

Volume 3, Number 2

SOUNDings

 SENNHEISER

Olympic Games
Olympic Games

Olympic Games

Expo 2000
Expo 2000

Summer of Superlatives!



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Eurovision Song C
Eurovision Song Contest



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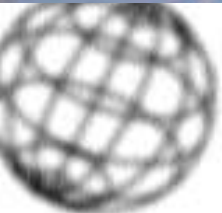


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A Summer of Superlatives...

Summer 2000 was a summer of superlatives for Sennheiser. International events presented challenges all over the world that were successfully solved by our local partners and our Wedemark engineers. The Eurovision Song Contest in Stockholm, the world exhibition Expo 2000 in Hanover and

finally the Olympic Games in Sydney: for all of these big events, the organizers relied on a state-of-the-art audio solution from Sennheiser.

Each of these events was a highlight in itself – and worth a title story. It was difficult to decide in favor of one project... therefore this issue has three title stories! They all go to prove that Sennheiser has much more to offer than high-quality products. During the past few years, Sennheiser has developed from a supplier of individual audio products to an international solution provider for an increasingly demanding industry. This is a special challenge for our local partners, and requires a lot of team work – see the Eurovision Song Contest in Stockholm. In the end, everybody will be pleased with the results: artists are able to perform with reliable, state-of-the-art equipment; our partners win satisfied customers and establish long-term business relationships; and Sennheiser successfully penetrates into new international markets.

Our perspective is clear: together with our partners we will focus on expanding our solution competence – even if that means that we cannot decide on a title story for Soundings...

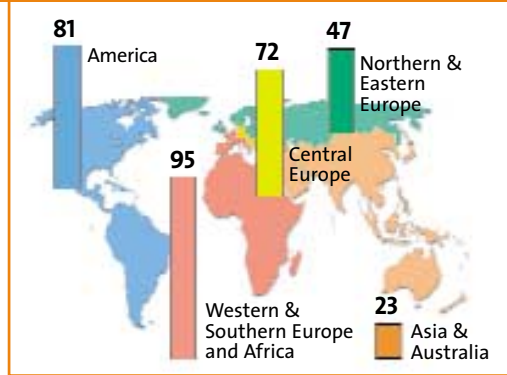
Enjoy the magazine!

Yours sincerely,

Rolf Meyer
(President)

Sennheiser Group Registers Increase in Turnover of 16 Percent

Continuing the positive trend of the past years, the Sennheiser Group again recorded a substantial increase in turnover in 1999. Sales revenue increased by 16 percent to reach DM 319 million. This growth is above all based on the very good results achieved by America and Western & Southern Europe and Africa. In America, net turnover increased by 33 percent to reach DM 81 million, compared to DM 61 million in 1998. Already at a high level, Western & Southern Europe and Africa registered a 9 percent growth from DM 87 million in 1998 to DM 95 million in 1999. Northern & Eastern Europe saw a substantial gain of 18 percent (1998: DM 40 million – 1999: DM 47 million). With 35 percent, Asia and Australia registered the biggest growth, with sales rising from DM 17 million to DM 23 million.



Central Europe experienced a 2 percent growth, attaining 72 million DM. The enormous importance of foreign markets for Sennheiser is also reflected by an export share of 77 percent.

With regard to product groups, RF wireless microphones had a 23.4 percent share, while headphones attained 17.6 percent and cabled microphones 16.7 percent. The remaining turnover was achieved by conference systems (10.1 percent), audiology products (9 percent), Georg Neumann (8.6 percent) and aviation

equipment (3.6 percent). The positive trend in turnover also resulted in an increase in the number of employees, which rose to 1,206 worldwide. "These figures prove our company's success as a medium-sized global player," states President Rolf Meyer.



Important Visitors at Sennheiser

On June 23, Sennheiser welcomed 50 under-secretaries to its Wedemark headquarters. Far away from the German capital, they experienced innovative corporate culture and future-oriented technology, accompanied by Professor Dr. Jörg Sennheiser, President Rolf Meyer and Vice-Presidents Volker Bartels and Dr. Heinrich Esser. Product managers presented their latest developments and gave an overview of their portfolio. The under-secretaries tested the Orpheus headphone system and the AudioBeam directional loudspeaker. A tour of the Neumann production, the automated evolution assembly line and microphone development rounded off an interesting day. The under-secretaries were greatly impressed by Sennheiser's innovative strength.

Future Is Now!

June 24, 2000 went down as another milestone in Sennheiser's company history. At the Sennheiser headquarters in Wennebostel near Hanover, company founder Professor Dr. Fritz Sennheiser opened one of the most modern microphone production centers worldwide. Professor Sennheiser, who has seen the company rise to a globally active group, delivered a moving opening speech in front of VIPs from politics and industry. The new high-tech building accommodates the manufacturing departments for Sennheiser condenser microphones and Neumann studio microphones as well as an ultra-modern clean room.

According to Dr. Heinrich Esser, Sennheiser's Vice-President of Production and Logistics, "Our products are setting standards worldwide and have to comply with the most stringent demands. Therefore, we have created absolutely stable production conditions. The 10 million mark building is fully air-conditioned, and the class 100 clean room even fulfills all requirements for the manufacture of semiconductor chips. Constantly high quality is ensured."

The highlight of the festive ceremony was the cutting of the "opening ribbon" by Professor Sennheiser, Dr. Esser and Dr. Birgit Grote, under-secretary of the Lower Saxony Ministry for Industry, Commerce, Technology and Transport.



Festive opening: (left to right) Professor Dr. Fritz Sennheiser, Volker Bartels, Karin Sennheiser, Dr. Birgit Grote, Rolf Meyer

Sennheiser at Magic in the Channel of Sounds



The Channel of Sounds with the Technology Cocoon



The Nature Cocoon



Experimenting with the vocoder in the Humankind Cocoon



The AudioBeam projects sounds around the listeners

Drumming envelops the visitor, chants echo from foreign countries, a didgeridoo is playing, water is splashing, and suddenly a train seems to race through the mysteriously lit tunnel at Sennheiser's Expo booth. At the World Exhibition 2000 in Hanover, Sennheiser is the only exhibitor to make "hearing" the focus of its booth and to invite visitors to an expedition of discovery into the magical world of sounds.

Architecture

Under an iridescently illuminated, tent-like roof, 28 meters of "sound channel" wind their way across Sennheiser's Expo booth. Following the Expo motto, the booth is subdivided into "Humankind", "Nature" and "Technology" – as are the three "Cocoons" that branch off it and inspire visitors to play with sounds.

The Channel of Sounds

Over 18 months of work have given the Channel its unique sound composition. Each channel area has its own acoustic topics. At the channel entrance, whispering voices prepare visitors for the sound experience, followed by an expedition that begins with Sennheiser's AudioBeam. Its directional reproduction projects sounds around the listeners: Caruso is singing, the murmur of a spring is coming closer and moving away again. A few steps further, a multitude of sounds and melodies unfold. The audio samples, collected and composed by sound designer Gregor Zielinsky, are rhythmically "united" by a bell motif. Their ringing

(and a few other sounds) runs through the entire Channel and links the three different areas.

The Cocoons

...are an invitation to experiment and play with sounds! A plasma screen in the Nature Cocoon lets you play a free jazz piano, headsets in the Humankind Cocoon electronically alter their users' voices via a vocoder, and the Technology Cocoon boasts NoiseGard™ headsets that eliminate the surrounding noise of manmade machines.

Equipment

Two kilometers of loudspeaker cable, 85 loudspeakers, 48 power amplifiers – an impressive audio installation. Audio, effects lighting, and interactive elements such as movement sensors, plasma screen etc. are controlled by a central Apple Macintosh computer with MIDI interfaces. Six samplers send their MIDI-triggered signals to mixing consoles which drive the loudspeakers that produce true surround sound.



Expo 2000:

Expo Partner

As Expo's exclusive Product Partner for Professional Sound, Sennheiser supplies all audio requirements for EXPO GmbH's venues and events. This partnership holds many interesting challenges, for example the joint concert of rock band "The Scorpions" with the Berlin Philharmonic Orchestra.

Sensational Cross-Over Success for The Scorpions and Berlin Philharmonic Orchestra

One of Germany's best orchestras, famous for its work with star conductor Herbert von Karajan, playing together with the rock band The Scorpions? Hard guitar riffs and soft violin sounds?

Sceptics of both "camps" indeed had enough "fodder" for critical comments. But the Expo concert on June 22 swept all these doubts aside. The audience was infected by a fascinating concert, both visually and acoustically harmonious, by enthusiasm and sensitivity of both band and orchestra. Those who had expected a "soft" concert were delightfully entertained by pure rock songs such as "Big City Nights" with guest star Ray Wilson; those who suspected that the orchestra only served as harmonious decoration were surprised by symphonic pieces such as "Crossfire" or "Moments of Glory", the official Expo hymn.

Sennheiser Microphones Make It Possible

The perfect ensemble not only demanded a thorough musical preparation but also tailor-made miking and monitoring. For this, organizers and the PA company mainly relied on Sennheiser. A



The Scorpions performed with the Berlin Philharmonic Orchestra

total of 80 wireless links were used for monitoring and pick-up of The Scorpions and a children's choir. Sennheiser's frequency management specialist Klaus Willemsen gave a helping hand in choosing the best frequencies. For the 140 members of the orchestra, freedom of movement was not exactly an issue, so they were miked by wired microphones. The orchestra also had to work with in-ear monitoring, a *terra incognita* for the musicians. The in-ear monitor supplied them with the mix of rock band, orchestra and choir, but the musicians were still able to monitor their play acoustically.

