

**BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS  
MINUTES OF MEETING**

The Board for Hearing Aid Specialists and Opticians met on Wednesday, April 17, 2013, at the Offices of the Department of Professional and Occupational Regulation, Perimeter Center, Board Room 1, 2<sup>nd</sup> Floor, 9960 Mayland Drive, Richmond, Virginia 23233. The following members were present:

Renee P. Allgood  
Robert E. Flippin  
Teresa Robinson Irwin  
Harry W. Kessler  
L. Frederick Lassen, MD  
Arva B. Priola  
Billie L. Taylor

The following members were not present:

William H. Bearden, III, MD  
Eric B. Hecker, PhD  
Olivia Little Kearney  
Faye Prichard  
Pamela Pugh

DPOR staff present for all or part of the meeting included:

Gordon N. Dixon, Director  
Mark N. Courtney, Senior Director/Regulatory and Public Affairs  
Demetrios J. Melis, Executive Director  
Adam Harrell, Licensing Operations Administrator  
Cathy Clark, Administrative Assistant

No representative from the Office of the Attorney General was present for the meeting.

Mr. Flippin, Board Chair, determined a quorum was present and called **Call to Order** the meeting to order at 9:07 a.m.

Upon a motion by Ms. Taylor and seconded by Ms. Irwin, the Board **Approval of Agenda** voted to adopt the agenda.

The members voting 'yes' were Ms. Allgood, Mr. Flippin, Ms. Irwin, Mr. Kessler, Dr. Lassen, Ms. Priola, and Ms. Taylor. There were no negative votes. The motion passed unanimously.

Upon a motion by Ms. Irwin and seconded by Ms. Taylor, the Board **Approval of**

voted to approve the minutes of the December 14, 2012 Board for Hearing Aid Specialists and Opticians Meeting.

**Minutes:**  
**December 14, 2012**  
**Board for Hearing**  
**Aid Specialists and**  
**Opticians Meeting**

The members voting 'yes' were Ms. Allgood, Mr. Flippin, Ms. Irwin, Mr. Kessler, Dr. Lassen, Ms. Priola, and Ms. Taylor. There were no negative votes. The motion passed unanimously.

Mr. Flippin asked if there was any public comment. There was none.

**Public Comment**

Mr. Melis welcomed Ms. Michelle Nelms, Executive Director of the Opticians Association of Virginia, who was observing the meeting.

**Welcome and**  
**Introductions**

Mr. Melis also introduced Mr. Adam Harrell, the new Licensing Operations Administrator for the Board for Barbers and Cosmetology and the Board for Hearing Aid Specialists and Opticians.

Mr. Melis reviewed Hearing Aid Specialists and Opticians licensing statistics.

**Statistics**

A March 15, 2013 memo from Examination Director, in response to various inquiries made by the Board at the December 14, 2012 meeting, was reviewed by the Board and is attached as an addendum to these minutes.

**Old Business**

**Miscellaneous Exam-**  
**related items**

Mr. Melis reviewed Hearing Aid Specialists and Opticians exam statistics.

**Other Board**  
**Business**

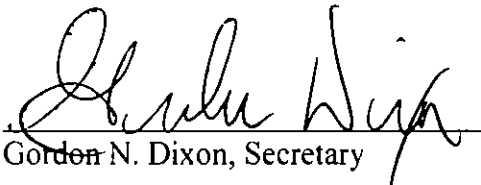
**Current Exam**  
**Statistics**

There being no further items for discussion, the Chair adjourned the meeting at 9:50 a.m.

**Adjourn**



Robert E. Flippin, Chair



Gordon N. Dixon, Secretary

**Addendum to Draft Minutes  
Of  
April 17, 2013 Board Meeting**

**Commonwealth of Virginia**  
**Department of Professional and Occupational Regulation**  
**9960 Mayland Drive**  
**Richmond, Virginia 23233**

TO: Board for Hearing Aid Specialists and Opticians

FROM: Sharon M. Sweet  
Examination Director

DATE: March 15, 2013

RE: Examination Issues

1. American Board of Opticianry (ABO) and the National Contact Lens Examiners (NCLE)

The following is from the ABO web site explaining ABO and NCLE:

ABO, the American Board of Opticianry, certifies opticians – those who dispense and work with spectacles.

NCLE, the National Contact Lens Examiners, certifies those ophthalmic dispensers who fit and work with contact lenses.

The Board/DPOR does not have a contract with ABO NCLE (ABO). A contract is not needed. The Board provides a scheduling list to ABO of those eligible candidates scheduled to take the exam. The board is invoiced for the number of examinations given. ABO administers and scores the examinations then provides the scores to the Board. The Board issues the licenses.

