

# CODEX PÆRNVENSIS

LIBER EXERCITIORUM AD MVSICAM MICROTONALEM

VOL. I

COMPOSIT HANS-GUNTER LOCK

A.D. MMXXI

SOCIETAS ARNOLD SCHOENBERG ESTONICA

# 22-EDO Scales for Sevish's Scale Workshop Synthesizer

## 22-EDO chromatic

<https://sevish.com/scaleworkshop/?name=22%20equal%20divisions%20of%202%2F1&data=54.54545454545455%0A109.0909090909091%0A163.63636363636363%0A218.1818181818182%0A272.72727272727275%0A327.27272727272725%0A381.8181818181818%0A436.3636363636364%0A490.90909090909093%0A545.4545454545455%0A600.%0A654.5454545454545%0A709.0909090909091%0A763.6363636363636%0A818.1818181818182%0A872.7272727272727%0A927.2727272727273%0A981.8181818181819%0A1036.3636363636365%0A1090.909090909091%0A1145.4545454545455%0A1200.&freq=261.625565&midi=60&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=triangle&ampenv=organ>

## D-Superpyth[7] 4414441 (major)

<https://sevish.com/scaleworkshop/?name=Superpyth%5B7%5D%20major%20mode&data=218.1818181818182%0A436.3636363636364%0A490.90909090909093%0A709.0909090909091%0A927.2727272727273%0A1145.4545454545455%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=triangle&ampenv=organ>

## D-Superpyth[7] 4144414 (dorian)

<https://sevish.com/scaleworkshop/?name=Superpyth%5B7%5D%20dorian%20mode&data=218.1818181818182%0A272.72727272727275%0A490.90909090909093%0A709.0909090909091%0A927.2727272727273%0A981.8181818181819%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=triangle&ampenv=organ>

## D-Superpyth[7] 4144414 (phrygian)

<https://sevish.com/scaleworkshop/?name=Superpyth%5B7%5D%20phrygian%20mode&data=54.54545454545455%0A272.72727272727275%0A490.90909090909093%0A709.0909090909091%0A763.6363636363636%0A981.8181818181819%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=triangle&ampenv=organ>

### **D-Pajara[10] 22322 22322**

<https://sevish.com/scaleworkshop/?name=D-Pajara%5B10%5D%2022322%2022322&data=109.0909090909091%0A218.1818181818182%0A381.8181818181818%0A490.909090909093%0A600.%0A709.09090909091%0A818.1818181818182%0A981.8181818181819%0A1090.9090909091%0A1200.%0A&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=triangle&ampenv=organ>

### **D-Porcupine[7] 3433333**

<https://sevish.com/scaleworkshop/?name=Porcupine%5B7%5D%203433333&data=163.63636363636363%0A381.8181818181818%0A545.4545454545455%0A709.0909090909091%0A872.7272727272727%0A1036.3636363636365%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=triangle&ampenv=organ>

### **D-Porcupine[7] 3343333**

<https://sevish.com/scaleworkshop/?name=Porcupine%5B7%5D%203343333&data=163.63636363636363%0A327.27272727272725%0A545.4545454545455%0A709.0909090909091%0A872.7272727272727%0A1036.3636363636365%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=sawtooth&ampenv=organ>

### **D-Porcupine[7] 3334333**

<https://sevish.com/scaleworkshop/?name=Porcupine%5B7%5D%203334333&data=163.63636363636363%0A327.27272727272725%0A490.909090909093%0A709.0909090909091%0A872.7272727272727%0A1036.3636363636365%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=sawtooth&ampenv=organ>

### **Porcupine[8] 33133333**

<https://sevish.com/scaleworkshop/?name=Porcupine%5B8%5D%203433333&data=163.63636363636363%0A327.27272727272725%0A381.8181818181818%0A545.4545454545455%0A709.0909090909091%0A872.7272727272727%0A1036.3636363636365%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=square&ampenv=organ>

**Machine[6] 424444**

<https://sevish.com/scaleworkshop/?name=Machine%5B6%5D%20424444&data=218.1818181818182%0A327.27272727272725%0A545.4545454545455%0A763.6363636363636%0A981.8181818181819%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=square&ampenv=organ>

**Machine[6] 244444**

<https://sevish.com/scaleworkshop/?name=Machine%5B6%5D%20244444&data=109.0909090909091%0A327.27272727272725%0A545.4545454545455%0A763.6363636363636%0A981.8181818181819%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=square&ampenv=organ>

**Machine[6] 444442**

<https://sevish.com/scaleworkshop/?name=Machine%5B6%5D%20444442&data=218.1818181818182%0A436.3636363636364%0A654.5454545454545%0A872.7272727272727%0A1090.909090909091%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=square&ampenv=organ>

**Machine[6] 444424**

<https://sevish.com/scaleworkshop/?name=Machine%5B6%5D%20444424&data=218.1818181818182%0A436.3636363636364%0A654.5454545454545%0A872.7272727272727%0A981.8181818181819%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=square&ampenv=organ>

