

McCALLUM THEATRE AUDIO-VIDEO

April 27, 2009

The room has been described as "live (as in loud) and dry." RT-60 is <1 second. The auditorium ceiling is lath/plaster; orchestra level side wall surfaces are hardwood diffusers, while rear walls and the entire floor are carpeted.

A. SOUND REINFORCEMENT

The House Sound Console is located on the House Right side of the auditorium in an open box, immediately in front of the Mezzanine.

B. SIGNAL ROUTING/CONSOLES

The Sound System is configured with BSS Soundweb which provides distribution of signals to House Right, House Left speaker arrays, House Center cluster, and delayed 4 ½" ceiling speakers distributed in all Balcony and under-balcony areas. House program also feeds desired Lobby, Front of House, and selected backstage areas. A Stage Manager Audio Routing Panel routes Show Mic, Board Mix, Aux Program, and Paging to twelve (12) backstage zones.

Distributed 4 ½" speakers are mounted in the apron of the stage and provide front fill. A portable JBL Custom shop (UCF2521) system with Crown Power is optionally available for front fill.

1. HOUSE SOUND CONSOLE

The House Sound Console is a Soundcraft Series 5 with ten (10) VCAs. This unit has 48 microphone inputs, four (4) stereo returns, eight (8) group outputs, ten (10) matrix outputs, twelve (12) Aux outputs, stereo and mono main outputs, and LCR panning. Group and output section is located between channels 24 and 25.

Normal output distribution is as follows:

CHANNEL ASSIGNMENT

Matrix 1 House Left Cluster

Matrix 2 House Right Cluster

Matrix 3 House Center Cluster

Matrix 4 Subwoofers

Matrix 5 House Program

Matrix 6 Stage Lip

Matrix 7-10 Patch Panel

Aux 1-12 Patch Panel

Groups 1-8 Patch Panel

Stereo Main L,R&C Patch Panel

All inputs, outputs and inserts are routed through a local patch bay. There are dual power supplies for this console.

2. PORTABLE SOUND CONSOLES

(1) Yamaha 03D

(1) Yamaha O2R96 with meter bridge

(1) Mackie ONYX 1220

3. MICROPHONE SPLITTERS

Forty-eight Jensen microphone splitters provide transformer isolated splits of all main sound console inputs to the stage monitor

console (split B and split C (second monitor console, OB Van, etc.)
There are ground lifts on B and C outputs.

4. HOUSE SPEAKER SYSTEMS

The House Speaker System consists of a Center Cluster and Subwoofer, located above the proscenium at House Center (in the first ceiling panel), and Left & Right Arrays located at the midpoint of the side walls flanking the proscenium. Center cluster is installed in half-space.

a. AMPLIFIERS

- (14) Crown I-Tech 4000
- (8) Crown I-Tech 6000
- (1) Crown I-Tech 8000
- (8) - JBL 6230 Power Amplifiers
- (7) - JBL 6260 Power Amplifiers

b. SPEAKERS - CENTER CLUSTER

The Center Cluster consists of:

- (3) JBL 2450J (with Aquaplas dusted domes)/2382 high frequency assemblies. Each high frequency assembly is separately powered with a Crown I-Tech 4000 amplifier channel.
- (2) JBL 2123H, 10" speakers. Each is powered separately by a Crown I-Tech 4000 channel.
- (4) JBL 2225H, 15" speakers, each powered by a Crown I-Tech 4000 channel.
- (3) JBL VERTEC VT 4880 subwoofers, powered by (1) Crown I-Tech 8000. Crossover frequencies are 27 Hz to 75 Hz for the subwoofer.

c. RIGHT & LEFT LINE ARRAYS

Identical right and left line arrays each consist of eight (8) JBL VERTEC VT-4888 powered with two (2) Crown I-Tech 4000s for highs, two Crown I-Tech 4000s for mids, and four (4) Crown I-Tech 6000s for lows.

All three arrays are controlled by integral DSP in each I-Tech. Modified JBL presets are utilized.

d. DELAY SPEAKERS

The delay speakers are ceiling mounted JBL 8110 4 ½" speakers. There are ten (10) delay zones, each with no more than 10 ms. variation within any zone. The feed to delay speakers is derived from the signal to the center cluster. Use of line arrays has minimized use of delay speakers.

Soundweb controls Balcony, Mezzanine, and under-Balcony delay zones. All power amp inputs to delay speakers are accessible via the patch bay and can be used for effects.