2. ABO and NCLE (ABO) computerized examinations

In November 2012 the ABO and NCLE written examinations began administration by computer. ABO and NCLE have contracted with a vendor, ACT, to deliver the exam at over 250 test sites, 6 in VA (Charlottesville, Glen Allen, McLean, Richmond, Roanoke and VA Beach). Candidates will schedule within a window of 8 days. The next exams will be held May 18-25, 2013.

The ABO security procedures are attached. The letter also advised that ABO is not aware of any one who registered twice for the same exam; however, they have assured that they will contact their testing agency to ensure this cannot occur. The letter points out that a candidate could take the ABO and the NCLE on the same day. (Attachment -ABO NCLE security procedures)

### 3. Audiometric examinations statistics and the use of a manual audiometer

The audiometric examination statistics for the last 2 years are provided for your review. (Attachment- Examination Statistics)

During examination development, the use of a manual vs. a computer based audiometer has been discussed. The points raised follow:

Computer based audiometers are not allowed because software installed on them typically provides some information which the candidate needs to provide as evidence of competency.

There are security issues, as the audiograms used may be stored on the candidate's computer, thereby, allowing exposure of the exam.

Although the manual based audiometers are not used as often in professional business as the computer based, it is the determination by the exam developers (board members and other subject matter experts) that candidates still need to know the basic skills required by the use of manual audiometers.

Note: The instructions for use, make, model and a photo of the Board audiometer are provided to the candidates 2 weeks prior to the exam. Candidates are told to bring their own equipment, as the Boards' is basically to assist candidates who cannot bring equipment. Most candidates do bring their own equipment and, unfortunately, those who do not sometimes don't appear to prepare for the use of the Boards' equipment. (Attachment-Operating instructions for MA 42)

Candidates (cd) are also advised on basic test content areas. (Attachment-Info mailed to cd)

### 4. Inconsistent administration of the exam and training of the examiners

All examiners are licensed Hearing Aid Specialists and have 5 or more years of experience. Some are Board members or former Board members. None have had disciplinary action. Many have been involved in the examination development.

To promote consistency:

Scripts have been prepared in the exam development process which examiners must read to administer the examination so that all candidates receive the same information. The basic instructions are provided for your review. The actual script's are not included for security reasons, but can be provided as necessary. (Attachment-Basic examiner instructions)

Prior to each exam administration, the Examination Coordinator and Examination Specialist explain the administration of the exam, use of the timers and equipment to the examiners and the need for consistency in exam administration.

The Board's audiometer is calibrated before each exam.

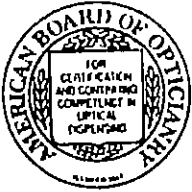
New examiners observe the exam and are partnered with an experienced examiner before being allowed to administer the exam on their own.

I, as well as other examination staff, observe the examiners during the administration of the exam and provide feedback on consistency.

As with all practical exams, the exam is structured to be as objective as possible. However, no examiner is observed continuously throughout an administration, so, for example, it is possible that an examiner may forget to start the timer on time. In that case, the candidate does receive the full amount of time.

The agency has had difficulty in obtaining examiners. We currently offer a stipend and reimburse examiners for travel expenses if they travel over 100 miles. Since this process was implemented, we have been able to maintain a small group of highly qualified examiners. With this process in place, we are able to train new examiners; however, we do not have a huge list. We are limited in the funds available for equipment, supplies and examiners and rely heavily on donated supplies and individuals who are truly dedicated to the profession and serve as examiners based on that dedication rather than any payment offered for their service.

Additional funding will be necessary to implement additional training or purchase additional equipment.



# AMERICAN BOARD OF OPTICIANRY NATIONAL CONTACT LENS EXAMINERS



6506 Loisdale Road, Suite 209  
Springfield, Virginia 22150  
703-719-5800 • FAX 703-719-9144  
800-296-1379  
Web Address: [www.abo-ncle.org](http://www.abo-ncle.org)

February 23, 2013

Ms. Sharon Sweet  
Director, Office of Education and Examinations  
Dept. of Professional and Occupational Regulation  
9960 Mayland Dr., Ste 400  
Richmond, VA 23233

Re: ABO/NCLE Exam Security

Dear Ms. Sweet:

Thank you for your inquiry regarding the American Board of Opticianry exam security procedures and exam registration process. Please share with your Board the following information about the exam process:

The Online exam registration for the next exam began Feb. 4. During the registration process, the individuals provide their own private user name, a password of their choosing, and the last four digits of their social security number.

