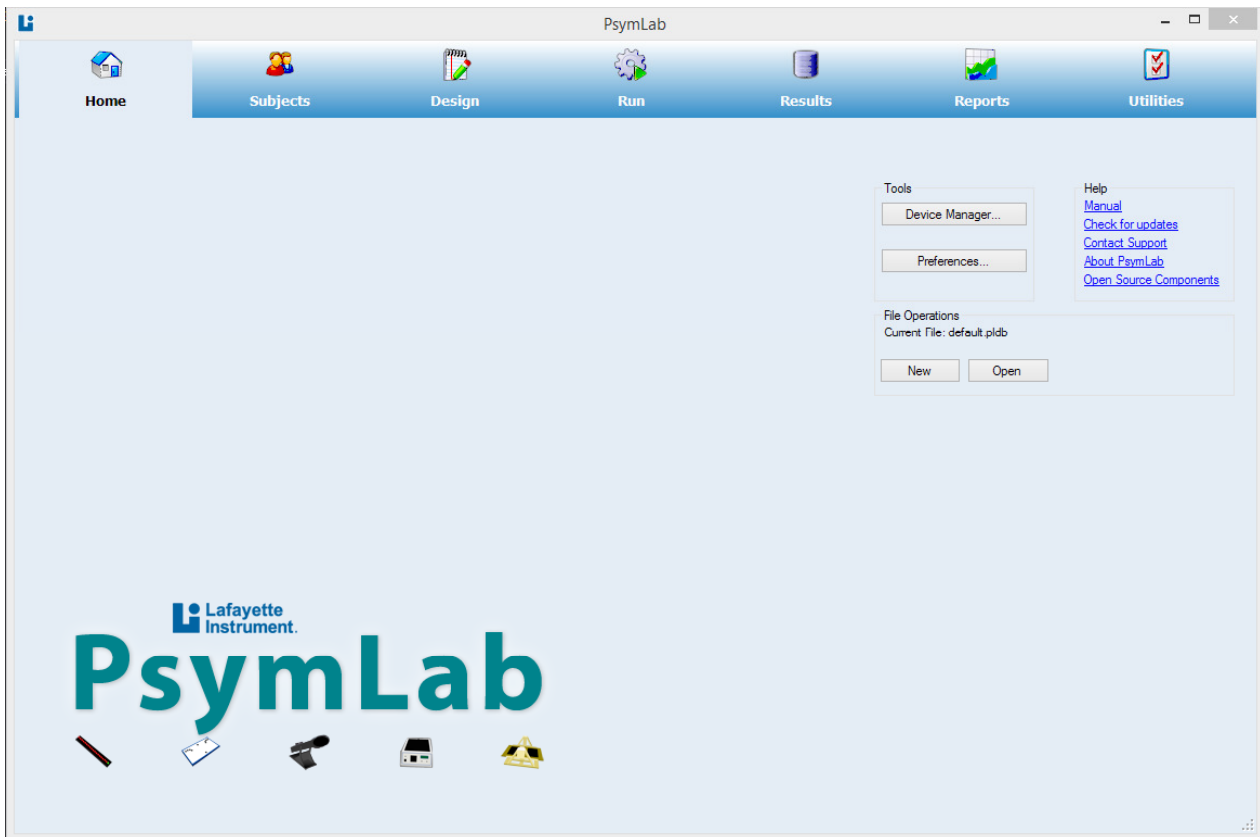


# ***PsymLab Psychomotor Control Software User Instructions***



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## **Getting Started**

### **Installing PsymLab**

1. Double-click the PsymLab Setup icon.
2. Click "Next"
3. Read and accept the License Agreement.
4. Click "Next"
5. Choose a different location for installation if desired. The user may also choose to limit the installation to their user profile by clicking "Just me" in the lower-left portion of the window. Click "Next" when ready.
6. Click "Next"
7. Click "Close"

### **Opening PsymLab**

To launch PsymLab, either double-click the associated desktop shortcut or utilize the start menu in order to open the application. This shortcut can be found under Start > Programs > Lafayette Instrument > PsymLab by default, however the user installing the software is able to choose a different location if desired.

### **Uninstalling PsymLab**

Using the start menu, navigate to the PsymLab program folder. By default, this can be found under Start > Programs > Lafayette Instrument > PsymLab. In this folder, click "Uninstall PsymLab". Click "Yes" to continue with the uninstall process. This will not remove database and export information from the computer. The associated folder will have to be removed manually. The default location for this is under \My Documents\Lafayette Instrument\PsymLab.

### **General Use**

PsymLab is navigated using the mouse, and most selections can be made by clicking the desired item or window with the left mouse button. The right mouse button can be used within the **Design and Run Tabs** to bring up a list of shortcuts that are available for selection. This is addressed in more detail within the sections of this guide dedicated to those tabs. Cells, boxes, and windows within PsymLab can be resized by clicking the border of the object to be resized with the mouse and dragging the border to the desired location.

## Tabs

PsymLab is laid out in a window, with tabs located at the top for navigation. When PsymLab is launched, the **Home Tab** will be active. From left to right, the other tabs are Subjects, Design, Run, Results, Reports, and Utilities. Following are brief summaries of each of the tab's functions.

- The **Home Tab** allows for the creation and management of databases and devices.
- The **Subjects Tab** allows for the creation and management of subject data as well as groups.
- The **Design Tab** allows the user to create and manage multiple experiments and experiment blocks.
- The **Run Tab** is where current experiment runs are carried out. Experiment runs can be set up for groups or individual subjects.
- The **Results Tab** is used to view individual results, which can be organized by subject and group or by experiment. This data can be exported to Microsoft Excel.
- The **Reports Tab** is used to generate tables based on individual or group data. Rows are defined by experiment types and columns are defined by individuals or groups. Results are then calculated based on rows and columns designated by the user. This data can also be exported as a comma separated value file (\*.csv).
- The **Utilities Tab** allows for the creation and management of custom subject attributes which can be applied to subjects on the Subjects tab. These attributes can also be used to group subjects in dynamic groups.

## Home Tab

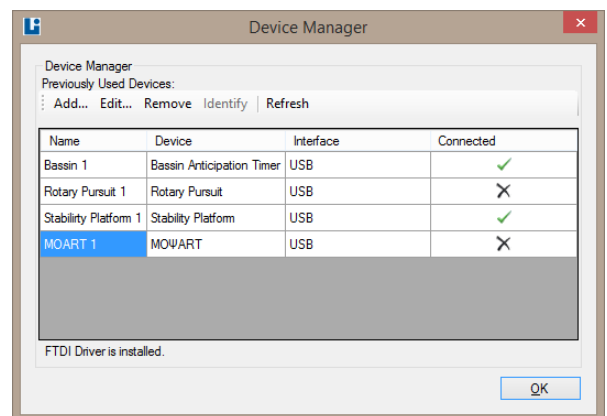
The home tab allows for a few basic critical functions, and displays useful information.

### Device Manager

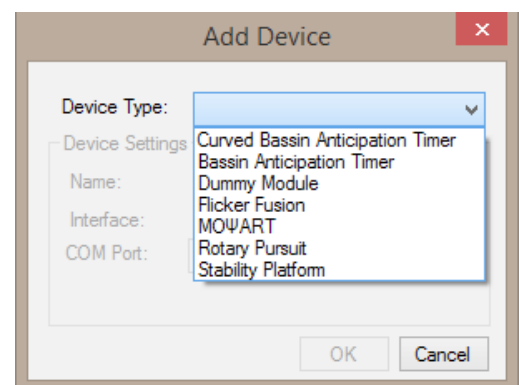
Clicking the "Device Manager" button will open a new window that lists the user's devices. Device name, type, interface, and current connection status will be listed for each.

### Adding and Editing Devices

**Note:** USB devices should be added to the Device Manager automatically when they are connected to the system.



1. To add a non-USB device, click "Add..."
2. Select the applicable device type from the drop-down list. Device settings should now be accessible.
3. Input a name for the new device.
4. By default, the Interface selected should be "Serial". Select the appropriate COM port for the device being added.
5. Click "OK".
6. Once the device has been added, these settings can be changed by selecting the appropriate device and clicking "Edit..."
7. Click "OK" when finished.



## User Instructions

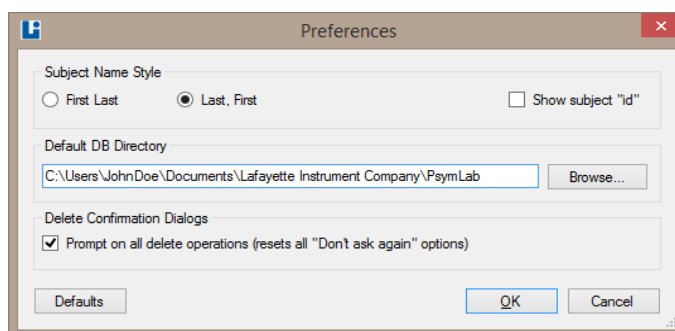
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The “Refresh” button can be clicked in order to update device status while configuring or adding devices. The “Identify” button can be used to check device connectivity and to differentiate between multiple connected devices. In order to remove a device from the list, select the desired device and click the “Remove” button. The device will need to be added and configured as a new device in order to use it again in the future.

**Note on Flicker Fusion:** A serial-to-USB converter (Model 12021A-USB) is required to connect a Flicker Fusion system to PsymLab.

### Preferences

Clicking the “Preferences” button will open a new window giving the user a couple of basic choices regarding subject names, default directories, delete operations, and identification.

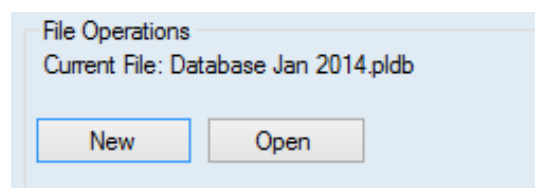


### Help

The “Help” box contains links to such things as user instructions, software updates, and support.

### File Operations

Upon launching the PsymLab application, the filename of the current database will be shown on the right-hand portion of the screen under “File Operations”. Under “File Operations”, databases can be created or opened. By default, the most recent database in use will be open upon start-up.



### Creating a New Database

1. Click “New” under “File Operations”.
2. Enter the name for the new database. At this point, the file path may also be changed if desired.
3. Click “Save”. A progress bar will be displayed as the new database is generated.
4. Once the new database has been created, a message will appear in the bottom left-hand corner of the window confirming that the new database has been opened. The information under “File Operations” will also be updated to reflect this change as well.

### Opening an Existing Database

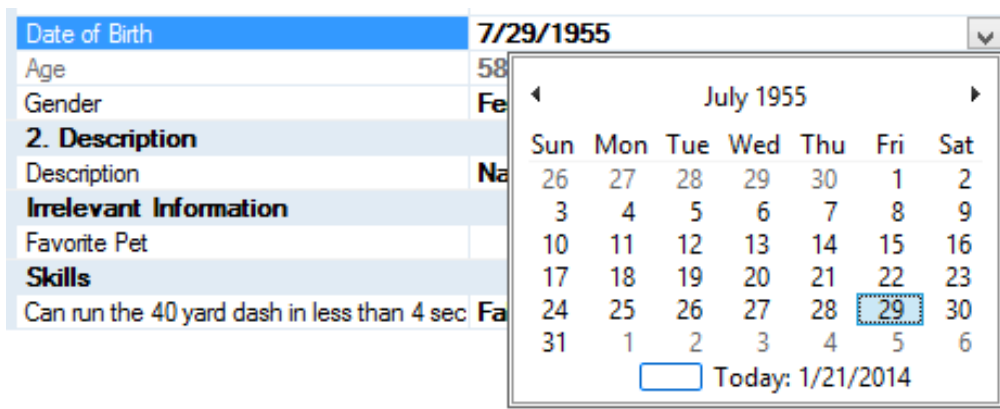
1. Click “Open” under “File Operations”.
2. Navigate to the proper folder if the desired database file has been stored in a different location.
3. Click on the database file name.
4. Click “Open”.
5. Once the database file has been opened, a message will appear in the bottom left-hand corner of the window confirming that the new database has been opened. The information under “File Operations” will also be updated to reflect this change as well.

