

# the EDGE

Issue Seven | March 2003

## Top Producer Specifies Wavefront

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The Martin Experience

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## At the Cutting Edge

The satisfaction of putting together issues of *The Edge* is the sheer uncertainty of the content.

Production starts with a blank sheet of paper, and following the age old publishing principles of Just In Time, rolls into our repro house three weeks later and off the printing presses in time for the next major trade show. Somewhere along the way it takes on its own life force.

That this edition bears little similarity to its predecessors speaks volumes for the breadth of our product portfolio, and the versatile and inventive manner in which our distributors and contractors are applying these in the marketplace.

We generally attempt to arrive at the Frankfurt Musikmesse with a surprise up our sleeves and this year is no exception. Via our distributors Atlantic Audio we are delighted to announce that will be giving a world premier not only to our new W8LC Compact Line Array but also our W8LS dual 18in Line Array Subwoofer.

We are confident that the W8LC will give theatres and smaller venues access to our ground-breaking Line Array technology, with reduced size and weight making it easier either to ground-stack or present in a flown array.

An information engineering support article in this edition, conjured by Bill Webb's team, should enable all W8L/W8LC users to get the best from their systems.

Elsewhere, we have covered premium nightclub installations from as far afield as Panyu, China to Providence, Rhode Island, and tracked the remorseless penetration of our cinema systems into prestigious screening rooms in Belgium and the heart of the UK film industry.

The image quality in this latest edition eclipses anything we have produced previously, and for that thanks are due to our friends at Mondo Magazine, as well as Louise Stickland (who was responsible for the Siemens Xelibri launch in London), Martin Kelly (for his excellent coverage of Zambra) and Peter Jordan for the breathtaking Sunbelt Scenic Tostitos concert shots.

## Where to see us

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

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

May 16-19: **CALM**,  
Beijing, China

June 3 -5: **INFOCOMM USA**,  
Orlando, N. America

June 19 - 20: **ABTT**,  
London, UK

June 23-26: **Cinema Expo**,  
Amsterdam, Holland

July 9 - 11: **PALA**,  
Singapore

Sept 7-10: **Plasa**,  
London, UK

Sept 10-13: **AES Convention**,  
New York, N. America

Cover: **Estado Novo, Portugal.**  
Courtesy Mondo Magazine.

Jerry Gilbert

# Compact Line Array Launch



Capitalising on the success of the W8L, launched exactly a year ago, the W8LC will afford theatres and smaller venues the opportunity of embracing Martin Audio's line array technology. The reduced size and weight of the flown or ground stacked W8LC, combined with the sonic advantages of this all horn loaded system, makes it eminently suitable for accurately reproducing live or playback material for both touring and installed sound applications.

Adopting the same design philosophy as the W8L, the new system has been built without compromise, combining line array principles with classic horn loading techniques to provide a powerful compact enclosure with maximum dynamic impact. Utilising patentable driver loading techniques, vertically coupled waveguides and constant directivity horns has resulted in the W8LC being able to deliver a level of efficiency and coverage consistency not usually associated in compact cabinets.

The three-way system comprises of a horn-loaded 12in LF (103dB@1W, 1m), twin 6.5in midrange (106dB @1W, 1m) and triple 1in HF horn (109dB@1W, 1m).

The 12in/3in coil neodymium driver is reflex-loaded to extend the LF output to below the natural cut-off point of the horn. This Hybrid™ technique marries the very high efficiency of horn loading with the extended low-frequency response of a reflex enclosure.

Martin Audio have been developing high-efficiency cone mid-range horns for over 20 years. The output of the twin horn loaded 6.5in mids is far superior, at 106dB, to typical cross-firing direct radiator mids with an average efficiency of 101-102dB. This means that with half the input power the W8LC mid-horn can produce a greater maximum SPL compared to four cross-firing direct radiators. Line array systems employing a single 10in direct radiator for the mid-frequencies fair no better, being some 4-5dB down on the W8LC.

By refining the key midrange horn element to allow the mid/high crossover point to be shifted upwards, it has become possible to replace traditionally used large format compression drivers with smaller 1in-exit devices, producing a smoother and more consistent performance.

The W8LC employs an HF section comprising three 1in, low-curvature horn elements, which reduce distortion, improve dispersion and extreme HF performance, and are less susceptible to premature ageing.

In common with the W8L the W8LC has been deliberately designed asymmetrically; because the mid and HF horns are not fighting each other for a share of the same real estate they can be designed as completely separate devices to optimise their pattern control. In contrast, in a symmetrical design, with the HF section centred within the mid section, either the HF or mid section (or both) will be compromised.

As a result of this principle, the horizontal dispersion is a true 90°, running consistent throughout the mid and HF bands, creating a greater actual usable dispersion angle than other systems.

One critical element of the line array principle is its ease of flying. The proprietary rigging system of the W8LC is safe, quick to assemble and allows a wide range of array curvatures to be achieved.

The W8LC hinge point is at the front of the cabinet, which keeps the spacing between adjacent elements the same, irrespective of splay angle. This makes a big difference as splay angle increases, usually towards the bottom of an array.

'ViewPoint', the Martin Audio Windows based programme designed to take the guess work out of arriving at the optimum curvature to achieve the most even coverage for a particular venue, now includes the W8LC and is part of the system package.





# High Performance Subwoofer

## Added To Line Array Family



Martin Audio has extended its range of Wavefront loudspeakers with the introduction of the W8LS Line Array Subwoofer.

The very high performance 2kW design features dual very long excursion 18in (460mm) direct radiators in a twin-ported enclosure.

The exceptionally high power drive units have magnetic structures and suspensions engineered for maximum linear excursion. Extensive research by Martin Audio's R&D team has led to the development of an exceptionally rigid high pressure enclosure to minimize cabinet wall energy absorption. This maximizes electro-acoustic efficiency to give better bass definition and more punch from lighter power amp racks when compared with other manufacturers' products.

The W8LS is constructed from internally braced multi-laminate birch ply, is fitted with generously sized handles and is supplied with a slam-latched wheelboard for fast get outs and easy trucking. To resist ingress of water, the driver cones are treated with a waterproof lacquer and the perforated steel grille is backed with Declon foam.

The physical dimensions of the W8LS are identical to the W8L and it is equipped with the same proprietary rigging system. The rigging system is quick to deploy and allows a wide range of W8L array curvatures to be matched. Inter-cabinet angles from 0 to 7.5 degrees are set by a rotating splay bar at the rear of the enclosure. All cabinet rigging hardware is integral and remains captive in transit.

Although primarily designed to extend the low frequency performance of W8L columns in flown applications, the

W8LS may be ground stacked on its standard W8L grid for use with W8LC mid-sized line arrays or W8C Wavefront Compact systems.

The W8LS's very slim profile, excellent bass response (32Hz - 180Hz  $\pm 3$ dB) and extended bandwidth (usable down to 28Hz at full power) make it ideal for dramatic on-stage effects and apron fill applications.

### The W8LS at a glance

- Very high power, dual long excursion 18in direct radiator design
- Compatible with W8L Line Array
- Fast, integral rigging system with variable splay angles from 0 to 7.5 degrees to match W8L progressive curvatures
- High power - maximum SPL 138dB continuous, 144dB peak (single unit half-space)
- Extended response 32Hz – 180Hz  $\pm 3$ dB
- Useable response to 28Hz (-10dB) at full power
- May be used ground stacked to supplement W8LC Compact Line Arrays or other Wavefront systems
- Standard W8L grid may be used for flying or ground stacking
- Slim package – may be used on-stage or under stage apron
- Designed to be powered by Martin Audio MA4.2S power amplifiers



# Line Array Principles — For The Mathematically Minded



By Engineering Director, Bill Webb

Early in 2002, Martin Audio entered the competitive line array market with the W8L. One year on, its compact sibling — the W8LC is about to enter production. This article explains how, in parallel with actual product development, the Engineering Department at Martin have been developing mathematical tools that can predict line array performance and give a greater insight into how line arrays really work in practice.

## WHAT IS A LINE ARRAY?

The principle of configuring a vertical column made up of closely-spaced loudspeakers has been around for decades. Because of increased coupling, line arrays increase directivity in the vertical plane and produce a narrow vertical beam, while the horizontal coverage remains the same as for a single device.

The increased coupling is due to:

1. Much smaller distances between each element (either horn or direct radiator), and
2. Much flatter wavefronts produced by those elements.

To illustrate this, the difference between three closely spaced horns and three horns spaced 1m apart is shown in *Figs 1a and 1b*.

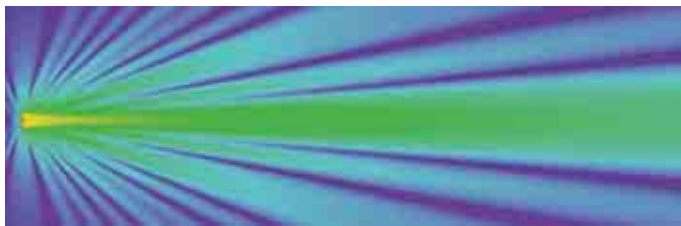


Fig 1a: W8L 3 x 1" HF at 8kHz (vertical dispersion)

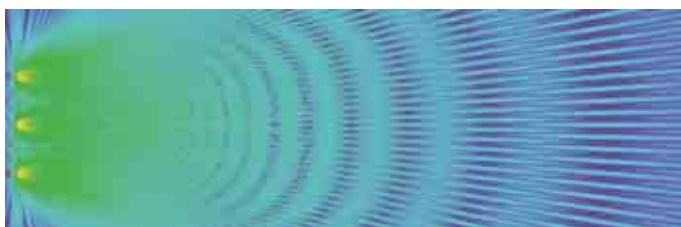


Fig 1b: Three 30° horns 1m apart at 8kHz (vertical dispersion)

In straight line arrays, this increased directivity can result in coverage angles of less than 1 degree at high frequencies.