Rudolf Schenker of The Scorpions was thrilled: "Working with the Berlin Philharmonic Orchestra was a completely new and rewarding experience for us. Both sides were

extremely committed and disciplined. The wireless mics from Sennheiser performed flawlessly, and the in-ear monitoring had been optimally fine-tuned."



The World Exposition
1 June - 31 October 2000
Germany
Product Partner for
Professional Sound



www.sennheiser-expo2000.com



Olympic Games 2000 in Sydney

Sport fans across the world looked forward to September 2000 – finally, the Olympic Games had come! Behind the scenes, however, the Olympics started a long time ago for the organizers. Two years of intensive preparation were behind Syntec International Ltd., the Sennheiser partner for Australia and New Zealand. In close cooperation with the organizing committee for the Millennium Games, Syntec coordinated the wireless links for communication and reporting in the various Olympic locations – a true challenge for the frequency planners!

Frequencies for ENG

The Australian authorities blocked certain TV channels for use during the Olympic Games. Of these channels, some frequencies were reserved for local TV companies and for the official ceremonies. Other frequencies were earmarked for guest ENG teams. VHF frequencies “dropped out” before the Games began: With the Olympics, Australia introduced digital TV – which had been assigned the VHF range.

Relying on Know-How

Sennheiser and its partners can look back on extensive Olympics experience. The Atlanta Games benefitted from the know-how of Sennheiser Electronic Corporation, while the Winter Olympics at Nagano saw General Traders, Sennheiser’s partner for Japan, supplying the Games with MKH microphones and ENG equipment. Syntec offered similar services to the Sydney organizers.

Detailed Frequency Planning

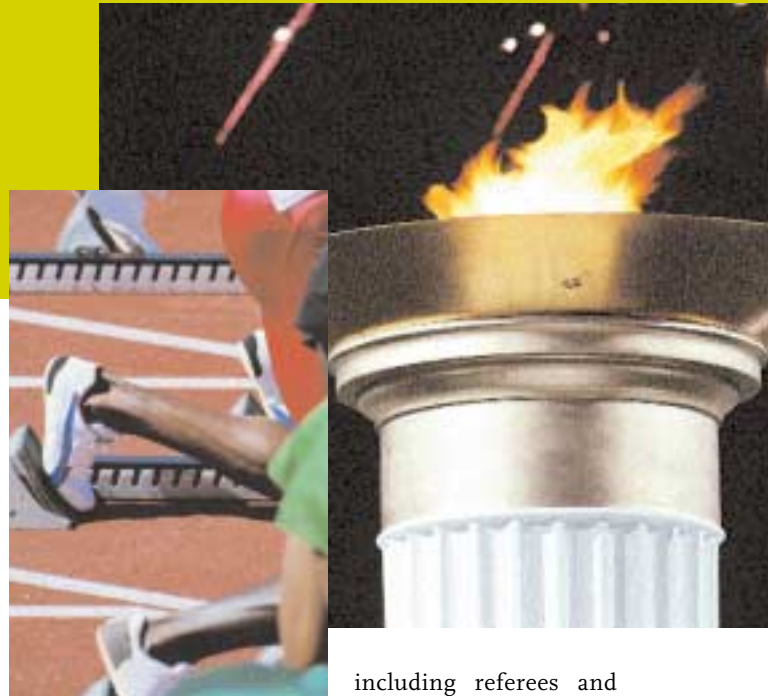
Assisted by the Sennheiser headquarters in Germany, Syntec worked out a

detailed plan for wireless links in the UHF range. The target was of course to provide as many links as possible in the given frequency ranges while ensuring freedom from interference. Different quality levels of the equipment to be used at the Games were taken into consideration. For example, Sennheiser’s state-of-the-art 3000 and 5000 lines require a carrier spacing of 300 kHz. With an IM spacing of 25 kHz, up to fifteen wireless links can be operated in the same 7 MHz TV channel. For the majority of the competition, specifications are not as good: their equipment can only handle eight or nine links within the same range.

A Flood of Applications

Applications for over 700 radio microphone frequencies reached the office of the Olympics organizing committee. Sometimes compromises had to be found, because in addition to the broadcasters, it was necessary to find frequencies for the committee (live sound from each venue

Higher, Faster, Farther



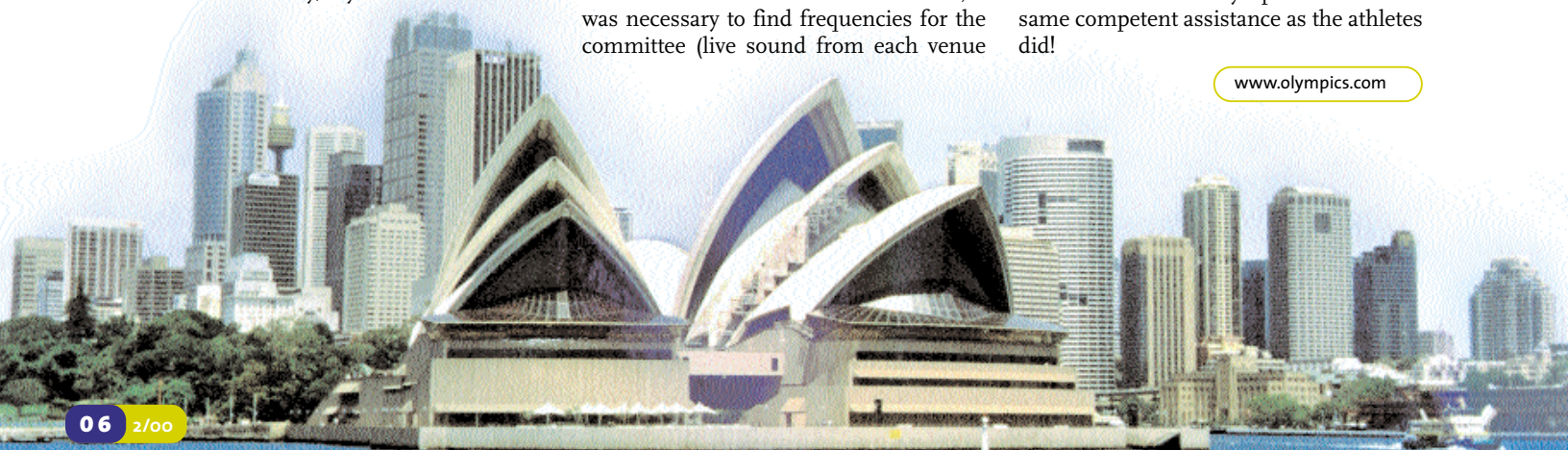
including referees and sound effects), for PA, communications, opening and closing ceremonies, in-ear monitoring as well as press conferences and entertainment within the Olympic areas.

Full, On-Site Service

Better safe than sorry: on the Olympic ground, Syntec checked all ENG equipment for the proper frequencies and RF output power. Syntec carried out repairs, provided spare parts and products, gave assistance in finding usable frequencies for the different locations and helped in finding rental equipment for use during the Games.

Thanks to Sennheiser and Syntec, broadcasters at the Olympics received the same competent assistance as the athletes did!

www.olympics.com



“Welcome Europe” – these words elicited a thunderous applause from 13,000 guests in Stockholm’s Globen Arena. Without a wireless microphone from Sennheiser, the soft voice of the petite girl, who welcomed viewers in over 120 countries to the Eurovision Song Contest, would hardly have been heard.

For the fourth consecutive time, and the 15th time altogether, Sennheiser supplied all microphone needs to the Eurovision Song Contest. Nearly a full year of hard work was behind a team of sixteen people from engineering, production, sales and marketing.



Eurovision Song Contest Stockholm

How everything began...

Even when the presenters of the 1999 Song Contest in Jerusalem announced “And the winner is... Sweden!” there was no time for a break for the Sennheiser team. The new goal was quickly set: equipping the Song Contest 2000 in Stockholm. When it comes to such a demanding live event as the Song Contest, not only state-of-the-art equipment is required, but also solution competence – and Sennheiser offers a lot of both.

The Jerusalem Model

As early as in November 1999, Lars Haeggström, Sennheiser AB’s Technical Project Manager for the Song Contest, took a delegation of Swedish Television to Israel to get first-hand information on the solutions provided for the last Grand Prix. At Kilim, the Sennheiser partner for Israel, the Northerners had a close look at how Kilim had cleared the hurdles of frequency planning, system configuration and sound reinforcement. In the end, the audio specialists of Sveriges Television were convinced by the excellent technology, the team’s know-how and the audio installation for Jerusalem: they commissioned Sennheiser AB to equip the Eurovision Song Contest 2000.

On the Right Wavelength

In January, Klaus Willemsen, Sennheiser Germany’s RF expert, travelled to Sweden to scan the contest venue for

occupied frequencies. Sweden is an eldorado for wireless communication, and finding interference-free channels represented a special challenge. After all, the audio transmission systems were not the only radio equipment to be operated during the Song Contest... There were mobile phones, walkie-talkies, ENG links and then Sennheiser’s 46 channels of EM 1046, SKM 5000 and SK 50a, plus 16 channels of SR 3056/EK 3053 in-ear monitoring which had to operate simultaneously without any interference.

