

the **EDGE**

Issue Six | September 2002

Line Array Lifts Off

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Blackline Wins BEDA Award
ViewPoint Aids W8L Users
W8C For Irish Superclub
W8L Given Weenie Workout
...And it's George W8L Bush**



The Martin Experience

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At the Cutting Edge

Anything good is worth waiting for and our entry into the line array market was consolidated this month when the Synco Network partners backed the new W8L as their system of choice, in a decision which will now resonate throughout Europe.

As we look around the globe – from Spain and Italy in Southern Europe, up to Scandinavia, around the world one way to the States (and the other to China), our new horn-loaded concept is literally flying. In our own backyard, not only has **fabric**, voted as having the UK's leading dance sound, taken the bold step of upscaling from W8C to W8L, but our London-based rental partners, Capital Sound Hire, have also placed a massive vote of confidence in the system.

In this edition of *The Edge*, our engineering director, Bill Webb, talks about the release of the software package, ViewPoint, which is designed to help W8L users optimise their system. More information on this will be available from our stand at the *PLASA Show*.

With all this banging on about line arrays it would be easy to forget our consolidated portfolio. With this edition we have probably broken some kind of record by covering events or installations featuring a vintage Philishave (in Belgium), the original Wavefront W8 design (in the UK) and a vast deployment of EM Series, Blackline, Contractor series and W8C enclosures — not to mention our MA series amplifiers, which in many cases are powering the systems.

The success of Blackline as first choice for providing cost-effective punchy dance sound (more bang for fewer bucks) we owe to the example of Room 2 at **fabric**, where many club owners first heard the system at work. It proves that however much we talk the product up there is no substitute for experiencing the system first hand, in full flight, correctly optimised by professional engineers. So we thank them for again leading the way with their latest progressive upgrade.

Which leads us seamlessly into the debt of gratitude we owe those who have contributed to this edition (our customary largesse will translate into champagne if you care to visit Stand F64 at the *PLASA Show*).

For the Jacky Cheung article we thank Richard Lawn and his team at *Pro Audio Asia*; the chiselled penmanship of Jim Evans was responsible for the words on *Isle of MTV* in Lisbon; Gasoline Media went the extra mile to bring the story on the Synco partnership; for co-operation de-luxe we again thank Justin Gawne and his editorial teams at *Mondo* and *Night*. And finally to Martin Kelly (at Martin) and the posse of photographers who have provided the essential picture resource. Credits appear alongside the relevant images.

Jerry Gilbert

Where to see us

Sept 8-11: **Plasa 2002**, London, UK

Oct 18-20: **LDI**, Las Vegas, N. America

Dec 3-5: **Cine Asia**, Bangkok, Thailand

March 3-6: **ShoWest**, Las Vegas, N. America

March 5-9: **Musikmesse**, Frankfurt, Germany

March 13-15: **NSCA**, Dallas, N. America

Cover: *Enigma in Carrickmacross*

Blackline Wins Top Award



Martin Audio's Blackline Series of loudspeakers has won the UK BEDA Award for *Product of the Year 2002*.

The Bar Entertainment & Dancing Association Awards, which took place at Birmingham's Hilton Metropole Hotel, is the most prestigious awards ceremony for the entertainment industry in the UK. The panel of judges recognised the considerable success of Blackline on the world stage – most notably at **fabric** in London.

A statement from the judges said, "Its high profile installation at **fabric** —widely regarded as one of the world's best sound systems — was one of the key factors that propelled this product range to the top of the pile. An excellent product, purposely designed for installation in late night venues and well marketed to its target audience, Martin Audio's Blackline has been warmly welcomed by installers and club operators alike."

Speaking of the award, Martin Audio MD, David Bissett-Powell, remarked, "Although we have historically enjoyed success in the club field, it's pleasing at last to be recognised for having a proprietary club system. We hope we can continue to repay the faith shown by the nightclub industry."

Dressed for the occasion: Martin Audio sales and marketing director, Rob Lingfield and national sales manager, Simon Bull, collect their BEDA Award



Runners-up in the category were Chromarange from Pulsar, EVID from Electrovoice and Xone mixers from Allen & Heath.

Cap Sound Invest In First Martin Line Array

Leading sound production company, Capital Sound Hire, have purchased their second Line Array system inside a year.

They were unable to extend their long relationship with Martin Audio the first time around as the High Wycombe-based company were still developing their own system. But that recently changed.

Explained managing director, Keith Davis, "We had a client who wanted to use a line array system last year, which forced us to go a different route. But once Martin were able to demo their new W8L we were convinced.

Trialing the W8L on the Hear & Now tour, Vodafone Ball and dates with Blue, the engineers noticed how impressive the system sounded. "Now everyone who hears it just goes 'wow'."

The different characteristics of the two proprietary line array systems Keith believes will increase their already heavy concert, classical and corporate work schedule even more. "The two systems go hand in hand," he says, "their characteristics sonically are entirely different."

However, the Martin W8L is compatible with the W8C, of which Cap Sound hold a substantial stock — which



Capital Sound Hire's Keith Davis (left) and Paul Timmins — with new W8L stacks and amp racks

further justified their investment in the initial batch of 24 x W8Ls and a further 16 x WSX subs — along with 24 x Martin MA4.2 amplifiers.

Another advantage is the speed with which the W8L can be rigged and derigged. "It's fantastic — we were taking these down at ten minutes a side," says Keith.

It's part of the reason everybody loves the system."

He continued, "Martin have really put some good thought into this and we are now toying with the idea of travelling these boxes in clusters of threes and fours ... to make the set-up time even quicker."

The new system has already been out with Status Quo.

How ViewPoint Will Help W8L Users



Straight line arrays are extremely directional in the vertical plane. A long, straight array will produce an extremely narrow angle at high frequencies — in some cases 1° or less.

Consequently, in practical applications, line arrays need to be physically curved in the vertical plane to cover the audience. In a typical array, the top boxes usually have a flat or shallow curvature and the lower boxes are increasingly splayed.

Up to now, arriving at the optimum curvature to achieve the most even coverage for a particular venue has been a largely hit-and-miss process.

The problem is too complex to be solved by simple reasoning alone, and analytical tools that simulate the acoustic properties of each element in the array are required to determine the overall directional characteristics of the entire array. With each acoustic element in the model driven by a 'virtual' crossover and EQ, the frequency response of the entire array at any point in the audience vertical plane can then be predicted.

At the start of the summer we derived such an analytical model for the elements of the W8L and confirmed its validity in practical trials in many different venues. While very time consuming — taking about a day to calculate each venue — this analytical process has provided us with the ground rules for curving a W8L line array, and established that a progressively curved array gives much more even coverage than a J-shape array.

This information is now contained in ViewPoint — a Windows-based programme developed to enable W8L users to quickly configure their system to suit a particular venue.

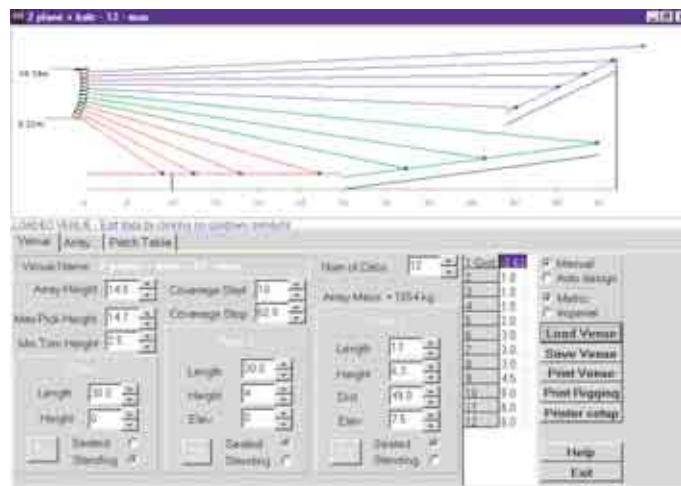
ViewPoint has three screens and a Help function: **Venue Screen** — shows the array in the venue for design and editing; **Array Screen** — shows the array rigging in detail from the side; **Patch Screen** — shows how the array is zoned and the controller set-up.

When using ViewPoint the first step is to enter the venue dimensions, vertical coverage start/stop points, trim height and number of cabinets. By clicking on the 'Design Array' button, ViewPoint will then automatically calculate the optimum array configuration, including the overall tilt of the array and the splay angles between each cabinet.

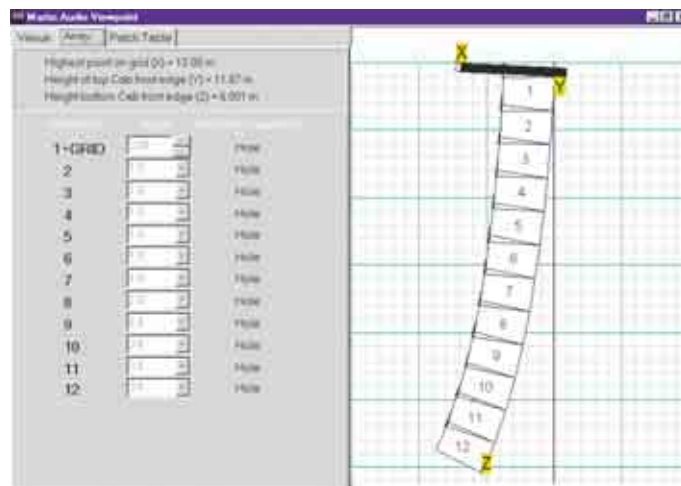
The array can then be manually edited or 'nudged' if required. Once an array design has been completed the array/venue/patch configuration can be printed out and saved to disk.

ViewPoint takes the guesswork out of line array curvature and beta tests have confirmed that it is a useful and welcome addition to the W8L line array toolbox.