**Machine[6] 444244**

<https://sevish.com/scaleworkshop/?name=Machine%5B6%5D%20444244&data=218.1818181818182%0A436.3636363636364%0A654.5454545454545%0A763.6363636363636%0A981.8181818181819%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=square&ampenv=organ>

**Machine[6] 442444**

<https://sevish.com/scaleworkshop/?name=Machine%5B6%5D%20442444&data=218.1818181818182%0A436.3636363636364%0A545.4545454545455%0A763.6363636363636%0A981.8181818181819%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=square&ampenv=organ>

**D-Orwell[9] 23223 2323**

<https://sevish.com/scaleworkshop/?name=D-Orwell%5B9%5D%2023223%202323&data=109.0909090909091%0A272.72727272727275%0A381.8181818181818%0A490.90909090909093%0A654.5454545454545%0A763.6363636363636%0A927.2727272727273%0A1036.3636363636365%0A1200.&freq=293.664768&midi=62&vert=5&horiz=1&colors=white%20black%20white%20white%20black%20white%20black%20white%20white%20black%20white%20black&waveform=triangle&ampenv=organ>

## HOW TO USE LEIMMA FOR SCALES IN 22EDO

You need to have a Scala file for 22EDO on your computer. You can download one from the Gradus Google drive (22EDO.scl). You only need to use this once.

1. Open Leimma in Chrome. <https://isartum.net/leimma>

2. Sign in (or log in), using your email address and password. Google account won't work properly. Leimma does work without signing in but you can only save your tunings and scales if you have signed in.

3. Click 'Create a new tuning system'.

4. Choose the Reference Pitch. We've been using D4 (293.665 Hz) for our solfège. 5. Click 'Next'.

6. Click 'Import Scala File' in the upper right corner. Choose the scala file for 22edo from your computer. (You only need to do this once, it will be saved with your tuning.)

7. Click 'Next'.

8. The circle has all the notes of 22edo, with cent values. If you click the empty, outer parts of each sector, you will hear the tones. D is 0 cents (if you chose that as the reference pitch). The sound is either a beep or a plucked string sound. You can select these from the MIDI Output menu on the right: 'Internal Synth (poly)' or 'Internal Strings (poly)'. External synths can also be used but this guide is for the internal sounds.

9. Here's how to create a subset (scale), and to map its notes on the computer keyboard or MIDI keyboard.

First choose your preferred playing method. If you have a MIDI keyboard hooked up, select it as the MIDI Input from the menu on the right. The computer keyboard, 'QWERTY' is the default input.

With the mouse, choose the note marked '0' by clicking on the lower part of the sector, where the cent value is. It turns red.

Click the 'Keyboards' box in the bottom. That shows how the piano layout is mapped on the computer keys.

Choose a note from the 'Map to Keyboard' menu in the middle of the circle. It's up to you if you want to put the first note on the C key, or on the D key (because D is our tonic). The maximum number of notes in a subset is 12, and you can map them any way you want on the twelve keys. Obviously, this is the mapping for the MIDI keyboard, too, if you have one.

When you have chosen your mapping, the note turns grey. Choose the next note you want in your scale. In Porcupine[7] in the symmetrical ('Dingoian') mode 3334333, it would be the one three steps higher, ie. 164 cents. Map that to your preferred key. You can deselect notes and remap them.

10. When you have completed your scale, save it. Click 'Save to My Tunings' on the right. Save Tuning System to My Tunings:

Type '22edo' in the Name box. Save as New.

Save Scale/Mode to My Tunings

This saves the subset you created from 22edo. Type, for example, "Porcupine[7] Dingoian" in

the Name box, and "3334333" in the description.

A menu for 'Existing subsets' is created.

The next time you use Leimma, log in and click 'Select a tuning system'. Choose 22EDO from 'My Tunings' and the scale from the 'Existing subset' menu.

## LEIMMA synthesizer links

Porcupine[7]+2 333312313 (3333334)

[https://isartum.net/leimma/220/refpitch/D4-62/tuningsystem/1r1\\_1r1s1r1\\_54.54545s1r1\\_109.09091s1r1\\_163.63636s1r1\\_218.18182s1r1\\_272.72727s1r1\\_327.27273s1r1\\_381.81818s1r1\\_436.36364s1r1\\_490.90909s1r1\\_545.45455s1r1\\_600s1r1\\_654.54545s1r1\\_709.09091s1r1\\_763.63636s1r1\\_818.18182s1r1\\_872.72727s1r1\\_927.27273s1r1\\_981.81818s1r1\\_1036.36364s1r1\\_1090.90909s1r1\\_1145.45455/scale/403/english/0~0~3~ts3~0~6~1s6~0~7~1s9~0~10~1s12~0~12~1s13~0~13~1s15~0~15~1s18~0~0~1s19~0~1~1](https://isartum.net/leimma/220/refpitch/D4-62/tuningsystem/1r1_1r1s1r1_54.54545s1r1_109.09091s1r1_163.63636s1r1_218.18182s1r1_272.72727s1r1_327.27273s1r1_381.81818s1r1_436.36364s1r1_490.90909s1r1_545.45455s1r1_600s1r1_654.54545s1r1_709.09091s1r1_763.63636s1r1_818.18182s1r1_872.72727s1r1_927.27273s1r1_981.81818s1r1_1036.36364s1r1_1090.90909s1r1_1145.45455/scale/403/english/0~0~3~ts3~0~6~1s6~0~7~1s9~0~10~1s12~0~12~1s13~0~13~1s15~0~15~1s18~0~0~1s19~0~1~1)

