THE EDUCATION SYSTEM

C-LAB

AURA

MUSIC EDUCATION PROGRAM

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APPENDIX

1. Program Concept

Due to the widespread MIDI interface, which allows the communication between computers and electronic sound sources, there are many musical possibilities, both in the field of sequencing, as well as, for AURA, in the field of ear-training.

In combination with AURA, the computer plays the part of a precise and patient "co-student". In addition it compiles an exact statistic of your learning progress.

An important element of AURA's program concept is its ability to create an individually-tailored "tool". The musical contents are not fixed, but come as libraries and lessons. AURA can be easily adapted to your personal requirements, such as choosing the degree of difficulty or musical style, etc, or even completely re-organized, allowing individual learning to take place.

An important feature of AURA is the ability to simultaneously respond in realtime to various methods of data entry or control, which ensures the convenient communication between user and program. Exercises can be easily completed using a MIDI keyboard, which also allows remote control of program functions. As you might expect, AURA can also be operated via the "screen keyboard" and the mouse, or via the computer keyboard. This convenient interaction allows you to concentrate on the essential part - doing the exercise in a relaxed and fun way.

At this point I would like to thank everybody, especially Johannes Waehneldt, for their support during the creation of AURA.

Clemens Homburg, June 1990

1.1 About the Use of this Manual

The systematic structure of this player's guide will meet the various demands made on an operating manual.

We recommend that you read Chapters 1 to 4 one after another to acquaint yourself in detail with the operation of AURA.

The following sections of this Chapter describe the general use of computers. If you are already familiar with computers you may skip these sections.

AURA is divided into different training areas. Each area has its own Chapter:

- 5. Intervals
6. Editing Intervals

- 7. Chords
8. Editing Chords
9. Chord Analysis

- 10. Scales
11. Editing Scales

- 12. Random Lines

- 13. Rhythm Exercises

After you have become familiar with the various training areas, Chapter 14: "AUTO LESSONS" will describe the automatic succession of exercises from different areas with different degrees of difficulty.

2. For The Beginner

If you are a layman with computers...

...it doesn't matter. You don't have to acquire any special knowledge of the computer, learn programming languages or subscribe to an Information Technology course. With the purchase of this program you can make optimum use of computer technology. Learning to operate AURA is as easy as learning to operate a new TV set.

2.1 Hardware

2.1.1 Computer

A computer basically consists of two elements:

1. A processing unit, whose processing speed is very often so fast that many operations seem to happen simultaneously.

2. A memory area (called RAM), which stores all data until the power is turned off.

In addition computers provide "interfaces" for the communication with other devices (e.g. the MIDI ports).

The Atari 1040 ST is equipped with an integrated alphanumerical keyboard and a floppy drive. All you have to do is connect the mouse and the monitor to the corresponding ports.

The MEGA ST series come with a separate keyboard, which must also be connected.

The computer must always be switched on last and switched off first.

Switching off the computer erases all data in the memory!

Therefore data must be saved to another medium: e.g. to floppy disk or hard disk.

2.1.2 Floppy Drives

The drive basically works like a hybrid of a tape recorder and a record player. A read/write head permanently saves digital data onto a magnetic disk, which is divided into blocks, sectors and tracks. From there data can be reloaded any time.

2.1.3 Disks

Disks are the data carriers for all data, e.g. chord or scale libraries or automatic successions of exercises.

You should buy 5 to 10 good-quality 3.5" disks (just like the program disk). Always buy "2DD" disks (double-sided, double- density). Never buy "HD" disks (high density), as they cannot be used with the Atari ST series.

Protect your disks from dirt, dust, liquids and most of all from magnetic fields (e.g. speakers, TV sets, power supplies).

Disks must be formatted before use! (See Atari manual for a description of this procedure.)

Data is stored in "files". On disk, a file is a self-contained data package. Before storing you must name the file so that lessons and libraries can be identified for future use.

You should also make safety copies of all files to another disk regularly. This takes little time but can save you a lot of trouble if an error occurs on disk.

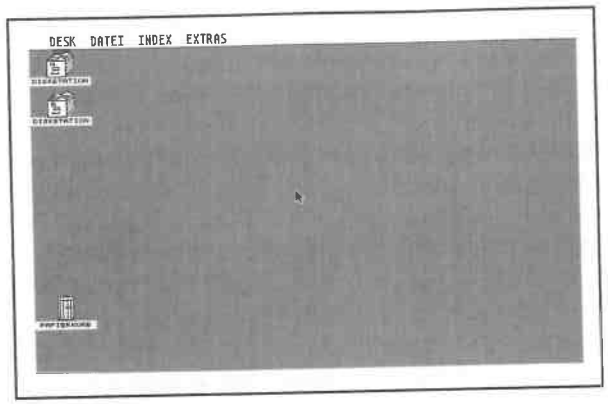
For further information, see the Atari operating manual.

2.2 Software

2.2.1 Atari ST Operating System

The operating system is the basic program, which is needed to facilitate the use of other programs. In other words, it is the foundation on which all started programs are based.

The operating system for computers of the Atari ST series is called TOS (= The Operating System). It is built-in and immediatedly available when you start the computer.



The so-called GEM ("Graphics Environment Manager") is part of the TOS operating system and an important element of the graphic user interface. It includes the "desktop" (the screen is set up like a desk with symbols for drives and trash can), the mouse pointer, the windows, the menu panel, etc.

For further information, see Atari operation manual.

2.2.2 Programs

A "program" is the creative work of one or several programmers and provides the computer with specific characteristics and functions, which make it a word processor, a data manager or, in our case, a music education program.

A program is a long chain of commands for the computer. Therefore a program - the result of invention and development - is called "software" in contrast to hardware. As a rule the storage medium for this information - and for AURA - is the disk.

1. System Setup and Preparation

1.1 What do you Need for the Operation of AURA?

For the operation of AURA you need an ATARI ST series computer with a monochrome monitor (e.g. SM 124) and a MIDI keyboard with integrated sound source or a MIDI expander (sound source without keyboard).

1.2 Connections (MIDI)

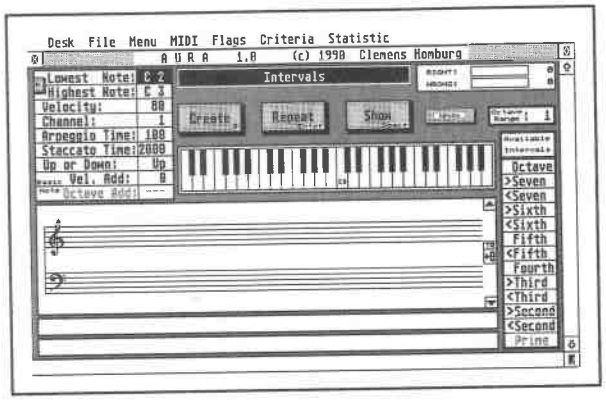
Use one MIDI cable to connect the MIDI Out port of the computer with the MIDI In port of the keyboard. Use another MIDI cable to connect the MIDI In port of the computer with the MIDI Out port of the keyboard.

Keyboard MIDI Out —> ATARI MIDI In
ATARI MIDI Out —> Keyboard MIDI In

1.3 Starting the Program

- Insert the original program disk into drive "A" of the ATARI ST.
- "Double-click" drive symbol "A" on the desktop to open a window which displays the disk contents. (*"Double-click" means rapidly clicking twice with the left mouse button.*)
- Select the program symbol AURA.PRG with the mouse and start the program with another double-click.

The program starts loading. After a short time it will display a window with the title INTERVALS.



Note for hard disk users:

The AURA program and all accompanying files can be copied from the original disk to hard disk.

When you start the AURA program the original disk must be inserted into drive "A".

2. Default Settings for the MIDI Keyboard

2.1 Routing MIDI Data through AURA (MIDI Thru)

"MIDI Thru" means that all MIDI information created by playing the synthesizer (e.g. notes) will be received at the MIDI In port and will be transmitted by AURA at the MIDI Out port (almost) unaltered.

MIDI information can be "diverted" by AURA.

The routing:

- Playing the keyboard creates MIDI information, which is transmitted via MIDI Out of the synthesizer to MIDI In of the Atari computer.

- It is routed by AURA to the MIDI Out port of the computer and returns to the sound source via MIDI In of the synthesizer.

AURA's MIDI Thru function is activated when "MIDI Thru" in the "MIDI" menu is checked. *(Please also refer to Chapter 2: "GENERAL", section 3.4 "Menu Panel".)*

This is the default setting after loading AURA.

2.2 Separating the Keyboard from the Sound Source (LOCAL OFF)

Normally all the MIDI information created by playing the keyboard is directly transmitted to the sound source of the synthesizer. This setting is called "LOCAL ON".

In other words: the synthesizer plays itself.

To avoid each note being played twice - by the synthesizer and by AURA when MIDI Thru is activated - the direct connection between keyboard and sound source must be interrupted.

This setting is called "LOCAL OFF".

Most synthesizers provide the facility to switch between "LOCAL ON" and "LOCAL OFF".

When working with AURA you should use the "LOCAL OFF" setting.

Note: if the connected MIDI keyboard does not provide a "LOCAL OFF" setting, you should switch off "MIDI Thru" in the program.

AURA facilitates the operation of important functions by "remote control" via specific keys of the connected MIDI keyboard.

When "MIDI Thru" (in AURA) and "LOCAL OFF" (in the synthesiser) are activated, the notes assigned to remote control are automatically filtered by AURA.

If, for example, key "D1" controls the repetition of an interval or a chord, it would be irritating if the "D1" note was additionally played.

Note: if a sound source is set to "Omni On", it plays MIDI notes on all channels.

When you are working with AURA, you should set the sound source to "Omni Off". For further information, see the operating manual of the connected synthesizer.

3. Program Operation

3.1 The Mouse

The mouse is used to move the cursor around the screen.

Many fields on the screen function like "switches", which can be clicked with the left ("normal") or right (special function) mouse buttons.

All program functions can be operated with the mouse.

The mouse moves the mouse pointer across the screen to the desired switch. Clicking one of the mouse buttons activates the function corresponding to the switch. For the rest of this manual we will refer to this procedure as "**clicking**".

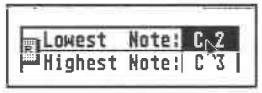
3.2 Altering Values with the Mouse Buttons

You can alter the values displayed on the screen with the mouse.

Some fields allow the direct alteration of values with the mouse buttons. The following rules go for most program sections:

Select the desired "parameters" by clicking them.

The selected parameter will be inverted (white on black).



To alter the value of the selected parameter you must press one of the mouse buttons. The following rules go for all setting alterations of the program:

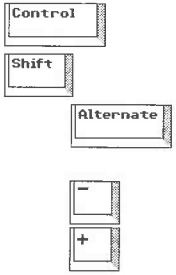
The left mouse button increases the value in single steps.

The right mouse button decreases the value in single steps.

Holding down the other mouse button changes the values in large steps.

Note: pressing 'Alternate' and 'M' swaps the functions of the mouse buttons for value alterations ("Swap Mouse Buttons").

3.3 The Computer Keyboard

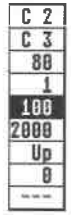


Most program functions can also be operated via the computer keyboard. The rest of the manual refers to this kind of program operation as "keyboard commands". Some keyboard commands require that you simultaneously hold down the special keys: '**Shift**', '**Alternate**' or '**Control**'.

Values can also be changed with the '+' and '-' keys of the computer keyboard. Holding down 'Shift' simultaneously alters values in large steps.

The "screen cursor" shows where alterations are possible on the screen.

The cursored screen position will be inverted (white on black).



The plus/minus keys are effective at the cursor position.

As an alternative to mouse operation, AURA provides special "function keys".

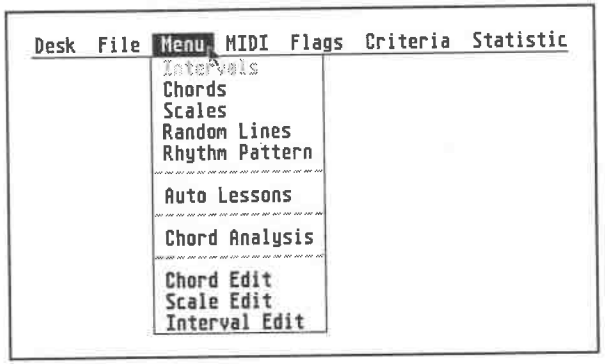
These keyboard commands will be described in their respective sections and are summarized once again in the appendix. (*See Chapter "APPENDIX", 2. "General Keyboard Layout"*).

3.3.1 Keyboard Click through the Monitor Speaker

The keyboard click will normally be heard as a metronome through the monitor speaker. You might prefer to switch it off in the "control panel". The "control panel" is an "accessory", which should come with your computer. When you switch on your computer, a disk containing the "CONTROL.ACC" file (and maybe other ".ACC" files) must be inserted into the drive. If necessary, copy this file to the AURA program disk.

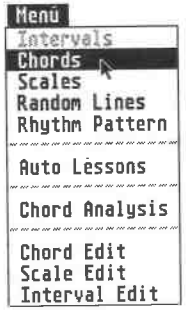
3.4 The Menu Bar

The menu bar is structured like a real menu, with which you can "order", i.e. call up specific functions. The Atari ST uses "pull-down" menus; they are pulled down like a roller blind when you touch a "menu heading" in the menu bar with the mouse pointer.



Note: if it does not work right away, try again by clicking the menu heading.

To select a function, move the mouse over the menu item and click.



Some menu items will only be checked or unchecked when you click them. Those menu items are called "switches" or "flags".

A function is activated when its corresponding menu item is checked.

To cancel a menu without using any functions, simply click with the left mouse button anywhere outside the menu window.

3.5 "Remote Control" via MIDI

Remote control via an external keyboard is an important feature of AURA. This option simplifies the communication between the user and AURA, since you need not operate your computer and MIDI keyboard simultaneously.

All important program functions can be controlled from the MIDI keyboard by pressing a key.

Although useful default settings are already provided, the user can freely choose which MIDI message is to control a certain program function (*see Chapter 15: "MIDI REMOTE"*).

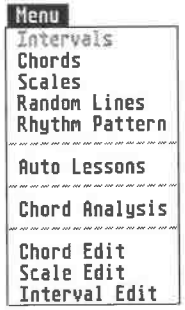
3.6 The Screen Pages, Overview

AURA is divided into several working areas. Each area has its own graphic layout on the screen. Since the switching of screens is similar to leafing through a book, we will from now on refer to the different screens as "pages".

Screen pages used for the setting and completing of ear-training exercises are called main pages.

Main pages used for the preparation of exercises are called edit pages.

Use "Menu" to access all main pages of AURA.



Main Pages:

Intervals	- interval exercises
Chords	- chord exercises
Scales	- scale exercises
Random Lines	- atonal ear-training
Rhythm Pattern	- rhythm exercises and training
Auto Lessons	- automatic succession of various exercises
Chord Analysis	- analysis of various chord structures

Edit Pages:

Chord Edit	- creating and editing chord libraries
Scale Edit	- creating and editing scale libraries
Interval Edit	- renaming intervals

4. First Steps

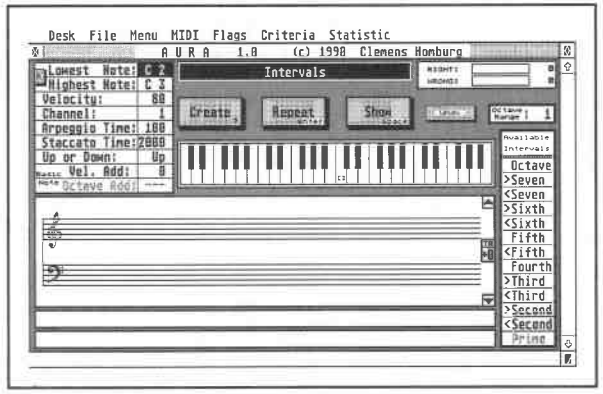
This section will acquaint you with the basic operation of AURA by means of simple and practical examples. We will be working on ear-training for intervals, but the steps described hold true for all parts of the program.

4.1 Preparation

We assume that your Atari computer and MIDI keyboard are set up and correctly connected.

Start the AURA program as described in Chapter 2: "GENERAL" - 1.3 "Starting the Program".

After the program has been loaded the screen will display the "Intervals" main page. On this page, ear-training exercises for intervals can be set and completed successfully.



Make sure that the MIDI receive Channel of the keyboard matches the MIDI transmit Channel of AURA. Its transmit Channel can be adjusted in the "Channel" line of the "Parameter" field.

If you don't know the receive Channel of your keyboard, simply select "Channel" values 1-16 one after another. AURA transmits a "test note" each time, with which you can find out which sounds are being played on which Channels.

You can also directly "play" the screen keyboard by clicking it with the mouse. You should also be able to hear the sound of your sound source.

Find the sound program of your keyboard that comes closest to the sound of a piano. Such sounds are usually best-suited for ear-training.

If you are still unsure about selecting sound programs or setting MIDI Channels, please refer to the operating manual of your keyboard/synthesizer.

4.2
Exercise A: doing an Exercise in the "Text Window".

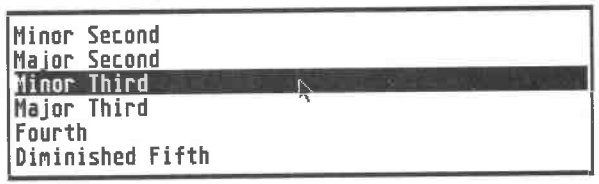
- Click the "Create" switch with the mouse. You will hear the two notes of the interval played one after another and a text window with different interval names will open.

AURA is waiting for your answer, i.e. you must tell the program which interval has just been played.

- If you can find the right answer in the text window, click the respective interval name with the mouse (e.g. major third).

- If not, you can scroll additional interval names into view by clicking the up/down arrows at the right side of the text window.

- Click the interval name which you think is correct.



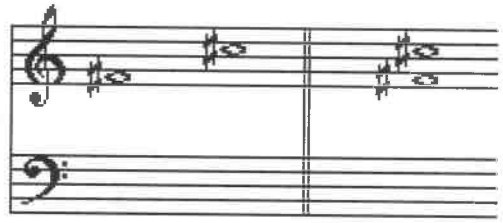
- If you have made a mistake, a black box with the message "Try again!" will appear and you can try once again.

