



d&b's Cruise market solutions

d&b audiotechnik has gone to great lengths to understand and meet the special requirements of the Cruise industry. In terms of practical performance, aesthetic sensibility and business support, d&b has proved a resourceful, dependable partner in the demanding world of marine sound installations . . .

For decades, d&b audiotechnik has been recognised for its expertise in sound systems for live entertainment, in countless theatres and concert venues worldwide. With its compact, efficient and consistently voiced loudspeakers it has also developed winning solutions for hospitality markets, delivering optimum sound to hotels and restaurants everywhere. And, in recent years, the company has successfully turned its attention to meet the enormous sound demands of the Cruise industry. This has been no simple challenge, as we shall see.

Today's luxury Cruise liners are vast, floating towns, filled with leisure and entertainment facilities. Manifests of 3,000-5,000 passengers are relatively common; the largest can host in the region of 7,000. Where once the destination was the focus of

guests' experience, today it's just as much about the journey, the entertainment, the experience. Leisure amenities include bars and restaurants, theaters, casinos, swimming pools, kids' clubs, running tracks, gymnasiums, spa facilities and shops.

It's a hugely competitive business. Globally, the Cruise ship market will generate over \$40 billion of revenues in 2024. Regular rounds of scheduled maintenance and refurbishment in dry dock cost hundreds of millions. In either new builds or refurbs, delays are, understandably, unwelcome. It's a demanding market, but equally it's dependable and transparent. Unlike most segments, the order book may as well be set in stone.

Even through Covid, when the live entertainment market evaporated, Cruise ship work continued – an important bonus for d&b at the time.



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Managing Director, VIDELIO-FUNNA GmbH



Addressing the Market

The cruise market makes unique demands of every technical element – sound systems included. It's not just waterproofing: the crucial environmental factor is salt-water. Everything is at risk of accelerated deterioration through corrosion – even the air carries corrosive salt. Add to that the damage caused by exposure to UV light and fluctuations in temperature, and the challenge is immense.

d&b's involvement was first kindled in 2015, when two of its team in the DACH region – Jürgen Wilhelm (now Global Segment Manager, Marine) and Wolfgang Daub (now retired) – began to seriously consider the opportunities – and technical hurdles – that cruise work represented. Their interest began as an experiment, a toe-dip. The company's Custom Solutions team did not exist: Michael Eckstein (now its head), was working in d&b's R&D department. His work on effective new solutions, along with the team's crucial ongoing price

negotiations, led to a product presentation and eventually to a contract for the supply of systems for two new ships – Genting Dream, built in 2016, and World Dream in 2017.

It was a successful proof of concept. d&b had succeeded in opening a major new segment. Since then, its cruise work has grown exponentially: so far it has supplied systems for 25 Cruise ships, with many more on the order books. Among them are some refurbishments and many new build vessels, particularly for Carnival Corporation (owner of cruise lines including AIDA, Costa, P&O, Princess and Carnival), as well as several for Disney Cruise Line. Among the Carnival line-up are the AIDAnova (2018), the Costa Smeralda (2019), the AIDAcosma (2021), the Costa Toscana (2021) – and, for P&O Cruises, the Iona (2021) and the Arvia (2022).

These are among the first cruise ships to be powered by Liquefied Natural Gas (LNG).



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In 2019, AIDAnova (the first 100% LNG-powered cruise vessel) won the German government's Blue Angel award for its significant contribution to environmentally friendly ship design.

Understanding the Challenges

Andreas Köhler is managing director at VIDELIO-FUNA GmbH – one of the world's leading integrators of entertainment, communication and lighting solutions for the cruise ship segment, and the systems installer for the P&O Arvia. He has many years' experience of sound system manufacturers serving this market.

He says, "A manufacturer might think 'OK, it's outside: we have speakers for outside, we've done a stadium.' But that's not a cruise ship. That's something they have to understand. They might say they have a speaker which is 'military standard': it's shock-proof and dust-proof, it's very robust.

It may be military standard, but it's not navy standard. That's a different thing."

In the cruise ship business, conditions are particularly harsh, but longevity is crucial. "Everything might be fine after a few months, but after half a year, a year, two years – what's the situation then?" Andreas asks. "Cruise lines need a sound system which can last for 10 years, if possible. Maybe after five years they have the first drydock refurbishment, and after 10 years they will install something new, for sure. But if they have to do replace it earlier – in two or three years, perhaps – it's always painful."

Andreas is clear that all the world's top speaker brands are capable of making excellent sound systems. "But" he says, "when it comes to cruise ship installation, with its special requirements, not all of them recognise what is needed for a perfect solution. That's something which is understood by d&b."

d&b system: xS-Series, E-Series, Yi-Series, Vi-Series, xC-Series, B22-SUB, Bi8-SUB, 10D, 30D, DS10, DS100, En-Scene, En-Space

Ship-shape Solutions

Since becoming an official d&b resource, the company's Custom Solution Department has come up with a series of targeted products. These feature a special nano-coated grille for waterproofing, a paint finish that provides protection from UV damage and high-grade, seawater-resistant stainless steel alloy construction to combat the effects of salt-water corrosion – a measure which extends to the versatile mounting components, of course.