Orwell[9] 323232322

[https://isartum.net/leimma/220/refpitch/D3-50/tuningsystem/1r1\\_1r1s1r1\\_54.54545s1r1\\_109.09091s1r1\\_163.63636s1r1\\_218.18182s1r1\\_272.72727s1r1\\_327.27273s1r1\\_381.81818s1r1\\_436.36364s1r1\\_490.90909s1r1\\_545.45455s1r1\\_600s1r1\\_654.54545s1r1\\_709.09091s1r1\\_763.63636s1r1\\_818.18182s1r1\\_872.72727s1r1\\_927.27273s1r1\\_981.81818s1r1\\_1036.36364s1r1\\_1090.90909s1r1\\_1145.45455/scale/572/english/0~0~3~ts3~0~6~1s5~0~7~1s8~0~10~1s10~0~11~1s13~0~13~1s15~0~15~1s18~0~0~1s20~0~2~1](https://isartum.net/leimma/220/refpitch/D3-50/tuningsystem/1r1_1r1s1r1_54.54545s1r1_109.09091s1r1_163.63636s1r1_218.18182s1r1_272.72727s1r1_327.27273s1r1_381.81818s1r1_436.36364s1r1_490.90909s1r1_545.45455s1r1_600s1r1_654.54545s1r1_709.09091s1r1_763.63636s1r1_818.18182s1r1_872.72727s1r1_927.27273s1r1_981.81818s1r1_1036.36364s1r1_1090.90909s1r1_1145.45455/scale/572/english/0~0~3~ts3~0~6~1s5~0~7~1s8~0~10~1s10~0~11~1s13~0~13~1s15~0~15~1s18~0~0~1s20~0~2~1)

Orwell[9] 223232323

[https://isartum.net/leimma/220/refpitch/D3-50/tuningsystem/1r1\\_1r1s1r1\\_54.54545s1r1\\_109.09091s1r1\\_163.63636s1r1\\_218.18182s1r1\\_272.72727s1r1\\_327.27273s1r1\\_381.81818s1r1\\_436.36364s1r1\\_490.90909s1r1\\_545.45455s1r1\\_600s1r1\\_654.54545s1r1\\_709.09091s1r1\\_763.63636s1r1\\_818.18182s1r1\\_872.72727s1r1\\_927.27273s1r1\\_981.81818s1r1\\_1036.36364s1r1\\_1090.90909s1r1\\_1145.45455/scale/572/english/0~0~3~ts3~0~6~1s5~0~7~1s8~0~10~1s10~0~11~1s13~0~13~1s15~0~15~1s18~0~0~1s20~0~2~1](https://isartum.net/leimma/220/refpitch/D3-50/tuningsystem/1r1_1r1s1r1_54.54545s1r1_109.09091s1r1_163.63636s1r1_218.18182s1r1_272.72727s1r1_327.27273s1r1_381.81818s1r1_436.36364s1r1_490.90909s1r1_545.45455s1r1_600s1r1_654.54545s1r1_709.09091s1r1_763.63636s1r1_818.18182s1r1_872.72727s1r1_927.27273s1r1_981.81818s1r1_1036.36364s1r1_1090.90909s1r1_1145.45455/scale/572/english/0~0~3~ts3~0~6~1s5~0~7~1s8~0~10~1s10~0~11~1s13~0~13~1s15~0~15~1s18~0~0~1s20~0~2~1)



9.09091s1r1\_763.63636s1r1\_818.18182s1r1\_872.72727s1r1\_927.27273s1r1\_981.81818s1r1\_1036.36364s1r1\_1090.90909s1r1\_1145.45455/scale/584/english/  
0~0~3~ts2~0~5~1s4~0~6~1s7~0~8~1s9~0~10~1s12~0~13~1s14~0~15~1s17~0~16~1s19~0~0~1

Machine[6] 444244

https://isartum.net/leimma/220/refpitch/D4-62/tuningsystem/1r1\_1r1s1r1\_54.54545s1r1\_109.09091s1r1\_163.63636s1r1\_218.18182s1r1\_272.72727s1r1\_327.27273s1r1\_381.81818s1r1\_436.36364s1r1\_490.90909s1r1\_545.45455s1r1\_600s1r1\_654.54545s1r1\_709.09091s1r1\_763.63636s1r1\_818.18182s1r1\_872.72727s1r1\_927.27273s1r1\_981.81818s1r1\_1036.36364s1r1\_1090.90909s1r1\_1145.45455/scale/626/english/  
0~0~3~ts4~0~6~1s8~0~8~1s12~0~11~1s14~0~15~1s18~0~0~1

