

# TOP GEAR | PRODUCT REVIEW SPECIAL

IAN SEAGER TAKES TO THE AIR WITH FOUR TOP-OF-THE-RANGE ANR HEADSETS

## ANR Headsets – loud and clear

**T**he idea of spending between £700 and the best part of £1,000 on an ANR headset can seem a bit extreme. While there's no getting away from the fact that you can pay for a decent chunk of flying for that kind of money, particularly if you're going to be buying two or even four headsets, it's equally true that nothing spoils a flight more than a dodgy headset and the resulting noise. Apart

from the dangers to your hearing – ever wonder why so many of the older pilots, who did a lot of flying before intercoms and headsets were the norm, are deaf? Bad audio quality on a long flight will make you tired quicker and can add stress. So if you think of a high-quality headset as something that enhances the flight and then factor in its use over many years, it all starts to make a little more sense.

For many years Bose dominated the market with the Bose X, but at Oshkosh last year that was replaced, after 12 years in service, with the Bose A20. The Lightspeed Zulu, which had quietly built a reputation for quality and comfort, recently became Lightspeed Zulu.2 and in April this year Beyerdynamic introduced the HS800. While we were preparing to put all three up against each other we heard rumours of something new from Sennheiser who kindly supplied us with a



**Bose A20**







pre-production model to evaluate, so we've included it in the group test, although we've been told that there will be some minor changes when it goes into production.

All four ANR headsets are pitched at the top end of the ANR range, all of them come with battery/control boxes and all of them have options to work with the aircraft's power supply. Apart from Beyerdynamic's HS800, all also come complete with Bluetooth, either built-in

(Lightspeed and Sennheiser) or as an option (Bose). Thankfully, all of the headsets have an 'auto off' function that will save the forgetful among us from needing a pair of new AA batteries each time we want to use them.

### Comfort

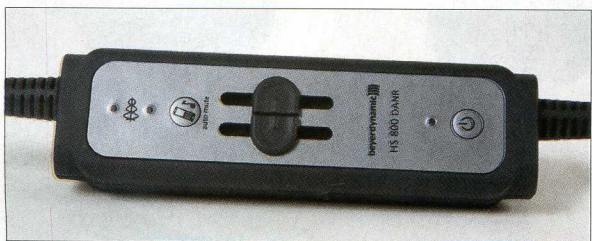
While the sound-reduction qualities may provide the headline grabbing numbers, it's the combination of comfort and noise attenuation

that delivers the real value. The good news is that all of the headsets tested are pretty comfortable, but there are differences. Anyone with slightly large ears (and they don't have to be in Prince Charles's league) will be happy that the A20 from Bose enjoys larger ear cups than its predecessor, although this doesn't mean that they're too big for anyone with 'normal' sized ears. Of all the headsets tested, the Bose has the lowest clamping force, making it one of the most



**Lightspeed Zulu.2**





## Beyerdynamic HS800

comfortable on test. The Zulu.2 claims to deliver 15% less pressure than the original Zulu and this might well be the case, but I guess our heads just weren't sensitive enough to really notice.

Although the Zulu undoubtedly does exert more force, it's not at all uncomfortable and when we asked some pilots and passengers to try the headsets for comfort, a couple rated the Zulu as the best of the bunch.

The Sennheiser brings innovation to the question of comfort, inasmuch as the tension can be adjusted on a per side basis. Add that to the generous cup size and cushion material, and there won't be any complaints even after long flights. Of the four headsets tested, the Beyerdynamic HS800 looks like it ought to be the least comfortable – the ear cups are perfectly round and the headband, although padded, looks, well, a bit simple. In practice, it seems that the round cups fit varying ear sizes pretty well, and while the padded headband is undoubtedly 'simple' it's also pretty effective. If we had to pick a winner in the comfort stakes, then in our view Bose and Lightspeed would take joint honours; but comfort is very subjective and among the people we asked, each headset was rated as the best by at least two wearers. Realistically, this means get yourself to a pilot shop or exhibition and try them for yourself.

### Real world ANR

Check out the table on the next page if you want to see the official data, but read this if you want some subjective opinion based on actual flight time. As the numbers suggest, the Bose A20 is the quietest headset of the bunch. This was effectively demonstrated when for some unknown reason the ANR clicked off a couple of times during the test (which was more than likely down to our aircraft rather than the headsets). The difference was startling, and it took us by surprise when it happened. I'm happy to say that switching the ANR back on again immediately restored peace and tranquillity to the cockpit.

