



# **A GUIDE TO CLEAR SPEECH**

The DTG Accessibility Task Group

# 1 WHY IS CLEAR SPEECH IMPORTANT?

**More than 12 million people in the UK have hearing loss according to the RNID – or about one in five of the population. This includes a predicted 7.1 million people in 2021 who could benefit from hearing aids (hearing loss of at least 35dB in the better ear) and 1.2m people with hearing loss greater than 65 dBHL.**

Audibility is the single biggest topic of viewer complaints [BBC]. Whilst the majority of those complaining suffer from some degree of hearing loss, this is not the only reason for difficulty understanding dialogue.

In 2010 BBC Vision carried out two separate surveys with its Pulse on-line panel of 20,000 viewers to identify the issues which caused problems with television sound. The research showed that nearly 60% of viewers had some trouble hearing what was said in TV programmes.

The research identified four key factors that can make it hard for viewers to hear what is being said:

## 1. Clarity of speech

Poor and very fast delivery, mumbling and muffled dialogue, turning away from camera, people talking over each other, trailing off at the end of sentences.

## 2. Unfamiliar or strong accents

Audiences find accents other than their own harder to understand.

## 3. Background noise

Locations with heavy traffic, babbling streams, farmyard animals, in fact any intrusive background noise can make it difficult to hear what is being said.

## 4. Background music

Particularly heavily percussive music or music with spikes that cut across dialogue.

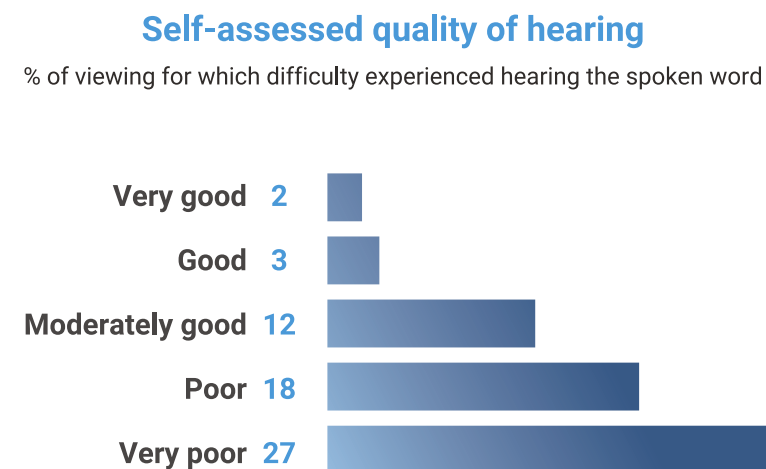


## 1 WHY IS CLEAR SPEECH IMPORTANT? CONTINUED

A common problem for people with hearing loss is that they experience difficulty in discerning speech from background sounds. Even the minor hearing loss that is a natural result of ageing leads to a noticeable reduction in the ability to follow dialogue over background sound.

A similar study, carried out by Voice of the Listener and Viewer ([www.vlv.org.uk](http://www.vlv.org.uk)), BBC and RNID among a sample of viewers of mixed ages and hearing abilities, found that participants experienced problems hearing the spoken word across more than a quarter of content (Fig. 1). It also underlined the link between viewer age and hearing difficulties (see section five).

Fig. 1



## 2 WHAT ARE THE RISKS FOR THE TV SECTOR?

**If the dialogue is not clear, the broadcaster can receive hundreds, even thousands of complaints and many viewers may stop watching the programme or series.**

Rectifying the problems after broadcast is both costly and time consuming and the press coverage can be extremely bad for the reputation of the programme, the production company and the broadcaster.

As the production team know the script and listen to the dialogue many times during production, their ability to follow what is being said doesn't mean viewers will be able to do the same. The problem is exacerbated by the difference in listening conditions; production is generally undertaken in a quiet environment using high quality speakers; the general public listen in sometimes noisy environments using the small speakers built into a TV.

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## 3 WHAT CAN BE DONE?

**Many of the factors affecting the clarity of speech can be reduced or removed by care taken in the production process, including pre-production planning and quality control.**

Programme commissioners and producers have a role to play in ensuring that purchased and in-house programmes are made in a way that ensures clarity of speech.

Whenever possible, prior to release a programme should be played through domestic quality loudspeakers to someone not involved in the production, so that any instances of unclear dialogue can be identified and rectified prior to transmission. Use of a hearing-loss simulator (see section five) provides a convenient way of checking the clarity of the speech element of a programme and is encouraged.



## 4 PRACTICAL ADVICE & RESOURCES

The BBC's College of Production has made a number of useful training videos giving practical advice on, among many other things, acquiring, recording and post-producing sound for television. The following are relevant to clear speech and are freely available.

