

# HEARING AIDS AND FITNESS TO FLY FOR CLASS 1 PILOTS

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# HEARING AIDS(HA)

- ▶ -The mandatory use of HA within Class 1 pilots is determined by the Authority, AMC1 MED.B.001 limitation to class 1
- ▶ HAL: means wearing HA

	CODE	LIMITATION
1	TML	restriction of the period of validity of the medical certificate
2	VDL	correction for defective distant vision
3	VML	correction for defective distant, intermediate and near vision
4	VNL	correction for defective near vision
5	CCL	correction by means of contact lenses only
6	VCL	valid by day only
7	HAL	valid only when hearing aids are worn
8	APL	valid only with approved prosthesis
9	OCL	valid only as co-pilot
10	OPL	valid only without passengers (PPL and LAPL only)
11	SSL	special restriction as specified
12	OAL	restricted to demonstrated aircraft type
13	AHL	valid only with approved hand controls
14	SIC	specific regular medical examination(s) - contact licensing authority
15	RXO	specialist ophthalmological examinations

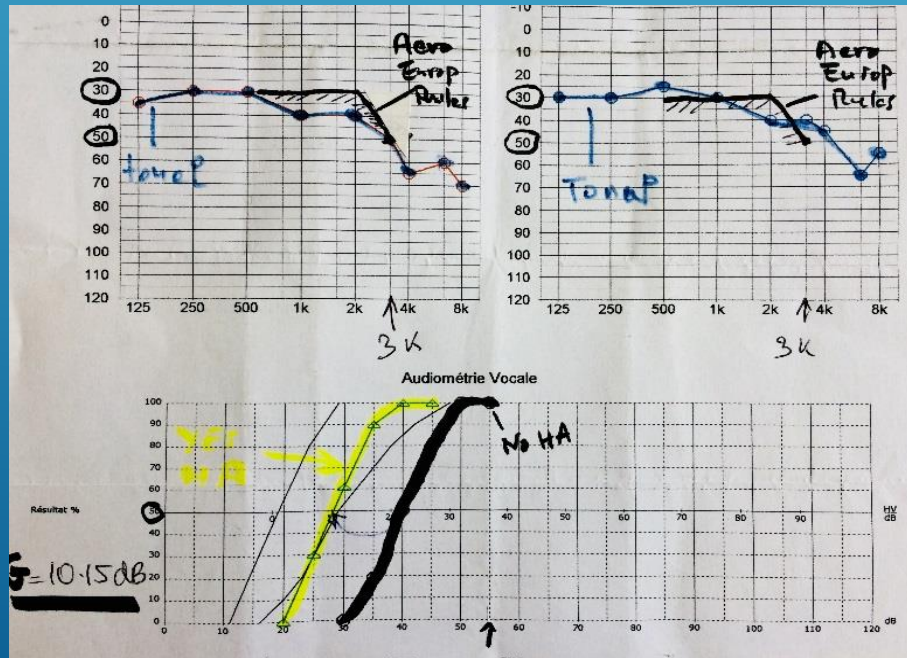
# HEARING AIDS EVOLUTION

- ▶ **-More than 50% of the HA are of open-type.**
- ▶ **-New numeric HA now exist.**
- ▶ **-In France, the ear prothesis technician must successfully complete a 3-year program in order to practice**




# PRESCRIPTION OF HEARING AIDS

- ▶ Important Issue ...
- ▶ -Regardless of the deafness type, this question must take into account medical, cultural and economic factors.



# PRESCRIPTION OF HEARING AIDS

- ▶ **-LEVEL 1: No HA is prescribed if there is no significant disturbance of daily routine and activities.**
  - ▶ **-LEVEL 2: HA are considered when auditory deficiency has no significant impact on daily life and no impact whatsoever on professional duties.**
  - ▶ **-LEVEL 3: HA are necessary when auditory deficiency impacts both personal and professional activities**
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# THE AIM OF HA IS TO INCREASE THE LEVEL OF HEARING IN THE CONTEXT OF NOISY BACKGROUND

- ▶ -Hearing in a silent environment is easy and of no challenge.
- ▶ -The end goal is to amplify the sound during daily routine life using HA or using a mandatory helmet during flight duty.