5. STAGE MONITOR SYSTEM

- (1) - Midas H3000 with 44 inputs plus 4 stereo returns.
There are two power supplies for this console.
- (6) - JBL SP 212A Sound Power slant Monitors (12" x 1")
- (16) - JBL SRX4702 Monitors (12" x 1")
- (2) - JBL TTM149 High Power (Custom Shop) (14" x 1")

- (2) - JBL CSR4718x-58 Sub Woofers
- (2) - JBL Powered EON-15-G2 (15")
- (2) - JBL EON-10-G2 (10")
- (2) - Custom JBL tri-amp Side Fill Monitors (2 x 2225, 2 x 2123, 1 x 2445)
- (4) - Fostex SPA-11 amplified Speakers
- (6) - Galaxy PA5X140 (Hot Spot)
- (2) - Lexicon PCM 91 Reverb Units
- (1) - Yamaha REV 5
- (1) - tc D-TWO Delay Unit
- (7) - BSS FCS 960 (Two-Channel) Graphic Equalizers
- (2) - BSS DPR 901 II Dynamic EQ
- (11) - Crown I-Tech 4000 Power Amplifiers
- (2) - Crown I-Tech 6000 Power Amplifiers
- (1) - Crown I-Tech 8000 Power Amplifiers
- (1) - DBX 900 Main Frames equipped with:
 - (6) - DBX 904 Gates
 - (2) - DBX 902 De-esser
 - (2) - DBX 905 Parametric Equalizer

Multi-pin connector for Monitor Board appears DSL.

C. PORTABLE EQUIPMENT

1. MICROPHONES

- (12) - AKG C-3000
- (6) - AKG C414B/ULS
- (5) - AKG-451 w/CK-1 capsule
- (6) - AKG-451B
- (2) - AKG D-112
- (2) - AKG CK33/GN50E PODIUM MICROPHONES
- (3) - Audio Technica AT-815R long shotgun
- (3) - Audio Technica AT-857AM podium microphone
- (6) - Audio Technica ATM33R
- (1) - Avalon U5 Active Direct Box
- (2) - Beyer C500
- (2) - BEYER M88
- (2) - C-Ducer CSX/6 Stereo Piano Pickup
- (12) - Countryman FET-85 Direct Box
- (8) - Crown PCC-160
- (4) - Crown PZM-6S
- (16) - DPA String Mics
- (4) - Electrovoice RE 16
- (2) - Electrovoice RE 20
- (6) - Neumann KM-84
- (6) - Neumann KM-184
- (2) - Neumann KSM 105
- (4) - Schoeps hypercardoid with collet cable
- (2) - Sennheiser 431 with switch

- (16) - Sennheiser 421
- (2) - Sennheiser MKE-II lavalier microphones
- (2) - Sennheiser 441
- (6) - Sennheiser E604
- (2) - Sennheiser E609S
- (4) - Shure SM-18B-CN
- (2) - Shure Beta 52A
- (8) - Shure Beta 56A
- (8) - Shure Beta 57A
- (8) - Shure SM-57CN
- (8) - Shure SM-58CN
- (8) - Shure Beta-58A
- (8) - Shure Beta 58
- (2) - Shure SM-58-S
- (6) - Shure SM 81
- (4) - Shure SM-85LC
- (4) - Shure Beta 87A
- (4) - Shure Beta 87C
- (2) - Shure SM-91
- (5) - Shure SM 98's
- (6) - Shure SM-Beta 98S
- (2) - Shure 55SH II
- (2) - Sony ECM-44B Lavalier
- (8) - Westcam (Jensen Transformer) Direct Box
- (4) - Vega T-82 hand-held wireless with SM87 capsule
- (4) - Vega 77-C belt pack with Sennheiser MKE-II mics
- (4) - Vega R42 VHF wireless receivers
- (2) - Sennheiser SK-50 wireless transmitter
- (1) - Sennheiser EM 3032 receivers
- (12) - Sennheiser MKE-II lavalier microphones
- (4) - Sennheiser EM3532U Receivers
- (4) - Sennheiser SKM5000 NBK (Neumann 105 capsule)
- (8) - Sennheiser SK5012 with MKE II
- (4) - Sennheiser Evolution EM550 G2
- (6) - Sennheiser Evolution SKM 565 G2 (Handheld)
- (8) - Sennheiser Evolution SK500G2 with MKE II
- (4) - Shure U124D/ Beta 87A & Beta 58A and Beta 87 C capsules

2. ACCESSORIES

Over 100 microphone stands plus assorted windscreens and adapters are available.