### Pre-production planning

▶ Clear sound - planning ahead

▶ Clear sound - best practice tips

### Post-production

▶ Clear Sound – when the audience complains

▶ Clear sound – making the most of post

### Content acquisition

▶ Sound for self-shooters: radio mic

▶ Sound for self-shooters: top mic

▶ Tips: Self shooting actuality

▶ Clear Sound: recording in the studio

▶ Clear sound: recording factual

▶ Clear sound: recording drama

▶ Clear sound: self-shooting

## 5 SPECIFIC AUDIENCE DEMOGRAPHICS

**Age-related damage to the cochlea, or presbycusis, is the single biggest cause of hearing loss. This process occurs naturally as part of the ageing process.**

Around the age of 50 the proportion of people with hearing loss begins to rise sharply, and 55% of those over 60 are deaf or hard of hearing. It should be noted that while only about 2% of young adults are currently affected, the fastest rate of increase among adults is now in the 16-24 age group.

The Voice of the Listener and Viewer, BBC and RNID study showed that in the over-65 age group, 29% of programmes posed speech audibility problems to at least 10% of viewers. The table (Fig. 2) shows the results for different age bands, using selected programme material, and that the over-65 age group have difficulties with four times as many programmes as the youngest group. Background noise and background music combined account for a quarter of the difficulties with the latter a particular issue for those in older age brackets (Fig. 3).

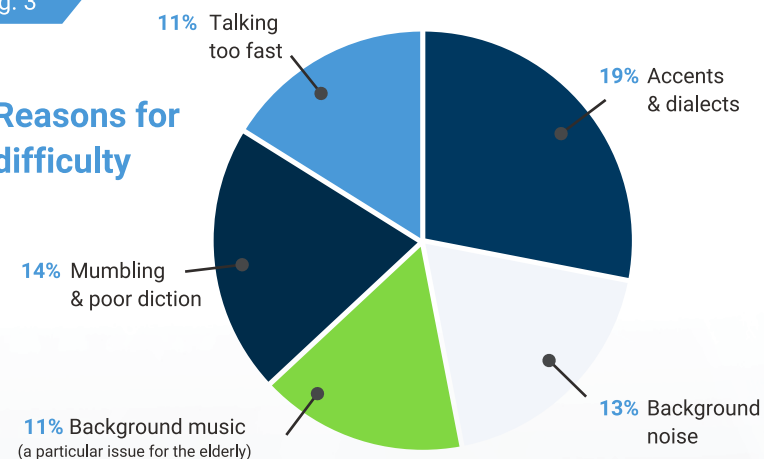
Fig. 2

### UK adult population having difficulty hearing speech in programmes

Age range	% of UK adult population (approx)	% having difficulty hearing speech in programmes
16-49	40	13
50-64	30	23
65+	20	53

