

# Grace Notes for The Blue Note

By Amit Peleg

## A legendary jazz club installs new sound and lighting systems



Since opening its doors in 1981, the Blue Note has become a cultural institution in New York's Greenwich Village and one of the premier jazz clubs in the world. Over the last 30 years, the Blue Note has played host to some of the greatest musicians of all time, including Ray Charles, Sarah Vaughan, Oscar Peterson, Dizzy Gillespie, Lionel Hampton, Nina Simone, B.B. King, Tito Puente, Celia Cruz, Tony Bennett, Chris Botti, McCoy Tyner, Chick Corea, and Etta James, as well as modern hip-hop and R&B stars, including Lauryn Hill, Mos Def, Common, and Lupe Fiasco. In addition to the flagship club in New York, there are Blue Note clubs in Tokyo and Nagoya, Japan, as well as in Milan, Italy.

My company, Peltrix, was hired to

install a new sound system; I was the head engineer at the Blue Note for 23 years, and I still mix the front-of-house there when time permits. It keeps my "chops" sharp so I won't lose the "feel" for it, which positively affects other installation jobs we do. On one hand, you work directly with the artists, their managements, roadies, engineers, road managers, and egos [inseparable entities]. And, on the other hand, you work with venues and their priorities and objectives (not always coinciding with the artist). As a result, you have to know how to maneuver between all parties, making everybody happy. Often, this is a bigger challenge than the technical aspect of the production. With the production experience, coupled with 30 years experience in A/V, lighting installation, and touring, we take this aspect out of the equation by doing it right the first time.

### Sound for an intimate space

The Blue Note set up was a challenge. While the acoustical characteristics of the room are good, the audience sits around the stage, which is positioned in the center of the room. There is only 15.5' from the front of the stage to the wall across from it, 30' to the left and 46' to the right. The ceiling is low at 9'-10" (see 3D model, pg. 70). Seating capacity is 200, with seats lined up right against the stage all the way to the walls.

The Blue Note is a jazz club, and the music is mostly acoustic. Eighty

percent of the audience sits within 20' from the stage and can hear a lot of stage sound. The house system is used mainly to balance out the sound coming off the stage. There are three mixing zones, designed to compensate for the position of instruments on stage. For example, audience sitting on house right usually hears mostly drums acoustically, while stage right projects more piano. The bar area is yet a third mix, as stage volume is much lower in that area. The house engineer has to walk around the room frequently to balance out the instruments and achieve an even mix around the room. If you sit on one side, you are completely out of range of sound produced on the opposite side. Stereo imaging is not possible due to the stage location.

With the close proximity of the wall across from the stage, the speakers covering the front area had to be mounted with a steep downward angle in order to avoid reflections that would disturb the artists. Overall, due to a low ceiling and short distances, all speakers are in very close proximity to the audience, which poses a challenge. How do you cover the room evenly without blowing away people that sit 8' from a speaker while having others at 40' hear well? Our solution was to install more speakers containing ribbon drivers.

By design, horn-loaded, compression drivers "shout" out program material. Compression drivers are made to produce high output, while the horn concentrates the sound so it can be delivered further away. Dispersion control is important, of course, but, in the case of the Blue Note, it is counterproductive. As a demonstration for those less familiar, I always like to use the following exam-



ple: Begin sounding out a constant vocal tone, then draw hands toward the mouth to create a horn shape and observe by listening to the difference. The sound ahead of you becomes louder, but it isn't very pleasing.

With the objective of low SPL combined with the speaker's close proximity to the audience, we went with ribbon speakers for the second time in 22 years. The first time we used ribbon speakers at the Blue Note, we installed SA (Stage Accompany) speakers; Stage Accompany, a Dutch manufacturer, was a pioneer with ribbons for

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live sound reinforcement. They worked very well for the room, and, when it was time to upgrade, we went with ribbons again, this time manufactured by SLS. The flat response, low distortion, un-concentrated and compressed sound of ribbon drivers is the optimal

choice for this room. SLS engineers worked with us on a customized setup for the Blue Note.