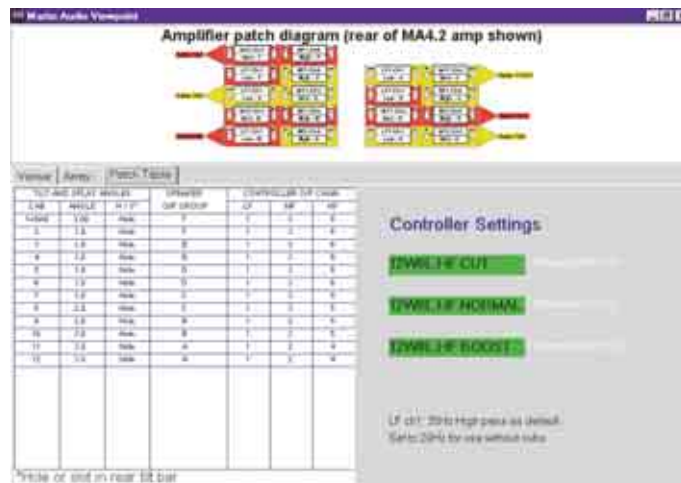
Bill Webb, Engineering Director



Venue Screen



Array Screen



Patch Screen

Fabric Fixes On Line Array



With so many young pretenders to the 'superclub' throne now emerging — many of them modelling their soundscapes around the legendary **fabric** system — the Clerkenwell club's owner Keith Reilly and technical manager Dave Parry recently decided it was time to reclaim the higher ground.



Richie Rowley (left) with Dave Parry

They already had the Wavefront sound system, the Bodysonic dancefloor, the Timax sound spatializer and the Red Cycloops enabling them to zigzag sound

through three-dimensional space. But when recently rumours began to resound through the labyrinths under Smithfield Meat Market that **fabric** was about to fly a Line Array it produced all kinds of frissons among visiting acts. The superclub was about to join the ranks of *überclub*.

Given the close relationship the two men had built up with Martin Audio and their south-of-England pro audio distributors Marquee Audio (who also fulfilled the club's previous W8C order), it was little surprise that they should opt to partially upgrade the Wavefront W8C with the new Martin W8L Line Array, in an effort to rearrange the sonic sensibilities of their punters.

"The simple truth," Dave Parry interjects, "is that



Room 3 at fabric



The new Line Array – in situ

other clubs were starting to catch up around the UK, and we needed to retain our competitive edge. **fabric**'s sound was getting a reputation in the magazines; and when two clubs in Ireland came up with similar systems to ours we knew it was time to move on. Line Array was starting to become the *de facto* standard, and **fabric**'s owner Keith Reilly just loves it."

The opportunity to love it came at a demo, orchestrated by Martin Audio product manager, Richie Rowley.

"There was a lot of hype and we were a tad nervous initially," admits Parry. "It had to live up to expectations — but we had it in for a day and it was awesome."

Richie remembers, "We stacked the Line Array on the stage and ran the system up and it was smacking right into your chest. Everyone started smiling ... and then we decided to drop the subs in!"

Dave Parry quakes at the prospect of how this raw, kinetic energy will transfer to the 700-800-capacity room, and how it will be absorbed. But after a demo he was absolutely convinced.

"It is a lot of power," admits Richie Rowley. "But that's what it's all about. The fundamental horn-stacking design and Line Array methodology will provide seamless 90° coverage from each one of these arrays — acting as a point source, with no combing from within the left and right arrays, as you have

with traditional combi enclosures. The two W8L enclosures splayed at 6° will give enough vertical coverage from front to back of the dance floor. It's just like sonic roller coaster ride."

Which answers any questions about whether this system should carry a health warning, and whether the sight of auricular blood would have had even those hardened meat-packers trembling?

Each W8L integrates a high excursion, Hybrid horn-loaded and ported 15-in low frequency cone driver, with two vertically-coupled constant directivity horn-loaded 8in mid frequency cone drivers and three vertically-coupled constant directivity horn-loaded 1in high frequency compression drivers. It's a small panzer division of artillery.

Parry believes that the decision to back Line Array is justified purely on its sonic thrust rather than its marketing hype. "There's no point us following a marketing trend. This is a purely practical decision — people were catching us up and we have a reputation to preserve. It's as simple as that."

The installation this month will not be the first time that this system architecture — patently designed for concert touring — has been rigged permanently, but it is certainly the most consequential.

However, it is not entirely about Line Array. While Room 1 will now see two W8L's slung either side of the stage, replacing the existing W8C's, serious bass extension will be provided by the monobloc of eight existing WSX's, forming a single point 'wavefront' source without cancellation, while the four W8C's on the rear balcony will continue to provide infill quad sound.

The pre-existing QSC amplification, driving the W8C's, will be replaced by Martin MA series power engines. Multiples of MA2.8's will drive the W8C's, MA4.2's the Line Array — and the further 4.2's on the subs.

"We are using the existing Soundweb network — but it's been fairly easy to adapt the dynamics ... just a case of changing the crossover points. It's also about using the best signal multicore. With a good system why sacrifice it for the cable?"

At the same time, **fabric** has implemented a Martin top-up to Room 3 and VIP Room, which have now been finally converted.

The tiny stage area is covered by four Martin Blackline F15's, with two sets of F10's paired together and flown — supported by an F8 out over the bar, while a pair of S218's provide the sub bass.

Part of their ongoing maintenance to ensure they pull in corporate clients and underground bands alike is to make ongoing improvements whenever necessary. For instance the Martin F12 DJ monitors are now all left and right handed matched pairs.



Room 3 – from the DJ booth

Finally, **fabric** have taken the decision to exchange their existing JBL system in the VIP Room for Martin Blackline F8's — completing the standardisation to the High Wycombe company's products.

Twelve F8's will be distributed around the venue — but only after deliberation, as Dave Parry explains. "At one point we were going to use a single Line Array box on a hoist middle stage to cover the VIP balcony and become the centre of a 5.1 surround system on the main dance floor — but I think it would have been too mad."

Every decision made by Dave Parry and Keith Reilly is fired by the desire to improve the experience — build the emotion. It's one reason why you'll rarely find Dave Parry in residence after dark. "It's just too intense for me," he says, without a shred of pretention.

Dave Parry pays tribute to his two technicians — Sanj Bhardwar who looks after Room 2/3 with the fastidiousness of his own house, and Dave Fly drives Room 1.

They have to be prepared for all kinds of demands from visiting DJs these days — just as though they were meeting a headlining band's rider requirements.

"People now turn up with G4's, Josh Wink will turn up with Final Scratch and we take the RED Cycloops out of the system — we are totally adaptable."

But for now all attention will be on the newly-launched W8L Line Array.

"Marquee will be the first dealer in the UK to sell our Line Array — and I don't think any other club system will now come close. I can't see anyone playing catch up this time."

The meaty system at Smithfield Market just got meatier.

Glossop Uses Wavefront For Commonwealth Games



As part of the Avesco Group — who were awarded the status of ‘Official Provider of Audio Visual Services to the Manchester 2002 XVII Commonwealth Games,’ Dimension Audio were responsible for providing the audio reinforcement at 17 different locations.

With George Glossop as Dimension’s designer, at its peak the Group were supplying services to 17 different venues, while Dimension themselves were covering a wide remit — from providing submersible speakers for synchronised swimming in the Aquatics Centre to impregnating the advertising toblerones at Heaton Park with flat panel technology for the Lawn Bowls.

They also looked after the playback in some of Manchester’s bigger arenas, such as GMEX, MEN (Manchester Evening News) and Belle Vue — and here they turned to a big concert rig.

Glossop sub-hired huge numbers of Wavefront enclosures from Martin Audio’s premier London rental house, Capital Sound Hire, as he has on occasions in the past.

At GMEX (where the ice hockey and gymnastics took place) they ran 56 W2’s — all truss-flown to take into account sightlines — in a design conceived by George Glossop. “The reason for using so many boxes is that we are trying to achieve sonic clarity and get the



sound into people’s faces — not by driving massive levels but keeping the reverb and RT down. The days of the big central cluster have gone,” he told *The Edge*.

At the MEN Arena (which hosted boxing and netball), Dimension Audio augmented the house system, with four clusters of Wavefront W8C’s, run active, and flown around the central video gondola, where a square lighting truss also moved vertically. Since the venue was staging boxing and netball the truss had to remain flexible.

“We decided to run the four flown clusters of W8C (two wide, four deep), so that the top boxes functioned as one unit and the next pair down and bottom tier were linked,” explained George.

“In this way we could zone the power delivery and use in the in-house delay system. This was important because with sections of the arena allocated to sports presentation, media and broadcast etc we could not deliver the same SPL’s to these areas as we could to the audience areas. We had the choice of either balancing it on the amplifiers or matrixing it up and processing it at the mixer stage.”

At Belle Vue where a punchy system was required, George Glossop faced the additional problem of environmental health (the venue is situated 100 metres from local housing) and the fact that the event ran through until 10pm each evening.

Working with Unusual Rigging, who created special brackets, Glossop located his speakers in the middle of the side bleachers, working around high octagonal lighting stands. Over the lighting towers Dimension specified 12 suspended

clusters, each comprising a single W8C and two W2’s for nearfills (facing in opposite directions). These were positioned at each end and at the quarter points down the long sides.

Dimension MD, Colin Duncan said, “Sports venues are not noted for the quality of their inherent PA systems, and bringing the reinforcement level up to the necessary standard, while working within the parameters of broadcast requirements, was taxing.

“While we demonstrated an ability to track down sometimes arcane products that generally exceeded the spec, and provided a more than adequate solution, we were fortunate on being able to draw on such a large and dependable Wavefront stock.”

DM Audio Introduce Line Array On Eurovision Song Festival



Lars Wern and his team from DM Audio produced some inspired sound mapping, using a digital highway and some new audio tools when the 7,000-seat Saku Suurhall in the Estonian capital of Tallinn hosted the 2002 Eurovision Song Contest.

The live audience were treated to the first major European installation of the Line Array. However, the Stockholm-based audio production company are well aware that priority has to be given to the 100 million picking up the broadcast through the world's TV networks and the W8L's had to be trimmed out of view.

The QSC amp racks were flown close to the loudspeaker clusters, which were remotely addressable via QSCControl software, running on CobraNet, while Rane's RPM-88 10 x 10 digital matrix, programmed with delay and EQ parameters, fed the left and right main speaker systems, downfills, frontfills and extreme left and right. The outputs were summed using a special summing box, as were the signals feeding external processors.



FOH engineers, Robert Ernlund (foreground) and Lars Wern



However, the real story was about the W8L, which Lars Wern sensed would provide the coverage he was seeking without the need for delays.

“The footprint, the rigging attributes and the long throw all were important for a show like this, enabling us to cover the whole arena.”

DM Audio flew the 24-box line array either side of the stage, in a configuration of four clusters of six boxes. Wern appraised, “This produced an extremely wide sound; the stereo imaging was incredible and the effect of the reverbs fantastic.”

