CHAPA
COLLEGE OF HEARING AID PRACTITIONERS OF ALBERTA

Dear CHAPA Competency Examination Applicant,

There are two components to the CHAPA Competency Examination: The ILE and practical. The ILE examination component must be passed before any attempts can be made at the practical examination component.

An applicant who is unsuccessful on the second attempt at the ILE examination will be required to successfully complete the International Hearing Society Distance Learning Course. This course will be completed at the applicant's own expense If the applicant has already completed this course, the Examination Committee may determine different educational requirements. Proof of course completion must be provided by the applicant to the CHAPA Registrar before the applicant will be permitted to register for another ILE examination.

An applicant who is unsuccessful on the second attempt at the practical examination will be required to contact the Examination Committee Chair in order to determine courses or training to assist in passing the exam on subsequent attempts.

Applicants have up to two years after graduation from an approved program of study to successfully complete the two CHAPA Competency Examination components, with an extension of one year available if requested by the applicant. Out-of-province and out-of-country applicants should consult with the CHAPA Registrar to determine if additional requirements must be met.

Sincerely,

CHAPA Examination Committee

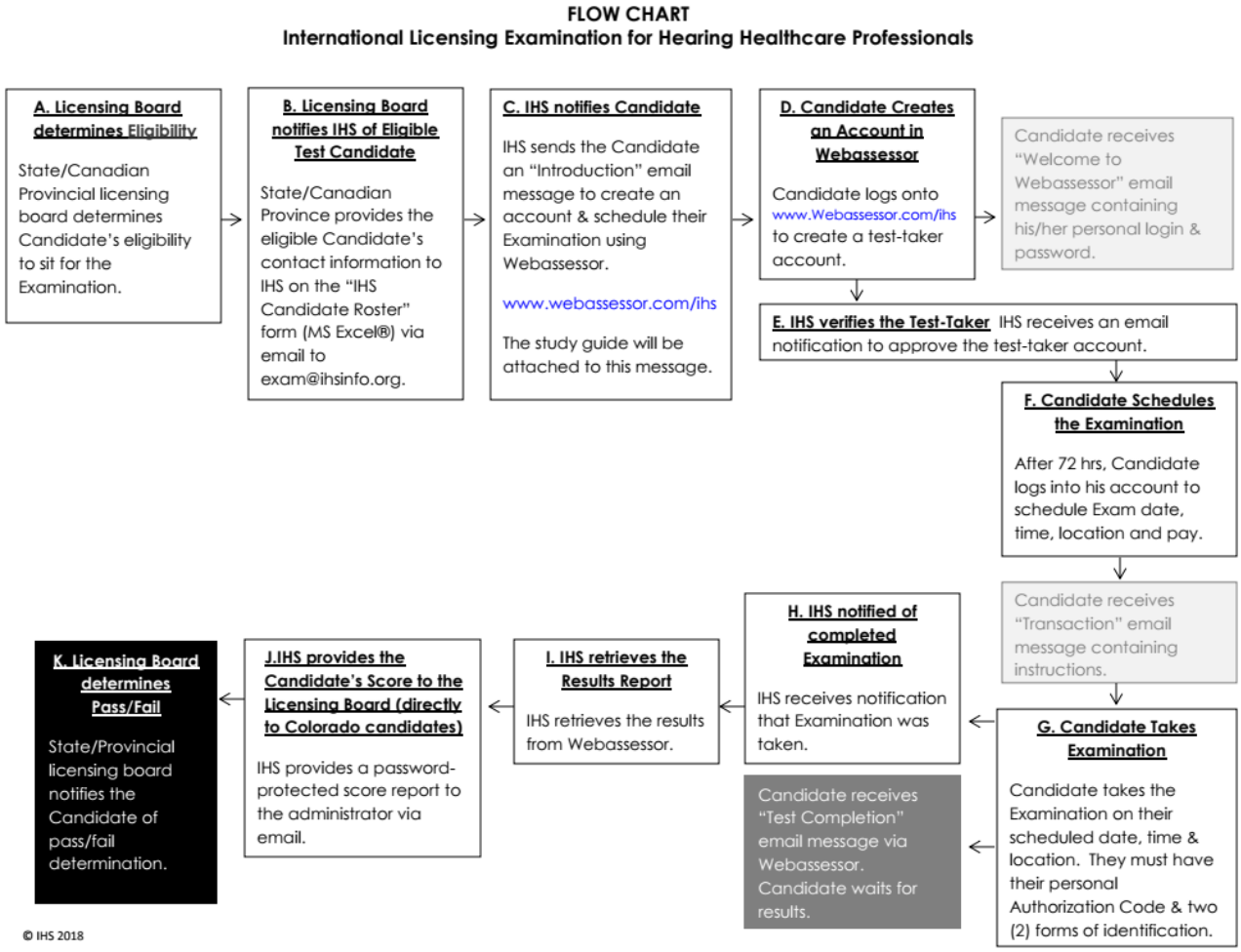
COLLEGE OF HEARING AID PRACTITIONERS OF ALBERTA