Orgone[7]+4 31231213213 (4242424)

https://isartum.net/leimma/new/refpitch/D4-62/tuningsystem/1r1\_1r1s1r1\_54.54545454545455s1r1\_109.0909090909091s1r1\_163.63636363636363s1r1\_218.181818181818182s1r1\_272.72727272727275s1r1\_327.27272727272725s1r1\_381.8181818181818s1r1\_436.3636363636364s1r1\_490.90909090909093s1r1\_545.4545454545455s1r1\_600s1r1\_654.5454545454545s1r1\_709.0909090909091s1r1\_763.6363636363636s1r1\_818.1818181818182s1r1\_872.7272727272727s1r1\_927.2727272727273s1r1\_981.8181818181819s1r1\_1036.3636363636365s1r1\_1090.909090909091s1r1\_1145.45454545455/scale/new/english/  
0~0~3~ts3~0~5~1s4~0~6~1s6~0~7~1s9~0~9~1s10~0~10~1s12~0~13~1s13~0~15~1s16~0~16~1s18~0~0~1s19~0~1~1

Porcupine[7] 3343333

https://isartum.net/leimma/220/refpitch/D4-62/tuningsystem/1r1\_1r1s1r1\_54.54545s1r1\_109.09091s1r1\_163.63636s1r1\_218.18

182s1r1 272.72727s1r1 327.27273s1r1 381.81818s1r1 436.3636  
4s1r1 490.90909s1r1 545.45455s1r1 600s1r1 654.54545s1r1 70  
9.09091s1r1 763.63636s1r1 818.18182s1r1 872.72727s1r1 927.  
27273s1r1 981.81818s1r1 1036.36364s1r1 1090.90909s1r1 114  
5.45455/scale/369/english/  
0~0~3~ts3~0~6~1s6~0~7~1s9~0~10~1s13~0~13~1s16~0~16~1s  
19~0~0~1

## 22-EDO Interval Name Table

nr.	interval name	abbreviation	note name from d	intervalli nime
0	unison	unis.	d	unison
1	quarter tone	1/4T	d+	veerandtoon
2	semitone	ST	d#	pooltoon
3	lesser wholetone	WT-	e-	väiksem täistoon
4	greater wholetone	WT+	e	suurem täistoon
5	septimal minor third	7Min3	e+	seitsmene väike terts
6	greater minor third	Min3+	f	suurem väike terts
7	major third	Maj3	f#	suur terts
8	septimal major third	7Maj3	f#+	seitsmene suur terts
9	pure fourth	P4	g	kvart
10	lesser undecimal tritone	11L_Trit	g+	väiksem üheteistkümnene tritoon
11	(12-EDO) tritone	Trit	g#	(12-EDO) tritoon
12	greater undecimal tritone	11G_Trit	a-	suurem üheteistkümnene tritoon
13	slightly wider pure fifth	P5	a	veidike laiem kvint
14	septimal minor sixth	7Min6	a+	seitsmene väike sekst
15	minor sixth	Min6	a#	väike sekst
16	lesser major sixth	Maj6-	b-	väiksem suur sekst
17	septimal major sixth	7Maj6	b	seitsmene väike septim
18	lesser minor seventh	Min7-	b+	väiksem väike septim
19	greater minor seventh	Min7+	c	suurem väike septim
20	major seventh	Maj7	c#	suur septim
21	major seventh plus quarter tone	Maj7+1/4T	c#+	suur septim pluss veerandtoon
22	pure octave	P8	d	oktav

# 22-EDO Solfège

Hans-Gunter Lock

0 1 2 3 4 5 6 7 8 9 10  
 1/4T ST WT- WT+ 7Min3 Min3+ Maj3 7Maj3 P4 11L Trit

11 12 13 14 15 16 17 18 19 20 21  
 Trit 11G Trit P5 7Min6 Min6 Maj6- 7Maj6 Min7- Min7+ Maj7 Maj7 +1/4T P8

4 5 6 7 8 9 10 11 12 13 14  
 1/4T ST WT- WT+ 7Min3 Min3+ Maj3 7Maj3 P4 11L Trit

15 16 17 18 19 20 21 0 1 2 3  
 Trit 11G Trit P5 7Min6 Min6 Maj6- 7Maj6 Min7- Min7+ Maj7 Maj7 +1/4T P8

## 0. Chromatic Zigzag 1-12-23-3...

1/4T ST WT- WT+ 7Min3 Min3+

Maj3 7Maj3 P4 11L Trit Trit 11G Trit P5

1/4T ST WT- WT+ 7Min3 Min3+

Maj3 7Maj3 P4 11L Trit Trit 11G Trit P5

WT- up, ST down, WT- up, ST down...