(1) - Ivie IE-30A Real Time Analyzer

(1) - Ivie IE-20B Noise Generator

SMAART on PCs at both House and Monitor Consoles

3. HOUSE EFFECTS & PROCESSING

- (3) - Klark Teknik DN-360 two-channel graphic equalizers
- (1) - Lexicon 960SL Reverb Unit with LARC
- (1) - TC Electronic M5000 Effects Processor (2 engines)
- (1) - Yamaha REV-5
- (1) - tc D-TWO Delay unit
- (1) - tc 2290 Delay
- (1) - EVENTIDE Eclipse
- (1) - Aphex 300 Compellor
- (2) - Aphex Dominators
- (3) - BSS 901 MULTIBAND DYNAMIC EQUALIZER
- (4) - dbx 160SL Limiters
- (3) - BSS 504 GATES (4 PER UNIT)
- (8) - DBX 160A COMPRESSORS
- (2) - DBX AFS 224 FEEDBACK SUPPRESSION
- (1) - SUMMIT LABS DCL 200 VOCAL COMPRESSOR
- (1) - SU1500 RM2U APC UPS for playback devices
- (1) - GRACE 801PREAMP (SET OF 8)

4. PLAYBACK/RECORD DEVICES

- (1) - Tascam 122 Cassette Recorder
- (1) - Tascam 112R Cassette Recorder
- (1) - Panasonic SV-3900 DAT Recorder
- (1) - Technics SL-1200MMII Turntable, Shure SC-39EJ Cartridge, RTS-425 Phono Preamp
- (2) - Tascam 801R Mini Disk
- (1) - Alesis XT20 A-Dat
- (2) - Tascam RW2000 CD Recorder
- (1) - 360 Systems Instant Replay
- (2) - Sony MDSE 12 Mini Disk
- (4) - Denon DNC-635 CD/MP3 Player

5. PORTABLE PLAYBACK RACK (MONITOR SYSTEM or REMOTE)

- (1) - Tascam 302 Dual Cassette Recorder
- (1) - Denon DN 630 Compact Disc Player
- (1) Soundcraft 200B with eight (8) inputs

6. CABLES

We have sufficient microphone and speaker cable to do any normal show. All mic cables have three conductor XLR connectors. All speaker cables use Hubbel twist lock connectors, male on one end and female on the other. Cable accessories include:

- (4) - Whirlwind MK-15 (15 pair) Snake Box and Pigtails
- (5) - Whirlwind MK-15-25 multi-cable - 15 lines, 25'
- (2) - Whirlwind MK-15-75 multi-cable - 15 lines, 75'
- (3) - Whirlwind MK-6 (6 pair) Snake Box and Pigtails
- (4) - Whirlwind MK-6-25 multi-cable - 6 lines, 25'
- (2) - Whirlwind MK-6-75 multi-cable - 6 lines, 75'

D. SYSTEM INTERFACE

<u>RECEPTACLE LOCATION</u>	<u>Audio</u>	<u>Video</u>	<u>I-com</u>
Footlight Trough			
DSL	2		
DSL Mid	2	1	1
DSC	2		
DSR Mid	2	1	1
DSR	2		
Stage			
DSL	120	2	2
USL	4	2	1
DSR	24	4	3
USR	4	2	1
Tech Services	4	1	
Catwalk (Stage)			
SL	4	1	1
SR	4	1	1
Catwalk (FOH Attic)			
Front	2	1	1
Mid	2	1	1
Rear	2	1	1
Gridiron			
SL	4	1	1
SR	4	1	1
Trap Room	2		
Orchestra Pit			
Lift #1 (5 floor pockets)	12	2	1
Lift #2 (5 floor pockets)	12	2	1
SL Entrance	4	1	1
Up Center	36	2	1
SR Entrance	4	1	1
Aud Floor/ Production table	3	2	1
Mezzanine Rail	6	1	
Balcony Rail	6		
House Mix Position	18	8	1
<u>RECEPTACLE LOCATION</u>	<u>Audio</u>	<u>Video</u>	<u>I-com</u>
Center Control Room	12	4	2
Rack Room	8	4	1
Lighting Control Room	4	3	1
Dimmer Room	1		
Followspot Booth	4	1	1
Green Room	4	2	1
O.B. Van (Loading Dock)	17	8	1+6

Orchestra Lobby			
East Wall	2	1	
West Wall	2	1	
Mezzanine Lobby			
East Wall	2	1	
West Wall	2	1	
Balcony Lobby			
East	2	1	
West	2	1	
Box Office	1	1	1
VIP Room North	2	1	
VIP Room South	2	1	

Note: The Center Control Booth also has XLR mic and line level press feeds.