In the exam registration literature, it states that a candidate must use his/her name exactly as it appears on a current government-issued photo ID. In order to ensure that the person who appears to take the exam is actual registrant, he or she must provide not only that photo identification but also the admission ticket that was emailed to them when they registered for the scheduled exam. Candidates are turned away for missing, inadequate or expired identifications.

At the exam site, candidates are not permitted to bring anything to their seat. No electronics, purse/backpack or scratch paper, etc. are permitted. There is a small camera straight on and behind the candidate the entire time they are testing. The cameras are monitored during the exam for any irregularities. The camera also takes

Ms. Sharon Sweet  
February 23, 2013  
Page 2

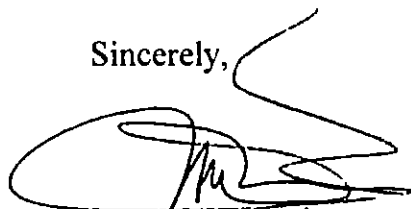
a photo of the individual at the start of the exam in case there is any irregularity in identification. Scratch paper and pencil are provided by the site, and the proctors collect the paper and it is shredded when the candidate leaves the site.

Your inquiry also made reference to some information regarding someone who had registered twice for the same exam. We are certainly unaware of anything of that nature having taken place in the past but will inquire of our testing agency to ensure that it cannot happen. I will point out, however, that it is possible for an individual to register for two exams (i.e., one for ABO and one for NCLE) to be taken at the same location on the same day.

Finally, in 2012, ABO terminated our testing contract with PES and retained ACT to administer our examinations. At the same time, we undertook to computerize and upgrade our tests in order to be more efficient and uniform. Although there were a few issues with the administration of the last tests, ACT has assured us that they have ironed out the wrinkles and that the next text should run smoothly.

Thank you again for your interest. Please feel free to contact us with any other questions that you may have.

Sincerely,



James M. Morris  
[jmorris@abo-ncle.org](mailto:jmorris@abo-ncle.org)



Date: 03/14/2013

GENERAL STATISTICS REPORT 01/01/2011 - 12/31/2012

21 1 HEARING AID SPECIALISTS

Board Occup	Lic Type	Exam Date	Total			First Time			Re-Exam			Total Examinees Scheduled
			Exams Taken	Exams Passed	Percent Passed	Exams Taken	Exams Passed	Percent Passed	Exams Taken	Exams Passed	Percent Passed	
21 1		10/15/2012	20	14	70.00	13	13	100.00	7	1	14.29	20
21 1		06/11/2012	21	11	52.38	13	9	69.23	8	2	25.00	21
21 1		02/06/2012	17	14	82.35	10	9	90.00	7	5	71.43	17
21 1		10/17/2011	37	23	62.16	31	20	64.52	6	3	50.00	37
21 1		06/13/2011	20	14	70.00	14	10	71.43	6	4	66.67	20
21 1		02/07/2011	18	10	55.56	10	5	50.00	8	5	62.50	18
TOTALS:			133	86	64.66	91	66	72.53	42	20	47.62	133

Date: 03/14/2013

CONTENT AREA REPORT 01/01/2011 - 12/31/2012  
21 1 A HEARING AID SPECIALISTS

Board Lic	Exam	Content Description	Exams Taken	Exams Passed	Percent Passed
21 1	A	10/15/2012	10	4	40
21 1	A	06/11/2012	13	5	38.46
21 1	A	02/06/2012	12	10	83.33
21 1	A	10/17/2011	19	10	52.63
21 1	A	06/13/2011	20	10	50
21 1	A	02/07/2011	12	6	50

Date: 03/14/2013

CONTENT AREA REPORT 01/01/2011 - 12/31/2012  
21 1 S HEARING AID SPECIALISTS

Board Lic	Exam	Content Description	Exams Taken	Exams Passed	Percent Passed
21 1	S	10/15/2012	8	6	75
21 1	S	10/14/2012	8	6	75
21 1	S	06/11/2012	14	11	78.57
21 1	S	02/06/2012	12	9	75
21 1	S	10/17/2011	18	9	50
21 1	S	06/13/2011	19	11	57.89
21 1	S	02/07/2011	9	5	55.56

Date: 03/15/2013

CONTENT AREA REPORT 01/01/2011 - 12/31/2012  
21 1 E HEARING AID SPECIALISTS

Board Lic	Exam	Content Description	Exams Taken	Exams Passed	Percent Passed
21 1 E	10/15/2012	EARMOLD IMPRESSIONS	13	13	100
21 1 E	10/14/2012	EARMOLD IMPRESSIONS	13	13	100
21 1 E	06/11/2012	EARMOLD IMPRESSIONS	17	17	100
21 1 E	02/06/2012	EARMOLD IMPRESSIONS	13	13	100
21 1 E	10/17/2011	EARMOLD IMPRESSIONS	21	16	76.19
21 1 E	06/13/2011	EARMOLD IMPRESSIONS	22	17	77.27
21 1 E	02/07/2011	EARMOLD IMPRESSIONS	13	13	100