# HEARING AIDS

- ▶ -HA are considered efficient if the vocal audiometry results generate more than 15dB.
- ▶ -The ENT conducts an ear prothesis tone audiometry test and a vocal audiometry test with and without HA, in silence in noise.



# HEARING AIDS AND FITNESS TO FLY

- ▶ **-Between 2015 and 2017 following Authority examination, it was determined that 14 class 1 pilots required a mandatory helmet during flight duty in order to be fit for flying and were categorized with a HAL limitation.**
- ▶ **-Evolutionary ear pathologies, middle ear cholesteatoma and vestibular schwannoma must first be ruled out before HA can be prescribed.**

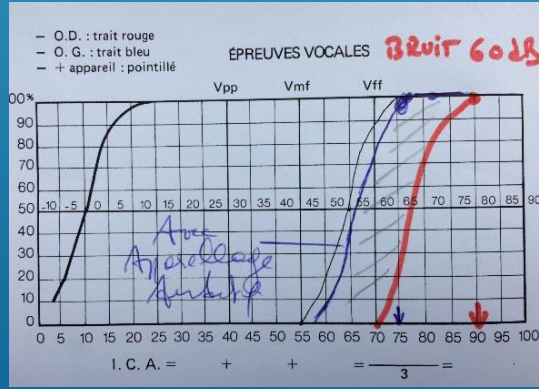
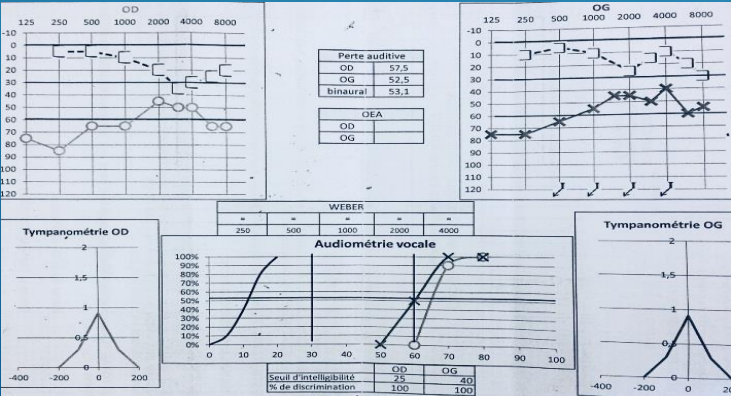


# HEARING AIDS AND FITNESS TO FLY

- In cases deemed fit to fly using a mandatory helmet, both tone and vocal audiometry results, with and without background noise (speech discrimination hearing test), must be submitted to the Authority. An Analysis of the audio prosthesis benefit is also verified.
- The British (UK) Authority requires a mandatory functional hearing test

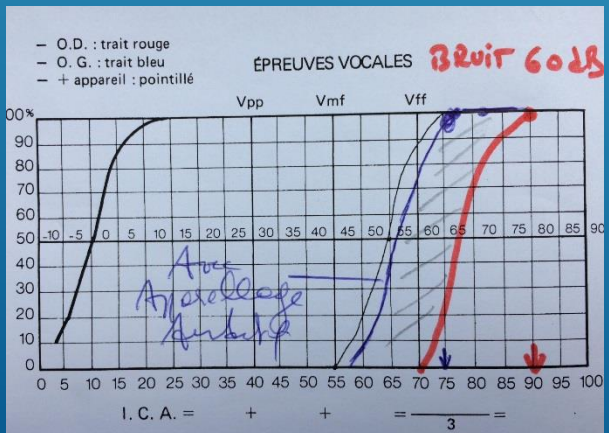
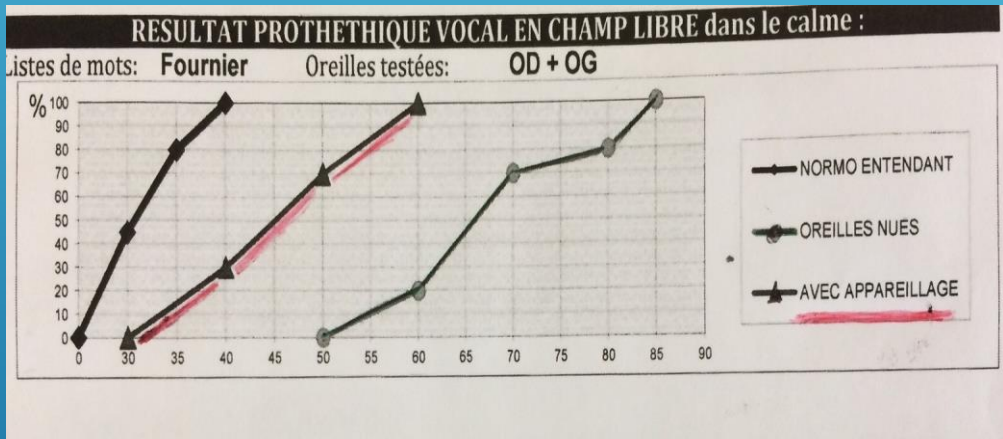
# HEARING AIDS AND FITNESS TO FLY

