AVAB VIKING LIGHTING CONTROL SYSTEM

SPECIFICATIONS

A. GENERAL DESCRIPTION

The computer controlled system shall be an AVAB VIKING. It shall utilize a 16 bit processing system as its main computer and shall use microprocessors as ancillary process controllers.

Power fail circuitry shall insure that no information is lost due to power outages. Following such an outage the system shall return automatically to the exact status of the production program which existed before the outage took place. All fades in progress shall continue from exactly their positions at the moment of power outage.

The external memory shall consist of a standard 3.5" floppy disk drive. The system shall be fully operational using one such drive. The system shall be capable of reading from or to disk during playback.

The system shall have a true control-channel-per-dimmer configuration. All control channels shall be available for immediate access without the need for any type of hard-wired or electronic patching. The system shall directly output to AVAB digital dimmers.

The system shall directly operate on 220/240 (120) VAC at 50/60Hz, two wire plus ground mains service. All of the following features shall constitute the minimum performance standard:

B. SOFTWARE CONFIGURATION

The operational program shall incorporate all functions and shall be written in a real-time, high-level language such as C or PASCAL and shall be stored in CMOS memory. No external devices shall be required for special effects. Program updates shall be be provided on floppy disk. The operational program shall include real-time test programs for trouble shooting which can be executed while the system is performing its normal functions.

C. HARDWARE CONFIGURATION

1. The system shall consist of a modular control desk for entering production programs and playing them back and a computer rack which computes output values to the dimmers and other devices to be controlled, generates video displays and contains the disk drive(s). The desk shall be configured to accommodate 8 modules and shall be provided with blank plates to provide for future addition of modules. The modules in the control desk shall be movable for maximum operator convenience.

2. Communication between control desk and computer rack shall be in digital form.

3. The system shall provide for a wireless infra-red control.

4. The system shall be provided with a detachable alpha-numeric keyboard. All functions of the system shall be accessible from this keyboard.

5. The modules shall be interconnected via a ribbon cable data bus and shall be freely positionable within the control desk without the need for tools or special equipment.

6. The modules shall have integral displays, which complement information shown on the video monitors.

7. Fader wheels shall be used as level-setting devices, as submasters, and as crossfaders. These wheels shall be precision machined. They shall incorporate servo-motors to provide tactile feedback to the user.

8. Integral LED displays adjacent to the fader wheels shall indicate the level and direction of fades.

9. An integral voice synthesis system shall be incorporated in the system to provide prompts and warnings to the operator.

10. Output shall be provided to a minimum of two high resolution RGB video display monitors or monochrome monitors. Additional monitors shall be available to display additional channel pages as required.

D. SETTING LEVELS

1. Channel levels shall be set or altered individually, in randomly selected or pre-recorded groups or as complete presets.

2. Level setting shall be possible either actively or blind.

3. It shall be possible to enter levels using a fader wheel or with key entries interchangeable.

4. The system shall provide for a user programmable level key to enter ofter used levels.

5. Functions shall be provided to limit minimum or maximum levels, and to hold channels at predetermined levels.

6. A swap function shall be provided to allow channels or groups of channels to be substituted for others.

7. A notebook program shall be provided to allow coding of channel groups at user's convenience on eight different criterias, such as lamp type, color, position etc. It shall be possible to search for channels or groups on any combination of these criterias. The found group shall directly be entered into the channel editor for easy modification.

8. An editor shall be provided to allow global alterations to the user's lighting program.

9. A programmable preheat function shall be provided.

10. The submaster wheels shall be used as auxiliary level setting devices for single channels, groups or presets.

11. A dedicated facility shall be provided to proportionally call groups of channels into another preset. These groups shall be treated as channels.

12. The contents of any or all submasters shall be combinable and transferable to another preset for recording.

E. RECORDING

1. Any number between 0.1 and 999.9 shall constitute a valid preset number.

2. Presets may be recorded in any order and at any time.

3. The amount of memory remaining shall be displayed continuously on the video monitor.

4. A direct to disk facility shall be provided to store each preset on disk automatically as recorded it the user so desires.

5. The system shall provide a facility for recording component presets on the submasters. These presets can be combined to record new presets. Additionally, a facility shall be provided to automatically re-assign those presets to their submasters for instant access during playback.

6. Special effect presets may be assigned to both the playback sequence and independent fader levels.

7. The system shall provide a facility for measuring the time for a manually executed crossfade complete with different in, out and delay times (Time Track).

8. Any or all of the following shall be assignable to every preset:

    a. An IN or an OUT fade.

    b. A preset text of up to 9 characters.

9. The standard VIKING console shall be configured to accept additional hardware and software to control:

    a. Up to 1024 channels of color changers.

    b. Up to 128 remote-controlled lighting instruments.

    c. 128 motors controlling stage rigging.

10. Any or all of the following shall be assignable to each crossfade:

    a. Up to 32 simultaneous in or out fade times (cue parts) with delay times both in tenth of seconds, seconds or minutes and seconds up to one hour. There shall be a specific facility for creating these parts from pre-existing level information.

    b. User programmable fade curves. It shall be possible to record the exact movements of a manually executed fade. It shall be possible to playback the manual action exactly with a for practical purposes unlimited number of accelerations/retardations, up and down movements. It shall be possible to reverse or pause the fade curve at any moment.

    c. An IN or an OUT fade time plus a DELAY time in tenth a seconds, seconds or minutes and seconds up to one hour.

    d. An automatic wait and start time between crossfades in tenth of seconds, seconds or minutes and seconds up to one hour.

    e. An 80 character message, of which 22 characters are displayed automatically and the rest recallable from memory.

    f. A spoken message of up to 80 characters in computer synthesized speech.