- If you can't remember the interval, click the "repeat" switch, and AURA will play it again for you.

- If you give the correct answer, a white box with the message "Right!" will appear.

The screen displays the solution in different ways:

<u>On the stave:</u>



If you click the notes which are arranged side-by-side, you hear them separately.

If you click the notes which are arranged above each other, you hear them together.

4.3 Exercise B: solving an Exercise via the Screen Keyboard

On the "Note Information Line":

The notes displayed as "letters" can also be clicked and played.

On the "Text Information Line":

This is the interval name in text. Clicking it plays the interval via MIDI.

You can "preview" an exercise, i.e. hear its solution any time by clicking the "Show" switch. (This is not the point of the exercise, but AURA will not object!)

Apart from clicking the answers in the text window you can successfully complete the exercise by "playing" the screen keyboard.

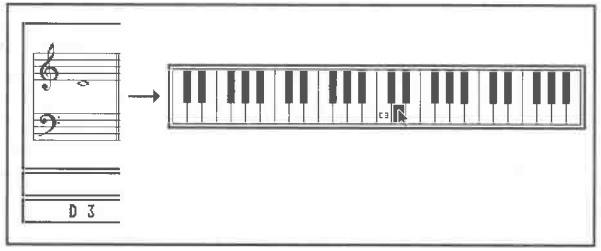
For a clearer layout of the screen you can switch off the text window containing the answers:

- Open the "Flags" menu and click the entry "Answer in Text Window". The text window will disappear.

- Click the "Create" switch and a new interval will be played.

The first interval note is displayed on the stave and as "text" in the text information line on the lower margin of the screen.

- Play exactly this note on the screen keyboard by clicking the corresponding key with the mouse. The key with the small label "C3" is middle C.



- Play the second interval note (the solution) on the screen keyboard.

If you have made a mistake, you can try again - as described above - or have AURA play the interval one more time.

If the first note you entered is not correct, press the 'Esc' key and re-enter the note.

4.4 Exercise C: completing an Exercise via the MIDI Keyboard

Instead of doing the exercise with the screen keyboard you can of course use your MIDI keyboard.

The procedure is identical to the example of the screen keyboard. But please try it anyway.

4.5 Exercise D: operating AURA by Remote Control via the MIDI Keyboard

All functions which have been carried out until now with the mouse can be directly controlled via the MIDI keyboard. Thus you don't have to switch between operating the MIDI keyboard and the computer.

- Press the "C1" key of your MIDI keyboard. If your synthesizer has a 5-octave keyboard, it will be the bottom key.

AURA will play an interval and will display the first note on the screen, i.e. the "C1" key controls the "Create" function.

- Solve the exercise by playing the corresponding interval on the MIDI keyboard. The first interval note will be displayed as usual on the screen.

- If you have made a mistake and you want to listen to the interval again, press the "D1" key on the MIDI keyboard.

The "D1" key controls the "Repeat" function.

- If you want to preview the solution, press the "E1" key on the MIDI keyboard.

The "E1" key controls the "Show" function.

- If the first note you played was not correct, you can erase it by pressing the "F1" key of the MIDI keyboard. You can then start again.

You should get used to operating AURA via the MIDI keyboard, because in daily use this is the most convenient way to do your exercises.

1. Setting an Exercise

The "Create" function instructs AURA to set an exercise. The exercise will be immediately transmitted via MIDI and played by the sound source.

Note: for the recognition of intervals, chords or scales we recommend that you select a piano-like sound on your synthesizer.

The "Create" function can be operated in one of three ways:

1. Clicking the "Create" switch with the left mouse button.

2. Pressing the Zero key ('0') of the numerical keypad on the right side of the computer keyboard.

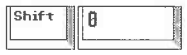
3. Playing the "C1" note on the MIDI keyboard. "Create" is operated by remote control via the MIDI keyboard.

When you work on interval and chord exercises the left and right mouse buttons have different functions:

Clicking the "Create" switch with the left mouse button plays the notes one after another at the speed set under "Arpeggio Time".

Clicking the "Create" switch with the right mouse button plays the notes simultaneously.

Or: Press the 'Shift + Zero' key of the numerical keypad.



This switches the "Arpeggio Time" setting to "Off".

The exercises concerning scales, random lines and rhythms can be interrupted with the "Stop/Cont." function (stop).

Selecting the "Stop/Cont." function again continues the exercise at the point you stopped (continue).

The "Stop/Cont." function can be operated three ways:

1. Clicking the "Stop/Cont." switch with the mouse button.

2. Pressing the '.' key on the numerical keypad to the right of the computer keyboard.

3. Pressing the "C#1" note on the MIDI keyboard. "Stop/Cont." is operated by remote control via the MIDI keyboard.

2. Completing an Exercise

After AURA's "Create" function has set an exercise, the program will wait for the answer to the question as to which interval, chord, scale, etc. has been played.

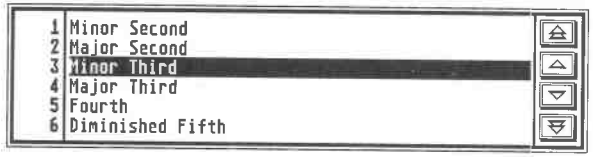
There are three ways to successfully complete an exercise:

1. Entering the Answer into the Text Window:

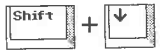
(For intervals, chords and scales only)

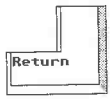
The exercises can be done on the computer via the text window.

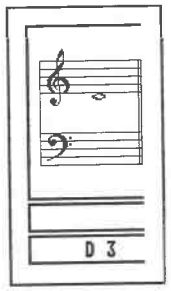
After the operation of "Create" a text window will open which covers the stave. Six names of intervals, chords or scales are displayed simultaneously.



Note: at first, the black cursor bar is always positioned on the first line of the text window (e.g.: diminished second for intervals). It does not refer to the interval, chord or scale last played.







Intervals, chords and scales not visible in the text window can be scrolled into view with the up/down arrows located to the right.

Or you can use the cursor keys (up/down arrows) instead.

Clicking one of the double arrows on the screen takes you to the following window sector (upwards/downwards).

Holding down the 'Shift' key and pressing the cursor keys has the same effect.

To do the exercise given by AURA you must click the line in the text window which contains the correct interval, chord or scale name.

You can also move the black cursor bar with the cursor keys to the desired line in the text window and confirm your answer by pressing the 'Return' key.

2. Entering the Answer via the MIDI Keyboard:

You can also do the given exercise directly via the MIDI keyboard.

If no other settings have been made, AURA will expect an absolute answer, i.e. when working with intervals you must repeat exactly the two notes played by AURA.

The first note of the interval, chord or scale will be displayed in the left corner on the lower screen margin.

3. Entering the Answer via the Screen Keyboard:

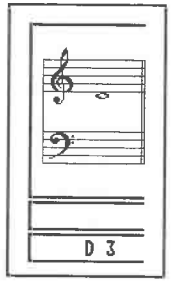
You can also do the given exercise by clicking the corresponding keys on the screen keyboard. The notes "played" will be transmitted via MIDI to the sound source.

The little label "C3" (= middle C) on the screen keyboard shows the octave position.

For the text-related representation of the octave position of notes you can select the classical method of division instead of the "MIDI nomenclature" by checking "Display C3 as C'" in the "Flags" menu. "C3" will then be represented as "C'".

If no other settings have been made, AURA will expect an absolute answer, i.e. when working with intervals you must repeat exactly the two notes played by AURA.

The first note of the interval will be displayed in the left corner on the lower screen margin.



3. Identification via MIDI

If "Identification via MIDI" in the "MIDI" menu is checked, you can also do the exercises given by AURA via the MIDI keyboard or screen keyboard.

Except for the keys reserved for MIDI remote control, each note received via MIDI will be evaluated.

When answering via the MIDI keyboard you must bear in mind that:

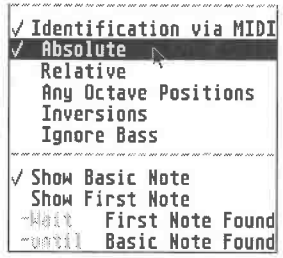
- the notes you play unintentionally will also be evaluated, since AURA - like all other music programs - is unable to tell the difference.

- the evaluation does not start until the number of notes entered matches the number of notes played by AURA. You must enter two notes for intervals, three notes for triads and up to eight notes for a scale.

The notes you played unintentionally can be erased again, if the number of notes played is smaller than the number of notes required for the answer.

To completely erase your entry press MIDI remote note "F1" (see Chapter 15: "MIDI REMOTE") on the MIDI keyboard or the 'Esc' key on the computer keyboard.

When you enter your answer via the MIDI keyboard or screen keyboard you can select different evaluation criteria.



AURA expects for:

"Absolute" - a completely identical answer

Example: when AURA asks for the minor sixth interval "F#3 - D4", you must enter exactly those two notes.

When "Absolute" is selected you can additionally activate the "Ignore Bass" function (see below).

"Relative" - the correct structure with different notes

Example: When AURA asks for the minor sixth interval "F#3 - D4" and you enter "C3 - Ab3" instead, it will also be found correct.

"Relative" cannot be combined with any other evaluation criteria.

"Any Octave Positions"
- the octave position of the answer can be different.

Example: If you enter "F#2 - D3" instead of "F#3 - D4", it will also be found correct.

"Any Octave Positions" can be combined with the "Inversions" and "Ignore Bass" functions (see below).

"Inversions" - inversions will also be accepted.

Example: if you enter "E3 G3 C4" instead of "C3 E3 G3" it will also be found correct.

"Inversions" can be combined with the "Any Octave Positions" and "Ignore Bass" functions (see below).

Note: inversions will only be recognized if the tonal range of the given chord is smaller than an octave. When AURA gives you e.g. a ninth chord like "C-E-G-B-D" and you answer with "C-D-E-G-B", AURA will not be able to recognize the structure of the given ninth chord, no matter how hard it tries to invert your entry.

"Ignore Bass"
- **the doubling of the exercise's root in a lower register will be ignored.**

Example: AURA's evaluation of the given triad "C3 E3 G3" will ignore all notes below C3.

If the "Relative" function is activated, this menu item has no effect.

"Show Basic Note"
- **when this menu item is activated, the root will always be displayed.**

When you work with chords and scales, the root need not match the first note.

"Show First Note"
- **when this item is checked, the first note of the exercisewill be displayed.**

"Wait-until First Note Found"
All notes will be ignored until the first note of the exercise has been played correctly (*see "Show First Note"*).

This gives you sufficient time to "feel for the answer".

"Wait-until Basic Note Found"
All notes will be ignored until the root of the exercise has been played (*see "Show Basic Note"*).

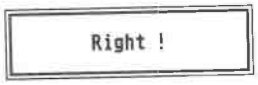
This again gives you sufficient time to "feel for the answer".

4. Evaluation of Right/Wrong Answers

The screen and the speaker of the Atari monitor will inform you as to whether your answer is right or wrong.

Right answer:

A white box with the message **"Right!"** will appear and the ringing of a bell will be heard through the monitor speaker.



The right answer will be displayed as text below the stave and on the screen keyboard.

Wrong Answer:

A black box with the message **"Try again!"** will appear and a "chattering" sound will be heard through the monitor speaker.

5. Repeating an Exercise (Repeat)

When you select the "Repeat" function, AURA will repeat the last exercise; it will be transmitted via MIDI and played by the sound source.

There are three ways to select the "Repeat" function:

1. Click the "Repeat" switch on the screen.

2. Press the 'Enter' key of the numerical keypad to the right of the computer keyboard.

3. Play the "D1" note on your MIDI keyboard. "Repeat" is operated by remote control via the MIDI keyboard.

6. Automatic Setting of New Exercises (AutoRepeat/Create)

When "Auto Repeat/Create" in the "Flags" menu is checked, AURA will play the next exercise automatically after the previous one has been successfully completed.

If you have made a mistake, the exercise will be repeated.

This setting is very convenient since you need neither reselect the "Create" or "Repeat" functions nor operate them by remote control via the MIDI keyboard.

7. Returning to an Exercise (Undo)

The "Undo" function swaps the last but one interval/chord etc. for the last interval/chord of the exercise and plays it.

Thus you can e.g. recall an interval that has unintentionally been "overwritten".

There are three ways to select the "Undo" function:

1. Click the "Undo" switch on the screen.
2. Press the 'Undo' key of the cursor block to the right of the computer keyboard.
3. Play the "G1" note on your MIDI keyboard. "Undo" is operated by remote control via the MIDI keyboard.

The "Show" function displays an exercise as text below the stave and on the screen keyboard.

There are three ways to select the "Show" function:

1. Click the "Show" switch with the left mouse button.
2. Press the 'Space' bar on the computer keyboard.
3. Play the "E1" note on your MIDI keyboard. "Show" is operated by remote control via the MIDI keyboard.

Important Notice! "Show" is only a control function and has no effect on the error statistics.

8. Displaying an Exercise (Show)

9. Statistical Evaluation of Answers (Statistic)

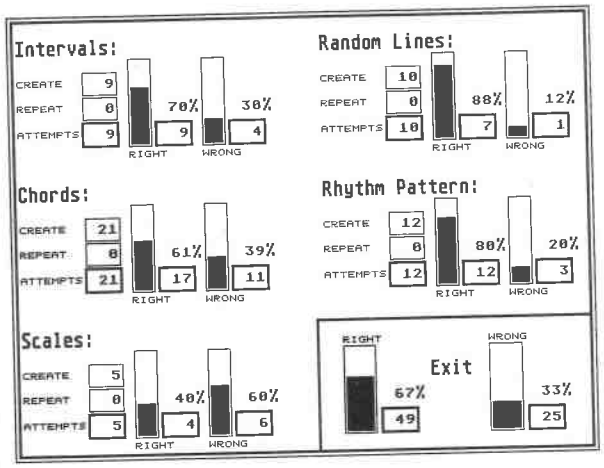
AURA statistically registers all the right and wrong answers as well as each resetting and repeat of the exercise.

9.1 Current Display

The current number of right and wrong answers is displayed in the little "statistic" field in the upper right corner of the screen. The ratio of right and wrong answers is also visually expressed in percentages by means of a small bar graph. Thus you can constantly control your training progress.

9.2 Total Evaluation of all Exercises

Clicking "Show Statistics" in the "Statistic" menu will open the "Statistics" window.



Each training area has its own statistic:

- the number of new exercises
- the number of repeats
- the sum of new exercises and repeats

- the number and percentage of right answers
- the number and percentage of wrong answers

The bar graph shows the ratio of right and wrong answers in percentages.

The total evaluation of right and wrong answers in all training areas is provided in the edged field in the lower half of the window.

9.3 Print-Out of Statistic

The complete statistical evaluation of all exercises can be printed out.

A specific printer adaptation is not necessary, since all characters are put out in ASCII standard code.

The following two control values can be alternatively switched on/off:

- "Send Linefeed"

At the end of a line a line feed command is transmitted. Some printers do not need a separate line feed command. If this is the case, switch it off.

- "Send Carr.Return"

At the end of the line a carriage return command is transmitted.

9.4 Erasing The Statistic

Clicking the menu item "Clear Statistics" will set the statistic for all training areas to zero.

1. The Parameter Field

The various options of default settings allow the custom arrangement of all exercises.

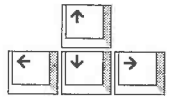
You can select various default settings for each training area (intervals, chords, scales, etc.). They will be called "Parameters" in the following Chapters.

Lowest Note:	C 2
Highest Note:	C 3
Velocity:	80
Channel:	1
Arpeggio Time:	100
Staccato Time:	2000
Up or Down:	Up
Basic Vel. Add:	0
Note Octave Add:	---

2. General Operation of Parameters

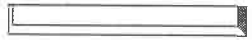
A parameter value is selected by clicking the desired field, which will be inverted (white on black).

Parameter fields can also be selected with the cursor keys.



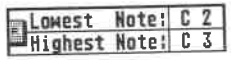
Note: when the text window for answers is opened during an exercise, the cursor keys cannot be used for the selection of parameters.

Remedy: close the text window by pressing the 'Space' bar. (The 'Space' bar activates the "Show" function.)



3.
The Parameters

3.1
Limiting the Tonal Range (Lowest-/Highest Note)



The parameter values "Lowest Note" and "Highest Note" set the tonal range, within which AURA will play the first note of an interval, chord or scale.

- "Lowest Note" sets the lowest note to be chosen for an interval, chord etc.

- "Highest Note" sets the highest note to be chosen for an interval, chord etc.

Example: if "Lowest Note" is set to "C3" and "Highest Note" to "C4", AURA will play the first note of an interval within this range.

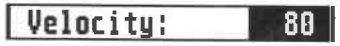
If "Lowest Note" and "Highest Note" are set to the same pitch, all intervals, chords and scales will be built upon the same note.

Example: all intervals are to start with the same note, middle "C". Simply select "C3" as the "Lowest Note" as well as the "Highest Note".

If you click the small "R" to the left or press the 'R' key, the lower/higher limits can also be set via the MIDI keyboard or the screen keyboard.

3.2
Setting the Velocity for the MIDI Output

The value set in the parameter field "Velocity" (1-127) sets the velocity of the notes transmitted to the sound source via MIDI.



Note: the keyboard/expander must, of course, be velocity-sensitive.

3.3
Adjusting the MIDI Transmit Channel (Channel)

The value (1-16) set in the "Channel" parameter field determines the MIDI Channel (Transmit Channel), on which notes are transmitted via MIDI. The Transmit Channel must match the Receive Channel of the sound source.

The Channel set here also affects the MIDI Thru function (*see Chapter 2: "GENERAL", 2.3 "Routing MIDI Data Through AURA"*).

Adjusting the Transmit Channel puts out the "C3" note, which simplifies the search for the Receive Channel of the sound source.

3.4 Setting the Time between Notes (Arpeggio Time)

The value set in the "Arpeggio Time" parameter field determines the time lag between each note of an exercise. The measure is milliseconds (1000 milliseconds = 1 second).

The "smallest" setting is "Off". In this case the notes will be played simultaneously.

3.5 Setting Note Length (Staccato Time)

The value set in the "Staccato Time" parameter field determines the note length put out via MIDI. The unit is milliseconds.