In March, the “hot” phase began for Sveriges Television, Sennheiser AB and Sennheiser electronic. Frequency ranges for the RF wireless and in-ear monitoring systems were determined and approved by the Swedish postal authorities. Deft hands in production manufactured the RF systems and submitted them to three weeks of intensive testing.

Continuity and Comeback

On May 13, the big night had finally come. The audience was in a tremendous mood. Wild applause for the Swedish singer and his band; standing ovations for

the Danish song “Fly on the Wings of Love”. The microphone equipment worked perfectly – and at the end of the night, there were two big winners: the Danish Olsen Brothers, who had made a wildly acclaimed comeback, and the Sennheiser team, who had once more proved their competence in providing large-scale audio solutions.

The two beaming winners from Denmark were enthusiastic about their Sennheiser equipment: “We are very happy about the Sennheiser equipment, especially the in-ear monitoring. We have never before been able to sing this clean.”

Directly after the contest, the Olsen Brothers became Sennheiser endorsers...

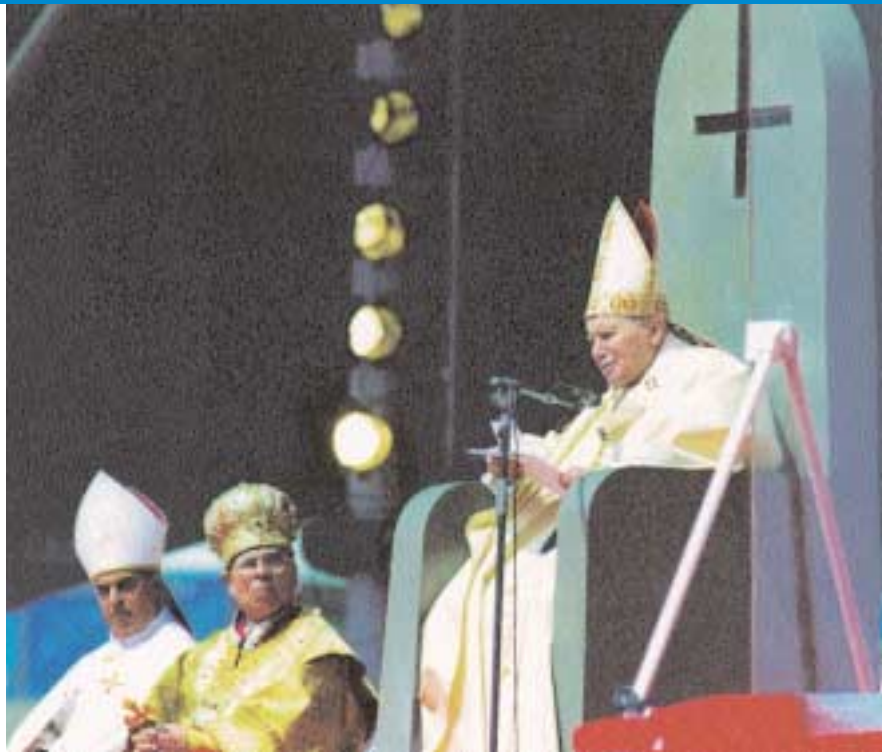
www.eurosong2000.com

A Historical Event –

Pope John Paul II Visits the Holy Land

For billions of Christians all over the world, the Pope's visit to Israel was the highlight of the Holy Year 2000. John Paul II visited the places where Christian faith began over 2000 years ago, and where two other great world religions, Judaism and Islam, have their roots, too. Near the Sea of Galilee, the Pope said a mass – an unforgettable experience for the large congregation at the Sea.

Kilim electronics Ltd., Sennheiser partner in Israel, reinforced the words of the Pope for the huge crowd of faithful. Besides a gigantic PA system with 15 delay towers, Kilim also relied on Sennheiser RF wireless systems and microphones from Sennheiser and Neumann. An SR 3056/EK 3053 system provided a wireless link to the delay towers; the security forces were issued with two Set 1083 systems. For the mass, the Pope used an EM 3532/SKM 3072 wireless system. An additional e 845 on a boom and a COM 1423 speaker microphone on the pulpit ensured that his every word was picked up. The two cardinals saying the mass together with the Pope were miked with two Neumann KM 140. In addition, Kilim electronics supplied a second EM 3532/SKM 3072 system and



COM 1423 for the mass in the open. Talking about open... the skies opened during installation of the audio system and dur-

ing mass – but the system worked perfectly despite the rain, and contributed to making the mass an unforgettable historical event.

Ladies and Gentlemen,

the Chancellor of the Federal Republic of Germany



When German Chancellor Gerhard Schröder appears at a press conference, journalists hang on his every word. Since April 2000, Sennheiser has been ensuring optimum sound for press conferences at the Federal Chancellery – with a specially developed speaker microphone, the ME 106 KA. The pre-polarized, back-electret microphone has been designed to the exacting requirements of the Federal Chancellery. A highly directional mic, the ME 106 KA features excellent feedback rejection, with its condenser principle ensuring detailed, natural sound. The mic has been optimized for lectern use, with a slim, unobtrusive design. But not every press conference is the same. To make the choice of microphone location flexible, the ME 106 KA is fitted with a special plug for connection to an RF wireless bodypack transmitter. After only three months of design work, Jürgen Gutmann, Sennheiser's Product Manager for Conference Systems, has designed a microphone which has lived up to the expectations of the Federal Chancellery. Congratulations!

LIPA Graduation:

Professor Sennheiser Presents Student Achievement Awards



Photograph: Simon Camper

LIPA graduation ceremony: Professor Sennheiser (2nd from right) on stage with Sir Paul McCartney (3rd from left), Mark Featherstone-Witty (4th from left), members of the Council of LIPA and 200 graduating students

At this year's graduation ceremony for The Liverpool Institute for Performing Arts, Professor Dr. Jörg Sennheiser, Chairman of the Board of Sennheiser electronic, presented the inaugural Sennheiser Student Achievement Awards. The ceremony, held in the art-deco splendor of the Liverpool Philharmonic Hall, saw Professor Sennheiser share the stage with Lead Patron Sir Paul McCartney, Principal and Chief Executive Mark Featherstone-Witty, members of the Council and Trust, members of staff, and almost 200 graduating LIPA students.

In an address, Professor Sennheiser praised the achievements of the Institute in developing such high standards of education and training, highlighting in particular the unique multi-disciplinary and

collaborative aspects of the curriculum, between performance and technical studies, as having been critical in attracting Sennheiser's support three years ago. Professor Sennheiser then presented the three Achievement Awards to a total of five students for work of outstanding merit in both recording production and theatrical sound design.

Among the graduating students was Adam Fulton, who was awarded a first class Bachelor of Arts with Honors in Sound Technology; he was the second Sennheiser Scholarship Student to graduate and to achieve a first class degree.

Professor Sennheiser and Paul Whiting, Managing Director of Sennheiser UK, met Sir Paul McCartney at a private function after the graduation ceremony.

Sennheiser funds a number of ongoing sponsorship initiatives at LIPA, principal among them the international scholarship for students studying for the Sound Technology BA degree. There are currently three Scholarship students studying at LIPA. Further support is provided by the donation of professional theater and studio equipment to assist in expanding the resources available for teaching and production activities. The Sennheiser Student Achievement Awards are made throughout the academic year in recognition of personal achievement and innovation in the field of sound and performance arts related technology.

www.lipa.ac.uk

Sennheiser Pilot Headsets on the Fast Lane



Reliable communication with Sennheiser headsets

When Schumacher, Coulthard, Häkkinen & Co. fight for the Formula One world championship in their ultra-fast racing cars, race organizers, organization crew and track marshals behind the scenes are busy ensuring a safe race.



Quick, precise, and clearly intelligible communications are vital to protect the lives of the drivers. Their communication systems must withstand the roaring of motors and the hectic rush of the race.

In cooperation with Riedel Funk- & Intercomtechnik, responsible for the radio equipment at the Formula One races on Nürburgring, in Hockenheim and on the Austrian racetrack AI, Sennheiser equipped the organization crew with 130 aviation headsets. The track marshals used HME 100 headsets, while the race organizers wore HMEC 300s with Noise-

Gard™ active noise reduction. Both headset models were slightly modified to adapt them to special Formula One requirements. The push-to-talk (PTT) button was placed on the earcup for quick and easy operation. In addition, the ear-defender headsets were adapted to the latest Motorola radio sets, including the GP300, GP340, GP360, GP380, GP600, and GP680 models.

The Sennheiser headsets became an instant hit with the organization crew. The track marshals, who sometimes have to wear their headsets for more than 10 hours, unanimously praised the excellent attenuation and extended listening comfort. Equally popular were the pouches Sennheiser supplied with the headsets. They not only accommodated the headset plus accessories, but were also big enough for some soft drinks and snacks, making them a very popular companion at the racetrack.

www.formula1.com

New Ways to Success

Their website is the number two most visited on the Internet; their catalog is one of the world's top five. Micro Warehouse (www.warehouse.com) is America's top specialty catalog and online retailer of brand name personal computers, software, accessories, peripherals and networking products. Now the retailing giant has added Sennheiser's medi@coustics series to its print and online catalogs – the only line of computer headsets and microphones in the current catalog.