Whilst this narrow beam might be fine for aiming voice announcements in transportation facilities, it is of little use in live performance applications where both the audience and tour manager demand high quality sound in every seat.

To achieve the wider vertical pattern required to cover an audience area, practical line arrays are nearly always physically curved in the vertical plane. Curving the array in this manner has very important implications for the design and use of practical systems, and challenges some of the simplistic ideas associated with first generation line arrays.

## 3dB OR 6dB PER DOUBLING OF DISTANCE?

In line array folklore, much has been made of the notion that a line array produces a cylindrical wavefront with an output that falls off at 3dB per doubling of distance rather than the 6dB associated with a spherical wavefront. The increased throw gained by extending the 'cylindrical' nearfield out to a greater distance has been promoted as one of the key benefits of line array technology.

There are two problems with this notion. The first is that, if it were true, a cylindrical wavefront would require a floor to ceiling column in a typical stadium to cover both the floor and the highest seat.

The second is that only an infinitely tall line could produce such a cylindrical wavefront. The wavefront produced by a line source with a finite length will only approach 'cylindrical' for a certain distance, after which it will disperse in the vertical plane. This distance will depend on the length of the line and the frequency. Theoretically, with a continuous array 3m high the transition from 3dB to 6dB will occur at the following distances:

100Hz	500Hz	1kHz	5kHz	10kHz
1.3m	6.5m	13m	65m	130m

While perhaps of academic interest, this effect is largely useless as it only really comes into play at high frequencies. Also, if we remember that in a straight line array the vertical coverage may be less than 1 degree, it is clear that only a very few members of the audience could ever benefit from such a narrow beam.

In fact, whilst many believe it to be a key feature of line array, the cylindrical wavefront notion has little or no practical value. >>

# Line Array Principles — For The Mathematically Minded

## << CURVING THE ARRAY

Given that the line array must be curved in the vertical plane to cover the entire audience, we needed a way of determining exactly what shape of curvature was necessary to achieve the desired coverage for a particular venue.

Since this question was much too complex to be answered by simple reasoning alone, we embarked on the development of a computer model, incorporating the acoustic and electro-mechanical characteristics of each individual low, mid and HF element and with each element driven by a virtual crossover. The phenomenon of air absorption of high frequencies over distance was also taken into account.

To validate the model 12 WL8HF horns were arranged in a line with zero splay between them as shown in Fig 2. The SPL was measured every 20cm on a 12m path normal to the line positioned at the centre and the measured and predicted responses compared. Fig 3 shows that the response predicted by the mathematical model correlates very well with the measured response.



Fig 2: Validation set-up



Fig 3: Comparison of model prediction vs measured response

With this model, it was possible to predict the frequency response curves at various points in the audience and use the results to optimise the curvature of the array. In nearly all cases, the computer model yielded a progressive curvature array profile (Fig 4), where the curvature increases gently and gradually going down the array. This produces a more consistent frequency response from front to rear seats than J-shaped arrays (Fig 5), having a straight section at the top and a curved lower section.

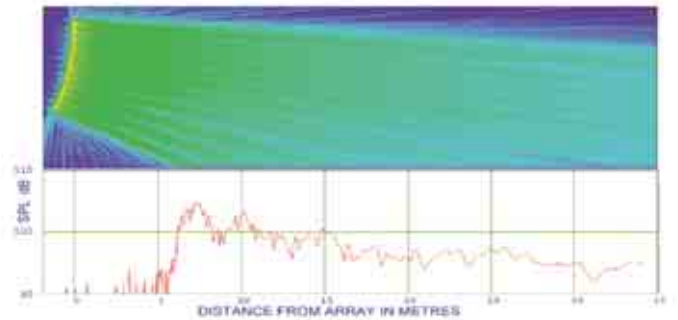


Fig 4: Progressive Curvature Array

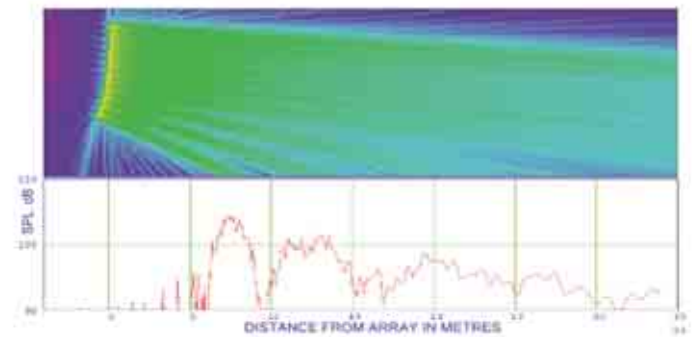


Fig 5: J-Shaped Array

## FRONT OR REAR HINGE?

Not only is it important to curve the array correctly in order to achieve consistent frequency response at any point in the audience, the position of the hinge point is also important. The W8L and W8LC hinge points are at the front of the cabinet which keeps the spacing between each cabinet the same, irrespective of splay angle. This makes a significant difference as splay angle increases, usually toward the bottom of an array (Fig 6). With a hinge point at the rear, as in some first generation line array systems, noticeable drops in output occur towards the upper end of the frequency spectrum when the listener is in-between cabinets (Fig 7).



Fig 6: Front hinge, 8 cabinets 5.6kHz



Fig 7: Rear hinge, 8 cabinets 5.6kHz

**POPULAR MISCONCEPTIONS – WAVEFRONT CURVATURE AND STEP DISTANCE BETWEEN DRIVERS**

As well as the cylindrical/spherical argument, which has little or no practical value in real-world line arrays, other ideas which have found their way into line array folklore include so-called criteria for wavefront curvature and the step distance between sources.

Contrary to popular belief, a perfectly flat wavefront is not essential and can indeed cause problems in curved arrays where the situation is complex and important trade-offs have to be made.

Too much wavefront curvature will adversely affect coupling and therefore output at the top of the array where there is typically very little or no splay between each cabinet.

No wavefront curvature will give noticeable high frequency hot-spots where inter-cabinet splay angles are large, typically in the short throw region at the bottom of the array. This is made much worse when the hinge point is at the rear of the cabinet.

The acoustic devices within the W8L and W8LC generate low curvature wavefronts, which, together with the advantages of a front hinge point, provide a combination of excellent projection over distance and smooth coverage right up close to the array.

The other so-called ‘criteria’ regarding what constitutes a line array calls for the step distance between drivers to be less than a wavelength at the highest frequencies. This is one area where the performance of horns and direct radiators differ: a horn can be driven by drivers which are greater than one wavelength apart at the highest frequency that they reproduce and still produce a low curvature wavefront, as shown in Fig 8.

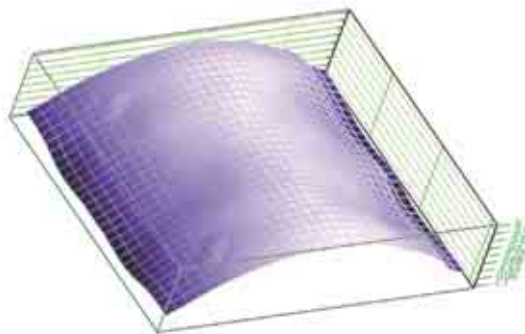


Fig 8: W8L mid horn – measured wavefront curvature @ 2.5kHz

Using specially-designed toroidal phase bungs (patent pending), which act in conjunction with the shape of the horn flare, the W8L mid horn produces a low curvature wavefront in the vertical plane, all the way to the upper end of its passband. Note the curvature from left to right is due to the 90° horizontal dispersion of the horn. >>

**VIEWPOINT™**

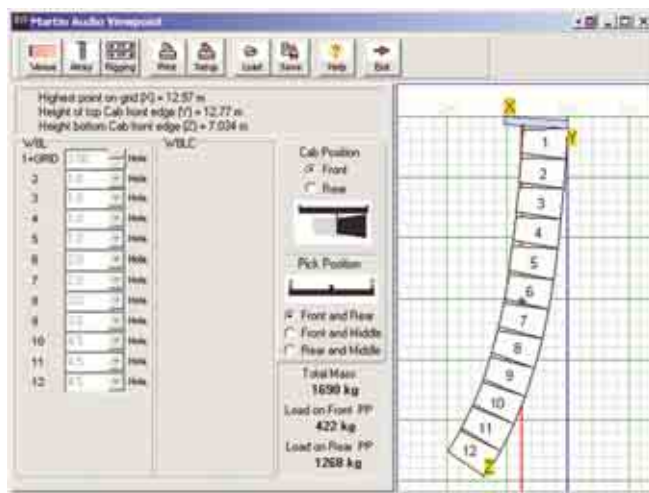
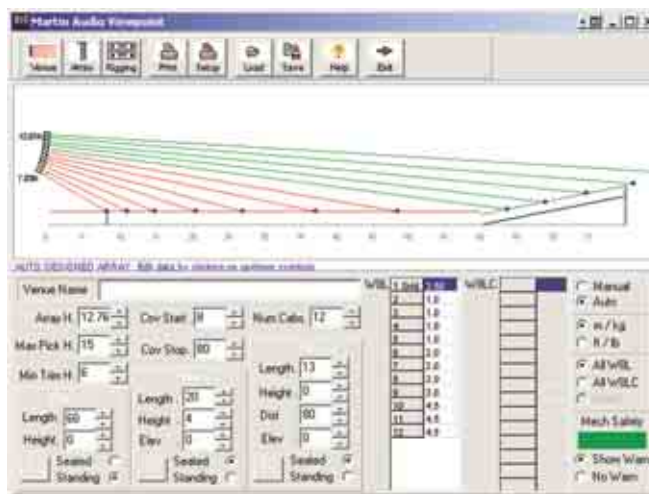


Fig 9: ViewPoint™

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# Line Array Principles — For The Mathematically Minded

<< During the summer of 2002, the progressive curvature rules established by the mathematical model were built into ViewPoint™ (Fig 9), a proprietary Martin Audio optimisation programme. Venue dimensions and number of cabinets are entered into ViewPoint™, which will automatically optimise the curvature of the array to suit the venue. Designs can be saved to disk and printed out ready to give to the crew assembling the array.

