ON LINEAR NOTATIONS AND THE BOSANQUET KEYBOARD

This is a tentative approach toward a specifically linear notation for the Bosanquet keyboard system. It is the primary intent of this notation to facilitate and expedite the performance of musical works on the keyboard. It is not the intent of this notation to supply specific tuning information with each written note. This could better be provided apart from and before performance begins. This does not attend to the problems of notations other than linear, nor to notating for instruments other than the Bosanquet keyboard.

It is apparent that the Bosanquet geometry is hospitable to various families of tuning systems. While the keyboard is conceived as having 12 vertical ranks in the "Octave", it may also be seen as having 7 ranks running right-oblique, and as having 5 ranks running left-oblique. The families of systems may be grouped according to the number of ranks, and whether the pitches ascend or descend along the rank.

Vertical, 12-rank, pitches ascending
Duodecimally positive systems ("Fifth" greater than 7/12 "8ve")
(5, 7, 12) 17, 29, 41, 53, 65, etc

Vertical, 12-rank, pitches descending
Duodecimally negative systems ("Fifth" less than 7/12 "Octave")
(5, 7, 12) 19, 31, 43, 55, etc

Right-oblique, pitches ascending, 7-rank
Septimally negative systems ("Fifth" less than 4/7 "Octave")
(2, 5, 7) 9, 16, 23, etc

Right-oblique, 7-rank, pitches descending
Septimally positive systems ("Fifth" larger than 4/7 "Octave")
(5, 7) 12 19 26 etc

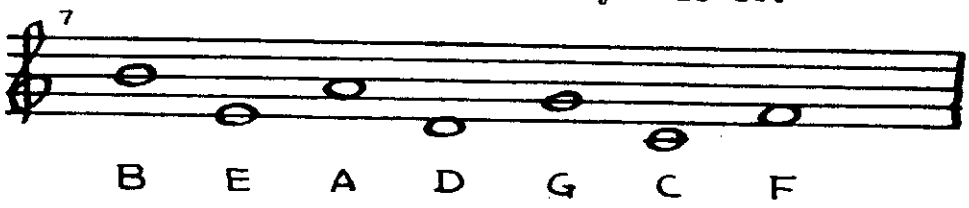
Left-oblique, 5-rank, pitches ascending
Quintally positive systems, ("Fifth" greater than 3/5 "Octave")
(3, 5) 8, 13, 18, 23, etc

Left-oblique, 5-rank, pitches descending
Quintally negative systems, ("Fifth" less than 3/5 "Octave")
(2, 5) 7, 12, 17, 22, etc

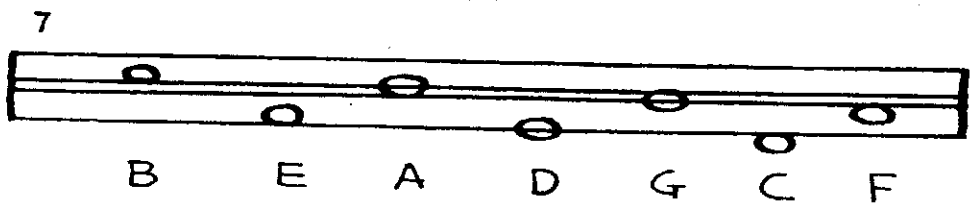
By "system" I do not limit the meaning to closed equal cycles. If the beginning member of a linear series forms (in this case) a "quasi-fifth" to the ending member of the series, which subtends the same number of scale-degrees as the remaining (typical) "fifths" of the series -- a moment-of-symetry is formed having scale-like and systematic properties. These are important, and I will go more into them at another time.

The member systems of each family may share the same notation, but each family requires a different notational treatment in order to be melodically consistant. Geometric consistancy is no problem. Occasionally the matter of how we chose to 'spell' presents a problem. To accomplish notation where each family of systems is both geometrically and melodically treated a linear set of nominal symbols is used. These are supplemented with set(s) of linear, alteration signs.

