C H 2 0 0 O P E R A T I O N S M A N U A L

3 - 3 - 8 8

SECTION 1 -- INTRODUCTION

The CH200 Console is a "hybrid" type of lighting control console. It incorporates features available on memory systems, rock boards, and functions popular in the video industry. These features, and the latest microprocessor technology makes the CH200 a flexible tool for the creative lighting designer.

The CH200 is available with 18,24,36, to 48 channels.

This manual will take you step by step through the hookup and operation of your CH200. Since it is basically a two scene console with enhancements it should not be difficult to master. Study the manual carefully with the console to become familiar in all operations and let your creativity go.

SECTION 2 -- INSTALLATION AND HOOKUP

Since the CH200 is for portable use as well as permanent installations there is no complicated installation procedure. The console should be placed on a flat surface larger than the console. Allow some room at the rear of the console for access to cable connections and rear panel controls.

The CH200 is equipped with a 6" (2M) detachable power cord. Connect the receptacle end to the CH200 and then plug the cord into a standard wall outlet. The CH200 requires only 2 Amps of 120 Volts, 60 Hz power. The console can be energized at this point using the key switch.

Control signal to dimmers is contained in a multiplexed digital signal from the data link connectors. Connect the data cable supplied with digital CH200 systems to the console "A Data Connector" on the back of the console and then to your dimmer rack, interface box, or plug in box. You are now ready to operate the console. The "B Data Connector" is not used. The standard data format is the USITT DMX-512 digital standard.

CH200 consoles are also equipped with an integral analog interface. Control signal comes standard wired to 10 pin Cinch Jones connectors at the rear of the console. Connectors are wired per Lighting Methods, Inc. standard pin out shown in the chart below.

Pin	Dimmer
1	1
2	2
3	3
4	4
5	5
6	6
7	not used
8	common
9	not used
10	not used

The output control voltage is 0-10 Vdc. Any Lighting Methods, Inc. dimmer pack may be connected directly to these connectors. For the compatibility of any other manufacturers equipment consult Lighting Methods Inc. or your dealer.

The CH200 is equipped with two working lights mounted to retaining clips on the console rear. Remove them and install them using a quarter turn to latch them into sockets on the top of the console. Even when attached they will seem loose. Adjust them to best light the console in your operating situation. A dimmer potentiometer on the rear of the console will adjust their intensity.

SECTION 3 -- TWO SCENE OPERATION

The CH200 is what is refered two as a "Two Scene" console. What this means is that we can set a look or "scene" on stage using the faders in "Scene 1" and while it is running set the next scene up in "Scene 2" and be ready for it on command. After fading into the "Scene 2" we can go back and use the "Scene 1" to set the next look.

CROSSFADERS

The CROSS-FADE faders are used to change control from "Scene 1" to "Scene 2". You will notice that the fader for "Scene 2" is upside down. This will allow you to fade from "Scene 1" to "Scene 2" by grabing both faders at once.

The LED's next to the faders track the actual fade. The green LED,s show the active scene. The red show the inactive. As you will see further on, the actual fade may not be where the position of the faders is.

Since each scene has its own cross fader it is possible to have both or neither scene operational. When both scenes are operational the output will be the higher of the two.

GRAND MASTER

The GRAND MASTER fader proportionaly controls all channels. For example ,if the GRAND MASTER is set to 50% then the

maximum that any channel output can be is 50%.

SYSTEM BLACKOUT

The SYSTEM BLACKOUT forces all outputs to "0". This works simialar to bring the GRAND MASTER to "0" but does it instantly. The LED will come on when in blackout.

TIME FADERS

The TIME FADERS allow the cross faders to act slowly over a period of time, freeing the operation from the tedious operation of doing it by hand. The actual fade time from "0" to "10" is displayed in the window above each fader. Since each cross fader has it's own time fader each can fade at its own rate. Times can be set from "0" to "5:00" minutes in 1 second intevals up to 25 seconds, 5 second intervals up to 2:00 minutes and 10 second intervals up to 5:00 minutes. Please note that these times are not precise and may vary depending on the mode of operation.

TYPICAL OPERATION:

Preshow - GRAND MASTER set to "10"
- SCENE 1 CROSS FADER TO "0"
- SCENE 2 CROSS FADER TO "0"
- BLACKOUT "OFF"
- FADERS in "SCENE 1" set to levels for cue 1

Cue 1 - Bring SCENE 1 CROSS FADER to "10".

- Set FADERS in "SCENE 2" to levels for cue 2.