## AIR ABSORPTION AND BAND ZONING

Whilst line arrays have greater high frequency output capabilities than cluster based systems, all sound systems are still limited by the phenomenon of air absorption, which is a function of temperature, humidity, atmospheric pressure and frequency (Fig 10). The relationship between these quantities is quite complex, but losses always increase as frequency rises and distance from the source increases. Note this effect is in addition to the overall SPL loss as distance increases.

For instance, weather conditions can attenuate output at 8kHz by 12dB at a distance of only 50m from the source. On another day the same system could throw over 200m!

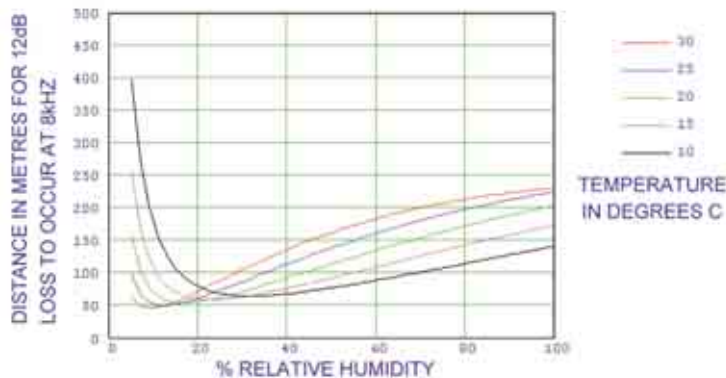


Fig 10: Temperature and humidity effects

To offset the affects of air absorption, progressively more EQ is required as the distance from the array increases. Since air absorption primarily affects high frequencies, it is of most benefit to split the drive to the HF devices into a number of separate channels (typically three) so that optimal EQ can be added to suit the requirements of the short, medium and long throw sections of an array.

By using this 'HF band zoning', people near the front don't have to listen to the extra EQ that the people at the back must have in order for them to hear high frequencies adequately. This simple technique helps to deliver remarkably consistent sound quality over the whole audience (Fig 11).

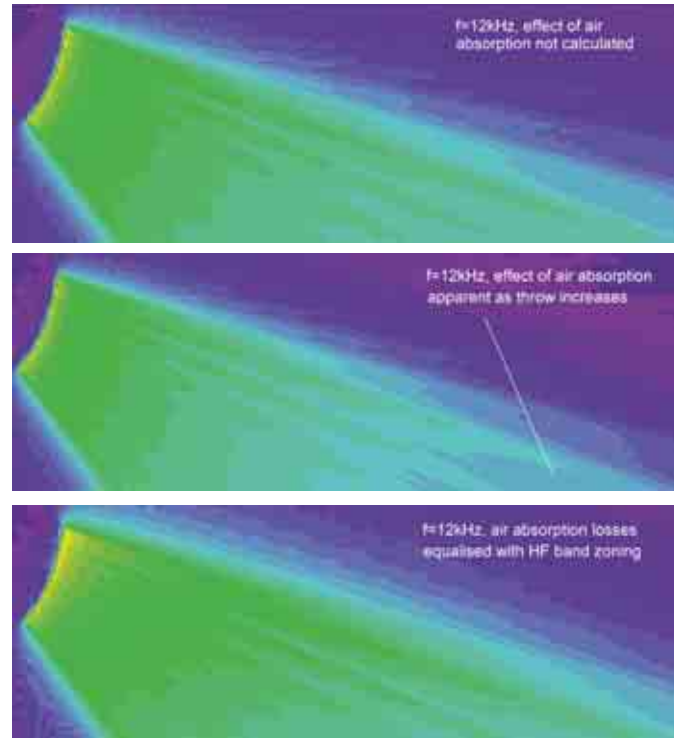


Fig 11: HF band zoning accurately compensates for air absorption

## CONTROLLER PRESETS

Up to now, it has been common practice to use a single digital controller preset or analogue crossover for a particular loudspeaker system, with users adding their own preferred EQ and crossover tweaks.

Whilst the simplicity of this approach may have some appeal, line arrays benefit greatly from specific controller presets that take into account variables such as line length and degree of curvature.

Using our mathematical model, we have determined a family of presets that are optimised for different array configurations, curvatures and also take into account the highly variable effect of air absorption.

The presets are called up by ViewPoint™ during the array design process and ensure consistent sound quality over the whole audience whatever the size or shape of the array and atmospheric conditions prevailing on the day.

## SUMMARY

The development of a mathematical model that will predict line array performance has brought a greater insight into the ways that real-world, touring line arrays actually work. It has also provided the basis for everyday, practical tools such as ViewPoint™ and the band zoning techniques that enable users to get consistently good performance out of the W8L and W8LC in all configurations and atmospheric conditions.



# Sunbelt Scenic's Tostitos



They called it a block party, but with 250,000 attendees, it was a New Year's celebration on a grander scale than most. Affiliated with the Fiesta Bowl (this year's National Championship) college football game, this get-together took place on New Year's eve night and January 2 at the Tempe Town Lake, a man-made wonder in the middle of town.

Sunbelt Scenic, a leading production, events and staging company in the Southwest and early adopters of Martin Audio loudspeakers, provided four stages of sound, light, stage and roof, along with a staff of technicians. The stages covered Rock, Pop, Country, and Alternative music with every genre represented including Collective Soul, the Go Gos, Charlie Daniels and Authority Zero, to name a few.

Typically, the equipment list started with Martin Audio — 16 flown W8L's, 16 ground-stacked Blackline

S218 sub-bass systems, and 18 Martin Audio MA 4.2s Martin Audio power amplifiers. Crown 5000 amps were also used, along with Apogee AE5's powered by Crest.

The drive rack included three Martin DX1 controllers, along with three Klark-Teknik DN360's. The FOH system consisted of Yamaha PM4000 and PM3500 consoles, BSS compressors and gates and an assortment of Yamaha, Eventide, Lexicon, Roland and TC Electronic effects.

16 Martin Audio LE12J's and two W8's sidefill speakers were included in the monitor set-up.

While Sunbelt's expert technical staff, led by chief audio engineer Jim Jorgensen, maximised the system, Steve Hill, production coordinator for the event, commented, "The

Martin line array was incredible and rocked the compound. The sound could easily be heard over seven stages."

Jim Jorgensen adds Martin's "versatility" as a primary reason for choosing their systems. "We can relate a variety of events to this factor. One week we're providing the audio for the Tostitos Block Party, the next week we're supplying similar equipment for four major corporate business meetings with nationally recognised companies. We have to purchase products that perform perfectly in both situations.

"Martin Audio is the 'musical' box we can always count on. These speaker systems bring a higher quality of audio to any application," Jorgensen concludes.

*Pics – Peter Jordan Photo*



# W8L's Clean Sweep At Daytona 500 Ball



The night before the rain-shortened Daytona 500 Race, won by Michael Waltrip for the second time, the focus was on the 8,700 sq. ft Grand Ballroom in the Adams Mark Daytona Beach Resort for the Grand Marshal's Ball.

Being appointed Grand Marshal of the 500 is quite an achievement in stock car racing circles and, this year, two-time Academy Award-nominated actor John Travolta, a Daytona Beach native, had the honour. As Grand Marshal, Travolta was responsible for giving the all-important command to "start your engines." Popular songbird Mariah Carey, who sang the National Anthem before the race, was slated to entertain at the Ball along with MC, Wayne Brady, an Orlando, Florida born comedian with a popular national daytime TV Show.

With 850 people in the house, ASR ProEvents of Central Florida was in charge of sound for a very discriminating crowd, not the least of which was the man in charge, Cap Spence, also production manager for the Super Bowl.

creative about how we fly the PA. It worked out perfect this year because we had to hang the PA in such a way that it shouldn't have worked, but it did. We stretched the boundaries of logic.

"The pressure we were under," Holton added, "was the fact that the show producer, Cap Spence, is production manager for the Super Bowl and he's been one of our clients for the last ten years. So Cap came to me and said the event had to be perfect. There was a lot of pressure, but we managed to pull it off and it went great. Cap was happy because his client, NASCAR, was extremely happy with the sound."