3.6 Exercise Direction (Up or Down)

The value set in the "Up or Down" parameter field determines how an exercise will be played. There are three settings available:

1. **"Up": Intervals, chords and scales will be played in ascending order.**
2. **"Down": Intervals, chords and scales will be played in descending order.**
3. **"Rdom" (Random) leaves the choice to AURA, which will randomly select "Up" or "Down".**

3.7 Accent First Note (Velocity Add)

The value set in the "Vel. Add" parameter field will be added to the "velocity" value of the first note played. The first note will sound louder.

In exercises with chords and scales the root will be accented. The root will not always be the first note.

3.8 Doubling the Root in the Bass Register (Octave Add)

The values set in the "Octave Add" parameter field double the root once or several times in the bass register.

Examples: "1" means one octave below the root. When AURA plays the triad "C3 E3 G3" ("C" is the root) during a chord exercise and the setting is "1", the root will be doubled with "C2". When the setting is "2", the root will be doubled with "C1". A setting of e.g. "2+3" facilitates multiple doublings of the root.

Exercises with intervals and random lines do not allow the doubling of the root.

3.9 The "Playback" Parameters

You must distinguish between two kinds of parameters:

1. E.g. "Lowest Note" and "Highest Note" or "Up or Down" are parameters which affect the creation of an interval, chord etc.

2. All other parameters such as "Velocity" etc. are "Playback" parameters affecting the reproduction of notes only.

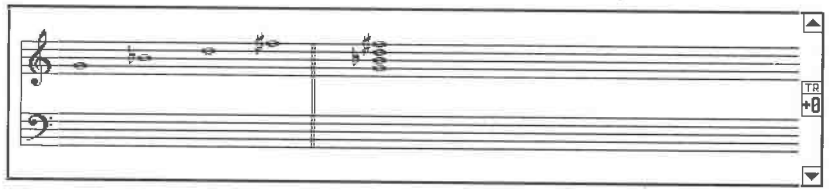
The Playback parameters can be altered any time as often as you want (e.g. before a repeat). If, say, the velocity is too low, it can be increased with the "Velocity" parameter. The same goes for the "Arpeggio Time" and "Staccato Time" parameters.

4. Representation of Notes

AURA can show you all exercises on the stave in the lower half of the screen.

After a correct answer the exercise will be displayed automatically.

AURA displays all notes enharmonically correctly. You can choose between a single stave and a piano stave (double stave).



When you click the notes displayed on the screen, they will be transmitted via MIDI.

4.1 Changing the Clef

To meet the demands of different applications or instrumentations, AURA provides the following clefs apart from those of the piano stave:

- Treble clef
- Bass clef
- Tenor clef
- Alto clef
- Soprano clef

Select the desired clef or the piano stave by clicking the currently-visible clef.

4.2 Transposition

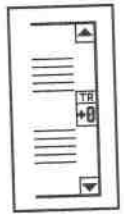
The octave position of notes displayed can be freely adjusted in octave steps. This function is especially useful for exercises containing very low/high notes.

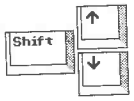
You can transpose the exercise in one octave steps by adjusting the value below the small "TR" field at the right side of the stave (+/- six octaves).

You can also use the 'T' or 'Shift T' keys of the computer keyboard for transposing.

4.3 Shifting the Stave

If very low or high notes are positioned outside the currently visible area, the display can be shifted with the two arrows at the right side of the stave.



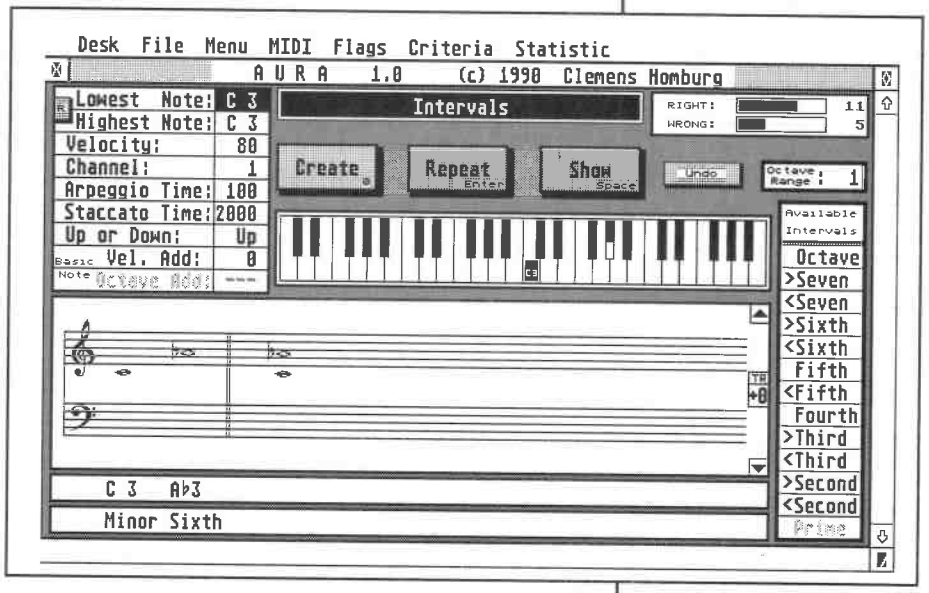


You can also hold down the 'Shift' key and use the cursor keys instead.

5. Saving Default Settings

All default settings can be saved and will immediately be available after you restart AURA.

Selecting "Save Settings" in the "File" menu saves all settings to the disk inserted in the disk drive.



On the "Intervals" main page, ear-training exercises for intervals can be set and answered. Select this main page by clicking "Intervals" in the "Menu" menu.

1. Default Settings for Intervals

1.1 The Parameter Field

In the parameter field you can adjust various values which affect the creation and reproduction of intervals.

Included are e.g. "Lowest Note" and "Highest Note" (limiting the tonal range) or "Arpeggio Time" (reproduction speed).

For a detailed description see Chapter 4: "DEFAULT SETTINGS", 3. "Parameters".

1.2 Excluding Intervals (Available Intervals)

The settings in the "Available Intervals" field exclude specific intervals from random selection.

Clicking the desired interval in the "Available Intervals" field includes an interval (normal characters) or excludes it (grey characters) from random selection.

Example: you can customize exercises, e.g. practice only the recognition of "perfect" intervals (forth, fifth, octave) or "consonant" intervals (third, sixth).

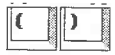
With "Octave Range", the distance between two interval notes can be expanded in octave steps (10 octaves maximum).

Example: a third will become a tenth if "Octave Range" is set to "2".

AURA will randomly choose the range of intervals. The selected "Octave Range" value represents only the maximum octave range.

You can also use the "Bracket" keys '( )' of the numerical keypad to adjust the octave range.

1.3 The Octave Range of Intervals (Octave Range)



1.4 Two Random Functions (Random 1/2)

These functions will affect the random creation of intervals in different ways:

1. **"Random Function 1" (see "Flags" menu) plays the first interval note within the limits set by "Lowest Note" and "Highest Note". The second note will be created disregarding the "Lowest/Highest Note" limits.**

If "Octave Range" is set to a value larger than "1", AURA will play larger intervals accordingly.

2. "Random Function 2" (see "Flags" menu) creates intervals within the "Lowest/Highest Note" limits only.

In this case "Octave Range" has no effect and will be switched off automatically.

Example: if "Lowest Note" is set to "C3" and "Highest Note" is set to "E3", intervals will be created within the "C3"-"E3" range only.

"Random Function 1" is suited for the ear-training of intervals of any size, whose first interval note is limited to a specific tonal range. "Random Function 2" limits the tonal range of both interval notes.

Which function you select depends on your individual approach to the ear-training of intervals.

2. Completing Interval Exercises

There are three ways to do an interval exercise:

1. Entering the answer in the text window

Clicking "Answer in Text Window" in the "Flags" menu switches the text window on/off.

The text window displays only those intervals allowed by the settings of "Available Intervals" and "Octave Range".

On the left side of the text window, the interval size is displayed in semitone steps.

Intervals not visible in the text window can be scrolled into view with the up/down arrows (or cursor keys).

2. Entering the answer via the MIDI keyboard

The first interval note will be displayed in the lower left corner of the screen.

Note: if you prefer to do the exercise via the MIDI keyboard, you should switch off the text window with "Answer in Text Window" in the "Flags" menu.

3. Entering the answer via the screen keyboard

The little "C3" tells you the octave position of the screen keyboard. You can change the octave position in the "MIDI Remote Definition" window of the "MIDI" menu.

If you enter the answer via the MIDI keyboard or screen keyboard, different evaluation criteria, such as "Absolute", "Relative" etc., are available.

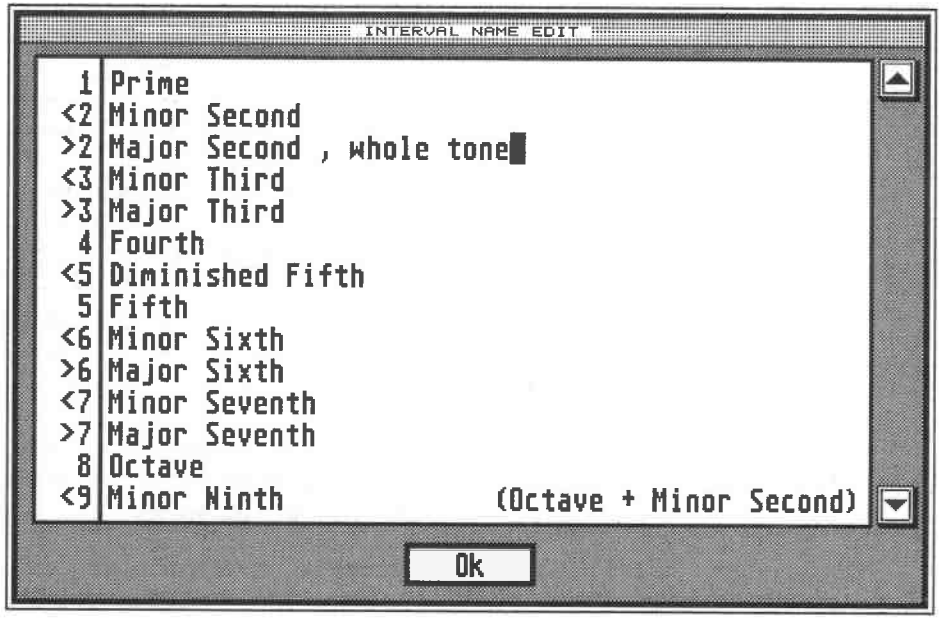
For a detailed description of these criteria see Chapter 3: "GENERAL OPERATION", 3. "Identification via MIDI".

3. Automatic Setting of New Interval Exercises (Auto Repeat/Create)

After you have successfully completed an interval exercise AURA will play the next interval automatically if "Auto Repeat/Create" in the "Flags" menu is checked.

If you have made a mistake, the interval will be repeated.

Thus you need not manually select the "Create" or "Repeat" functions.



1. Individual Interval Names

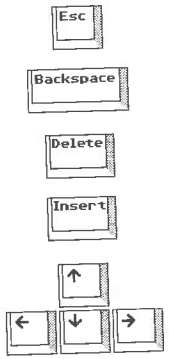
With "Interval Edit" you can change the interval names in the text window.

All interval names, starting with "prime" up to "octave + major seventh", can be replaced by custom names or supplemented with additional comments.

The text is entered in the "Interval Edit" window.

Clicking "Interval Edit" in the "Menu" menu opens the "Interval Edit" window.

2. Changing Interval Names



All characters of the computer keyboard are available for renaming intervals. The following keys provide additional help:

'Esc' - Erases the whole line

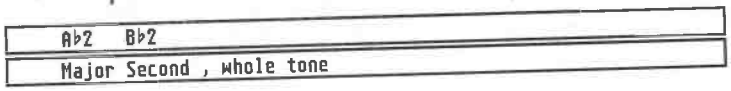
'Backspace'- Erases the character to the left of the cursor

'Delete' - Erases the character marked by the cursor

'Insert' - Inserts a blank

Interval names not visible in the text window can be scrolled into view with the up/down arrows (or cursor keys).

The new names will be displayed during the ear-training of intervals in the text window for answers and in the information line on the lower screen margin.

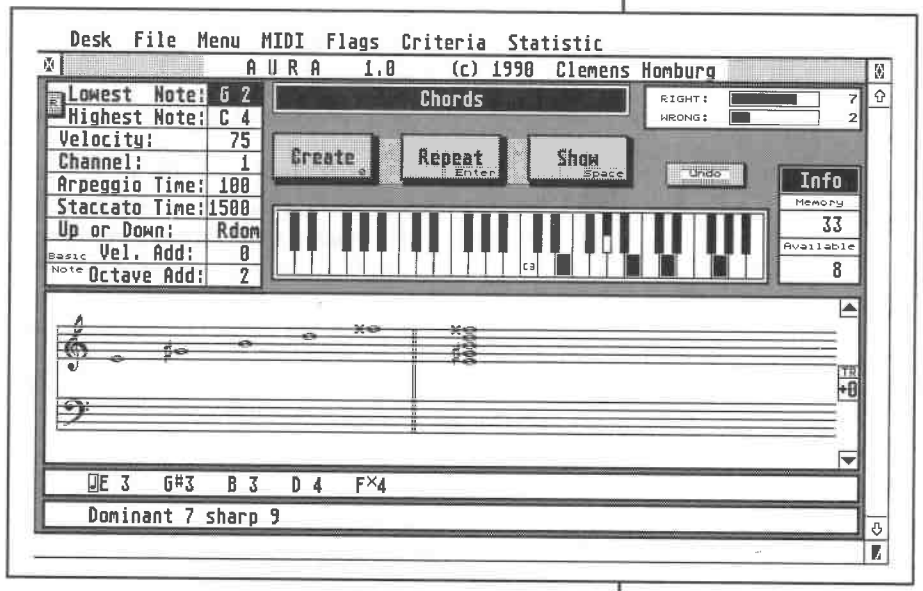


Note: of course, nonsense answers are also possible. If you rename "Major Third" to "Minor Third", the contents of the text output during the ear-training of intervals will obviously be incorrect.

3. Saving New Names

Clicking "Save Interval Names" in the "File" menu saves the interval names and comments to the "INTERVAL.DAT" file of the current folder.

When you restart AURA, this file with interval names and comments will be automatically loaded.



1. Basic Concepts

On the "Chords" main page exercises for the ear-training of chords can be set and completed. Click "Chords" in the "Menu" menu to select this main page.

Since AURA allows the creation of custom chord libraries, you can set up all kinds of special chord exercises.

For further information see Chapter 8: "CHORD EDIT" (Library Management).

2. Default Settings for Chords

For the ear-training of chords you can select different styles and degrees of difficulty under "Criteria".

Chord libraries can be loaded from disk and saved to disk. If there is no chord library in the computer memory, you cannot do any chord exercises.

When you start AURA, it will look for the "AUTOLOAD.CHD" file on the program disk. If this file is found, it will be loaded automatically. All chords contained therein will be available immediately.

To load a different library, select "Load Chords" in the "File" menu. In addition you can "append" libraries to the one stored in memory (see "Load/Save Chords" in the "CHORD EDIT" Chapter).

You can alter the settings in the parameter field to affect the creation and reproduction of chords.

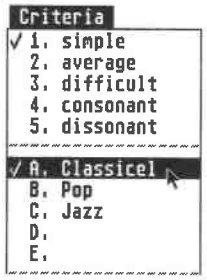
Included are "Lowest Note" and "Highest Note" (limiting the tonal range) or "Arpeggio Time" (playback speed).

For a detailed description see Chapter 4: "DEFAULT SETTINGS", 3. "The Parameters".

3. Criteria

With the ten criteria, specific chords of a chord library can be selected and the succession of exercises can be systemized (e.g. different styles or degrees of difficulty).

Clicking one of the ten entries in the "Criteria" menu selects/checks the desired item.



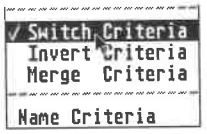
Example: if "simple" is selected, AURA will select only those chords that fulfill this criterion.

In the upper righthand corner of the screen page, the "Info" display of the "Memory" field tells you how many chords the library contains.

The "Available" field displays the number of available chords, which correspond to the selected criteria.

If no criterion is checked, all chords are available for exercises.

Chords



In addition the "Criteria" menu contains functions which control the effect of the selected criteria.

- "Switch Criteria"

When this menu item is activated, only one criterion can be selected.

When this menu item is deselected, different criteria can be combined. In this case the selected chords fulfil both criteria.

Example: All "simple" chords from "Classical Period".

- "Merge Criteria"

When this menu item is activated, chords types whose criteria are different will be combined.

Example: if two criteria, e.g. "Classical Period" and "Jazz" are selected, both chord types ("Classical Period" and "Jazz") will be available.

- "Invert Criteria"

When this menu item is activated, the effect of the selected criteria will be inverted.

Example: if the criterion "simple" is selected, all chords will be available which are not "simple".

- "Name Criteria"

Clicking this menu item opens a window, in which you can change the names of all ten criteria as you please. For example, all ten criteria could be divided solely into degrees of difficulty or solely into styles.

Important Notice! If you change the basic meaning of criteria, the assignment of criteria to chords in the library must also be changed (see Chapter "Chord Edit").

Note: nonsense entries are, of course, also possible. If you changed a criterion's name from "difficult" to "simple", people would get pretty confused.

4. Completing Chord Exercises

There are three ways to do a chord exercise:

1. Entering the answer into the text window

Clicking "Answer in Text Window" in the "Flags" menu switches the text window on/off.

The text window displays only those chords which fulfil the criterion selected in the "Criteria" menu.

On the left side of the text window, the chord's control number in the library is displayed.

Chords not visible in the text window can be scrolled into view with the up/down arrows (or cursor keys).

2. Entering the answer via the MIDI keyboard

The first note or the root of the chord will be displayed in the lower left corner of the screen.

Note: if you prefer to do the exercise via the MIDI keyboard, you should switch off the text window with "Answer in Text Window" in the "Flags" menu.

3. Entering the answer via the screen keyboard

The little "C3" tells you the octave position of the screen keyboard. You can change the octave position with "MIDI Remote Definition" in the "MIDI" menu (see Chapter 15: "MIDI REMOTE").

