



Recording Nielsen with the NY Phil

TimbreMusic in Denmark is involved with a complete Carl Nielsen Symphony cycle with the New York Philharmonic. TimbreMusic's **MIKKEL NYMAND** explains how they do it.

In preparation for the 150th anniversary in 2015 of the birth of Denmark's foremost composer, Carl Nielsen, Dacapo Records is releasing his entire symphony and concerto cycle played live by one of the world's most prominent symphony orchestras, the New York Philharmonic. There is a certain historic connection between Nielsen and the New York Phil as the stunning 1960's releases of Nielsen's music became references through the unique musical guidance of conductor Leonard Bernstein. The present music director of the New York Phil, Alan Gilbert, has dedicated himself to this CD cycle of reinterpreting the complex music of Nielsen. Having been chief conductor of the Royal Swedish Philharmonic Orchestra in Stockholm, Gilbert knows the Scandinavian music style from the inside and it is audible that this music runs in his veins: 'Carl Nielsen's music comes out of a classic Germanic symphonic tradition, but it's so distinctly Danish! It's very gripping and has a craggy edge to it that is characteristic of life in the high North. I'm sure that Nielsen's time has now come, and I am looking forward to sharing this wonderful music with audiences and CD listeners,' he said.

There are strong recording references of this work, so it has been important for the conductor and the production team to dedicate themselves to the music and make it appear with the famous musical language of Nielsen — everything from moods of the rural idyll in the woodwinds to large and heavy expressions in grandiose tutti passages, where the New York Phil brass section can appear with all its impressive power and might. Having the objective to end up with a recording that is able to reproduce this requires exceptionally good recording techniques, experience and gear at a level that matches the passion of the performers.



The Danish national label, Dacapo Records, which releases classical and new Danish music, chose TimbreMusic from Denmark to handle the productions. With many years of cooperation on numerous releases for Dacapo, classical music producer Preben Iwan and myself, Mikkel

Nymand, as the recording engineer pride ourselves on offering the highest musical and technical standards. Never before has the orchestra been recorded in what is TimbreMusic's specialty of DXD (Digital eXtreme Definition) and surround for SACD release. We produce in DXD with Merging's excellent high-resolution Pyramix DAW and NTP's Digital Audio Denmark AX24 mic pre/converter units as the front end. The DXD's eight-times CD sample rate of 352.8kHz ensures an improved time-domain resolution with faster transient responses and a unique level of three-dimensional sound stage imaging. Combined with natural realism in the dynamics, we often hear interesting comments like 'the best digital sound, we have never heard'. The fact is that we hear no digital artefacts, it is as alive as analogue just without the noise.

The Nielsen Project releases will be based on a series of live performances. Depending on the overall scheduling of the orchestra, a normal production flow can look like this:

1st day — First rehearsal (not recorded but supervised by the production team) then microphone setup and establishing a control room.

2nd day: Second rehearsal — possible microphone positioning adjustments.

3rd day: Open rehearsal with audiences (recorded) followed the same evening by the first of three live concerto performances.

4th-5th day: Live concerto performances.

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For the symphonies, this is it! For the solo concertos, individual patch sessions are planned for getting particularly the cadenzas perfect.

After monitoring each rehearsal, the production team has the option to meet maestro Gilbert to discuss different musical and performing aspects. The released product will be an edited live performance where we seek the best general musical flow, free from recital mistakes and where audience, performance and background noise will be eliminated as well.

The production team has from the beginning sought the rich quality of the orchestra playing Nielsen. His music spans very wide in width and form. The New York Phil is a huge orchestra and its string section bigger than on any other Nielsen recordings, which gives space and opportunity for the woodwinds also to open and spread out their sonic character more than normal. Both will result in a bigger and more overwhelming appeal. Add to this the amazing snap from the brass section, with such an impressive attack and precision, playing Nielsen in a much more 'bragging American style' than most Nordic orchestras dare.

Investigations and test recordings have been done by TimbreMusic to optimise the recordings and adapt the engineering choices to the acoustics of the Avery Fisher Hall in the Lincoln Center, New York City. Despite being one of the most famous concert halls in the world it is a venue with historical challenges. At its opening in 1962, most musicians and listeners were disappointed and after a number of modifications, a total rebuilding was done in 1976 providing more early reflections and richer diffusion. Still, even though the total reverb time seems right for orchestral work, the hall has a 'less than optimal' reputation and could still benefit from even more envelopment by a different early reflection pattern. The hall does not offer the same glamorous richness in natural reverb as other reference halls like The Carnegie Hall, New York City, Concertgebouw, Amsterdam or Konzerthaus, Vienna. So, acoustic case studies were learnt before travelling to New York. Furthermore, the proper artificial reverb had to be selected and the microphone main array design had to be tweaked a number of times. It ended up with a Decca Tree-inspired three omnidirectional microphone choice of DPA 4006-TLs mounted

in the DPA D3 Decca Tree Mount, flanked by two similar, widely spaced outrigger omnis. The Left to Right Spacing in the Decca Tree was 201cm, while Left/Right to Centre was 170cm. In this sense it was pretty close to an old-school Decca Tree size, apart from the forwarded centre positioning.

The DPA 4006-TL omnis were selected for their natural sound and dynamics. Since the importance of reproducing the soundstage's geometric shape and dimensions has been of utmost importance, the 4006-TLs in that sense outdid the hall's fixed Neumann KM130 AB pair. On the other hand they did offer a fuller low frequency colour and in some passages of the symphony they were mixed in to enrich the sound.