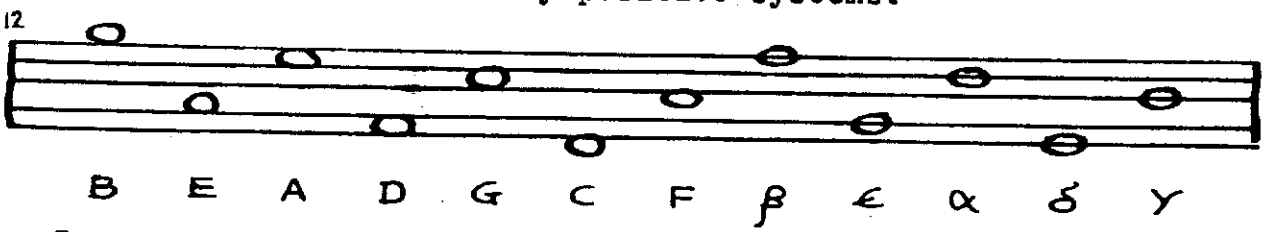
The linear set of 7 nominal symbols is:



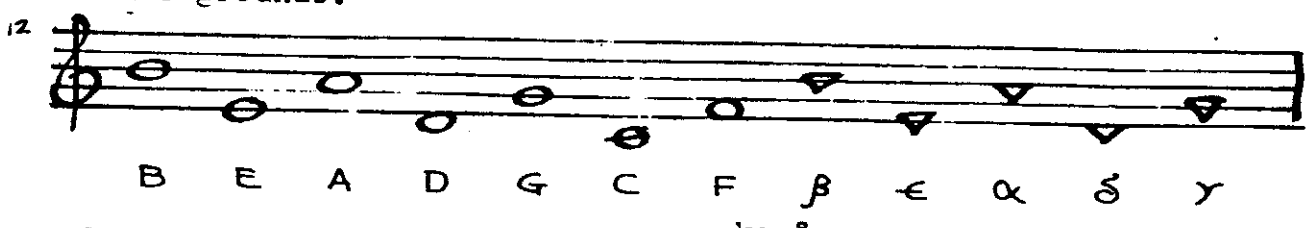
Its advantage is its familiarity-- to those who have already learned it. But a set like this would be identical for all octaves, and easier to learn:



A linear set of 12 nominal symbols seems especially appropriate for the duodecimally positive systems:

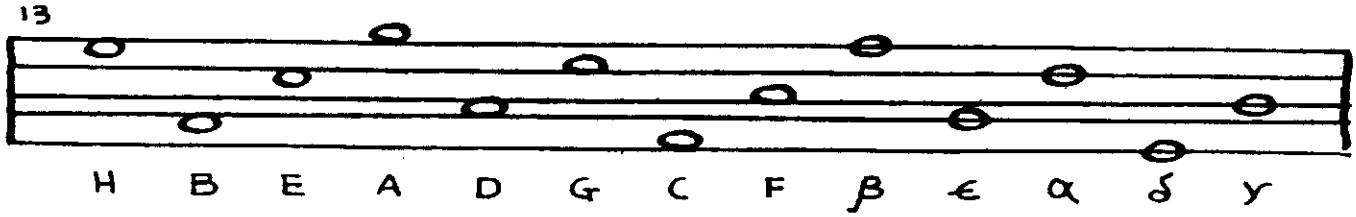


I am partial to this approach.
It is easy to learn and simple to use, and relates visually to the keyboard; the white keys are in the spaces, and the black keys are on the lines. 12 could be put on the familiar staff, and would gain some advantage of familiarity, but would lose on other grounds:

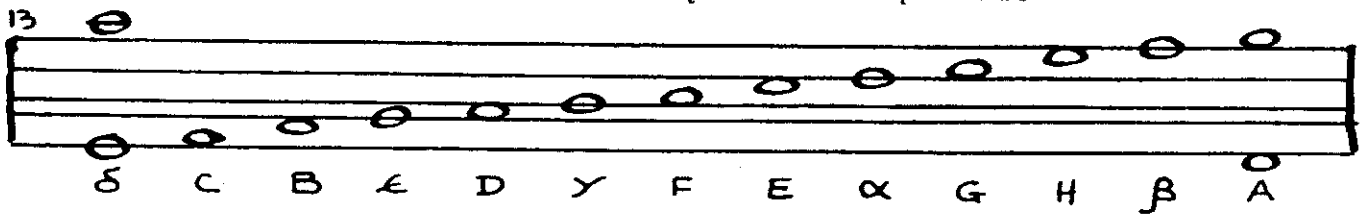


The triangular notes are the black keys. They are clumsy to write, and do slow you down. Nevertheless, the approach probably merits the mentioning.