## Subjects Tab

The subjects tab is where all of the information associated with each subject is entered and managed. On the left, current subjects are listed, and new subjects can be added. In the center, information for the currently selected subject is displayed. These fields can also be edited from this view. On the right, groups and dynamic groups are listed in their respective areas. New groups can be added and managed. Dynamic groups can be added and edited as well. Dynamic groups rely on subject information in order to classify subjects into groups, while basic groups rely on the user to manually assign subjects to them. Data such as age, gender, and custom attributes can be used to group subjects in dynamic groups.

### Adding Subjects and Editing Subject Information

1. Click the "New Subject" icon in the "Subjects" box to add a new subject to the list. Information for this subject will need to be completed inside of the "Subject Info" box before adding another subject. 
2. In order to fulfill the minimum requirements for subject information, required attributes must be filled in. By default, the only required attribute is "First Name", however, user defined custom attributes may be required as well. Required attributes will be denoted with an asterisk. **Note:** Subjects can be entered without required attributes, however, a test may not be run on a subject until all required information is entered.
3. Other attributes and a description of the subject can be entered as well. Dates, True/False data types, and distinct values use a drop-down box for input. When inputting dates, selection options can be expanded by clicking the header at the top of the selection window.. For instructions on adding custom subject attributes, refer to *Adding a Custom Subject Attribute* in the **Utilities Tab** section of this manual. In custom attributes that are dates, time can be adjusted this way as well, and can be found at the bottom of the drop-down box.



The screenshot shows the "Subject Info" box with the "Date of Birth" field selected, displaying "7/29/1955". A date picker calendar is open, showing July 1955. The calendar has a grid with days of the week (Sun to Sat) and dates (1 to 31). The date 29 is highlighted. Below the calendar, there is a "Today" button and the text "Today: 1/21/2014".

| July 1955 |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|
| Sun       | Mon | Tue | Wed | Thu | Fri | Sat |
| 26        | 27  | 28  | 29  | 30  | 1   | 2   |
| 3         | 4   | 5   | 6   | 7   | 8   | 9   |
| 10        | 11  | 12  | 13  | 14  | 15  | 16  |
| 17        | 18  | 19  | 20  | 21  | 22  | 23  |
| 24        | 25  | 26  | 27  | 28  | 29  | 30  |
| 31        | 1   | 2   | 3   | 4   | 5   | 6   |

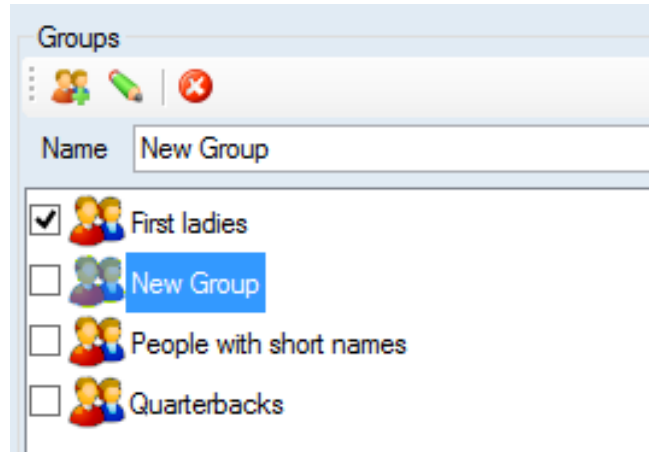
Today: 1/21/2014

4. The age attribute is dynamic, based on the subject's date of birth.
5. While entering information, the description of each attribute can be found at the bottom of the "Subject Info" box for reference.
6. Click the "Remove Subject" icon in the "Subjects" box to remove the currently selected subject from the list. 

### Adding and Using Basic Groups



1. Click the "Add Group" icon in the "Groups" box to add a new group to the list.
2. Select the new group by clicking the appropriate name in the list.
3. In the upper portion of the "Groups" box, the current name of the group will be displayed to the right of the label, "Name". The name can be edited by clicking inside the name field. This can also be done for any existing group in the same way.
4. Once a group has been created, subjects can be associated with the group. Select a subject by clicking on the subject name from the list in the "Subjects" box.
5. Assign this subject to a group by subsequently checking the box associated with the desired group within the "Groups" box.
6. In order to remove a subject from a group, select the intended subject in the same way as in STEP 4 and uncheck boxes associated with any group in which the subject should be removed.
7. Subjects can also be added and removed from groups using the "Edit Group" window.



### Adding a Dynamic Group

1. Click the "New Dynamic Group" icon. A new window labeled "Dynamic Group Editor" will open.
2. The name of the new dynamic group can be edited by clicking inside the name field at the top of the window.
3. In the box labeled "New Search Term", terms can be defined by the user that will be used to group subjects.
4. The attribute used to group subjects can be selected from the drop down list labeled "Attribute". This list will contain attributes such as gender and age, as well as any user defined custom attributes associated with the current database.
5. Values can then be selected according to what the attribute type is. Numeric values can be entered by clicking inside the "Value" field and entering the desired number, or by using the up and down arrows at the right of the field. Distinct values and True/False data types can be chosen from a drop-down list. Dates can be selected in a drop-down box, and text based values can be entered by clicking inside of the field.
6. Once a value has been chosen, the user is able to select a function type from the "Function" drop-down list for date, text, and numeric attributes.



7. The “Not” box can be checked if the subjects should be picked if they do not meet the requirements set up by this search term. For example, if the criterion for the dynamic group should require that the desired attribute not equal a specific number, the equals sign should be chosen from the “Function” drop-down list, and the “Not” box should be checked.
8. When it is desired to remove subjects from a dynamic group based on a specific attribute, “Exclude” can be chosen from the “Include/Exclude” drop down list. Once the search term has been added, this will keep any subject meeting the associated requirements out of the dynamic group.
9. Click “Add Term” to apply this search term to the dynamic group. Active search terms will appear in the “Search Terms” box.
10. Repeat this process in order to add multiple search terms.
11. Subjects that meet the requirements dictated by the current search terms associated with the dynamic group will appear in the “Subjects Found” box on the right side of the window.
12. Click “OK” when finished.

### Editing a Dynamic Group



1. Click the “Edit Dynamic Group” icon. A new window labeled “Dynamic Group Editor” will open.
2. The name of the dynamic group can be edited by clicking inside the name field at the top of the window.
3. Refer to *Adding a Dynamic Group* for information on adding a new search term.
4. In order to edit an existing search term, first select the desired search term by clicking on it in the “Search Terms” box.
5. Click “Remove/Edit”. This will remove the selected search term from the list. However, the information will be transferred into the “New Search Term” box, and will be available for editing,
6. Refer to *Adding a Dynamic Group* for information on editing a search term.
7. After editing the search term, click “Add Term” to ensure that the search term is applied to the dynamic group again. If the dynamic group editor is closed before clicking “Add Term”, the entire search term will be lost.
8. Subjects that meet the requirements dictated by the current search terms associated with the dynamic group will appear in the “Subjects Found” box on the right side of the window.
9. Click “OK” when finished.

### Removing a Dynamic Group

1. On the **Subjects Tab**, select the dynamic group to be removed by clicking on it in the “Dynamic Groups” box.
2. Click the “Delete Dynamic Group” icon in the “Dynamic Groups” box.



### Design Tab

The design tab is used to set up experiment designs for a variety of devices. Any given experiment can be comprised of tasks using any combination of the devices connected to the system. In addition, these tasks can be arranged in multiple blocks within the experiment.

### Experiments, Blocks, and Tasks

In PsymLab, the user is able to arrange experiments using three levels of organization: experiments, blocks, and tasks. Tasks are the actual tests that the subject will perform. They can be run in single or multiple iterations, and the time between the tasks can also be specified. Blocks contain the tasks to be run, and can consist of a single type of task or a variety of tasks. Blocks may also be run in single or multiple iterations.

In the case below, the highlighted block will be run 4 times, while the associated task will be run 5 times per block, resulting in a total of 20 iterations of the task. However, this structure allows the subject to take a break after five iterations of the task, as the block is set to progress manually. The user would be able to ask the subject to perform the task differently as well. In the case of this example, the subject will be asked to change which hand they use for each iteration of the block. The inter-block message, "Switch hands for next test" will remind the user to ask this of the subject between blocks.

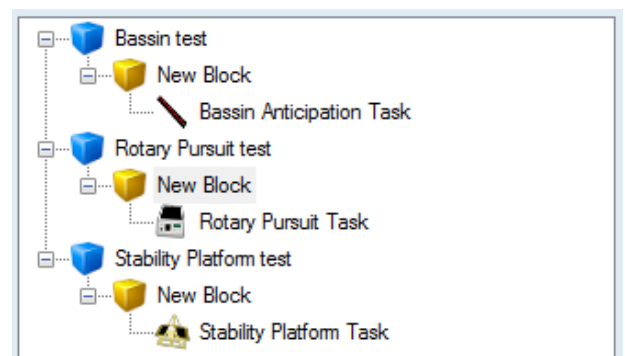
The screenshot shows the 'Experiment Design' window. On the left is a tree view with three main tests: 'Bassin test', 'Rotary Pursuit test', and 'Stability Platform test'. Each test contains a 'New Block' and a corresponding task (e.g., 'Bassin Anticipation Task', 'Rotary Pursuit Task', 'Stability Platform Task'). The 'Rotary Pursuit test' block is highlighted. On the right is the 'Edit' panel for the selected block. It shows 'Name' as 'New Block', 'Repeat' as '4', and 'Interval Type' as 'Manual'. There are checkboxes for 'Execute in Parallel' and 'Inter-Block Message'. Below the 'Inter-Block Message' checkbox is a text area for entering a message.

Task to be run. In this example it is repeated 5 times within each iteration of the block.

Block to be run. In this example, it is repeated 4 times, allowing the subject to rest between blocks. A message can even be displayed to the user between each iteration.

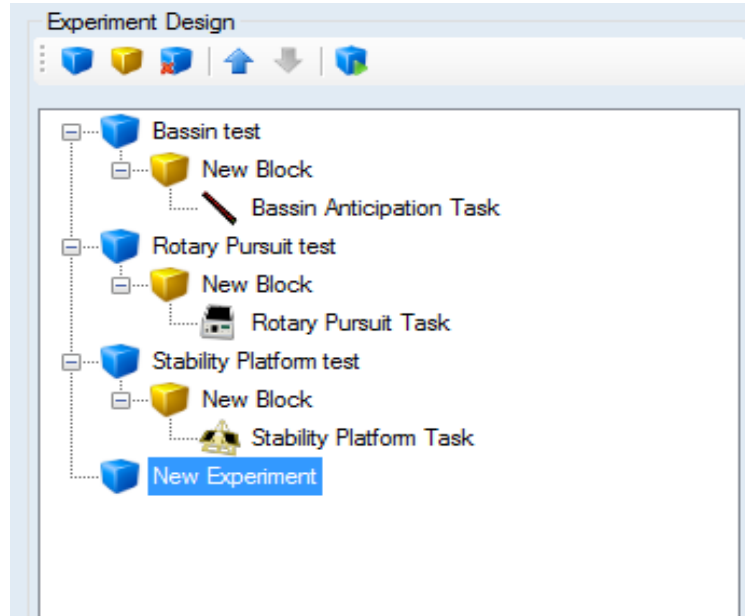
Experiments may also be run in single or multiple iterations if the user would wish to run all blocks and tasks more than once in a single run. For this example, three iterations of the experiment in a single run would result in a total of 12 single tap blocks and 60 single tap tasks for the run.

The ability to run multiple blocks within a single experiment adds to the versatility the user has when setting up a test. In this example, the subject will perform two separate MOART tasks within a single experiment, and the user has split the two tasks types into separate blocks, allowing the tasks to be run separately. If the user had rather asked the subject to alternate between single tap and dual tap tasks, these tasks would have been placed within the same block, as shown on the right.



## Creating a New Experiment

1. Click the “New Experiment” icon in the “Experiment Design” box. This will add a new experiment to the list within this box.
2. The new experiment can be edited using the “Edit” box in the center of the window. To edit the name of the experiment, click inside the “Name” field.
3. The number of iterations of the entire experiment for each run can be changed in the “Repeat” field.
4. In the “Timing” box, the user is able to choose between manual, fixed, and random interval types. The “Interval Type” drop-down list is used to accomplish this. The type of interval will determine how the experiment progresses. Manual will prompt the user to click a button in order to continue, while the other options will allow the experiment to proceed automatically after a random or set period of time defined by the user. These times can be set using the “Value” fields, which are set up in a “Minutes : Seconds” format.