To timbre-match the Decca Tree to the outriggers, similar DPA 4006-TLs were positioned with approximately 8-metre spacing in front of the first and second violin groups. Having more bite to the string groups than the main pair, but still less separation than the string spot mics, the outriggers serve an important role in gluing the mix together. Also, panning them just a little to the rear in surround mix magically keeps the surround image coherent.

After several try-outs, two wide cardioid DPA 4015-TLs were hung about 15m from the front array, with a 201cm spacing, serving as ambience sound to

the stereo mix and at the same time capturing the rear channels' content for the surround mix. The wide cardioid polar pattern has proved itself very useful to blend in with the front omnis, yet preserves adequate direct signal attenuation with its 10dB at 180 degrees off-axis. Traditional cardioids sounded too isolated from the fronts and also the inevitable low frequency loss from pressure gradients is less prominent with wide cardioids. And the hall ambience sound needs as much help as possible. Basically, these seven mics (Decca Tree, Outriggers and Surrounds) are the backbone of the mix!



As spot mics, the hall's assortment of Schoeps, DPA and Neumann were chosen. The general softer approach of the Neumann KM140 cardioids (for woodwinds and second violin), Schoeps MK21 wide cardioids (first violin, brass), MK5s in cardioid (viola, cello), MK4 cardioid (horn) and MK41 supercardioid (timpani) make them easy to blend in without being 'over-detailed'. Again, as with the surrounds, the wide cardioid pattern of the MK21s feels less complicated to blend in the mix and will easier fit with the Decca Tree omnis. For the bass section, a DPA 4060 miniature mic was used as a boundary layer mic on the floor. The larger the surface serving as the pressure zone, the larger frequency range will benefit from the special characteristic of a boundary layer microphone — a 6dB gain of direct sound and only 3dB gain of the diffuse sound. Therefore, the sound captured has greater clarity compared to sound captured above the surface.

Every spot mic is time delay compensated into the main array. Measured with laser and delayed correspondingly in Pyramix, the delay compensation is the only way to implement spot mics without ruining the sound colour and precision of the main array. If not, spot mics are heard before the main array instead of what they should do, which is create emphasis and details on a certain soloist or instrument group. Apparently, this seems to be heard more clearly the higher the time domain resolution is; and that's what working in 24-channel DXD most certainly is.

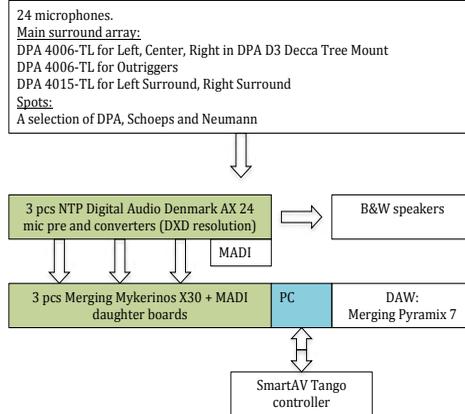
Crucial to making spot mics sound reverberant and to achieve the overall wanted reverb brilliance is the use of reverb units in the edit and mix phase of the production. The Bricasti M7 is the essential reverb unit and we use it primarily for stereo mix. We find the M7 reverb as having the most flavourful, analogue sound today. It's not necessarily the most realistic sounding, but it is the one that the ears like best. Additionally, Audio Ease's convolution reverb Altverb 7XL, as a VST plug-in in Pyramix, was added to the Bricasti M7, mainly as an add-on to the surround mix. TimbreMusic uses the Altverb a lot, not only when reverbs should sound lifelike, but also due to its 6-channel structure that makes it easy to use in surround mixes and because it can follow our projects all the way up to 384kHz sample rate.

Our Pyramix system runs on a Quad Core PC in MassCore Engine mode with three Mykerinos PCI



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TimbreMusic recording setup when producing Carl Nielsen for Dacapo Records SACD release with New York Philharmonic



DSP cards, each equipped with a MADI 64-channel I-O daughterboard. DXD requires extremely high data bandwidth, so each MADI stream/PCI board handles 8 channels. DXD also requires fast hard disks; we use 1Tb 3.5-inch 7200rpm SATA III disks with a data speed of 600Mbit/s. Just to give a rough indication of file sizes — 1 minute recording in 24 channels DXD (32-bit/352.8kHz) takes about 2Gb of hard disk space. That in turn means that recording a concert performance of 2 x 1hour is 2 x 120Gb!

When the Smart AV Tango workstation controller was integrated into our Pyramix studio we felt an instant improvement in the workflow. The way Tango has helped us to focus on the musical process instead of having technical barriers is outstanding. It is a much more direct and inspiring process with these controllers. Accessing most Pyramix features and controls, as, for instance, quickly copying an Aux send level to a number of channels, the Tango is the perfect match for a flawless workflow with Pyramix — not least when editing and mixing. Speaking of editing, this was done by TimbreMusic. Producer Preben Iwan presented the first edits for co-producer Mats Engström and music director Alan Gilbert from NY Phil. Their comments were incorporated in the final tweaked mix done by Preben and me.

The Nielsen Project setup described here is also the basic for other interesting TimbreMusic recording projects, like the Copenhagen Philharmonic's Beethoven Symphonies cycle and Our Recording's East meets West project, where the first release — Chinese Recorder Concertos with Copenhagen Phil and recorder player Michala Petri — achieved a 2012 Grammy Award Nomination in the classical instrumental solo category.

The Nielsen project is one of the most prominent export initiatives for Danish culture launched in recent years and for the New York Philharmonic it is its biggest recording project in recent times. It's a prestigious project — Queen Margrethe II of Denmark participated in the launch of the event in 2011. The first release of this cycle is an SACD in October 2012, which includes Carl Nielsen's 2nd (The Four Temperaments) and 3rd (Synfonia Espansiva) symphonies. ■

Contact

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