We knew we needed DSP-based amplifiers. A few months earlier, I tested a Yamaha TXn amp, which impressed me with its quality of sound

and control features. I worked with other DSP-based amps before, but some features in this one gave us the extra control we were looking for. Although the TXn line is a relatively new model, I knew from experience that I can trust the Yamaha reliability, a paramount with every installation we do. While we had a full DSP control over each speaker, we still needed general DSP functionality that we employed with two dbx Driverack 4820s. After reviewing all the options and deciding on the model of speakers to use, we sent SLS a Yamaha TX4n amplifier to install custom DSP settings for each individual speaker in the room. We then copied the DSP presets to the 11 other TX4n amplifiers, as we have a dedicated amplifier for each speaker in order to control each individual speaker separately. This gave us the ability to not only control levels separately, but to actual-

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ly customize other DSP settings for the individual speakers, compensating for bass traps, extra acoustical absorption, dynamic limiting, etc.

Subwoofers for the Blue Note came with their own challenge. The old system did not have any subs. Certain artists requested them every now and then, so the club would rent them. Every inch of the floor space is precious at the Blue Note, so putting subs permanently on the floor meant a loss of eight seats, which was out of the question. It's amazing how a room can be utilized down to the last inch. There is also no room to fly subs, which are not as effective in the air, anyway. This dilemma held back the installation for a couple of years until d&b audiotechnik came out with the B4-SUB. Prior to that, we discussed placing subs



Amit Peleg at the Blue Note's Yamaha MC7L console.

under the stage. This posed two problems: First, the stage was low at 17" to fit a 15" sub, and second, subs under the stage would disturb the performers, especially the more acoustic shows. Couple that with a higher ceiling over the stage area, which creates a "resonance box" effect and a bass

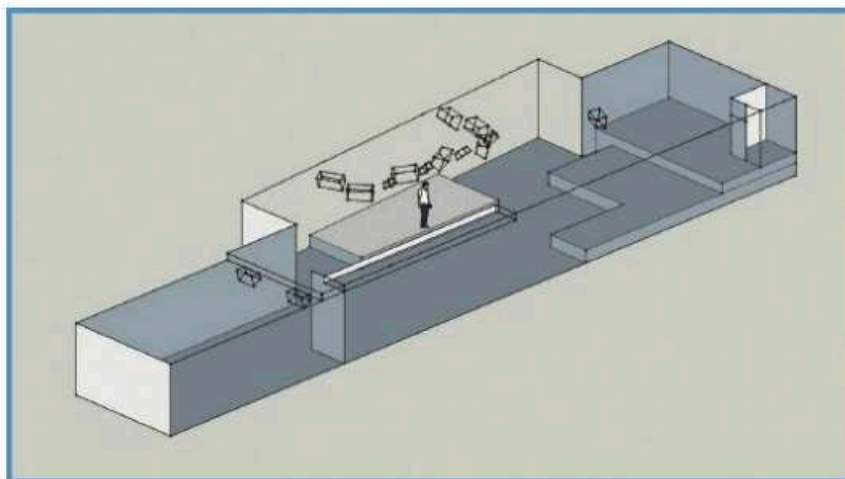
trap, and the option to put subs under the stage was out. When the B4-SUBs came out, however, I saw a potential for the solution. First, at an 18.7" height we would only need to raise the stage by 2" to fit them in (raising the stage more than 2" was not possible due to the low ceiling). Second, maybe the cardioid design of the B4-SUB would solve the over-the-stage resonance I was worried about. We brought in a couple of d&b B4-SUBs for a test drive and they worked great. The rear firing cancellation of the cardioid boxes worked astonishingly well, and they sounded great to boot.

than any other console used by that club in its 30 years of existence. When time came to upgrade the club, it was a natural choice to go with a M7CL console again, but this time there were two extra incentives. The installation coincided with the release of StageMix, an iPad remote control application; now the house engineer can walk around the room and mix the individual zones described above right from their individual locations. There is no need to walk back and forth to the console, make changes and go back out to the zone to hear what you did, with is inefficient and disturbs the audience.