1.1 Superpyth[7] 4414441 (major)  $1 = 1/4T, 4 = WT+$

WT+ 7Maj3 P4 P5 7Maj6 Maj7 +1/4T P8

1/4T 1/4T

1.2 Superpyth[7] 4144414 (dorian)  $1 = 1/4T, 4 = WT+$

WT+ 7Min3 P4 P5 7Maj6 Min7- P8

1/4T 1/4T

1.3 Superpyth[7] 1444144 (phrygian)<sup>1 = 1/4T, 4 = WT+</sup>

1/4T 7Min3 P4 P5 7Maj6 Min7- P8

1.4 Superpyth[7] 4441441 (lydian)<sup>1 = 1/4T, 4 = WT+</sup>

WT+ 7Maj3 <sup>11G</sup>Trit P5 7Maj6 Maj7 +1/4T P8

1.5 Superpyth[7] 4414414 (mixolydian)<sup>1 = 1/4T, 4 = WT+</sup>

WT+ 7Maj3 P4 P5 7Maj6 Min7- P8

1.6 Superpyth[7] 4144144 (aeolian)<sup>1 = 1/4T, 4 = WT+</sup>

WT+ 7Min3 P4 P5 7Min6 Min7- P8

1.7 Superpyth[7] 1441444 (locrian)<sup>1 = 1/4T, 4 = WT+</sup>

1/4T 7Maj3 P4 <sup>11L</sup>Trit 7Min6 Min7- P8

2.1 Pajara[10] 22322 22322 2 = ST, 3 = WT-

ST WT+ Maj3 P4 Trit P5 Min6 Min7- Maj7 P8

2.2 Pajara[10] 23222 23222

ST 7Min3 Maj3 P4 Trit P5 Maj6- Min7- Maj7 P8

2.3 Pajara[10] 32222 32222

WT- 7Min3 Maj3 P4 7Min6 Maj6- Min7- Maj7 P8

2.4 Pajara[10] 22223 22223 2 = ST, 3 = WT-

ST WT+ Min3+ 7Maj3 Trit P5 Min6 7Maj6 Min7+ P8

2.5 Pajara[10] 22232 22232 2 = ST, 3 = WT-

ST WT+ Min3+ P4 Trit P5 Min6 7Maj6 Maj7 P8

3a.1 Porcupine[7] 3433333 3 = WT-, 4 = WT+

WT- Maj3 11L Trit P5 Maj6- Min7+ P8

3a.2 Porcupine[7] 3343333 3 = WT-, 4 = WT+

WT- Min3+ 11L Trit P5 Maj6- Min7+ P8



3a.3 Porcupine[7] 3334333  $3 = \text{WT-}, 4 = \text{WT+}$ 

WT- Min3+ P4 P5 Maj6- Min7+ P8

WT+

3a.4 Porcupine[7] 3333433  $3 = \text{WT-}, 4 = \text{WT+}$ 

WT- Min3+ P4 11G Trit Maj6- Min7+ P8

WT+

3a.5 Porcupine[7] 3333343  $3 = \text{WT-}, 4 = \text{WT+}$ 

WT- Min3+ P4 11G Trit Min6 Min7+ P8

WT+

3a.6 Porcupine[7] 3333334  $3 = \text{WT-}, 4 = \text{WT+}$ 

WT- Min3+ P4 11G Trit Min6 Min7- P8

WT+

3a.7 Porcupine[7] 4333333  $3 = \text{WT-}, 4 = \text{WT+}$ 

WT+ Maj3 11L Trit P5 Maj6- Min7+ P8

WT+

3b.1 Porcupine[8] 33133333 = 1/4T, 3 = WT-

WT-    Min3+Maj3    11L  
Trit    P5    Maj6- Min7+    P8

3b.2 Porcupine[8] 33313333 1 = 1/4T, 3 = WT-