Date: 03/15/2013

CONTENT AREA REPORT 01/01/2011 - 12/31/2012  
21 1 M HEARING AID SPECIALISTS

Board Lic	Exam	Content Description	Exams Taken	Exams Passed	Percent Passed
21 1	M	10/15/2012 MAINTENANCE AND REPAIR	14	13	92.86
21 1	M	10/14/2012 MAINTENANCE AND REPAIR	14	13	92.86
21 1	M	06/11/2012 MAINTENANCE AND REPAIR	18	17	94.44
21 1	M	02/06/2012 MAINTENANCE AND REPAIR	11	9	81.82
21 1	M	10/17/2011 MAINTENANCE AND REPAIR	21	20	95.24
21 1	M	06/13/2011 MAINTENANCE AND REPAIR	23	17	73.91
21 1	M	02/07/2011 MAINTENANCE AND REPAIR	13	9	69.23

## **HEARING AID SPECIALIST PRACTICAL EXAMINATION EQUIPMENT LIST**

**(BRING WITH YOU TO THE EXAMINATION)**

1. One form of photographic identification, such as a driver's license.
2. An audiometer, in good working condition, that will allow you to perform pure tone air conduction and bone conduction audiometry, and speech audiometry, all with masking.

**NOTICE:** Automatic masking or test presentation routines will not be allowed. The applicant must be able to operate the equipment in a manual mode to demonstrate the applicant's knowledge of stimuli selection and presentation.

**It is strongly recommended that you bring your own audiometer.**

**NOTE:** If you are unable to bring an audiometer, the Maico MA 42 Audiometer will be available for use. You are responsible for knowing how to use this audiometer prior to the test day; speech testing on this audiometer must be live voice only.

A general description of the MA 42 Audiometer and the controls are enclosed. If you choose to use this audiometer, come prepared to operate this equipment, as instructions will not be provided on the test day.

3. An Otoscope in proper working order.
4. All necessary tools and supplies for making earmold impressions, such as
  - Otoblocks
  - Ear light
  - Impression material
  - Ear syringe or dispensing gun
  - Germicidal disposable cloth, alcohol and wipes
5. A hearing aid stethoscope
6. A battery tester.
7. Equipment for replacing tubing.
8. Equipment for making hearing aid modifications, example-a file or dremel tool.
9. Safety Glasses

Commonwealth of Virginia  
Board for Hearing Aid Specialists

**INSTRUCTIONS TO CANDIDATES  
FOR PRACTICAL EXAMINATION**

Hearing Aid Specialist Candidate:

The practical examination about to be administered to you is designed to test your practical knowledge of (1) the audiogram and pure tone testing, (2) speech audiometry, (3) earmold impressions, and (4) hearing aid troubleshooting and maintenance. The examiner will read the instructions to you for each section and for many individual items. We are providing those same instructions to you to ensure that you understand the questions and the assigned tasks. You may ask the examiner to clarify questions or assignments if necessary. The examiner will not indicate to you whether or not your responses are correct. The examiner may, however, ask you to expand on certain responses, or you may be led in a specific direction if it appears that you did not fully understand your task. Following are the specific instructions you will be given:

**Section I: Audiometric Testing – 20 minutes to complete – (Sections I & II 40 minutes)**

**Instructions to candidate:** "Please place the client's chair in the proper position and instruct the client. Give instructions for each different test or procedure you perform."

1. Client's position and instructions.

**Instructions to the candidate:** "Place the headphones on the client and prepare to administer an air conduction hearing test."

2. Earphone placement. (Air conduction)

**Instructions to the candidate:** "If the patient had a collapsing ear canal, what would you do to obtain an accurate measurement?"

**Instructions to the candidate:** "Begin the hearing test. Use masking when indicated. I will respond for the client. Mark your audiogram accordingly."

3. Audiometric testing. (Air conduction)

**Instructions to the candidate:** "Place the Bone Conduction Oscillator on the head and prepare to test bone conduction thresholds."

4. Bone Oscillator placement. (Bone conduction)

**Instructions to the candidate:** "Begin testing hearing by bone conduction. Use masking if indicated. As before, I will provide the responses."

5. Audiometric testing (Bone conduction)

**Section II: Speech Audiometry – 20 minutes to complete – (Sections I & II 40 minutes)**

**Instructions to the candidate:** “Set up your equipment for testing using live voice or recorded speech as stimuli and perform any calibration required.”

