

**Audio System Description  
Discovery Theatre  
Alaska Center for the Performing Arts  
Anchorage, Alaska**

**CENTER CLUSTER**

The Discovery is a standard square proscenium theatre with an approximate seating capacity of 800. The proscenium is 48 ft. wide at deck level and 23 ft. high. The main cluster is located at the top of centerline behind a transparent fascia. The cluster consists of 3 UPA-2P self-powered loudspeakers. The Meyer UPA-2P self-powered speakers are comprised of: one 12-inch cone driver and one 3-inch diaphragm compression driver; phase-corrected, optimized control electronics and a two-channel amplifier (350 W rms/ch). The gain structure between the control electronics and the amplifier is perfectly matched. The UPA-2P produces flat acoustical phase and amplitude response, full-range bandwidth, precise imaging, and exceptional system response. The UPA-2P supplies a maximum SPL of 132.5 db at 1 m with excellent intelligibility, without distortion or coloration commonly exhibited by small PA speakers. The cabinets are aimed at the mezzanine and back of the orchestra level.

**CENTER CLUSTER**

3 UPA-2P self-powered loudspeaker Cabinets  
1 Phase-corrected, controlled electronics per cabinet  
2 Channel Amplifier (350 W rms/ch) per cabinet

**SIDE STACKS**

The main cluster is supplemented by side fill speaker positions (stacks) located DSL and DSR behind the proscenium fascia. House has installed four self-powered full range loudspeakers cabinets and two self-powered sub cabinets. Each stack side has the following compliment of equipment: Two Meyer Sound Lab CQ-1 Self-Powered Cabinets and One Meyer Sound Lab 650-P Self-Powered Subwoofer Cabinet. The CQ-1 self-powered loudspeaker contains an independent amplifier and control electronics for one 4' diaphragm horn driver and a 15" bass-flex cone driver in a compact enclosure. The 650-P is Meyer's most powerful self-powered subwoofer. It contains an independent amplifier and control electronics for two 18" drivers in a compact enclosure.

## SPEAKER STACKS (Per Side)

Two Meyer Sound Lab CQ-1 Self-Powered Cabinets:

One 4' diaphragm horn driver per cabinet

One 15" bass-flex cone driver per cabinet

1240 Watts (620 Watts/channel) Amplifier per cabinet

Frequency Response  $\pm 4$  dB 40 Hz –18 kHz

Phase Response  $\pm 90^*$  50 Hz – 16 kHz

Maximum Peak SPL 136 dB

Dynamic Range > 110 dB

One Meyer Sound Lab 650-P Self-Powered Subwoofer:

Two 18" diameter MS-18 cone drivers

1240-Watts (620 Watts/channel) Amplifier

Frequency Response  $\pm 4$  dB from 28 Hz to 100 Hz

Phase Response  $\pm 30$  from 45 Hz to 145 Hz

Maximum SPL:

Music as Source 136 dB peak

Pink noise as source 120 dB continuous; 130 dB peak

Dynamic Range > 110 dB

## FRONT OF HOUSE MIX CONSOLE / PROCESSING

The FOH in house mix console is a Mackie SR24.4. It has (24) inputs with (4) sub group outputs and stereo master mix outputs. It also has (4) auxiliary outputs. The Processing Racks and Playback Racks are listed in the Inventory.