PART 1

ILE EXAMINATION CRITERIA

COLLEGE OF HEARING AID PRACTITIONERS OF ALBERTA

The flow chart below walks through the ILE exam process. Candidates are eligible to write the ILE after graduation from an approved program of study. The registrar will provide eligible candidates contact information to IHS after proof of program completion is received. Once you have received your introduction email from IHS follow all directions to complete the exam process. All questions in regards to the ILE exam are to be directed to IHS. You will be notified of the exam results via email. Please ensure the email address provided when registering with CHAPA is correct and up to date. CHAPA will not be responsible for exam results not being received do due incorrect email.



If you have any questions about the ILE examination process please contact IHS at 734-522-7200 or via email at exam@ihsinfo.org.

COLLEGE OF HEARING AID PRACTITIONERS OF ALBERTA

PART 2

PRACTICAL EXAMINATION CRITERIA
2 HOUR TIME LIMIT

INTRODUCTION AND PURPOSE

All applicants who desire to become Registered Hearing Aid Practitioners in the Province of Alberta must demonstrate their competency to the College of Hearing Aid Practitioners of Alberta. This Guide is used for the evaluation during the Competency Assessment.

PURPOSE OF THIS PRACTICE GUIDE is to provide the applicant with competent hearing test practice information. The components in this practice guide are: 1) case history, 2) otoscopy, 3) tympanometry and acoustic reflex tests, 4) pure-tone air and bone conduction, speech audiometry, and masking, 5) real ear measurements.

Sanitary, safety procedures and professionalism in appearance and conduct must be demonstrated throughout.

Case History: The Applicant is required to obtain answers to a diverse list of questions. This provides an opportunity to demonstrate a professional attitude and good interpersonal communication skills. As well, listening and asking questions could point to the need for a referral or influence the fitting of hearing aids.

Otoscopic Examination: Applicants must describe aloud and record what is seen in the ear canal – including the tympanic membrane, the landmarks seen on the tympanic membrane, and demonstrate a visual inspection of the external ear. Proper bracing technique must be demonstrated.

Tympanometry and Acoustic Reflexes: The applicant is expected to instruct the client of what to expect, obtain a seal in the ear canal, record the information from the printout on the audiogram and include an interpretation of the type of Tympanogram and Acoustic Reflex results.

Audiometric Tests: The step by step hearing test procedures detailed here should result in an accurate audiometric configuration and a reliable indication of hearing ability. When masking is required, it will be necessary to record the type of noise that was utilized and the initial and final effective levels of masking. (Masking levels can be placed under each threshold or in a space that is provided below the audiogram but must be present on the audiogram.).
You will be tested on your procedures and accurate recording of: MCL's, Pure tone air and bone, SRT's, Word Discrimination testing, UCL's and appropriate masking of these tests.