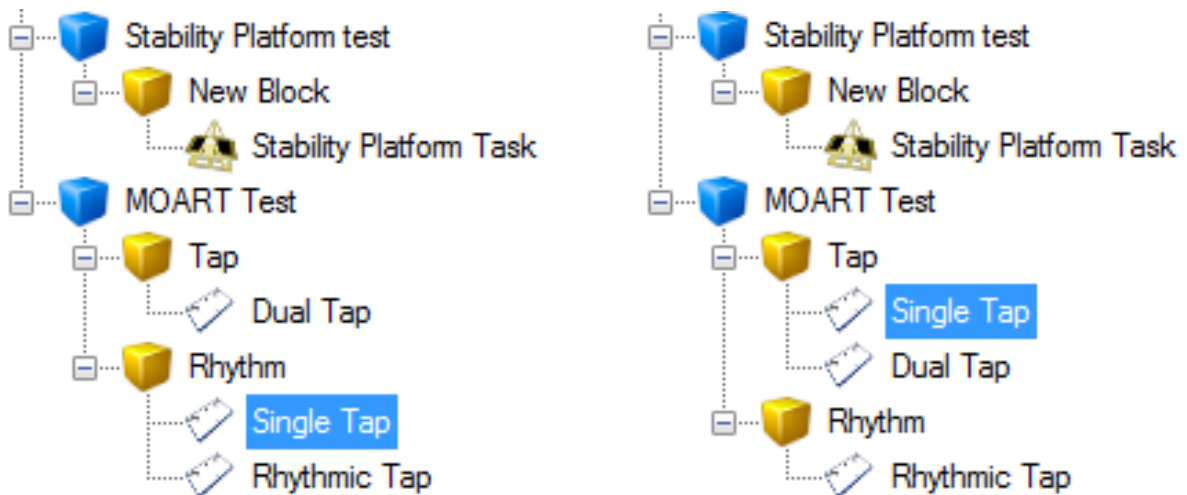
The screenshot shows the 'Experiment Settings' box. It contains three main sections: 'Name', 'Repeat', and 'Timing'. The 'Name' section has a text input field containing 'New Experiment'. The 'Repeat' section has a numeric input field with the value '1'. The 'Timing' section has a dropdown menu for 'Interval Type' set to 'Random'. Below the dropdown are two sets of input fields for 'Min' and 'Max' values, each with units for minutes (m) and seconds (s). The 'Min' values are '0' minutes and '1' seconds, and the 'Max' values are '0' minutes and '5' seconds.

5. In the “Experiment Settings” box, a description of the experiment can be added in the “Description” field in order to provide necessary or additional information or clarification to the experiment. A message may also be added to be shown between experiments in the “Inter-Experiment Message” field.
6. Blocks within an experiment can be randomized a single time prior to running the experiment by clicking the “Randomize Now” button in the “Block Random Mode” box. If the blocks should be randomized for each experiment, the box labeled “On Each Run” should be checked.

## Managing Blocks and Tasks in an Experiment

1. In order to add blocks to an existing experiment, click and drag the desired task type from the list on the right-hand side of the window to the experiment in the list on the left-hand side of the window. This will create a new block associated with the selected experiment for the chosen task to be placed in.
2. To add subsequent blocks to any given experiment, drag the desired task for the new block onto the experiment in the list on the left. To add more tasks to any given block, drag the desired task onto the intended block.
3. New blocks and tasks can also be added using the “Add Block/Add Experiment Task” button on the Experiment Design toolbar.

4. Once an experiment is set up with multiple blocks and tasks, it may be reorganized using the “Move Up” and “Move Down” icons located in the “Experiment Design” box. Blocks and tasks may also be moved by dragging and dropping them into the desired location within the experiment.



5. Names of selected blocks and tasks can be edited by clicking inside the “Name” field in the “Edit” box.
6. The number of iterations of each group as well as each task can be changed in the “Repeat” field.

Block

☒ Execute in Parallel

Inter-Block Message

Next Block

7. While a block is selected, the user is able to write an inter-block message.
8. If desired, the user may also allow multiple tasks to be run simultaneously during a block by checking the box labeled “Execute in Parallel”. Blocks set up in this way will not allow a single device to be used in more than one task.

Edit

Name

Repeat

Timing

Interval Type

Min  m  s Max  m  s

Device

[Connected]

Preview

Results are  
Late response: 326 ms.]

9. In the "Timing" box, the user is able to choose between manual, fixed, and random interval types. The "Interval Type" drop-down list is used to accomplish this. The type of interval will determine how the block or task will progress. Manual will prompt the user to click a button in order to continue, while the other options will allow the experiment to proceed automatically after a random or set period of time defined by the user. These times can be set using the "Value" fields, which are set up in a "Minutes : Seconds" format.
10. Tasks within a block can be randomized a single time prior to running the experiment by clicking the "Randomize Now" button in the "Task Random Mode" box. If the tasks should be randomized for each experiment run, the box labeled "On Each Run" should be checked.

## Task Setup

1. In the "Device" drop-down list, the user is able to select the device that will be associated with the selected task from the devices currently connected to the system.
2. The user is able to test the currently selected device by clicking the "Preview" button. This will begin a sample test run of the current task.

## Bassin Anticipation Test Settings

1. Select a Bassin Anticipation test by clicking on it in the "Experiment Design" list.
2. In the "Speed Settings" box, the user is able to define the speed(s) used for the trial. Click "Constant" to set the speed to a single value throughout the trial. Click "Ramped" to allow the speed to linearly change between the selected start and end speeds during the trial. Click "Random" to allow the speed to be a randomly chosen integer value between the selected minimum and maximum speeds; the random value is re-selected each time the task is run, and the selected minimum and maximum speeds are possible values.
3. In the "Cue Duration" box, the user can define the length of the cue in seconds. Check the "Random" box to set a variable value for cue duration. A minimum and maximum length can be set in the appropriate fields that are made available when "Random" is checked.

Speed Settings

☒ Constant      Speed 10 mph

☐ Ramped

☐ Random

Cue Duration

☐ Random

Value 1.0 s

Runway Info

Number Runways 2      Get Current Count      ☐ Freeze on response

Target Runway 2

Target Light 16      Show Target Light On Runway      Reset Lights

Blanking Selection

Pattern Directions

Apply Pattern (All On)      Repeating Continuous

Speed Settings

☐ Constant      Start Speed 5 mph

☒ Ramped      End Speed 10 mph

☐ Random

Speed Settings

☐ Constant      Min Speed 5 mph

☐ Ramped      Max Speed 10 mph

☒ Random

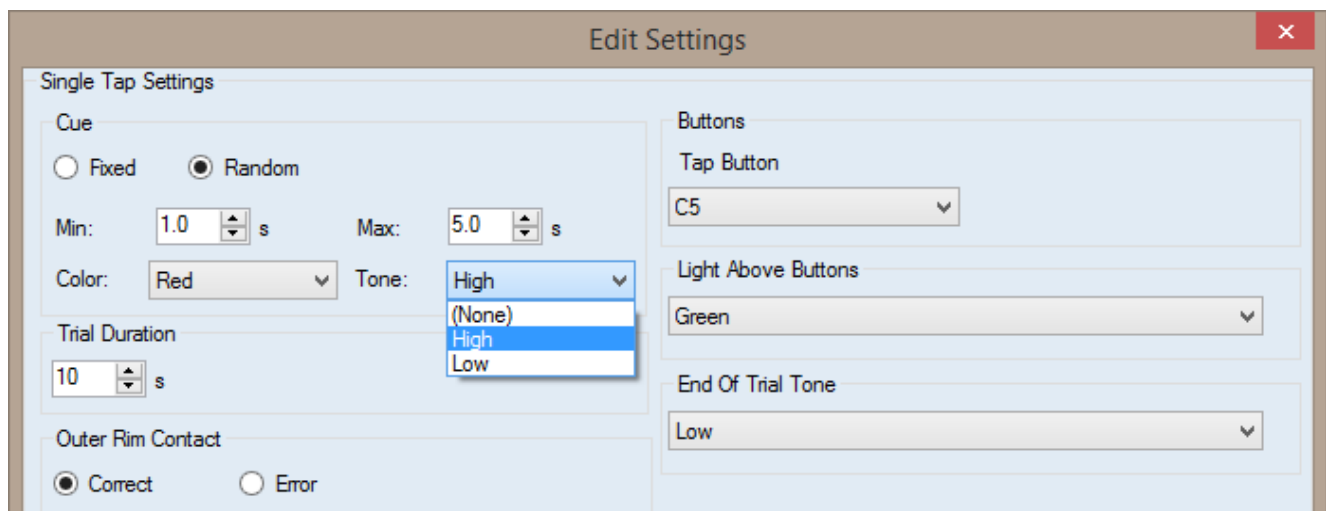
4. In the "Runway Info" box, the user can select the number of runways available, as well as define the target runway and light using the respective fields. Click "Get Current Count" to detect the number of runways currently connected and available to PsymLab. Check the "Freeze on response" box if the light should stop when a subject's input is detected.
5. At the bottom of the window, the pattern of the lights can be defined manually or by using a preset pattern. Select the desired choice from the "Apply Pattern" drop-down list. Manual patterns are created by inputting a series of "+" and "-" symbols into the drop-down list. "+" designates an illuminated light, while "-" is a non-illuminated light.
6. The "Repeating" drop-down list is used to select a pattern style. "Continuous" patterns will use all lights in a repeating sequence. "Once" patterns will not be repeated. "On Every Runway" patterns will create identical patterns on each runway rather than using the lights in a continuous sequence.

### Curved Bassin Anticipation Test Settings

The Curved Bassin Anticipation test has the same controls as the Bassin Anticipation test. Refer to *Bassin Anticipation Test Settings* for reference.

### Single Tap Settings (MOART)

1. Select a single tap task by clicking on it in the "Experiment Design" list.
2. Click "Edit Settings" in the "Edit" box. The "Edit Settings" window will pop up, allowing the user to alter a variety of parameters.



3. In the "Cue" box, the user is able to set the min and max cue time, set the cue color/tone, and select a fixed or random cue time.
4. In the "Timeout" box, the user is able to set the amount of time for which the task will run. That is, how long the subject has to tap the button.
5. In the "Outer Rim Contact" box, the user is able to decide whether the outer rim of the button should count as a valid tap or as an erroneous tap.
6. In the "Buttons" box, the user is able to decide which button the subject will tap.
7. In the "Light Above Buttons" box, the user has the option to select from a red, orange, or green light that will be displayed during the task.
8. In the "End of Trial Tone" box, the user is able to decide whether or not a tone should signal the end of the task. The user may choose between a high or low tone.
9. Click "OK" when finished.

## Dual Tap Settings (MOART)

1. Select a dual tap task by clicking on it in the “Experiment Design” list.
2. Click “Edit Settings” in the “Edit” box. The “Edit Settings” window will pop up, allowing the user to alter a variety of parameters.

The screenshot shows the 'Edit Settings' dialog box for the 'Dual Tap' task. The 'Dual Tap Settings' section includes radio buttons for 'Fixed' (selected) and 'Random', a 'Value' of 5.0 seconds, a 'Color' dropdown set to 'Green', and a 'Tone' dropdown set to '(None)'. The 'Buttons' section has two dropdowns for 'Tap 1' (R3) and 'Tap 2' (L3). The 'Light Above Buttons' dropdown is set to 'Green'. The 'End Of Trial Tone' dropdown is open, showing options: 'High', '(None)', 'High', and 'Low'. The 'Outer Rim Contact' section has radio buttons for 'Correct' and 'Error' (selected). 'OK' and 'Cancel' buttons are at the bottom right.

3. In the “Cue” box, the user is able to set the min and max cue time, set the cue color/tone, and select a fixed or random cue time.
4. In the “Timeout” box, the user is able to set the amount of time for which the task will run. That is, how long the subject has to tap the button.
5. In the “Outer Rim Contact” box, the user is able to decide whether the outer rim of the button should count as a valid tap or as an erroneous tap.
6. In the “Buttons” box, the user is able to decide which buttons the subject will tap.
7. In the “Light Above Buttons” box, the user has the option to select from a red, orange, or green light that will be displayed during the task.
8. In the “End of Trial Tone” box, the user is able to decide whether or not a tone should signal the end of the task. The user may choose between a high or low tone.
9. Click “OK” when finished.