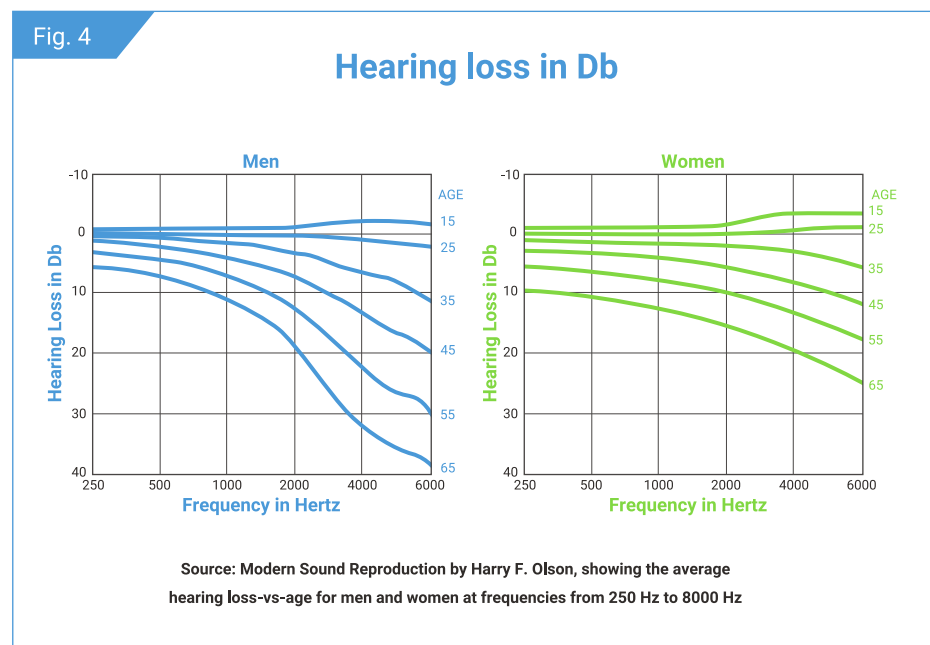
Fig. 3

### Reasons for difficulty



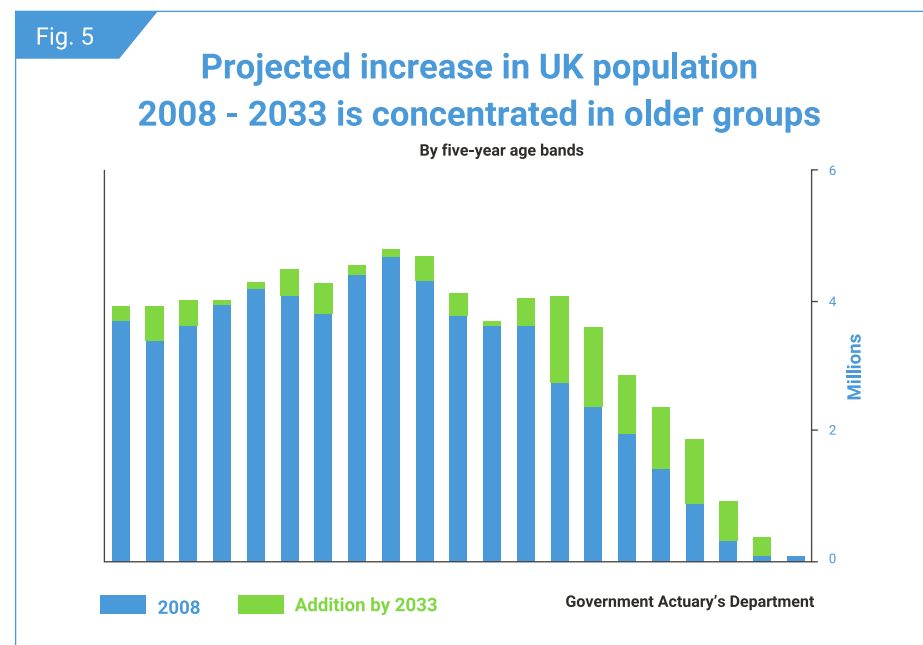
## 5 SPECIFIC AUDIENCE DEMOGRAPHICS CONTINUED

The charts below illustrate the way in which hearing loss increases with age, both basic sensitivity and frequency-dependent loss.



A vital factor is that a majority of consonants, which are crucial to understanding, are centred in the higher frequency range, where hearing loss is most marked.

The following chart shows the expected increase in the UK population by 2033.



Note the significant increase in the population aged 65 and over. So, the number of people in the audience with limited hearing is increasing each year.



## 5 SPECIFIC AUDIENCE DEMOGRAPHICS CONTINUED

While subtitles are a solution for some viewers, many of those suffering from mild hearing loss prefer not to use subtitles, particularly for news programmes, as the delay and errors can be distracting. Consequently, even for this group, the clarity of speech is important.

**A study carried out by TV Licensing in 2017** revealed that the average amount of TV viewed per person per day increases with age – in 2016, adults aged 65+ watched more than three times as much TV as those aged 16-24: Over 65s watch 344 minutes of TV a day 16-24s watch 114 minutes of TV a day.

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### Hearing Loss Simulators

You can hear for yourself what it is like to have impaired hearing by using software simulators. Several are available, two of which are:

#### University of Cambridge Inclusive Design Kit

Demonstrates some of the main effects of common types of hearing loss in the UK. It gives an indication of how sounds might be perceived by affected people, at varying levels of severity. Its purpose is to help content creators to better empathise with those with reduced hearing capability, and to help them understand how capability loss affects the ability to interact with products, services and everyday life.

[inclusivedesigntoolkit.com](http://inclusivedesigntoolkit.com)

#### University College London's HearLoss

An interactive Windows PC program for demonstrating to normally hearing people the effects of hearing loss. With HearLoss you can replay speech, music and noise under a variety of loudness, filtering and masking conditions typical of hearing impairments. Best of all you can interactively change the settings and demonstrate their consequences.

[www.phon.ucl.ac.uk/resource/hearloss](http://www.phon.ucl.ac.uk/resource/hearloss)

## RESOURCES & PUBLICATIONS



DTG U-Book: UK Digital TV Usability and Accessibility Guidelines, including Text to Speech, Version 3, December 2014 from the DTG Publications web page



The DTG Receiver Recommendations publication gives details of the mandatory requirements for accessibility features in receivers from the DTG Publications web page



IEC 62731 International Standard: Text-to-speech for television - General requirements



BBC guidance on visually and hearing impaired audiences



Ofcom's code on television access services and best practice guidance



The DTG frequently host events focused on accessibility and have an Accessibility Working Group which meets regularly. Details of events can be found on the DTG Events page