## FRONT OF HOUSE MIXERS

Mackie	Onyx 3280	24X4X2	F.O.H. Audio Booth Only Console
Mackie	SR24.4	24X4X2	F.O.H. Mixing Console
Mackie	CR1604	16X4X2	F.O.H. Mixing Console
Mackie	1402-VLZ	14X1X2	F.O.H. Mixing Console

## AMPLIFIER RACK

Shure	SM267	6X1	Audio Mixer
JBL	5235	2	Frequency Dividing Networks
QSC	1200	7	Amplifiers for Effects
QSC	1400	4	Amplifiers for Effects

## FRONT EFFECTS RACK

1 Behringer	XR-2400	4 Channel Gate
1 Brook Siren Systems	DPR-504	4 Channel Gate
2 Brook Siren Systems	FCS-960	2 Channel Graphic Equalizer
2 DBX	1066	2 Channel Compressor/Limiter/Gate
1 Furman	PL8	Power Conditioner
1 Lexicon	MPX1	Effects Processor
2 Yamaha	SPX900	Effects Processor

## PLAYBACK RACK 2

2 Denon DnC635	Stereo	CD/MP3 Player
1 Denon DN790R	Stereo	Cassette Deck

## DIGITAL PLAYBACK/RECORD

SV-3900	Stereo	DAT Deck (Rental)
---------	--------	-------------------

## SELF POWERED STAGE MONITORS

(12)	Meyer Wedges	USM-100P HF 1.4" Throat, 3" Diaphragm Compression Driver LF 15" Cone Driver, 1) 700 Watts Amplifier
( 1)	Subwoofer Meyer	USW-1P 2) 15" Cone Drivers 1) 700 Watts Amplifier

## MONITOR SPEAKERS

( 6)	JBL 121	12"Cone, 1" Compression Driver (Internal X over)	Wedges
(12)	JBL 152	15"Cone, 2" Compression Driver (Bi-Amp)	Wedges
( 2)	JBL 4825	12"Cone, 1" Compression Driver (Bi-Amp)	Wedges
( 8)	JBL 3110A	800Hz Crossover Point (for JBL 152)	X over
( 4)	JBL 2152	2) 12"Cones, 2" Compression Driver (side fill)	Full Range
( 2)	JBL 4842	2) 8"Cone (side fill)	Subwoofers
( 2)	JBL 4852	2) 15"Cones, 2" Compression Driver (Side Fill)	Full Range
( 8)	Galaxy		Hotspots

## AUDIO CONTROL ROOM

Audio Control room (2AC) is located at the rear of orchestra level, house left. This room contains the main power switch for the audio systems and the central patch bays. The control room console panel has 24 inputs. Outputs include: 1 main to cluster, 4 to stack, 2 to fold back, 4 to auxiliary, and 2 to monitor amp. 2AC is also the location for the system console panel with final volume controls for cluster, bar, lip, and slf speakers.

The control room also has program distribution to under mezzanine speakers, backstage, lobby, and infrared systems. Other items in the control room include: Nakamichi MR-1 cassette deck, Clearcom MS-808 4-channel intercom, infrared modulator, RTS 2500 Series card racks, QSC 1200 monitor amp and 2 JBL 4406 monitors. Clearcom is distributed from this room to all related production areas. (Light booth, follow spot booth, fly rails, etc.)

## **HOUSE MIX POSITION**

Com at house mix has only one channel, which may be accessed at a time. The house mix position in the Discovery is 6 ft. deep by 8.5 ft. wide. It is located approximately 35 ft. from the lip of the stage at orchestra level and there are no obstructions between FOH mix engineer and any FOH speaker. The space needed for the house mix position normally negates 8 seats. Depending on your mix console requirements, amount of process gear, and drive racks, some seats immediately surrounding the mix position may become "obstructed view" seats.

There are a total of (24) hardwired mic lines available at the mix position. These mic lines terminate in a custom-made multi pin connector at a panel to which you connect the house 24 send XLR fan. The house mix panel also has XLR output connectors to main (1) cluster, (4) XLR aux outputs, (4) XLR outputs to stack positions, and (2) XLR outputs to fold back. There are also (1) 6 in. conduits with pull lines, which run from house mix to outside orchestra right door. This conduit run is approximately 60 ft. long. A (12) send Canare snake lives in one of them. As an alternative, there are several usable routes from stage to house mix for you to run your custom show harness through the house.