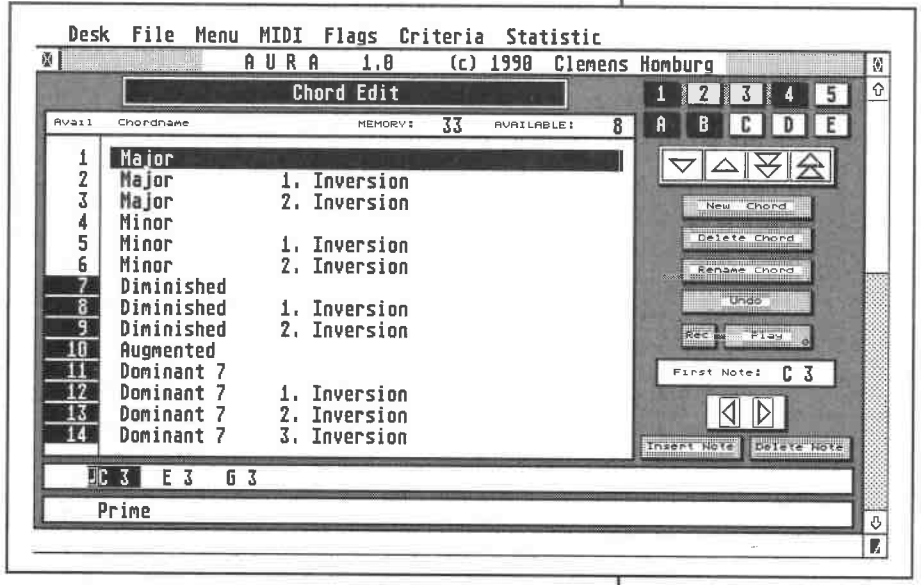
If you enter the answer via the MIDI keyboard or screen keyboard, different evaluation criteria, such as "Absolute", "Relative" etc., are available. For a detailed description of these criteria see Chapter 3: "GENERAL OPERATION", 3. "Identification via MIDI".

5. Automatic Setting of New Chords (Auto Repeat/Create)

If "Auto Repeat/Create" in the "Flags" menu is checked, AURA will play the next chord automatically after you have successfully completed a chord exercise.

If you have made a mistake, the chord will be repeated.

Thus you need not manually select the "Create" or "Repeat" functions.



1. Basic Concept

"Chord Edit" is used to enter and create any chord and to set up a chord library of virtually unlimited size. You can also work with several smaller chord libraries instead.

Libraries can be saved to disk and loaded from disk.

The ear-training exercises use the chords of the loaded library.

Since AURA offers very flexible possibilities for creating a library, it can meet all individual demands. The following options for editing are available:

- you can enter any chord.

- you can name chords as you please.

- you can determine the root, which need not be contained in the chord being played.

- you can determine a second (root) note (e.g. for bitonal chord structures).

- you can determine the enharmonic function of chord notes.

In addition, up to ten different criteria, such as "simple", "Classical Period" or "Jazz", can be assigned to each chord. The ten criteria can be combined and named as you please.

The selection of specific chords, which fulfill the chosen criteria, enables the convenient creation of custom training concepts for different styles and different degrees of difficulty.

Clicking "Chord Edit" in the "Menu" menu selects this main page.

2. The Chord Library

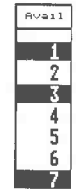
2.1 Creating Chord Lists

The chords contained in the library are listed below each other and numbered in the left margin of the list. Up to 14 chords are visible in the window.

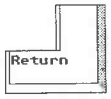
1	Major	
2	Major	1. Inversion
3	Major	2. Inversion
4	Minor	
5	Minor	1. Inversion
6	Minor	2. Inversion
7	Diminished	
8	Diminished	1. Inversion
9	Diminished	2. Inversion
10	Augmented	
11	Dominant 7	
12	Dominant 7	1. Inversion
13	Dominant 7	2. Inversion
14	Dominant 7	3. Inversion

The total number of chords contained in the current library is displayed under "Memory" in the list title. "Available" informs you about the number of available chords, which fulfill the respectively selected criteria (*see Chapter 7: "CHORDS", 3. "Criteria"*).

In the number column in the left margin of the list, available chords are displayed in light script. Chords which are not available are displayed in black script.



2.2 Selecting a Chord from the List



There are three ways to select a chord:

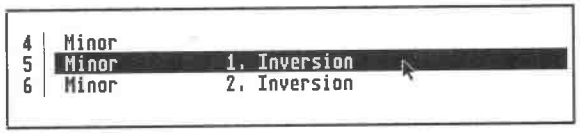
1. Clicking the chord name
2. Clicking one of the up/down arrows
3. Using the cursor keys of the computer keyboard

The up/down arrows or cursor keys can be used to quickly move through the library step by step or page-by-page.

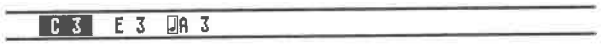
In the course of this, the chords are put out via MIDI.

Note: "Playback parameters" set on the main page, such as "Velocity", "Arpeggio Time", "Octave Add" etc., are also effective in "Chord Edit" mode. (For rapid alterations of these parameters, press the 'Return' key to get to the main page. Pressing the 'E' key brings you back to your initial position).

The selected chord is marked by a black cursor bar.

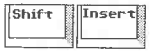


The note information line below the list displays the notes of the chord.



3. Entering a New Chord

3.1 Creating a List Entry



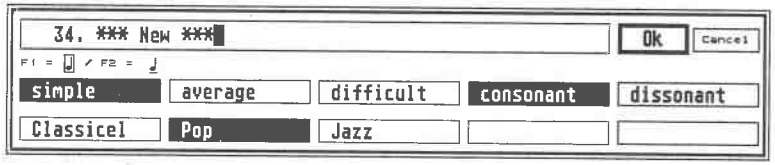
To enter a new chord, you must first make a new entry in the chord list.

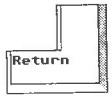
After clicking the "New Chord" field (or keyboard command 'Shift Insert'), an entry window opens. The exact description of the chord to be entered (e.g. dominant seventh) must be typed in here.

Note: you may enter the chord notes now or later (see 3.4 "Entering Chord Notes"). The following Chapter will give a more detailed description of the entry window.

All characters of the computer keyboard are available for entering any chord. The following keys provide additional help:

'Esc' - Erases the whole line
'Backspace' - Erases the character to the left of the cursor
'Delete' - Erases the character marked by the cursor
'Insert' - Inserts a blank



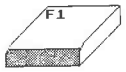


3.2 Defining the Root Display

Clicking the "OK" switch or pressing the 'Return' key inserts the chord entry into the library.

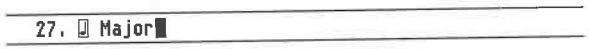
To cancel the procedure, select "Cancel".

When you name a chord, the 'F1' and 'F2' keys have special functions. The special characters inserted with these keys represent placeholders for any two chord notes. During chord exercises the pitches which are actually being played will be displayed here instead of the placeholders.

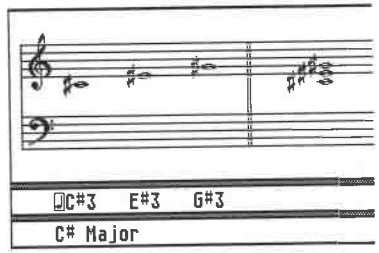


The bordered note symbol inserted with the 'F1' key will be replaced by the root of the chord which is actually being played.

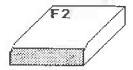
Example:
The chord name is "Major" and you insert the bordered note symbol in front of the name with the 'F1' key.



During chord exercises, the text output will display the root which is actually being played:



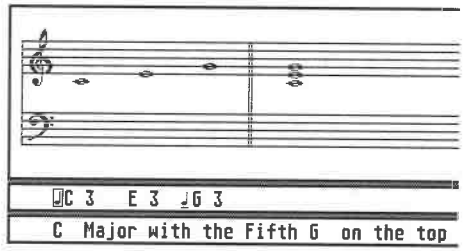
Another root or additional note can be defined e.g. for bitonal chords with the 'F2' key. Its placeholder is represented by a small underlined note.



The note position within the chord cannot be defined until the note material is entered (see 3.7. "Defining Roots").

Example:
The chord name is:

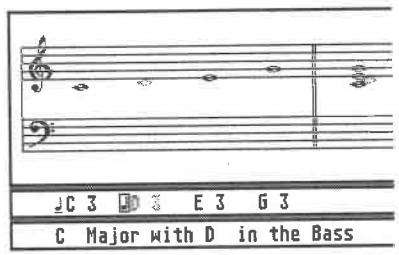
The final text output for the exercises to follow will be:



if "C" is the root and "G" has been defined as second note.

Example:
(bitonal structure):The chord name is:

The final text output for the exercises to follow will be:



if "D" is the root and "C" has been defined as second (root) note.

3.3 Assigning Criteria

Up to ten different criteria can be assigned to each chord. A chord can fulfil several criteria at the same time, such as "simple", "consonant", "Classical Period" and "Pop".

There are two ways to assign criteria:

3.3.1 Entry Window

Clicking one of the criterion fields carries out the assignment. Selected criteria will be inverted (white on black). To cancel the assignment, click once again.

3.3.2 List

Assign criteria to each chord in the list as follows:

- Select chord
- Assign criteria by clicking fields 1-5 and A-E in the upper right half of the screen.

This function is very useful for quickly assigning criteria in large libraries.

Note: for a clear lay-out of the "criteria-field" assignment, open the "Criteria" menu.

Criteria names are not fixed and can be changed by the user as he/she pleases (see Chapter 7: "CHORDS", 3. "Criteria").

3.4 Entering Chordal Notes

The chord entered into the library with the "New Chord" function should, of course, contain some "note material".

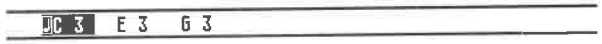
There are two ways to enter the notes of a new chord:

1. Entering the Notes via the MIDI Keyboard:

After you have clicked the small "Rec" switch or pressed the "asterisk" key ('*') of the numerical keypad, AURA will expect an entry via MIDI:

The chordal notes can be entered one after another in any succession via the MIDI keyboard (up to 9 notes).

The notes played will be displayed immediately in the note information line.



Entered notes can be erased with the remote control function "Clear" by pressing the "MIDI Remote" note "F1" (see Chapter 15: "MIDI REMOTE").

The complete entry can be erased with the 'Esc' key of the computer keyboard.

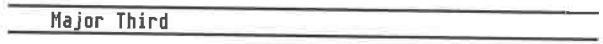
2. Entering the Notes via the Computer:

Clicking the "Insert Note" switch or pressing the 'Insert' key inserts a note. It will be positioned a minor third above the previous note.

The desired pitch can be adjusted with the mouse in the note information line.

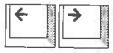
You can also use the '+/-' keys instead.

The interval information line on the lower screen margin displays the distance between the selected note and the root.



3.5 Erasing a Chordal Note

Clicking the "Delete Note" switch or pressing the 'Delete' key erases specific notes.



The note to be erased can be selected with the mouse, the 'left/right' arrow switches or the cursor keys.

3.6 Hints for Entering Chords

We recommend that you enter only "simple" chord structures, since AURA can double bass notes automatically during chord exercises.

The chord exercise is only successfully completed if the exact note structure defined in the library is entered.

If the chord definition contains e.g. the doubling of an octave in the bass register, AURA will expect this "fixed" bass doubling and object to an otherwise correct answer.

Example 1:
A triad "C3 E3 G3"
should not be entered as "C1 C3 E3 G3"
or "C2 C3 E3 G3".

Example 2:
The inversion of a triad
"E3 G3 C4" should neither be entered as "C1 E3 G3 C4"
nor as "C2 E3 G3 C4".

Example 3:
Bitonal chord structures
e.g. "C major with a D bass" should not be entered with the root "D" in the bass.

Wrong: "D2 C3 E3 G3"
Right: "C3 D3 E3 G3"

The "D" root can be "hidden" afterwards with the keyboard command 'Alternate B' (see 3.7.3 "Hiding The Root").

3.7 Defining Roots

3.7.1 First Root

AURA will sort the notes from low to high according to their pitch. At first, AURA automatically defines the lowest note as being the root.

The root is marked by a small outlined note symbol.

Each chordal note can be defined as being the root no matter what its pitch is. Click the desired note while holding down the 'Shift' key.

You can use the keyboard command 'Shift B' instead.

AURA automatically puts all chordal notes - according to the selected root - into their harmonically correct order.

3.7.2 Defining the Second (Root) Note

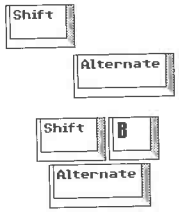
In addition to the first root a second chordal note can be marked as a supplementary note.

The second supplementary note can be easily distinguished from the actual root, since it is marked by a small underlined note symbol.

To define the second (root) note, click the desired note while holding down the 'Alternate' key.

You can use the keyboard command 'Alternate B' instead.

3.7.3 "Hiding" a Root



In bitonal chord structures, for example, the root itself is not contained in the chord being played.

In this case you can define a root, which will not be transmitted via MIDI. This kind of root will be displayed in grey script.

If you click the desired note while holding down the 'Shift' and 'Alternate' keys, it will become a "hidden" root.

The corresponding key command is: 'Shift/Alternate B'.

If "Octave Add", i.e. an additional doubling of the root in the bass register, is activated during chord exercises, the "hidden" root will be played in the bass register.

3.8 Enharmonisation

Though AURA can automatically recognise the enharmonic function of chordal notes from the root definition, it will sometimes be necessary to manually adjust the enharmonic function of specific notes later.

The keyboard command 'Shift H' allows enharmonisation in three steps.

Example:
enharmonisation of the "C" note:

1st step: "C" is converted to "B#".
2nd step: "B#" is converted to "Dbb"
3rd step: "Dbb" is converted to "C" again

Typical Examples:
the diminished triad "C Eb F#" will be converted to "C Eb Gb".

The diminished seventh chord "C Eb F# A" will be converted to "C Eb Gb Bbb".

Note: we recommend that you avoid the enharmonisation of the "G#" or "Ab" note, since the enharmonisation of this note can be executed only once. AURA considers the "G#" note twice, therefore the first enharmonisation from the single sharp to the double sharp will not be visible. This means that the enharmonisation executed by the internal logic of the program will in this case remain "invisible" and will only become effective in a different "key" (where you perhaps do not expect it).

Hint: to carry out the enharmonisation of the "G#" or "Ab" note, select a different "key" by altering the "First Note" parameter.

4. Overview of Chord Library Functions

4.1 Quick Assignment of Criteria

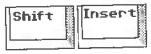
Up to ten criteria can be assigned to each chord.

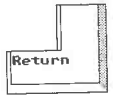
For a quick overview of the criteria assigned to the currently selected chord, ten small numbered fields are provided. The selected criteria will be inverted (white on black).

Clicking one of these fields assigns the criterion to the chord.

Hint: opening the "Criteria" menu quickly informs you about the definitions of fields 1-5 and A-E (see 3.3 "Entering A New Chord").

4.2 "New Chord"





After you have clicked the "New Chord" field or pressed 'Shift Insert' an entry window will open in which you can exactly describe the chord to be entered.

Clicking the "OK" switch or pressing the 'Return' key inserts the chord entry into the library.

4.3 "Delete Chord"

Clicking the "Delete Chord" switch erases the selected chord.

You can use 'Shift Delete' instead.

A chord name can also be erased by directly "grabbing" it and dragging it to an area outside the chord list.

- Click the desired chord name and hold down the left mouse button until an outline appears.
- Keep holding down the mouse key and drag the outline to an area above or below the chord list and release the mouse button.

This command can be cancelled with "Undo".

4.4 "Rename Chord"

Clicking the "Rename Chord" switch opens an entry window in which you can change the name of a chord. The entry window can also be opened with a double-click.

You can use ' N' instead.

4.5 "Undo"

Clicking the "Undo" switch cancels the deletion, renaming or alteration of chordal notes.

You can use 'Undo' instead.

4.6 "Rec"

Clicking the "Rec" switch switches AURA to a state of waiting.

You can then enter a chord via the MIDI keyboard (see 3. "Entering A New Chord").

You can use '*' on the numerical keypad instead.

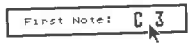
4.7 "Play"

When you click the "Play" switch with the left mouse button, the selected chord will be played back - according to the default settings on the main page.

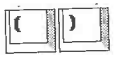
When you click the "Play" switch with the right mouse button, the chordal notes will be played back simultaneously.

You can use the 'Zero' key or the 'Shift Zero' keys on the numerical keypad instead.

4.8 "First Note"



In the "First Note" field, you can change the base note for the MIDI playback of all chords in the library. This is also a useful function for displaying chordal notes in different "keys".



You can use the bracket keys '( )' in the numerical keypad instead.

4.9 "Insert Note"

Clicking the "Insert Note" switch adds a note to the selected chord. The new note will be inserted behind the currently-selected note.

You can use 'Insert' instead.

4.10 "Delete Note"

Clicking the "Delete Note" switch erases the selected chordal note (see 3. "Entering A New Chord").

You can use 'Delete' instead.

4.11 Copy Chords

A chord can be copied (inserted) to a different position in the chord list by directly "grabbing" the chord name and dragging it there.

Click the desired chord name and hold down the left mouse button until an outline appears. Keep holding down the mouse button, drag the outline to the destination position and release the mouse button.

Releasing the outline outside the chord list erases the chord.

5. Loading/Saving a Chord Library

5.1 Loading an (Additional) Library

Selecting "Load Chords" in the "File" menu opens the file selector window. All files with the extension "name.CHD" will be displayed. The desired library can be selected here.

Clicking the "OK" switch loads the selected file.

You can then decide if the new library should be appended to the existing one (Append) or if the current library shall be replaced (Replace).

5.2 Saving the Current Library

Clicking "Save Chords" in the "File" menu opens the file selector window. You can enter a file name consisting of up to 8 characters with the computer keyboard.

The program will automatically add an extension consisting of three characters. AURA adds the identification ".CHD" to chord libraries to distinguish them from other files.