Cue 2 - Crossfade from "SCENE 1" to "SCENE 2" by moving both CROSSFADERS together till the SCENE 2 CROSSFADER is at "10".

- Set FADERS in "SCENE 1" to levels for cue 3.
- Set timer for both CROSS FADERS to "10".

Cue 3 - Crossfade from "SCENE 2" to "SCENE 1" by moving both CROSSFADERS together till the SCENE 1 CROSSFADER is a "10" (The actual fade will take 10 seconds and will show on the CROSSFADER LED's.

Cue 4 - . . .

Fade time may be change during a fade if needed. A fade can also be stoped by bringing the CROSSFADERS to the actual fade point and may actualy be reversed by continuing past the actual fade point.

INDEPENDENT CHANNELS

The CH200 also has an "Independent Scene". This allows Channels to be taken out the crossfade operation. Channels in the "Independent Scene" will be controlled by the "Scene 1" FADER and mastered by the INDEPENDENT MASTER.

To program a channel in the "Independent Scene", press the INDEPENDENT PROGRAM button. The LED on the button will come on to show your in program mode. While in this mode the button below each channel can be pressed to but or release a channel from the "Independent Scene". When you are done selecting channels press the INDEPENDENT PROGRAM button again to record settings.

SECTION 4 -- SPECIAL EFFECTS

BUMP

Any channel may be "Bumped" to full using the BUMP effect. To activate the BUMP BUTTONS below each channel press the BUMP ENABLE button. The LED will come on. Each time you press and hold one or more BUMP BUTTONS the corresponding channel will flash to full. When released the channel will return to original level.

SOLO

Any channel may be "Soloed" to full using the SOLO effect. To activate BUMP BUTTONS below each channel press the "SOLO ENABLE" button. The LED will come on. Each time you press and hold one or more BUMP BUTTONS the corresponding channel will flash to full as in the "Bump" mode. At the same time any channel not "Soloed" will go to "0" thus giving a solo or single light effect.

CHASE

The CH200 has a user programable channel chase. Any channel can be included in the chase pattern once. The chase pattern can be programed in any order and will be played back in the same order it was put in. The CHASE MASTER will control the level of the chase. The CHASE BLACKOUT button will activate the chase on stage (This comes on at power up) when disabled. The CHASE PREVIEW will allow the user to

preview the speed and direction of the chase by showing it on the LED below each channel. The CHASE RATE FADER will control the speed and direction of the chase. Placing this fader in the center position will stop the chase.

To program a chase pattern, press the CHASE PROGRAM button. The LED should come on. Press the BUMP BUTTON below each channel desired in the pattern. Press them in the order that you want them to chase. Pressing a button twice will remove it from the pattern. Once remove from the pattern if pressed again, it will be place after the last channel selected. Press the CHASE PROGRAM button again to record the chase.

Chases can not be cleared so be sure to keep the CHASE BLACKOUT on if you do not want it to have an effect on stage.

SECTION 5 -- MEMORY MASTER

Besides the two manual scenes, the CH200 also has "hidden" scenes. These scenes can be programed and stored for use later. When bringing them back they will be controles by one fader or master. Thus we have "Memory Masters". The "Memory Master" has two modes, "Program" and "Playback".

PLAYBACK

To put the "Memory Master" in "Playback" mode, press the MEMORY MASTER buttom. Do not hold it in, or you will go into program mode. The LED should come on (not blink).

While in the "Playback" mode "Scene 1" will act as normal. "Scene 2" will act as master for the hidden memories. Channel 1 will bring up memory one and so on. Using the crossfader will fade the memories in "Scene 2" and the levels set in "Scene 1".

While in "Playback" mode, "Bump" and "Solo" will bump memories but only while faded into the memory ("Scene 2) scene. Also note that the LED's below each channel do not come on as they do in normal "Bump" mode. (The first 6 do flash sometimes, please ignore this)

The "Chase" will operate as normal when in "Playback" mode.

PROGRAM

To put the "Memory Master" into the "Program" mode, press and hold the MEMORY MASTER button for 3 seconds. When you release the button the LED should blink.

Place the GRAND MASTER at "10". Use the "Scene 1" FADERS to set the level for the memory scene. Press the BUMP BUTTON below the channel to program it into that memory.(ie. channel 1 = memory 1).

Press the MEMORY MASTER button again exit "Program" mode.

One or all memories can be programed while in the program mode.

To clear a memory, program levels of "0" into all channels.

