TuneLab Used in the PTG Tuning Exam

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This document describes the functions of TuneLab that pertain to the preparation, recording, and scoring of the Piano Technicians Guild Tuning Exam. It is to be used in conjunction with the appropriate TuneLab manual, which can be downloaded from **tunelab-world.com**. The tuning exam function is provided in the Windows, iPhone, and Android versions.

Matching the Pitch of a Note (Locking On)

This function is used in the recording of both the master tuning and the examinee's tuning. So a thorough understanding of this function is crucial to the use of TuneLab in the Tuning Exam.

Matching the pitch of a note means adjusting the offset in TuneLab until the tuning indicators (the Phase Display and/or the Spectrum Display) indicate the note is in tune. This means the moving boxes of the Phase Display are brought nearly to a stop and the peak in the graph on the Spectrum Display is exactly in line with the vertical red line in the middle of the display.

See the chapter in the manual called "All About Offsets" for details. The most direct way to adjust the offset is to swipe left or right through the Phase Display (or click and drag left or right in the Windows version). Go in whatever direction makes the tuning displays appear more in tune.

There is also an automatic way to adjust the offset by tapping on the "lock" icon. This turns on automatic locking to whatever sound is heard at the microphone. When this mode is enabled, the offset will be gradually and automatically adjusted to approach an in-tune condition in the tuning displays. If this method is used, make sure to disable the automatic locking immediately after the note is done sounding. You can turn off automatic locking by tapping on the red stop sign that will appear in the mobile versions, or by clicking the message in the left status box that says "click here to stop" in the Windows version.

Saving the offset for one note

The adjustment of the offset as described above is only the first step in recording the pitch of a note. The second step is to transfer that offset to the Custom Stretch for the given note. To transfer the offset to the Custom Stretch for a note, tap on the yellow box that says "Exam Mode" in the mobile versions, or press the F9 function key in the Windows version. This will turn the box from yellow to blue or green in the mobile versions and will erase the highlighted offset in the Windows version. Then you can go on to the next note. This applies to the recording of both the master tuning and the examinee's tuning.

Recording a Master Tuning

The first step in administering the Tuning Exam is to develop a master tuning on the piano that is to be used for the exam. Typically this is done only once for a specific piano. The recorded master tuning can be used as a standard for several years, provided no significant changes are made to the piano that might affect its inharmonicity, such as replacing strings. While it is not the purpose of this document to give detailed instructions for this process, the development of the master tuning is generally carried out by a committee of tuning examiners. Sometimes the piano is initially tuned using an electronic tuning aid, such as TuneLab. But the tuning is always carefully evaluated and modified by the committee before it is declared to be a master tuning. In order to minimize the risk that the piano will drift before its master tuning can be measured, the committee will sometimes measure and record small sections of the tuning as it is developed, instead of waiting until the entire scale has been tuned.

Since the PTG Tuning Exam specifies certain partials to be used for each note, it is important to enter into Exam Mode before recording a master tuning. In the mobile versions of TuneLab you can enter Exam Capture Mode by going to the Settings (the gears button) and then finding "PTG Tuning Exam." There you can turn on the switch that says "Exam capture mode" and return to the main tuning screen. In the Windows version you can find this setting under the Modes menu.

When Exam Capture mode is enabled you will see "Exam Mode" in the status box to the right of the current note display on the main tuning page. Once in this mode, proceed to adjust the offset for each note of the master tuning and transfer that offset to the Custom Stretch for that note as described above.

After all the notes have been recorded in this fashion, the current tuning file should be saved under a name that indicates that it is a master tuning. It would be a good idea to backup this file in some way, so that in the event of a computer failure, the committee's efforts in developing the master tuning file would not have been wasted.

Preparation for Examinee's Tuning

Before the piano is used for an examinee's tuning, the piano should be de-tuned in order not to give the examinee the benefit of an existing tuning. The PTG has specified a pattern of de-tuning offsets that results in a minimal impact on the overall string tension. This spares the examinee the additional burden of doing a pitch raise. These de-tuning offsets are enabled from the Modes menu in TuneLab Pro, or from the Settings menu in the mobile versions. Instead of turning on the switch for Exam Capture Mode, turn on the switch for "Pre-exam detuning". When de-tuning offsets are enabled, the normal function of the temporary offset is replaced by the de-tuning offset. The exam piano can be prepared by loading the master tuning, and then enabling de-tuning offset. If the piano is roughly tuned using this setup, the piano can then be tuned by the examinee.

Recording and Scoring of the Examinee's Tuning

After the examinee has tuned the exam piano, the tuning can be recorded in the same way as the master tuning was recorded. It is not absolutely necessary to store the examinee's tuning in a tuning file, but it is a good idea to do so for purposes of record-

keeping. Record the examinee’s tuning in Exam Mode, just as the master tuning was recorded. That way the same partials will be used between the two tunings.

After the examinee’s tuning has been recorded, the examinee’s tuning can now be scored. First make sure the examinee's tuning is loaded. If the examinee's tuning was just recorded, then it is still loaded. If the scoring is being done some time later when the examinee's tuning might not be loaded as the current tuning, make sure to load that tuning.

To generate a scoring report on the currently-loaded tuning, go to the PTG Tuning Exam page from the Settings and tap on “Generate Report”. In the Windows version go to the View menu and select Exam Scoring. Follow the prompts to complete the process.

The first prompt will be for the selection of the temperament octave. This octave will be used as specified by the PTG to normalize the rest of the tuning. Then you will be prompted to select the master tuning file. This will create a report file, which will be named the same as the examinee's tuning. Internally the file will have a “.txt” extension to distinguish it from the tuning file of the same name, which has a “.tun” extension internally.

The report shows the offsets that were recorded in the examinee’s tuning and in the master tuning for octaves 1-7. Then it shows the difference between these two tunings, and the number of penalty points assigned to each difference. The normalization correction is also shown as well as the selected temperament octave.

This report file can be printed in the usual manner using Notepad in the Windows version. In the mobile versions, if you want to archive the examinee's tuning and report files you can upload them to Dropbox using the Dropbox Operations described in the manual, and then access those files from any desktop computer.