The second incentive to installing the Yamaha M7CL was the release of Version 3 software, which allows the third port to be used with an AuvTran Network ASIO Driver to facilitate DAW recording without any extra hardware. The Blue Note has a record label called Half Note Records, which, over the years, has released countless live recordings from the Blue Note, some of which have won Grammy Awards. Now, engineers can multi-track record shows right into Pro Tools for potential future use.

The Blue Note initially bought one of the first five Yamaha M7CL digital consoles to arrive in the U.S. when the model was first released. It worked very well, and, in fact, lasted longer

The entire system is digital. The only points of conversion are A-D at the stage box input and back, and D-A at the output of the amplifiers. Everything in between is digital, either via Ethersound or AES/EBU. The system is completely networked for both signal and control.



The 3D model, showing the venue's constrained space.

"Since the new sound system was installed, we have had artists ranging from straight-ahead jazz greats Michel Legrand and Toots Thielemans to R&B legend Al Jarreau and hip-hop star Mos Def," says the Blue Note's owner, Steven Bensusan. The new sound sys-

tem has a versatility and range that can handle any genre being played on stage, and both the customers and the artists have noticed a difference."

### Ease-of-use lighting

The main reason the club updated its lighting system, Bensusan says, was to increase the options for colors and spotlighting, depending on who was on stage and what kind of music was being played. "The new lighting system enhances the live music experience for concertgoers and will help preserve the Blue Note's iconic look in photographs and on film," he says.

The Blue Note's stage production is a one-person operation, so the house sound engineer operates the lighting system as well. We needed a modern system that would provide state-of-the-art lighting, yet would be simple enough so that the engineer could operate it without losing focus on mix-

ing the sound. Our solution for ease of operation was to install Martin Professional's LightJockey, which is programmed with presets and independent controls over specials. For straight-ahead jazz, the solo is a main aspect of the per-

formance. You need a special for each musician, so he or she can be lit well when performing a solo while the rest of the stage gets a nice combination of color washes. Since we can't use haze in a venue such as the Blue Note, being able to produce dramatic color washes is critical. To accomplish this, we installed eight Robe Robin 600 LED Wash units: two from the front, four from sides/overhead, and two from the rear/overhead. Specials are handled by six Elation Platinum Spot 5Rs: four from the front and two from the side/overhead.

With the stage depth at only 9', we looked for a way to increase depth perception. This was accomplished with four Elation ELAR EX Tribar LED strips, mounted 4" away from the rear curtain and pointing straight down. The Tribars' wash the curtain with any color combination desired, creating a rising sun-type effect.

### Install challenges

There were logistical challenges, as well. Other than a couple of days after September 11, 2001, the Blue Note has never closed its doors in 30 years. They were not going to make an exception for us. We had to complete the installation without affecting the normal operations of the venue. To do this, we installed the entire new sound system to be run simultaneously, side by side with the old system until it was time to make the final switch, all in one night, which is when we swapped out the speakers.

The Petrix team first had the old drywall removed to expose the joists. Then we ran all new wiring from the front of house to the amp room and from the amp room to the locations of the new speakers. Following that, custom-designed rigging brackets for the new speakers that were mounted to the ceiling joists were installed, allow-

ing for a quick hang of the new speakers and to give them the exact angles that were needed in just a couple of hours. Then we removed the old equipment from the sound booth and set it outside of the booth so that the old system could continue to function while we rebuilt the booth to accommodate the new console and outboard gear. We came in after a show at 1am, removed the old speakers, hung the new speakers, retested, and tuned the system just in time for the next day's act to soundcheck at 4pm.

Once the old speakers were installed with their built-in amplifiers there was no turning back. The uncertainty presented by the inability to revert to the old system, coupled by a hard deadline of the following day's soundcheck was a bit daunting. But it all worked according to plan, and we were ready on time for musician Bill Evans to "dust off" the new system. ▶

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