### Rhythmic Tap Settings (MOART)

1. Select a rhythmic tap task by clicking on it in the “Experiment Design” list.
2. Click “Edit Settings” in the “Edit” box. The “Edit Settings” window will pop up, allowing the user to alter a variety of parameters.

The screenshot shows the 'Edit Settings' dialog box for the 'Dual Tap' task. The 'Cue' section has 'Fixed' selected with a value of 5.0 seconds, 'Green' as the cue color, and '(None)' as the tone. 'Trial Duration' is set to 5 seconds. Under 'Outer Rim Contact', 'Error' is selected. The 'Buttons' section shows 'Tap 1' as 'R3' and 'Tap 2' as 'L3'. The 'Light Above Buttons' is set to 'Green'. The 'End Of Trial Tone' dropdown menu is open, displaying the options: 'High', '(None)', 'High', and 'Low'. The 'OK' and 'Cancel' buttons are at the bottom right.

3. In the “Cue” box, the user is able to set the min and max cue time, set the cue color/tone, and select a fixed or random cue time.
4. In the “Trial Duration” box, the user is able to set the amount of time for which the task will run.
5. In the “Outer Button” box, the user is able to decide whether contact with outer rim of the button should be counted separately.
6. In the “Locations” box, the user is able to decide which button will be used as the rhythmic stimulus, and which button will be tapped by the subject (response).
7. In the “Stimulus” box, the user has the option to select from a red, orange, or green light that will be displayed during the task, as well as a high or low tone. The user is also able to select “None” for either of these stimuli.
8. In the “Stimulus Rate” box, the user is able to designate the rate the stimulus will follow for rhythmic tap in beats per minute.
9. Click “OK” when finished.

## Simple Reaction Time Settings (MOART)

1. Select a simple reaction time task by clicking on it in the “Experiment Design” list.
2. Click “Edit Settings” in the “Edit” box. The “Edit Settings” window will pop up, allowing the user to alter a variety of parameters.

The screenshot shows the 'Edit Settings' dialog box for the Simple Reaction Time task. The 'Cue' section has 'Fixed' selected with a value of 1.0 seconds, 'Red' color, and '(None)' tone. The 'Timeout' is set to 3.0 seconds. Under 'To React', 'Press' is selected. The 'Reaction Button' is 'C0'. The 'Correct Stimulus' is 'Red' with '(None)' tone. The 'False Stimuli' list includes 'Green Light', 'Orange(Both) Light(s)' (which is selected), 'Low Tone', 'High Tone', and 'Red Light with Low Tone'. The 'Odds of Presenting Correct Stimulus' is set to 50%.

3. In the “Cue” box, the user is able to set the min and max cue time, set the cue color/tone, and select a fixed or random cue time.
4. In the “Timeout” box, the user is able to set the amount of time for which the task will run.
5. In the “To React” box, the user is able to decide which action the subject will need to perform to satisfy the test. If a simple button press is desired, select “Press”. If “Release” is chosen, the subject will be required to press and hold the reaction button to begin the test. Upon presentation of the correct Stimulus, the subject should release the button in order to complete the test.
6. The Reaction button for this test is C0 by default, but auxiliary buttons may be chosen, if desired.
7. In the “Correct Stimulus” box, the user may select a red, orange, or green light that will be presented as a stimulus during the task, as well as an optional high or low tone. The subject should only respond to the chosen stimulus.
8. In the “False Stimuli” box, the user is able to choose a false stimulus for this test should be applied. A list of choices is available. Click the desired choices to select them. The subject should not respond to false stimuli. The likelihood for the test to present a correct stimulus to the subject can be defined by the user in the “Odds of Presenting Correct Stimulus” field.
9. Click “OK” when finished.

### Simple Reaction Time / Movement Time Settings (MOART)

1. Select a simple reaction time / movement time task by clicking on it in the "Experiment Design" list.
2. Click "Edit Settings" in the "Edit" box. The "Edit Settings" window will pop up, allowing the user to alter a variety of parameters.

**Edit Settings**

Simple Reaction Time / Movement Time Settings

**Cue**

☒ Fixed ☐ Random

Value: 1.0 s

Color: Red Tone: (None)

**Timeout**

3.0 s

**Outer Rim Contact**

☒ Correct ☐ Error

**Buttons**

Reaction: C0 Movement: C5

**Correct Stimulus**

Color: Red Tone: (None)

**False Stimuli**

- ☐ Green Light
- ☐ Orange(Both) Light(s)
- ☐ Low Tone
- ☐ High Tone
- ☐ Red Light with Low Tone

Odds of Presenting Correct Stimulus: 100 %

OK Cancel

3. In the "Cue" box, the user is able to set the min and max cue time, set the cue color/tone, and select a fixed or random cue time.
4. In the "Timeout" box, the user is able to set the amount of time for which the task will run.
5. In the "Outer Rim Contact" box, the user is able to decide whether or not to include outer rim button presses as correct. If not, "Error" may be selected so that inaccurate button presses are reported as erroneous.
6. The buttons used by this test are C0 and C5 for Reaction and Movement, by default, but auxiliary buttons may be chosen, if desired.
7. In the "Correct Stimulus" box, the user may select a red, orange, or green light that will be presented as a stimulus during the task, as well as an optional high or low tone. The subject should only respond to the chosen stimulus.
8. In the "False Stimuli" box, the user is able to choose a false stimulus for this test should be applied. A list of choices is available. Click the desired choices to select them. The subject should not respond to false stimuli. The likelihood for the test to present a correct stimulus to the subject can be defined by the user in the "Odds of Presenting Correct Stimulus" field.
9. Click "OK" when finished.

## Choice Reaction Time Settings (MOART)

1. Select a choice reaction time task by clicking on it in the “Experiment Design” list.
2. Click “Edit Settings” in the “Edit” box. The “Edit Settings” window will pop up, allowing the user to alter a variety of parameters.

The screenshot shows the 'Edit Settings' dialog box for the Choice Reaction Time task. The 'Cue' section is set to 'Fixed' with a value of 1.0 seconds, 'Red' color, and '(None)' tone. The 'Stimulus' section is also set to 'Red' color and '(None)' tone. The 'Timeout' is set to 3.0 seconds. Under 'To React', the 'Release' option is selected. The 'Reaction Buttons' list on the right shows that L3, L4, and R4 are selected for the reaction, while L1, L2, C5, and C0 are not. The 'OK' and 'Cancel' buttons are at the bottom right.

3. In the “Cue” box, the user is able to set the min and max cue time, set the cue color/tone, and select a fixed or random cue time.
4. In the “Timeout” box, the user is able to set the amount of time for which the task will run.
5. In the “To React” box, the user is able to decide which action the subject will need to perform to satisfy the test. If a simple button press is desired, select “Press”. If “Release” is chosen, the subject will be required to press and hold the reaction buttons chosen to begin the test. Upon the presentation of the stimulus, the subject should release from only the associated button in order to complete the test. Tones may be substituted for lights.
6. In the “Stimulus” box, the user has the option to select from a red, orange, or green light that will be displayed during the task, as well as an optional high or low tone.
7. In the “Reaction Buttons” box, the user is able to choose the buttons that will be used in the test from a list of all buttons available on the MOART board. Since C5 is the location of the cue at the start of a trial, if C5 is also chosen as a reaction button, a tone must be used in addition to light to distinguish the stimulus from the cue. For the test, stimuli will be randomly presented over the chosen reaction buttons.
8. Click “OK” when finished.

### Choice Reaction Time / Movement Time Tap Settings (MOART)

1. Select a choice reaction time / movement time task by clicking on it in the “Experiment Design” list.
2. Click “Edit Settings” in the “Edit” box. The “Edit Settings” window will pop up, allowing the user to alter a variety of parameters.

The screenshot shows the 'Edit Settings' dialog box for the MOART task. The dialog is titled 'Edit Settings' and contains a sub-section 'Choice Reaction Time / Movement Time Settings'. This section is divided into several groups: 'Cue' (Fixed/Random radio buttons, Value: 1.0 s, Color: Red, Tone: (None)), 'Timeout' (3.0 s), 'Outer Rim Contact' (Correct/Error radio buttons), 'Buttons' (Reaction: C0), 'Stimulus' (Color: Red, Tone: (None)), and 'Movement Buttons' (a list of checkboxes for L1, L2, L3, L4, C5, and C0, with L4 selected). The 'OK' and 'Cancel' buttons are at the bottom right.

3. In the “Cue” box, the user is able to set the min and max cue time, set the cue color/tone, and select a fixed or random cue time.
4. In the “Timeout” box, the user is able to set the amount of time for which the task will run.
5. In the “Outer Rim Contact” box, the user is able to decide whether or not to include outer rim button presses as correct. If not, “Error” may be selected so that inaccurate button presses are reported as erroneous.
6. The reaction button for this test is set to C0 by default, but any other button may be selected.
7. In the “Stimulus” box, the user has the option to select from a red, orange, or green light that will be presented as a stimulus during the task, as well as an optional high or low tone.
8. In the “Movement Buttons” box, the user is able to choose the buttons that the subject will press after releasing the reaction button from a list of all other buttons available on the MOART board. Since C5 is the location of the cue at the start of a trial, if C5 is also chosen as a movement button, a tone must be used in addition to light to distinguish the stimulus from the cue. For the test, stimuli will be randomly presented over the chosen movement buttons.
9. Click “OK” when finished.

## Rotary Pursuit Task Settings

1. Select a rotary pursuit task by clicking on it in the "Experiment Design" list.
2. In the "Test Settings" box, the duration of the test can be set using the "Duration" fields, which are laid out in a "Minutes: Seconds" format
3. The target velocity (in RPMs) can be defined by the user in the "Velocity" field.
4. In the "Sensitivity" field, the sensitivity level of the light sensitive wand can be chosen on a scale of 0 to 9 with 0 being the lowest, and 9 being the highest.
5. The "Rotation Direction" box sets the rotation of the instrument. For a clockwise rotation, select "CW". For a counter-clockwise rotation, select "CCW," and to have a random rotation in each test, select the "Random" option.

**Test Settings**

Duration: 0 m 10 s

Velocity: 5 RPM

Sensitivity: 5 (0-9)

Rotation Direction

☒ CW ☐ CCW ☐ Random

## Stability Platform Task Settings

1. Select a stability platform task by clicking on it in the "Experiment Design" list.
2. In the "Stability Platform Settings" box, the duration of the test can be set using the "Test Time" fields, which are laid out in a "Minutes: Seconds" format.
3. If a tone is desired to signal the beginning and end of a test, check the box labeled "Beep" next to the "Test Time" fields.
4. Under the "Thresholds" box, the user is able to define the threshold limits for the left and right tilt zones.

**Stability Platform Settings**

Test Time: 0 m 10 s ☒ Beep

Balance Limits (degrees)

Right: 25 Left: 25

## Flicker Fusion Settings

Three automatic profiles (Automatic Method, Adaptive Method, and Self-Control Method) are available when connected to a computer running PsymLab, as shown below. Each method is subject to a unique group of settings, which are detailed in the following. Please refer to MAN083, the user instructions for the Flicker Fusion system (Model 12021A) for any additional information specific to the hardware.



Hand-held Subject Response Switch

**Available Experiment Tasks**

- Bassin Anticipation Timer
- Bassin Anticipation Task
- Curved Bassin Anticipation Task
- Flicker Fusion
  - Adaptive Method
  - Automatic Method
  - Self-Control Method
- MOΨART
  - Simple Reaction Time
  - Choice Reaction Time
  - Simple Reaction Time / Movement Time
  - Choice Reaction Time / Movement Time
  - Single Tap
  - Dual Tap
  - Rhythmic Tap
- Rotary Pursuit Task
- Stability Platform Task

### Automatic Method

In Automatic Method, PsymLab automatically runs a test using the Ascending Auto Frequency Mode to determine the fusion frequency and the Descending Auto Frequency Mode to determine the flicker frequency. The results of these two tests are averaged to obtain the CFF value. In this method, the subject responds by pressing either side of the hand-held subject response switch.

