

Invisible miking for opera

DPA headset mics in action

Mike Crofts

It's the time of year when we should be enjoying lovely warm, dry outdoor gigs, with sunblock and floppy hats being high on the list of essentials... Instead, it's been umbrellas, tarpaulins and wet grass, but for this year's open-air opera event in the grounds of the very posh Chewton Glen Hotel (in the New Forest) we had one significant additional technical requirement: headworn mics. At last year's concert we had used stand microphones for the soloists, but this year, Candlelight Opera's Artistic Director, David Norman, wanted to allow for a degree of movement as some of the pieces were to be semi-staged, and he specified radio mics for all the six soloists. We were, therefore, extremely fortunate that Sound Network, the UK distributors for DPA products, had provided a set of DPA 4066F headset mics for evaluation, and I took them along to the gig to use in conjunction with my rack of Sennheiser receivers.

The gig was a bit of a reunion, as Candlelight Opera had once again engaged the services of Midas ProSound to provide and operate the sound system, and I was looking forward to working again with Paul Nicholson and Andy Reeves. The sound system was the same as Paul had used for last year's concert — three L-Acoustics dV-DOSCs and one L-Acoustics dV-Sub each side, mixed on a Yamaha M7 board and connected with a Roland S-4000 Digital Snake — and the

Another Candlelight Opera production for *PM's* intrepid PA correspondent provides the perfect opportunity to check out a set of DPA 4066F headband microphones in a demanding application.

audience would be occupying a sloping grassy area some 80 meters deep by about 50 metres wide.

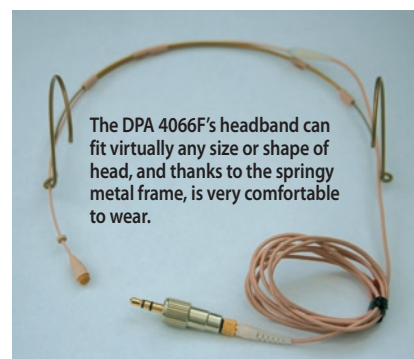
With events like this, audience expectation is high, and because the repertoire is so well known you can expect that most of the listeners know exactly what they want to hear. The two absolutely critical things are clarity of the vocal parts and a good balance between soloists, ensemble and orchestra. There isn't usually anyone demanding 'more kick' or anything even vaguely rock & roll, but there are plenty of other demands, believe me — and everyone expects to be able to enjoy clarity and balance no matter where they have chosen to sit, be it near the stage or right up on the balcony at the back. All this was in the hands of Paul on the desk, so he and Andy got on with rigging the PA and miking up the orchestra, and I was given the job of sorting out the soloists' mics.

The six microphones supplied were the DPA 4066F model, which are very small, discreet, omnidirectional mics mounted on a full headband frame (ie. over both ears). The 'F' suffix denotes the colour of the mic, its accessories (eg. foam shield) and supporting boom arm, which in this case were what DPA officially describes as 'beige' (suffix 'B', for example, would refer to a black finish). Each

microphone is supplied in a flip-top plastic box, which has foam slots to hold the headset assembly and all the included accessories in place. The transparent top cover neatly presses the springy metal over-ear parts of the headband into the case for travel and storage. There are quite a number of very small accessories and extra parts supplied with each mic, including four colour-matched foam shields, a tool for tightening the connector, and an alternative grille which alters the response of the mic.

The 'soft' option

The 4066 uses a pre-polarised condenser capsule, which requires a minimum 5V supply from whatever it's plugged into — in this



The DPA 4066F's headband can fit virtually any size or shape of head, and thanks to the springy metal frame, is very comfortable to wear.



is very springy and can be adjusted to fit virtually any head you'd normally encounter. The boom arm is detachable and can be changed over to left- or right-side mounting by simply detaching it from the headband and remounting it on the other side.

As standard, the 4066 is supplied with its cable terminated in a MicroDot connector, and a range of adaptors is available to suit whichever pro-standard system you're using. In this case, 3.5mm jack adaptors (for Sennheiser) were already fitted, but I tried removing and re-fitting one, which was easy to do. A small tool like a tiny foam

discomfort. This was surprisingly easy to do; I've spent quite a few anxious minutes with my own headsets trying to get this right, and I have to say that the DPAs were really easy to strap on. As the afternoon session was only a non-dress rehearsal we didn't worry about tidying up the leads and just stuck the transmitters in pockets, and we had a good opportunity to walk around the field and listen to the sound while Paul did his thing at the desk.

The performance standards of DPA products are well known, and these mics follow in the company tradition of sounding very



▲ The mics were extremely easy to fit, and none of the soloists found them intrusive.

case, a Sennheiser EW300 series belt-pack transmitter. Frequency response is from 20Hz to 20kHz within 2dB and the detailed response of the system depends on which of the two supplied capsule end-housings is used. The 'soft boost grid' is the one that is fitted as standard and gives around 3dB boost in the mic's response above 8kHz, whereas the 'high boost grid', which is supplied with the mic and easily fitted, produces a 10dB boost at 12kHz. You can find the user manual at www.dpamicrophones.com/Images/DM03351.pdf if you want to compare the response curves of the two different grids. For this particular application we were, naturally, going with the soft boost option.