"The addition of the medi@coustics series in the Micro Warehouse catalog is an exciting milestone for both customers and the company alike," says Sennheiser Electronic Corporation's headphone/multimedia product manager Rob Douglas. "Now tech buyers looking for Sennheiser quality and innovation need go no further than their favorite catalog to find it. Likewise, the unique and exclusive exposure offered by the Micro Warehouse catalog and website will help spread our message of reliability and technical excellence throughout the IT and home office marketplace."

www.warehouse.com

Big and Small Stars at the Zlin Film Festival

At Europe's greatest and oldest festival for children's and youth films, held in the Czech town of Zlin, "Dětská televize" (Czech Children's Television) gave teenagers the opportunity to gain first-hand experience in TV work. At the international festival, the 12- to 18-year old junior journalists obtained their first VIP interviews. World stars such as Gina Lollobrigida and Annie Girardot came to Zlin and readily answered their questions for children's and youth films. The interviews were broadcast by Česká televize and several Czech cable TV stations.

Panter, Sennheiser partner in the Czech Republic, has been sponsoring this project of Dětská televize for quite some time. Therefore, the "little stars" from Children's Television used microphones from Sennheiser's evolution wireless Series for their festival interviews.



Annie Girardot (top) and Gina Lollobrigida, interviewed by the junior journalists from Dětská televize

Sennheiser Wireless at Polish Public Television

Ryszard Kuśmierski, Chief Engineer in the Department of Technical Support for Production and Broadcast at Polish Television in Warsaw, interviewed by Kacper Miklaszewski of Pro Audio, the Konsbud Audio bulletin.

Miklaszewski: Polish television has over 400 wireless microphone channels in its Warsaw and regional stations. How many of these remain at your disposal?

Kuśmierski: At present our department has 69 microphones, transmitters and receivers of various series. And that is not too much. It happens that several studios need the equipment at the same time. Quite often the OB Department wants to borrow some equipment, or smaller independent studios ask us for technical support. We have just complemented our equipment by two additional 8-channel systems to support externally produced programs.

Miklaszewski: Do you use equipment of various manufacturers?

Kuśmierski: No, all our microphone equipment is manufactured by Sennheiser. It was a conscious decision to use one manufacturer – a good company makes a decision on the frequency network once and does not change it for a long period of time. We have got one platform, which we can extend just as we like. The advantages are obvious: there are no problems if you quickly need to interchange microphones with different pick-up patterns or replace an item with that of another system. Everything is compatible, and servicing is easy.

Miklaszewski: For what kind of productions do you use wireless microphones?

Kuśmierski: With television, the video is almost always recorded together with the complete sound. Post-syncs are very rare. In the past we used microphones on booms. Then came the era of cabled miniature mics which were still connected to a console. The introduction of wireless microphones finally gave actors complete freedom of movement. It opened new, inspiring possibilities for directors – nowadays we cannot even imagine a show without wireless microphones. In journalist programs, we very often use both wireless and wired microphones. In order to have a coherent sound, both types of microphones should have the same transducers, and all wireless microphones similar noise reduction systems. Wireless and wired microphones should be from the same manufacturer, in our case – Sennheiser. Ample experience in manufacturing miniature transducers was very important for us – 80 per cent of all microphones in television are miniature mics clipped to the clothing.

Miklaszewski: Is it difficult to find interference-free radio frequencies in Warsaw?

Kuśmierski: We prefer to use our own television channels. Thus we don't cause interference with other stations, and no one can jam our transmission as this frequency range is protected. The situation is worse with live transmissions in which many TV companies participate, but here we can change the channel settings very quickly via software. If this is not enough, the Sennheiser Service Department can provide different hardware, which allows use of further frequencies.

Miklaszewski: What is the sound quality of microphones used by Polish Television?

Kuśmierski: First of all, the sound quality depends on the transducers. The sound should not be flawed. Sennheiser uses transducers of the highest quality. Experienced sound engineers say they can sometimes hear the noise reduction system but that is the price you pay for freedom of movement. And usually it is the signal dynamics and not the sound which gets distorted. One thing is sure: the future will definitely be wireless.

www.tvp.com.pl • www.konsbud-audio.com.pl



When sponsoring a talented sportsman, you are on the edge of your seat during competitions, and share all the ups and downs he may experience. René Rast is a kart racing ace – despite his very young age of only 13 years. He has already qualified for the German junior national team, and we wish him the very best for the remaining races of the season! And who knows – maybe we will see him in the Formula One in a few years. The most popular German racing driver, Michael Schumacher, also started his career with kart racing...

For information on René's races, his career and the latest news, please visit his website at www.rene-rast.de. And do not forget to leave a greeting in his guest book...

www.rene-rast.de



Circulating for Sennheiser: four colorful buses with Sennheiser advertisements are currently travelling through the streets of Singapore.

www.sennheiserasia.com

Live on Air:

Holger Küchler

April 20 saw the “ON AIR” lamp of TV station Hamburg 1 go on for Holger Küchler, Managing Director of Sennheiser Vertrieb. More than two million people watched the latest developments at Sennheiser. Main topics of the 10-minute interview were the strengths of the company, the German Industry Innovation Award for AudioBeam, and new products such as the evolution microphone series.

www.hamburg1.de



Life Tells the Best Stories...



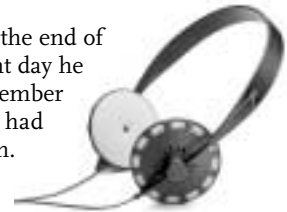
Some stories are so wonderful, that you simply have to relay them! The late 1980s, a sunny Saturday afternoon on an Australian farm. Near a marvelous lake,

Bruce Wicksteed and his band were rehearsing in their home studio, when they were suddenly interrupted by a couple of large kangaroos passing close to the house at a very fast pace, followed closely by an enormous kangaroo dog in hot pursuit. As the band watched the kangaroos and dog disappear into the bush, three Aboriginal friends of Bruce appeared, explaining that they had been chasing the kangaroos for several hours. Bruce and the band decided to join them, and a hot chase around the lake began. Bruce, the band, the Aborigines, the dog, the kangaroos. In the excitement, one of the band members had left a pair of HD 40 headphones around his neck when setting off. He quickly took them off and placed them in a tree – to be kept safe and collected

later. But at the end of the turbulent day he did not remember where he had placed them.

Twelve years later, Bruce returned to the farm to build his own house near the lake – and what did he find in a tree? Yes, the HD 40s. They had spent twelve years exposed to extreme heat, rain, cold and tree dwelling critters. Bruce took the poor headphones to his home, purchased two new foam pads and – the headphones worked perfectly!

A great story and certainly the most exciting product test ever made for Sennheiser!



Greetings from Outer Space!

Space: the final frontier, undiscovered worlds, future-oriented technology. Since April 2000, Russian space station MIR has been manned again. Two Russian cosmonauts have returned to MIR, accompanied by NoiseGard™ headsets from Sennheiser.

Having stood all tests in aviation, NoiseGard has now accepted the space challenge. “Adapting our systems



for space travel was a very special task,” comments Rolf Meyer, President of Sennheiser electronic. Contrary to common belief, life aboard the space station is extremely loud. A multitude of fans and ventilation systems generate an incredible noise – which is now attenuated by Sennheiser headsets. In cooperation with Russian space agency

Energija, Sennheiser engineers have modified the NoiseGard headsets for connection to the MIR’s on-board system. Unlike conventional headsets, which achieve attenuation mechanically by using bulky and heavy ear cups, NoiseGard headsets reduce the noise electronically, offering excellent attenuation while at the same time keeping headset weight to an absolute minimum for extended listening comfort.

Negotiations about further cooperation for international space projects are in progress. One thing, however, is certain: Sennheiser supplies future-oriented technology.

Cannes – Excellent in Every Respect!

Once a year, international film and show stars step onto Cannes' famous red carpet, accompanied by the popping of flashbulbs of hundreds of cameras; and the French city becomes a symbol of success, beauty and glamour. But in the "Palais des Festivals et des Congrès de Cannes" the season never ends. No other venue in France hosts as many events, conferences and congresses per year as Cannes does. The reason is not only the fantastic Mediterranean location and the international, chic flair of the city but also the venue itself.

The "Palais des Festivals et des Congrès de Cannes" is one of the best equipped event and congress centers in Europe. To keep this high technical standard, Sennheiser France was commissioned to bring the infrared transmission

system up to date. 3000 HDI 1029 infrared stethoset receivers now ensure acoustically perfect events and conferences. The ergonomic HDI 1029 is very easy to use. Features include a built-in squelch which protects the user against hissing noise and serves as an energy saving function during conference breaks.

The stethoset receiver is powered by a BA 90 rechargeable battery and can be quickly and easily recharged in special charging units or charging cases, to be ready for use the next day. With such



A bird's-eye view and an impression of the varied life inside the "Palais des Festivals et des Congrès de Cannes"



state-of-the-art conference systems, Cannes will certainly be booked up for the next few years...