SECTION 6 -- OTHER THINGS

CLEARING ALL MEMORY

To clear all memory in the console press the SYSTEM BLACK OUT and the MEMORY MASTER function pushbuttons at the same time. Most of the LEDs on the control will flash. This will clear all memory in the console.

MEMORY RETENTION

The CH200 has a 10 year lithium battery to retain all recored information while the unit is turned off. It is always wise to also record all information in paper also in case some memory problem arises.

MAINTAINENCE

The CH200 has been designed using the latest digital technology. It will give you many years of reliable service. There are no user servicable parts inside the console and no adjustmemts to make.

Be sure to plug the console in to 110/120V AC.

Keep console covered when not in use to keep dust out of it.

Keep containers of liquid, ash trays and other sources of small particals away from console. (especialy Coco-Cola).

Do not try to clean faders. They are lubricated from the manufacture and cleaning will drasticly shorted there life.

If you have any proplems contact your dealer of Lighting Methods Inc. (716)-328-1020.

SECTION 7 -- PATCH OPERATION

The DESIGNER console has what is referred to as a "proportional patch". This feature allows you to group multiple dimmers to one control channel. This will allow you to control more dimmers than the console has channels and will assist you in grouping dimmers into a logical format. Also, each dimmer can be assigned its own maximum level adding even more flexibility.

PATCHING DIMMERS TO CHANNELS

Turn the console on. The display will show various messages as it goes through its self test. If all goes well you will be left with a cursor in the topleft corner of the screen. Make sure the "patch" key is in the ON position. Adjust the display illumination with the knob on the back of the console for your best view.

Start by clearing the console with the following sequence:

[CLEAR] [CHAN] [9] [9] [PATCH] [PATCH]

This will be discussed further on in greater detail. The order to enter is as follows:

Dimmer(s)
Level
Channel
Patch type

We will use patch type "new" for now. This is done by using the [-] key. When the type is an "add" patch, use the [+] key. Both will be discussed later.

Lets try an example:

Lets say we want to patch dimmer 1 through 6 to channel 1 at full intensity.

KEYSTROKE	DISPLAY SCREEN
[DIM]	DIM
[1]	DIM 1

[-]	DIM 1-
[6]	DIM 1-6
[AT]	DIM 1-6 @
[FULL]	DIM 1-6 @ FULL
[PATCH]	DIM 1-6 @ FULL PATCH CHAN
[1]	DIM 1-6 @ FULL PATCH CHAN 1
[-]	DIM 1-6 @ FULL PATCH CHAN 1 NEW
[PATCH]	(display clears)

Lets examine the keys strokes.

We entered [DIM] to signify upcoming dimmer numbers.

We selected the dimmer numbers [1] [-] [6]. Notice the use of the [-] key as "through". We could have also entered [1] [+] [2] [+] ... using the [+] key as "and". The [-] and [+] keys can be used in conjunction with each other also, i.e. [1] [-] [6] [+] [8] (Dimmer 1 thru 6 and dimmer 8).

We entered the [AT] key to signify we are done selecting dimmers and are ready to select a level.

We entered the [FULL] key for 100% intensity. An exact intensity could have been entered here instead. An intensity consists of a level from 00 to 99, FULL or NON-DIM. A non-dim intensity means the dimmer will remain off until the control level reaches 50%. When 50% is reached the dimmer will turn on to full. Returning the channel to a level below 50% will turn it back off.

We entered [PATCH] to signify we want to "patch" to a channel.

We entered [1] as the channel number. Only one channel can be selected at a time, though it can be selected again later.

We entered the [-] key signifying a "new" patch. This will remove all dimmers currently assigned to the selected channel. If we had used the [+] key, we would have "added" the dimmers selected to the channel, leaving dimmers already assigned still assigned. If there are no previous dimmers assigned, then either key will work.

We entered the [PATCH] key to signify we are done patching.

At any point the [CLEAR] key can be used to erase the last key pressed.

Multiple dimmers at different levels can be assigned all at once. For example:

[DIM] [1] [+] [6] [AT] [5] [0] [9] [AT] [7] [5] [PATCH] ...

This would assign dimmers 1 and 6 at 50% and 9 at 75%.

VIEW THE PATCH

Once a patch is made, it can be called back up on the display for viewing. This is done by selecting the channel or dimmer number followed by the patch key. For example:

[CHAN] [1] [PATCH]
or
[DIM] [1] [8] [PATCH]

If there is more information than the display can show the [+] and [-] keys will scroll the display.