**After that is completed,**

“Describe how you would conduct a speech reception threshold (SRT) test using an acceptable method of determination and then demonstrate. Interpret the results.”

“Determine a speech discrimination score (SDS) in each ear using the appropriate presentation level. Interpret the results of the speech discrimination test.” (Must use 25 words)

“Under what condition would you mask when testing for speech?”

**Section III: Earmold Impressions – 20 minutes to complete**

**Instructions to the candidate:** “You have determined that a hearing aid is required for the \_\_\_\_\_ ear. Please make an impression of that ear. Assume a moderate to severe hearing loss and the choice of a full-shell in-the-ear hearing aid. Describe and demonstrate all steps in this procedure. Discuss appropriate safety and hygiene factors.”

“Please demonstrate the initial ear examination on the Examiner’s ear using the Otoscope.”

“Please perform the rest of the procedure on the model ear. Evaluate the finished earmold impression for acceptability.”

“Tell me what you are looking for in the Otoscopic exam which would require a referral to a physician for care.”

“What are the indications of an allergic reaction?”

**Section IV: Maintenance and Troubleshooting – 20 minutes to complete**

**Instructions to the candidate:** “Inspect these 3 hearing aids, identify the problems discovered and explain how to repair each one.” “Do not do the repair.”

**Instructions to the candidate:** “Show me how you would examine this hearing aid.”

**Instructions to the candidate:** “Describe factors that would create feedback.”

**Instructions to the candidate:** “If you will be using the Dremel tool in this modification of hearing aid section, you must wear safety glasses. If you do not have safety glasses, you cannot use the Dremel. Show me how you would make the following modifications.”





# Operating Instructions MA 42

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## 2.0 INTRODUCTION

### 2.1 Instrument Description

The MA 42 is a portable two-channel audiometer with master hearing aid, offering pure tone speech and free field audiometric testing. The master hearing aid feature is a tool whereby the operator may simulate several common frequency responses. While adjusting the dB level in each ear, the operator can grossly simulate the sound characteristics of some hearing aids so that patients can benefit from actually experiencing the difference a hearing aid can make in their hearing.

It performs tests using TDH 39 headphones, a B-71 bone conduction receiver, optional insert phones or optional loudspeakers. Built-in test signals include pure tone, pulse tone; warble tone, narrow band and broad band noise. Inputs include ports for live speech and CD/tape speech test material; outputs have separate jacks for TDH 39s, optional insert phones, optional free field speakers, and bone conduction.

The MA 42 offers air conduction frequencies from 125 Hz to 8 kHz, with intensity levels from -10 dB<sub>HL</sub> to 110 dB<sub>HL</sub>. Bone conduction test frequencies are 250 Hz to 6 kHz with intensity levels of -10 dB<sub>HL</sub> to 70 dB<sub>HL</sub>. Sound field measurements are possible using the built-in amplifier and optional speakers.

The MA 42 has a built-in RS 232 interface. Calibration is performed via the front panel and thus simplifies annual service calibrations.

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# Operating Instructions MA 42