Celebrating Great Britain



Mark Underwood, RF Technical Manager at Delta Sound

For Great Britain, the year 2000 is a year of celebrations. Just before the Queen Mother's 100th birthday on August 4, the United Kingdom staged the Royal Military Tattoo 2000 – the most ambitious military tattoo ever in the

history of the United Kingdom. Over 1,800 military personnel, including 600 musicians in three marching Royal Marine Bands, 180 horses and a vast assortment of guns and historical and modern day military hardware of the Army, The Royal Navy and the Royal Air Force could be seen and heard from July 10 to 15 on London's Horse Guards Parade.

Sound designer for this unique 90-minute spectacle of theater, military precision and pageantry was Paul Keating, Director of Delta Sound Ltd.: "From an RF point of view, this is a huge space, 120 meters by 90 meters, the biggest RF distribution we have ever done. Sennheiser UK has helped us tremendously in pulling this off. With all of the theater stuff going on in London, we have had to apply for special frequency allocations, so all the RF had to be switched over to non-standard frequen-

cies in the 600, 700 and 800 MHz bandwidth. Delta Communications, our sister company, has had to design a special aerial system, six aerials arranged in diversity pairs to cover the parade ground, providing maximum rear-field rejection and creating the maximum focus within the arena."

"This event was to be unlike any other event ever held before, moving away from the traditional style of military tattoo and giving the show a greater sense of theater. The major challenge was in achieving a greater level of reinforcement for the various marching bands, especially as they countermarched. The reinforced sound actually tracked the movement of the bands. We resorted to mixing the marching bands to a greater extent than anyone has previously experienced."

For the sound transmission, 3000 and 5000 series receivers were used with SK 50 pocket transmitters and MKE 2 Red Dot microphones, which can easily handle the very wide dynamic range and high SPLs of the military brass.

The Royal Military Tattoo 2000 was a perfect show of lighting and laser techniques, projection and audio technology. And as there is no end to special events in Great Britain in 2000, the same sound system was used for Queen Mum's Birthday Celebrations. Happy birthday!

Take off with Sennheiser!

Everything revolved around aircraft at this year's ILA aerospace show, held in Berlin from June 6 to 12. Being the oldest and one of the world's biggest international aviation shows, ILA hosted more than 850 exhibitors from 35 countries, showcasing the most recent product developments on this internationally expanding market. As an exhibitor, Sennheiser showed its entire aviation range.

Since Sennheiser delivered its first pilot headsets to German Lufthansa in 1980, the company's aviation equipment has become an integral part of many aircraft cockpits. Today, over 120 international airlines rely on high-quality Sennheiser headsets. At ILA, the focus was once more on NoiseGard™ headsets, which actively reduce noise in the annoying low-frequency range. A combination of passive headset and active NoiseGard compensation yields a total noise reduction of over 80%. NoiseGard not only protects the pilot's hearing, but also reduces stress and increases concentration, especially in situations that demand the pilot's full attention.

What is ideal for pilots is equally good for passengers traveling in noisy aircraft cabins. Therefore, Sennheiser also exhibited its NoiseGard in-flight headphones. They provide increased passenger comfort, relaxed flight and optimum audio quality for music and videos.

Welcoming the Next Generation

Today's generation is young, fresh and dynamic. They like jogging, walking, cycling or roller-blading through the cities. They are mobile and flexible. Music is an important part of their lives – everywhere and at all times. Sennheiser's new generation of in-ear headphones is just as dynamic as today's youth. The MX Series comprises the 300, 400 and 500 models for excellent sound on the go. With a frequency response of up to 18–22,000 Hz (MX 500), fans of bass-driven hip hop and techno rhythms as well as rock and pop enthusiasts will have a whale of a time.

Quickly hooked up to any portable CD player, DAT recorder, MiniDisc or MP3 player, the new MX Series delivers exceptional musical reproduction with excellent bass response. For convenience, the MX 400 and 500 are supplied with a carrying case that fits easily into the pocket. The MX 500s are additionally fitted with a volume control built into the cable. Like its tried-and-tested predecessors, the new MX generation features selected materials and excellent workmanship for ruggedness and extended service life.



An Acoustic Revolution in the Classroom

Many schoolchildren have difficulties understanding what their teachers are saying – in the purely acoustical sense of the word! Sometimes classroom acoustics are disastrous, or the teachers speak too softly. Some pupils may have a slight hearing impairment, others are hyper-active. Sometimes lessons are boring...

Sennheiser's new EMP 2015 Soundfield system is an ideal solution to almost all of these problems. Similar to a miniature PA system, "Soundfield" consists of an ME 3 headmic with SK 500 body-pack transmitter for the teacher and an EMP 2015 amplifier with integrated receiver for feeding up to eight loudspeakers in the classroom. Optional FM receivers for children with severe hearing impairments can be connected via a line output. And as the system is compatible to evolution wireless™, many convenient accessories are readily available.

With the EMP 2015 system, the whole class can acoustically sit in the front row. After school, it can even be used for perfect sound at parties – but not even Soundfield can ensure attention during boring lessons!



Ideas Make Markets

For Sennheiser USA, market orientation is to recognize customer needs as early as possible, and, for example, to translate them into attractive, everything-you-need-in-a-box promotional packs.



With the brand new Kick Pack for drummers, Sennheiser Electronic Corporation is adding yet another evolution pack to its highly successful e-pack (evolution mic, cable and boom stand), three-pack (three evolution mics with mic clips and pouches) and SET 604 (evolution instrument mic kit), putting quality mics into the hands of up and coming musicians at extremely attractive prices.

The new Kick Pack includes an e 602 mic, cable and mini mic stand. Optimized for high sound pressure levels and extended low frequency response, the e 602 is the perfect kick drum mic. Its cardioid polar pattern and exceptional durability make it an ideal choice for stage and studio use.

Assistive Listening in a New Design

Sennheiser's new audiology line Set 800 perfectly combines ergonomic aspects and innovative technology with modern design. Succeeding the Set 250, 500 and 2500, the 800 systems let you enjoy clear TV sound or music – no matter whether you prefer infrared transmission (Set 810) or radio transmission (Set 820) with the additional benefit of being able to move around freely.

With the new series, classic, functional products have been given a modern look. Product design was supported by German design students of Potsdam Fachhochschule, who developed various ideas for products revolving around better hearing. Sennheiser awarded prizes to the four most innovative works.

The new 800 line not only comes in a fresh look – the IR system is red, the RF system blue – but also includes many new, convenient functions, such as an extra-large, easy to use volume control, an automatic on function when the stethoset headphones are put on, individually adjustable earbow caliper pressure and 4-hour quick charging. For both systems, Sennheiser also offers small “receiver only” variants for connection of headphones, induction neck loops or hearing aids with audio input. The new 800 line will be shown for the first time at the Congress of Hearing Aid Acousticians in Cologne (October 5 – 7). The RF version will be launched in spring 2001.



Many Thanks

to the Readers of *Sound Check*,
Keys and *Tastenwelt!*



SOUND CHECK
FACHBLATT

The readers of German magazines *Sound Check*, *Keys* and *Tastenwelt* have given Sennheiser's evolution wireless in-ear monitoring system the 2000 Readers' Award, voting it one of the most important audio products of the year.

Congratulations

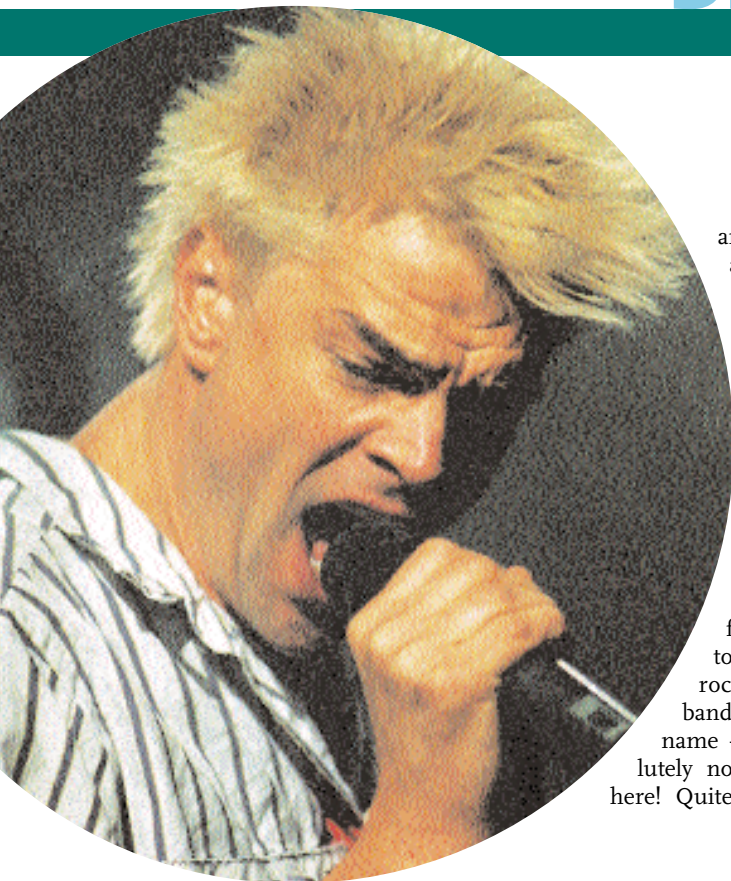
... to the evolution wireless Series! The Association of German Music Stores has voted Sennheiser's evolution wireless Product of the Year 1999/2000 in the MI category.



