

*Model 76876US*

# MICROPHONE VOICE COUNTERMEASURE USER'S MANUAL



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## *Microphone Voice Countermeasure Model 76876US*

### **Description:**

The Lafayette 76876US Microphone Voice Countermeasure is used with the LX4000 Computer Polygraph to detect mental countermeasures used by a subject during examination. The LXSoftware is used to capture waveforms produced by both the subject and examiner. These waveforms are then analyzed by the software to help determine the subjects' polygraph results.

### **Supplied Accessories:**

76876US Control Box

(2) - Microphones

(1) - Auxiliary Connection Cable

(1) - Lafayette Screwdriver



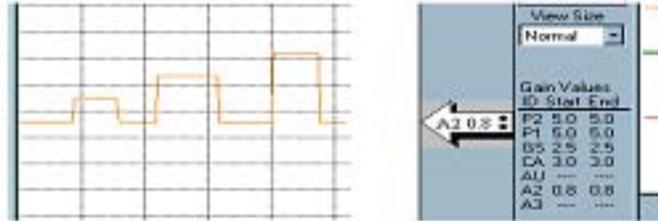
### **System Specifications:**

<b>Power:</b>	+5VDC supplied from LX4000
<b>Freq. Response:</b>	20-20kHz
<b>Signal to Noise Ratio:</b>	58dB, 1 kHz @ 1pa
<b>Open Circuit Sensitivity:</b>	-42dB, 1v @ 1pa
<b>Dynamic Range:</b>	90dB, 1kHz
<b>Max. Input Sound Level:</b>	108dB
<b>Shielded Cable Length:</b>	6ft



## Operating Instructions:

- 1) For proper recording, connect the 76876US to only the AUX 2 channel of the LX4000.
- 2) Connect a microphone to both channels, noting which is the subject, and which is the examiner.
- 3) If you have not started the LXSoftware, do so and you enable the channels for countermeasure data (via trace preferences). You should notice a captured voice waveform on AUX 2 if the channel is activated. It should look like the window below.



- 4) Adjust AUX 2 channel on the computer to your appropriate gain level (0.8) and center the channel.
- 5) When speaking into the microphones, you will see the waveform appear on the screen. There are 4 levels that will be shown. The following graph shows levels.
  1. level one = no one talking, flat line waveform
  2. level two = mic 2 talking, step 1
  3. level three = mic 1 talking, step 2
  4. level four = mic 1 and 2 talking, step 3
- 6) It is essential that only 1 waveform be captured at a time during testing. Level four shows when both the subject and examiner are talking. **The subject is not to talk until the examiner has completely finished giving a question.**
- 7) If the waveforms are not being captured or the microphones have too much gain, you can adjust the gain on the 76876US control box. Using the supplied screwdriver, place it into the hole next to the microphone input and turn the potentiometer clockwise to increase the gain and counter-clockwise to decrease the gain. The gain is factory-set in the middle of its' range
- 8) Each subject may have a different sensitivity toward the device. Meaning that you may have to adjust your microphone sensitivities for different subjects.
- 9) At the end of a test, select the countermeasure scoring menu option: Exam->Score->Countermeasure.

Please call your Lafayette Instrument sales or service representative for any further information concerning the installation and operation of the Activity Sensor.

## Software Instructions:

### Performing Countermeasure Detection

The optional Lafayette Countermeasure Detection System (Model 76876US) may be used with the Lafayette Polygraph System to detect mental and physical countermeasures employed by a subject during an examination. Once you have acquired the Countermeasure Detection System, it must be attached via a category 5 patch cable (available at most computer stores) to the Aux 2 input of the LX-4000.

To display the Aux 2 trace, follow the instructions for setting Trace Preferences.

Once the trace has been displayed, the LXSoftware must be informed to begin saving countermeasure scoring data. To enable saving of countermeasure scoring data, modify the Administrator Preferences.

**Note:** Only charts recorded using software version 9.1.1 or newer may be scored using the Countermeasure Detection algorithm.