WT-    Min3+    P4    11L  
Trit    P5    Maj6- Min7+    P8

3b.3 Porcupine[8] 33331333 1 = 1/4T, 3 = WT-

WT-    Min3+    P4    11G  
Trit    P5    Maj6- Min7+    P8

3b.4 Porcupine[8] 33333133 1 = 1/4T, 3 = WT-

WT-    Min3+    P4    11G  
Trit    Min6    Maj6- Min7+    P8

3b.5 Porcupine[8] 33333313 1 = 1/4T, 3 = WT-

WT-    Min3+    P4    11G  
Trit    Min6    Min7-    Min7+    P8

3b.5 Porcupine[8] 33333313 1 = 1/4T, 3 = WT-

WT-    Min3+    P4    11G  
Trit    Min6    Min7-    Maj7  
+1/4T    P8

3b.7 Porcupine[8] 13333333 1 = 1/4T, 3 = WT-

1/4T WT+ Maj3 11L Trit P5 Maj6- Min7+ P8

1/4T

3b.8 Porcupine[8] 31333333 1 = 1/4T, 3 = WT-

WT- WT+ Maj3 11L Trit P5 Maj6- Min7+ P8

1/4T

4.1 Machine[6] 424444 2 = ST, 4 = WT+

WT+ Min3+ 11L Trit 7Min6 Min7- P8

ST

4.2 Machine[6] 244444 2 = ST, 4 = WT+

ST Min3+ 11L Trit 7Min6 Min7- P8

ST

4.3 Machine[6] 444442 2 = ST, 4 = WT+

WT+ 7Maj3 11G Trit Maj6- Min7+ P8

ST

4.4 Machine[6] 444424 2 = ST, 4 = WT+

WT+ 7Maj3 11G Trit Maj6- Min7- P8

ST

4.5 Machine[6] 444244 2 = ST, 4 = WT+

WT+ 7Maj3 11G Trit 7Min6 Min7- P8

4.6 Machine[6] 442444 2 = ST, 4 = WT+

WT+ 7Maj3 11L Trit 7Min6 Min7- P8

5.1 Orwell[9] 232232323 2 = ST, 3 = WT-

ST 7Min3 Maj3 P4 11G Trit 7Min6 7Maj6 Min7+ P8

5.2 Orwell[9] 322323232 2 = ST, 3 = WT-

WT- 7Min3 Maj3 11L Trit 11G Trit Min6 7Maj6 Maj7 P8

5.3 Orwell[9] 223232323 2 = ST, 3 = WT-

ST WT+ Maj3 P4 11G Trit 7Min6 7Maj6 Min7+ P8

WT- WT- WT- WT-

5.4 Orwell[9] 232323232 2 = ST, 3 = WT-

ST 7Min3 Maj3 11L Trit 11G Trit Min6 7Maj6 Maj7 P8

WT- WT- WT- WT-

5.5 Orwell[9] 323232322 2 = ST, 3 = WT-

WT- 7Min3 7Maj3 11L Trit P5 Min6 Min7- Maj7 P8

WT- WT- WT- WT-

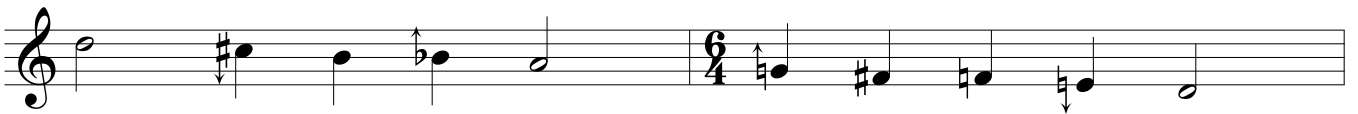
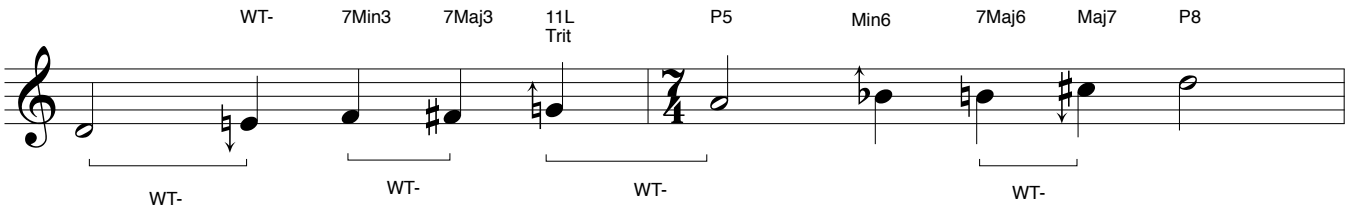
5.6 Orwell[9] 232323223 2 = ST, 3 = WT-

ST 7Min3 Maj3 11L Trit 11G Trit Min6 7Maj6 Min7+ P8

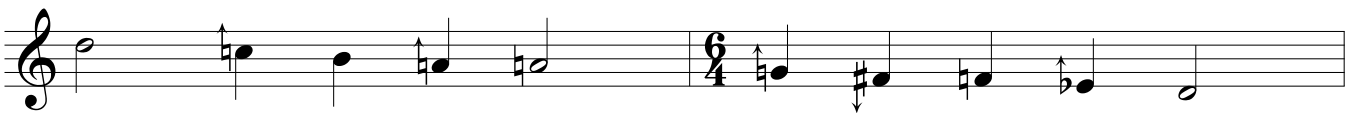
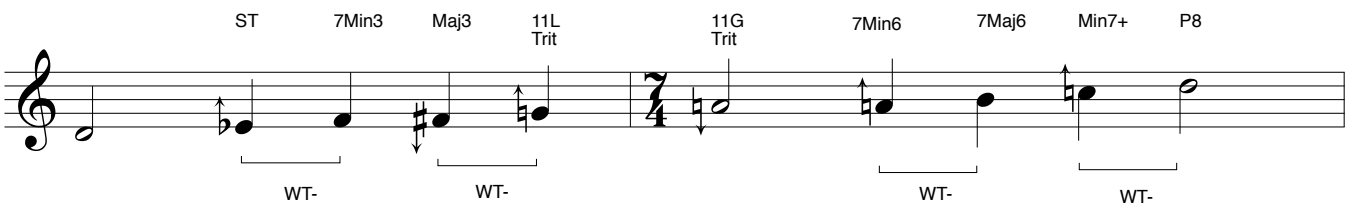
WT- WT- WT- WT-