1. Select the Flicker Fusion, Automatic Method task by clicking on it in the "Experiment Design" list.
2. Select the desired brightness level of the display (when looking through the eyepieces) by adjusting the Luminance (%) setting using the up and down arrows to the right of the numeric field.
3. Select the Between Test Delay Time by using the corresponding field. The Delay may be set using the up and down arrows to the right of the numeric field or clicking inside the field and typing. Between Test Delay Times are measured in seconds within a range of 0 to 20 seconds.
4. Select the display type (left eye only, right eye only, coincident, or alternating) by clicking on the bubble associated with the desired stimulus type. 'Right eye only' is selected in the example.
5. Select the desired Flicker and Fusion starting rates by clicking on the bubble associated with the proper frequencies. In the example below, the Flicker Starting Rate is set to 20 Hz and the Fusion Starting Rate is set to 50 Hz.
6. The Sweep Rate is the rate at which the frequencies will change during the test in Hz/sec. Make the desired selection by clicking in the corresponding bubble.

The screenshot shows the Automatic Method control interface. At the top, 'Luminance (%)' is set to 100 with up and down arrows. Below it, 'Between Test Delay Time (s):' is set to 1 with up and down arrows. There are four sections of radio buttons: 'Stimulus' with options Left (selected), Right, Coincident, and Alternate; 'Sweep Rate Selection' with options 0.5 Hz/Sec, 1 Hz/Sec (selected), 2 Hz/Sec, and 4 Hz/Sec; 'Flicker Starting Rate' with options 1 Hz, 10 Hz, and 20 Hz (selected); and 'Fusion Starting Rate' with options 100 Hz, 80 Hz, and 50 Hz (selected).

### Adaptive Method

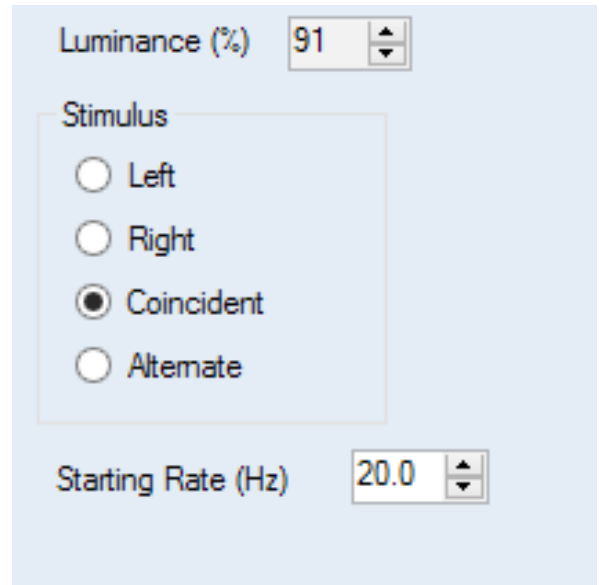
In Adaptive Method, PsymLab uses the Discrete Mode to display fixed frequencies and allows the test subject to respond to the frequencies as "flicker" or "fusion". PsymLab uses the responses to "zero in" on the CFF value. Please notice the symbols on the black hand-held subject response switch. The half-moon shape with dotted lines extending out symbolizes a response of "flicker". The half-moon shape with solid lines extending out symbolizes a response of "fusion".

1. Select the Flicker Fusion, Adaptive Method task by clicking on it in the "Experiment Design" list.
2. Select the desired brightness level of the display (when looking through the eyepieces) by adjusting the Luminance (%) setting using the up and down arrows to the right of the numeric field.
3. Select the display type (left eye only, right eye only, coincident, or alternating) by clicking on the bubble associated with the desired stimulus type. 'Right eye only' is selected in the example.
4. Select the desired starting rate by clicking on the bubble associated with either 10, 20, 50, or 80 Hz frequencies. The 10 and 20 Hz frequencies are associated with Flicker, while the 50 and 80 Hz frequencies are associated with Fusion.

The screenshot shows the Adaptive Method control interface. At the top, 'Luminance (%)' is set to 100 with up and down arrows. Below it, there are two sections of radio buttons: 'Stimulus' with options Left, Right (selected), Coincident, and Alternate; and 'Starting Rate' with options 10 Hz (Flicker), 20 Hz (Flicker), 50 Hz (Fusion) (selected), and 80 Hz (Fusion).

### Self-Control Method

In Self-Control Method, PsymLab uses the Continuous Mode to display a starting frequency and allows the test subject to select whether to increase or decrease the frequency. The test is complete when the test subject cannot discern whether the frequency is a flicker or a constant. Please notice the symbols on the black handheld subject response switch. The "+" symbolizes a response to increase the frequency. The "-" symbolizes a response to decrease the frequency. The amount of the increase or decrease becomes smaller as the subject "zeros in" on the CFF.

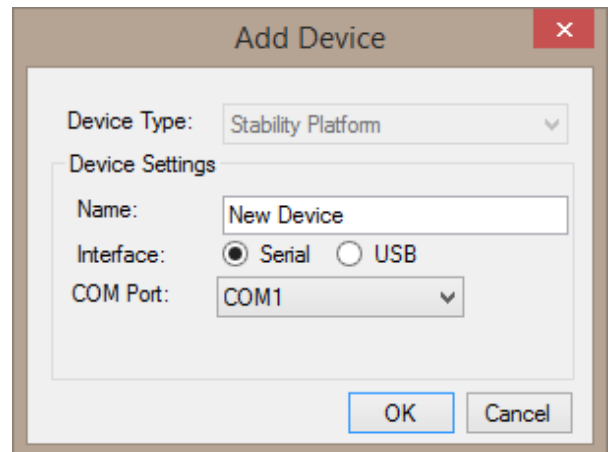


The screenshot shows a settings window for the Self-Control Method. At the top, 'Luminance (%)' is set to 91. Below it, the 'Stimulus' section has four radio button options: 'Left', 'Right', 'Coincident' (which is selected), and 'Alternate'. At the bottom, 'Starting Rate (Hz)' is set to 20.0.

1. Select the Flicker Fusion, Self-Control Method task by clicking on it in the "Experiment Design" list.
2. Select the desired brightness level of the display (when looking through the eyepieces) by adjusting the Luminance (%) setting using the up and down arrows to the right of the numeric field.
3. Select the display type (left eye only, right eye only, coincident, or alternating) by clicking on the bubble associated with the desired stimulus type. 'Right eye only' is selected in the example below.
4. Select the desired Starting Rate (Hz) by clicking the arrows or typing in the frequency to be used. PsymLab allows a range between 1 Hz - 100 Hz. In the example, the frequency has been set to 20 Hz.

### Adding a Device from the Design Tab

1. When setting up a task, the device to be used (if not already added) can be added from the "Device" box on the **Design Tab**.
2. Click the "Add" button in the "Device" box. The "Add Device" window will pop up.
3. The device type will be chosen based on the task that is currently being set up.
4. Under "Device Settings," name the new device and select the appropriate connection interface. USB devices should connect automatically when they are plugged into the system.
5. Click "OK" when finished.



The screenshot shows the 'Add Device' window. It has a title bar with a close button. Inside, 'Device Type' is set to 'Stability Platform'. Under 'Device Settings', the 'Name' field contains 'New Device', the 'Interface' is set to 'Serial' (with 'USB' also available), and the 'COM Port' is set to 'COM1'. 'OK' and 'Cancel' buttons are at the bottom right.

### Running an Experiment from the Design Tab



1. Click the "Run Experiment" icon. This will bring up a new window labeled "Create New Experiment Runs".
2. Refer to *Creating and Removing Experiment Runs* in the **Run Tab** section of this guide. The only difference between creating a run from the **Design Tab** is that the experiment will already be selected in the "Create New Experiment Runs" window and cannot be changed.

### Design Tab Shortcuts

In the list of experiment designs on the left-hand side of the window, the right mouse button can be used to access applicable shortcuts depending on the entry that has been right-clicked. Entire experiment designs, blocks, and individual tasks can all be deleted in this way. Blocks and individual tasks can also be moved up or down in the list by selecting the applicable choice. An option to set up a run for an experiment design is available by right-clicking the desired experiment and selecting "Run". Refer to *Creating and Removing Experiment Runs* in the **Run Tab** section of this guide.

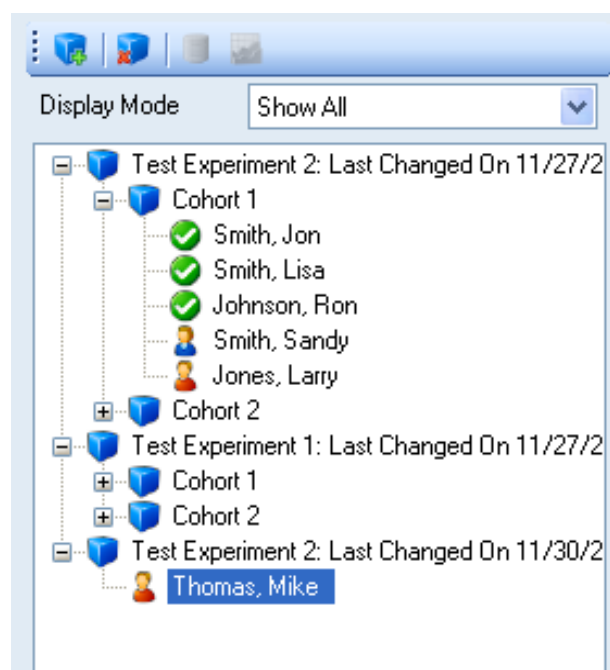
## Run Tab

The run tab is used to run and manage current experiments, as well as monitor the progress of the experiments. Experiment runs can be created to include a single subject or a group of subjects. To help keep track of experiment progress, completed experiments will be denoted with a check mark. The list of experiments on the left-hand side of the window can be navigated by expanding and collapsing each section. This can be done by double-clicking the entry to be expanded or collapsed, or by clicking the plus or minus sign associated with the entry.

### Creating and Removing Experiment Runs



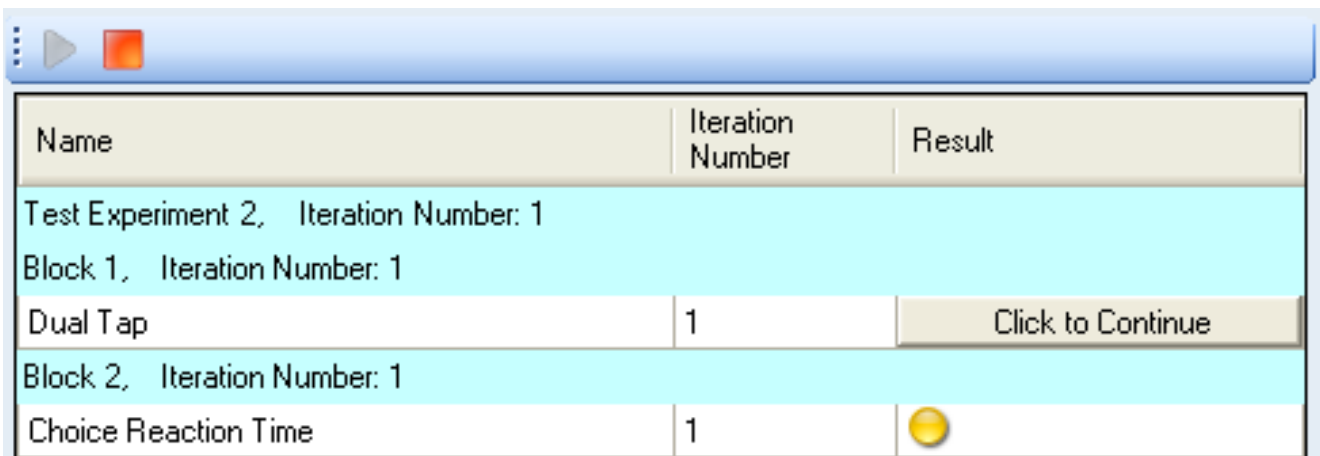
1. Click the "Create New Run" icon. This will bring up a new window labeled "Create New Experiment Runs".
2. Select between using a single subject or a group of subjects by clicking on the appropriate tab in the "Select Subject Or Group" box. The currently selected tab will be white, while the inactive tab will be blue. A list of either subjects or groups will be displayed based on the current selection.
3. Select the desired subject or group by clicking on it in the list.
4. The "Select Experiment" box contains a list of the experiments that have been set up using the Design Tab. Select the experiment to be run for the selected group or subject by clicking on it in this box.
5. Click "Create" to add the experiment. Click "Create and Run" to add the experiment and begin the task. Refer to **Running an Experiment** for further instructions if using the "Create and Run" option.
6. The new experiment plan will be displayed in the left-hand portion of the screen. Experiment information can be expanded to show individual subjects involved in the experiment, or collapsed to make the list easier to navigate.