The system's compatibility with Martin's established Wavefront W8C and WSX subs also worked in its favour, as the Wavefront W8C Compacts were asked to provide nearfield, centre cluster and extreme side coverage.

Martin Audio's Jim Cousins, who attended the site in

advance to advise on inter-cabinet arraying and optimising the system for the humidity, said “As the W8L is very smooth off axis we don't run into the feedback that other companies would typically experience.”

With W8C's providing stalls coverage for those seated behind the Line Arrays, and WSX subs stacked each side behind the screens, Martin WT2's were used for extra fills, while front fills were provided by WT15's concealed under the fibre glass stage mesh.

At FOH Lars Wern and Robert Ernlund operated an Innova Son digital system built around a pair of Sensory desks, and set on top of the desks were three TC System 6000 reverb/delay Icon remote panels.

Monitor engineers Lief Mattson and Mats Wennerholm mixed on Martin LE12JB and LE700A

conventional floor monitors, concealed under the traps, along with the W8C sidefills, presenting the artists' IEM mixes in stereo pairs.

Today the Eurovision Song Contest exists in a playback environment with artists standing on the quality of their DAT backing track, fed frame-synched to FOH from the ETV OB trucks. The variable of the dynamics from tape to tape provide the monitor engineers with a real ordeal.

However, Lars Wern felt that DM had managed to contend with this, and an inherently live environment. He also felt they had been able to work within the context of ETV's low-level requirement without audio compromise. And he attributed this to the controllability of the Wavefront W8C central cluster.

Ireland's Largest Superclub Opens Its Doors To Wavefront



With a capacity of 3,000, Ireland's largest dance club opened its doors this month in the town of Carrickmacross, Co. Monaghan.

Owners Kevin McKenna and PJ Woods have invested nearly €5 million in developing arguably Ireland's first superclub, around a Martin Audio Wavefront W8C system.

Enigma have already hosted many leading progressive house DJ's and were delighted with their choice after Rea Sound's Sean Gallagher had exposed them to the powerful system, which is resident in some of

Ireland's leading clubs (including the recently fitted Club One in Cork and London superclub **fabric**).

PJ had known Rea Sound from previous leisure ventures but the Cookstown-based company still had to win a tender to develop the dancefloor and balcony (with a small, 200-capacity chill-out room in the next stage of development).

"When they gave us a chance to quote we thought we'd show them just what the Martin Wavefront system was capable of, as we were under serious pressure from other leading brands," says

Sean. "So we took them on a tour, and they were quickly convinced."

This sounded the signal for Martin's product manager, Richie Rowley, to carry out a site survey, optimising the system for the vast space.

Rich Rowley explained, "The basis of my design was to give high intensity sound to the entire dance space. This was no mean feat considering the dance floor was of irregular shape on one level and could accommodate 3000 hungry clubbers. The answer was to use a distributed Wavefront W8C system in six pairs with the addition of two single

units providing plenty of 'ego' energy directly in front of the DJ box.

"The 14 W8C's were then supported by 12 WSX (2.1m horn-loaded sub bass units) to provide biblical amounts of low frequency energy."

The overall system drive was fashioned around Rowley's design for **fabric** in London where he had put more level (gain) emphasis from the forward facing enclosures and then utilised the rears just as a fill system. This gives the clubber the impression that the energy is derived from a source which naturally draws them closer to the DJ.

Speaker infills are supplied in the form of eight Martin Blackline F8's for under-balcony, along with a pair of F12's. A second pair of F12's provide DJs with their monitor sound, aided and abetted by a Blackline S18 sub.

The club already has a dynamic operating programme up and running, with an alcohol-free Friday teen night, featuring big club anthems; a regular club night on Saturdays with leading international DJs, including Graham Gold, Matt Hardwick and Jeremy Healey. Manumission's Griffin Jay headed a cast that kicked off the Ibiza season, while other names lined up include Brandon Block, Alex P, JFK and Des Mitchell, supported by local residents, Modelle from Belfast, Al Gibbs (from local radio station FM 104) and Leno.



Top Acts Give W8L A Weenie Workout



Delicate's 'Smoother' Smyth (foreground) with Gordon 'Gunji' Patterson

Delicate Productions were again awarded the sound contract for the 10th Annual KROQ Weenie Roast held at the Verizon Wireless Amphitheater in Irvine, CA.

Tickets for this year's show sold out in less than ten minutes, and the capacity crowd enjoyed such acts as Puddle of Mudd, with a surprise performance by the Violent Femmes and New York's red-hot band The Strokes. Other bands included System of a Down, Bad Religion, Incubus, Moby, Papa Roach, Jimmy Eat World, New Found Glory, POD and Rob Zombie.

The main stage sound system comprised of 40 W8L Line Array boxes, flown in a main column of 12, and a side column of eight per side with 12 Martin BSX 2 x 18in sub-bass cabinets stacked per side. Also provided for inner and outer front fill were W8C and W8CS cabinets.

Band engineers took turns mixing on two

Yamaha PM4000/60 consoles (at FOH) and two Midas Heritage 3000 monitor consoles. A turntable was utilised for band changes, so the monitor system needed to be duplicated to expedite the changeovers.

The two monitor systems each comprised of 14 Martin Audio LE700 floor monitors and two F1B/F1T for drum-fill. Side-fill for the event was made up of two F2 bass cabinets and two F2 Combis per side. Crest Audio 7001's and 8001's powered the system.

Engineers that had the opportunity to 'test drive' the new Martin Line Array included Greg Nelson, Brendan Brown, Toby Francis, James Gebhard, Rick Volz, John Pennington, Gary Nelson, Dan Hallas and Mark Hayworth. "All the comments we received on the new W8L were highly favourable," remarks Delicate's Graham Thornton, "Gunji Patterson, who mixed System of a Down, had used

the W8L's before and was happy to see them, as was Ted Keedick who mixes Zombie, since their touring rig is also a Martin W8L Line Array. Everybody was very impressed with what they heard."

Delicate's own Smoother Smyth was on hand to oversee the installation and coordinate the crew.

"It's always interesting doing the same show in the same venue on a yearly basis," notes Graham Thornton. "The Martin Audio systems we've used in the past were excellent, but the new W8L certainly stacks up very, very well. The big difference is uniformity of coverage, from front to back and side to side the sound was completely seamless."



Pic Credits: Jimi G/Graham Thornton

MHA's W8L Given Presidential Inauguration



It's rare that a sound reinforcement system will make such an auspicious and high-profile debut as to broadcast the sound at a presidential dinner.

But that's precisely how Mike Scarfe's Maryland-based MHA Audio deployed his newly-acquired W8L system recently.

Mike had no hesitation in trucking 16 of the 24 W8L enclosures that have now joined his inventory to the Washington Convention Center, where he set up facing sound sources, in two blocks of four, at either end of the room.

At one end was President George W Bush and his entourage, while performing on the stage at the opposite end of the 300 ft square room was country singer, Vince Gill.

"The Line Array was perfectly suited for this application," said Mike. "Since the set was 100ft wide I was able to fly the W8L's 120ft apart — high and wide, and completely out of the field of vision." The main system was augmented by front fills and delays.

This was MHA's first major Martin Audio purchase (although they run the classic LE monitors), and included 12 WSX subs and six W8C's.

"The ability to field a line array system is expected now — even at a local level," he states. "Other companies have flooded the

market which has increased the pressure on everyone else. Having mixed on these systems over the years, I had been impressed by the principal though not necessarily the quality.

"But once I was given the chance to try out the W8L I immediately realised its superiority over the competition."

In particular, Mike Scarfe cited the evenness of the horizontal coverage and the powerful low end boost of the W8L in providing its competitive edge.

The American office of MHA Audio was set up by the British audio professional back in 1983 to serve their UK touring clients. Today, its workload is concentrated in the mid-Atlantic area, with a work portfolio ranging from local music festivals to large political events and corporate events.

In fact two of the recent shed shows he has covered with the W8L were for the B52's and Blondie. "A line array is totally expected now," he says, "in fact as of August 1, Merrilweather Post Pavilion, Columbia, MD, has not hosted a single show this year without a line array .

And with the speed of rigging and de-rigging — another of the Martin system's attributes — Mike Scarfe is convinced he has made a sound investment in the future.



MHA's new W8L rigged for B52's and Blondie

Sunbelt W8L Debut At Hard Rock Café



If you're hungry, thirsty and in the largest city in America's south-west, cruise into the new Phoenix Hard Rock Café. This 8,000 sq ft restaurant and rock 'n roll club is an oasis for great food, music and memorabilia. Just keep your eyes open for the giant red and white Flying-V guitar hovering over the entrance.

The club's grand opening featured an impressive outdoor performance by Sugar Ray. Handling the sound system was Sunbelt Scenic Studios of Tempe, Arizona. Jim Jorgensen, head of Sunbelt's Audio Department states, "The first elements to the new system installed were the 32x32 Vision Stage, a ten tower roof with 120k of lights, six Studio Colors and six Studio Spots. Sunbelt also debuted our new Martin Audio W8L Line Array system. We installed a 16-box rig hung off our self-climbing truss system. The gig was a grand success although it rained right up until load in."

There were reports from Bank One Ball Park, two blocks away, that the show sounded clear, well-defined and had plenty of low end. Will Lewis from Audio Analysts commented towards the end of the show, "The Martin system sounds great. It has a really tight sound."

Jorgensen goes on to say, "I am very pleased with our new Martin Line Arrays. They sound incredible. If I closed my eyes and really listened to the System (in the round with four

clusters of four speakers) I was unable to identify where the speakers actually were. The coverage was fantastic and seamless. The vocal intelligibility is unmatched by any other product. Also, they incorporate a very fast rigging system. I showed two stage hands how to rig the first box and they did the rest."

Martin Audio's latest W8L touring package has been designed to meet industry requirements for compact, horizontally-formatted line arrays. They do not have the performance limitations common to the current flood of cross-fired, direct radiating products. This true three-way system offers very high efficiency with an all-horn design and a consistent

90° horizontal mid and HF pattern control.

When asked about Sunbelt Scenic Studios, Jorgensen explains, "There are roughly 100 people that work in our 90,000 square foot facility. We sell, make, create, and provide all kinds of different things for the entertainment industry. Sunbelt is a big scenery shop with a lighting department, an install department and an audio department. We work on corporate business meetings, theatre shows, themed environments and concert performances."