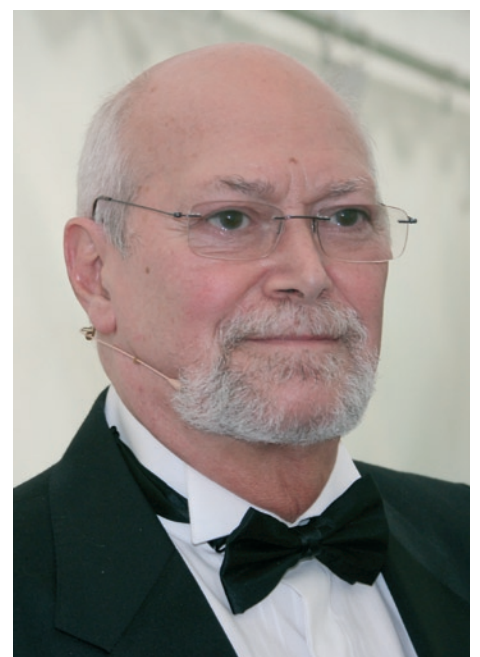
The 4066 mics can cope with a peak maximum sound pressure level of 144dB before clipping, which is (a) impressive and (b) absolutely necessary when placing the things on or near professional opera singers! As the capsules are not directional, exact placement can vary somewhat (the manufacturers recommend a capsule position anywhere between mouth and ear) and I experimented with different positions to find the best spot. The mics are extremely light — the whole thing, including headband, cable and standard connector, is a mere 14g, so the headband isn't being dragged out of place all the time. The headband itself is much more comfortable than it looks, especially as the metal frame

horseshoe is provided to securely tighten the MicroDot connector onto the adaptor without damaging or stressing the cable.

Fit-up

I handed out the six headsets to the singers and helped them make initial adjustments to get the mics into a good starting position — close to the cheek and not causing any

natural and uncoloured, which is exactly what's needed for live performances like this one, particularly where the singer has to blend with an acoustic ensemble and the whole performance must sound as natural as possible. The sound was extremely clear and very natural sounding from the outset. Clarity and projection were there in abundance, and the singers were happy with what they were



▲ Although the capsules are omnidirectional, optimum mic placement still varies significantly from person to person. DPA recommend only that the capsule be placed somewhere between the mouth and ear.

Invisible miking for the opera

DPA headset mics in action



▶ As at last year's event, three L-Acoustics dV-DOSC cabinets and one dV-Sub were used on each side of the stage.



▶ The headset mics were used in conjunction with a rack of Sennheiser EW300 series wireless systems.

» hearing too.

I had been keeping an eye on the rehearsal schedule, as I had allowed about 40 minutes for getting the vocal mics completely sorted, but in the event we simply didn't have any issues with them or any difficulty in getting a great vocal sound. The mics behaved impeccably and sounded equally good in ensemble work, which is where any colouration or over-equalisation can really begin to cause problems.

Show time

When it came to the evening performance all I had to do was put fresh batteries in the belt packs, check that the mic positions hadn't changed since the rehearsal, and help the soloists connect and secure the transmitters. I double-checked that they were all happy (which they were) and so the show went on. Paul didn't have to make any significant adjustments on the desk, except to execute a quick channel swap because yours truly had



The show was mixed on a Yamaha M7 digital desk.

Sound engineer Paul Nicholson of Midas ProSound

"I've used many types of wireless headsets before but the DPA models are by far my favourite. This was the first time I had used them in an operatic environment and I have to say they were so easy to set up and EQ; just a high pass at 150kHz across all six singers and a tight 1kHz filter on the sopranos were all I had to do. The gain before feedback was extremely impressive, and had I been using a conventional loudspeaker system rather than dV-DOSC I would still have had plenty of headroom to spare. Not being tied to a static microphone position and having freedom to move and express themselves was a great advantage for the singers, and having such a lightweight and unobtrusive headset made it a really enjoyable experience for them. From my side, it was just perfect using the DPAs and the comments from some of the audience regarding the 'amazing vocal sound' was testament to the quality of the singers and the DPAs."



▶ The DPA 4066F comes with four colour-matched foam shields, a tool for tightening the connector and two grilles, which alter the frequency response of the mic in slightly different ways.



managed to fix two of the transmitters onto the wrong bodies — Paul had a very tactful way of pointing this out to me, which went something like, "I'm sure Frank wasn't singing soprano this afternoon, was he Mike?"

The client — Candlelight Opera's Artistic Director, David Norman — was extremely pleased with the DPA mics, not only at how good they sounded but also at the minimal visual impact, so important in a setting like this. These beige versions are very difficult to notice even at relatively close range, and the headband design gives lots of confidence that they will stay in place once properly adjusted. The performers — professional singers who know what they like and dislike, and aren't afraid to say so — were all untroubled by the headband and boom design, and the overall success of what could easily have been a very tricky live sound application was undoubtedly made possible by these excellent microphones.

This was a successful show, which hinged

on the performance of the six wireless mics. The first-class audio performance was underlined by the stability and comfort of the headbands, and this was the first time I hadn't spent the entire gig worrying about when the first one was going to fall off or start to annoy the performer. The DPA 4066F is a high-end product and doesn't have a budget price tag, but the fact that they are regularly used in large professional productions tells its own story, and my only problem now is that having used them once it will be difficult accepting anything which isn't up to this standard of audio performance or physical design. ■ PM



Andy Reeves of Midas ProSound takes a well-earned rest.

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+ LIVE SOUND WORLD

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