Real Ear measurements: You will need to demonstrate the calibration of the real ear and the electro acoustic analyzer. You must also demonstrate proper placement of the probe microphone and perform an unaided sweep.

Ear Impression: You will be required to demonstrate proper impression taking techniques.

Interpretation of test results: Proper referrals and recommendations must be made as well as proper interpretation of all tests performed.

Please Note:
When you are demonstrating the hearing evaluation for the competency examination, there will be three proctors observing you; two proctors will evaluate your testing procedures and the third proctor will act as the test subject. The test proctor will simulate a false hearing loss by placing a block in their ear and having one headset placed on their temple area. To ensure a unilateral conductive loss is present, testing will be done with the use of headphones. Be sure you familiarize yourself with the differences if you are accustomed to using insert phones.

There will be no communication/discussion between proctors or student and proctor once the exam starts, except for the proctor acting as the test subject. The proctor acting as the test subject should be treated like a real client in an office setting.

No reference or previously written materials are allowed in the test area.

C.H.A.P.A. Practical Examination
(Two Hour Time Limit)

Audiometric Practical Application is divided into eight sections, and the following areas must be recorded, demonstrated and passed with an **80% success in each area**. This is essential, for the applicant, to prevent a re-evaluation: **(A test subject will be provided)**

1. Daily biological calibration of equipment. (Audiometer).

2. Obtain information and medical history of the client.

3. Otoscopy – right and left ears (eg. proper positioning and recording of information).

4. Positioning of the client and equipment.

5. Pure tone air/bone conduction thresholds **for both right and left ears**. (TDH-39 Headphones will be used).

    a. Air conduction testing you are required to test **3K** and **6K**
    b. Bone conduction testing you are required to test **3K**

6. Speech tests for right and left ears:
    a. MCL
    b. Speech reception threshold
    c. Word recognition
    d. UCL

7. Masking - when necessary

8. Tympanometry for right and left ears.

9. Monaural ear impression.

10. Discussion of results with the test subject.

11. Real Ear and electro acoustic calibration

12. Unaided real ear measurement

Fees for the ILE exam are paid directly to IHS, cost for the exam is as laid out by IHS. **Cancellations must be made within 48 hours of the examination date.**

The applicant must be a registered member of CHAPA to write any portion of this exam. The applicant must register with the CHAPA Registrar and have all fees paid in full prior to the registration deadline.

Please be aware of the following:

There will be three proctors during your practical exam, one acting as the client and two proctors marking. There will be no conversation between you and the marking proctors once the practical exam begins. The only interaction will be between you and the "Client". You will be given an opportunity to ask the proctors questions before you start the exam.

TEST PROCEDURES

CASE HISTORY

- Obtain answers to a diverse list of pertinent questions.
- Medical history of ears- surgery, infections, medications, head trauma
- Tinnitus, Vertigo, nausea
- Exposure to noise- at work, during recreational activities
- Which is the better ear?
- Name of family physician
- Hearing aid history

OTOSCOPIC EXAMINATION

- Select the largest speculum size that will fit comfortably into the external auditory meatus.
- Hold the otoscope toward the top of the handle near the light source.
- The examiner's eye should be about one inch from the magnifying lens.
- Inspect the pinna and the surrounding area for abnormalities.
- Pull back the pinna to straighten the canal.
- Hold the otoscope with a comfortable and safe bracing technique that will prevent the speculum from being accidentally inserted deeper into the canal by a sudden movement of the head.
- Place the speculum in the external auditory meatus without touching the canal wall with the tip of the speculum.
- Observe the condition within the canal, the tympanic membrane, and the landmarks of the middle ear on the tympanic membrane.
  A cone of light should be visible from the umbo
- As the otoscope is removed, observe the sides of the ear canal.
- Press the pinna against the subject's head to determine if collapse of the external auditory meatus will occur during audiometry.