In addition to the Martin Audio loudspeakers, ASR used the ubiquitous Yamaha PM4000 for front of house and Yamaha PM4000M for monitors, proprietary ASR Soundworx wedges, QSC PowerLight amps for front of house, with everything driven by a Klark-Teknik DN9848.

Staff for this hugely successful conclusion to the biggest race in NASCAR included Darryl Jones, FOH engineer, Scott Hayes, asst. production manager and Michele Ranalli, production assistant. Holton supervised the event.



A Central Florida based full service production company, ASR ProEvents has been in business for 12 years, designing and executing world class pro audio, backline, video, trucking, lighting, staging production services.

Typically when the goal is superior sound quality and coverage, the sound system starts with Martin Audio — and four W8L's a side were flown for the ballroom stage with WSX sub-bass systems. ASR Audio production manager, Ken Holton, describes the challenges the company faced for this event.

"The problem we've had in the past have been achieving maximum coverage with minimum decibels. Every year is a challenge because we're in different ballrooms and they're not conventional rooms the way it's set up with all of the scenic elements, so we have to get real





# Blackline Provides Fabric-Style Therapy



Even though it was Thanksgiving 2001, only weeks after September 11, Alex Tomasso was moving forward with plans to make Therapy, his new ultra-dance club in Providence, Rhode Island, the very best American had to offer.

A true entrepreneur and risk-taker, Tomasso already owned and operated several other venues.

Working with British expat Mark Waker of Balanced Input, Alex wanted a club that, like London's legendary Fabric, would re-define standards. The building that would house Therapy was originally a mill that had once serviced the electric trucks that moved the Providence trolley car system. Almost 55 feet tall, it only had two floors, but making those fit for use required a total renovation.

Therapy's interior design, by Kyla Coburn, was to be distinctive without clutter. The same directive was issued for general contractor Joe Ricci and Brian Jay of Euphoric Lighting.

The lower floor is made up of four parallel tunnels. By day, the outer tunnels form the Gallery INSANE, and a quiet area for the club by night. Ten Martin Audio C115 speakers broadcast music throughout the lower floor, from CD by day and the DJ booth by night.

The upper floor measures 90 by 45 feet and almost 40 feet high, with the massive crane from the trolley car days still

high above the floor. Service areas now occupy the west wall; entrance and VIP zone are on the south side, bleacher style seats/dance areas are on the north. The

direct all the energy on to the dance floor. Six Martin Audio S218 subwoofers are configured in a single block, located under the bleachers on the north wall, with the

Comments about the sound system often include the word "pristine" and "insane", frequently in the same sentence. It is completely silent and often scares people



DJ booth occupies the north-east corner, sitting above the amp room.

Because he wanted Therapy to offer the same refined audio as London super-club Fabric, Tomasso followed Waker's recommendation and selected a low-distortion, high-resolution system. The design initially called for Martin Audio Blackline H3 full-range speaker systems to be flown at each corner of the 35ft by 27ft dancefloor, with Martin Audio H2 mid-hi packs filling in on the long axis. These elements are suspended approximately 12ft above the floor and raked steeply downward at 45° to

amp room situated under the booth.

The DJ booth houses the usual complement of three Technics SL 1200s, Rane MP 2016 with six-pack EQ module and a Denon DN 2600F CD player, all powered by an ETA power conditioner. The monitors are Martin Audio F12 systems which are flown close to each side of the booth.

On October 4 Therapy opened and the system was run hard for the first time. The following day NYC's Shawn Ink ripped the roof off with a blistering set.

who are used to the steady hiss and hum that populates so many systems. With only minimal compression and EQ in use, the dynamic range of the system is unencumbered and the music quality shines through.

The final word has to go to Alex Tomasso who commissioned the system. "I currently own two large scale sound systems and have purchased many more, but they don't come close. I didn't know *anything* could sound *this* good!"



# Governor's Inauguration Covered With Line Array



When Steve Palmer was faced with the prospect of providing audio for California Governor Gray Davis' Swearing In Ceremony and Inaugural Ball, the good news was the importance of the event and its impact on his company's growth; the not-so-good news was the fact that both events were being held in older, traditional venues

Auditorium was clear and intelligible. Then he and his staff had to reproduce more speeches along with dance music at the Inaugural Ball that evening.

The 3,855-seat capacity Auditorium has three seating levels with a sloped main floor and two balconies.

With the emphasis on articulation and coverage to

theatre system provided typically smooth, and dynamic full-frequency performance with exceptional articulation. Palmer needed the intelligibility and impact of the W8L's "they kick like a mule," he remarked and appreciated the fast set-up and break-down times, considering there were four events that day.

This occasion would involve both speech and music reproduction, with the popular swing band Big Bad Voodoo Daddies (who first gained acclaim in the modern Hollywood fable *Swingers*) providing the music.

In order to provide adequate SPLs without compromising clarity, balance and coverage throughout the room, Loudsound combined 12 of Martin Audio's flagship, award-winning W8C loudspeakers with eight ground-stacked Martin Wavefront WSX folded-horn subwoofers.

The W8C's can be rigged quickly to deliver outstanding power and performance from very compact configurations. More importantly, as a well-known professional sound engineer who's toured with the Wavefront has noted, "You can really pump it up and never get near its threshold. The sound is warm and full with a very natural voice."

For monitoring, Loudsound used 12 Martin LE12J's, a Martin WS2A (drum sub), and two Martin S218's (sidefill subs) among the configuration.

With company engineers Scott Prentice, Chris O'Brien and Ryan Cornelius at the helm and Martin Audio systems delivering the impact with traditional flair and accuracy, Governor Davis' newest tour of duty was truly off to a flying start.



distinguished by a cavernous, reverberant sound.

Sacramento Production Services, Palmer's successful production and hire company, had to ensure that every word spoken during the Governor's Swearing In Ceremony at the Sacramento Memorial

counteract the less than perfect audio environment for the Swearing In ceremonies, Palmer, engineer Scott Prentice and tech, Ryan Cornelius, chose 16 Martin W8L loudspeakers, eight a side, and four Martin WT2 speakers.

Combining Martin Audio's premier line array system with its superlative compact

A spokesman for the governor's office pronounced the sound simply as "great," with the Sacramento Production Services staff impressed with the clarity, audio quality and impact of the audio throughout the event.

Later that day — January 6th, 2003 — the Governor's Ball was held at the Sacramento Convention Center, located in the heart of downtown.

# Major W8C Cluster System For Zambra



Martin Audio components provide the public address system in a new nightclub near the French/Spanish border.

Situated in the town of Lesaka, close to Bilbao, Zambra is a new-build multi-functional, 2000-capacity venue, which draws crowds from miles around to its picturesque location in the mountains.

The contract to fit the venue out was won by Kaskabel Soinua SL, who approached Martin Audio's distributors, Alberdi Pro.

Said Alberdi Pro MD, Nacho Alberdi, "We first became involved in the project two years ago, and we slowly started to put together the entertainment system, starting with the audio — and later the lighting. The venue wanted to bring in bands from France and also present high-powered dance music.

"As this was a new building we had the chance to show what we could achieve with the Martin system, and work closely with

the acoustic engineer, Higini Arau, who is one of the best in Spain."

A large Martin Audio Wavefront W8C system was specified, with 12 boxes, run three-way and split into two clusters, suspended high above the dancefloor. These are underpinned by eight WSX sub bass enclosures, while deployed for infill and delay purposes are a further ten Martin Audio WTUB's.

Elsewhere, Martin Audio EM56 contractor enclosures service the peripheral areas (such as bar and entrance) in two blocks of four.

The Martin system — which was commissioned by Martin Audio's support team of Richie Rowley and Martin Kelly — is time-aligned using XTA processing and powered by MC2 amplifiers.





# Wavefront Goes Fluid For Sangalli



So it is written... (boldly on the walls) the philosophy of Fluid which nails its colours firmly to its cultural mast.

This venue — in Bergamo, Italy — is for the serious clubber, the lover of House music in all its guises. For Italy, this is something of a rarity because, for all its cool clubs of sublime design, the music policy can sometimes leave a lot to be desired, tempted as they are to pander to the commercial desires of the clientele.

Owner and promoter Max Colombo has no such quandary. The venue is open on Fridays and Saturdays only, from midnight until 6am. Those who enter the world of Fluid know exactly what they are going to get, whether it is with resident DJ Leo Mas or the host of internationally renowned turntablists who regularly turn up — such as Frankie Knuckles, Dave



Morales, Paul Trouble Anderson, Lil Louis Vega, CJ Macintosh ... all have played here during its four year reign.

For huge sound, you need a huge sound system and Sangalli Technologie has provided just that. A Martin Audio Wavefront system has been constructed around six stacks of Martin W8C and WSX — powered by Lab Gruppen amplification and processed by XTA devices. This easily fills the 1,500 capacity venue with a cacophony of different genres.

SGM Colour Dynamic 575's provide the fluid element to the venue by creating a series of constantly changing light beams which are very similar to fractal patterns on the walls. Clay Paky Mini Scan HPE, TAS Colore and SGM Gallileo II 575 scanners provide the lighting for the small dancefloor at the centre of the raised areas.





# Cuban-Style Social Club Shows Blackline Versatility



The Cuban-influenced Social Club, with Cuban-style restaurant and typical Latin music, has opened in Italy's Reggio Emilia region.

The club's large room is divided into two areas — one designated the Live Zone and the other the Disco Zone; both are equipped with Martin Blackline speakers, powered by Lab Gruppen amplification.