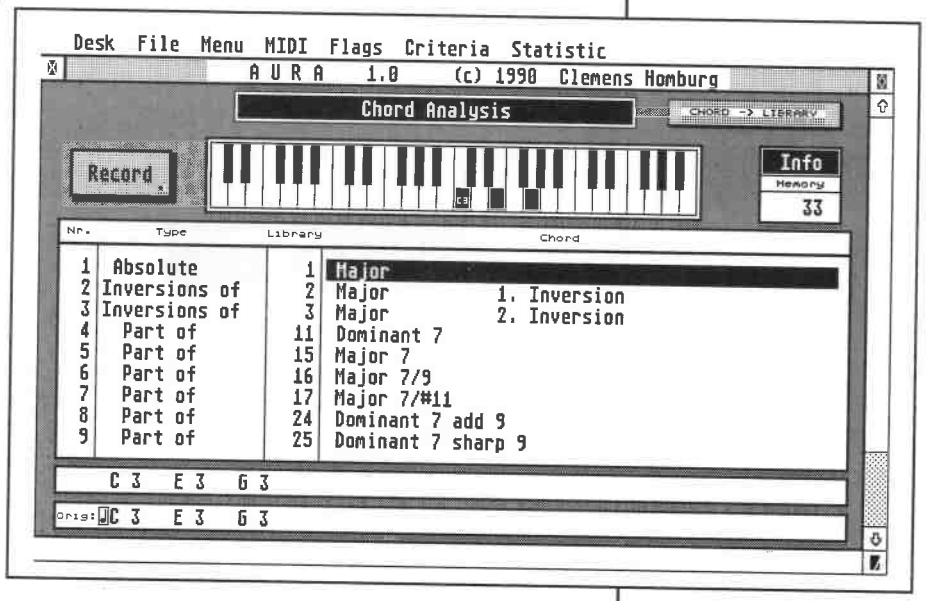
Clicking the "OK" switch saves the corresponding file.

If a file with the same name already exists in the current folder, AURA will expect you to confirm your decision prior to saving. You can cancel the saving procedure with "Cancel".

If you select the "Replace" field, an existing file will be irreversibly overwritten! So take care in using this function.

5.3 Saving A Library To An AUTOLOAD File

The library named "AUTOLOAD.CHD" must be saved to the same folder on the same disk, with which AURA is started. If the program can find a library named AUTOLOAD during start-up, it will be loaded automatically.



1. Basic Concept

AURA provides special logic operations which help automatically identification of entered chords. Thus you can find out about the theoretical function or name of a previouly "unknown" chord.

The chord library in memory will be integrated into chord analysis as well.

Clicking "Chord Analysis" in the "Menu" menu calls the "Chord Analysis" page.

2. Entering a Chord (Record)

After you have pressed the "D#1" key ("Record" remote control) on the MIDI keyboard, AURA will expect you to enter a chord.

You can also enter the chord after you have clicked the "Record" switch or pressed the asterisk ('*') key in the numerical keypad.

You can enter the chord to be analyzed via the MIDI keyboard or screen keyboard. The notes may also be entered one after another.

Pressing the "E1" key ("Show" remote control) on the MIDI keyboard completes the entry.

You can also press the right mouse button or any other computer key to complete the entry.

AURA will then analyze the chord.

3. Indication of Chords Found

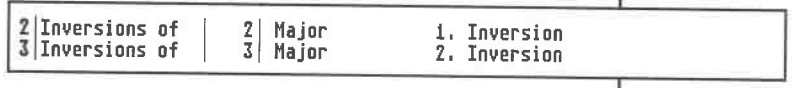
3.1 Indication In The List

AURA tries to find the entered chord in the chord library stored in memory first. Only if a corresponding entry cannot be found will a special logic operation come into force, which will identify the chord automatically.

There are three criteria for the indication of the chords found:

1. "Absolute"
The entered chord is completely identical with the chord in the library.

2. "Inversion of"
The entered chord is an inversion of a chord in the library.



3. "Part of"
The entered chord corresponds to parts of specific chords in the library.

Example: A major triad is part of a dominant seventh chord in the library.

4	Part of	11	Dominant 7
5	Part of	15	Major 7

The "Library" column displays the respective library number of the chord.

If the entered chord cannot be found in the current library, AURA will automatically analyze the entry.

AURA's analysis will be "absolute". The first (lowest) note will be considered as being the root. Octave doublings of chordal notes will be filtered out to give an objective evaluation.

3.2 Indication via the Screen Keyboard

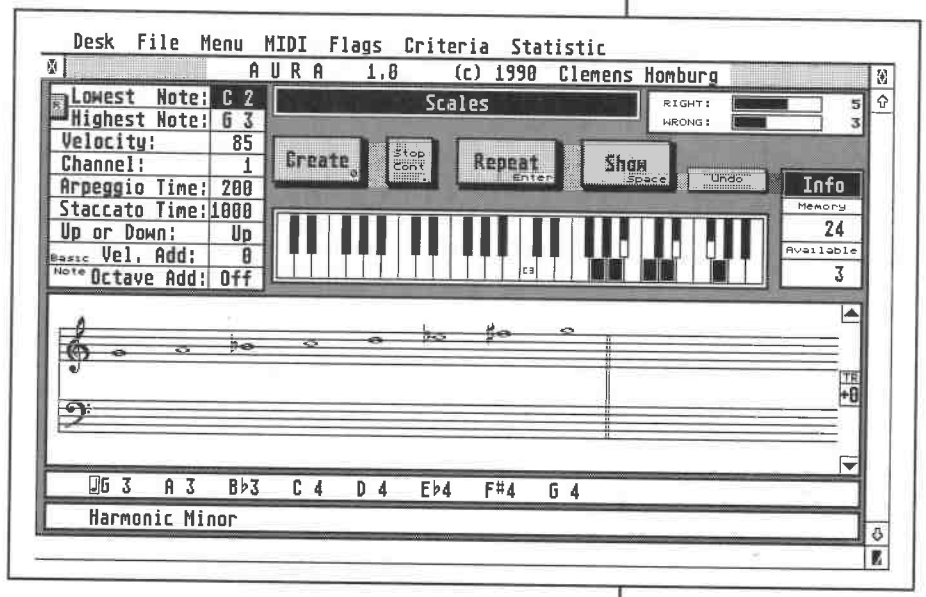
The currently-selected chord in the "Chord Analysis" list will be displayed on the screen keyboard.

Thus e.g. the positions of all chord inversions are clearly displayed.

4. Tranferring New Chords to the Library

Chords not found in the library can be directly added in the form of a "New Entry" to the chord library. Those chords are marked with the entry "AURA".

Clicking the "Chord -> Library" field appends the new chord to the current library. You can then rename or change it as you please.



1. Basic Concept

Exercises for the ear-training of scales can be set and completed on the "Scales" main page. To get there click "Scales" in the "Menu" menu.

Since AURA allows the creation of custom scale libraries, you can set up all kinds of special scale exercises. Specially-altered scales can be practised in various ways.

For further information see Chapter 11: "SCALE EDIT" (library management).

2. Default Settings for Scales

For the ear-training of scales you can select different styles and/or degrees of difficulty under "Criteria".

Scale libraries can be loaded from disk and saved to disk. If there is no scale library in the computer memory, you cannot execute any scale exercises.

When you start AURA, it will look for the "AUTOLOAD.SCL" file on the program disk. If this file is found, it will be loaded automatically. All scales contained therein will be available immediately.

To load another library, select "Load Scales" in the "File" menu. In addition you can "append" libraries to the one stored in memory (*see Chapter 11: "SCALE EDIT", 5."Load/Save"*).

You can alter the settings in the parameter field to affect the creation and reproduction of scales.

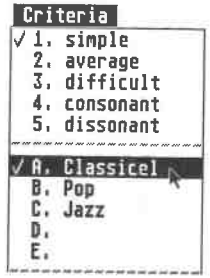
Included are e.g. "Lowest Note" and "Highest Note" (limiting the tonal range) or "Arpeggio Time" (playback speed).

For a detailed description see Chapter 4: "DEFAULT SETTINGS", 3. "The Parameters".

3. Criteria

With the ten criteria specified, scales of a scale library can be selected and the succession of exercises can be systematized (e.g. different styles or degrees of difficulty).

Clicking one of the ten entries in the "Criteria" menu selects/checks the desired item.



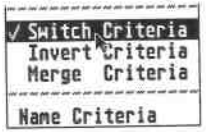
Example: when "simple" is selected, AURA will select only those scales that fulfil this criterion.

In the upper right corner of the screen page the "Info" display of the "Memory" field tells you the number of scales in the library.

The "Available" field displays the number of available scales which correspong to the selected criteria.

If no criterion is checked, all scales are available for exercises.

In addition, the "Criteria" menu contains functions which control the effect of the selected criteria.



- "Switch Criteria"

If this menu item is activated, only one criterion can be selected.

If this menu item is deselected, different criteria can be combined. In this case the selected scales fulfil both criteria.

Example: all "simple" scales from "Classical Period".

- "Merge Criteria"

If this menu item is activated, scales fulfilling different criteria can be combined.

Example: if two criteria, e.g. "Classical Period" and "Jazz" are selected, both scale types ("Classical Period" and "Jazz") will be available.

- "Invert Criteria"

If this menu item is activated, the effect of the selected criteria will be inverted.

Example: if the criterion "simple" is selected, all chords will be available which are not "simple".

- "Name Criteria"

Clicking this menu item opens a window, in which you can change the names of all ten criteria as you please. For example, all ten criteria could be divided solely into degrees of difficulty or solely into styles.

If you change the basic meaning of criteria, the assignment of criteria to scales in the library must also be changed (*see Chapter 11: "SCALE EDIT", 3.3 "Assigning Criteria"*)**.**

Notice: nonsense entries are, of course, also possible. If you changed a criterion's name from "difficult" to "simple", people would get pretty confused.

Scales

4. Completing Scale Exercises

There are three ways to do a scale exercise:

1. Entering the answer into the text window:

Clicking "Answer in Text Window" in the "Flags" menu switches the text window on/off.

The text window displays only those scales which fulfil the criterion selected in the "Criteria" menu.

On the left side of the text window, the scale's control number in the library is displayed.

Scales not visible in the text window can be scrolled into view with the up/down arrows (or cursor keys).

2. Entering the answer via the MIDI keyboard:

The first note or the root of the scale will be displayed in the lower left corner of the screen.

Note: if you prefer to do the exercise via the MIDI keyboard, you should switch off the text window with "Answer in Text Window" in the "Flags" menu.

3. Entering the answer via the screen keyboard

The little "C3" tells you the octave position of the screen keyboard. You can change the octave position with "MIDI Remote Definition" in the "MIDI" menu (see Chapter 15 "MIDI Remote").

If you enter the answer via the MIDI keyboard or screen keyboard, different evaluation criteria, such as "Absolute", "Relative" etc., are available.

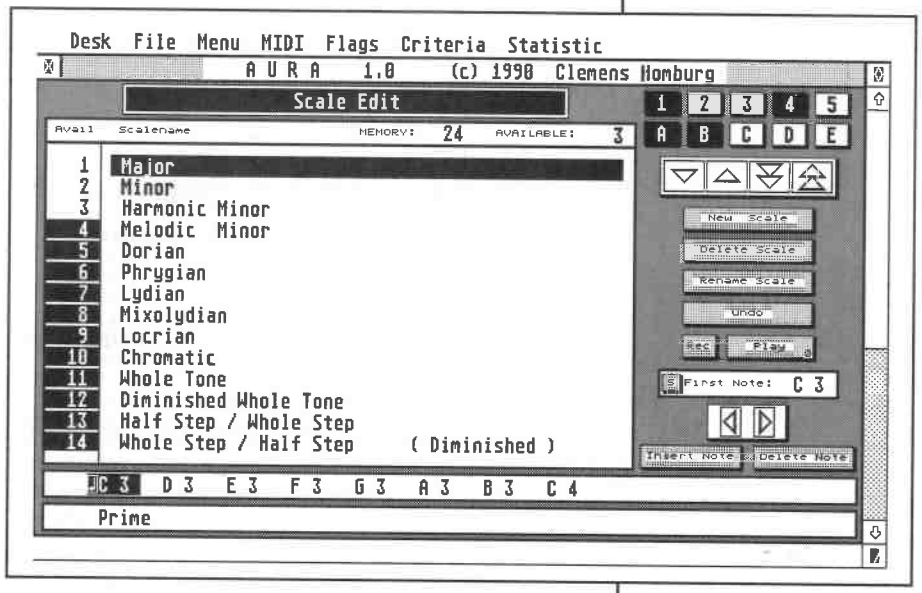
For a detailed description of these criteria see Chapter 3: "GENERAL OPERATION", 3. "Identification via MIDI".

5. Automatic Setting of New Scales (Auto Repeat/Create)

After the solution of a scale exercise, AURA will play the next scale automatically, if "Auto Repeat/Create" in the "Flags" menu is checked.

If you have made a mistake, the scale will be repeated.

Thus you need not manually select the "Create" or "Repeat" functions.



1. Basic Concept

"Scale Edit" is used to enter and create any scale and to set up a scale library of virtually unlimited size. You can also work with several smaller scale libraries instead.

Libraries can be saved to disk and loaded from disk.

The ear-training exercises use the scales of the loaded library.

The following editing options are available:

- you can enter any scale

- you can name scales as you please

- you can determine the root, which need not be contained in the scale being played

- you can determine a second (root) note (e.g. for ambiguous scale structures)

- you can determine the enharmonic meaning of scale notes.

In addition, up to ten different criteria, such as "simple", "Classical Period" or "Jazz", can be assigned to each scale. The ten criteria can be combined and named as you please.

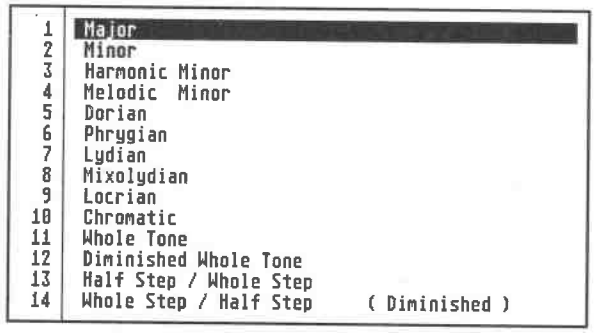
The selection of specific scales, which fulfill the selected criteria, enables the convenient creation of custom training concepts of different styles and of different degrees of difficulty.

Clicking "Scale Edit" in the "Menu" menu selects this main page.

2. The Scale Library

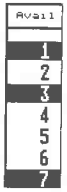
2.1 Creating a Scale List

The scales contained in the library are listed below each other and numbered in the left margin of the list. Up to 14 scales are visible in the window.

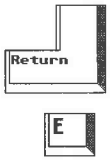


The total number of scales contained in the current library is displayed under "Memory" in the list title. "Available" informs you about the number of available scales which fulfill the selected criteria (*see Chapter 10: "SCALES", 3. "Criteria"*).

In the number column in the left margin of the list, the available scales are displayed in light script. Scales which are not available are displayed in black script.



2.2 Selecting a Scale from the List



There are three ways to select a scale:

1. Clicking the scale name

2. Clicking one of the up/down arrows

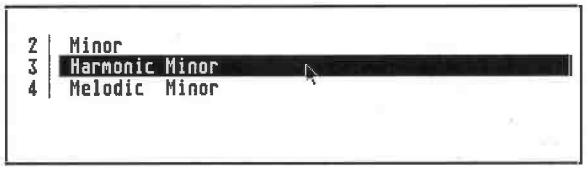
3. Using the cursor keys of the computer keyboard.

The up/down arrows or cursor keys can be used to quickly move through the library step-by-step or page-by-page.

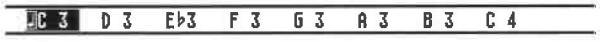
In the course of this, the scales will be put out via MIDI.

Note: "Playback parameters" set on the main page, such as "Velocity", "Arpeggio Time", "Octave Add" etc., are also effective in "Scale Edit" mode. (For quick alterations of these parameters, press the 'Return' key to get to the main page. Pressing the 'E' key brings you back to your initial position).

The selected scale is marked by a black cursor bar.



The note information line below the list displays the scale notes.



3. Entering a New Scale

3.1 Creating a List Entry

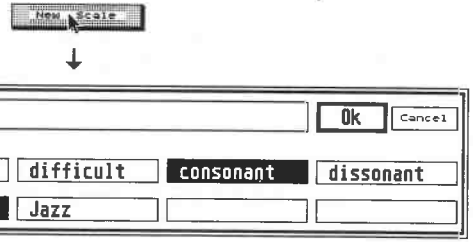
To enter a new scale, you must first create a new entry in the scale list.

After you have clicked the "New Scale" switch (or keyboard command 'Shift Insert'), an entry window will open. The exact description of the scale to be entered (e.g. blues scale) must be typed in here.

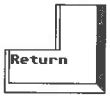
Note: you may enter the scale notes now or later (see 3.4 "Entering Scale Notes"). The following Chapter will give a more detailed description of the entry window.

All characters of the computer keyboard are available for entering any scale. The following keys provide additional help:

'Esc' - Erases the whole line
'Backspace' - Erases the character to the left of the cursor
'Delete' - Erases the character marked by the cursor
'Insert' - Inserts a blank



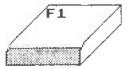
Clicking the "OK" switch or pressing the 'Return' key inserts the scale entry into the library.



To cancel the procedure, select "Cancel".

3.2 Defining the Root Display

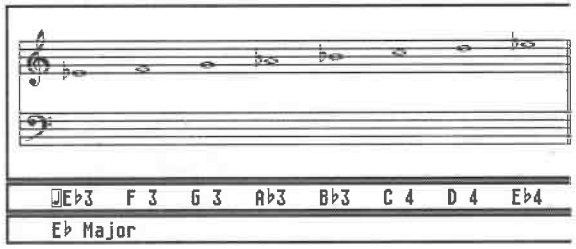
When you name a scale, the 'F1' and 'F2' keys have special functions. The special characters inserted with these keys represent placeholders for any two given scale notes. During scale exercises, the pitches which are actually being played will be displayed here instead of the placeholders.

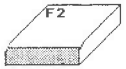


The bordered note symbol inserted with the 'F1' key will be replaced by the root of the scale which is actually being played.

Example:
The scale name is **"Major"**. The bordered note symbol in front of the name will be inserted with the 'F1' key.

During scale exercises the text output will display the root which is actually being played:

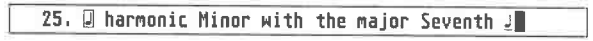




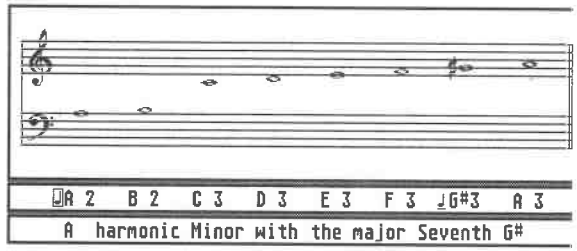
Another root, scale step or additional note can be defined, e.g. for ambiguous scales, with the 'F2' key. Its placeholder is represented by a small underlined note.