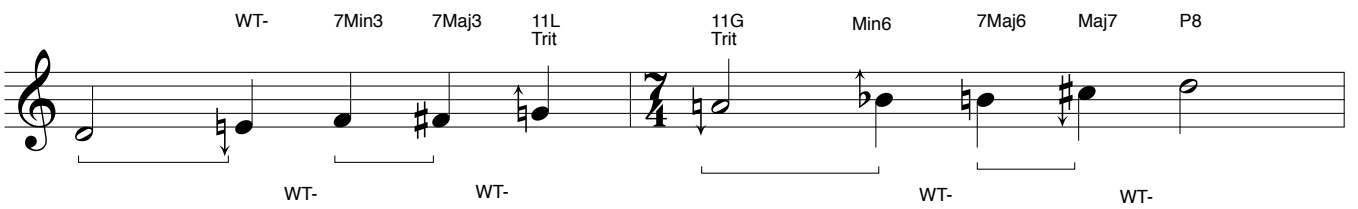
5.7 Orwell[9] 323232232 2 = ST, 3 = WT-



5.8 Orwell[9] 232322323 2 = ST, 3 = WT-



5.9 Orwell[9] 323223232 2 = ST, 3 = WT-



# Porcupine Drill 1

narrow whole-tones

wide whole-tone

1

minor thirds

fourths

Musical notation for measures 1-2. The first system shows a sequence of notes with fingerings 3, 3, 3, 3, 3, 3, 4. The second system shows intervals: minor thirds (brown dashed lines) and fourths (red dashed lines).

Musical notation for measures 3-8. Measure 3 starts with a blue note. The system includes repeat signs and various intervallic patterns.

Musical notation for measures 9-15. Measure 9 starts with a blue note. The system includes repeat signs and various intervallic patterns.

Musical notation for measures 16-21. Measure 16 starts with a blue note. The system includes accents (>) and various intervallic patterns.

Musical notation for measures 22-27. Measure 22 starts with a blue note. The system includes repeat signs and various intervallic patterns.

27

Musical score for measures 27-30. The score is written for piano in 4/4 time. The right hand (treble clef) and left hand (bass clef) both play chords and single notes. Measure 27 starts with a treble clef and a key signature of one flat. The piece is in 4/4 time. The first two measures of this system are marked with a repeat sign. The notes are: Treble: G4, A4, Bb4, C5; Bass: G2, F2, E2, D2. The next two measures are: Treble: G4, A4, Bb4, C5; Bass: G2, F2, E2, D2. The final two measures are: Treble: G4, A4, Bb4, C5; Bass: G2, F2, E2, D2.

31

Musical score for measures 31-34. The score is written for piano in 4/4 time. The right hand (treble clef) and left hand (bass clef) both play chords and single notes. Measure 31 starts with a treble clef and a key signature of one flat. The piece is in 4/4 time. The first two measures of this system are marked with a repeat sign. The notes are: Treble: G4, A4, Bb4, C5; Bass: G2, F2, E2, D2. The next two measures are: Treble: G4, A4, Bb4, C5; Bass: G2, F2, E2, D2.

35

Musical score for measures 35-38. The score is written for piano in 4/4 time. The right hand (treble clef) and left hand (bass clef) both play chords and single notes. Measure 35 starts with a treble clef and a key signature of one flat. The piece is in 4/4 time. The first two measures of this system are marked with a repeat sign. The notes are: Treble: G4, A4, Bb4, C5; Bass: G2, F2, E2, D2. The next two measures are: Treble: G4, A4, Bb4, C5; Bass: G2, F2, E2, D2.





# Porcupine Drill 2

narrow whole-tones      wide whole-tone 1      minor thirds      fourths

5      sim.

12

22

31

40

# Porcupine Example 1

narrow whole-tones

quarter-tone

1

minor thirds

fourths

4

A

B

12

C

D

semitone A#

# Orwell[9] little training session

Hans-Gunter Lock

5.2 Orwell[9] 322323232 2 = ST, 3 = WT-

WT- 7Min3 Maj3 11L Trit 11G Trit Min6 7Maj6 Maj7 P8

WT- WT- WT- WT-

3

## Exercise A

5

7Maj3 11L Trit 11G Trit Maj3 P4 7Maj3 Trit 7Maj3

## Exercise B

12

Maj3 7Min3 7Maj3 11L Trit P4 Maj3 P4

16

7Maj3 11L Trit 7Maj3

## Exercise C

20

WT+ 7Min3 7Maj3 Maj3 WT+ 7Min3 Maj3

P5 Maj3 7Maj3 7Min3 11L Trit ST

24

7Maj3 Maj3 WT- 7Maj3 11L Trit 11L Trit 11L Trit Min6

Maj3 7Maj3 P4 Maj3 WT+ 7Maj3 Maj3

# Orwell Exercise

Juhani N.

narrow whole-tones

A

septimal minor thirds

minor second

3 2 3 2 3 2 3 2 2

B

wide whole-tone

5

1. 2.

