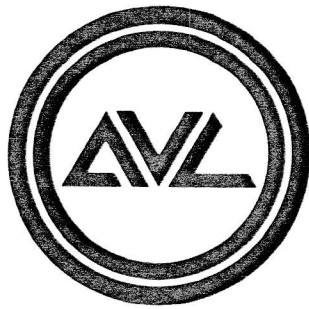
MAGNETIC TAPE: Line Level record and playback. Time Division Multiplex (Digital), multiple pass with cyclic redundancy check (CRC) characters and computer analysis on playback.

ELECTRICAL: 115/230 VAC, 50/60 Hz.

SIZE: H x W x D = 4½ x 21 x 15 inches.
12 x 54 x 38 cm.

WEIGHT: 22 pounds
10 kg.

ORIGIN: Manufactured in U.S.A.

Audio Visual Laboratories, Inc.

500 Hillside Avenue, Atlantic Highlands, New Jersey 07716   201-291-4400