- ▶ Clinical case study: 41 year old class 1 pilot
- ▶ -Post surgery otosclerosis resulting in bilateral (left and right) hearing loss at 60 dB tone audiometry.
- ▶ -At 80 dB vocal audiometry in silence, 100% of words are heard.
- ▶ -At 90 dB vocal audiometry in noise, 100% of words are heard.



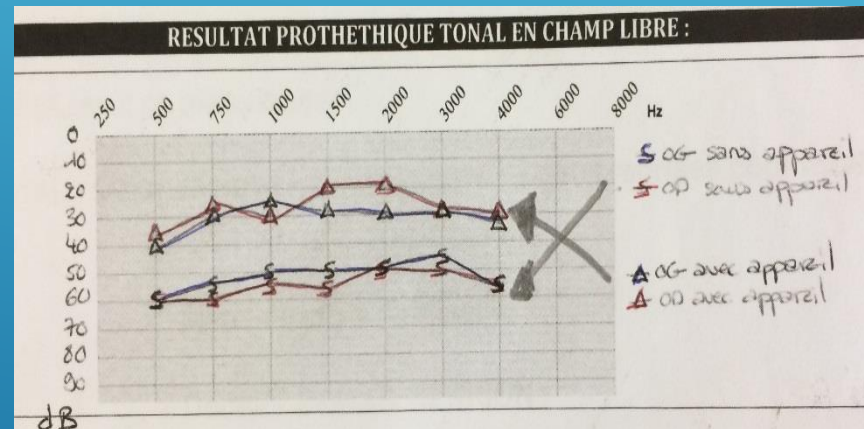
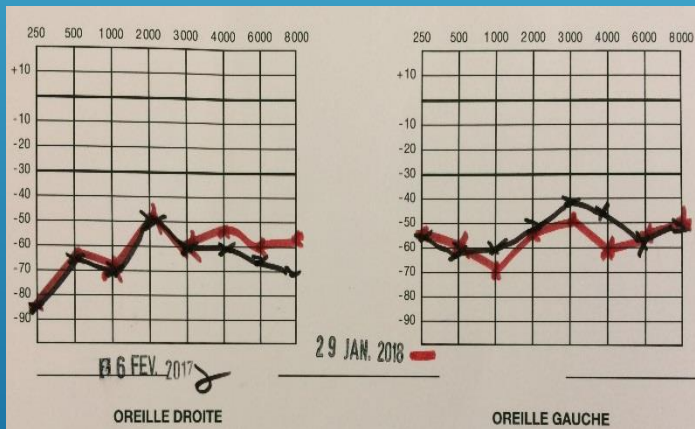
# HEARING AIDS AND FITNESS TO FLY

► With bilateral HA, a 25 dB increase in vocal audiometry in silence is observed while a 15 dB increase is noted in vocal audiometry in noise.



# ▶ HEARING AIDS AND FITNESS TO FLY

Decision by authority SSL :HAL /  
mandatoty helmet during flight duty/  
Survey Aemc / SIC 36 month





# CONCLUSION

- ▶ -New decisions regarding the fitness of class I pilots to fly depend on both the in-depth knowledge of deafness by the AME and technical improvements.