## 4.0 FRONT AND REAR PANEL CONTROLS AND DESCRIPTIONS

### 4.1 Front Panel Controls

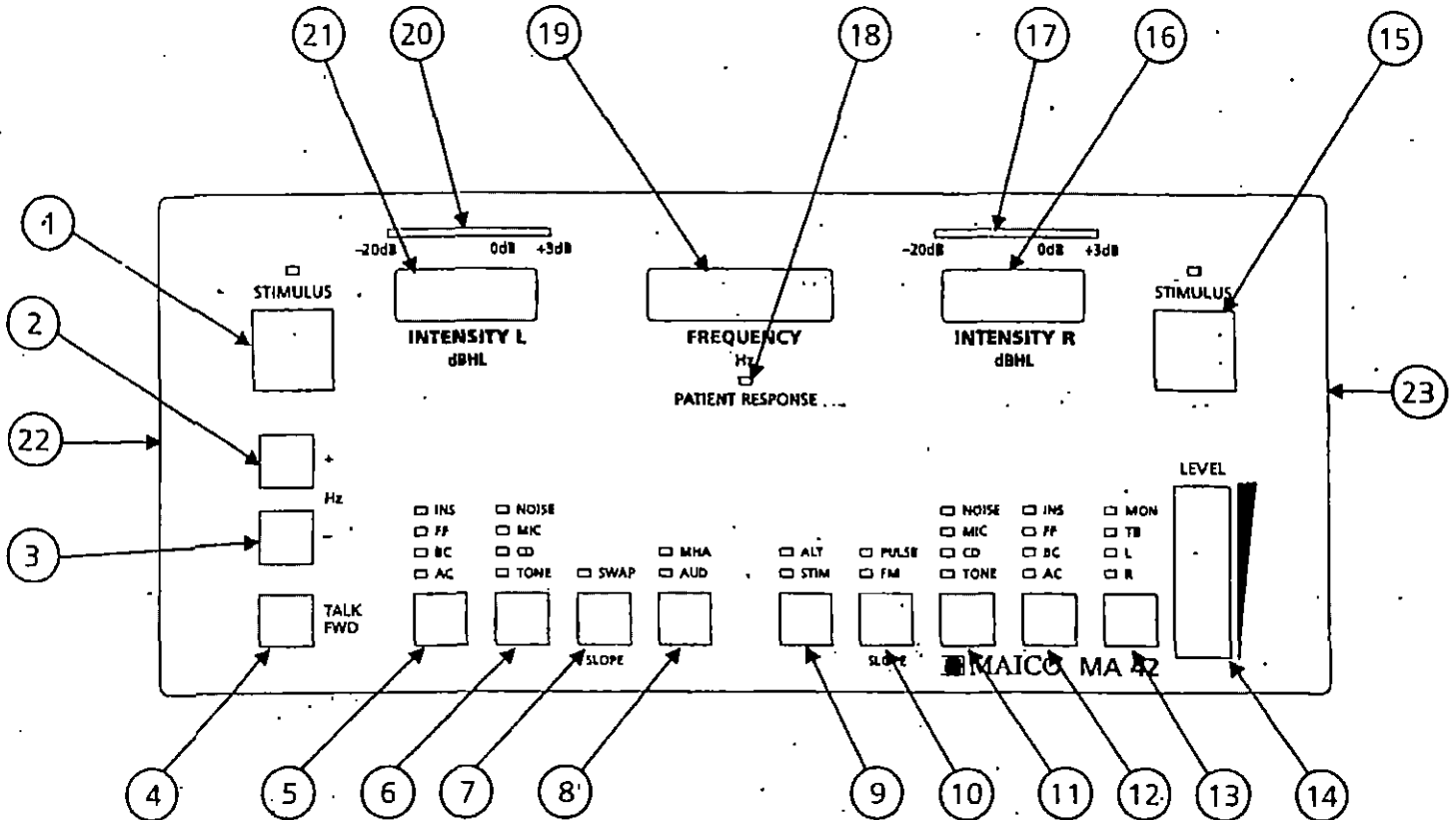


Figure 1

1. STIMULUS. Left stimulus present/interrupt switch. Stimulus is present when the LED is lit.
2. + HZ. Frequency select increase.
3. - HZ. Frequency select decrease.
4. TALK FWD. Talk forward enable. Press and hold to talk to the test subject via the monitor headset microphone or optional speech microphone; adjust the test subject's headphone level via either INTENSITY CONTROL DIAL. (See 22 and 23)
5. LEFT OUTPUT SELECT. Press and release to cycle through the available transducers. LED of selected transducer will light.

INS	Insert Phones
FF	Free Field
BC	Bone Conduction
AC	Air Conduction



# Operating Instructions MA 42

6. LEFT SIGNAL SELECT. Press and release to cycle through the available signals. LED of selected signal will light.

NOISE	Masking
MIC	Microphone
CD	Compact Disk/Tape Player
TONE	Pure Tone

7. SWAP/SLOPE. When in audiometer mode (AUD, See 8), press and release to swap selected test ear between left and right. LED will light when SWAP is selected. When in master hearing aid mode (MHA, See 8), press and release to cycle through standard hearing aid slopes for the left ear. Selected slope will be displayed in left side of the FREQUENCY window.

F	Flat
6	6 dB/octave
12	12 dB/octave
18	18 dB/octave

8. MHA/AUD. Press and release to switch between MHA (master hearing aid) and AUD (audiometer) modes. When in MHA mode, the SLOPE functions of Keys 7 and 10 are enabled.
9. ALT/STIM. When in TONE mode on both channels (See 6 and 11) and PULSE mode (See 10), press to enable one of these options:

STIM LED on	Changes function of STIMULUS key from "present" to "interrupt", i.e., stimulus always on unless STIMULUS key is pressed.
ALT LED on	Select PULSE (See 10), select ALT, then press either STIMULUS key to present pulsed stimulus alternately between the left and right ears. Used in ABLB test.
Both ALT and STIM LEDs on	Presents alternating pulsed stimulus to left and right ears and changes function of STIMULUS key from "present" to "interrupt", i.e., stimulus always on unless STIMULUS key is pressed. Used in ABLB test.
Both ALT and STIM LEDs off	Both functions disabled.