The [STEP] key will step to the next dimmer or channel.

MODIFYING AN INTENSITY "LIVE"

A dimmer intensity can be adjusted while watching it on stage by first viewing the desired dimmer, then selecting the desired channel and using the raise and lower keys to adjust. For example:

[DIM]	DIM
[9]	DIM 9
[8]	DIM 98
[PATCH]	1@FULL 6@85

This displays the channels to which the specific dimmer is currently patched and its current patch level.

To continue:

```
[CHAN]          1@FULL 6@85 CHAN
[6]             DIM 98@85
[LOWER]         DIMMER 98@84
   .
   .
[LOWER]         DIMMER 98@50
[PATCH]         (display clears)
```

CLEARING THE PATCH

All the dimmers assigned to a channel or all the channels assigned to a dimmer can be deleted with the clear command. For example:

```
[CLEAR]         CLEAR
[CHAN]          CLEAR CHAN
[1]             CLEAR CHAN 1
[5]             CLEAR CHAN 15
[PATCH]         CLEAR CHAN 15 SURE ???
[PATCH]         (display clears)
```

This would clear all dimmers from channel 15.

Notice the double [PATCH] entered to confirm.

If you want to clear just some dimmer from a channel, then repatch them at an intensity of "00". Be sure to use an "add" patch.

If you want to clear all dimmers and all channels, a special channel number is used. Channel 99 is reserved for this. For Example:

[CLEAR] [CHAN] [9] [9] [PATCH] [PATCH]

This will clear the entire memory including group master assignments that will be discussed later.

SECTION 8 -- GROUP MASTER OPERATION

GROUP MASTERS allow one or a number of channels to be "mastered" by one fader. Eight GROUP MASTERS are provided numbered 1 through 8. GROUP MASTERS can operate in one of three ways:

SUBTRACTIVE - Any channel assigned to it will be at its scene level when the MASTER is at "full", and proportionally reduced as the MASTER is brought to "zero".

PILE ON - Any channel assigned to it will be at the level of the master or the SCENE level, which ever is higher.

CONTROL - Any channel assigned to it will be at the level of the master. The SCENE level is ignored.

ASSIGNING GROUP MASTERS

GROUP MASTERS are assigned via the patch key board. Enter them as follows.

[CHAN]	CHAN
[1]	CHAN 1
[-]	CHAN 1 -
[6]	CHAN 1 - 6
[PATCH]	CHAN 1 - 6 PATCH GROUP
[8]	CHAN 1 - 6 PATCH GROUP 8
[PATCH]	display clears

This would assign channels 1 through 6 to GROUP MASTER number 8.

VIEWING A GROUP MASTER

Viewing a GROUP MASTER works just like viewing a channel except use channels 91 through 98 to view GROUPS 1 through 8

CLEARING A GROUP MASTER

Clearing a GROUP MASTER works just like clearing a channel except use channels 91 through 98 to clear GROUPS 1 through 8.

ADDING CHANNELS

Channels can be added at any time to a GROUP MASTER just by programing them in as normal. Any channels selected that are not currently assigned will be added to the MASTER.

EFFECTS AND GROUP MASTERS

Special effects such as CHASE, BUMP AND SOLO, are not effected by any GROUP assignments.

UNUSED CHANNELS

Any channel, 1-48, can be assigned to the GROUP MASTERS. Assigning channels beyond the number that are in the console (ie, channel 37 in a 36 channel board) is allowed. This allows for the additions of extra channels if needed.

SECTION 9 -- TAPE DRIVE OPERATION

The DESIGNER is equipped with a micro-cassette tape drive. The cassette will record PATCH and GROUP information entered through the key board. It will not record any of the effects of the TWO SCENE section of the console. (ie, MEMORY MASTER, BUMP, etc...)

Each cassette holds two shows, one on each side. The cassettes are marked "A" and "B" on each side. To insert the cassette, press the button on the drive, the door will open. Insert the cassette, tape end first, in the drive. To select a particular side, face the desired side down. Close the drive door.

RECORDING SHOWS

To record a show use the following commands.

[RECORD] RECORD: SIDE A?

This will confirm you side selection. Press clear to abort.

[RECORD] RECORD: TAPE REWINDING

Tape will rewind to the beginning.

[RECORD] RECORD: READY ?

Final conformation.

[RECORD] RECORD: IN PROGRESS

This will take about 45 seconds

RECORD: FINISHED
display clears

RECALLING SHOWS

To recall a show, use the following commands:

[RECALL] RECALL: SIDE A?