**Note:** You must have administrator privileges to modify the Administrator Preferences. If you do not have administrator privileges, contact your System Administrator to enable this feature.

### Selecting the Countermeasure Detection Algorithm

The general procedure for performing countermeasure detection is as follows:

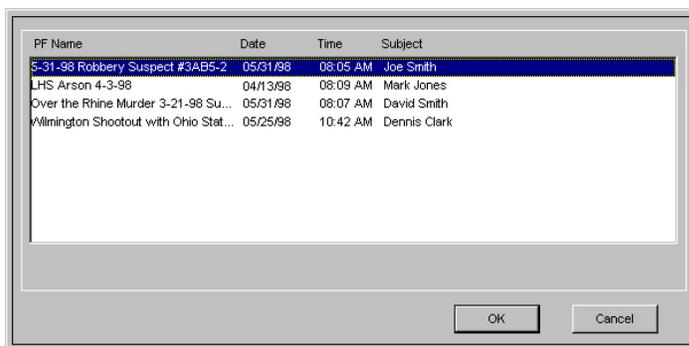
1. Open the PF containing the charts to score
2. Select the Countermeasure menu item from the Exam-> Score menu
3. Select the charts to include in the Countermeasure Detection process
4. Select the questions to score in each chart
5. Review the Countermeasure report

If a PF exists on the hard drive, you can open it using either of the following methods:

Select **Open PF** from the **File** menu, then select the PF from the submenu.

**Or,**

Select **Open PF (Ctrl + O)** from the **File** menu, then select **Open PF...** from the submenu. The **Open PF dialog box** appears:

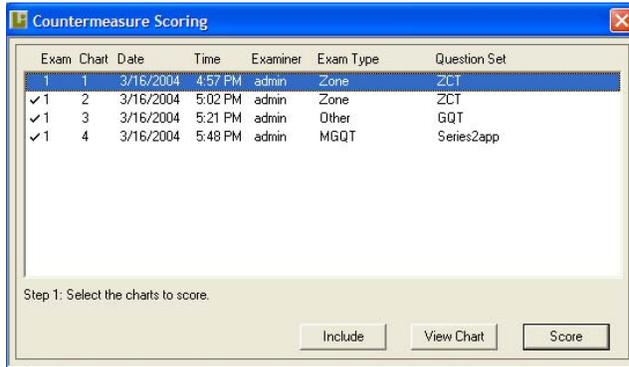


From the list of PFs, highlight the PF you want to open and select **OK**. To close the dialog box and disregard any changes, select **Cancel**.

## Selecting Countermeasure charts to score

To **select** one or more charts to include in the Countermeasure Detection process:

1. Highlight the number of the chart you want to include using the mouse or the <up arrow> and <down arrow> keys.
2. Select **Include (I)**. A check mark appears in front of the chart information.



**Tip:** For a shortcut, **double-click** the chart you want to include. A check mark appears in front of the chart information.

3. Repeat steps 1 and 2 for each additional chart you want to include.

After selecting all the charts to include in the scoring process, select **Score (S)**. The Countermeasure Detection algorithm performs initial data processing and question type identification, and the **Set Question Types dialog box** appears for tagging questions.

### Deselecting a chart

If you accidentally select a chart, you can deselect it using the **Exclude** button (the toggle of the **Include** button; when you highlight a chart with a check mark beside it, the button reads **Exclude**). To **exclude** a chart from the scoring process:

1. Highlight the number of the chart you want to exclude using the mouse or the <up arrow> and <down arrow> keys.
2. Select **Exclude (E)**. The check mark is removed from in front of the chart information, and the chart will not be scored.

**Tip:** For a shortcut, double-click the chart you want to exclude. The check mark is removed from in front of the chart information.