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Jürgen Wilhelm

Global Segment Manager Marine,
d&b audiotechnik

"d&b have invested a lot in meeting the special demands of these outside speakers: they are really produced to a high standard," says Andreas. "That's fully appreciated from our side, because we see installations of various loudspeaker brands. What d&b are able to provide is a different solution, which is outstanding."

As well as the custom developments for these environments, d&b's loudspeaker range also features all the advantages that appeal to top-tier land-based hospitality environments: compact and efficient cabinet designs to limit visual intrusion in sensitively designed interiors, the choice of RAL colors or custom paint finishes to blend into surroundings, and the controlled dispersion characteristics which are such an advantage in the tight, often highly reflective spaces commonly found in on-board amenities.

"Outdoor areas are important, of course," says Andreas, "but most venues on-board have low ceilings. A theatre might be two or three decks high, an atrium three, four or five, but then we have many high-quality smaller venues where we need really dedicated speakers which we can integrate into the architecture. If it's done in a good way, you don't see the technology."

He continues, "On top of that, we have a lot of stone, glass – reflective surfaces. That's another big challenge for the speaker system – to direct the sound to minimise reflections and enhance intelligibility."

Boxes That Tick Boxes

Other pluses arise from d&b's inherent system architecture. Passive loudspeakers are a must, enabling sensitive amplification electronics to be housed safely away from direct exposure to the elements. Also of vital importance is the power-to-weight ratio of the hardware: on a cruise ship, every kilogram saved is of enormous value. Two decades ago, when digital audio became widely available, the shift from using kilometres of heavy copper data cable to fibre optics was a big step forward.

"Weight is absolutely crucial," says Jürgen Wilhelm, "and that's a huge plus for d&b. Our systems have a lot of power for their low weight, line arrays included. Products like our Y-Series are some of the lightest systems available with such high output power."

In response, d&b developed the Bi8 – a sub small enough to be concealed inside a limited height stage front.



Ease of use is similarly important: well known for their out-of-the-box readiness, with little or no tuning required, d&b loudspeakers also integrate easily with network systems—such as Q-SYS – all of which means valuable time saved in set-up and operation. When it's common for integrators to have a rigid 30-minute slot on the schedule to tune a sound system, this is essential.

Also importantly for this market, where technical crews can vary from voyage to voyage, control needs to be kept simple.

Each system is monitored and controlled by d&b's easy-to-use R1 remote control software. Here, the fact that d&b systems are installed on so many of Carnival Corporation's ships brings a further advantage.

As Andreas says, "It's a big benefit for the owner, because if the crew changes, they are broadly familiar with the system control from the ship before."

Going That Extra Nautical Mile

And, as we have seen, when it comes to the water-tight supply deadlines, there is no room for delay.

"It's essential for us to get the equipment in time," says Andreas. "With installations on this scale, we need to work with a manufacturer that supports us and does whatever they can to shorten delivery times, and there we also have good communication with d&b."

d&b's commitment in this regard was ably demonstrated when, prior to the supply of equipment for the Arvia, the integrator went bankrupt, leaving the supply schedule in severe doubt.

At that time, in 2022, supply chains were already under enormous pressure globally, following the pandemic. Nevertheless, the shipbuilding contractor, Meyer Werft, and VIDELIO-FUNA were able to work closely with the d&b team.



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**Martin Hahnenkamp &
Boye Schmidt**
Engineers at Meyer Werft

Together, they brought forward the supply of over 600 loudspeakers, subwoofers and associated peripherals in record time, despite no delivery dates having been agreed with the previous supplier. Martin Hahnenkamp and Boye Schmidt, engineers for Meyer Werft, say: "Added to this was the difficulty that it was not just a matter of stock items. A considerable proportion of custom-made products – such as speakers in special colours and/or in special seawater-resistant versions – were also required. This was a huge problem."

"In overcoming this seemingly impossible task, d&b's representatives were motivated and helpful, right from the start. Over numerous discussions with them, we came closer and closer to suitable deadlines. d&b shifted orders internally and even put in extra shifts to achieve this. In the end, they managed to deliver all the required items on time, enabling us to deliver a state-of-the-art ship to our customer P&O Cruises on time."

For all these aspects, Andreas likes the completeness of the d&b offering.

While its especially robust 'Sea Water Resistant' (SWR) versions make them uniquely durable in these demanding exterior conditions, the sophistication of their product, developed for the wider installation market, pays dividends for the integrator.

"Having a different speaker manufacturer for every venue is something that we want to avoid," he says. "Sometimes there is a price pressure in some areas, of course – but when it comes to the high-quality venues – the theaters, restaurants and so on – then quality is key. All the passengers should get the very best experience."