Band music is played out through four F12's and four S12 subs, with a further three F12's as floor monitors and two F8's acting as DJ monitors.

The dance sound is relayed through six Blackline F10's and four S12's.

The system is processed via an XTA DP-224 and mixed through Formula Sound equipment.

The entire system — including speakers, outboard processing consoles and cabling — was installed by Audiosales, Martin Audio's Italian distributors

Commented Audiosales' Mauro Codeluppi, "The consultant that was called in to do the job had worked with our products before — so there was no question that the system would be Martin Audio.

"Also we had previously done a demonstration direct for the club owner, and he liked the fact that the system was so versatile, and could perform so well in both a live situation — as main PA and monitors — as a background system, and as a frontline disco system."

Owned by a company called Mareba, the club is strategically positioned just 100 metres from Reggio's motorway exit. Although only a couple of years old, prior to being taken over it had stood empty.

Half a million euros later and Mareba have turned it into a venue to stand alongside the very best.



# Top Producer Specifies Wavefront In Porto



Having been operating successfully for five years, one of the most famous clubs in Portugal, Estado Novo, located in the northern outskirts of Porto, has had a technical refit involving one of the most highly respectable sound engineers in the business.

Phil Newell, former technical director of Virgin Records recording division and sound engineer on Mike Oldfield's seminal *Tubular Bells* album among others, was approached to configure the Martin Audio Wavefront system to produce a sound that could cope with the heady mix of commercial and house music played to different age groups throughout the night. From 11pm-3am, a more mature crowd is in attendance before giving way to the young 'uns for a house spectacular until 8am.

Taking sound seriously is something owner Alberto

Magachaes has become renowned for during his 25 years experience of running clubs and restaurants (he also owns a Brazilian restaurant nearby). Newell, as is the sound engineer's privilege, decided to tweak the W8S sub bass units and position them under the stage, while the W8 mid-hi cabs are flown over the stage and around the periphery areas. The result is a system that copes easily with the cavernous 1,500 capacity ex-warehouse.

The lighting, designed by João Azevedo and Sergio Vilela, also deals with the large dancefloor area and high ceiling. Clay Paky Stage Color 575 and Stage Zoom 1200 moving heads are positioned above the dancefloor with SGM Galileo II's positioned on the stage. White partition walls create the ideal backdrop for both lighting and video projection effects.





# Club Mirage Takes Live/ Karaoke Opulence To New Heights



The sumptuous Bravo Hotel in Panyun has witnessed the opening of its equally opulent nightclub — Club Mirage, which occupies five adjacent storeys.

The complex features a live club, disco, and no fewer than 72 Karaoke TV rooms.

The project — costing around 11 million RMB (circa £1 million) was installed by Guangdong Hui Feng Performance Equipment Co., Ltd, who have been a dealer of Martin Audio products for ten years.

The spectacular design of the karaoke rooms, complete with Martin Audio loudspeakers, has ensured that it has been impossible to book a single KTV room after 7pm since the day Club Mirage opened.

The main bar is the Show Bar, which features eight Martin Audio WT3 speakers and eight Martin Audio WS2A subwoofers and four Martin Audio LE350 stage monitors, along with Klark Teknik processing and TSG amplification.

In the disco, Martin's legendary Wavefront W8C has been installed, the four mid/high enclosures being underpinned with six WSX subwoofers, while a further six Martin Audio Blackline F15 speakers act as infills and two F10's provide the DJ monitoring. This is largely powered by Martin Audio MA series amplification.



As for the KTV rooms, these house an aggregate of 20 Martin Audio Blackline F8 speakers, 80 Martin Audio F10's and 20 F12's, reinforced with TSG equipment, including karaoke amplifiers.

Among the early visitors to the Club Mirage was Martin Audio managing director, David Bissett-Powell, who believes that this is one of the premier karaoke/live entertainment venues in the whole of China.





# Blacklines For Blackpool's Opulent Hush



An upscale new style bar in Blackpool has been created by owner, Geoff Moore of Betawell Ltd, beneath one of the city's favourite clubs, Rumours.

Moore controls both venues — but the cellar bar had been better known as Lucy's, a long-standing gay bar, before he earmarked it for conversion to the 300-capacity Hush.

He contacted local audio electronics engineer Peter Bawden, one of the partners in sound and light company Audio Sound Advice, who had a long association with the installation at Rumours.

Peter and co-director Kevin Jones devised a sound and lighting scheme for the stripped-out basement in keeping with the opulence of the proposed design scheme (which was partly conceived by Geoff Moore's wife, Sandra).

Given a free hand with the specification, Audio Sound Advice immediately specified a Martin Audio sound reinforcement system. Explained Kevin, "It was an automatic choice for us. We've tried a number of brands over the years but 12 months ago started working with Martin Audio systems, and have since done several installations without experiencing any problems.

"The style of the product and its sonic excellence makes it a first choice for all our major installations — and the client is delighted."

Four Blackline F10's are concealed inside the central pillar along with two S12 subs, used with the dedicated DX1 system controller. A further eight Martin Audio EM15's are distributed around the room as infill speakers, all fed from a choice of Technics turntable or Denon CD player, mixed through an Allen & Heath Xone:62 mixer and powered by Macro amps.

Kevin Jones says the L-shape of the building lent itself to this approach. "The corner of the L forms the central pillar, which opens into a semi-circle. This allows us to array the F12's for optimum effect." The subs are ground stacked in the pillar — one facing left the other right.

Audio Sound Advice also provided lighting in the form of 12 Pulsar LCD fixtures along with Madscans and Madspins, controlled from a Pulsar Masterpiece 216.

The upscale venue presently trades three nights a week until 2am.



# Sub Club Returns



Glasgow's legendary Sub Club is to reopen after three years — powered by a full Martin Audio sound system.

In the three years since fire gutted the adjacent building (the Sub Club's own basement venue being structurally damaged during the subsequent demolition), owners Mike Grieve and Paul Crawford have kept the name alive by promoting nights around other venues.

On many occasions they used a Martin Wavefront 8C rig — hired from Capital Sound Hire's Scottish branch. And when two of their DJs worked Fabric in London, reporting back the stupendous Martin Audio sound system they found in residence, all roads started to lead to the High Wycombe manufacturer.

This prompted a further visit to the club by Mike Grieve, where he met technical manager Dave Parry, and was again able to sample the Wavefront 8C sound in Room 1 and TiMax-driven Blackline system in Room 2 at close quarters.

After 17 years in business, the Sub Club is only too pleased to namecheck Fabric as the inspiration for the new sound system. "When Fabric opened three years ago its mission statement followed exactly the same philosophy as ours. It was obvious they were coming from the same angle musically and artistically.

"Dave Parry was really helpful and introduced us to Richie Rowley at Martin Audio."

Richie came up with a tailor-made system design — optimised for total coverage and impact. With clever programming of the BSS Soundweb the venue is able to seamlessly shift the sound imaging from the dancefloor to the stage (for live showcases) whenever the need arises.

David Pringle at Capital Sound Hire, Glasgow

speakers, while a pair of the near-standard F12 DJ monitors are found in the DJ console. A further three F10's provide further dancefloor reference while four F8's take care of the rear end of the club and second bar area. Finally, a pair of EM15's mark the main entrance, leading down to the basement.

The whole system is powered by Martin amplification in the form of two Martin Audio MA4.2's, two MA2.8's, three MA1.6's and two MA1.3's.

David states that although only a small venue, Sub Club has been designed into five separate sound zones — and the various delay settings will be stored in Soundweb.



provided the full array of highly-specified audio tools, based around the Martin Audio Blackline system.

The main dancefloor system comprises two stacks of a single Blackline H3 on top of a pair of S218's, providing powerful point source subwoofers. A pair of flown Blackline F15's double as auxiliary floor fills and stage

All the DSP processing is handled by a 9088ii, backed up by a 9008 slave to provide extra outputs, while a 9010 Jellyfish in the DJ station provides local control.

Says David, "This gives us individual control over all the different areas. The left and right output from the main DJ mixer is routed to the various zones, and the delays, crossovers and box EQ's are all stored in Soundweb."

Capital Sound Hire have also provided all the DJ kit, including an Allen & Heath XONE6:2 mixer (with 3:2 back-up), three Technics SL1210 Mk3's, fitted with Stanton Trackmaster 2's — plus a pair of Pioneer CDJ-500S CD players and Pioneer EFX-500 effects units.





# EM26's Ready For Take Off



## At AV8

A new bar/restaurant called AV8 has been set up on the demilitarised RAF Kemble airfield, just south of Cirencester.

Run by Kemble Air Services, the largest privately-owned airfield in the UK is now being re-established as an enterprise park. AV8, a glass-fronted building which operates in a converted fire station, which opened initially to serve the existing businesses on the park, has now expanded its scope to serve the general public and corporate guests, offering a full a la carte menu.

The venue was designed by Simon Radclyffe of Radclyffe Associates, while the sound reinforcement — based around Martin Audio components — was installed by CAV (Contract Audio Visual).



A visual, rather than physical division separates the main bar, restaurant and café, wrapped around the curved wall, and this enables the venue to be used as a single space for private hire or corporate events when necessary.

CAV were recommended to the project by locally-based hi-fi company, Acoustic Energy. The two eating areas — which flank the bar —

form a single sound zone while the bar is on its own separate zone, the Denon multiplay CD sound source switched by a Cloud CX242 two-zone mixer.