Jorgensen goes on to state, "In the audio department we have rebuilt systems from the ground up. We purchase roughly \$150,000 worth of audio gear a year and almost that much in lighting. That means we are growing, and with the installation department taking off, our growth rate will just get faster. We do not do any tour support for national music acts yet, but that is next."

Sunbelt Scenic Studios is a leading provider of concert audio systems for tours, one-offs, and special events including flown concert systems for up to 20,000.



EM15 Brings Balance To Gloria Dei



As part of a recent \$5 million construction and renewal project, Gloria Dei Lutheran Church in St. Paul, Minnesota, has built a 17,000 sq. ft. addition to the main structure, and also renovated the existing 1950's-era church building. The architect for the project was Bentz/Thompson/Rietow Inc of Minneapolis, MN.

The project encompassed all-new audio systems, designed and installed by Jim Pfitzinger of PI Audio/Design, based around a total of 40 Martin Audio loudspeakers. Pfitzinger's contract included complete replacement of the existing main sanctuary PA system, upgrades to the fellowship hall system and systems for the new, three-storey building addition.

The most difficult challenge faced by Pfitzinger was designing a system for the long, tall and highly-reverberant sanctuary. The old, high-mounted single cluster suffered from inadequate coverage and — with the recent addition of wireless lapel microphones — frustrating feedback problems.

To cure these ills, Pfitzinger devised a delay-zoned distributed system comprising Martin Audio's compact EM15 two-way wall mounted loudspeakers supplemented by single-driver C115 surface mount speakers. Ten of the EM15's were recessed into side pillars for the main seating area, with additional EM15's and C115's providing balcony coverage. This approach provided even dispersion of sound throughout the space, minimising reflections and greatly enhancing intelligibility.

"The new speakers sound great and it's working out very well," says Jack Angerhofer, the church's volunteer sound technician for the past 15 years. "It's much better balanced throughout the church, with fewer dead spots. We don't have to crank up the system in order to make the words intelligible. We can keep it down to a much friendlier level."

Jim Pfitzinger has used Martin speakers extensively in the past, in both concert and theatre applications, and has used the EM15's in other church installations.

"The EM15 is excellent for high quality distributed church systems where you need a low profile," he notes. "They have excellent sound quality and low end response. The defined coverage pattern avoids excessive reflections, and the inductively coupled full range driver means you can't accidentally burn out the voice coil."

The new sanctuary system also included a pair of EM15's to cover a side chapel, which extends at a 90-degree angle from the main worship space. For the altar area at the far end of the chapel, Pfitzinger specified a small, dedicated system employing a pair of the Martin C115 speakers.

The large gathering space in the new addition utilises ten of the powerful Martin Audio C516 flush-mount speakers to cover the large, high ceiling room. Additional C115 and C516 loudspeakers also were installed in the new addition's kitchen, nursery and connecting hallways.

After two months of use, Pfitzinger reports the speakers are performing flawlessly and to the complete satisfaction of everybody involved. And he expects to rely on the compact speakers in any similar future installations. "They are exceptionally reliable," he says, "and for their size they sound a whole lot better than they have a right to."



Blumenthal Performing Arts Center Upgrades



Celebrating its 10th anniversary, the \$65 million Blumenthal Performing Arts Center has grown from a staff of 15 to over 100. Likewise, annual operating revenues have jumped from \$5.5 million to a whopping \$19 million. And for the 2002-03 season, the Center expects the number of visitors to exceed 4.5 million. That is a success story by anyone's standards!

The 2,100-seat Belk Theatre is nationally known for its first-class touring Broadway productions like *West Side Story*, *The Lion King*, *Jesus Christ Superstar* and *Beauty and the Beast*. Additionally, the Center's Education Institute and community programmes develop innovative partnerships with schools and local organisations. This brings the excitement of theatre and the performing arts to many people throughout the region.

Also part of the celebration is the installation of an expansive new Martin Audio system. Technical director for the Center —and owner of RJC Consulting — Rossi Craft, states, "We needed to upgrade the system since there was a lot of mismatched components. The solution was to make everything consistent and compatible. What I'm hoping to do is make this installation a representation of Martin Audio products in theatre design."

The installation for the Blumenthal Center is actually four systems in one. The upgrade will consist of a four-phase install for each level.

The theatre levels include the orchestra level, a Grand Tier, the Mezzanine and the Balcony. RJC Consulting has completed the first part, which covers the lower level. The company hopes to have the other three storeys finished by the end of the year or by early 2003.

Once completed, the Center will feature around 75 speakers from Martin Audio. These include WT3's, S218's and custom zone speakers. Craft continues, "We've been working with Martin on prototype speakers for under-balcony fills. These need to be small but have high level impact. Martin Audio is a very accommodating manufacturer and their turn around time for delivery is amazing."

RJC Consulting is one busy company. Another interesting installation they've recently completed was for the Charlotte Latin School. Similar to a basketball gymnasium, the school's activity centre is an all-purpose facility that accommodates student performances, school meetings and graduations.

Rossi Craft describes the installation, "We put in a 180 degree cluster system with six Martin Audio W3's firing in a full circle. There are three on each side and two W1's firing down.

"The speaker cluster had to be split into two parts to accommodate a centre support beam. In other words, one side is hanging three W3's and one W1, the other side is symmetrical — when joined together they become a single entity. We also time aligned them to eliminate the gym's echo. The system has received very positive responses for its clarity."



Rossi Craft

Based in Charlotte, North Carolina, RJC Consulting has been using Martin Audio for about six years. The company specialises in large scale installations, audio consultation and design.

Rossi continues, "I love the way the Martins sound. They are fuller and warmer than other systems. And we have had zero complaints from our Martin Audio installations. We are real excited about the future!"



The Belk Theatre



'God Of Songs' Takes W8L On Tour



Jacky Cheung has been nicknamed the “God of Songs” such is his popularity in his native Hong Kong and China. He has recorded a huge catalogue of hits stretching over two decades, such as *Love You More Each Day*, which was voted the most popular song of the 90’s in Hong Kong. In addition to his singing talents, Jacky Cheung has also starred in numerous films as well as Broadway musicals and his popularity shows no signs of waning.



Therefore, when Cheung decided to take his latest CD release, *Touch Of Love*, to the road, a vast itinerary of large stadiums were announced throughout China to accommodate the huge demand for tickets.

Two production companies were hired for the tour in China. Both Power Max (Asia) Engineering Ltd and Quanzhou-based Guangdong Huifeng Performance Equipment Co Ltd supplied the entire PA and audio production equipment. As both companies are large users of Martin Audio loudspeakers, the timing of the tour was perfect, as Martin Audio’s Chinese / Hong Kong distributor, Dah Chong Hong Ltd, had just taken a huge stock of the new W8L Line Array loudspeakers. The £1m-plus package was finalised at this year’s Frankfurt Pro Light and Sound and Dah Chong Hong’s, Patrick Lau, wasted no time in supplying both companies with

the new Line Array loudspeakers — in all, 84 W8L’s were supplied by Dah Chong Hong Ltd.

“Many line arrays were auditioned for the tour”, commented Lau, “but the W8L’s were finally specified due to their overall sonic performance, as well as Martin Audio’s commitment to support and service.” Power Max (Asia) have supplied 36 W8L’s together with 24 WSX loudspeakers, whilst Guangdong Huifeng Performance Equipment supplied a further 24 W8L’s and another 16 WSX’s. The PA was powered by a combination of ten Crest 7001 and 60 Martin Audio MA4.2 amplifiers.

The tour kicked off in Shanghai in late April before moving on to Hangzhou, Shenyang, Tianjin, Beijing, Wenzhou and Quandong, where several dates were performed at each stadium to audiences between 30,000 and 50,000 per concert.

Chief engineer, Daniel Kwan is internationally renowned and he has worked on Cheung’s tours for over ten years. He has, therefore, come to appreciate what Cheung wants from his PA system. “Jacky has a unique voice,” commented Kwan. “He can modulate his voice in consonance with the music, which makes his songs more passionate. For this reason the long throw capabilities of the W8L array have enhanced this vocal technique to the entire audience. There have been no problems with feedback or distortion. Indeed, the W8L’s deliver very even sound dispersions with very little loss throughout the stadiums. Even at 90 – 100 metres distance from the main stage, the line array’s coverage is very, very smooth.”

Despite the weight of line arrays in general, there were no problems flying such a system Lau dismissed. “Each

loudspeaker weighs approximately 120 kg and between 48 and 60 W8L’s were used for the main PA. However, flying them was easy – it only took 3-4 hours at each concert.” Five 40-foot containers trucked the entire audio system throughout mainland China. A pair of Midas Heritage (3000 and 1000) consoles at front-of-house completed the picture, to ensure a smooth mix and favourable reviews from the critics who amassed at the series of Shanghai concerts.

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Martin Audio managing director David Bissett-Powell (right), pictured with Patrick Lau from Dah Chong Hong



Alberdi Pro Open Up The Spanish Market



Alberdi Pro has grown out of the umbrella of the founding Barcelona company, Adagio, which was established at the beginning of the 1970's, to become the largest specialist piano shop in Spain.

At the beginning of the 1990's Adagio acquired Union Musical Espanola, a company which gave them four further retail outlets, and by 2001 Adagio had opened a professional audio school in Barcelona to provide specialist classes in television, deejaying and recording studio engineering.



Along the way a professional sound division was formed — today familiarly known under the name of Alberdi Pro. When the young Nacho Alberdi arrived in his father's company at the age of 16 he soon saw the need to isolate Pro from MI.

He knew that the relationship with Martin Audio stretched back some 23 years, and that the company's founder Dave Martin had been a frequent visitor to Spain. But as the installation market emerged, so Nacho gradually changed the mindset of the professional customer base with a new strategy that



Disco bowling with CIRSA

emphasised quality rather than price. Alberdi Pro was formed nine years ago.

Nacho had seen the Martin portfolio develop through the eras of Philishave, VRS-800, F1, F2 and Wavefront. With the W8C he took the opportunity to notch up some highly prestigious installations with Martin — such as the Fashion Café in Barcelona — and establish it among the city's leading rental/hire companies. And when Blackline came along it provided the icing on the cake.