The note position within the scale cannot be defined until the note material is entered (see 3.6 "Defining Roots").

Example:
The scale name is:



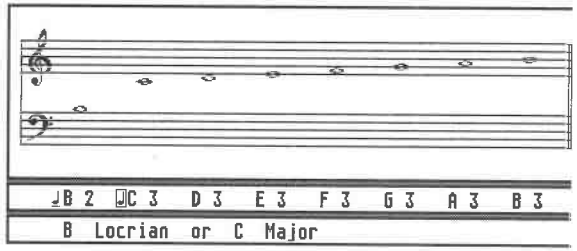
The final text output during exercises will be:



if "A" is the root and "G#" has been defined as the second note.

Example (defining a scale with two roots):
The scale name is:

The final text output during exercises will be:



if "C" is the root and "B" has been defined as the second (root) note.

3.3 Assigning Criteria

Up to ten different criteria can be assigned to each scale. A scale can fulfill several criteria, such as "simple", "consonant", "Classical Period" and "Pop", simultaneously.

Clicking one of the criterion fields executes the assignment. Selected criteria will be inverted (white on black). To cancel the assignment, click once again.

3.4 Entering Scale Notes

The scale entered into the library with the "New Scale" function should of course contain some "note material".

There are two ways to enter the notes of a new scale:

1. Entering the Notes via the MIDI Keyboard:

After you have clicked the small "Rec" switch or pressed the "asterisk" key ('*') of the numerical keypad, AURA will expect an entry via MIDI:

The scale notes can be entered via the MIDI keyboard (up to 14 notes).

The notes being played will be immediately displayed in the note information line.

Entered notes can be erased with the remote control function "Clear" by pressing the "MIDI Remote" note "F1" (*see Chapter 15: "MIDI REMOTE"*).

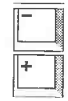
The complete entry can be erased with the 'Esc' key of the computer keyboard.

2. Entering the Notes via the Computer:

Clicking the "Insert Note" switch or pressing the 'Insert' key inserts a note. It will be positioned a major second above the previous note.

The desired pitch can be adjusted with the mouse in the note information line.

You can also use the '+/-' keys instead.

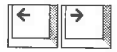


The interval information line at the lower screen margin displays the interval between the selected note and the root.

3.5 Erasing a Scale Note

Clicking the "Delete Note" switch or pressing the 'Delete' key erases specific notes.

The note to be erased can be selected with the mouse, the 'left/right' arrow switches or the cursor keys.



3.6 Defining Roots

3.6.1 First Root

AURA reproduces the scale notes in the order in which they have been entered.

Generally, AURA automatically defines the first note as being the root.

The root is marked by a small outlined note symbol in front of the note.

Each scale note can be defined as being the root no matter what its pitch is. Click the desired note while holding down the 'Shift' key.

You can use the keyboard command 'Shift B' instead.

AURA puts all scale notes - according to the selected root - into their harmonically correct context.

3.6.2 Defining the Second (Root) Note

In addition to the root, a second scale step can be marked as "supplementary" note.

The supplementary note can be easily distinguished from the actual root, since it is marked by a small underlined note symbol.

To define the second (root) note or an additional step mark, click the desired note while holding down the 'Alternate' key.

You can use the keyboard command 'Alternate B' instead.

If the actual root, which controls the enharmonization, is not contained in the scale, it can be hidden.

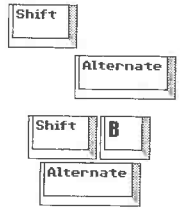
The "hidden" root will not be transmitted via MIDI and will be displayed in grey script.

When you click the desired note while holding down the 'Shift' and 'Alternate' keys, it will become a "hidden" root.

The corresponding key command is: 'Shift Alternate B'.

If "Octave Add", i.e. an additional doubling of the root in the bass register, is activated during scale exercises, the "hidden" root will be played in the bass register. Thus you can listen to the root <-> scale relationship.

3.6.3 "Hiding" a Root



3.7
Enharmonisation

Though AURA can automatically see the enharmonic function of scale notes from the root definition, it will sometimes be necessary to manually adjust the enharmonic function of specific notes later.

The keyboard command 'Shift H' allows enharmonisation in three steps.

Example:
Enharmonisation of the "C" note:

1st step: "C" is converted to "B#".
2nd step: "B#" is converted to "Dbb"
3rd step: "Dbb" is converted to "C" again

Typical example:
The phrygian scale
"E E# G A B C D E" is to be converted to
"E F G A B C D E".

Note: we recommend that you avoid the enharmonisation of the "G#" or "Ab" note, since the enharmonisation of this note can be executed only once. AURA considers the "G#" note twice, therefore the first enharmonisation from the single sharp to the double sharp will not be visible. This means, that the enharmonisation executed by the internal logic of the program will in this case remain "invisible" and will only become effective in a different "key" (where you perhaps do not expect it).

Hint: to execute the enharmonisation of the "G#" or "Ab" note, select a different "key" by altering the "First Note" parameter.

4.
Overview of Scale Library Functions

4.1
Quick Assignment of Criteria

Up to ten criteria can be assigned to each scale.

For a quick overview of the criteria assigned to the currently selected scale, ten small numbered fields are provided. The selected criteria will be inverted (white on black).

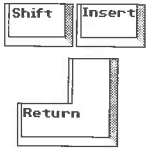
Clicking one of these fields assigns the criterion to the scale.

Hint: opening the "Criteria" menu quickly informs you about the definitions of fields 1-5 and A-E.

4.2
"New Scale"

After you have clicked the "New Scale" field or pressed ##'Shift Insert', an entry window opens in which you can exactly describe the scale to be entered.

Clicking the "OK" switch or pressing the 'Return' key inserts the scale entry into the library.



4.3. "Delete Scale"

Clicking the "Delete Scale" switch erases the selected scale.

You can use 'Shift Delete' instead.

A scale name can also be erased by directly "grabbing" it and dragging it to an area outside the scale list.

This command can be cancelled with "Undo".

4.4 "Rename Scale"

Clicking the "Rename Scale" switch opens an entry window in which you can change the name of a scale. The entry window can also be opened with a double-click.

You can use ' N' instead.

4.5 "Undo"

Clicking the "Undo" switch cancels the deletion, renaming or alteration of scale notes.

You can use 'Undo' instead.

4.6 "Rec"

After clicking the "Rec" switch you can enter a scale via the MIDI keyboard (see 3. "Entering A New Scale").

You can use '*' in the numerical keypad instead.

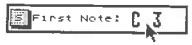
4.7 "Play"

When you click the "Play" switch with the left mouse button, the selected scale will be played back according to the default settings of the main page.

When you click the "Play" switch with the right mouse button, the play back of the scale will be stopped.

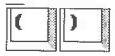
You can use the 'Zero' key or the 'Shift Zero' keys on the numerical keypad instead.

4.8 "First Note"



In the "First Note" field you can change the base note for the playback and representation of all scales in the list.

You can use the bracket keys '( )' on the numerical keypad instead.



4.9 "Insert Note"

Clicking the "Insert Note" switch inserts a note into the selected scale. The "new" note will be inserted after the currently selected note.

You can use 'Insert' instead.

4.10 "Delete Note"

Clicking the "Delete Note" switch erases the selected scale note.

You can use 'Delete' instead.

4.11
Copy Scales

A scale can be copied to (inserted) a different position in the scale list by directly "grabbing" the scale name and dragging it there.

Note: releasing the outline outside the scale list erases the scale.

5. Loading/Saving a Scale Library

5.1
Loading an (Additional) Library

The current library can be expanded or substituted by loading another scale library.

Selecting "Load Scales" in the "File" menu opens the file selector window.

All files with the extension "name.SCL" will be displayed.

The desired library can be selected here.

Clicking the "OK" switch loads the corresponding file.

You can then decide if the new library is to be appended to the existing one (Append) or if the current library is to be replaced (Replace).

5.2
Saving the Current Library

Clicking "Save Scales" in the "File" menu opens the file selector window. You can enter a file name consisting of up to 8 characters with the computer keyboard.

The program will automatically add an extension consisting of three characters. AURA adds the identification ".SCL" to scale libraries to distinguish them from other files.

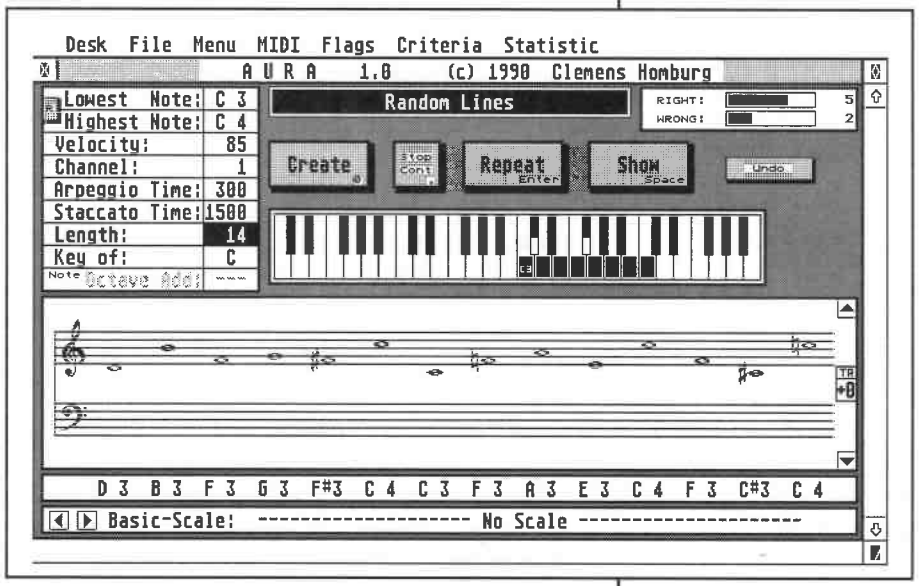
Clicking the "OK" switch saves the corresponding file.

If a file with the same name already exists in the current folder, AURA will expect you to confirm your decision prior to saving. You can stop the saving procedure with "Cancel".

When you select the "Replace" field, an existing file will be irreversibly overwritten! So take care in using this function.

5.3
Saving a Library to an AUTOLOAD File

The library named "AUTOLOAD.SCL" must be saved to the same folder on the same disk with which AURA is started. If the program can find a library named AUTOLOAD during start-up, it will be loaded automatically.



1. Basic Concept

The "Random Lines" function trains your ability to recognize random lines by "dictating melodies". AURA can set "atonal" and diatonic exercises.

The random generation of a line can be based on a scale contained in the library. This concept allows the ear-training of diatonic melodies in any key and improves your ability to recognize scale steps.

Clicking "Random Lines" in the "Menu" menu calls this main page.

2. Default Settings for Random Lines

2.1 The Parameter Field

In the parameter field, you can adjust various values which affect the creation and reproduction of random lines.

Included are e.g. "Lowest Note" and "Highest Note" (limiting the tonal range) or "Arpeggio Time" (reproduction speed).

For a detailed description see Chapter 4: "DEFAULT SETTINGS", 3. "Parameters".

2.2 Note Range (Lowest and Highest Note)

In contrast to chord and scale exercises the values entered for "Lowest Note" and "Highest Note" determine the actual note range for the creation of a line.

Example: if the settings are "C3" - "D3", AURA will create random lines which consist of the notes "C3", "C#3" and "D3".

2.3 Number of Notes (Length)

The "Length" parameter value determines the number of notes per line.

2.4 Setting the Key (Key)

The "Key of:" parameter is used for setting the key. The succession of keys corresponds to the circle of fifths (from "Ab" to "C#").

The selected line will be displayed in any key with the correct enharmonisation.

Example: notes of the "C major" key can be displayed with accidentals of "F# major".

2.5 Creating Random Melodies from Scales (Basic Scale)

The random generation of a line can be based on a scale contained in the library.

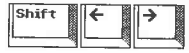
This concept allows the ear-training of diatonic melodies in any key and improves your ability to recognize scale steps.

In the line on the lower screen margin, any scale from the library can be selected with "Basic Scale".

You can scroll the entries of the scale library back and forth with the small "arrow" switches.

If you select the smallest setting, the exercise will not be based on a scale.

You can use 'Shift Cursor' instead.



The random lines will be based on the selected key (Key of:) and on the notes of the selected scale.

Examples:
The combination of "Key of: C" and any major scale creates a diatonic sequence in C major.

The combination of "Key of: D" and any minor scale creates a diatonic sequence in D minor.

3. Completing a Random Line Exercise

The first note of the set line will be displayed in the lower left corner of the screen.

There are two ways to do a random line exercise:

1. Entering the answer via the MIDI keyboard

2. Entering the answer via the screen keyboard

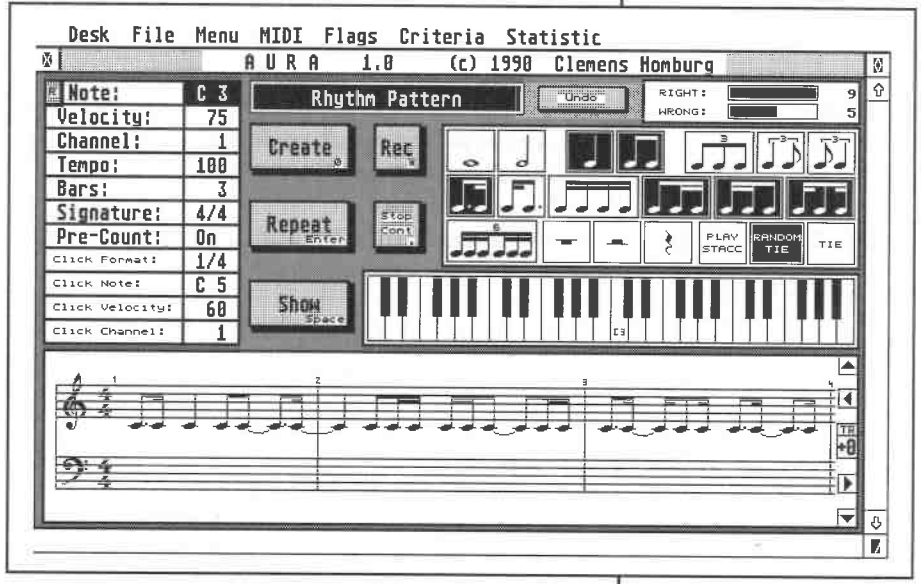
When you enter the answer, different evaluation criteria, such as "Absolute", "Relative" etc., are available.

For a detailed description of these criteria see Chapter 3: "GENERAL OPERATION", 3. "Identification via MIDI".

4. Automatic Setting of New Random Line Exercises (AutoRepeat/Create)

After the solution of a random line exercise, AURA will play the next random line automatically if "Auto Repeat/Create" in the "Flags" menu is checked.

If you have made a mistake, the random line will be repeated.



1. Basic Concept

This part of our educational program deals with the recognition and reproduction of rhythm exercises. Their length is variable, as patterns can be combined in many interesting ways.

AURA supports the training of rhythmical abilities in an entertaining way. The degrees of difficulty are variable.

Clicking "Rhythm Pattern" in the "Menu" menu recalls the main page for rhythm exercises.

2. Default Settings for Rhythm Exercises

2.1 Setting the Note for the MIDI Output (Note)

R	Note:	C 3
	Velocity:	75
	Channel:	1

The note set under "Note" will be used for the MIDI Output of rhythm exercises. The velocity and MIDI Channel of this "playback" note can be adjusted under "Velocity" and "Channel" respectively.

All alterations of the "Note", "Velocity" and "Channel" parameters can be directly monitored via MIDI.

After you have clicked the small "R" field (keyboard command 'R') to the left of "Note", the desired MIDI note can be directly entered via the MIDI keyboard or the screen keyboard.

Note: we recommend the use of a drum computer or multitimbral sound source with built-in drum sounds for rhythm exercises. The desired percussion instrument can normally be selected with the pitch set under "Note" (MIDI note number).

2.2 Setting the Metronome (Click)

Click Format:	1/4
Click Note:	C 5
Click Velocity:	60
Click Channel:	1

In addition to the "Play" note another MIDI note can be selected for the metronome. Thus the "Play" note and the "Metronome" note can control two different sounds (and two different sound sources).

We recommend that you use a percussive sound for the metronome as well, e.g. cow bell, clave etc.

The pitch of the MIDI note for the metronome can be set with the "Click Note" parameter.

The velocity of the metronome note is set with the "Click Velocity" parameter.

The MIDI Output Channel of the metronome note is set with the "Click Channel" parameter.

The note value of the metronome click can be set with the "Click Format" parameter (1/2 note, 1/4 note, 1/8 note).

The "smallest" setting ("Off") disables the metronome.

The metronome output via the ATARI monitor speaker can be switched on/off with "ATARI Click" in the "Flags" menu.

2.3 Setting the Tempo (Tempo)

The value set under "Tempo" determines the tempo of a rhythm exercise in beats per minute.

Tempo:	100

The tempo can also be changed during playback.

2.4 The Exercise Format

Bars:	1
Signature:	4/4

2.4.1 Number of Bars (Bars)

The number of bars for a rhythm exercise is set with the "Bars" parameter.

Rhythm Pattern

2.4.2 Time Signature (Signature)

The meter for a rhythm exercise is set with the "Signature" parameter.

You can choose between 2/4, 3/4, 4/4 or 5/4 time.

2.5 Pre-Count

The pre-count can be switched on/off with the "Pre-Count" parameter.

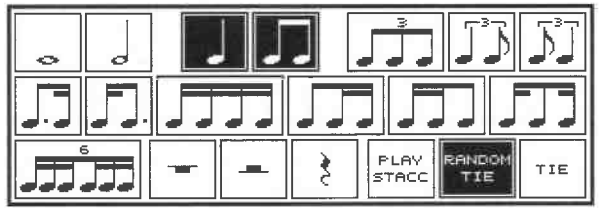
When "Pre-Count" is enabled ("On"), AURA will count you in. The length of the pre-count depends on the meter selected under "Signature".