Very pleased about the award: Product Manager Michael Polten (top) and Marketing Manager for Central Europe Frank Kirschner (1st row, on the right) with the German distributors

“Die Toten Hosen”

Sing with evolution



Their mixture of rock, pop and punk is cult. Their direct and mostly socially motivated songs are incomparable – their provoking live performances just legendary... the German band “Die Toten Hosen” has taken punk rock to another dimension.

Witty songs have long since catapulted The Toten Hosen from the clubs of their home town of Düsseldorf – where the band was founded in 1982 – into the top league of German punk rock music. Fortunately, the band does not live up to their name – “Tote Hose” means: absolutely nothing is happening around here! Quite on the contrary: on their

tours, the band is celebrated enthusiastically by a huge following of fans, who are rewarded by energetic stage shows and great songs.

The Toten Hosen want to offer their fans the very best in live sound, so the band relied on Sennheiser evolution™ microphones for their tour 2000. The rugged evolution series are just the right microphones for the dynamic punk rockers: lead singer Campino used an evolution wireless™ microphone, while the band sang with wired e 865 condenser microphones. Unfortunately, Campino’s crucial ligament was not as robust as the evolution mics: he tore a ligament during a concert, and the tour had to be interrupted. We keep our fingers crossed for the band, and hope that they will soon be back on the road with their hit album “Unsterblich”!

www.dietotenhosen.de

Monitoring with Sennheiser

What do a musical legend like Kenny Rogers, who is presently rocketing the charts again with “Buy Me a Rose”, an alternative band like “Cracker” and newcomers like “Apartment 26” have in common? They all rely on the excellent performance of an evolution wireless™ in-ear monitoring system.

Kenny Rogers’ sound engineers are always looking to upgrade his sound system. Frank Farrell described the motivation behind the in-ear monitors: “Kenny uses stereo wedges, but hates side fills. When Kenny needs to hear the true stereo image that I’m creating for him, we switch to the in-ears to get him out of the sound chamber he’s in. Randy Dorman, Kenny’s guitarist and a very picky jazz and country musician in his own right, is convinced the ew 300 IEM sounds warmer and clearer than the wired in-ear monitoring system we have!”

In the bustling world of alternative music, Cracker’s singer David Lowery is also supplementing the traditional wedge with one ear from the ew 300 IEM. Facing the vicissitude of monitors from club to club, FOH man and tour manager Woody Nuss secured the evolution wireless system to help ameliorate the situation for Lowery. Explained Nuss, “I put David’s voice in one ear as a sort of safety net. He can dial in just the right amount of himself from the belt pack. The range of the system is fantastic. Because I manage the tour, I’m often obligated to leave the soundcheck. I’ll just grab the ew 300 IEM and eavesdrop as I walk around to the club manager’s office. Now we’re working

on getting a couple more for the guitarist and bassist because it has made such a difference in David’s performance.”

Another new evolution user is Apartment 26, a “metal meets pop” group currently touring clubs and amphitheaters to promote their album “Hallucinating”. Drummer Kevin Temple knows the pain of “monitors on 11”: “We get whatever monitoring is left over. That’s usually a burnt-out wedge for me. Because I play to sequences and I hit so hard, I always ended up asking for a monitoring level that was too loud for my own good. Life has changed since I went to the ew 300 IEM. My volumes are under control, and I can hear the sequences and my own performance with a clarity that wedges couldn’t approach. I play tighter as a result, and my ears don’t ring after a show.” Or as their FOH engineer Rob Thomas put it: “Sennheiser wireless technology is years ahead of the competition and the only serious game in town.”

www.kennyrogers.net • www.crackersoul.com • www.apartment26.com



Woody Nuss, tour manager and sound engineer of Cracker

A Myth Rocks the Eiffel Tower

When a rock legend like Johnny Hallyday celebrates his 40th stage anniversary, a concert of superlatives is a must. On June 10, more than half a million fans rocked around the Eiffel Tower, while several millions of viewers watched TF 1's live broadcast. The French superstar thanked his fans with free admission and a sensational stage show.

The set-up was phenomenal: A giant video screen, surprising light effects, pyrotechnics along the total height of the Eiffel Tower – and state-of-the-art RF wireless from Sennheiser. Using the rugged EK 3053 bodypack receiver and SR 3054 transmitter for in-ear monitoring, Johnny Hallyday had the show under perfect acoustic control. The tremendous mood of the audience was captured by four MKH 70 microphones. Johnny Hallyday, his background singers and his many guest stars sang with SKM 5000 wireless microphones, while Johnny's band used SK 50 bodypack transmitters for their instruments.

Behind the scenes, Sennheiser France ensured optimum RF conditions for this mega-event. Of the over 40 RF channels



used, 33 were Sennheiser. A very special challenge for Sennheiser France was the planning of suitable RF frequencies. Not only did they coordinate the carriers of PA giant Clair Brothers, of two video cars, one radio car, and two OB vans, but they also had to contend with the powerful TV transmitters on the Eiffel Tower (65 channels – 550 kW) and in its vicinity (6 channels – 5 kW).

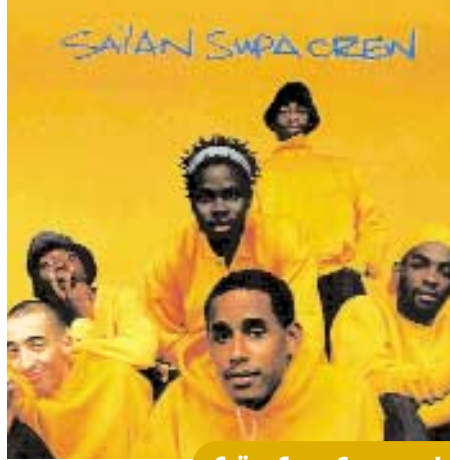
With the same microphone set-up, but in a more “intimate” atmosphere, Johnny Hallyday continued to celebrate his anniversary in two other Paris locations – with the support once again of Sennheiser.

www.hallyday.com



Big Mama

Aug 8, 2000



Saïan Supa Crew

July 28, 2000

Fader5000

June 7, 2000



Hardy Hard

Aug 25, 2000

Friday on My Mind – A Gift for the Expo City

Eat no Fish

Aug 11, 2000



If you are planning to visit the world exhibition Expo 2000 in Germany, or if you happen to be traveling somewhere near Hanover and are a fan of excellent rock, pop, folk or hip-hop music, choose a Friday night for visiting Hanover! Under the motto "Friday on My Mind", international musicians and bands such as "Reno's Men" from the USA, "Fader5000 featuring Nigel Clark" from Great Britain, "Saïan Supa Crew" from France and "Harmony Central" from Germany are turning Hanover's Opera Place into a tremendous concert arena.

Sponsored by Sennheiser electronic, Expo's Product Partner for Professional Sound, "Friday on My Mind" taps in to Sennheiser's worldwide artist contacts. Since June 30, well-known musicians and tomorrow's stars have played before an international audience every Friday. Rolf Meyer, President of Sennheiser electronic, comments: "This free series of concerts is our gift for the Expo city and its visitors."



The World Exposition
1 June-31 October 2000
Germany
Product Partner for
Professional Sound



Hamlet

Sep 15, 2000



Oscar Andrade

July 14, 2000



Harmony Central

July 21, 2000

Two Strong Partners

— One Great Success



S as in sensational. **T** as in top hits. **I** as in intensive. **N** as in nothing can stop him and **G** as in Grammy Award winner 2000. **STING!** A unique voice, equally at home with rock songs and soft ballads. A man who has always been looking for new musical challenges and has created his very own distinctive style. In the music business for almost 30 years, he has always managed to surprise fans and critics with new ideas. Pop songs with reggae or jazz elements, rock with classical motifs, influences from country and world music – no matter what the combination, Sting’s songs are certain to become hits.

With “The Police”, cult band of the eighties, Sting hit the world charts with hits like “Every breath you take” and “Roxanne”.

When Sting broke away from the band and started a solo career, success kept coming his way: songs like “An Englishman in New York” and “Russians” have become undisputed classics in music history. For his new album “Brand New Day” Sting recently won the Grammy for Best Pop Album – and was also awarded the Grammy for Best Male Pop Performer.

A top artist like Sting makes stringent demands on his technical equipment. For his “Brand New Day” world tour, Sting relies on the equally brand new e 865 condenser microphone, Sennheiser’s latest addition to its series of evolution™ stage microphones. Vish Wadi, Sting’s sound engineer, is proud to have helped in the fine-tuning of the e 865: “With this microphone, Sennheiser is reaping the results of its close cooperation with artists and sound engineers. The e 865 has been designed according to the wishes and requirements of those who use it daily.” Cutting easily through high on-stage levels and reproducing even the finest nuance in sound, the e 865 is made for Sting’s voice. It has excellent feedback rejection and efficiently suppresses pop noises. Moreover, the new condenser microphone easily withstands the rigors of touring and rough stage use: it can handle SPLs of 150 dB and features a rugged all-metal housing. The e 865: made by professionals for professionals.

www.sting.compaq.com

Sound Engineer Leo Garrido Captures Brazil’s Prestigious Audio Award 2000

Noted Brazilian sound engineer/producer Leo Garrido was recently awarded his country’s Audio Award 2000 in the “Professional of the Year in Live Recording” category for his groundbreaking work on the “Paralamas Unplugged” sessions recorded during the AES Brazil 2000.