C

15

22

D

27

36

45 **E**

Musical score for measures 45-51. The score is written for three staves (treble, middle, and bass clefs). Measure 45 is marked with a boxed 'E'. The music features various note values, including quarter and eighth notes, and rests. Red and purple annotations highlight specific intervals and melodic lines.

52

Musical score for measures 52-60. The score is written for three staves. A red annotation 'major third' is placed above the middle staff in measure 56, indicating an interval between two notes. Red and purple annotations highlight specific intervals and melodic lines.

61

Musical score for measures 61-67. The score is written for three staves. A red annotation 'major 3rd' is placed above the middle staff in measure 64, indicating an interval between two notes. Red and purple annotations highlight specific intervals and melodic lines.

68

Musical score for measures 68-74. The score is written for three staves. A red annotation 'major 3rd' is placed above the middle staff in measure 69, indicating an interval between two notes. Red and purple annotations highlight specific intervals and melodic lines.

# Exercise in a mode of Orwell[9]

Sebastian Dumitrescu  
modified from original file by Hans-Gunter Lock

## 5.3 Orwell[9] 223232323

2 = ST, 3 = WT-

ST WT+ Maj3 P4 11G Trit 7Min6 7Maj6 Min7+ P8

"major tetrachord"

"subminor triad plus 11/8"

interlocking Orwell triads



# Gradus

Juhani

## Machine[6]

wide whole-tones and semitone

4 4 4 2 4 4

4 4 4 2 4 4

4 4 4 2 4 4

A

b b # b b # b b b b

(same pitch)

b b # b b # b b b b



# Orgone Exercise

minor seconds

A

minor thirds

4 2 4 2 4 2 4

non-scale tones!

B

C

D

The red notes don't belong to the scale!

minor thirds

E

P5, P4

P5, P4

P5, P4

P5, P4

minor thirds

26 **F**

quarter-tone

narrow whole-tone

Minor triad      Minor      Minor

34 **G**

quarter-tone

Maj      Min      Min      Min

for Kazoo

# Octothorpe, Section A

Jacob Barton

The musical score is written for a Kazoo. It consists of two staves of music in treble clef. The first staff contains a sequence of eighth notes, a triplet of eighth notes, and a final note with an accent. The second staff begins with a '2' above the first measure, followed by eighth notes, a triplet of eighth notes, and a series of notes with accents and slurs.



väiksed

# Harjutus: Orwelltersid

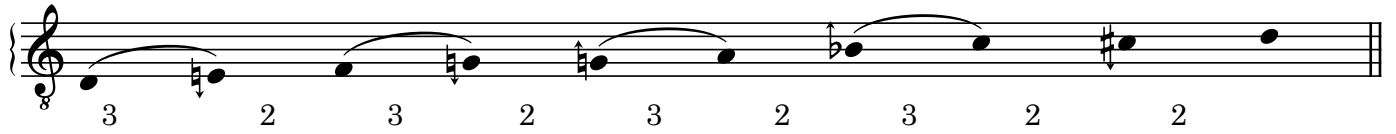
Hans-Gunter Lock

The first system of music consists of two staves. The top staff is in treble clef and the bottom staff is in bass clef. The time signature is 4/4. The key signature has one sharp (F#). The music is written in a style that suggests a simple harmonic exercise. The first staff contains a sequence of notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. The second staff contains a sequence of notes: D3, E3, F#3, G3, A3, B3, C4, D4, E4, F#4. There are downward-pointing arrows under the first three notes of each staff, and upward-pointing arrows under the last three notes of each staff.

The second system of music consists of two staves. The top staff is in treble clef and the bottom staff is in bass clef. The time signature is 4/4. The key signature has one sharp (F#). The music continues from the first system. The first staff contains a sequence of notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. The second staff contains a sequence of notes: D3, E3, F#3, G3, A3, B3, C4, D4, E4, F#4. There are downward-pointing arrows under the first three notes of each staff, and upward-pointing arrows under the last three notes of each staff. The system ends with a double bar line.

# Dies irae

Orwell temperament



narrow whole-tones

Di - es i - rae, di - es il - la Sol - vet sae - clum in fa - vil - la:  
Dies il - la Sol - vet sae - clum (la)

Te - ste Da - vid cum Sy - bil - la. Quan - tus fu - tu - rus,  
Te - ste Da - vid cum Sy - bil - la. Quan - tus tre - mor est fu - tu - rus,

Quan - do Ju - dex est ven - tu - rus,  
Quan - do Ju - dex est ven - tu - rus,

cunc - ta stric - te dis - cus - su - rus!  
cunc - ta stric - te