3. Creating a Rhythm Exercise

3.1 Selecting Rhythm Patterns

AURA creates interesting rhythm exercises by randomly combining metric patterns.

The window on the right side of the screen displays various rhythm patterns.

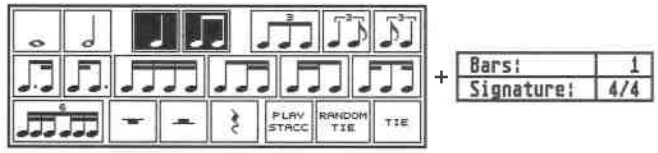


These rhythm patterns are the essential parts. The rhythm patterns created by AURA are based on different combinations of these essential parts which can contain note values and rest values.

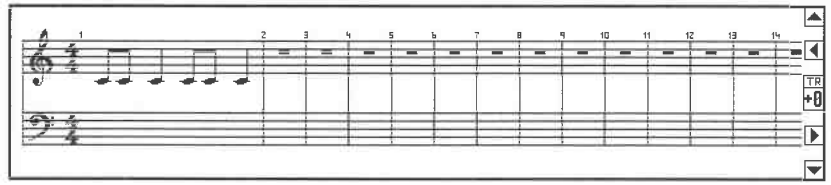
Clicking the desired rhythm patterns selects them. Selected patterns will be inverted (white on black).

Example (1):
An exercise consists of the random succession of quarter and eight notes. Its length is one bar in 4/4 time.

Go to the pattern window, select the displayed quarter and eighth note symbols, set the "Bars" parameter to "1" and the "Signature" parameter to "4/4".



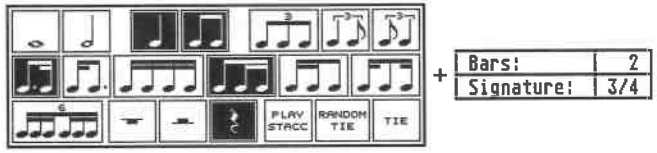
The possible result:



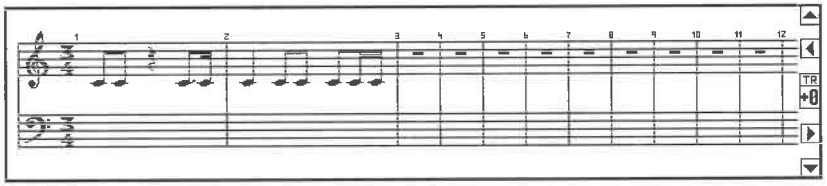
Example (2):

An exercise consists of the random succession of quarter, eight, sixteenth notes and quarter rests. Its length is two bars in 3/4 time.

Select the patterns according to the following illustration, set the "Bars" parameter to "2" and the "Signature" parameter to "3/4".



The possible result:



3.2 Tying Rhythm Patterns

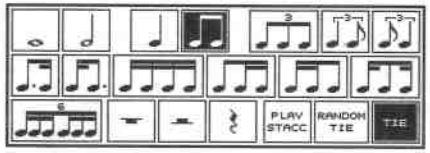
Syncopated exercises can be created by tying rhythm patterns.

"Fixed" or random ties can be selected.

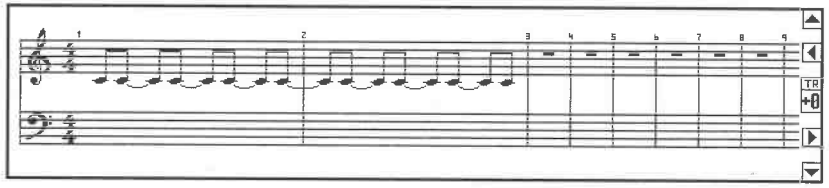
3.2.1 Fixed Ties

When the "Tie" field is selected, AURA will tie the last note of a pattern to the first note of the following pattern.

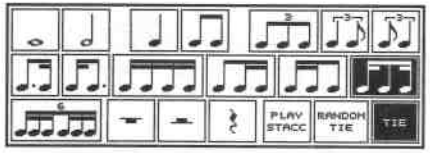
Example (1):
The exercise shall consist of a succession of tied eighth notes.



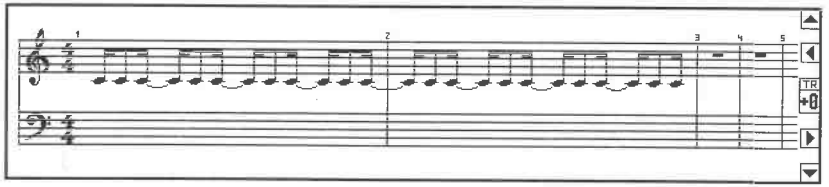
The result:



Example (2):
The exercise shall consist of a succession of syncopated sixteenth notes.



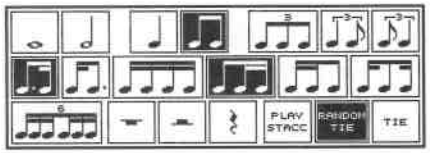
The result:



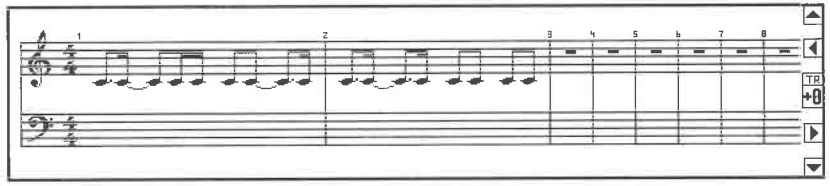
3.2.2
Random Ties

When the "Random Tie" field in the pattern window is selected, the patterns will be tied randomly.

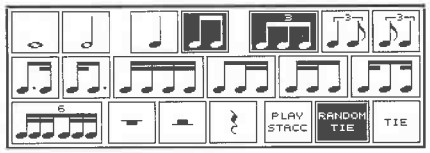
Example (1):
The exercise consists of a succession of eighth and sixteenth note patterns with random ties.



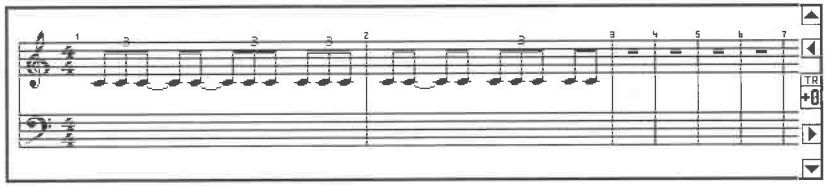
The possible result:



Example (2):
The exercise consists of a succession of eighth and eighth note triplet patterns with random ties.



The possible result:



When "Play Stacc" is selected, AURA will shorten the notes to half of their values for MIDI transmission.

3.3
Play Staccato

For the clear distinction of notes which follow each other in a rapid succession, their audible length must be shortened. This holds especially true if synthesizer sounds are used.

Note: when a drum computer is used, the length of MIDI notes is normally irrelevant.

4. Completing Rhythm Exercises

The exercise is completed by playing it correctly.

You can use a MIDI keyboard, a MIDI drum computer or the 'Tab' key of the computer keyboard.

As soon as you play the first note, AURA will switch to "REC" mode and start the metronome.

There are two ways to start recording:

- Select "Any Note Starts REC" in the "Flags" menu to switch to "record" mode as soon as you hit a note.
- Press the remote control note "D#1" first to switch to "record" mode.

When you switch to "record" mode the screen will be inverted (white on black).

Note: "Invert Screen REC" in the "Flags" menu switches the inversion of the screen during "recording" on/off.

4.1 Doing the Exercise with an Additional Pre-count

When the metronome pre-count is enabled, you must wait until the end of the pre-count before you can start playing the exercise. If you start earlier, AURA will assess an otherwise correct answer as being incorrect.

As usual, "recording" can also be started by clicking the "REC" switch or pressing the asterisk key ('*') of the numerical keypad.

4.2 Doing the Exercise without a Pre-count

If the pre-count is switched off, you can immediately start playing the exercise.

Important notice! If the pre-count is switched off, you must observe the following rule: if the exercise to be played starts with a rest on the first beat, you must nevertheless play a note on the first beat to start the recording. In this case the note played first will be "muted".

4.3 "Play" Note on any Key

When "MIDI Thru" in the "MIDI" menu is enabled, you can use any key on the MIDI keyboard to transmit the "play" note.

Example: if you use the snare drum sound of a drum computer for the exercises, it can be played with all keys of the MIDI keyboard. When synthesizer sounds are used, the pitch stays the same for all keys.

If you play, say, a fast exercise with both hands or several fingers on different keys of the MIDI keyboard, the same note/instrument will be heard whichever key you press.

5. Automatic Setting of New Exercises (Auto Repeat/Create)

After the solution of an exercise, AURA will play the next exercise automatically if "Auto Repeat/Create" in the "Flags" menu is checked.

If you have made a mistake, the rhythm exercise will be repeated.

With "Auto Repeat/Create" enabled, you need not manually select the "Create" or "Repeat" functions or operate them by remote control via the MIDI keyboard.

The length of the break between your correct answer and the setting of a new exercise depends on the selected meter and tempo.

Example: if the meter is 4/4 time and the tempo is "100" beats per minute, AURA will wait for 4 quarter notes at tempo 100 and play the next rhythm exercise.

Four degrees of difficulty can be selected for playing the rhythm exercise. These degrees evaluate the rhythmic precision of your playing.

A degree of difficulty can be selected with "Quantize Level 1-4" in the "Flags" menu.

"Level 1" allows inaccuracies of "+/-" a sixteenth note. The limit of tolerance is one eighth note. This is the "lowest" degree of difficulty.

"Level 2" —> "+/-" 1/24, the limit of tolerance is 1/8 triplet.

"Level 3" —> "+/-" 1/48, the limit of tolerance is 1/16 triplet.

"Level 4" —> "+/-" 1/96, the limit of tolerance is 1/32 triplet. This is the "highest" degree.

After giving the "right" answer you may still play the same exercise as often as you please. Thus you can train your rhythmic abilities by continuously increasing the "Quantize Level" settings, i.e. by raising the degree of difficulty.

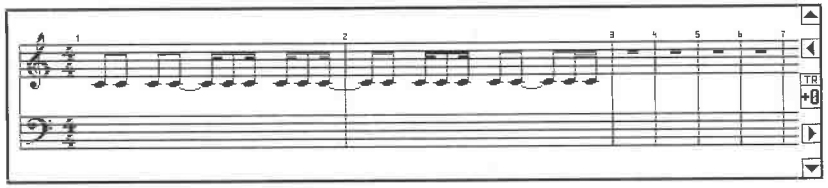
This way AURA functions as your "rhythm-trainer". By setting a "fixed" rhythm of several bars (select a pattern without "Random Tie") you can test your rhythmic precision by playing the exercise over and over again. The degree of difficulty also depends on the selected tempo, of course.

6. Degrees of Difficulty (Quantize Level 1-4)

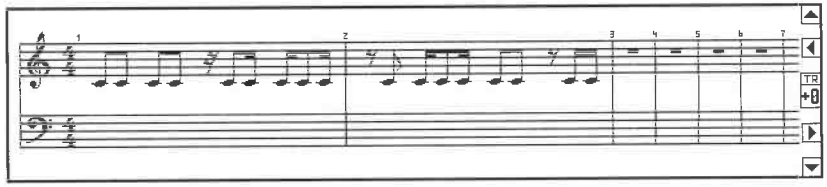
7. Note Display

There are two ways to display a rhythm exercise on the stave:

1. The ties created with the "Tie" and "Random Tie" functions will be displayed as ties.

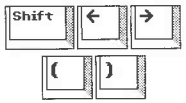


2. The ties created with the "Tie" and "Random Tie" functions will be displayed as rests.



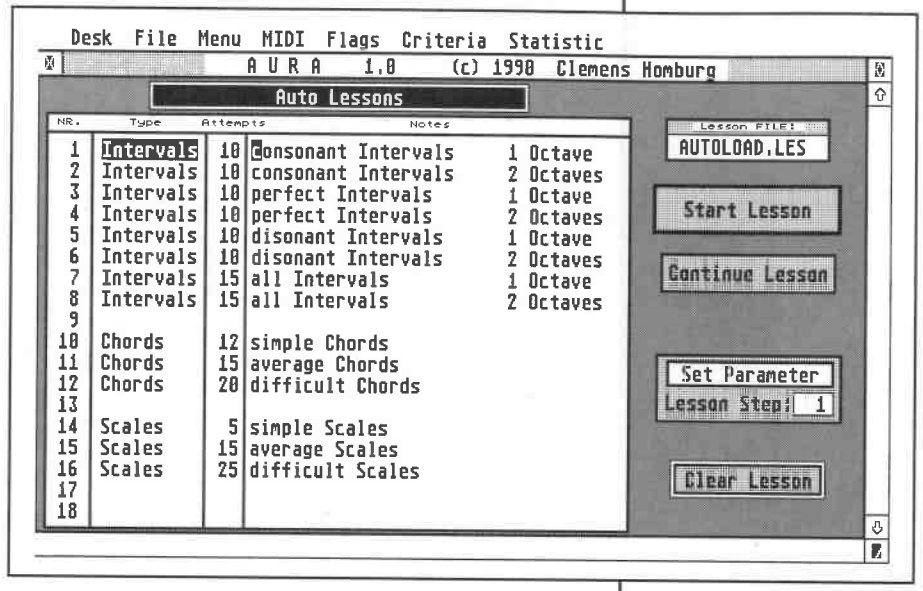
"Show Result as Ties" or "Show Result as Rests" in the "Flags" menu selects the desired option.

If the exercises are pretty long, AURA cannot simultaneously display all notes on the screen. You can scroll backwards or forwards bar-by-bar with the left/right arrows (on the right side of the stave). The current bar number will be displayed above the bar line.



You can also use 'Shift Cursor' or the bracket keys '( )' in the numerical keypad.

The meter of a rhythm exercise displayed on the stave can also be changed later with the "Signature" function.



1. Basic Concept

In an "Auto Lesson", all kinds of exercises can be combined in any succession. After you have started an "Auto Lesson", the exercises contained therein will be set by AURA one after another automatically.

An automatic lesson consists of consecutive steps, and different exercise sections (intervals, chords, scales, random lines or rhythm exercises) can be assigned to each step.

The settings and the choice of criteria for the respective exercise sections will be saved separately for each step of a lesson.

A lesson can, for example, contain the following exercises:

- 5 interval exercises with thirds and sixths
- 3 interval exercises with fifths and fourths
- 6 interval exercises with all intervals within an octave

followed by:

- 5 exercises with simple chords from the "Classical Period"
- 5 exercises with chords of medium difficulty from "Pop"

which could be followed by melody dictations and rhythm exercises.

All the steps of a lesson are automatically played one after another. If you have made a mistake, the exercise will be repeated.

At the end of a lesson the statistic window displays the number of set exercises and the number of correct and incorrect answers.

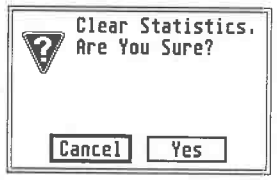
This allows a sort of "multi-discipline" learning situation in the form of an "automatic exam".

The AURA program disk contains a file named "AUTOLOAD.LES". This lesson is already loaded and can be used as an example in the following Chapter.

To start a lesson you must first call the "Auto Lesson's" main page by clicking "Auto Lessons" in the "Menu" menu.

Clicking the "Start Lesson" switch starts a lesson.

Before the start AURA will ask you whether the existing statistic shall be erased or not.



Clicking the "OK" switch sets the statistic to "zero" to allow the objective evaluation of the new lesson. Please note that only the statistics of the training areas contained in the respective lesson will be erased.

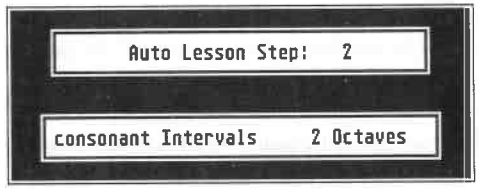
Example: if a lesson contains only interval and scale exercises, only the statistics of interval and scale exercises will be set to "zero". To erase the complete statistic use "Clear Statistics" in the "Statistic" menu.

Clicking the "Cancel" switch adds the evaluation of the new lesson to the already existing evaluations.

AURA will then go to one of the program's main pages and start the lesson.

2. Starting the Lesson (Start Lesson)

To distinguish a lesson from a "normal" exercise the text information: "Lesson Step xx" will be displayed next to the menu panel.



Depending on the number and nature of the lesson steps, AURA will automatically take you to the next exercise after the correct answer has been given.

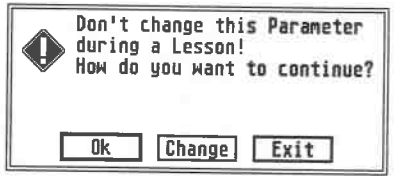
You can also start a lesson at any step. In this case you must first click the desired step on the "Auto Lessons" main page and then click the "Continue Lesson" switch (*see Section 4.5 "EXAMPLE: Defining the Step of a Lesson"*).

3. Altering Settings during a Lesson

Each lesson step has its own parameter settings, such as "Lowest Note" and "Highest Note".

These default settings, which determine a lesson's degree of difficulty amongst other things, should not be altered during a lesson.

If you do alter the settings, a dialog window will appear:



The following options are available:

"OK" - do not alter value, continue lesson
"Change" - alter value, continue lesson
"Exit" - quit lesson

4. Creating a New Lesson

Click "Auto Lesson" in the "Menu" menu to call the "Auto Lesson's" main page. A lesson consisting of 18 steps can be prepared here.

NR.	Type	Attempts	Notes
1	Rdom-Line	2	C3 - D3 (Major Scale)
2	Rdom-Line	2	C3 - E3 (Major Scale)
3	Rdom-Line	2	C3 - G3 (Major Scale)
4	Rdom-Line	2	C3 - C4 (Minor Scale)
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

In each line the kind of exercise, the number of exercises and the "name" of the lesson step must be entered.

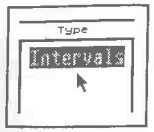
When you want to start a lesson from scratch, existing entries can be completely erased by clicking the "Clear Lesson" switch. If you want to save an existing lesson to disk before you erase it, please refer to section 6. "Saving a Lesson".

Lines 1-18 in the "Type" column are provided for the selection of the exercise type.

Intervals, chords, scales, random lines and rhythm patterns can be selected.