- The “Display Mode” drop-down list gives users the options to display all experiments, incomplete experiments only, or only the currently selected experiment.
- Click the “Remove Experiment Run” icon to remove the selected experiment run from the current database. **All data associated with the experiment run will also be lost.**
- Click “Yes” to confirm the removal of the selected experiment run.

## Running an Experiment

- If using the “Create and Run” option when creating a new experiment run, skip to STEP 4.
- Select the experiment to be run by clicking the desired subject name in the list on the left-hand side of the screen.
- Click the “Run Experiment” icon to begin running the experiment. 
- If intervals were set to manual, PsymLab will wait for the user to click the “Continue” button at the bottom of the window before running a task. Click “Continue” to progress through the experiment and block rows. If intervals were set to fixed or random for experiments, blocks, and tasks, the user will not be prompted to click continue. PsymLab will continue automatically based on the user defined intervals.
- A “Click to Continue” button will appear in the row associated with the task to be run. Click this button to begin the task. Fixed or random intervals will continue automatically according to their settings.



| Name                                   | Iteration Number | Result                                                                                |
|----------------------------------------|------------------|---------------------------------------------------------------------------------------|
| Test Experiment 2, Iteration Number: 1 |                  |                                                                                       |
| Block 1, Iteration Number: 1           |                  |                                                                                       |
| Dual Tap                               | 1                | Click to Continue                                                                     |
| Block 2, Iteration Number: 1           |                  |                                                                                       |
| Choice Reaction Time                   | 1                |  |

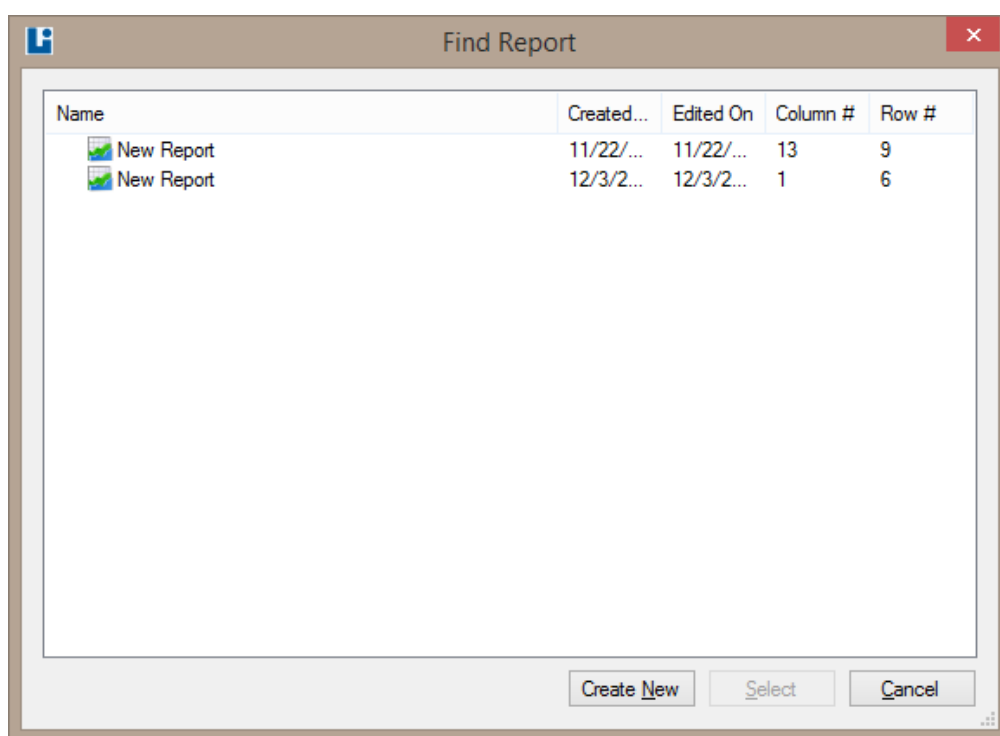
- After the task has completed, the result of the run will be displayed in the “Result” column. The user will again be prompted to click “Continue” in order to progress to the next task in the experiment if fixed or random intervals were not used. When all tasks have been completed, a green check mark will be displayed for each task, as well as next to the name of the subject who has completed the experiment.

| Iteration Number               | Result                                                                                                         |
|--------------------------------|----------------------------------------------------------------------------------------------------------------|
|                                |                                                                                                                |
| 1                              |  Tap Ct 1: 6, Tap Ct 2: 4 |
| Waiting: Please click Continue |                                                                                                                |
| 1                              |                           |

- At any time during the experiment run, PsymLab allows the user to click the “Stop Experiment” icon to terminate the experiment. A stopped experiment may be restarted from the same point by clicking the Run button. 

### Viewing Results from the Run Tab

1. Select the subject or group for which results are desired by clicking the name or group under the appropriate experiment from the list on the left-hand side of the window.
2. Click the “View Results” icon.
3. The **Results Tab** will open.
4. If a group was selected, a table of the associated subjects will be displayed along with their completion data. Subjects who have completed the experiment will be listed in blue, underlined text. Their names may be clicked on in order to view their individual data related to the selected experiment. Subjects who have not completed the experiment will be listed in black text, and completion data will not be present.
5. If an individual was selected, a table of that individual’s experiment data will be displayed.
6. For more information on viewing results, refer to the **Results Tab** section of this guide.

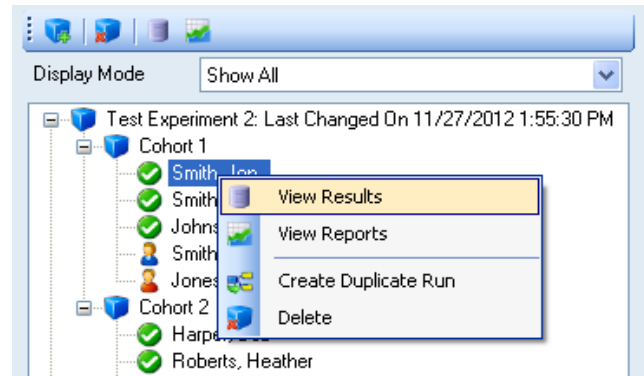


### Viewing Reports from the Run Tab

1. Select the subject for which a report is desired under the proper experiment by right-clicking the subject’s name in the list on the left-hand side of the window, and selecting “View Reports” from the menu that appears. Reports are not accessible based on selected groups in the **Run Tab**.
2. A window labeled “Find Report” will open, giving a list of created reports available based on the selected subject.
3. Select the report to view by clicking the name of the report in the list.
4. Click “Select” to open the report in the **Reports Tab**.
5. If no reports are currently available to view, a new report can be generated for this experiment by clicking the “Create New” button.
6. For more information on creating reports, refer to *Creating a Report* in the **Reports Tab** section of this guide.

## Run Tab Shortcuts

In the list of experiments on the left-hand side of the window, the right mouse button can be used to access applicable shortcuts depending on the entry that has been right-clicked. Entire experiments, groups, and subject experiments can all be deleted in this way. Subject and group result data is also accessible using this method. Subject reports can be viewed for those that have completed an experiment, and experiments can be run for subjects that have not yet begun an experiment. A unique function is available using this method. An option is available when right-clicking a subject that allows for the creation of a duplicate run. This is extremely useful when a run has been stopped, and needs to be repeated.



## Results Tab

The results tab can be used to view information about each experiment in the current database. This information can be organized by experiment, or by subject and group by using the "Display By" drop-down list in the upper-left portion of the window. This will affect the way that experiments and subjects are laid out in the list directly below. This list of experiments can be navigated by expanding and collapsing each section. This can be done by double-clicking the entry to be expanded or collapsed, or by clicking the plus or minus sign associated with the entry. Results for groups or individual subjects may be exported into a Microsoft Excel spreadsheet at any time during review by clicking the "Export All to Excel" button at the right-hand side of the window. All data associated with the currently selected subject or group will be exported.

### Viewing Experiment Results by Group when Displaying by Subject and Group

1. Expand the list for the group desired.
2. Click the desired experiment under this group to view a table listing associated subjects and their experiment completion data. Names of subjects that have completed experiments can be clicked to view their individual data.
3. Expand the list on the left for the currently viewed experiment to enable access to separate block information.
4. Click the desired block to view a table presenting a data summary based on that block of the experiment.
5. Expand the list on the left for the currently viewed block to enable access to separate task information.
6. Click the desired task to view the task settings and a data summary based on that particular task.

Block 1

Manual Start.  
Repeated: 1 time

**Summary**

|   | Name                 | Min | Max | Avg | Count |
|---|----------------------|-----|-----|-----|-------|
| ► | Dual Tap             |     |     |     |       |
|   | Button 1 Tap Count   | 9   | 15  | 12  | 3     |
|   | Button 2 Tap Count   | 5   | 14  | 8   | 3     |
|   | Button 1 Error Count | 0   | 0   | 0   | 3     |
|   | Button 2 Error Count | 0   | 0   | 0   | 3     |

### Viewing Experiment Results by Group when Displaying by Experiment

1. Expand the list for experiment to be reviewed.
2. Expand the list for the group desired.
3. Because the desired experiment has already been selected, only that experiment will be available to view under the selected group. Click the title of the experiment to view a table listing associated subjects, and their experiment completion data. Names of subjects that have completed experiments can be clicked to view their individual data.
4. Expand the list on the left for the currently viewed experiment to enable access to separate block information.
5. Click the desired block to view a table presenting a data summary based on that block of the experiment.
6. Expand the list on the left for the currently viewed block to enable access to separate task information.
7. Click the desired task to view the task settings and a data summary based on that particular task.

### Viewing Experiment Results by Subject when Displaying by Subject and Group

1. Expand the list for the desired subject.
2. Click the title of the desired experiment to view a table containing the selected subject's data for the entire experiment.
3. Expand the list on the left for the currently viewed experiment to enable access to separate block information.
4. Click the desired block to view data based on the selected subject's performance in that particular block of the experiment.
5. Two tabs are available above the displayed table. To view a shorter summary, click the "Summary" tab. This is selected by default. To view details on the subject's performance, click the "Detail" tab.
6. Expand the list on the left for the currently viewed block to enable access to separate task information.
7. Click the desired task to view that task's settings as well as data regarding the subject's performance.
8. Two tabs are available above the lower table. To view a shorter summary of the subject's performance, click the "Summary" tab. This is selected by default. To view details on the subject's performance, click "Detail" tab.
9. Expand the list on the left for the currently viewed task to enable access to separate iterations of the currently viewed task.
10. Click the desired iteration of the task to view the selected subject's performance on that particular iteration of the task. The settings for the task will be displayed in this view as well.

The screenshot shows the software interface with the 'Display By' dropdown set to 'Subject and Group'. The left sidebar shows a tree view of the experiment structure, including 'Brown, Pat', 'Test Experiment 2', 'Test Experiment 1', 'Block 1', 'Single Tap', and 'Block 2'. The main area displays the 'Single Tap' task settings and a data summary table.

