



d&b Achieves Marine-Grade Success



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Cristiano Romani
CTO of Videlio-HMS

Setting the scene

d&b audiotechnik has long been a leading brand in professional audio markets worldwide. Thanks to its decades-long quest for listening excellence, the d&b name is sought after by top theatres, opera houses, live music venues, concert tours, visitor attractions and leisure environments of all kinds – on dry land . . .

In recent years, however, d&b has been busy making progress in providing sound system solutions for the unique demands of a less static market, cruise ships. In its rapidly growing Marine business, d&b systems have now been specified on almost 20 cruise ships.

One of these successes is Sky Princess. Built and fitted out in Italy's Fincantieri shipyard for Princess Cruises and launched in 2019, Sky Princess is typical of today's large

cruise liners. Serving either European or Caribbean cruise routes, depending on the season, it has capacity for almost 6,000 passengers and crew, and requires dozens of entertainment and leisure facilities.

The biggest is the main show auditorium, the Princess Theater, which has a capacity for 922 and hosts musical productions, live music and comedy, running two shows each night. Then there's an open-air theatre on the top deck, called Movies Under the Stars, which shows movies, music, and sporting events on a giant LED screen.

There are also many smaller entertainment spaces, as well as bars, restaurants, lounges, pool-sides, spas and shops.

All-told, Sky Princess features more than 30 spaces which require sound systems.

d&b system: Yi8, Yi12, Vi7P, Vi10P, Vi-SUB, T10, Ti-SUB, E8, E6, E4, E12, E15X-SUB, B22-SUB, 8S, 5S, 12S-SUB, 24C, D80, 30D, 10D

Of these, just a handful are outdoor spaces – but they face the biggest challenges of all.

Unique objectives

Supplying sound systems to commercial marine environments is no straightforward cut-and-paste of land-based solutions. The special requirements are very real, and very challenging – particularly outdoors.

Firstly, sea air is highly corrosive: its high salt and moisture content means that every outdoor component has to be highly resistant: an off-the-shelf loudspeaker would be lucky to last a few weeks. Secondly (and this counts for all areas), the vessel itself rolls and

moves, placing potentially enormous dynamic stresses on rigging and mounting systems, quite unlike the static conditions on land.

Physics aside, the economic structure of the industry itself pressurizes equipment delivery. Ships can cost many hundreds of millions of dollars to build, and for the shipyard, payment is on delivery. Order books are filled years in advance and deadlines for completion and delivery are set in stone (even during the Covid lockdowns!).

Accordingly, integrators look for indoor systems to offer a lifespan of 10-12 years, and perhaps 5-8 years for outdoor systems.

Scheduled dry-dock refits to replace or update systems are planned in detail, and time is money. All these challenges set a high bar for success. System integrators and their suppliers must be seriously prepared for every eventuality.

Rising to the task

Answering these demanding Responsible for the design and installation of entertainment and comms solutions aboard Sky Princess was Videlio-HMS, a division of the leading European AV and IT systems integrator, Videlio Group.

Heading up the Sky Princess team for Videlio-HMS was Fabio De Pace, PM of the project, technically supported by Cristiano Romani, C.T.O. of the company. Cristiano says, "Increasingly, the solutions we need to provide are custom, especially for the outdoor areas, which are exposed to the sea air. These are very different to land-based systems. "What d&b has done for us with these outdoor systems is to create an advanced, marine grade water-proof treatment for all cabinets, plus dedicated rigging hardware specifically designed to securely mount them in a such an environment."

These products are d&b's SWR (Sea Water Resistant) models, developed in-house by d&b's Custom Solution Department. They include a proprietary nano-coating for a cabinet's grille, which effectively prevents the ingress of salt-laden moisture, and rigging and mounting components manufactured from marine-grade, corrosion-resistant stainless steel 316.

This is not just 'outdoor': this is Marine.

Romani adds, "Certainly, all the treatments that d&b have achieved with the outdoor speakers have worked very well for us and have lasted over the years."



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When system longevity is crucial, a loudspeaker's performance quality can take second place, but with d&b systems, Videlio-HMS enjoys the best of both worlds. "In the past we would choose an outdoor system just for its longevity, and compromise on the sound quality. But, with d&b, we have both – quality and longevity. We don't have to prioritize the build at the expense of performance."

Fixed installs

Although the ship's conditioned interior atmosphere removes these environmental factors, indoor venues still have major demands. The roll, pitch and yaw of a ship on the ocean wave can create huge dynamic loads, so rigging and mounting becomes an art in itself. An array cannot be flown from a static point: it must be tethered to withstand the shifting forces of a moving venue. Likewise, must account for more than simple gravity.

Thanks to its Custom Solution Department, d&b's products meet all such needs. Installation and commissioning schedules are also necessarily rigid. For Videlio-HMS, the first to be completed is always the main theatre space, in this case the Princess Theatre. "We need to finish the theatre first, maybe one or two months before the delivery of the ship, to give them time to build their productions. The rest is completed in time for the delivery of the ship itself. Of course, when the ship leaves port, it is usually immediately in service with its first cruises, so everything has to work straight away."

Support Structures

With a build taking three to four years, from drawing to delivery, the integration of the technical systems is carried out over the last eight months. It's a tightly executed, regimented process, with up to 20 technicians and 30 to 40 electricians employed across that period. In meeting those deadlines, the consistency of performance across d&b products is another advantage for Romani.



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Custom solutions aside, d&b's loudspeaker products also offer the same benefits that they bring to land-based installations: compact, unobtrusive designs (protecting both sightlines and egress routes), a choice of RAL colors or custom paint finishes, and the controlled dispersion characteristics – a huge advantage in these low-ceilinged, often highly reflective spaces.

Romani also enjoys the advantages of direct support and engagement from d&b. He says, "It's very good, because d&b not only has a distributor in Italy but also their own office, from which we receive direct support in our own language. Even though we are a global company, this can sometimes be very helpful.

And then, any time we've needed to discuss anything with the team in Germany, they are always open to modifications and accommodations. They're very supportive."

He adds, "It's also very important to us that we can rely on d&b to be our partner, not to jump above us and go straight to the client. That's surprisingly common – and it takes the choice away from us, the integrator. This never happened with d&b."

Conclusion

Meeting the needs of the cruise ship business is no easy undertaking. It requires significant R&D, the development of custom solutions and advanced manufacturing standards, all backed up by a culture of responsive, flexible support – and with all of this, d&b is fully on-board.