“Here was a product that was priced in a way that it enabled us to put in as many boxes as the installation required and think more about the end result. It meant we could specify multiple enclosures to get the dispersion right.”

Alberdi had been one of the first companies on the international circuit to establish Blackline on the impressive Parc Vallée leisure park, just outside Barcelona, and this became a great shop window for the product.

Today Alberdi Pro are selling Martin Audio throughout Spain via a network of dealers, and also carrying out their own installations. Only this month they have been engaged in fitting a large multifunctional theatre in Bilbao called Zambra, using 12 stacks of W8C's, with ten WTUB's providing the delays.

And despite the difficulty in marketing premium products to hire companies they have just sold their first 16 W8L Line Arrays to local rental company, Musica Viva — who from a base in lighting are moving increasingly into the audio domain.

All this has enabled Alberdi Pro to expand to a 15-strong workforce, with its own sales staff throughout the country.

Some of their most prestigious installations include Casa Batllo, the Cova del Drac and CIRSA, installing Martin enclosures in all their disco bowling operations throughout the country.

The relationship with Martin is just about perfect, says Nacho. “We love the products — the way the systems are voiced — but more importantly Martin is like a family. Although the people have changed along the way they remain a great team, who provide wonderful support. If we experience any problems we only have to phone them up and it is sorted.”



Nacho Alberdi

Return Of Philishave Sends Techno Crowd Off The Wall



Belgian rental company DEE have used Martin's Audio's seminal 1970's W-bin (bass horn) and Philishave system in a hi-tech Techno festival in Ghent, Belgium. The event featured 92 top Techno acts from all over the world.

DEE was contracted to provide the complete sound system for Ten Days Of Techno. The organisers requested a powerful system that could play 24 hours, for ten consecutive days.

DEE's André Schneider, recommended a ten-stack system, with a single W-Bin

and Philishave, plus a top cabinet. Two of those were actually strapped together and flown on each side of the main stage, while the remaining six stacks were placed around the venue's dancefloor.

The result was an incredible massive wall of sound from all angles which sent the crowd off the wall.

Which proves that the mother and father of all of today's PA speaker systems is still alive and kicking, and that its dynamics has remained intact over 32 years.

Dee in Vooruit (Ghent), showing the W-Bin and Philishave set

D-Rent First Benelux Company For Line Array



D-Rent have become the first Benelux company to invest in the Martin W8L Line Array — purchased from Ampco Belgium.

The company decided to acquire a system comprising 16 W8L cabinets for large venues and open-air events. They also intend to introduce their new system to their colleagues for dry hire, in a matched system that includes amp racks, crossovers, subs and engineer.

D-Rent was founded in 1986 by Koen Ponet. Originally the company focused on the event market, offering mainly technical support. However, in recent years D-Rent has expanded rapidly in the sound reinforcement sector, with contracts including the Coca Cola Party tours, for which they purchased a first set of Martin W8C boxes. As more (and bigger) jobs came along, their business demanded the expansion of the W8C / WSX inventory as their market share increased accordingly.

The Martin Audio range allows D-Rent to contract a wide variety of jobs. For corporate and audio-visual work, D-Rent

uses Martin ICT-300 and ICT-500 systems. Smaller PA sets are serviced with W2, while for compact PA sets in medium sized venues, theatres and concert halls they use W8C/W8CS. Finally, in the largest venues, D-Rent will field W8C/W8CS/WSX/W8CT/W8CM — or now, W8L Line Array.



Left to right: Ampco Belgium's Remo Martufi, (sales & marketing director), with Steven Kemland (pro sound consultant) and D-Rent's Pieter Nys (technical director)

Line Array Fronts MTV's Lisbon Dance Party



The Lisbon waterfront setting, adjacent to the floodlit Torre de Belem, provided a stunning setting for MTV's annual dance music extravaganza, *Isle of MTV*. In previous years, this event has been staged in Ibiza, but this year, MTV — currently celebrating its 15th birthday — quit the Balearics and took the show on the road, including dates in Marseilles and Helsinki as well as the Portuguese capital.

The *Isle of MTV* all-nighter featured three stages and a chill out zone. The main stage featured a Martin W8L line array system — flown over from the UK in the wake of Synco confirming their partnership deal with Martin Audio — while the adjacent side stages employed the conventional RH Synco touring system. The chill out area featured a



conventional W8C Compact system with WSX subs.

The line array was configured as 12 x W8L's per side, with six WSX subs, stage left and right all powered with Martin MA4.2 amplifiers.

The Lisbon event provided a shop window for the services of PA rental company Puro Audio — the Portuguese partner in the Synco Europe Network.

Headliners included 'virtual' band Gorillaz, Morcheeba and underground dance duo Layo & Bushwacka, with support from a spread of Portuguese bands and DJs including Roger Sanchez — and all much appreciated by around 10,000 local punters.

"We're very happy with the Synco set-up," says Puro founder and partner Jose M Henriques. "It's a relationship that works well and has proved a winning solution for a number of



Roger Sanchez on stage

reasons. We've worked with Ampco Pro Rent for many years and have developed a long-standing friendship as well as a business relationship. And the philosophy behind the scheme appeals to us. The spread of equipment caters for most eventualities and enables us to service television shows, corporate events as well as major music festivals and concerts.

"You have to equip to meet the changing demands of the marketplace which is why we're moving into line array and are looking forward to taking delivery of the Martin Audio W8L Line Array system for the Synco network."



Puro's Jose Henriques

Wavefront Pops The Cork At Club One



Martin Audio have supplied a massive club system through their Irish distributors Rea Sound, to fulfil the exacting remit of club owner Peter Collins at his new venue, Club One in Cork.

Collins and partner Denis O'Mullane have spared no expense in converting a former lap dancing venue into an 800-capacity House/Garage dance club. They reckon to have spent around 1 million euros (£750,000) on the work — without the cost of the building — having brought in interior designer John Duffy, and Cork-based audio consultant Chris Tyler to ensure the venue achieved both aesthetic and acoustic perfection. As a result everything was in place for Dr. Bob Jones to pulse the club into life at the opening night party.

It was the latter who introduced Rea Sound to the contract, as the quest began for a system that could reproduce the hard R&B-flavoured music favoured by the clientele.

Visits were arranged to **fabric** in London — as well as premium Martin Audio sites in Northern Ireland — by Rea Sound's Sean Gallagher, and Peter Collins also paid a visit to the PLASA Show in September before making his expansive technological commitment.

Collins confirmed, "It was the experience of **fabric** that led me to Martin. That was the benchmark sound, and suddenly it all just fell into place.

"I can't tell you how thrilled we are at the way things have worked out with the audio. Martin produce an amazing product and we are absolutely delighted with the sound in the club — even the fills have been commented on!"

Prior to that he had talked at length to Chris Tyler, as other brands were considered. "But they either weren't happening, were too old, or the local back-up was poor. Martin offered the best value for money — and the MA amplifiers brings the best out of the system."

Club One is situated on a single floor, with two rooms linked by a tunnel. "Due to the design of the tunnel, there's practically no sound seepage between the two rooms," records Sean Gallagher.

On the main dancefloor Rea Sound have provided a four-way active system, comprising a Wavefront W8C flown in each of the four corners, with three WSX sub bass ground-stacked on either side of the dancefloor (after the original power requirement had been upgraded). Twelve Blackline F10's are used for off-floor infills and the system management is via XTA processing.

High priority has been given to the DJ monitoring environment, with a pair of Martin Blackline F12's flown left and right of the DJ booth, with a Blackline S15 sub located underneath. "It just sounds unreal," enthuses Gallagher. The booth also contains an option of Rane MP44 and MP2016 Rotary mixers (fitted with XP-2016 EQ module) and Technics SL1210 Mk3 and Pioneer CDJ-1000's for playback.

Multiples of Martin Audio amplifiers are used to power the system — three MA4.2's driving the subs in the main room, MA2.8's handling the low mids, MA1.6's the high mid/highs and ten MA1400's dedicated to the DJ monitors, the subs and all the sound in the small second room.

The sound system serving the auxiliary 200-capacity room — which is geared more to hip hop — is comprised of six Blackline F12's flown around the floor and six ground-stacked S15 subs. A pair of Blackline F10's are used as DJ monitors and the booth also houses Allen & Heath XONE2 62, Denon DN1800 and a further pair of Technics decks.

For the lighting, the client requested slow moving beams, wall and floor washing through a Jem Stage Hazer, and so eight Martin Pro MAC250's and 12 Robocolour 3's make up the entire lighting plot, while 'non-neon' is used for decorative effects. Similarly in the second room there are no pulsed effects but simply 12 Martin Pro CX2 colour changers.

But with DJs of the calibre of John Acquaviva already booked in, the final word goes to Peter Collins. "When we were stripping out the venue we couldn't bear the idea of putting the lap dancing pole in the skip — so we gave it to the local biker club — as a goodwill gesture!"



Podd Fit Blackline Into Exclusive £2m West End Club



Pro audio installers, Podd Sound of Kingston, has fitted the entire sound system into the latest celebrity club – the exquisite 700-capacity Elysium, in London’s West End — using entirely Martin Audio Blackline components.

Costing in excess of £2m to develop it boasts five different bars, a 120-capacity restaurant and various VIP areas, as well as a ground floor cocktail bar.

Set up in the basement of the Café Royal — and previously used as a Masonic Temple — Elysium is owned by Paul Carew, Neville Mody and Mark Young, operating as Aquarius 2001 Ltd.

Carew and Mody had previously used Matthew Podd’s company to install Bar Eivissa in Kingston-upon-Thames, (which they operate as Carmody Leisure). At the Café Royal they had originally intended to develop the basement only but took on the upstairs Daniel’s Bar in a deal with landlords, Meridien, as part of the condition to gain access via the Café’s main Regent Street entrance (rather than in Glasshouse Street). They have converted this into the cocktail bar, Ku De Ta.

Downstairs, Tibbatts’ interior designer Tony Carty — inspired by the idea of joining two extreme vertical worlds by what he describes as a ‘changeling’ staircase — has created an Indo-Chinese interior, highlighted by a 120-seat restaurant.

Matthew Podd has assembled an intelligently-specified sound system. On the near side of the dancefloor, the DJ booth is raised high above a vibrantly painted alcove — playing out through an all-Martin Audio sound design resembling Room 2 at **fabric**.