Power to house mix consists of (3) 20 amp circuits. Two of these are dedicated audio power, and one is common building power.

There are a total of (4) channels of Clear. Only one of these channels may be used at a time.

## **STAGE MANAGERS RACK**

Audio Stage manager rack (**1AS**) is permanently located DSR. It contains a 4 channel Ramssa WR-M10 mixer, Clearcom MS-808 4-channel intercom, QSC 1200 monitor amp, patch bay, and an aux input panel, 8 balanced tie lines to all other stage and pit boxes, and Mic inputs 1 thru 24. The mono output from the WR-M10 in this rack is connected to the main cluster thru a system-summing amp. House mix desk provides phantom voltage when monitor mixer is in use.

## **FX MONITORS**

All FX Power Amps are in a separate amp rack room. This is also the location of all under mezzanine, aux system power amps, and FX power amps. There are a total of (4) FX QSC 1400 power amps. The FX amps are used for running passive crossover stage monitors. The FX amp input can be fed from fold back buss 1 or 2, or an independent input. The list of monitors available from our inventory includes: (9) Meyer Wedges USM-100P HF with 1.4" Throat, 3" Diaphragm Compression Driver, LF 15" Cone Driver and a 700 Watts Amplifier, (1) Subwoofer Meyer USW-1P with 2) 15" Cone Drivers and a 700 Watts Amplifier.

The (8) custom built bi-amp floor wedges model 152 w/(1) 15" JBL 2225H cone and (1) 2" JBL 2445J horn driver on a JBL 2380A horn in each box run with an external JBL 3110A external crossover, (6) custom built floor wedges model 121 w/ (1) 12" JBL 2204H cone, (1) 1" JBL 2344A horn with a JBL 2426H driver, (2) JBL 4825 floor wedges w/crossover and (4) JBL 4406 studio monitors.

## **AUDIO POWER**

There is a 100 amp three-phase service dedicated for audio use located on the SL wall. Below the service, house has installed a 50-amp dual-phase Hubbell connector as a feeder for a Hubbell spider. The feeder cable for spider is 50 ft. long. The spider has (2) 20amp twist lock outlets and (6) 20 amp Edison outlets.

For those companies needing to use their own power distribution system, there is a (1) 400-amp three-phase company switch on the SR wall.

## **UNDER BALCONY SYSTEM**

There are two basic seating levels in the Discovery Theatre: orchestra and mezzanine. For those seats under a mezzanine overhang, there is an under balcony speaker system. These speakers derive their signal from omni directional mics mounted on the face of the overhang. The signal to the under balcony speakers is therefore delayed as a function of the time it takes for the sound to travel from the stage to the face of the overhang. Controls in the sound booth allow for volume adjustment of these speakers. For those FOH engineers who require a discrete delayed send to the under mezzanine speakers, bring your delays, and we can patch speakers as a separate feed.

## **PROGRAM/PAGING SYSTEM**

All dressing rooms, wardrobe, or green rooms, can get a program feed from any one of the three theatres. The light, sound, follow spot booths and lobby of any given theatre can get a program feed only from that theatre.

The system also allows you to interrupt the program feed, and page members of your company. Permanently installed page controls are located in the sound booth. We can also carry in a portable page control panel and plug it in DSL, DSR, the lighting booth, or at a directors/designer location in the middle of the house on the main floor. If your company must use your own paging system, you can still tie into house distribution. You must supply a balanced line level signal that can toggle between program and page. The house will input that signal to our distributed speaker systems.

### **CONTACT INFORMATION:**

*Discovery Theatre Production Manager:*

**Mark Florez**

Alaska Center for the Performing Arts

621 W. 6th Avenue | Anchorage, AK | 99501

Tel: 907-263-2945

Fax: 907-263-2927

Email: [mflorez@alaskapac.org](mailto:mflorez@alaskapac.org)

Web: [www.myalaskacenter.com](http://www.myalaskacenter.com)