The company opted for four black Martin Audio EM26's in each of the two dining areas (one wall-mounted on special brackets in each corner) operating as two stereo pairs. A further two EM26's provide the sound in the bar.

CAV managing director, Hans Beier, said, "We conducted an onsite demo with another leading brand and the EM26's won. They offered better quality sound, were more directional than the competing speaker and had low visual impact. And when used in multiples the EM26's seem to work particularly well."

The Stroud company also supplied the architectural lighting control based around a Pulsar Masterpiece Replay and Anytronics dimmers, providing the venue with a 12-way keypad to access different lighting presets. The lighting design was undertaken by Ollie Metcalfe, who is also the Manic Street Preachers' LD.

This follows Simon Radclyffe's design theme, which is based around vibrant yellows and blues (to create the 'holiday' idea implied by an airfield), softened by fabric and large ribs (inspired by Airfix kits).

"With its new entrance, glass frontage and double doors it creates an amazing presence," says Simon.





# Floating On A Wave Of Sound



Auckland's most exciting new bar and club venue, Float, opened recently to rapturous acclaim from critics and customers alike. Located in New Zealand's Americas Cup harbour on the prestigious Princes Wharf in Auckland, customers vary from thirsty Cup crew and hungry spectators to the multitude of cruise liners docked alongside.

Pride of place is taken by the biggest Martin Audio installation in New Zealand. Andrew Clelland of Wavefront Audio says the system just rocks.

"The client wanted the best sound and video system available and is more than happy with the result. The five large areas at Float can either provide individual entertainment or come together as one huge club. A weekly live TV sports programme is broadcast from Float, giving an extra exciting dimension to the venue. The needs of a dance club and a TV studio are widely different but we worked with the TV production company to develop a sound, video and lighting system that worked well for either use, and can be changed at the touch of a button."

With the diverse areas and requirements that make up Float, Wavefront Audio, Technical Audio Group NZ and MediaSys worked in close collaboration to devise a layout that was totally flexible. "I knew that the Martin speakers, with their incredibly even sound,



would work perfectly in all the areas of Float," said Robert Judd, managing director of Technical Audio Group, New Zealand's Martin Audio distributor.

Coverage is provided by no fewer than 64 Martin loudspeakers, including four Blackline S218's, two Blackline H3's and two Blackline F15's — plus four EM56's for the dancefloor.

A further eight F8's and four S15's cover the main bar, while the upstairs bar has 30 EM15's, two EM150's and two

EM120's to give an even sound. "Given the size of the venue, I knew we had to have the best control system available to run the multiple zones smoothly," said Clelland. "The obvious choice was three Allen & Heath DR controllers, driving six Martin Audio MA2.8's and seven MA1400's; it gave us the flexibility and sound quality we wanted."

Integral to the smooth operation of Float is the computer control system giving bar staff easy control of the most complex audio/visual operations.

The no compromise Martin system is complemented by a component video distribution system sourcing four satellite feeds, DVD and computer displays, with the NEC three-chip DLP NightHawk projector presenting a stunning image on the 6 metre Stewart Grey Hawk screen.

"We wanted to fulfil our clients brief of Float having the best audio and video quality of any venue in New Zealand," said Leroy Muir of Wavefront Audio, "and we surpassed even our own expectations."

And Float owner Paul Hollis, added his endorsement. "The sound just takes my breath away. We have nights with 1000+ people dancing and enjoying themselves and the sound is simply the best I have heard. People just love it, they don't want to go home!"

# Wavefront Involved In Sleaze Campaign



The Sleaze Ball is one of Australia's largest and best-known dance parties on the world circuit. It unites the gay and lesbian community and their friends in a celebration of identity, community togetherness, diverse music and dance culture. Each year the organisers of this fabulous event promise a sensory overload of wild music, wicked sounds and wayward live performances.

The recently-held Sleaze Ball was no exception, with over 6,500 revellers packing Sydney's Horden Pavilion at Fox Studio. The party's 'In Uniform' dress theme was enthusiastically received, allowing the creative to give full vent to their imagination while the others could still get into the swing by donning something as simple as a rugby kit or school uniform ... usually two or three sizes too daring.

The 12-hour programme required some serious audio, lighting and effects and Sydney's leading integrated production company 32 Hundred were on hand to make it happen.

A total of 14 W8C's, eight W8CT LongThrows and 32



WSX subwoofers were used in a FOH configuration. Power was provided exclusively by QSC PowerLight amplifiers with racks positioned behind each stack and a total of 36 amplifiers. Such was the power and headroom that not a single clip light was seen for the duration of the event.

The DJ Booth was thoroughly over-specified, with two channels of one W8C on top of two Martin WS2 double 15in subwoofers. For once no requests for additional volume were received from the DJ area!

"This system rocks," commented Josh Chapman, who along with Iain Reed and Kevin Davidson engineered the production. He added, "that's our experience with Martin and QSC; whatever you throw at them, for however long, they 'maintain the rage.'"

Despite the Mardi Gras' recent financial turmoil and questions over management, Sleaze Ball provided one clear answer ... these guys sure know how to throw a party!



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](http://www.martin-audio.com) E-mail: [info@martin-audio.com](mailto:info@martin-audio.com)

The Martin Experience

# Blackline Stars At The Roxy



A&T Trade, the exclusive distributor of Martin Audio in Russia and CIS, has successfully completed the installation of a new Moscow night club called Roxy. Situated in the centre of the city, Roxy is set to become one of its most popular entertainment complexes.

The club features two rooms, offering a seating capacity of 700. The main hall boasts a ceiling height of nine metres, and those visiting for the first time are greatly impressed with the incredible design and space. High white columns and second level balconies have changed the look of the club more to a concert hall or theatre.

This unique auditorium can stage a wide range of performance — from disco to live concerts and shows. And those preferring comfort can enjoy European cuisine on the second level as well as the opportunity for private conversation.



To provide excellent sound to every seat in the auditorium — and to the dancefloor in particular — was defined as the key objective, and the technical specialists have worked with Blackline equipment to fulfil the goal.

Four F15 speakers and two S218 subwoofers have been fitted in the front hall. To meet sonic intensity over the dancefloor, four F12 cabinets were added on the opposite side in two separate clusters.

The second room is entirely different; this is an unusual space, with the atmosphere changed by ceilings, calm colours of walls and furniture. It is divided into two parts — a dancefloor with a small stage and chill-out room.

# Martin Do The Biz In Martin



In a town called Martin — the cultural centre of Slovakia and the territorial middle of Europe — quality is winning over the price.

This is the base of Rock Centrum, the company which distributes a number of leading pro audio brands, including Martin Audio. The Mayor of the town — along with a group of creative architects — approached Rock Centrum to create a permanent sound installation in a pedestrian zone and also for the building situated within this zone.

The building is named Millennium and its sound is distributed to four independent zones via an Allen & Heath zone mixer. Crown amplifiers power the Martin Audio C516 ceiling speakers, reinforced by the active C265P bass cabinet processed with compressor/limiters.

As the town enjoys historical status all technologies (including sound) have to conform to the statutes laid down by the legal cultural centre.





# First Screen 4 For Belgium



The 427-seat De Brouckere cultural centre in Torhout first opened its doors in 1995 with the main purpose of providing theatre productions and music performances.

From the start, however, the premises was also used for film projections. After a couple of years the city of Torhout bought a fully refurbished Bauer U2 projector with a 4000W xenon lamp, Dolby CP65 processor and DTS system — installed by venue technician, Rik Miny.

Last year the latter contacted Ampco Belgium's project engineer Steven Kemland to advise on, and design, a new (mobile) sound system specifically for the cinema. In cooperation with theatre technician Dirk Verougstraete, Steven proposed the Screen 4 system and 12 Effect 5 surround speakers.

As the system needed to be mobile in the event of a theatre – or other production — being scheduled, a special trolley was designed, enabling the technicians to rapidly move the speaker system to the backstage area, without having to worry about wiring and carrying speakers around (*see pic*).



After the installation and tuning was completed, the latest James Bond movie, *Die Another Day*, was projected to test the system. At the end of the film Rik Miny observed, "This system not only sounds good and correct, it is also far less tiring than all other sound systems I've heard in Belgium – even in the hardest actions scenes!"

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# Classifiers Use Screen 2's



The British Board of Film Classification — located in the British Film Industry's Soho heartland — is the industry body charged with ensuring fair and effective regulation of the film industry.

The Board has to classify every film and video that goes on sale. Thus its 45-seat Preview Theatre, which is also available commercially, undergoes a high degree of usage.

Cinema installation specialists Sound Associates have a relationship with the Board extending back to 1986, and have

periodically updated the replay systems as new sound platforms have been established.

When they were recently called in to fit an AMX remote touch screen system they took the opportunity to simultaneously upgrade its loudspeaker system.

"While their screen frame was coming out it seemed to make a lot of sense," said Sound Associates' Graham Lodge. "They needed higher quality and the ability to deal with modern digital soundtracks."

He recommended that they replace their old system with three of Martin Audio's Screen 2 enclosures, driven passively.

"We have used Martin Audio cinema systems many times in the past, and the new Stage speakers are positioned left, centre and right behind the perforated cinema screen."

Simple to install, and with a shallow profile minimising space requirements, the Screen 2 is an ideal choice for preview theatres, offering 90° x 90° dispersion and a sensitivity of 98dB.

"Given the size of the theatre it was a very logical decision to use the Screen 2's," concluded Graham.