### Displaying a chart

You can also use this dialog box to **display** a specific chart:

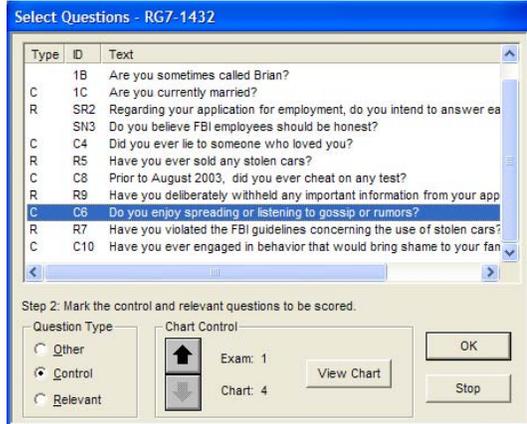
1. Highlight the number of the chart you want to display using the mouse or the <up arrow> and <down arrow> keys.
2. Select **View Chart (V)**. The chart appears.

### What should I do next?

You're now ready to tag the questions.

## Tagging Countermeasure Questions

The **Select Questions dialog box** displays the list of questions for the first chart included in the scoring process:



The **question type tags** are displayed in the **Type** column and correspond to the first letter of the **question type** (e.g., O = Other, C = Comparison/Control, and R = Relevant). Note that questions of type Other display as a blank in the **Type** column.

**Note:** Countermeasure detection accuracy depends on the correct tagging of questions.

### Changing a tag

To assign a different tag to a question in the current list:

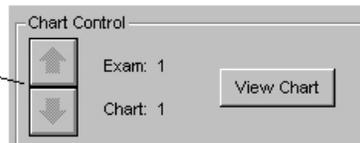
1. Highlight the question using the mouse or the <up arrow> and <down arrow> keys.
2. In the **Question Type group box**, select the appropriate option button or type the first character of the tag, such as r for Relevant. The new tag is displayed in the Type column.
3. Repeat steps 1 and 2 for each question tag you want to change.
4. Review the questions for the other charts in the scoring process.. See “Viewing other questions,” next, to learn how.

### Viewing other questions

To display the questions used while recording one of the other selected charts:

1. Press the  or  arrows in the Chart Control group box, or use the <page up> and <page down> keys until the desired exam and chart number is displayed

Use these arrows to move through the charts



2. Revise the question type tags as appropriate.
3. Repeat this process for each chart selected for scoring.
4. After reviewing the questions and tags for all the charts in the scoring process, select **OK**. The **Countermeasure report** then appears.

### What should I do next?

You're now ready to review the Countermeasure report from the scoring process.

## Review the Countermeasure report

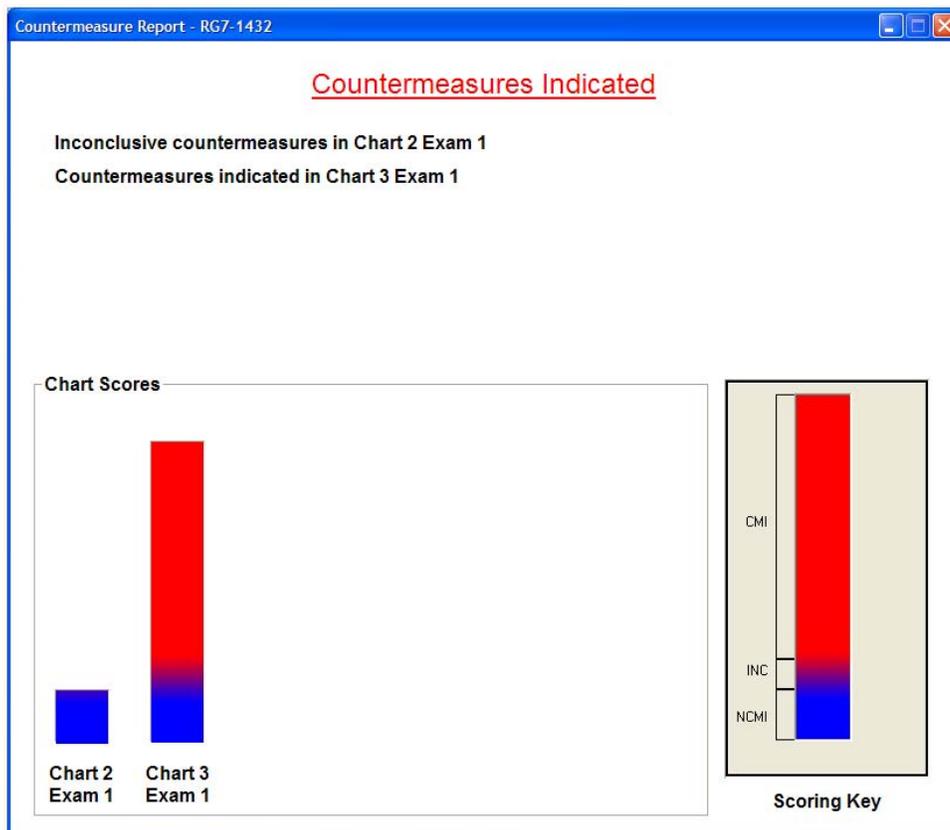
The Countermeasure report includes the following information:

1. Overall summary of whether countermeasures were detected.
2. An indication per chart of whether countermeasures were detected on that chart.
3. PF name and charts evaluated.
4. Chart scores showing one bar graph per chart indicating the likelihood that countermeasures were employed.
5. A scoring key indicating how to interpret the results.

CMI = Countermeasures Indicated

INC = Inconclusive

NCMI = No Countermeasures Indicated



## Ordering Information:

All phone orders must be accompanied by a hard copy of your order. All must include the following information:

- 1) Complete billing and shipping addresses
- 2) Name and department of end user
- 3) Model number and description of desired item(s)
- 4) Quantity of each item desired
- 5) Purchase order number or method of payment
- 6) Telephone number

### DOMESTIC TERMS

There is a \$50 minimum order. Open accounts can be extended to most recognized educational institutions, hospitals and government agencies. Net amount due 30 days from the date of shipment. Enclose payment with the order; charge with VISA, MasterCard, American Express; or pay COD. We must have a hard copy of your order by mail or fax. Students, individuals and private companies may call for a credit application.

### INTERNATIONAL PAYMENT INFORMATION

There is a \$50 minimum order. Payment must be made in advance by: draft drawn on a major US bank; wire transfer to our account; charge with VISA, MasterCard, American Express; or confirmed irrevocable letter of credit. Proforma invoices will be provided upon request.

### RETURNS

Equipment may not be returned without first receiving a Return Goods Authorization Number (RGA).

When returning equipment for service, please call Lafayette Instrument to receive a RGA number. Your RGA number will be good for 30 days. Address the shipment to: Lafayette Instrument Company, 3700 Sagamore Parkway North, Lafayette, IN 47904, U.S.A. Shipments cannot be received at the PO Box. The items should be packed well, insured for full

value, and returned along with a cover letter explaining the malfunction. Please also state the name of the Lafayette Instrument representative authorizing the return. An estimate of repair will be given prior to completion ONLY if requested in your enclosed cover letter. We must have a hard copy of your purchase order by mail or fax, or repair work cannot commence.

### WARRANTY

Lafayette Instrument guarantees its equipment against all defects in materials and workmanship to the ORIGINAL PURCHASER for a period of one (1) year from the date of shipment, unless otherwise stated. During this period, Lafayette Instrument will repair or replace, at its option, any equipment found to be defective in materials or workmanship. If a problem arises, please contact our office for prior authorization before returning the item. This warranty does not extend to damaged equipment resulting from alteration, misuse, negligence or abuse, normal wear or accident. In no event shall Lafayette Instrument be liable for incidental or consequential damages. There are no implied warranties or merchantability of fitness for a particular use, or of any other nature. Warranty period for repairs or used equipment purchased from Lafayette Instrument is 90 days.

### DAMAGED GOODS

Damaged equipment should not be returned to Lafayette Instrument prior to thorough inspection.

When a shipment arrives damaged, note damage on delivery bill and have the driver sign it to acknowledge the damage. Contact the delivery service, and they will file an insurance claim. When damage is not detected at the time of delivery, contact the carrier and request an inspection within 10 days of the original delivery. Please call the Lafayette Instrument Customer Service Department for a return authorization for repair or replacement of the damaged merchandise.



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