



One of the major events held to celebrate the Queen's Diamond Jubilee in June, the Thames Diamond Jubilee Pageant saw over 1,000 boats parade in front of Her Majesty the Queen in a seven-mile flotilla between London's Battersea and Tower Bridge. Andy Wood reports . . .

Funktion-One on The Thames

UK - The millions of people gathered along the banks of the Thames to view the Diamond Jubilee Pageant, lashed by typical English Summer weather of driving rain and strong winds, were entertained by various Herald Music Barges, containing musicians from a wide range of genres, from military bands to orchestras, with four incorporating bespoke sound systems sourced from British loudspeaker developer and manufacturer Funktion-One by Thames Audio, one of several audio companies involved in the project.

The event was a return to the Thames for both companies, following Shepperton Studios-based Thames Audio's involvement in the Lord Mayor's Fireworks in 2010, where audio systems were placed on static barges to relay music for the display. Following the success of that project, production manager Jonathan Bartlett contacted Thames to ask for their involvement in the Pageant.

"Of course, we said yes," explains Thames' joint managing director, Peter Cox. "The brief for the Pageant was that we should produce a fairly controlled sound which followed the boat down the river - almost a stripe of sound. The last thing Jonathan Bartlett wanted was a cacophony of sound as all the boats moved down the Thames and bled audio into each other. As such, point-source loudspeaker systems seemed to be the answer, and this is when we spoke to Funktion-One about options."

Working with Funktion-One's Tony Andrews and John Newsham, the systems began to take shape, initially using Resolution Res 5 product. However, when a new loudspeaker, the horn-loaded MST-10 was introduced into the options, the systems began to take on entirely new dimensions.



Top: The Royal Barge - Spirit of Chartwell.
Above: Wyndham Grand with Swing Band.

"It was initially designed for use in football stadiums," says Tony Andrews. "It's a long-throw, horn-loaded 10" with a tight dispersion; it's made from a lightweight composite; it's sun and water resistant - and it was a simple solution."

Initial tests were held at Funktion-One's facility in Surrey, and after agreement from Jonathan Bartlett, the systems were transferred to the Edwardian - one of the boats to be used on the day - for testing at Butler's Wharf in January of this year. The final decision was for a single MST-10 combined with three F118 subs positioned on each side of the boats, facing outwards towards the banks of the river. Each MST-10 was placed above the subs on a uni-strut system which allowed the horns to be tilted up or down, depending on the height of the river that day. In addition, a pair of Resolution 2 horn-loaded enclosures was added to the bow of each boat, pointing up, to distribute sound to the bridges as the boats travelled underneath.

This system combination was used on three boats; the Edwardian, which held members of the Academy of Ancient Music playing compositions of the day; the Valulla, featuring 30 musicians from The Band of Her Majesty's Royal Marines Plymouth; and the Wyndham Grand, which featured a 16-piece band playing music from the 60 years of the Queen's reign.

A fourth boat, the Connaught, held the Royal Marines Herald Fanfare Team, which performed fanfares along the Pageant route to announce the imminent arrival of the Royal Barge. Here, due to sightline considerations, Thames installed five AX88 two-way, horn-loaded enclosures on the bow of the vessel to give full 180° coverage across the river.

In addition to the Funktion-One loudspeaker systems, each vessel also incorporated a complete mix system, featuring MC2 Audio/Funktion-One amplification, XTA 488

loudspeaker control, digital consoles and mix monitoring, complete with large Universal Power Supplies alongside the boat's own power systems, which could provide 20 minutes of back-up power if required.

Mix engineers for the project included Ian Barfoot on the Edwardian utilising an Allen & Heath iLive R72 and iDR10 mix rack; Euan Hill on the Wyndham Grand with an Avid Profile and Avid Mix Rack Stagebox; James Tebb on the Valulla using an Avid Venue; and Mike 'Stix' Steer on the Connaught, utilising a Yamaha LS9-16 with MY16AE AES output card. With each engineer ensconced below decks, a combination of Genelec 8030A and Funktion-One F101 cabinets were in use as mix monitors.

"I decided to use digital consoles as this gave us a decided advantage given the scale of the load-in," explains Peter Cox, who acted as Thames' project manager alongside production manager Tom Albu. "We were able to set the systems and store the settings during the test and soundcheck earlier in the year. On the day of the event, we simply recalled all that information. Of course, there was a little tweaking to do, but not that much."

Indeed, load-in did hold a few issues, especially on the Edwardian where, due to a booking on the day before, the system could not be loaded until late at night - when 35mph winds and horizontal rain added to the occasion.

Microphones from Shure (KSM137, SM98, and SM57) and DPA (4099, 4060) were also in use on the boats, with Rycote windshields for rain and wind protection. The DPA Microphones proved to be one of the stars of the day, especially on the rain and windswept decks of the Valulla, where Thames Audio used DPA 4099s with the appropriate clips for the trombones, French horns and cornets. They also used DPA 4060 miniature mics, which were taped onto the clarinets and saxophones and actually mounted on the helmets of the musicians who were playing piccolo. In total, 18 DPA microphones were used on that boat alone. The same models were used on the Edwardian, where a see-through marquee added its own acoustic issues. These mics were sourced via freelance engineer Ian Barfoot, and DPA's UK distributor, Sound Network. Further DPA 4088 Directional Headset Microphones were used to mic the Royal College of Music Chamber Choir who performed with the London Philharmonic Orchestra on Symphony, the last of Herald music barges taking part in the pageant.

"The DPA microphones really did their job. I can't praise them enough," says Cox. "I also must thank Sound Network for their help on this. As the job we went on, we kept upping our requirement and Walter Samuel at Sound Network supplied everything we needed. It was tremendous support on a project like this."

On the morning of the Pageant, each boat then set the pitch of the MST-10 horns to make sure they were pointing at the crowds on the embankments, and not up into the buildings behind, where unnecessary



Above:
The speaker set-up
on The Edwardian.

Left:
A very wet but
happy Pete Cox
and Tony Andrews
during set-up.

reflections could occur. This had to be done at this time, as the river, normally tidal, had been closed at the Thames barrier to allow for a smoother and safer passage for some of the smaller craft in the flotilla.

"I have to say, I was overjoyed with the results," continues Cox. "There was some hesitation on using the large horn flares initially, but when I heard them on the day... that decision was confirmed as the right one. The definition was superb. High quality audio delivered precisely and focussed. You could see a 'wave' go up the banks on both sides as the crowds first heard the boat, reacted to it, and then settled down as the boat moved on. A 30-45 second audio 'stripe' travelling up the river - just as requested. I'm proud that we were involved in such an auspicious event."

The 'wave' effect was also confirmed by John Newsham on the Edwardian: "It was certainly an unusual gig. There you are in the middle of a very wide river, and you can hear a crowd applauding left and right of the boat, but you're not getting much slap-back from the walls of the embankment. Impressive. It was an absolute privilege to be involved."

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