# Operating Instructions MA 42

10. PULSE/FM/SLOPE. When in audiometer mode (AUD, See 8), PULSE and FM selections are enabled.

PULSE LED on	Pure tone stimulus will be pulsed.
FM LED on	Pure tone stimulus will warble.
Both PULSE and FM LEDs on	Pure tone will pulse and warble.
Both LEDs off	Pure tone stimulus only.

When in master hearing aid mode (MHA, See 8), press and release to cycle through standard hearing aid slopes for the right ear. Selected slope will be displayed in the right side of the frequency window.

F	Flat
6	6 dB/octave
12	12 dB/octave
18	18 dB/octave

11. RIGHT SIGNAL SELECT. Press and release to cycle through the available signals. LED of selected signal will light.

NOISE	Masking
MIC	Microphone
CD	Compact Disk/Tape Player
TONE	Pure Tone

12. RIGHT OUTPUT SELECT. Press and release to cycle through the available transducers. LED of selected transducer will light.

INS	Insert Phones
FF	Free Field
BC	Bone Conduction
AC	Air Conduction



# Operating Instructions MA 42

13. MON/TB/L/R. Used with LEVEL adjust (See 14) to calibrate speech sound levels and to adjust monitor headset listening levels.

MON	Adjusts tone and CD/Tape Player sound levels in the monitor earphone. Use the LEVEL control to adjust the sound to your comfort level.
TB	Adjusts the talk-back microphone sound level in the monitor earphone. Use the LEVEL control to adjust the sound to your comfort level.
L	Calibrates speech sound level for the left ear. Use either the calibrating tone on the CD/Tape Player or speak into the microphone while adjusting the LEVEL control until the sound level peaks just below the red.
R	Calibrates speech sound level for the right ear. Use either the calibrating tone on the CD/Tape Player or speak into the microphone while adjusting the LEVEL control until the sound level peaks just below the red.

14. LEVEL. Used with MON/TB/L/R (See 13) to calibrate speech sound levels and to adjust monitor headset listening levels.
15. STIMULUS. Right stimulus present/interrupt switch. Stimulus is present when the LED is lit.
16. INTENSITY R. Displays right channel intensity.
17. VU. Right channel VU meter.
18. PATIENT RESPONSE. LED lights when test subject presses patient response switch.
19. FREQUENCY. Displays frequency in AUD (audiometer) mode; frequency slope in MHA (master hearing aid) mode.
20. VU. Left channel VU meter.
21. INTENSITY L. Displays left channel intensity.
22. INTENSITY CONTROL DIAL. Adjusts left channel intensity.
23. INTENSITY CONTROL DIAL. Adjusts right channel intensity.