A devotee of Martin Audio he knew that his clients were familiar with the sound in **fabric** and he received no opposition from them in recommending a complete Blackline system. Thus he set about designing a comprehensive system to feed the seven separate sound zones. “We used Martin because of their range, their write-ups, their reviews and their reputation,” he said.

The main system is based around eight flown Martin F15s and groundstacked S218 subs. Distributed through the seven sound zones (including Ku De Ta) via a Cloud Z8 zoner are also six Blackline F12’s, 14 F10’s, four F8’s and a pair of S12 subs. The system is powered by a combination of QSC’s premium PowerLight and more budget conscious RMX series amplifiers.

For processing he has used an Ashly 31-band EQ and system management is via Martin’s dedicated DX1 digital processor and four Blackline controllers.

Elysium is licensed until 3am, whilst Ku De Ta trades from 11.00am to 1.00am.



Wavefront W8 For Flagship Rock Café



Luminar Leisure have carried out a major £1m conversion of their *Chicago Rock Café* in Northampton, providing the company with a flagship venue within the former Odeon Cinema and increasing the capacity to 1500.

With the relocation of the stage to its own mezzanine level, the venue is centred around live music. Forthcoming acts will range from Spandau Ballet to the Venga Boys — and this will be played back through a concert-spec Martin Audio Wavefront W8 system.

The sound and lighting contractors, Lynx Lighting, were also entrusted with putting in a new lighting rig and viewable from three levels (with the stage situated between two floors).

The large venue (with a massive 18 metres floor-to-ceiling height) is divided into three areas — the main room, the restaurant and Cuba Bar, situated inside the main entrance — and this is configured as a 16-zone system.

Having specified Martin Audio Wavefronts, the primary task facing Lynx Lighting's head of sound Jerrey Denning, was the ability to change the venue's soundscape — with automatic adjustment of the room's EQ settings in accordance with the different modes of music. This he did with the aid of four BSS 9088 Soundwebs and a 9010 Jellyfish remote.

Jerrey Denning explained, "The idea is to use the different processing blocks from each Soundweb to route around the whole network. As soon as a band takes the stage, emphasis switches to the front of the room and the delay settings will change."

Having experienced Martin Audio frequently as a sound engineer, Jerrey Denning was well aware of the attributes of the Wavefront concert system, and used two stacks of two Wavefront W8/W8S — spread out beyond either side of the stage.

In such a high, reflective building, positioning and control dispersions become crucial — and Denning knew that Wavefront's were accurate. "There were a lot of interactive projection screens designed in by the architect so we couldn't fly the system — and when you ground stack you have to get the mid-high above people's heads, otherwise they block the HF part. If I had used the lower-profile W8C Compact the HF would have been blocked out," he says.



One of the requirements put forward by the house engineer, was for an HF that did not sound harsh and aggressive, because punters would be in proximity of the speaker stacks — and Jerrey Denning already knew how sweet the Wavefront's HF sounded.

He was also mindful that band riders these days frequently state that performers have to play through a recognised system — and Wavefront met that requirement head on.

When Wavefront reverts to dance playback the W8 mid-high will be muted in Soundweb and the W8S bass bin retuned down to 80Hz crossover ... the lower level taking it into dance mode and acting as a sub. The signal can be rerouted and the crossover point changed accordingly.



Martin Audio Ltd. Century Point, Halifax Road, Cressex Business Park, High Wycombe, Buckinghamshire HP12 3SL, England.
Telephone: +44 (0)1494 535312 Facsimile: +44 (0)1494 438669 Web: www.martin-audio.com E-mail: info@martin-audio.com

The Martin Experience

Tiger Tiger's New Benchmark For MMS And EM26



Music Marketing Services have completed their sixth — and most ambitious Tiger Tiger for Chorion plc, with the recent extension of the successful roll-out into Croydon.

The company have largely standardised on Martin Audio sound reinforcement — and have been using their EM series extensively in Tiger Tiger since converting from another proprietary brand early on in the development.

MMS account manager, Paul Woodward, records that Chorion switched from their previous speaker brand to Martin after opening another multi-bar unit.

“They were seeking a higher quality, crisper hi-fi sound — and since it was in the early days of the relationship I knew I had to do something dramatic.”

So he took Chorion's technical services manager, Jeremy Dowding, to a demo at Martin's HQ in High Wycombe, where the system performed to order.

“As soon as they came across the EM26 they knew they had the answer to their prayers,” recalls Paul. “The previous system just didn't sound good enough when the bars started to get busy.”

No fewer than 70 EM26's are used in Croydon. This includes 18 in Tiger Bar, three in the restaurant, six in the Cocktail Bar, 12 in the Turkish Bar, 10 in the Lounge Bar and 36 in Raffles



to design their own custom bracketry. “We have actually been quite inventive and our hanging hardware allows these EM26's to be clustered in groups of three,” says Paul. “On top of that, the design includes an additional DSP unit in order to provide extra flexibility.”

For all its utility characteristics, the EM26 isn't used exclusively by Music Marketing Services off-dancefloor. They have also used pairs of the smaller EM15s in the snugs and alcoves, C516 ceiling speakers in the restaurant and EM251s where extra bass reinforcement is required.

Bar — as well as a pair for DJ monitoring! The bars are driven by combinations of Martin Audio MA1.6 amplifiers and each has its own audio source selector.

The nightclub area is served by six custom-hung Martin Audio EM186 loudspeakers, with a pair of EM251 sub bass enclosures, powered by a pair of Martin Audio MA2.8 and a pair of MA1.6 amplifiers.

“The EM26 is the one speaker that fits all Chorion's application requirements ... perfectly,” says Paul Woodward. “They choose to use little and often of these extremely high quality loudspeakers.”

The use of acoustic ceilings and the desire to couple the EM26's to gain an additional bass response has led MMS



“Technically-Advanced” Rehab Up And Running



With top promotion team DAD on board, **fabric**'s Dave Parry as technical consultant and legendary Back to Basics and Union club nights moving across town, the new 800-capacity Rehab in the heart of Leeds' Exchange quarter, has gone straight into overdrive. The new venue, which opened this month, is sited on Assembly Street in a Grade 1 listed, 17th century building.



Pic: Paul Harness, Night Magazine

Back To Basics opens its account

The installation was carried out by Jonathan Reece's Harrogate-based Funtime Music, who have a history of installing owner, Chris Edwards' clubs.

The operators were already familiar with the legendary sound of Martin Audio — having run a Wavefront W8C/WSX combination in sister venue, Space — and were hugely impressed.

But having visited **fabric**, Chris Edwards was particularly impressed with the Martin Audio Blackline sound system in Room 2, whereupon the club's technical manager, Dave Parry and Martin Audio's National Sales Manager Simon Bull, set about specifying the rig into a zonal room design.

Dave Parry confirmed, “There are three zones, with two music rooms — a main room, a mezzanine level and bar level off the main dancefloor — and we have followed a similar scheme to Room 2 at **fabric**.”

The design is based around two Blackline H3's (left and right front); two H3's (left and right, rear) and two Blackline H2's crossfiring across the centre of the floor.

In addition there are six S218 subs in a monobloc offering a point source of sub power to maintain a consistent wavefront emanating from the end zone. A further six flown Blackline F8's provide the sound in the bar.

On the mezzanine level there are a further six Blackline F12's distributed around the floor, with a pair of S218 subs providing the necessary bass extension. A pair of F10's and S18 sub form a generous DJ monitoring provision in the main room, while a single F10 allows the mezzanine DJ similar access to his sound output.

Two DJ mixers have been specified — an Allen & Heath Xone 464 and a Stanton VRM-10 using valve technology, with four Technics SL1200 Mk2 turntables and a pair of Stanton STR8-100's, with straight tone arms.

Control of the Crest-powered system is under the command of a BSS Audio 9088LL Soundweb and 9010 Jellyfish programmable remote.

Jonathan Reece says the primary concern was achieving the level of sound quality required — and these fears were comfortably assuaged on the opening night.

Dave Beer, who runs DAD Promotions with David Elliott and Antony Georgallis, says: “After three months of solid research we have chosen what we believe to be one of the best performing and technically advanced sound and processing systems in the world, which we feel is critical to the success of the club.”

Meanwhile, sister venue Space is temporarily closed and will be relaunched later this year.

Felix Leads The Way In Northern India



Martin Audio's Indian sole distributor, RK International, has had an impressive start to the year with projects completed in Kanpur, Dehradun and Chandigarh — all in Northern India.

Anyone entering the industrial city of Kanpur after a hectic day needs a place where he can relax and chill-out. The idea of Felix was forged when two local industrialists, Sailesh Gupta and Deepak Kothri, came up with the idea for an entertainment complex.

This became RK's most recent installation — the multi-purpose complex called *Rave 3* in the city. This one-stop entertainment centre features a pub and disco called Felix, as well as a bowling alley, multiplex cinema, restaurants and a full-fledged shopping arcade.

RK International heard about this project fairly late in the game where other companies had already submitted quotations. But the company's boss, Arun, and technical consultant, Philip,

set up a demo for the venue's owners whilst the place was still under construction.

"It was a bit of a pain to get the gear to Kanpur, which is 500 kilometres away from the capital, but it was a satisfying experience as the owners were blown away by the sound quality. A combination of two F12s and two S18s were used for the demo purpose and different genres of music were played back for almost two hours," recalled Arun.

Eventually, a combination of four Blackline F12's and two S218's was selected for the dancefloor, with an additional four F12's and two S18's at the bar area — powered by Martin MA4.2, MA2.8 and MA1.6 amplifiers (with a pair of M3 system controllers). An EM26 DJ monitor and four C115's completed the set up.

Philip, who has been on the DJ circuit for the past ten years, designed the console and also set up the total sound system. He said, "The tonal quality of the speakers



was so good that hardly any tweaking was required. The sound has been full-on from day one."

FELIX plays house trance and techno music.

Meanwhile, the city of Dehradun, famous for its young fraternity crowd, recently saw the opening of H2O Zone, which was installed by Messrs Vijay and Deepak, appointed dealers for the New Delhi-based RK International. For its official opening, H2O Zone — which adjoins a five-star hotel in the city — welcomed the city's college crowd onto its 480 sq ft dancefloor, and they obviously enjoyed the new venue and its entertainment offering.

The club was designed with simple sophistication for patrons to chill out and unwind after a long day of studies.