11. The system shall provide a facility for recording loops from any preset to any preset in the sequence and for specifying the number of times, between 1 and 199, that such a loop be executed.

12. The system shall provide a means for interrupting user programmed automatic functions in progress during playback by pressing a single key. The system shall provide a facility for creating and recording user programmable dimming curves. These curves shall be assignable to any group of dimmers at any moment.

F. SCREEN EDITOR

The system shall provide a Screen Editor which lets the user enter and modify information directly on the screen. Keys for moving a cursor around the screen shall be provided both on the main desk and on the optional alphanumeric keyboard. This cursor shall select the item to be changed. It shall be possible to enter new data for the selected item using the numerical keypad of the main desk or the optional keyboard. It shall also be possible to change the value of an item using the digitally encoded channel wheel. All sequence and mixer information shall be editable in this way, allowing the user to set/modify fade times, delays, wait times, preset numbers, preset and sequence texts, the levels of the wheels, mixer mode etc. It shall also be possible to set play name and date and to change operational parameters using the same method.

A channel track sheet function shall be provided. This function shall allow the user to step through a series of presets using the screen editor to set/modify levels in several presets at once directly on screen. The track sheet shall also provide a tracking mechanism that asks the user if a level change shall be performed also in the previous/following preset(s).

G. MIXER FUNCTIONS

The system shall include up to 12 mixer wheels or potentiometers which shall be capable of providing the following functions:

1. Single channels, groups or presets shall be assignable to the mixers without regard for conflicts and can be combined to create new presets.

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2. Single channels, groups or presets shall be assignable to the mixers for level corrections.

3. Single channels, groups or presets shall be assignable to mixers which shall act as selective masters for the channels involved.

4. Contents of the mixers shall be recordable for each preset and shall be re-assigned automatically as a function of each crossfade.

5. Fade times shall be assignable to mixers.

6. Each mixer preset may bear a nine character alphanumeric name.

7. Special effects shall be assignable automatically to mixers during playback.

H. PLAYBACK FUNCTIONS

1. The system shall be capable of supporting two completely independent sequences of presets.

2. The crossfade wheels shall provide control for manual, timed or recorded time fades. Timed fades can be converted to a manual fade at any time and vice versa.

3. A facility shall be provided for coupling mixer fades, special effect fades and the second crossfade sequence to the main crossfader so as to activate all functions simultaneously by pressing a single key (GO X) - Master Link.

4. All timed fades may be manually over-ridden, that is, accelerated, slowed down, stopped, resumed, reversed. faded to full, or faded to black.

5. A facility shall be provided to timing a manually executed or altered time fade and entering this time into memory.

6. A facility shall be provided for clocking the elapsed time between two crossfades and entering this time into memory with a single keystroke. The system shall then be able to warn the operator with an acoustic signal before the next crossfade is estimated to start.

I. DISPLAYS

1. Lighting program and system information shall be displayed in three forms:

   a. LED's integrated into each module

   b. fader wheel LED's, and

   c. at least two video monitors.

2. The video displays shall have user-selectable pages to show a variety of information. Channel information on the monitors shall be updated at a speed greated than 1/16 second per page.

3. The layout of the channel monitor(s) shall be user definable. There shall be at least 5 user definable monitor pages where the user can position the channels to reflect the position of the channels in the theater. This channel layout shall be possible to store on the system disk or together with the lighting program.

4. The video monitor displays shall be so designed that there is no loss of information if color monitors are not used.

J. SUPPLEMENTARY FUNCTIONS

1. A clock and calendar display shall be provided.

2. A stop watch display shall be provided.

3. The system shall provide for the archival storage of all production programs on a 3.5" floppy disk drive. All programs shall be marked with date and time of the storage and shall be displayed sorted in chronological order.

4. It shall be possible to label each program using both number and a title for identification purposes.

5. It shall be possible to store several versions of the same program.

6. The system shall be capable of supporting a computer terminal from which all functions are accessible.

7. The system shall be capable of supporting a high speed printer.

8. The system shall be capable of supporting external triggering devices for stage rigging.

9. The system shall be capable of supporting external triggering devices to start fades or special effects.

10. The system shall provide for independent control of house lights, work lights and emergency lighting.

K. BACK-UP SYSTEM

The system shall provide an interface to the back-up system contained in the AVAB PDD digital dimmer or PDD digital dimmer retro-fit.

Dimmers shall allow a secondary input from a back-up console. This input shall allow up to twentyfour (24) lighting looks to be stored in the dimmer's internal memory. These looks shall be accessed using an AVAB LBD-24 controller.

This feature shall allow twentyfour (24) scenes of back-up presets to be recorded and stored in the dimmer. These scenes can be used as additional stage lighting looks during normal operation or as back-up presets in case of console failure.

Equipment: Equipment required is one AVAB LBD-24 lighting control console and at least one 24-channels AVAB PDD dimmer unit.

Use: Lighting looks shall be programmed as follows:

1. Set up desired look on main console (VIKING).

2. Put dimmers into "back-up record mode" by operating switch on the LBD-24 console.

3. Activate the fader you want to record the look to on the LBD-24 console.

4. The stage look is now recorded into the dimmer's internal memory.
Playback:

Activate the faders on the LBD-24 console. It shall operate simultaneously with the main console. Highest level will take precedence.

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