This will confirm your side selection. Press clear to abort.

[RECALL] RECALL: TAPE REWINDING

Tape will rewind to the beginning.

[RECALL] RECALL: READY ?

Final conformation.

[RECALL] RECALL: IN PROGRESS

This will take about 45 seconds

RECALL: COMPLETE
display clears

If there were any errors in recalling information, a message would be printed in place of the COMPLETE message.

SECTION 10 -- BACKUP OPERATION

The DESIGNER has two modes of backup. The first uses only the Patch processor. The second uses only the two scene processor.

BACKUP MODE 1

Backup mode 1 is selected by switching the backup switch (located on the rear of the console) to the up position. The data connector must be removed from port "A" and placed in port "B". In doing so, the patch section of the DESIGNER will be disconnected and the console will act like a CH200 console. Each channel will control its own dimmer (i.e. Channel 1 is dimmer 1, channel 2 is dimmer 2,...), so you will only be able to control the same number of dimmers as you have channels.

BACKUP MODE 2

Backup mode 2 is selected by switching the backup switch (located on the rear of the console) to the down position. The data connector remains in the "A" port. In doing so the two scene section of the console will be disconnected and the GROUP MASTERS will act as backup faders. The "control" mode is forced and only channels assigned to groups will be activated. Groups can not be changed while in backup but you can switch back to normal mode, patch them, and then return to backup mode.

NORMAL MODE

In normal mode the BACKUP switch should be in the center position.

Section 11 -- Misc Utilities

The Designer does allow for the basic setup of certain parameters for operation of the console.

Starting with a blank display, press PATCH.

SET TYPE OF GROUP MASTERS

[PATCH] SUBS ARE SUBTRACT SELECT
1-SUB 2-CONTROL 3-ADD

By pressing 1, 2, or 3, the operator can choose how he would like the submasters to be programmed: subtactive, control channels or additive. Once the selection has been made, the display advances immediately to the next screen.

SET NUMBER OF DIMMERS

DIMMERS ARE SET TO 512
ENTER 1-5 FOR 100-512

Again, by pressing the appropriate button, the operator can set a limit on the number of dimmers the console will control. 1 for up to 100 dimmers, 2 for up to 200, 3 for ... 5 for up to 512 total dimmers. Again once the selection is made, the display will advance to the next screen.

SET DEFAULT PATCH

BUILD DEFAULT PATCH?
HIT PATCH TO CONTINUE

[PATCH] ENTER + - CLR XXX
PATCH START IS 001-

Because the console is limited by the number of channels, it is possible to begin a default patch at**********

A. [+] SURE?? HIT PATCH AGAIN
OR CLEAR TO ABORT

[PATCH] -

B. [-] SURE?? HIT PATCH AGAIN
OR CLEAR TO ABORT

[PATCH] -

SECTION 11-- MISC UTILITIES

XXXXX

- PATCH.

- GROUPS.

- # OF DIMMERS

- DEFAULT PATCH.

  L> PATCH

  L> STARTING GROUP.

  USUALLY 1 - 36

  |

  DIMMER CHECK

  1 P, C, C, C, 37.

PATCH.

SET TYPE OF GROUP MASTER

SUBS ARE SUBTRACT select
1- SUB 2- CONTROL 3 - ADD → ENTER [1][2][3]

IMMEDIATELY ADVANCES TO NEXT SCREEN

[CLEAR]

SET # OF DIMMERS

DIMMERS ARE SET TO 512

ENTER 1-5 FOR 100-512. → ENTER [1][2][3][4][5]

100
200
300 dimmers
400
512

[CLEAR]

SET DEFAULT PATCH

BUILD DEFAULT PATCH?

HIT PATCH TO CONTINUE → [PATCH]

ENTER + − CLR XXX
PATCH
START IS 001 — CURSOR

[CLEAR] — CLEARS DISPLAY

↳ UP TO NEXT GROUP OF DIMMERS

② [CLEAR] CLEARS DISPLAY or [−] [+]

DOWN TO LAST GROUP.

SURE ?? HIT PATCH again or clear to abort.

" [PATCH] CLEARS DISPLAY

① ENTER # TO BEGIN DEFAULT (START IS —)

↳ ei. dimmer check
rather than channel check
Ch 1-36 dimmers 1-36
reset start at 37
Ch 1-36 dimmers 37-42
reset at 42.
" 1-36 dimmers 43-

? NEVER PATCHES COMPLETE
CH 1 - 1, 37, 43.