The Lightspeed, despite not topping the table in terms of the dB reduction, also performed very well, particularly in the cruise, although in full-power climbs the harshness of the engine note could be heard more than with the other headsets. The Sennheiser brings an extra feature to ANR headsets – essentially, you turn them on to activate the ANR and then fine-tune the ANR by pressing a button on the side of the headset. When the headset's microphones have analysed the sound and tweaked the cancellation wave, a beep is heard and there's a noticeable drop in noise levels. Should the external noise levels or pitch change (different flight regimes, different

prop settings, etc.) then the button can be pressed again (and again and again) in order to match the headset's ANR qualities as closely as possible to the environment.

The Beyerdynamic HS800 features something called DANR, which stands for Digital Adaptive Noise Reduction. This means that the headset is constantly working to generate the best result. While this works well enough, we did notice a very low frequency rumble from time to time. It wasn't at all intrusive, but it was there.

The ANR properties of a headset obviously work in conjunction with the passive properties provided by the ear cup seal. This means that if you need to wear glasses or sunglasses when flying, then that seal is going to be disrupted in some way. A lot comes down to the shape of your head and even more importantly the thickness and position of the frames of your glasses. We tried the headsets with some fairly normal reading glasses and with a pair of Randolph Aviators. The reading glasses didn't cause much degradation, but the sunglasses were a disaster for every headset, at least when used by our testers. The headset that coped better than others with the frame disturbance was the Sennheiser, undoubtedly because the ear cup cushions have been designed with glasses wearers in mind.





**Sennheiser S1**

## Bluetooth

Three of the headsets have Bluetooth (or have models that include Bluetooth) and whether or not you need it depends on the type of flying you do and the convenience that you seek. The Sennheiser and Lightspeed Zulu.2 will let you make telephone calls and listen to music via Bluetooth, while the Bose will only let you make calls – if you want music then you'll need a lead (which can be plugged into the control/battery box). The Bluetooth pairing is simple and works well, and listening to music or making a call was easy. It's possible to set the music/call to mute when there's a radio transmission, so there's no danger of missing a call, there's also no question of being able to enjoy any music if you are using the radio, as even the quietest of frequencies has a procession of pilots seemingly regaling controllers with detailed descriptions of their current flight.

## Conclusion

All four of the headsets we tested perform very well indeed. However, if you are after the ultimate in noise reduction then look no further than the Bose A20; with the ANR switched on it easily

outperformed the competition. If passive noise reduction is important to you (i.e. if you have no power available and run out of batteries) then the Lightspeed does the best job, but the payback is that it exerts more pressure on your head (although this is by no means excessive). If you combine the measurements to provide a slightly artificial 'noise reduction score' then again Bose leads the field. If you're looking for the ultimate in adjustability, then the Sennheiser does extremely well, with both sound and comfort (tension) being adjustable, and if you are looking for the lowest cost, the Beyerdynamic will require fewer of your flying vouchers.

So, they're all good, and they all have advantages – but as is the way of group test, it's necessary to come up with a winner or two. If you are looking for the best in terms of comfort and noise reduction, then you get what you pay for. The Bose A20 may be the most expensive of the headsets tested but it's also the top of the tree in terms of performance and is supremely comfortable, the only minor snag being its inability to play music through the Bluetooth connection. If you want the best value for money, then at over £200 cheaper, the new Zulu is tough to beat. ■

## TECH SPEC ANR Headsets

### BOSE A20 WITH BLUETOOTH £945

Passive noise reduction .....	11dB
Active noise reduction .....	23dB
Weight .....	345gm
Available with Bluetooth, but for telephone only <a href="http://www.bose.co.uk">www.bose.co.uk</a>	

### LIGHTSPEED ZULU.2 £719

Passive noise reduction .....	13dB
Active noise reduction .....	16dB
Weight .....	380gm
Available with Bluetooth for both telephone and music <a href="http://www.lightspeedaviation.com">www.lightspeedaviation.com</a>	

### BEYERDYNAMIC HS800 £699

Passive noise reduction .....	11dB
Weight .....	19dB
Weight .....	340gm
<a href="http://www.beyerdynamic.com">www.beyerdynamic.com</a>	

### SENNHEISER S1 PRE-PRODUCTION

MODEL TBD but probably c£900	
Passive noise reduction .....	12dB
Active noise reduction .....	16dB
Weight .....	NA (pre-production model)
Available with Bluetooth for both telephone and music <a href="http://www.sennheiser.co.uk">www.sennheiser.co.uk</a>	