The names of the exercise types are displayed in "grey" script at first, since no values have yet been entered into the respective main page of the exercise type.

4.1 Selecting the Exercise Type (Type)



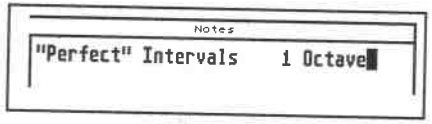
The "Attempts" column determines the number of single exercises of a specific exercise type.

Example: if "Chords" is entered into the "Type" column and "7" is entered into the "Attempts" column, this lesson step will consist of seven chord exercises.

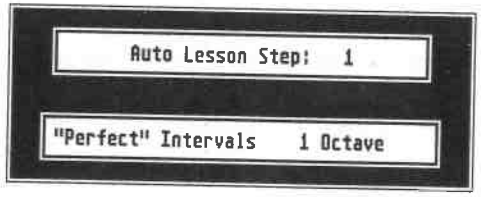
4.2 Number of Attempts (Attempts)

Each lesson step can be described with a comment or "title" of your choice.

4.3 Note Line



After the lesson has been started, the entered descriptions will be displayed before the next lesson step on the screen.



4.4 Setting Parameters (Set Parameter)

On the main page of each exercise type, the desired settings must be assigned to each step. The settings on the main page will then be saved as part of the lesson step.

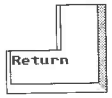
Select the desired lesson step by directly clicking the corresponding line or by adjusting the "step number" 1-18 in the "Lesson Step" field.

Afterwards, click "Set Parameter" to recall the main page of the exercise type set under "Type". Here you can experiment at length with all settings and select the suitable criteria.

In the upper righthand corner below the menu bar, the "edit" status is marked by "Set Parameter —> Auto Lesson".

Note: if you switch to another exercise type (e.g. from "Intervals" to "Chords"), default settings will not become effective for the new lesson step.

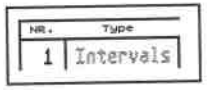
To assign these default settings to the lesson step, the "Auto Lessons" main page must be recalled.



To do so, click the blinking "—> Auto Lessons" field (in the upper righthand corner) or press the 'Return' key.

The entries required for the current lesson step are completed.

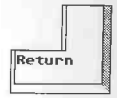
Important Notice: a lesson step will only be activated after all parameters have been entered. The grey script in the "Type" column will turn black. If the entries for a lesson step are incomplete (grey script), an error message will be displayed if you start this lesson.



A lesson step contains 6 exercises with consonant intervals, all based on the same note (C3).

Operational Steps:

- Call up the "Auto Lesson" main page in the "Menu" menu.
- Enter "Intervals" into an empty line of the "Type" column. (The characters are still displayed in "grey" script.)
- Enter "6" into the "Attempts" column.
- Enter "Consonant Intervals" into the text line.
- Click the light "Set Parameter" switch. AURA calls up the main page for interval exercises.
- Select the lines ">Sixth", "<Sixth", ">Third" and "<Third" under "Available Intervals". All other entries must be disabled, i.e. in "grey" script.
- Enter "1" into the "Octave Range" field.
- Set "C3" for "Lowest Note" and "Highest Note" in the parameter field.
- Set "Up" for "Up or Down:".
- Press 'Return'. AURA returns to the "Auto Lessons" main page. The script in the "Type" column has turned "black", the entry procedure is completed.



4.5 Example: Defining a Lesson Step

Re-Examining the Entry:

- Click the "Continue Lesson" switch. A dialog box will appear, asking, if the existing statistic is to be erased ("Clear Statistics?").

- Clicking the "OK" switch starts the lesson at the lesson step just created.

- AURA goes to the "Intervals" main page. An information window appears which displays the number of the lesson step, and the description "Consonant Intervals" entered previously.

- The six ear-training exercises follow one after another automatically. After they have been completed correctly, AURA will start the next lesson step, if another entry exists.

- If no other entry exists, the lesson is completed and the "Statistics" window will open.

4.6 Overview of Default Settings

Here is an overview of the settings, which can/must be entered for each lesson step.

Exercise Type "Intervals":

in the "Parameter" field
- "Lowest Note" and "Highest Note"
- "Arpeggio Time"
- "Staccato Time"
- "Up or Down"
- "Vel. Add"

in the "Available Intervals" field
- the intervals available
- "Octave Range"

in the "Flags" menu
- "Random Function"

Exercise Type "Chords"

in the "Parameter" field
- "Lowest Note" and "Highest Note"
- "Arpeggio Time"
- "Staccato Time"
- "Up or Down"
- "Vel. Add"
- "Octave Add"

in the "Criteria" menu
- "Criteria 1-5 / A-E"
- "Switch Criteria"
- "Invert Criteria"
- "Merge Criteria"

Exercise Type "Scales":

in the "Parameter" field
- "Lowest Note" and "Highest Note"
- "Arpeggio Time"
- "Staccato Time"
- "Up or Down"
- "Vel. Add"
- "Octave Add"

in the "Criteria" menu
- "Criteria 1-5 / A-E"
- "Switch Criteria"
- "Invert Criteria"
- "Merge Criteria"

Exercise Type "Random Lines":

in the "Parameter" field
- "Lowest Note" and "Highest Note"
- "Arpeggio Time"
- "Staccato Time"
- "Length"
- "Key of:"

"Basic Scale"
- the scale assigned

Exercise Type "Rhythm Pattern":

in the "Parameter" field
- "Tempo"
- "Bars"
- "Signature"

in the "Pattern" window
- "the selected patterns"
- "Play Stacc"
- "Random Tie"
- "Tie"

in the "Flags" menu
- "Quantize Level 1-4"

5. Loading a Lesson (Load Lesson)

After you have selected "Load Lessons" in the "File" menu, the file selector window will open. All files with the extension "name.LES" will be displayed. Select the desired lesson here.

After you have confirmed your choice by clicking the "OK" switch, the lesson will be loaded.

The chord and scale libraries of the same name as well as the criteria descriptions will also be loaded automatically.

If AURA can find an "AUTOLOAD.LES" file during program start, this AUTOLOAD lesson will be automatically available after the program has been started.

6. Saving a Lesson (Save Lesson)

After you have clicked "Save Lesson" in the "File" menu, the file selector window will open, in which a file name consisting of up to 8 characters can be entered with the computer keyboard.

An "extension" consisting of three characters will be automatically added by the program. AURA uses the identification "name.LES" for lessons to distinguish the file from other types of file.

Clicking "OK" saves the corresponding file.

If a file with the same name already exists in the current folder, AURA will expect you to confirm your decision prior to saving. You can cancel the saving procedure with "Cancel".

If you select the "Replace" field, an existing file will be irreversibly overwritten! So take care in using this function.

The criteria descriptions and the current chord and scale libraries in memory will automatically be saved with the lesson under the same file name but with different extensions.

7. Saving a Lesson to an AUTOLOAD File

The lesson named "AUTOLOAD.LES" must be saved to the AURA program disk (hard disk users: same partition/folder as AURA). If the program can find a lesson named AUTOLOAD during start-up, it will be loaded automatically.

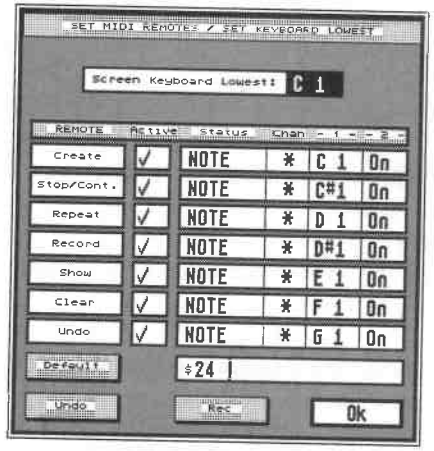
1. Basic Concept

The facility to operate important functions by remote control via a MIDI keyboard makes working with AURA much easier. It avoids the simultaneous operation of computer and MIDI keyboard and improves the communication between the user and AURA.

Clicking "MIDI Remote" in the "MIDI" menu switches this function on/off.

2. Custom Remote Control Settings

Clicking "MIDI Remote Definition" in the "MIDI" menu opens a window, in which you can define the MIDI messages that will trigger the remote control functions.



On the lefthand side of the window, the functions which can be accessed by remote control are displayed.

- **Create**
- **Stop**
- **Repeat**
- **Record**
- **Show**
- **Clear**
- **Undo**

In the "Active" column, these functions can also be excluded from remote control. In this case the function must be "unchecked".

A complete MIDI event consisting of four values must be entered into the next four columns:

1. **"Status"** determines the nature of the MIDI message (e.g. note or pedal etc.)

2. **"Chan"** determines the MIDI receive Channel.

3. **"-1-"** is the first data value. It determines e.g. the pitch of notes.

4. **"-2-"** is the second data value. It determines e.g. the velocity of notes.

In the "Status" column, three different event types can be selected. Remote control can be operated by playing a note, by pressing a program select button or by using a controller (sustain pedal etc.).

"Chan" (Channel) defines the MIDI Channel. If an asterisk (*) is entered here, the MIDI receive Channel is irrelevant, ie a MIDI message will be received and evaluated no matter what its "address" is.

If more than one keyboard is used, defining the MIDI Channel determines the keyboard which controls AURA.

The first and second data values are set under "-1-" and "-2-". Their effect depends on the selected status:

1. STATUS "Note": the first data value determines the pitch, the second data value determines the velocity of the note.

2. STATUS "Program": the first data value determines the number of the program select switch, the second data value is irrelevant.

3. STATUS "Control": the first data value determines the controller (e.g. sustain pedal or any switch). The info line informs you about preset controller numbers (e.g. sustain = 64).
   The second data value determines the position of the controller.

2.1 Convenient "Recording" of "Remote Control" Messages

The "status" ("ON" or "OFF") of notes and controllers to which AURA will respond is set under "-2-".

"ON" means: AURA will respond after a key has been pressed or a controller has been switched on.

"OFF" means: AURA will respond after a key has been released or a controller has been switched off.

If an asterisk has been entered, AURA will respond to both possibilities.

The "Rec" function allows the direct recording of the desired MIDI message.

Operation:

- Click the desired line before the recording.
- Clicking the "Rec" switch or pressing the asterisk key ('*') in the numerical keypad puts AURA into a waiting state. The mouse pointer is transformed into the well-known "busy bee".

- Now the desired key, program select button or controller on the MIDI keyboard must be operated.
- The received MIDI message will be entered into the selected line. The cursor will shift to the next line.

- Pressing a mouse key or any key on the computer keyboard cancels the recording.

Note: if AURA does not receive any MIDI data, check the MIDI connections between keyboard and computer. It is also possible that the MIDI keyboard cannot transmit the desired message via MIDI.

The settings can be saved (together with all other default settings of the program) by clicking "Save Settings" in the "File" menu.

3. Saving Remote Definitions

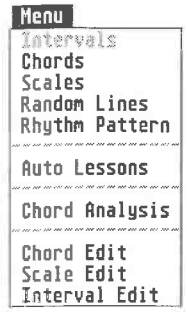
4. Setting the Octave Position of the Screen Keyboard

The "Screen Keyboard Lowest" field displays the lowest note of the screen keyboard. The lowest note can be changed in octave steps.

APPENDIX

1. Overview of Menu Functions

1.1 The "Menu" Heading



All screen pages of AURA can be selected under the "Menu" heading.

Intervals - Interval exercises
Chords - Chord exercises
Scales - Scale exercises
Random Lines - Random Lines (atonal ear-training)
Rhythm Pattern - Rhythm exercises/rhythm training

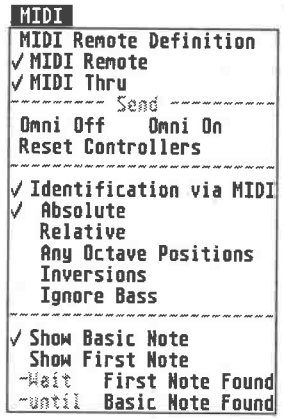
Auto Lessons - Automatic succession of various exercise types

Chord Analysis - Analysis of various chord structures

Chord Edit - Creating and altering chord libraries
Scale Edit - Creating and altering scale libraries
Interval Edit - Altering interval names

Note: depending on the selected screen page, only those menu items will be displayed whose functions fit into the current context. Menu items in grey script cannot be selected.

1.2
The "MIDI" Heading



MIDI Remote Definition
determines which MIDI messages trigger the remote control of important functions.

MIDI Remote
Switches the remote control on/off.

MIDI Thru
When activated, all MIDI messages received at the ATARI's MIDI In port are routed to the MIDI Out port.

Omni Off/On
Clicking these menu options transmits "Omni On" and "Omni Off" commands on all MIDI Channels. If up-to-date sound sources are used, you will not normally need to use these functions.

Reset Controller
Sets all important playing aids (e.g. sustain or pitch wheel) of a keyboard/expander to their "musical zero position". Undesired sustaining notes will be switched off. You can also use the 'Help' key instead.

Identification via MIDI
When activated, all exercises can also be completed via the MIDI keyboard.

The following menu items also apply to the screen keyboard.

Evaluation criteria for answers entered via the keyboard:

Absolute
a completely identical answer

Relative
the right structure

Any Octave Positions
an answer in any octave

Inversions
any inversion is accepted

Ignore Bass
the doubling of the root in the bass register will be ignored

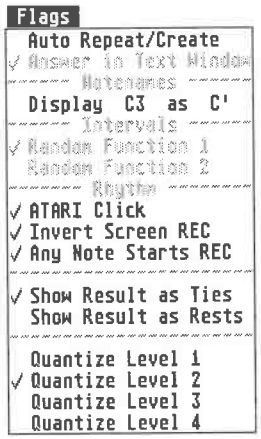
Show Basic Note
when activated, the root will always be displayed

Show First Note
when activated, the note sounding first will always be displayed

Wait-until First Note Found
all notes of the answer will be "ignored" until the first note of the exercise is played

Wait-until Basic Note Found
all notes of the answer will be "ignored" until the root of the exercise is played

1.3.
The "Flags" Heading



Auto Repeat/Create
after the right "answer" has been given, the next exercise will be played automatically. If you have made a mistake, the exercise will be repeated automatically.

Answer in Text Window
switches the text window for answers on/off.

Display C3 as C'
for the text-related representation of the octave position of notes, the divisions of the classical period instead of the MIDI nomenclature can be selected.

Random Function 1
creates a random base note within the note range set with "Lowest Note" and "Highest Note". An available interval will be built upon this base note.

Random Function 2
creates intervals within the given note range set with "Lowest Note" and "Highest Note".

ATARI Click
when activated, the metronome can also be heard through the ATARI monitor during rhythm exercises.

Invert Screen REC
during your "recording" of a rhythm exercise, the screen will be inverted (white on black).

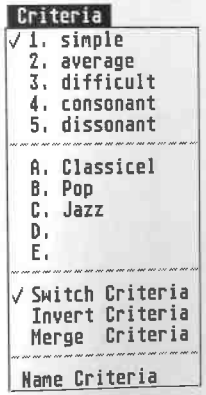
Any Note starts REC
any note (except for "remote control" notes) played on the MIDI keyboard starts your "recording" of a rhythm pattern.

Show Result as Ties
the syncopated rhythm patterns will be displayed with ties.

Show Result as Rests
the syncopated rhythm patterns will be displayed with rests.

Quantize Level 1- 4
four degrees of difficulty for the training of rhythmic precision during the "recording" of a rhythm exercise.

1.4
The "Criteria" Heading



1. - 5. / A. - E.
chords or scales that fulfill the assigned criteria are selected in the libraries.

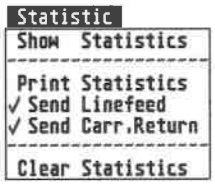
Switch Criteria
when disabled, different criteria can be combined.

Merge Criteria
when activated, criteria can be linked.

Invert Criteria
when activated, the effect of the selected criteria is inverted.

Name Criteria
clicking this menu option opens a window, in which all ten criteria can be renamed as you please.

1.5
The "Statistic" Heading



Show Statistics
a detailed and complete overview (statistic) of all exercises will be displayed in this window.

Print Statistics
the complete statistic is printed as text. A special printer adaptation is not needed, since all characters adhere to the ASCII standard. The two control values, which can be switched on/off are:

Send Linefeed
at the end of the line a line feed command is transmitted. Since some printers do not need a separate line feed command, switch this item off if necessary.

Send Carr.Return
at the end of the line a carriage return command is transmitted.

Clear Statistics
the complete statistic of all exercises will be erased.

Load Lesson
loads a new lesson

Save Lesson
saves the current lesson

Load Chords
loads an (additional) chord library

Save Chords
saves the current chord library

Load Scales
loads an (additional) scale library

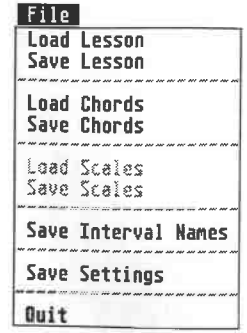
Save Scales
saves the current scale library

Save Interval Names
saves interval names

Save Settings
saves all default settings

Quit
quits the program

1.6
The "File" Heading



2. General Keyboard Layout

Numerical Keypad

'0' (zero)	- Create
'Enter'	- Repeat
'.'	- Stop/Continue
'*'	- Record
'+'/'-'	- alters values
'(' ')'	- "Octave Range" for intervals
'(' ')'	- alters base note (Chord Edit/Scale Edit)

Cursor Keypad

Cursor Keys	
'Undo'	- cancels the last command
'Help'	- Reset Controller
'Insert'	- inserts note (Chord Edit/Scale Edit)
'Delete'	- erases note (Chord Edit/Scale Edit)

Alphanumerical Keyboard

'Space'	- shows result
'Esc'	- erases MIDI entry (Clear)
'T' (Shift)	- transposes note display
'R'	- Lowest Note and Highest Note
'E'	- calls Chord Edit/Scale Edit
'N'	- rename (Chord Edit/Scale Edit)
'Shift H'	- enharmonisation (Chord Edit/Scale Edit)
'Shift B'	- sets root (Chord Edit/Scale Edit)
'Alt. B'	- sets second root (Chord Edit/Scale Edit)
'Shift Alt B'	- "hides" root (Chord Edit/Scale Edit)
'I'	- program info
'Alt. L'	- loading
'Alt. S'	- saving
'Alt. Q'	- quit
'Alt. M'	- swap mouse