**Single Tap Settings**

| Name         | Value         |
|--------------|---------------|
| Interval     | Manual Start. |
| Repeated     | 3 times       |
| Cue Delay    | 10 sec        |
| Cue Stimulus | Red Light     |

**Data Summary Table**

|   | Bucket (one second) | Taps |
|---|---------------------|------|
| 1 |                     | 1    |
| 2 |                     | 4    |
| 3 |                     | 0    |

## Viewing Experiment Results by Subject when Displaying by Experiment

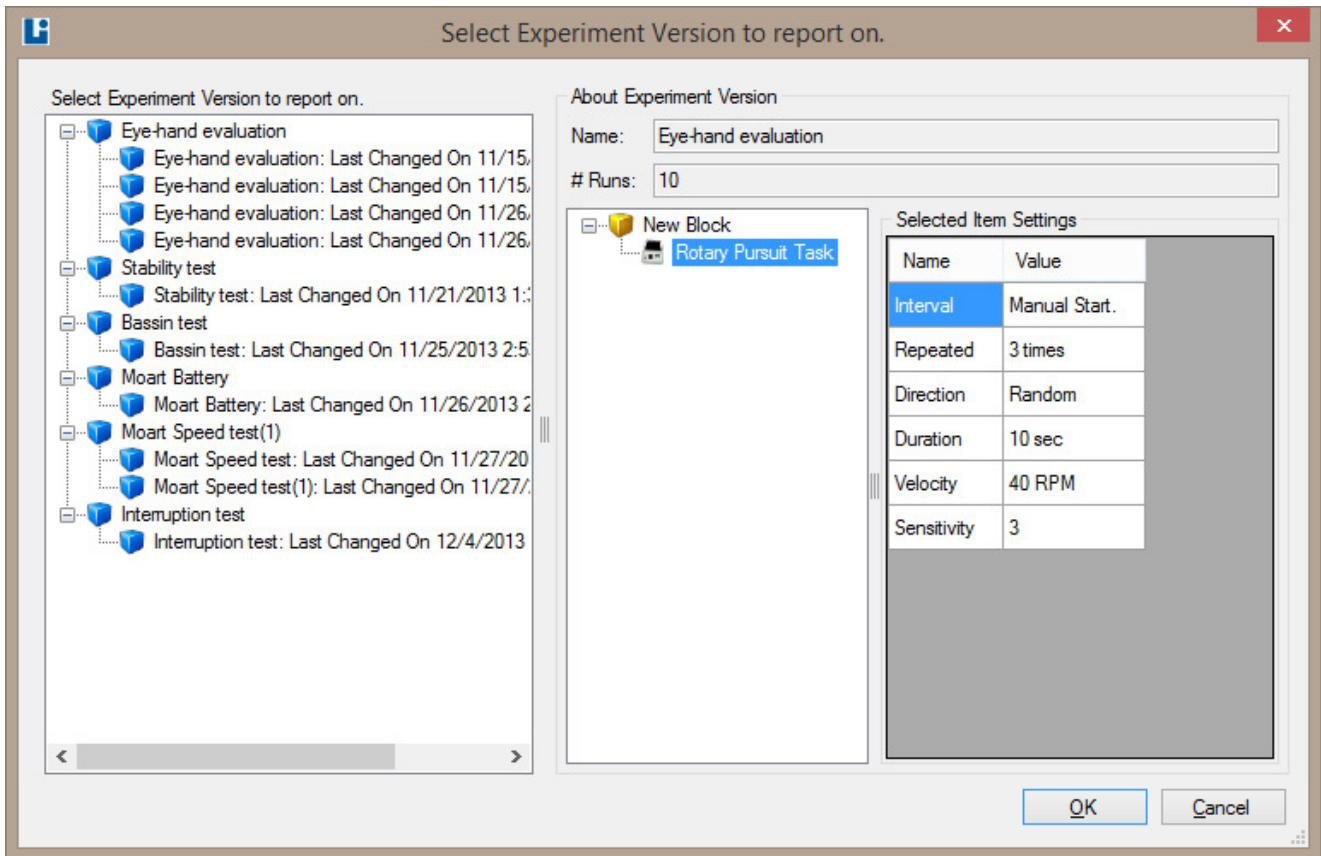
1. Expand the list for the experiment to be reviewed.
2. Expand the list for the subject desired.
3. Because the desired experiment has already been selected, only that experiment will be available to view under the selected subject. Click the title of the experiment to view a table containing the selected subject's data for the entire experiment.
4. Expand the list on the left for the currently viewed experiment to enable access to separate block information.
5. Click the desired block to view data based on the selected subject's performance in that particular block of the experiment.
6. Two tabs are available above the displayed table. To view a shorter summary, click the "Summary" tab. This is selected by default. To view details on the subject's performance, click the "Detail" tab.
7. Expand the list on the left for the currently viewed block to enable access to separate task information.
8. Click the desired task to view that task's settings as well as data regarding the subject's performance.
9. Two tabs are available above the lower table. To view a shorter summary of the subject's performance, click the "Summary" tab. This is selected by default. To view details on the subject's performance, click "Detail" tab.
10. Expand the list on the left for the currently viewed task to enable access to separate iterations of the currently viewed task.
11. Click the desired iteration of the task to view the selected subject's performance on that particular iteration of the task. The settings for the task will be displayed in this view as well.

## Reports Tab

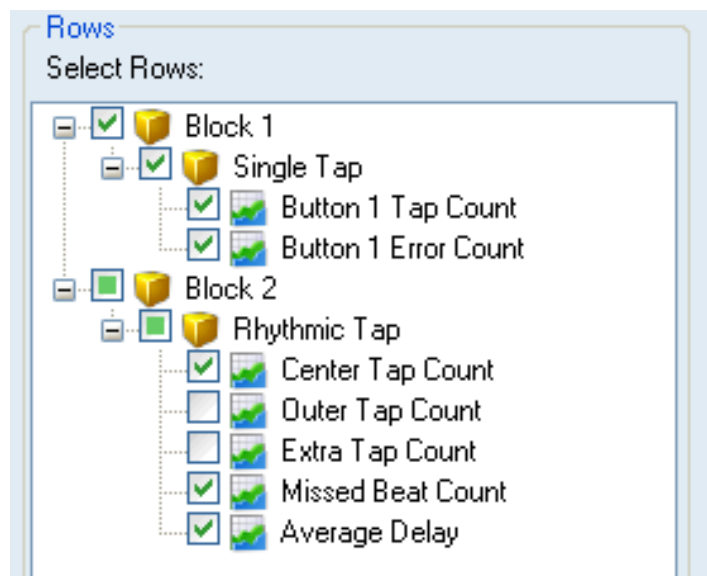
The reports tab is used to create and review tables that are generated based on user defined parameters for the rows and columns. The user is able to choose which experiments, blocks, and tasks will be incorporated into the report. The user is then able to choose which subjects, groups, or dynamic groups will be reported on. These will show up as columns in the table. The data can then be reviewed and interpreted more easily by the user. The data in these created reports can also be exported as a comma separated value file (\*.csv).

### Creating a New Report

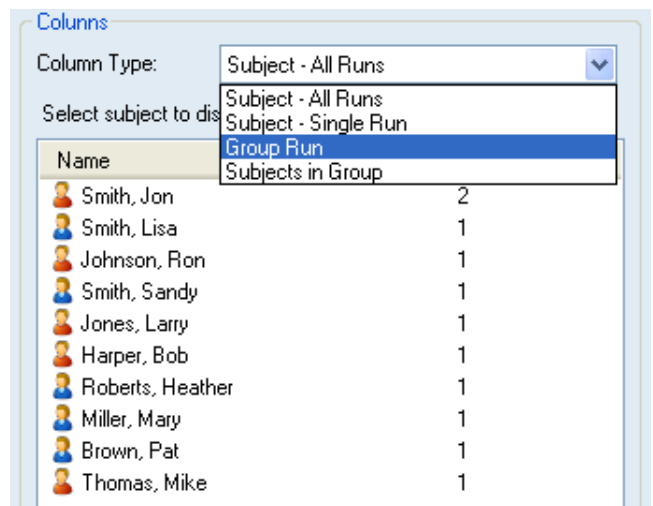
1. If using the "Create New" button from the **Run Tab**, skip to STEP 6.
2. Click the "New Report" icon. This will open a new window allowing the user to select from a list of experiments associated with the current database.
3. Select the desired experiment from the list by clicking the appropriate experiment title. Experiment designs cannot be used in generating a report; however selecting one will allow the user to view information about it in the "About Experiment" box.
4. Once an experiment run has been selected, the user is able to select specific blocks and tasks within the selected experiment in the "About Experiment Version" box. This allows the user to review the settings applied to that particular block or task within the experiment in the "Selected Item Settings" box.
5. Click "OK" when finished.
6. The report name can be edited by clicking inside the "Report Name" field.



7. The user is able to choose which statistics from each task will be used for the report by checking the appropriate boxes in the list under "Select Rows". If an entire block is to be reported on, the only box that needs to be checked is the box associated with that block. Everything within that block will be included. If individual statistics are to be left out, each box can be manually checked or unchecked as necessary. These selections will be used to determine the report's rows.
8. Aggregate functions are available to the user as well. Select the desired statistic within the "Select Rows" list by clicking the statistic title. Four aggregate functions are available in the lower-left corner of the window under "Aggregate Functions". These can be selected by checking the box associated with the intended function. The report will include a separate row for each aggregate function.



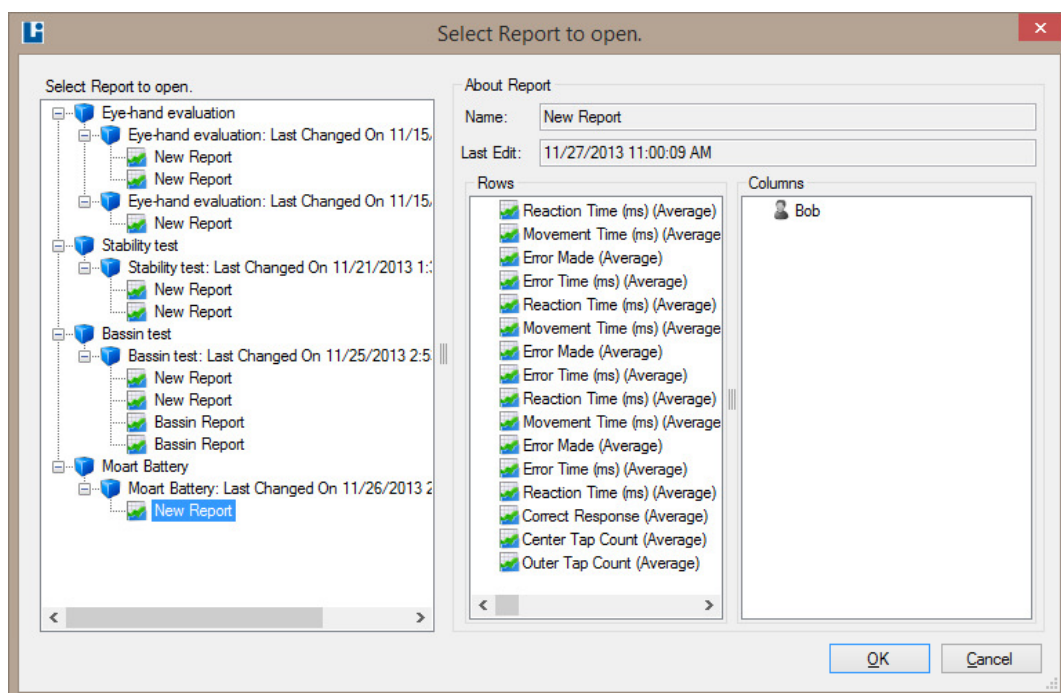
9. Once the required rows have been selected, columns can be added one by one to the report. Columns can be designated by selecting from subjects, groups, or dynamic groups. First, select the column type from the "Column Type" drop down list. "Subject – All Runs" presents all applicable data associated with a single subject. "Subject – Single Run" presents subject data from each applicable run for a single subject. "Group Run" pulls data from basic groups, and "Subjects in Groups" allows the user to generate a table based on user defined dynamic groups.
10. Select the desired individual or group by clicking the individual or group name from the list in the "Columns" box.



11. Click "Add Column" in the lower-right corner of the window. The generated table will display in the center of the window.
12. Columns can be removed from the report if necessary by clicking any cell within the column followed by clicking "Remove Column". Rows can be removed by simply un-checking the associated boxes in the "Select Rows" list.

## Opening an Existing Report

1. Click the "Open Report" icon. This will bring up a new window labeled "Select Report to open".
2. Select the desired report by navigating through the list on the left-hand side of the window, and clicking the name of the report.
3. Information regarding the report including the name and time of last edit will appear on the right-hand side of the window in the "About Report" box. The information used to generate the report's rows and columns will also be visible within this box. See the example below for reference.
4. Click "OK" to open the report. This will allow the user to add or remove rows and columns as is done in creating a new report. Any edits will be saved to the report automatically.