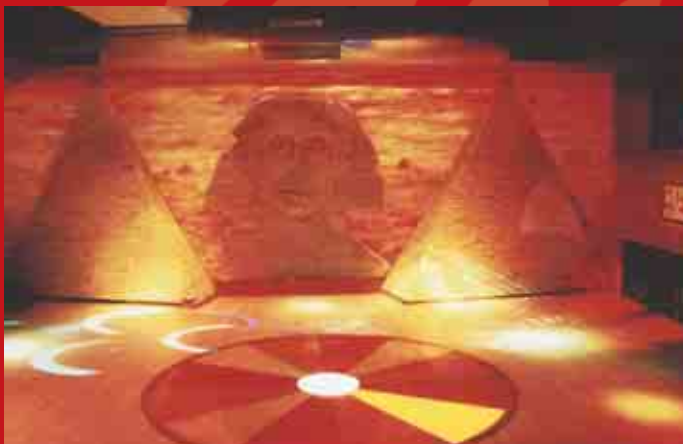
Powered by a combination of Martin Audio MA1.6 and MA2.8 amplifiers, four Blackline F15's, underpinned by the same number of

S218's, delivers punch music to the college crowd from a pair of Pioneer dual CD players.

The concept was conceived by Ashawani Agarwal who worked together with RK International on fine-tuning and carrying this concept to fruition. The core team was made up of Vijay Sharma, Deepak Bharadwaj, Arun Kalra and Naushad.

Over in Chandigarh, Gizeh is solely owned by Gurdyal Singh. With an area of 2800 sq ft this dance club offered RK International a challenging but fulfilling job in designing a sound system around an Egyptian-themed venue. The team of sound and lighting designers included Arun Kalra, Deepak Bhardwaz and Vijay Sharma.

Seeking the best solution, they opted for four of Martin's stylish Contractor series C115's, powered by four Martin Audio MA2.8 amplifiers.



Pillars Of The Establishment



installed over 65 Martin speakers. As MD Matthew Kline pointed out “this is probably the highest density of Martin Audio anywhere in the world, consequently it comes as no surprise how great the whole thing sounds! We put forward a number of concepts whilst Establishment was still in the planning stage and we were delighted when they chose the Martin option.”

The Establishment Bar has a high pressed metal ceiling, original cast iron columns and a huge rectangular white marble bar. Est — Establishment’s fine dining restaurant — is decked with a marble cocktail bar, plush sofa seating and wide timber polished floorboards. Hemmesphere, a private lounge bar, has low divan seating surrounds, large leather club chairs, fabric paneled walls and an intimate sushi bar.

The Garden Bar, which houses the Asian Kitchen, utilises the remains of the fire-ravaged building with the original jagged outer walls and free-standing cast iron columns topped by a glazed atrium. The Tank Stream Bar, an intimate watering hole, located within the original George Patterson warehouse, is a stone’s throw from the Australian Stock Exchange building, whereas the Street Bar is a deli style vending bar. Finally, there’s the Gaming Room, a private bar with tray service and 21 of the latest gaming machines.

The Ballroom, which features an Asian inspired water garden, seats 160 guests in formal dining mode and is the centrepiece of two levels of reconfigurable function rooms, wired for the latest presentation technologies.

All zones are serviced by Martin loudspeakers. There are 12 EM76’s and Blackline S15 sub in the Establishment Bar; 12 C115 5in speakers and two CS265 subs (in Est); ten EM56 speakers in Hemmesphere; four EM76’s and a pair of C115’s in the Garden Bar and Asian Kitchen; four EM56’s in Tank Stream Bar; a pair of C115’s in the Street Bar and 16 EM56’s in the Ballroom and Function Rooms.

Virtually destroyed by a devastating fire in 1996, George Patterson House, an icon of the Australian advertising industry in the heart of Sydney CBD, has been magnificently restored and reinvented as an emporium of luxury entertainment.

Now called Establishment — and conceived by Justin Hemmes of the Merivale Group — the venue combines a new eight storey tower with the classic fabric of the original building to house a luxury hotel, a series of bars and restaurants, two levels of function rooms, a ballroom and Tank, a two level nightclub.

For the technical component Merivale used Sydney based AV consultants Technology Sound & Vision (TS&V) to design the A/V system.

Merivale, already a large user of Martin Audio in their other venues, were happy to follow form. “Martin’s diverse product range from ceiling speakers to concert systems was a distinct advantage,” added Daniel Scarpellino, MD of TS&V.

One of Sydney’s leading audio, lighting and video contractors, Avsound Productions, was chosen for equipment supply and installations in the hospitality areas and in the process



Rea Move On Remorselessly



Rea Sound, Ireland's leading supply and installation company, have just completed another hectic six months in the installation world, with no sign of any let-up in the near future.

The BBC in Northern Ireland recently had the need to upgrade their sound system within their main studio in Blackstaff Square, Belfast. After extensive demonstrations from Rea Sound and other companies, the BBC overwhelmingly chose Martin Audio as their preferred product.

The highly-specified, superbly-built Martin Audio DX1 powerful, DSP-based audio processing unit was selected for its superb audio quality. The selected speakers from the Wavefront professional series consisted of four W3's for immediate delivery followed by eight further units, which are being supplied shortly. A dozen Martin Audio LE12JB's have also been ordered for the differential dispersion horn technology and low profile appearance. All this new equipment has been provided as part of the overall regeneration of the Studio A, home of the famous Patrick Kielty Show.



The Mermaid, Wicklow Arts Centre

The Mermaid, Wicklow Arts Centre, which was officially opened at the end of June, proved to be another success story for Rea Sound/Solas Design, who were awarded all technical contracts within the venue, including lighting, stage and foyer sound, communications and CCTV, flying, rigging and drapes. The main auditorium sound system consists of four Martin Audio EM26's, four EM76's and two EM201 sub-bass units, powered by four MA1.6 amplifiers and three EMX1A system controllers. Seven C115's provided the foyer sound, located throughout the two floors of the building.

Rea Sound have also equipped an outstanding bar on three floors in Galway, using two separate Martin Audio systems. Formerly the Lisheen Bar, this has been named the Living Room and features a fully-specified Blackline S18/F215 system forming the main FOH system (with F12 monitors), and no fewer than 36 EM15's and 12 EM120 subs as infills throughout the other zones. The system is managed by Martin Audio control, and powered by a mixture of Martin and Crown amplification.

Meanwhile, the two major nightclub installations carried out by Rea Sound — Club One in Cork and Enigma in Carrickmacross — are covered elsewhere in *The Edge*.

Future projects for Rea Sound include the Metro Bar, and the Whitefort Inn, Belfast. And for Solas Design a number of venues including Ballyfermot Civic Centre, an indoor/outdoor project.