TYMPANOMETRY AND ACOUSTIC REFLEXES

- Instruct the client.
- Obtain a seal in the ear canal
- Engage the test equipment
- The information must be recorded on the audiogram. Include an explanation as to the type of Tympanogram and the presence or absence of an Acoustic Reflex for each ear.

PURE TONE AIR CONDUCTION

- The threshold is determined when:
    - The intensity of the tone is perceived as barely audible and it is located at the same intensity level two out of three times.
- There are two recognized sequences for testing.
- 1000 Hz, 2000Hz, 3000Hz, 4000 Hz, 6000 Hz, 8000 Hz, 1000 Hz re-check, 500 Hz, and 250 Hz **OR** 1000 Hz, 500 Hz, 250 Hz, 1000 Hz re-check, 2000 HZ,3000 Hz, 4000 Hz, 6000 HZ and 8000 Hz.
    -
    - Ensure proper placement of the client and earphones.
    - Instruct for client test participation.
    - Clients are to indicate when they hear a tone, **even when that tone is <u>very soft.</u>**
    - Test better ear first.
    - Confirm the ear in which the tone is heard.
    - Present the test tone (one to two second bursts of tone and avoid rhythmic presentation)
    - Use the modified ascending method in exploration of each threshold (**5 dB steps to ascend – and descend in 10 dB steps**).
    - Record the threshold on the audiogram using the correct symbols.

BONE CONDUCTION

- Both ears must be **uncovered** during routine bone-conduction audiometry.
    - Place the bone-vibrator on the mastoid.
    - Instruct for client participation
    - Follow the same procedure that is indicated for air conduction testing.
    - Test 250 Hz through 4000Hz.
    - Record the threshold on the audiogram using the correct symbols.
    - **Bone conduction testing MUST be done on both ears.**

MASKING:

As indicated in the Standards of Practice, the Plateau Method may be used, or you may use a documented formula method. Included are the masking rules taught at MacEwan University. Inform the proctors of the intended masking method to be used.
Masking is to be employed where indicated according to the "When to Mask" rules.
(Note: It is better to mask unnecessarily than to fail to mask when a signal has been heard in the non-test ear.)

<u>PLEASE ENSURE THAT YOU UNDERSTAND THE FOLLOWING FULLY</u>

UNDERMASKING-the tone (by cross hearing) continues to be heard in the masked ear despite the noise, since the tone level is below the threshold of the test ear.
OVERMASKING- the masking level is so intense that it crosses to the test ear, resulting in continuous shifts in threshold of the tone with increases in the masking noise.
PLATEAU- the tone has reached the threshold of the test ear therefore raising the masking level in the masked ear does not shift the threshold of the tone.

TESTS PERFORMED WITH A TDH-39 HEADSET –you will be using headsets during testing- ensure that you are familiar with the masking rules for headsets.

- The adopted minimal value of Interaural Attenuation for Pure Tone Air Conduction is 40 dB: Pure Tone Bone Conduction is 0 dB, with consideration of the occlusion effect at 1000 Hz, 500 Hz, and 250 Hz. (Remember it is a false-hood in thinking that placing a bone-vibrator behind the right ear results in stimulation of only the right inner ear, because vibration of the skull from any location results in, approximately, an equal stimulation of both inner ears.)

- Consider an air-bone gap of 10 dB or less to be insignificant.

- Therefore, cross-hearing for bone conduction should be suspect whenever an air-bone gap greater than 15 dB is seen in the test ear.

- The preferred noise for masking pure tones is Narrow Band noise.

- To provide client comfort, reduce the masking attenuator immediately while recording the thresholds.

SPEECH TESTS

Obtain **SRT, MCL, UCL and WORD RECOGNITION SCORES.**

-Instruct for client test participation and re-instruct for each of the above tests.
When necessary obtain **SDT** with the use of some continuous-discourse stimulus. -Establish the intensity level where the presence of speech is **barely** detected and is not understood. (Raise and lower the level of speech until the test subject indicates an awareness (only) of speech.)