# Lighting Up Lanzarote's Dreams



Gravesend Sound & Light have carried out a large-scale nightclub installation on Lanzarote — one of the Canary Islands — using Martin Audio components.

Having already carried out work for British expat Martin Lyons at nearby Cesar's, in the holiday resort, the company's Simon Middleton was delighted to return — this time to fit out the 1300 capacity Dreams in central Puerto del Carmen.

Gravesend Sound & Light totally replaced the sound system using multiples of Martin Audio Blackline F15's around the dancefloor, underpinned with S218 subs.

Said Simon, "We had originally planned to fly the F15's in pairs but the roof wasn't structurally substantial enough; so instead we created two ground stacks either side of the stage, inverting the F15's on the S218's to produce a horn-coupled solution. It provided a much crisper, punchier sound with a vibrant top end."

Gravesend had requisitioned some special plates, secured with eyebolts, originally designed for pairing up the speakers to create the right splay angle. And despite having to resort to a



ground-stack alternative the special rigging was still able to be implemented to achieve maximum coverage while providing additional bracing.

Elsewhere, a pair of Martin EM76 architectural speakers serve as DJ monitors (powered by Martin MA1.3 amplifiers), with the remainder of the system controlled by Martin's dedicated DX1 processor and powered by Martin Audio MA2.8 amplifiers.

The result is that this popular holiday nightspot is now sonically equipped for the new tourist season.



Pic © Louise Stickleland

# Beck Bros Take Cen

When London-based rental company, Centre Stage, recently made a strategic move into high-end PA, with the purchase of 20 Martin Wavefront W8C/WSX stacks from distributors LMC Audio, they created a mighty stockholding of proprietary enclosures at their warehouse.

For Centre Stage proprietor, Graham Baker shares the Staples Corner facility he occupies in north west London with another W8C-based company, FX Music.

This will give the combined companies a joint stockholding of more than 50 W8C stacks — providing ample power to undertake large stadium and arena shows. And it's already paying off.

In the past Centre Stage have specialised in one-off arts events shows and local authority events — and last summer provided coverage for Ms Dynamite at West Ham's Upton Park stadium.

Coincidentally, that was precisely who was on the bill when FX Music fielded 28 W8C tops and 24 WSX subwoofers this month — crosshired to another long-time Martin advocate, Encore PA. The event was a corporate Siemens event to launch their Xelibri fashion phone at the Old Billingsgate Fish Market.

Sharing the bill were Shirley Bassey and Christine Aguilera, and while FX Music supplied the bulk of the PA, Encore provided all the DJ front end for production company, Outer Sanctum.

FX Music was started by brothers, Dave and Alan Beck 18 years ago. Though they had been early adopters of some of Martin's pioneering split bins it was only 15 months ago that they made the investment in Wavefront, ditching their old system in favour of 32 W8C's and 24 WSX's.

"We went with Martin primarily because they are a UK-based manufacturer ... and we've never regretted it," said Dave. "It's worked out very well and we are extremely happy. It's about the best box purchase we've made." >>



Left to right: Simon Bull (Martin Audio), Graham Baker (Center Stage), and Bunty King (LMC Audio) – with the new W8C stacks.



# Centre Stage In North London



Pic © Louise Stickland

The Siemens Xelibri corporate event

<< It has also given FX Music — who specialise in corporate event work as well as classical spectaculars and rock 'n' roll — the facility to inter-hire with Martin's other great London rental house, Capital Sound Hire ... plus of course Centre Stage and Encore.

Over at Centre Stage, Graham Baker said he had been heavily influenced by the Beck Brothers' decision to back Martin Audio, "It was they who introduced me to Martin Audio, and I must say I have always felt confident about their systems. The day FX Music went out and bought their 32 stacks the writing was on the wall.

"Principally the system sounds good, it trucks well, it's easy to cross-hire — and the back-up is exceptional.

"We looked at other systems, and as we became increasingly aware of their problems, it quickly turned into a one horse race."

# Sub Tone Celebrates With W8C



Long-time Martin contractors, CAV, have equipped a high-profile dance venue in the centre of Cheltenham with a Martin Audio Wavefront rig.

Situated on The Promenade, the trendy, 400-capacity Sub Tone — a haven for house music — forms the basement hub of the multi-room venue owned by Artwith's Ian Underhill and Emma Brazil.

Requiring a sound reinforcement upgrade, CAV MD Hans Beier recommended a powerful W8C/WSX stack, conventionally positioned on either side of the stage and controlled by Martin Audio's digital DX1 controller. He then reinforced the rear of the room with a pair of Wavefront W2 full range cabinets, in tandem with a WX3AS system controller, and finally split a pair of Martin Audio Blackline F12's — deploying one for infill duties and one for DJ referencing. The system is powered by Crown Pulse amplifiers.

"Ian Underhill preferred the Martin system to others we demonstrated and was totally aware of its brand venue," records Hans. "As Ian is a musician sound quality was an absolute priority."

At the same time CAV took the opportunity to install a new cabling infrastructure. "This will give the venue more



flexibility and it was important that the new system could cope with jazz, live PA and dance as well as open mic nights which the previous system could have been incapable of handling. There has been a huge difference in quality."

The system was installed in time for the club's fifth birthday — and an appearance by Seb Fontaine.

# W8

## AUSTRALIA

3200 LIGHTIUNG	+ 61 2 9693 1777
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## AUSTRIA

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BRUNNER & BRUNNER	+ 43 663 037578
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## BELGIUM

STAGE PROJECTS BVBA	+ 32 75 721710
PHILIPPO AUDIO BVBA	+ 32 3 491 91 76
D-RENT	+ 32 3 324 02 97
ALL AUDIO ACCOUSTICS KORK BVBA	+ 32 475 5745 17
DELTAENT NV	+ 32 50 49 00 81
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CANDO SA	+ 32 2 366 22 22
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MARC DE BAETS	+ 32 9 386 62 02
BSL	+ 32 9 348 80 20

## CANADA

NORTHWEST PRODUCTIONS	+1 250 765 8451
THE LION SHARE INC	+1 905 830 0525
S.P.L. SOUND	+1 250 763 3855

## CHINA

D & E (INTERNATIONAL) LTD	+ 852 2898 8666
HUIFENG PERFORMANCE EQUIPMENT (GROUP) CO. LTD	+ 86 20 8489 8888
POWER MAX (ASIA) ENGINEERING LTD	+ 852 2661 0527
CZECH REPUBLIC	
AV CENTRUM	+ 420 602 227357
SOUND SERVIS	+ 420 602 2220870
KUNMUNG YIFENG	+ 86 871 316 1287

## DENMARK

RINGSIDE TOUR PRODUCTION	+ 45 3645 0701
EUROPEAN TOUR PRODUCTION APS	+ 45 36 30 70 80

## ESTONIA

AUDIOTEL	+ 37 2 7 38 5485
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## FINLAND

RADIANT SOUND COMMUNICATION	+ 358 3 22 33311
UNITED SHOW ENTERPRISES	
HELSINKI LTD	+ 358 9 759 4180
SUOMEN TAPAHTUMATEKNIKA	+ 358 3 225 8600

## FRANCE

BGM	+ 33 4 66 84 39 34
TECHNISCENE	+ 33 2 35 88 86 86
PRODUCTION 44	+ 33 2 40 52 07 07
ART SON ET LUMIERE	+ 33 4 94 03 03 52
ATC	+ 33 5 56 69 60 60
AUDIO CONCEPT	+ 33 563 39 67 86
AUDIOLYRE	+ 33 5 59 98 31 10
GPS	+ 33 251 666 900
EURO LIVE	+ 33 296 743 326
LA COMPAGNIE LUMIERE ET SON	+ 33 478 491 026
BALLOON FARM STUDIO	+ 33 299 321 111
RICHARD LAURIANT ECLAIRAGE	+ 33 385 391 535
REGI-SON SONORISATION	+ 33 555 062 020

## GERMANY

LWS	+ 49 228 94676-0
KLEMENT ELEKTROTECHNIK	+ 49 5626 8475
SCHALLDRUCK	
VERANSTALTUNGSTECHNIK	+ 49 3531 65300
NEW NOISE	+ 49 201 8686010
BIG BEAT PA - SERVICE	+ 49 172 4304717
COMPLETE AUDIO BERLIN GERMANY	+ 49 30 661 00 45
MEGATEC	+ 49 351 8386811
SATION AUDIO	+ 49 8225 958134
JA BESCHALLUNG	+ 49 5722 1342
AMS GMBH	+ 49 0747191900
PINK NOISE CORPORATION	+ 49 2405 95441
S.A.L.	+ 49 5132 4823
MUSIK BIRKHOIZ	+ 49 2227 82753

ART VERANSTALTUNGSTECHNIK	+ 49 2332 149093
GS LICHT & TON	+ 49 7561 986712
GUADELOUPE	
SLP PRO SARL	+ 590 80 15 80
HONG KONG	
D & E (INTERNATIONAL) LTD	+ 852 2898 8666
POWER MAX (ASIA) ENGINEERING LTD	+ 852 2661 0527