# Operating Instructions MA 42

## 4.2 Rear Panel Controls

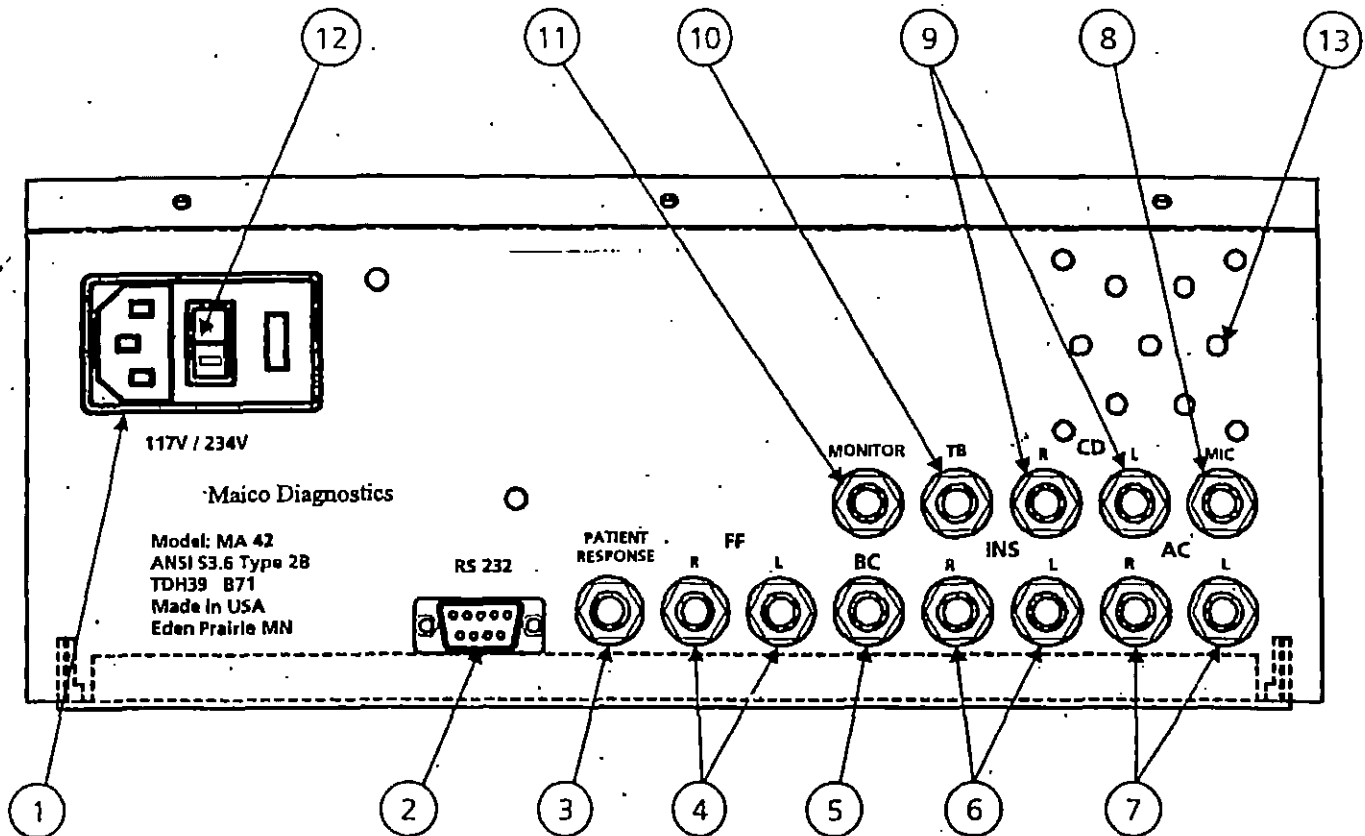


Figure 2

1. POWER ENTRY MODULE. Power input connector, switch and fuseholder.
2. RS 232. DB-9 female RS 232 port connector.
3. PATIENT RESPONSE. Input for optional patient response switch.
4. FF. Right and left output jacks for optional free-field speaker.
5. BC. Bone conduction output jack.
6. INS. Right and left jacks for optional insert phones.
7. AC. Right and left jacks for air conduction TDH 39 earphones.
8. MIC. Input jack for speech microphone.
9. CD. Right and left input jacks for CD/Tape Player speech testing.
10. TB. Input jack for talk-back microphone.
11. MONITOR. Input jack for monitor earphone.
12. POWER SWITCH. On/Off power switch.
13. MONITOR SPEAKER. Same function as monitor phone; active when nothing is plugged into MONITOR jack (See 11).



# Operating Instructions MA 42

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## 5.0 INSTALLATION AND SETUP

### 5.1 Headset/Insert Phones

Place the MA 42 on a stable counter or table. Flip open the side latches and fold the lid back. Fold the lid back one more time to reveal the accessories that are packaged within the rear storage compartment. If you haven't already done so, unpack and inspect the accessories.

The TDH 39 headphones are serialized and should match the serial number on the instrument. Check to see that the numbers match, as this will confirm that the headphones and MA 42 were calibrated together. The optional insert phones do not have a serial number, but if they were ordered at the same time as the MA 42 they were calibrated to that particular instrument and should not be used on another without recalibration.

Turn the MA 42 around so that you can view the rear jacks. Insert the RED (right) plug of the TDH 39 headset into the right air conduction earphone jack labeled **R**, under **AC** (Air Conduction). Insert the BLUE (left) plug into the left **AC** earphone jack labeled **L**.

The insert phones are installed in the same manner. Insert the RED (right) plug of the insert phone cord into the insert phone jack labeled **R**, under **INS** (INSert phones). The BLUE (left) plug is inserted into the jack labeled **L**.

### 5.2 Bone Conduction Transducer

Insert the bone conduction plug into the port labeled **BC** (Bone Conduction).

### 5.3 Microphone

Plug MICROPHONE into the port marked **MIC** and MONITOR into the port marked **MONITOR**.

### 5.4 Monitor

Plug monitor earphone into the port marked **MONITOR**.

### 5.5 Patient Response Switch

Locate the **PATIENT RESPONSE** jack on the rear panel and insert the plug end of the switch.

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## 8.2 Calibrating the Microphone for Live Speech Testing

1. Connect the monitor headset cables to **MIC** and **MONITOR** on the rear panel.
  2. Select MIC on the SIGNAL SELECT keys #6 and #11 (see page 7), then select the right channel (R) on key #13. Speak test words while turning the LEVEL wheel until the signal peaks just below the red LEDs on VU meter.
  3. Repeat for the left channel.
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