Wavefront 8 Rental Companies Around the World

COMPANY NAME	COUNTRY	TELEPHONE
3200 LIGHTING	AUSTRALIA	+ 61 2 9693 1777
AVSOUND PRODUCTIONS	AUSTRALIA	+ 61 2 9949 9000
ANDY J SOUNDS	AUSTRALIA	+ 61 8 8376 2771
MARTIN PARKS PRODUCTIONS	AUSTRALIA	+ 61 2 6360 4411
ENTERTAINMENT INSTALLATIONS	AUSTRALIA	+ 61 2 4324 3873
JAZZRIGHT PRODUCTIONS	AUSTRALIA	+ 61 2 9311 1197
TOP END SOUNDS	AUSTRALIA	+ 61 8 8981 7744
AVL	AUSTRALIA	+ 61 3 9387 1055
CENTRESTATE	AUSTRALIA	+ 61 2 6362 0587
SOUND SOLUTION	AUSTRALIA	+ 61 3 9686 4755
PHASE ONE AUDIO	AUSTRALIA	+ 61 89 22 77979
DERRINGERS MUSIC	AUSTRALIA	+ 61 88 37 11884
STEPHEN SOUND	AUSTRALIA	+ 61 3 9436 8981
DAVIDSON AUDIO	AUSTRALIA	+ 61 29 36 81159
MASTER SOUND PRODUCTIONS	AUSTRALIA	+ 61 2 9683 4971
HARWARE CORPORATION PTY LTD	AUSTRALIA	+ 61 3 9510 7529
AVLA	AUSTRALIA	+ 61 8 9221 1888
KRAXBERGER HERBERT	AUSTRIA	+ 43 7242 45193
PA SOUND & LIGHT TEC	AUSTRIA	+ 43 7667 6090
TOPLAK STAGE POWER	AUSTRIA	+ 43 222 4898877
VIDEO & SHOW	AUSTRIA	+ 43 7242 66588
FOR MUSIC VERLEIH	AUSTRIA	+ 43 2236 71684
BRUNNER & BRUNNER	AUSTRIA	+ 43 663 037578
MAYRHOFER VERANSTALTUNGSTECHNIK	AUSTRIA	+ 43 7667 / 6090
STUDIO 2000 BVBA	BELGIUM	+ 32 89 30 89 54
STAGE PROJECTS BVBA	BELGIUM	+ 32 75 721710
PHILIPPO AUDIO BVBA	BELGIUM	+ 32 3 491 91 76
D.RENT	BELGIUM	+ 32 3 324 02 97
ALL AUDIO ACCOUSTICS KORK BVBA	BELGIUM	+ 32 475 5745 17
DELTAENT NV	BELGIUM	+ 32 50 49 00 81
SOUND ART PA & LIGHT SERVICES	BELGIUM	+ 32 50 81 61 30
CANDO SA	BELGIUM	+ 32 2 366 22 225
SOUND & LIGHT SYSTEMS	BELGIUM	+ 32 59 27 66 46
NORTHWEST PRODUCTIONS	CANADA	+1 250 765 8451
THE LION SHARE INC	CANADA	+1 905 830 0525
S.P.L. SOUND	CANADA	+1 250 763 3855
D & E (INTERNATIONAL) LTD	CHINA	+ 852 2898 8666
HUI FENG PERFORMANCE EQUIPMENT (GROUP) CO. LTD	CHINA	+ 86 20 8489 8888
POWER MAX (ASIA) ENGINEERING LTD	CHINA	+ 852 2661 0527
AV CENTRUM	CZECH REPUBLIC	+ 420 602 227357
SOUND SERVIS	CZECH REPUBLIC	+ 420 602 2220870
RINGSIDE TOUR PRODUCTION	DENMARK	+ 45 3393 4748
EUROPEAN TOUR PRODUCTION APS	DENMARK	+ 45 36 30 70 80
AUDIOTEL	ESTONIA	+ 37 2 7 38 5485
RADIANT SOUND COMMUNICATION	FINLAND	+ 358 3 22 33311
UNITED SHOW ENTERPRISES HELSINKI LTD	FINLAND	+ 358 9 759 4180
SUOMEN TAPAHTUMATEKNIKA	FINLAND	+ 358 3 225 8600
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TECHNISCENE	FRANCE	+ 33 2 35 88 86 86
PRODUCTION 44	FRANCE	+ 33 2 40 52 07 07
ART SON ET LUMIERE	FRANCE	+ 33 4 94 03 03 52
ATC	FRANCE	+ 33 5 56 69 60 60
AUDIO CONCEPT	FRANCE	+ 33 563 39 67 86
AUDIOLYRE	FRANCE	+ 33 5 59 98 31 10
GPS	FRANCE	+ 33 251 686 900
EURO LIVE	FRANCE	+ 33 296 743 326
MEGAWATTS	FRANCE	+ 33 478 491 026
BALLOON FARM STUDIO	FRANCE	+ 33 299 321 111
RICHARD LAURIANT ECLAIRAGE	FRANCE	+ 33 385 391 535
REGI-SON SONORISATION	FRANCE	+ 33 555 062 020
LWS	GERMANY	+ 49 228 94676-0
KLEMENT ELEKTROTECHNIK	GERMANY	+ 49 5626 8475
SCHALLDRUCK VERANSTALTUNGSTECHNIK	GERMANY	+ 49 3531 65300
NEW NOISE	GERMANY	+ 49 201 8686010
BIG BEAT PA – SERVICE	GERMANY	+ 49 4403 6358
COMPLETE AUDIO BERLIN GERMANY	GERMANY	+ 49 30 661 00 45
MEGATEC	GERMANY	+ 49 351 8386811
SATION AUDIO	GERMANY	+ 49 8225 958134
JA AUDIO	GERMANY	+ 49 5722 1342
AMS GMBH	GERMANY	+ 49 07471/91900
PINK NOISE CORPORATION	GERMANY	+ 49 2405 95441
S.A.L.	GERMANY	+ 49 5132 4823
SLP PRO SARL	GUADELOUPE	+ 590 80 15 80
D & E (INTERNATIONAL) LTD	HONG KONG	+ 852 2898 8666
POWER MAX (ASIA) ENGINEERING LTD	HONG KONG	+ 852 2661 0527
THUKRAL PRODUCTIONS	INDIA	+ 91 11 431 1011
REA SOUND	IRELAND	+ 44 1648 764059
MAFFEI SERVICE	ITALY	+ 39 0461 707852
FUMASOLI SERVICE	ITALY	+ 39 0165 35806
PHOENIX AUDIO SNC	ITALY	+ 39 041 5342349
RADIO SATÀ SERVICE	ITALY	+ 39 051 6332440/6332398
MUSIC SERVICE	ITALY	+ 39 0577 306032
PIANO & FORTE	ITALY	+ 39 0522 661506
ELECTRA SERVICE	ITALY	+ 39 0375 82919
CLAPS	ITALY	+ 39 0434 26882
MEZZA NOTA	ITALY	+ 39 0444 695507
BIG TALU SERVICE	ITALY	+ 39 0174 45314
BLU STUDIO	ITALY	+ 39 079 293179
COOPERATIVA 56	ITALY	+ 39 051 6153339
FAST SERVICE	ITALY	+ 39 081 8237009
T.S.S.	ITALY	+ 39 0521 776810
VOX SERVICE	ITALY	+ 39 049 5380151
ZOHO MUSIC SERVICE	ITALY	+ 39 011 6645754
W M AUDIO SERVICE	ITALY	+ 39 0962 865013
EMPORIO ON STAGE	ITALY	+ 39 055 720794
CORIPPO ALBERTO	ITALY	+ 39 030 2511722
MUSIC LIGHT INSTRUMENTS	ITALY	+ 39 0566 56356

COMPANY NAME	COUNTRY	TELEPHONE
MUSIC SERVICE ALIBI	ITALY	+ 39 011 3589532
MISTER X SERVICE	ITALY	+ 39 347 9602838
PROCOPIO NICOLA	ITALY	+ 39 967 86718
JE-IL SOUND	KOREA	+ 822 835 1608
LIVE	KOREA	+ 822 747 2162
SOUND BOX CO	KOREA	+ 822 419 5141
MARTIN KOREA SOUND CO., LTD	KOREA	+ 822 419 5141
SHINHAN SOUND CORPORATION	KOREA	+ 822 376 8383-4
ELTEK	LEBANON	+ 961 1 265048
CHIFU	MACAU	+ 853 567847/8
KILMI MUSIQUE	MOROCCO	+ 212 332 44 23
SIMPLON	NETHERLANDS	+ 31 50 3184150
EAST SOUND	NETHERLANDS	+ 31 575 519365
MANIFESTO	NETHERLANDS	+ 31 229 279839
PURPLE HAZE	NETHERLANDS	+ 31 348 424477
VAN SAMBEEK PA	NETHERLANDS	+ 31 653 902690
SERVICE-CENTRUM APTRONICS	NETHERLANDS	+ 31 315 631521
AMPCO PRO RENT	NETHERLANDS	+ 31 30 241 3444
ACME AUDIO LTD	NEW ZEALAND	+ 64 9 302 0352
NORSTAGE A/S	NORWAY	+ 47 52 71 43 10
AMAS LYDPRODUKSJON A/S	NORWAY	+ 47 55 39 38 00
MUSNICKI SOUND	POLAND	+ 4822 773 24 73
PURO AUDIO	PORTUGAL	+ 351 21 434 31 25
RHYTHMIC SOUND SERVICES	SINGAPORE	+ 65 841 0911
PHOHL MIRAN	SLOVENIA	+ 386 62 661 761
MEGA AUDIO D.O.O.	SLOVENIA	+ 386 62 314063
SONOSET (MILWAUKEE AUDIO S.L.)	SPAIN	+ 34 93 372 40 53
SONARTE	SPAIN	+ 34 926 31 28 28
SONOBEXI	SPAIN	+ 34 953 76 33 37
LUC SON	SPAIN	+ 34 96 530 30 23
TOUR SERV. PROF. SO I.L.LUM., S.L.	SPAIN	+ 34 93 477 04 95
RED TSO	SPAIN	+ 34 977 64 34 95
PROSEC AUDIO S.L.	SPAIN	+ 34 985 98 07 01
ELECTRIC-SO	SPAIN	+ 34 93 726 54 44
MUSIBELIOS S.L.	SPAIN	+ 34 95 234 12 51
SEGUNDO LASER	SPAIN	+ 34 967 40 10 96
SONORIZACIONES Z, S.L.	SPAIN	+ 34 961 20 31 11
FATSINI S.L.	SPAIN	+ 34 97 770 1257
SONER, SONIDO E ILUMINACION	SPAIN	+ 34 98 653 0555
MUSICA VIVA	SPAIN	+ 34 93 303 32 47
MUG HYR AB	SWEDEN	+ 46 31 130990
SKELLEFTEA LJUDUTYRNING	SWEDEN	+ 46 910 173 74
DM AUDIO	SWEDEN	+ 46 8 97 07 85
RIGHIRE	SWEDEN	+ 46 16 145 300
SOUNDHOUSE	SWITZERLAND	+ 41 41 259 20 90
AUDIO-PHASE	SWITZERLAND	+ 41 32 384 26 72
X-LIGHT & SOUND GmbH	SWITZERLAND	+ 41 62 923 95 75
REYANG PROFESSIONAL SOUND CO LTD	TAIWAN	+ 886 2 8797 8687
YASHIN PRO-AUDIO INC.	TAIWAN	+ 886 7 322 2555
DINGLEY PROSOUND SERVICES	TAIWAN	+ 886 7 384 3845
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STARSOUND SYSTEMS	UK	+ 44 1924 278875
CAV	UK	+ 44 1453 751865
ADLIB AUDIO	UK	+ 44 151 486 2214
CAPITAL SOUND HIRE	UK	+ 44 207 978 5825
ROSSCO LTD	UK	+ 44 1462 431413
AUTOGRAPH SOUND RECORDING	UK	+ 44 20 7485 4515
PA PA	UK	+ 44 1248 670980
CABLE MUSIC PA HIRE	UK	+ 44 1926 339780
STARSONIC	UK	+ 44 7974 418867
INTASOUND PA	UK	+ 44 1905 841591
QUANTUM SOUND	UK	+ 44 24 7666 8457
BIG SOUND	UK	+ 44 1792 881 300
LIMIT AUDIO	UK	+ 44 1527 892368
STAGE AUDIO SERVICES	UK	+ 44 1384 263629
ATOMIC SOUND SYSTEMS	UK	+ 44 1636 702717
FX MUSIC	UK	+ 44 20 8208 1771
GLOBAL SOUND & LIGHT	UK	+ 44 1473 711227
BLIZZARD SOUND	USA	+ 1 920 451 1343
GSA NEW YORK	USA	+ 1 914 632 0192
PROLINE AUDIO	USA	+ 1 918 260 0503
SOUND CONSTRUCTIONS	USA	+ 1 718 893 7352
SAI	USA	+ 1 612 724 5395
DYNAMIC PRODUCTIONS	USA	+ 1 770 529 8100
RALEIGH MUSIC	USA	+ 1 919 965 4300
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WORLD AUDIO	USA	+ 1 210 472 3932
OPRYLAND PRODUCTIONS	USA	+ 1 615 228 0491
GO AUDIO	USA	+ 1 414 764 8290
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SOUNDWAVE	USA	+ 1 520 327 5590
STICHA BROTHERS	USA	+ 1 608 276 5570
TECHNOTRIX	USA	+ 1 815 935 0233
TECHNICAL PRODUCTIONS	USA	+ 1 314 644 4000
VERTICAL SOUND	USA	+ 1 216 521 9994
WAVE TRIBE PRODUCTIONS	USA	+ 1 541 618 9499
AV PRESENTATIONS	USA	+ 1 985 542 9196
PHIL REIGH SOUND	USA	+ 1 888 417 7445
NORTHEASTERN PRODUCTION	USA	+ 1 716 427 8760