Garrido, owner of XEF Sound Productions and a longtime sound engineer, not only recorded the musicians’ live, unplugged CD, but also was responsible for setting up and managing the venue’s sound system at the Parque Lage in Rio de Janeiro. He also managed the mixing of the CD and DVD formats with partner Vinicius Sa.

Critics praise the Paralamas recording as a reference work that satisfies even the most demanding audiophiles. In addition to the Audio Award 2000, this CD has been nominated for the first Latin Grammy Awards in the rock album category and will be released in multi-channel DVD format.

In capturing the raw sound of the musical event, Garrido relied on a variety of

Sennheiser and Neumann microphones. Models included the Sennheiser MD 409, MD 441, MD 431, and MD 421 II dynamic units; e 845 and e 604 evolution™ microphones; ME 64/K6 and KM 184 condenser

mics; and the Neumann KU 100 binaural dummy head. Onstage, Garrido employed the Sennheiser high-end wireless SKM 3072/EM 3032 systems, and the state-of-the-art SR 3054/EK 3053 in-ear wireless monitoring system.

“It is a great honor to have participated with Leo in this historic live recording in Brazil,” said Alexandre Algranti, general manager of Sennheiser/Neumann Brazil. “We are certainly pleased that Senn-

heiser and Neumann microphones and in-ear monitoring systems continue to live up to the exceedingly high expectations of an audio perfectionist like Leo Garrido.”



Photograph: Cristina Granato

Live & unplugged: Paralamas, brilliantly recorded by Leo Garrido

An Extraordinary Live Project: Sennheiser and La Traviata



Behind the scenes: EM 1046 receiver systems

Costumes, interior decoration... it seemed as if time in the Italian Embassy in Paris had stood still since the 19th century – if it hadn't been for the cameras of Italian broadcaster RAI and modern Sennheiser RF wireless systems! The former “Hôtel des Boisgelin” was the setting for a remarkable project of Radio Televisione Italiana: the live broadcast of Verdi's “La Traviata”.

For a long time there had not been anything new in opera programs, until RAI decided to broadcast Verdi's classic opera live (!) from its original settings in Paris and Versailles. In Sennheiser electronic and its partners Exhibo (Italy) and Sennheiser France, RAI found competent solution providers for their ambitious project.

In a metropolis like Paris, many frequencies are already occupied by numerous radio and TV stations and countless RF communication services – a true challenge for frequency planning. The four settings for the opera required 88 free frequencies which were found in five frequency windows of 24 MHz.

Each setting had its own control room for audio and video. The orchestra played “invisibly” in a fifth location, its members wore “HD 60 TV” headphones for monitoring the sound of the opera singers. The singers were miked by unobtrusive MKE 2 clip-ons, with bodypack transmitters hidden in the costumes that transmitted the sound to EM 1046 receivers.

The Sennheiser equipment used for the live broadcast included 88 SK 50 pocket transmitters with clip-ons (back-ups included), 11 EM 1046 receiver systems, various antennas, antenna boosters and splitters as well as 60 headphones.

Half a year of intensive preparation had finally paid off: on Sunday, June 4, RAI broadcast La Traviata live – a treat for opera lovers in 127 countries.



The Italian Embassy in Paris – a beautiful setting for the live broadcast of Verdi's “La Traviata”

France Celebrates National Holiday – With the World's Biggest RF Wireless System



More than one million spectators lined Paris' Champs Élysées and Place de la Concorde to watch the traditional July 14 parade – while Sennheiser specialists from three countries worked behind the scenes to ensure perfect sound transmission. Sennheiser France, Sennheiser BeLux and Sennheiser Germany miked all military bands plus choir, and set up the world's biggest RF system to transmit the musical program from Place de la Concorde.

The emblem of Paris, the Eiffel Tower, held quite a few challenges for the frequency planners. Transmitters with a total output power of 550 kilowatts “eclipsed” the RF power of the bodypack transmitters. In addition, a multitude of frequencies from ENG teams had to be coordinated; in France alone, the three biggest TV stations provided a live coverage of the parade. However, Sennheiser managed to clear these hurdles by careful frequency planning, special antennas with a rear-field rejection of more than 20 dB, and some specially modified antenna boosters and splitters.

Finally July 14 had come. With a total of 106 receiving channels (including two back-ups), the world's biggest RF system was put into operation. The gigantic set-up included 104 SK 50 pocket transmitters with MKE 2 Gold and MKE 2 Red Dot clip-on microphones, 52 receiving channels on 5000 Series receivers, 16 EM 3532 twin receivers, 8 EM 3032 twin receivers and 6 EM 2004 receivers. The 3000 and

5000 Series models were controlled via Sennheiser's proprietary SMCD software.

At the end of the day, the Sennheiser team from France, Belgium and Germany looked back on a successful event. Hundreds of thousands of people in Paris and several million TV viewers had celebrated their national holiday with an excellently transmitted musical parade.



Paris' July 14 Parade – transmitted flawlessly thanks to Sennheiser

Miking –

Tips and Tricks from the Professional

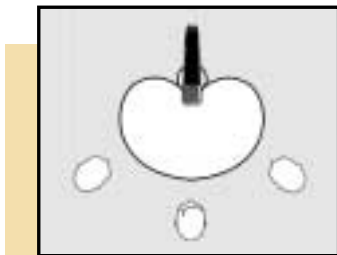
For perfect miking, the sound engineer needs two things: the right microphone and the right microphone position.

Lead Vocals

For best results use a uni-directional microphone (cardioid or supercardioid) with good high-frequency response. A windscreens minimizes pop noises from the singer's mouth and spares the mic capsule from saliva. Position the mic approximately five inches away, level with the vocalist's mouth. Mics placed too far or too close to a source can mean everything from far too much ambient noise to overwhelming bass response (so-called proximity effect). This effect is sometimes used deliberately to enhance the depth and warmth of a voice. Make sure the singer is positioned away from hard reflecting surfaces in order to minimize the ambient noise caused by reflected sound.

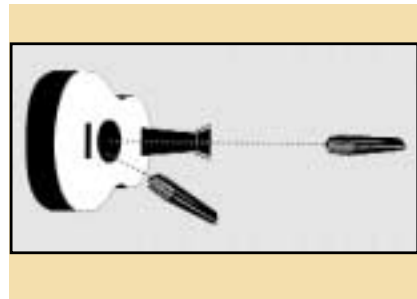
Group Vocals

Cardioid-pattern dynamic microphones work especially well in this role. Position groups of three or four singers in a quarter-circle, with the microphone at about eye-level and pointed slightly downwards, approximately a foot away from the center of the group.



Acoustic Guitars

Acoustic guitars actually sound best when miked by two microphones. We recommend condenser microphones (such as the ME 64/K6), which are usually better receptors of high frequency sounds than dynamic mics. Place the first mic about six inches away from the front of the guitar, slightly off-axis and aiming at a point between the soundhole and the bottom of the neck (see drawing). Place a second condenser mic approximately



three feet away, pointed directly at the guitar. This mic picks up the overall sound of the guitar, as well as some of the room's ambience. Now use a mixing board to blend the two different mic sounds.

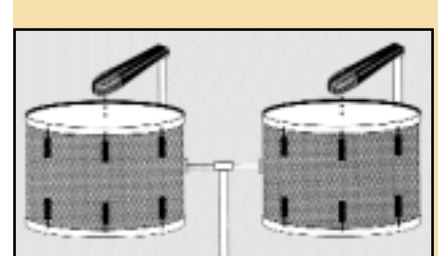
Guitar amplifier

Use a microphone such as the e 609, which is specifically designed to handle the extremely high sound pressure levels generated by a guitar amp. Drape the microphone over the amplifier so that it hangs directly in front of one of the amp's speakers. Feel free to experiment for tonal variations! Be sure the mic is addressing the speaker correctly, with the "pickup" side facing inward.

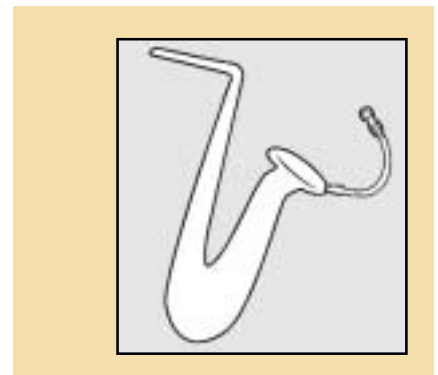


Drums

These require a variety of mic techniques. For snares, use a microphone that can handle the tremendous sound pres-



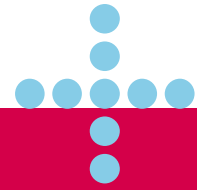
sure levels and transients of the drum, pointed across the drum, and a dynamic mic (such as the e 604) from below the snare, pointing upward. For toms, the MD 421 II is a standard. Place it approximately three inches above and slightly inside the rim. For the bass drum, you want something that handles a lot of signal, like the e 602. Condenser microphones, and their exceptional high-frequency response, are especially well suited to miking cymbals and hi-hats.