## INDIA

THUKRAL PRODUCTIONS	+ 91 11 431 1011
IRELAND	
REA SOUND	+ 44 1648 764059
ITALY	
MAFFEI SERVICE	+ 39 0461 707852
FUMASOLI SERVICE	+ 39 0165 35806
PHOENIX AUDIO SNC	+ 39 041 5342349
RADIO SATA SERVICE	+ 39 051 6332440
	+ 39 051 6332398
	+ 39 0577 306032
	+ 39 0522 661506
	+ 39 0375 82919
	+ 39 0434 26882
	+ 39 0444 695507
	+ 39 0174 45314
	+ 39 079 293179
	+ 39 051 6153339
	+ 39 081 8237009
	+ 39 0521 776810
	+ 39 049 5380151
	+ 39 011 6645754
	+ 39 0962 865013
	+ 39 055 720794
	+ 39 030 2511722
	+ 39 0566 56356
	+ 39 011 3589532
	+ 39 347 9602838
	+ 39 967 86718

## MUSIC SERVICE

PIANO & FORTE	+ 39 0522 661506
ELECTRA SERVICE	+ 39 0375 82919
CLAPS	+ 39 0434 26882
MEZZA NOTA	+ 39 0444 695507
BIG TALLU SERVICE	+ 39 0174 45314
BLU STUDIO	+ 39 079 293179
COOPERATIVA 56	+ 39 051 6153339
FAST SERVICE	+ 39 081 8237009
T.S.S.	+ 39 0521 776810
VOX SERVICE	+ 39 049 5380151
ZOHO MUSIC SERVICE	+ 39 011 6645754
W M AUDIO SERVICE	+ 39 0962 865013
EMPORIO ON STAGE	+ 39 055 720794
CORIPPO ALBERTO	+ 39 030 2511722
MUSIC LIGHT INSTRUMENTS	+ 39 0566 56356
MUSIC SERVICE ALIBI	+ 39 011 3589532
MISTER X SERVICE	+ 39 347 9602838
PROCOPIO NICOLA	+ 39 967 86718

## KOREA

JE-IL SOUND	+ 822 835 1608
LIVE	+ 822 747 2162
SOUND BOX CO	+ 822 419 5141
MARTIN KOREA SOUND CO., LTD	+ 822 419 5141
SHINHAN SOUND CORPORATION	+ 822 376 8383-4

## LEBANON

ELTEK	+ 961 1 265048
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## MACAU

CHIFU	+ 853 567847/8
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## MOROCCO

KILMI MUSIQUE	+ 212 332 44 23
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## NETHERLANDS

SIMPLON	+ 31 50 3184150
EAST SOUND	+ 31 575 519365
MANIFESTO	+ 31 229 279839
PURPLE HAZE	+ 31 348 424477
VAN SAMBEEK PA	+ 31 653 902690
SERVICE-CENTRUM APTRONICS	+ 31 315 631521
AMPSCO PRO RENT	+ 31 30 241 3444
NEW ZEALANDACME AUDIO LTD	+ 64 9 302 0352

## NORWAY

NORSTAGE A/S	+ 47 52 71 43 10
AMAS LYDPRODUKSJON A/S	+ 47 55 39 38 00
PA PRODUKSJONER BERGEN	+ 47 55 598 598

## POLAND

MUSNICKI SOUND	+ 4822 773 24 73
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## PORTUGAL

PURO AUDIO	+ 351 21 434 31 25
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## SINGAPORE

RHYTHMIC SOUND SERVICES	+ 65 841 0911
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## SLOVENIA

PLOHL MIRAN	+ 386 62 661 761
MEGA AUDIO D.O.O.	+ 386 62 314063
DEJAN ZURA	+ 386 41 336 869

## SPAIN

SONOSET (MILWAUKEE AUDIO S.L.)	+ 34 93 372 40 53
SONARTE	+ 34 926 31 28 28
SONOBEXI	+ 34 953 76 33 37
LUC SON	+ 34 96 530 30 23
TOUR SERV. PROF. SO I L.LUM, S.L.	+ 34 93 477 04 95
RED TSO	+ 34 977 64 34 95
PROSEC AUDIO S.L.	+ 34 985 98 07 01
ELECTRIC-SO	+ 34 93 726 54 44
MUSIBELIOS S.L.	+ 34 95 234 12 51
SEGUNDO LASER	+ 34 967 40 10 96
SONORIZACIONES Z, S.L.	+ 34 961 20 31 11
FATSINI S.L.	+ 34 97 770 1257
SONER, SONIDO E ILUMINACION	+ 34 98 653 0555
MUSICA VIVA	+ 34 93 303 32 47

## SWEDEN

MUG HYR AB	+ 46 31 130990
SKELLEFTEA LJUDUTYRNING	+ 46 910 173 74
DM AUDIO	+ 46 8 97 07 85
RIGHIRE	+ 46 16 145 300

## SWITZERLAND

SOUNDHOUSE	+ 41 41 259 20 90
AUDIO-PHASE	+ 41 32 384 26 72

X-LIGHT & SOUND GmbH	+ 41 62 923 95 75
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## TAIWAN

REYANG PROFESSIONAL	
SOUND CO LTD	+ 886 2 8797 8687
YASHIN PRO-AUDIO INC.	+ 886 7 322 2555
DINGLEY PROSOUND SERVICES	+ 886 7 384 3845

## TURKEY

TEMPO MUZIK LTD	+ 90 212 230 38 18
UNITED KINGDOM	

HAWTHORN THEATRICAL	+ 44 1664 821111
STARSOUND SYSTEMS	+ 44 1924 278875
CAV	+ 44 1453 751865
CAPITAL SOUND HIRE	+ 44 207 978 5825
ROSSCO LTD	+ 44 1462 431413
AUTOGRAPH SOUND RECORDING	+ 44 20 7485 4515
PA PA	+ 44 1248 670980
CABLE MUSIC PA HIRE	+ 44 1926 339780
ZU 2	+ 44 7974 418867
INTASOUND PA	+ 44 1905 841591
QUANTUM SOUND	+ 44 24 7666 8457
BIG SOUND	+ 44 1792 881 300
LIMIT AUDIO	+ 44 1527 892368
STAGE AUDIO SERVICES	+ 44 1384 263629
ATOMIC SOUND SYSTEMS	+ 44 1636 702717
FX MUSIC	+ 44 20 8208 1771
GLOBAL SOUND & LIGHT	+ 44 1473 711227
CENTRE STAGE	+ 44 202 8208 1033

## UNITED STATES OF AMERICA

BLIZZARD SOUND	+ 1 920 451 1343
GSA NEW YORK	+ 1 914 632 0192
PROLINE AUDIO	+ 1 918 260 0503
SOUND CONSTRUCTIONS	+ 1 718 893 7352
SAI	+ 1 612 724 5395
DYNAMIC PRODUCTIONS	+ 1 770 529 8100
RALEIGH MUSIC	+ 1 919 965 4300
SUNBELT SCENIC STUDIOS INC	+ 1 480 598 0181
CLEARWING AUDIO	+ 1 414 258 6333
WORLD AUDIO	+ 1 210 472 3932
OPRYLAND PRODUCTIONS	+ 1 615 228 0491
GO AUDIO	+ 1 414 764 8290
A.C.E.S	+ 1 518 270 4747
CELEBRATION SERVICES	+ 1 937 836 5662
DELICATE PRODUCTIONS	+ 1 805 388 1800
LA SOUND	+ 1 818 765 6900
LOUDSOUND	+ 1 916 481 3679
MHA AUDIO	+ 1 301 733 9337
ROLLING THUNDER	+ 1 401 331 5427
SOUNDWAVE	+ 1 520 327 5590
STICHA BROTHERS	+ 1 608 276 5570
TECHNOTRIX	+ 1 815 935 0233
TECHNICAL PRODUCTIONS	+ 1 314 644 4000
VERTICAL SOUND	+ 1 216 521 9994
WAVE TRIBE PRODUCTIONS	+ 1 541 618 9499
AV PRESENTATIONS	+ 1 985 542 9196
PHIL REIGH SOUND	+ 1 888 411 7445
NORTHEASTERN PRODUCTION	+ 1 716 427 8760

# W8L

AUSTRIA	
VIDEO & SHOW	+ 43 7242 66588

## BELGIUM

D-RENT (SYNCO)	+ 32 33240297
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## CHINA/HONG KONG

POWER MAX (ASIA) ENGINEERING LTD	+ 852 26610527
HUIFENG PERFORMANCE EQUIPMENT CO. LTD	+ 86 2084898888
KUNMING YIFENG INDUSTRY AND TRADE CO. LTD	+ 86 871 3161287

## DENMARK

EUROPEAN TOUR PRODUCTION APS	+ 45 36 30 70 80
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## ITALY

FUMASOLI SERVICE	+ 39 016535806
MUSIC SERVICE ALIBI	+ 39 0113589532

## NETHERLANDS

AMPSCO PRO RENT (SYNCO)	+ 31 302413444
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## PORTUGAL

PURO AUDIO (SYNCO)	+ 351 214343125
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## SPAIN

MUSICA VIVA	+ 34 33033247
ESPECTACULOS LITO, S.L.	+ 34 986/530.855

## SWEDEN

DM AUDIO	+ 46 8970785
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## UNITED KINGDOM

CAPITAL SOUND	+ 44 207 978 5825
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## UNITED STATES OF AMERICA

MHA AUDIO	+ 1 301 733 9337
DELICATE PRODUCTIONS	+ 1 8053881800
SUNBELT SCENIC STUDIOS INC	+ 1 4805980181
A.C.E.S.	+ 1 518 270 4747
A.S.R.	+ 1 407 767 5776
SACRAMENTO PRODUCTION SERVICES	+ 1 916 481 3679