### Exporting a Report

1. Create a new report, or open an existing report.
2. Click the "Export" icon.
3. Name the file in the "File name:" field. A different file path can be chosen, if necessary.
4. Click "Save".



### Deleting a Report

While a new report is still open, or an existing report has been opened and the report is being displayed in the **Reports Tab**, it can be removed from the database by clicking "Delete Report".

## Utilities Tab

The Utilities tab is useful when custom attributes need to be assigned to subjects. These attributes can then be used to group subjects. Refer to Adding and Editing a Dynamic Group in the **Subjects Tab** section of this guide for more information about this process.

### Adding a Custom Subject Attribute

1. Under "Name", click the next available empty space. The selected cell will then read "[New Attribute Name]".
2. By clicking this text, the user is able to edit the name of the attribute being added.
3. The type of data can then be selected. There are five types to choose from within the drop-down list. Distinct values are user defined selections, and will be discussed following this section in Editing Distinct Values.

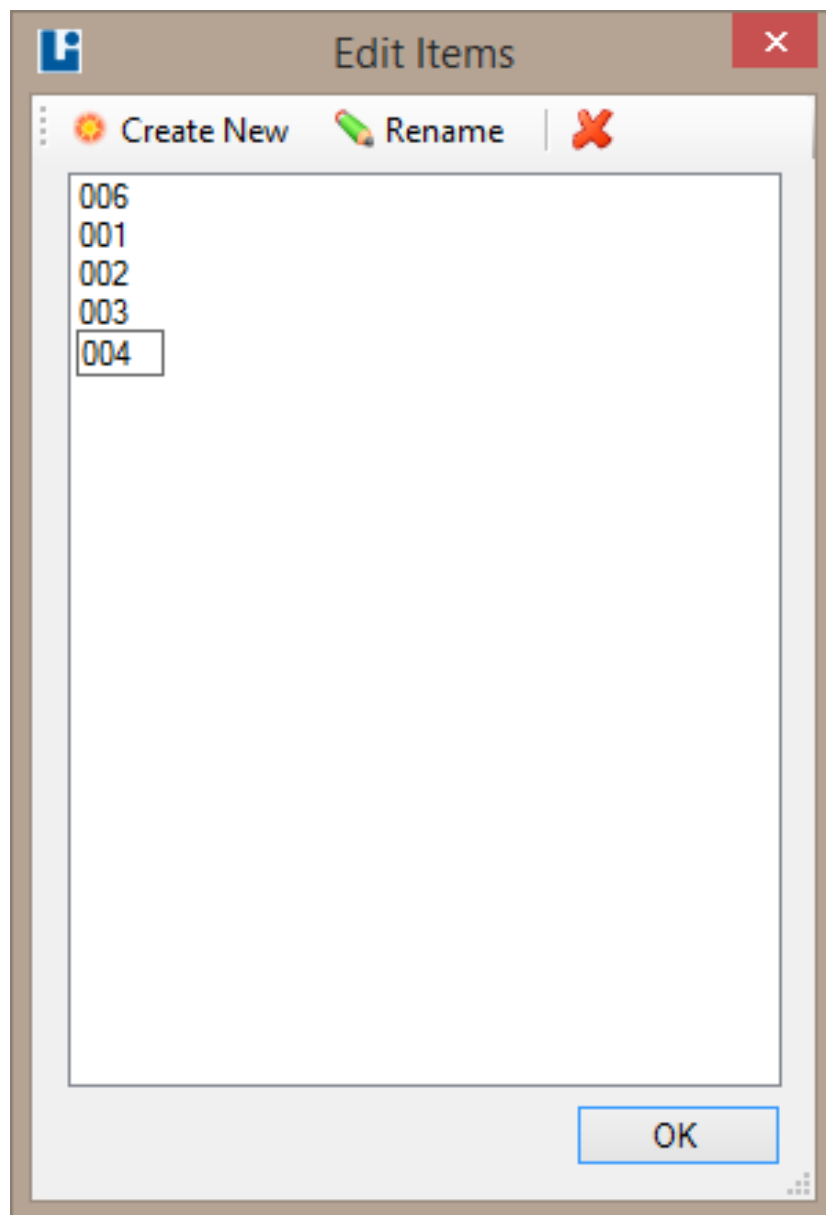
4. If data for this attribute will be required by the user entering subject information, check the box in the "Required" column.
5. Enter a brief description of each attribute, if necessary, under the "Description" column.
6. Under the "Category" column, enter an appropriate category name for each attribute. Categories will be used to group attributes together in the "Subject Info" box under the Subjects Tab.
7. Attributes can also be removed by selecting them and clicking the "Remove Attribute" icon directly to the right of "Edit Distinct Values".



| Required                            | Description                                              | Category           |
|-------------------------------------|----------------------------------------------------------|--------------------|
| <input checked="" type="checkbox"/> | Approximate number of hours of aerobic exercise per week | Health Information |
| <input checked="" type="checkbox"/> | Subject does or does not drink coffee                    | Health Information |
| <input type="checkbox"/>            | Mood of subject at time of test                          | Health Information |

## Editing Distinct Values

1. Select the name of the appropriate custom attribute by clicking on it. Verify that the selected type is "Distinct Values".
2. Click "Edit Distinct Values", bringing up a new window labeled "Edit Items".
3. Click "Create New" to add an entry to the list of items.
4. In order to edit each value, select the desired entry by clicking on it, then clicking "Rename". Entries can also be edited by double-clicking them.
5. Selected Entries can be deleted by clicking the red "X" 
6. Click "Ok" when finished.



## **Notes**

Write any user notes here for your convenience.

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[www.si-instruments.com.au](http://www.si-instruments.com.au)

# Terms and Conditions

## LIC Worldwide Headquarters

Toll-Free: (800) 428-7545 (USA only)

Phone: (765) 423-1505

Fax: (765) 423-4111

Email: [sales@lafayetteinstrument.com](mailto:sales@lafayetteinstrument.com)

[export@lafayetteinstrument.com](mailto:export@lafayetteinstrument.com) (Outside the USA)

## Mailing Address:

Lafayette Instrument Company

PO Box 5729

Lafayette, IN 47903, USA

## Lafayette Instrument Europe:

Phone: +44 1509 817700

Fax: +44 1509 817701

Email: [eusales@lafayetteinstrument.com](mailto:eusales@lafayetteinstrument.com)

## Phone, Fax, Email or Mail-in Orders

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

- Quantity
- Part Number
- Description
- Your purchase order number or method of pre-payment
- Your tax status (include tax-exempt numbers)
- Shipping address for this order
- Billing address for the invoice we'll mail when this order is shipped
- Signature and typed name of person authorized to order these products
- Your telephone number
- Your email address
- Your FAX number

## Domestic Terms

There is a \$50 minimum order. Open accounts can be extended to most recognized businesses. Net amount due 30 days from the date of shipment unless otherwise specified by us. Enclose payment with the order; charge with VISA, MasterCard, American Express, or pay COD. We must have a hard copy of your purchase order by mail, E-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 transfers to our account; charge with VISA, MasterCard, American Express, or confirmed irrevocable letter of credit. Proforma invoices will be provided upon request.

## Exports

If ordering instrumentation for use outside the USA, please specify the country of ultimate destination, as well as the power requirements (110V/60Hz or 220V/50Hz). Some model numbers for 220V/50Hz will have a "C" suffix.

## Quotations

Quotations are supplied upon request. Written quotations will include the price of goods, cost of shipping and handling, if requested, and estimated delivery time frame. Quotations are good for 30 days, unless otherwise noted. Following that time, prices are subject to change and will be re-quoted at your request.

## Cancellations

Orders for custom products, custom assemblies or instruments built to customer specifications will be subject to a cancellation penalty of 100%. Payment for up to 100% of the invoice value of custom products may be required in advance. Cancellation for a standard Lafayette Instrument manufactured product once the product has been shipped will normally be assessed a charge of 25% of the invoice value, plus shipping charges. Resell items, like custom products, will be subject to a cancellation penalty of 100%.

## Exchanges and Refunds

Please see the cancellation penalty as described above. No item may be returned without prior authorization of Lafayette Instrument Company and a completed Return Form. A copy of the Return Form or your assigned Return # (you will receive this via email after submitting the form) **must be included with the returned goods**. The merchandise should be packed well and fully insured. Unopened merchandise may be returned prepaid within thirty (30) days after receipt of the item and in the original shipping carton. Collect shipments will not be accepted. Returned products must be in saleable condition, and credit is subject to inspection of the merchandise.

## Repairs

**Instrumentation may not be returned without prior authorization by Lafayette Instrument Company and a completed Return Form. When you**

**complete the Form, or call Lafayette Instrument, you will receive a Return #. Your Return # number will be good for 30 days. Address the shipment to:**

Lafayette Instrument Company

3700 Sagamore Parkway North

Lafayette, IN 47904, USA.

Shipments cannot be received at the LIC PO Box. Items should be packed well, insured for full value, and returned along with a copy of the Return Form or the Return #. An estimate of repair will be given prior to completion ONLY if requested in an enclosed cover letter. We must have a completed purchase order by mail or fax, or repair work cannot commence for non-warranty repairs.

## Damaged Goods

Damaged instrumentation should not be returned to Lafayette Instrument prior to a thorough inspection. If 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. If damage is not detected at the time of delivery, contact the carrier/shipper and request an inspection within 10 days of the original delivery. Please call the Lafayette Instrument Customer Service Department for repair or replacement of the damaged merchandise.

## Limited Warranty

Lafayette Instrument Company warrants equipment manufactured by the company to be free of defects in material and workmanship for a period of one year from the date of shipment, except as provided hereinafter. The original manufacturer's warranty will be honored by Lafayette Instrument for items not manufactured by Lafayette Instrument Company, i.e. resell items. This assumes normal usage under commonly accepted operating parameters and excludes consumable products.

Warranty period for repairs or used instrumentation purchased from Lafayette Instrument is 90 days. Lafayette Instrument Company agrees either to repair or replace, at its sole option and free of part charges to the customer, instrumentation which, under proper and normal conditions of use, proves to be defective within the warranty period. Warranty for any parts of such repaired or replaced instrumentation shall be covered under the same limited warranty and shall have a warranty period of 90 days from the date of shipment or the remainder of the original warranty period whichever is greater. This warranty and remedy are given expressly and in lieu of all other warranties, expressed or implied, of merchantability or fitness for a particular purpose and constitutes the only warranty made by Lafayette Instrument Company.

Lafayette Instrument Company neither assumes nor authorizes any person to assume for it any other liability in connection with the sale, installation, service or use of its instrumentation. Lafayette Instrument Company shall have no liability whatsoever for special, consequential, or punitive damages of any kind from any cause arising out of the sale, installation, service or use of its instrumentation. All products manufactured by Lafayette Instrument Company are tested and inspected prior to shipment. Upon prompt notification by the Customer, Lafayette Instrument Company will correct any defect in warranted equipment of its manufacture either, at its option, by return of the item to the factory, or shipment of a repaired or replacement part. Lafayette Instrument Company will not be obliged, however, to replace or repair any piece of equipment, which has been abused, improperly installed, altered, damaged, or repaired by others. Defects in equipment do not include decomposition, wear, or damage by chemical action or corrosion, or damage incurred during shipment.

## Limited Obligations Covered by this Warranty

1. In the case of instruments not of Lafayette Instrument Company manufacture, the original manufacturer's warranty applies.
2. Shipping charges under warranty are covered only in one direction. The customer is responsible for shipping charges to the factory if return of the part is required.
3. This warranty does not cover damage to components due to improper installation by the customer.
4. Consumable and/or expendable items, including but not limited to electrodes, lights, batteries, fuses, O-rings, gaskets, and tubing, are excluded from warranty.
5. Failure by the customer to perform normal and reasonable maintenance on instruments will void warranty claims.
6. If the original invoice for the instrument is issued to a company that is not the company of the end user, and not an authorized Lafayette Instrument Company distributor, then all requests for warranty must be processed through the company that sold the product to the end user, and not directly to Lafayette Instrument Company.

## Export License

The U.S. Department of Commerce requires an export license for any polygraph system shipment with an ULTIMATE destination other than: Australia, Japan, New Zealand or any NATO Member Countries. It is against U.S. law to ship a Polygraph system to any other country without an export license. If the ultimate destination is not one of the above listed countries, contact us for the required license application forms.