Wind Instruments

For example the saxophone! Sound reflections caused by reflective surfaces are integral parts of the sound. So set up with the bell of the instrument facing toward a hard reflective wall, and place a dynamic microphone (such as the evolution™ e 608) a few inches above the bell.

Excellent Prospects in Sweden

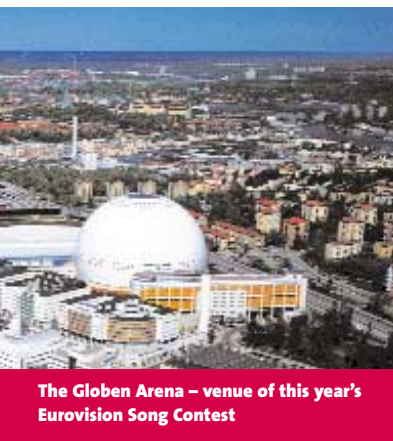


The picturesque city of Stockholm, built on islands and peninsulas and known as “Venice of the North”, is the home of Sennheiser AB. Here, a staff of 30 has specialized in the sales and support of professional audio equipment. Besides the entire Sennheiser and Neumann ranges, Sennheiser AB stocks further big audio brands and various accessory programs such as Neutrik, Siemens, Crown and Cordial. The portfolio for the demanding audio professional is continuously expanded: among the latest additions are acoustic measurement and analysis systems from EAW and network products from Channel Plus.

Since its inception as an independent company in 1979, Sennheiser AB has been headed by Peder Camp. “When we started, we were offered to use the name Sennheiser. We were very proud of this, and still are.” On Peder Camp’s initiative, Sennheiser AB operates the “Hörcenter Sophiahemmet” in Stockholm, a hearing aid center where highly experienced staff helps to determine and fit assistive listening devices that best suit the needs of the hearing impaired. Sennheiser AB is especially proud of its CIC (com-



Photograph: Frank Chimura/110foto



The Globen Arena – venue of this year’s Eurovision Song Contest

pletely in the ear canal) models which are produced in the company’s own laboratory.

Sennheiser AB’s last project is still well remembered throughout the whole of Europe: the competence and know-how of Sennheiser AB made the Eurovision Song Contest an unforgettable experience for Stockholm and millions of TV viewers (see “Summer of Superlatives”). And Sennheiser AB is also well respected in the National Theater and the Swedish Parliament. The theater uses a 48-cannel 5000 Series RF system, while the Parliament boasts a digital conference and interpretation system for up to twelve languages.

For further information about Sennheiser AB please visit:

www.sennheiser.se

ABQ – Expansion in the Western Hemisphere

ABQ – at Sennheiser, this is the nickname for Albuquerque in the US State of New Mexico. ABQ is synonymous with innovative production technologies, fast turnaround times and enormous growth. On April 17, 2000, ABQ saw the opening of Sennheiser’s first manufacturing plant in the land of unlimited possibilities.

On a production area of 4,500 sq.m., Sennheiser New Mexico manufactures printed circuit boards for electronic assemblies, digital RF wireless microphones and wireless headphones for the US market. Albuquerque is situated in the southwest of the United States, on the Rio Grande. The Mexican border is only a stone’s throw away, so are the Grand Canyon, many universities, research institutes and big companies such as Intel, Philips and Honeywell. “This infrastructure provides us with an outstanding potential of highly qualified manpower,”

says Bill Jenner, General Manager of Sennheiser New Mexico. “The support given by the State of New Mexico is exemplary.”

At its Albuquerque location, Sennheiser is presently employing 60 people, with additional building land earmarked for future expansion.

Transportation logistics benefit from the Interstate 25 and the nearby Albuquerque airport. Rolf Meyer, President of Sennheiser electronic, comments: “The only monotonous thing here



The team at Sennheiser New Mexico

is the weather forecast: sunny, sunny, sunny...” And so are ABQ’s prospects for growth and success!

Fairs and Exhibitions 2000/2001

NAME	VENUE	DATE	TARGET GROUP	REPRESENTED BY
September				
IBC	Amsterdam	08.09. – 12.09.	Pro Audio	Sennheiser electronic
Arken	Gothenburg	09.09 – 10.09.	Hifi	Sennheiser AB
PLASA	London	10.09. – 13.09.	Pro Audio	Sennheiser UK
International Hearing Society	Anaheim, CA	13.09. – 16.09.	Audiology	Sennheiser Electronic Corporation
Hörakustiker Kongress	Vienna	15.09. – 17.09.	Audiology	Grothusen
Music Expo	Rotterdam	15.09. – 18.09.	MI	Sennheiser Nederland
Mondial Son et Image	Paris	15.09. – 20.09.	Consumer	Sennheiser France
WAEA	Anaheim, CA	19.09. – 22.09.	Aviation	Sennheiser electronic
Live 2000	London	21.09. – 24.09.	Consumer	Sennheiser UK
Muzika	Prague	21.09. – 24.09.	MI/Consumer	Panter
50+ Beurs	Utrecht	21.09. – 24.09.	Consumer	Sennheiser Nederland
AES	Los Angeles, CA	22.09. – 25.09.	Pro Audio	Sennheiser Electronic Corporation
Multimedia Telecom	London	25.09. – 26.09.	Multimedia	Sennheiser UK
Hifi Show	Helsinki	30.09. – 01.10.	Consumer	Into Oy
October				
Sodogna Elektronika	Ljubljana	02.10. – 07.10.	Consumer	Grothusen
HAK	Cologne	05.10. – 07.10.	Audiology	Sennheiser electronic
Intermedia	Warsaw	06.10. – 11.10.	MI, Pro, Consumer	Konsbud Audio
Radio Conference	Warsaw	10.10. – 11.10.	Broadcast	Konsbud Audio
NBAA	New Orleans, LA	10.10. – 12.10.	Aviation	Sennheiser Electronic Corporation
CAPER	Buenos Aires	17.10. – 20.10.	MI/Pro Audio	DBA Systems
AOPA	Long Beach, CA	20.10. – 22.10.	Aviation	Sennheiser Electronic Corporation
LDI	Las Vegas, NV	20.10. – 22.10.	Pro Audio	Sennheiser Electronic Corporation
MATALEC	Madrid	24.10. – 28.10.	Pro Audio	Magnetron
Symposium Olšanka	Prague	25.10.	Pro	Panter
InfoBalt	Vilnius	25.10. – 28.10.	Pro Audio/Video, IT	TV & Communications
Hifi Show	São Paulo	27.10 – 29.10	Consumer	SKAudio
Compfair	Budapest	October	Multimedia	BaSys
Audiovisual Show	Helsinki	October	Pro Audio/Video	Into Oy
International Music Fair	Kiev	October	Pro Audio, Video	Indigo
Music Moscow 2000	Moscow	October	MI/Pro Audio	Ispa
November				
Top Audio	Prague	02.11. – 04.11.	Consumer	Panter
Theatre Symposium	Warsaw	06.11. – 07.11.	Theater	Konsbud Audio
SATIS	Paris	06.11. – 09.11.	Pro Audio	Sennheiser France
SBES	Birmingham	08.11. – 09.11.	Broadcast	Sennheiser UK
Audio Show	Warsaw	10.11. – 12.11.	Consumer	Konsbud Audio
Aviex	Sydney	09.11. – 12.11.	Aviation	Syntec
Music Live	Birmingham	17.11 – 19.11	Consumer	Sennheiser UK
Visiontec	Cairo	23.11 – 26.11.	Consumer/Pro	Technology KAR
Hit 2000	Vilnius	23.11. – 26.11.	Audio/Video/Light	TV & Communications
Tonmeistertagung	Hanover	24.11. – 27.11.	Consumer/Multimedia	Sennheiser electronic
TRBE	Moscow	November	Pro Audio/Video	Ispa
Music Expo	Budapest	November	MI	BaSys Hungary Ltd.
Top Audio	Prague	November	Consumer	Panter
January				
NAMM	Anaheim, CA	18.01. – 21.01.	MI	Sennheiser Electronic Corporation
CES	Las Vegas, NV	January	Consumer	Sennheiser Electronic Corporation
HAI 2001	Dallas, TX	January	Aviation	Sennheiser Electronic Corporation
February				
SIEL	Paris	February	Consumer/Pro Audio	Sennheiser France
March				
Prolight + Sound	Frankfurt	07.03. – 11.03.	MI, Pro Audio	Sennheiser electronic
High End	Prague	March	Consumer	Panter



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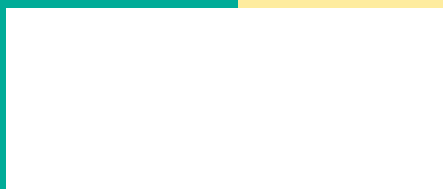


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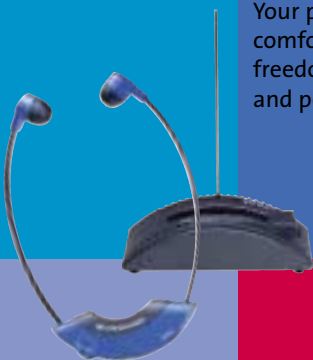
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