

## **Recording The New Philharmonic Orchestra at College of Dupage McIninch Arts Center**

1.29-30.2010, 3.23-24.2010

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### **Goals**

Short term: To produce high-quality audio recordings of the New Philharmonic's performances of Puccini's *Turnadot* for later radio broadcast.

Long term: Develop general methods for recording the orchestra in future concerts, utilizing as much existing, in-house equipment as possible. Second, to complete a recording of the orchestra in a more traditional orchestra concert without Jon present.

### **Planning**

Planning for this event included several phases - Communication via email with Stephen Cummins, Director of the McAninch Arts Center and with other technical staff - Bob Murr, Joe Hopper and Paula Cebula, the director of this concertized opera.

During the initial visit, the performance venue was inspected, including the house, the stage, and backstage areas. Various factors were considered, including ambient noise level, placement of acoustical treatments (movable band shell, flown acoustical clouds), logistics of the orchestra, choir and soloist positioning, location of house loudspeaker clusters and onstage monitors, the characteristic acoustics of the stage and house, location of recording "station", rigging possibilities for flown mics, possible locations of safe cable runs, and other instruments possibly needing special mic'ing (organ, celeste, harp, etc.). Additionally, since it was a goal to utilize as much in-house gear as possible, discussions of available equipment took place in person and via email. Other details, such as setup, rehearsal and performance schedules, load-in facilities were also discussed.

Initially, it was thought that achieving the desired result would require section mic'ing within the orchestra, in addition to area microphones for soloists and mics across the width of the choir. The hall is quite dry, which usually does not lend itself to natural blending of orchestral colors.

However, during the second visit (for a full rehearsal with orchestra, soloists and chorus), it was decided that the sound of the composite ensemble and soloists in the hall was coherent and quite useful. It was decided that rather than a section mic'ing approach, three omnidirectional microphones hung across the front of the orchestra would capture a well balanced, coherent and pleasing sound.

### **Equipment**

Recording:

- (1) (UIUC) Alesis HD24 Hard Disk Recorder
- (2) (UIUC) True Systems Precision 8 Microphone Preamplifiers
- (1) (UIUC) Yamaha 8 Ch. Microphone Preamplifier

Monitoring:

- (1) (UIUC) 6 Ch. Mackie Mixer
- (1) (UIUC) Pair Sony Professional Headphones

#### Cabling:

- (2) (UIUC) 24 Channel TRS<>TRS Snakes
- (UIUC & COD) Microphone Cables of various lengths
- (2) (UIUC) Multi-Channel Snakes (one from recording station to first catwalk (at least 5 Ch.), one from second catwalk to first catwalk (at least 2 Ch.))

#### Microphones:

- (3) (UIUC) AKG 414 B-ULX (omnidirectional pickup selected, no pad or roll-off) Orch. Main
- (2) (COD) Shure KSM 32 Orch. Winds Spot Mic, piano soloist (2nd JZ recording)
  
- (2) (UIUC) Earthworks QTC (omnidirectional) Hall Mics
  
- (6) (UIUC) AKG 451 (cardioid, no pad or roll-off) Soloist Mics
  
- (4) (COD) AKG 451 (cardioid, no pad or roll-off) Choir Mics
- (2) (UIUC) Shure KSM 137 Choir
  
- (1) (COD) Shure SM57 Organ-high
- (2) (COD) Shure Beta 52 Organ-low
  
- (1) (COD) Shure \*\* - Wireless mic for Maestro Kurt
  
- (6) (COD) Tripod Boom Microphone Stands – Soloist Mics
- (6) (COD) Tripod Boom Microphone Stands – Choir Mics

#### **Recording Procedures/Tasks**

- Run snakes (see diagram for details)
- Hang orch. main and hall microphones, place microphones on stand for winds (see appendix B for placement), place microphones for any special situations - soloist, organ, etc.
- Set up recording station - Patch preamps, recorder, and mixer for monitoring, label inputs at preamp (see photos and diagram for details)
- Check each line for abnormal noises (crackle, hum, intermittance), noise floor, inconsistent coloration, hall noises

#### **Post Production and Mixing**

The post-production and mixing of the final product which will be returned to the New Philharmonic and potentially broadcast on FM radio will be done by Jon. I have begun making my own mixes, for learning and comparison with Jon's work at a later time. So far, most experimentation has been in the application of EQ and artificial reverberation.

Equalization for appropriate/pleasing tone and tonal/color balance between groups of microphones is being done on subgroups (for each group of mics - i.e. Orchestra mains (AKG 414), Choir mics), where needed. EQ is also necessary to help account for the sound of the room(s) - The hall itself and the stage area, essentially a separate acoustic space from the rest of the hall. So far, I've used the Waves 4-Band EQ on several groups.

The most difficult and time consuming aspect of the mixing process has been in the application and development of pleasing and realistic artificial reverberation. I've experimented with using AUX sends by group, and with putting the effect on the master bus. I am finding that applying reverb by groups offers the most flexibility and is getting me closer to a convincing reverb. Once I've established a good balance and sound in the

reverbs mixing (mainly from the hall and orch. main groups), the main issue I'm finding with making a convincing "real" reverb is in the tail after a staccato hit, followed by silence or quiet material. The artificial sound of the reverb is apparent as it gets quieter and there is no direct sound to mask the decay.

### **Results, Evaluation and Reflections**

In my evaluation, this project has been a highly successful collaboration between Jon, myself, the artistic staff of the New Philharmonic and the technical staff at the College of Dupage. On my second visit (the third concert we recorded) I delivered final CDs of the first concert we recorded and several people, including the director of Turnadot and the Maestro of the orchestra expressed their excitement, having heard preview .mp3s from Jon via email. Jon has reflected that the techniques he devises have given him raw recorded material which could be manipulated to suit his high standards and tastes, and hopefully those of the client.

In the course of the project, I have gained an integrative knowledge of the process of making the best possible sounding final product, through each dynamic step. Among the most important lessons for me are those about what information needs (logistical, sonic, personal) to be had for effective planning and execution, responding to contingencies, the use of resources (including personnel), and thinking about and understanding how each decision will potentially affect each subsequent step and the final product.

### **Recommendations for Future Recordings**

-Use 3 orchestra main microphones, even if the center microphone casts a shadow on the video screen (when one is used).

-An extension to the Atlas 3-cornered base stand would be helpful in raising the woodwind microphone to an appropriate height, when that section is placed on risers. In the second concert I recorded, Ben and I fashioned a riser for the stand with a road case lid and duvetine.

-Use flown, flat frequency response omnidirectional microphones for hall sound - Mics need to hang only 4-5' below cloud.

-Even if levels seem a bit low on HD24, (or whichever digital recorded is in use), it is best to leave preamp gain levels consistent from night to night in one concert cycle, for ease of editing.

### **Appendix (in progress, separate documents available)**

- System diagram (with cable/snake run details)
- Microphone placement diagrams/visualizations
- Photographs
- Recording station system diagram