E. COMMUNICATIONS SYSTEMS

1. STAGE MANAGER CONSOLE

The Stage Manager Master Console is a portable desk on a 15' cable connected at the DSR proscenium wall. It contains an RTS-802 for 6-channel communication and Backstage paging, two (2) switchable color Video Monitors, and Cue Light controller.

a. INTERCOM

An RTS Intercom system has 26 circuits that can be assigned to any of six headset communication channels by means of a Source Assign Panel.

(3) - 802 RTS Master Stations (located in Mix Booth and Stage Managers' Console - plus a portable unit)

(1) - SAP 1626 Source Assign Panel (located in Sound Equipment Room)

(2) - RTS PS 31 Power Supplies (Channels 1,2,3 & 4,5,6.)

(26) - RTS BP-325 Intercom Belt Packs, dual listen

(2) - RTS BP 320-L-E Intercom Belt Packs, dual listen

(5) - RTS SPK 300-L Intercom Speaker Station

(3) - RTS SPK 300-L Intercom Speaker Station (dual listen)

(10) - RTS HS-6000 Intercom Handsets

(5) - RTS LH 267 Intercom Headsets, lightweight

(25) - RTS/Beyer DT 108 Headsets

(5) - RTS/Beyer DT 109/A5M Headsets, dual listen

(8) - HME Pro 850 Wireless intercom stations

b. PAGE SYSTEM

Paging throughout all backstage and/or public areas of the theatre is made from the Stage Manager Console, through an RTS-802 Master Station. Each speaker in the backstage area has its own volume control. Paging overrides local volume control. A Stage Manager Routing Panel selects Show Mic, Board Mix, Aux Program, and Paging to 12 backstage zones. A portable Paging Microphone Box can be placed in several locations in the theater.

2. HEARING IMPAIRED SYSTEM

- (1) - ListenTech LT800-72 Transmitter (72 MHz)
- (50) - ListenTech LR400 72 receivers

F. ROAD CONSOLE MIX POSITION

Road audio mixing consoles are placed in the last three rows of the Orchestra, house right (seats must be removed.) 200 feet of snake is required, or in Box B opposite house mix.

G. VIDEO

There are color video monitors of stage in all Backstage Offices, Green Room, Stage Door, and on the main level of the Lobby. There is an infrared sensitive camera that enables production staff to view the stage during a blackout.

Cable TV is available to the theatre.

1. VIDEO CAMERAS

- (1) - Ikegami HC-390TC Video Camera (permanently installed on Mezzanine rail) with Fujinon A16x9MD16X Zoom Lens with Fujinon focus motor drive and Ikegami MA-200A CCU.
- (1) - Vicon Pan-tilt Head for Video Camera-with custom offset bracket, telemetrics and remote control for pan, tilt, zoom focus
- (1) - Ikegami ICD-4220 B/W camera,.0093fc. with Cosmocar auto iris zoom lens (8mm. to 48mm) permanently installed on Mezzanine rail.
 - (1) - Panasonic WV-1854 Monochrome (infrared) Camera with auto iris lens (permanently installed at conductor position-orchestra pit.)
- (2) - Pelco LL-27 infrared light source with medium flood lamp, (1 permanently installed on Mezzanine rail, the other is portable.)

2. VIDEO RECORDER

- (2) - SONY SVO1502, VHS rack mounted VCR
- (1) - SONY DVD Recorder

3. PORTABLE VIDEO MONITORS

- (2) - Panasonic WV-5410 - 12" monochrome Video Monitors
- (2) - Panasonic 19" Receivers

H. CABLE CONDUIT SYSTEM

A system of empty 4" conduits provides easy routing of camera and other cables to several utility locations, including SL, SR, center Orchestra, rear Orchestra, Mezzanine Center Booth, Mezzanine center, Attic, and Spot Booth.

I. PROJECTION EQUIPMENT

- (1) - Kodak E3A Slide Projector with Sestar 3000Z Lens and AMX remote
 - (1) - Da-lite 6x6 tripod screen
- Video Projection is available for rental from outside vendors.

J. RADIO FREQUENCIES

The McCallum staff uses (14) walkie-talkies for production communication. Frequencies are:

- CH 1 469.825MHz PL 123.0 Hz
- CH 2 464.825MHz PL 123.0 Hz *main production channel

CH 3 461.9375MHz PL 123.0 Hz
CH 4 463.7000MHz PL 123.0 Hz
CH 5 468.7000MHz PL 123.0 Hz

Local TV stations transmit on channels 36, 38 & 42.

(602-608MHz, 614-620MHz and 638-644MHz)

Future HDVT stations will transmit on channels 46 & 52.

(662-668MHz, 698-704MHz)

Neighboring college uses 155.0-155.8MHz for security & maintenance.