Obtain **MCL –** with a **continuous-discourse (cold running speech)** stimulus via recorded material or live voice.

- The Client is instructed to indicate when speech is perceived to be at a comfortable listening level.
- The test may start at a normal conversational speech level (50 – 60 dB)
- The intensity is increased or decreased gradually. At each level the client should respond, indicating whether the speech is “too soft,” “too loud,” or “most comfortable”.
- Several measurements should be made approaching the MCL from both above and below the level first selected. (This approach is called **forced-choice**.)
- Record presentation level.

Obtain **SRT** with the use of spondaic words.

Set the start level at client MCL

- After a correct response is obtained, lower the intensity level 10-dB and present one spondee.
- If at the10dB lower level another correct response is given, again, lower the intensity level 10dB.
- When an incorrect response is given, raise the intensity in 5-dB steps until a correct response is obtained.
- Then, when a correct response is given, lower the intensity 10dB
- From this point on, the intensity is increased in 5-dB steps and decreased in 10-dB steps, with one spondee presented at each level until three correct responses have been obtained at a given level.
- **Threshold is defined as the lowest level at which at least 50 percent of the responses are correct, with a minimum of at least three correct responses at that intensity.**
    - The SRT can be predicted by finding the average of the best two thresholds at 500, 1000 and 2000Hz.
    - SRT can be much better than PTA when the audiogram falls precipitously in the high frequencies.
    - The SRT can be poorer than PTA (of the three frequencies) when clients have disorders of the central auditory nervous system.

Obtain **WORD RECOGNITION SCORES**

- Recognized word lists that are to be used include CID Auditory Test W-22 or NU6.
- The presentation level is at the client's MCL level.
- Present 25 words minimum to each ear.
- Record the presentation level and the correctly repeated word results in percentages.

Obtain **UCL -** Use cold running speech.

- Start the presentation at the client's MCL.
- Raise the attenuator in 5-dB steps
- Clients should be reminded that this test is considerably louder than they would find comfortable. They should signal only when the speech is intolerable.
- Be observant to the client's reaction.
- Remember! For the client's comfort, turn down the attenuator.
- Record the results.

MASKING SPEECH TESTS

MASKING for SRT.

- Mask for SRT when SRT of the test ear, minus the best BC of the NTE is equal to or greater than 40dB (SRT_{TE} – best $BC_{NTE} \geq 40$.)
- Use Speech Masking or White noise to mask speech.
- Initial Masking noise level is at SRT of the NTE.
- Raise the level of the masking signal in 5-dB steps to the point where the spondee can no longer be heard.
- At this point, raise the level of the spondee 5-dB and present the spondee word.
- Now increase the masking noise by 5-dB. If the spondee is repeated, raise the masking 5-dB again. Obtain a level where the masking has been increased 3 times while the spondees are at one level and two out of four words can be repeated at that level. (See bold text below.)
- **If fewer than two out of four words are repeated correctly**, the level of the words is raised 5-dB. Then if the masking noise can be increased three times (in 5-dB steps,) the plateau has been reached and the true SRT level for the test ear has been reached.

MASKING for WORD RECOGNITION

- Mask when the presentation level of the test ear minus the best BC of the NTE is equal to or greater than 40dB. (PL_{TE} – best $BC_{NTE} = \geq 40$.)
- Initial noise level is PL_{TE}- 20dB (presentation of the TE – 30 dB if the client can't tolerate the above).
- **OR** PL_{TE}-40+biggest ABG_{NTE}

DO NOT MASK THE UCL and MCL TEST

Other masking rules will be accepted if demonstrated correctly and identified before test begins.

Real Ear Measurements
You must demonstrate calibration of both the real ear probe and the electro acoustic analysis. You must enter the client's audiogram for the poorer ear, proper placement of the probe microphone and probe tip will need to be demonstrated. An unaided REM will be performed and results recorded and interpreted.

