



Guide to operating a small sound system or a hearing loop system

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Many small sound systems and hearing loop systems, are operated (switched on and off and generally looked after) by volunteers. While this guide cannot cover all the issues, particularly those concerning large systems (for which you may need to look at BS IEC TR 63049), it should provide a useful basis from which to start.

Quite a number of volunteers may have less than perfect hearing (whether they realise that or not). But that isn't a reason for disqualification, because there is one overriding important principle, which defuses the hearing-loss issue. That principle is:

'Talk to the users'

By that, I mean talk to a few of the users on a regular basis at least every month or so, to check whether anyone is having trouble hearing or offers any other constructive comment. Make it clear that no-one should wait to be asked; if they have a problem, they should tell you.

It's true that if you use hearing aids, or if you don't but really should, you will not hear the sound system (the loudspeakers) in quite the same way as others might, but that doesn't necessarily matter as long as you are happy with the performance of the system. A loop system can of course be checked with a loop receiver, but if you have hearing aids, then these can be an advantage because you can actually hear the loop sound, while people without hearing aids, of course, can't.

What do you do if there is a problem?

That depends on how confident you are with the electronic equipment. If you are uncomfortable with it, you need to have someone to call on who is able to investigate the problem. If you don't have such a back-up, you really owe it to yourself to persuade 'the management' (whoever they are) to get someone to show you the ropes. One way may be to approach local amateur radio clubs, which you can find through the RSGB website www.rsgb.org/main/clubs/club-finder/. Another way is to look for a local ISCE member through the ISCE website www.isce.org.uk/

Supposing that you are familiar with the operation of the accessible controls, you can obviously make the loudspeakers sound louder or quieter, because there is a volume control knob similar to the one on your radio (if it's not fully remote-controlled). You may need to adjust a master volume control or an input level (channel) control for different talkers, or for the same talker but a different microphone or at a different distance from the microphone.

Resist the temptation to make significant adjustments to tone controls (e.g. bass and treble) or equalisation controls, if there are any. Most such controls often have far too much effect, and can potentially make the sound very shrill or very muffled. Unless several users agree that the tonal balance needs adjusting, don't touch it.

Preferably, mark the positions of all controls that don't need to be regularly adjusted for different talkers.

Maintaining the system

If you are confident with dealing with electronic equipment, the plugs and sockets and what goes on at the back of the equipment for example, you could carry out some basic routine maintenance. This can be broken down into weekly / monthly checks and perhaps six monthly and annually. The first step is to carry out a visual inspection, looking for worn cables where they enter plugs, for example. You can repair cables with mains plugs (if the plug is moulded on, cut it off, be sure to remove the fuse and throw the plug away, as it's a safety hazard). But for other plugs (i.e. the audio input and connecting cables) these usually need to be soldered, which is OK if you are experienced in doing this but don't be tempted if you've never tried, or if you have trouble seeing the details of the small plugs that are in wide use these days. Check that all the plugs are firmly plugged in and the audio connections are not loose and all are where they should be. (It is useful to clearly label them so that they can be readily checked).



Plugs that go into 'jack sockets' (they have a cylindrical metal projection with one, two or even three insulating rings) can be cleaned occasionally – (once a year is usually adequate) with metal polish wadding or, even better, a silver polishing cloth. Make sure you remove all residual polish with a clean cloth. The three pin 'XLR' plugs, often found at the ends of microphone leads, can be similarly cleaned. However, if the plugs and sockets are regularly used, then they effectively become 'self-cleaning'.



Be careful with 'phono' plugs, which have a plain metal stem emerging from a metal cup. Cheap ones have only thin nickel-plating on steel, and if you clean too often, they may go rusty. You can get higher-quality versions, but you do not need to pay crazy 'high-end hi-fi' prices. Don't clean gold-plated plugs, other than with a damp cloth if necessary, because the plating is very thin and it will soon disappear.

So, the weekly schedule should include the visual inspection and operation of the system equipment. (If the amplifier(s) are kept in a secure cupboard and not touched then the inspections can be at longer intervals, but do check that the system is correctly working on a weekly or monthly basis – depending on its usage).

Carry out a full visual inspection at least twice a year and consider cleaning audio plugs and sockets on a yearly basis or more frequently if the equipment is located in an unheated or damp location. Do not forget to also check the microphone sockets or other audio input sockets that may be located around the room or building.

Microphones and batteries

Hand microphones often develop cable faults, due to repeated flexing where the cable leaves the microphone, and the cable can be trodden on or even driven over by wheelchairs and buggies. A lot of skill is required to replace a microphone cable, but this is avoided if the microphone is designed to have the cable plugged into it, rather than being solidly attached.

Before an event, check that all microphones are positioned correctly and that they are working. Change any batteries that are weak; this applies also to other system equipment that uses a battery.

Special considerations for hearing loops

Naturally, you will need to check before every event that the loop (amplifier) is switched on, and that it is, in fact, working. This can be accomplished by either observing that the current indicator lights illuminate when a microphone or other sound source is used, or by listening to the loop with a 'loop receiver' or with a hearing aid.

Something peculiar to hearing loops can be a big puzzle. One person (maybe two together) say they can't hear the loop where they are sitting, but can hear it if they move to another place. Obviously, you suggest they sit in 'the other place' (or any other place if they prefer) but why does it happen? The answer could be an irregularity in the loop layout and resulting magnetic field strength or could be due to the incorrect or unusual positioning of the loop pick-up element (the telecoil) in the hearing aid ('non-vertical telecoil'). Hearing loops can work with horizontal telecoils, but *not* in the middle region of the loop. So the 'fix' is to move away from the centre.

An even more curious complaint is 'I can only hear if I'm facing sideways or the back of the room'. This is due to some misguided hearing aid designs that have the telecoil positioned at an angle, that is neither vertical nor horizontal. This is supposed to work with old phones and loops, but there are regions inside many loops where the magnetic field is also at an angle, and that angle is opposite to the telecoil angle, which therefore can't 'see' the magnetic field. Again, this happens (if at all) only in some places within the loop, so a move will also provide a cure.

It is very important to keep all equipment ventilation slots free of dust and unobstructed.

What about the long term?

Nothing lasts forever. For a sound system or a hearing loop system, think 15 years as a reasonable life-time, more especially for hearing loop systems because there is much greater awareness now in the industry (thanks to the ISCE training courses and its approved assessment scheme) of the technical standards that need to be applied. The prudent course of action (if you can get it supported) is to double the cost of the last installation (to allow for inflation and improvements), divide that by 15 and put away the resulting sum every year, preferably invested and ring-fenced so it can't be appropriated for anything else.

Thanks to various ISCE colleagues for their valuable suggestions.