EAR IMPRESSIONS

- Make a thorough inspection of the ear with an otoscope.
- If the test subject wears glasses or dentures, make sure these are in place while taking the impression.
- Select a block that will fit tightly in the canal; it may appear to be slightly larger in diameter than the ear canal. However, be sure that it does not expand the ear canal – important when the texture of the ear is soft – it could stretch the ear canal out of shape.
- Hold the ear-light so that you provide protection to the client should there be a sudden movement of the person's head. **You must demonstrate a proper bracing technique.**
- Use the ear-light to set the block just past the second bend.
- Use the otoscope to check that proper size of oto block was selected, and position of oto block.
- Mix the impression material and place it into the barrel of the syringe.
- Insert the plunger and gently push the material into the nozzle to remove air pockets.
- Gently insert the tip of the nozzle into the canal entrance and gently inject the material into the canal. Watch as this is being done; when the material comes toward the opening of the canal gently pull the syringe outward then upward, while pushing on the plunger to continue filling the concha and helix area.
- Allow approximately 10 minutes of curing time – some impression material will cure in slightly less time.

Remove the impression

- Grasp the bulk of the impression with one hand – include the string – and with the other hand, press or peel the edges of the ear back and away from the impression.
- Ask the client to "open the mouth wide and then close it" while slowly rotating the top of the impression forward towards the nose to disengage the concha and helix.
- **REMOVAL SHOULD BE SLOW – SO AS TO NOT STRETCH OR TEAR THE CANAL – AND PREVENT THE FORMATION OF A VACUUM.**
- The block should come out attached to the end of the canal portion of the impression.
- Use the otoscope for a final inspection of the ear canal. Record any remarkable observations in the ear/canal after the removal of the impression.
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NOTE: If you are not satisfied with your first ear impression, a second attempt is permitted if there is time.

EXPLAINATION AND RECOMMENDATIONS

Upon completion of the test procedures, results / recommendations should be discussed and explained. Any pertinent recommendations must also be discussed.

REFERENCES:

Jean Duncan and Roger Lundberg, Instructors, Hearing Practitioner Program Grant MacEwan Community College, Masking Rules Chart, revised June 2005.

Grant MacEwan College, Student Manual, H.E.206.4

Edited by Robert E. Sandlin, Ph.D. Hearing Instrument Science and Fitting Practices, Second Edition

Jack Katz Ph.D., Handbook of Clinical Audiology, The Williams and Wilkins Co. 1972

Fredrick N. Martin, Introduction to Audiology, Sixth edition, Allyn and Bacon A Viacom Company, 1997.

Ronald J. Scheurer, M.A., Basic Audiometric Techniques, Mt. Hood Community College, Maywood Park, Portland Oregon, U.S.A.,1981

Wayne J. Stabb, Ph.D., Basic Masking: An Explanation and Procedure, Second Edition, Wayne Stabb, Ph.D., Phoenix AZ, U.S.A., Publisher

Standards of Practice, The College of Hearing Aid Practitioners of Alberta

William S. Yacullo, Clinical Masking Procedures, Allyn and Bacon, a Simon and Schuster Company, 1995

This is the plateau method **when using headsets.**

TEST	**WHEN TO MASK**	**INITIAL NOISE LEVEL**
Air Conduction	$AC_{TE} - BC_{NTE} \geq 40$ $AC_{TE} - AC_{NTE} \geq 40$	AC_{NTE}
Bone Conduction	$ABG \geq 15$	AC_{NTE} + OE*
SRT	SRT_{TE} – best $BC_{NTE} \geq 40$	SRT_{NTE}
Word Recognition	PL_{TE} – best $BC_{NTE} \geq 40$	PL_{TE} – 20
MCL	MCL_{TE} – best $BC_{NTE} \geq 40$	Best BC_{TE} + 40

* Occlusion Effect 250 Hz = 30 dB, 500 Hz = 20 dB, 1000 Hz = 10 dB