For the quintally positive systems a linear set of 13 nominal symbols is used:

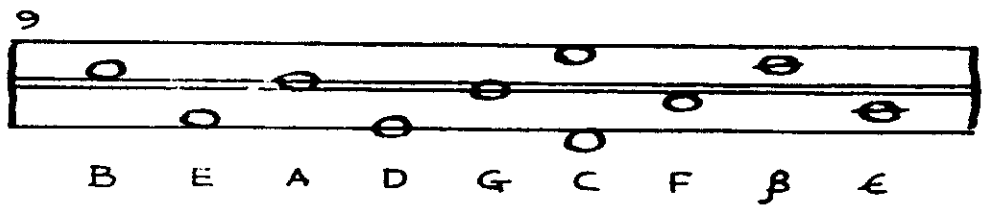


Perhaps I should spell these out in melodic sequence as well. Hang on! It works out beautifully on the keyboard:



For septimally positive systems one may use either a linear set of 7 nominal symbols or a linear set of 12. These are shown.

For septimally negative systems one may use a linear set of 7 nominal symbols- BUT - the 'flats' will be above the 'naturals'. I think a better picture is got if one adopts a linear set of 9 nominal symbols, instead: (these are the Blasquintenzirkel systems, appropriate to Pelog)

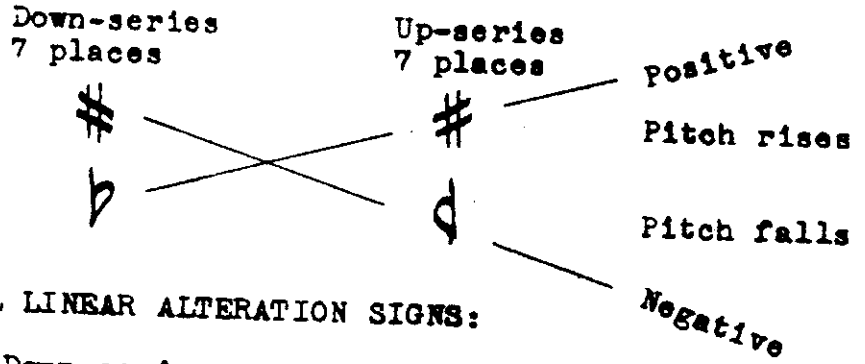


There is a fairly good argument for retaining the traditional staff and linear set of 7 nominal symbols for the duodecimally negative systems. This,because of traditional practice. However, one may find it just simpler, in highly microtonal work to use the duodecimal staff and the linear set of 12 nominal symbols.

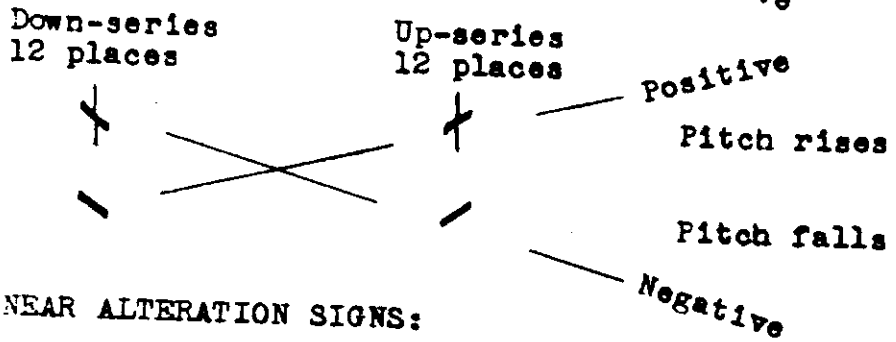
There is very little established tradition in the duodecimally positive systems. And particularly little in the West. In very simple materials one may use the the traditional staff and the conventional linear set of 7 nominal symbols. When one gets into Eikosany (3 out of 6,1·3·5·7·9·11 combinations set, for example) or Partchian materials (1 3 5 7 9 11 X $\frac{1}{1}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{7}$ $\frac{1}{9}$ $\frac{1}{11}$ cross-set) septimal notation may get so impossibly involved that it may well be simpler to learn duodecimal notation than to try to go thru all the mental gymnastics required to spell these materials in an academically correct manner. The beginning student is ahead to go duodecimal symbols and staff forthwith. For us old-timers, I must admit the familiar 5-line staff is comfortably reassureing. Even if it has nothing but white sound writen on it.

To the linear sets of nominal symbols may be associated one or more, as appropriate, species of linear alteration signs. "Downseries", here, refers to down the series of "Fifths", which on the Bosanquet also leads "Downkeyboard". "Upseries" is up the series of "Fifths", and Upkeyboard by that series. "Upkeyboard or Upseries 7 places" means "up the keyboard, or up the series of "Fifths" 7 places.

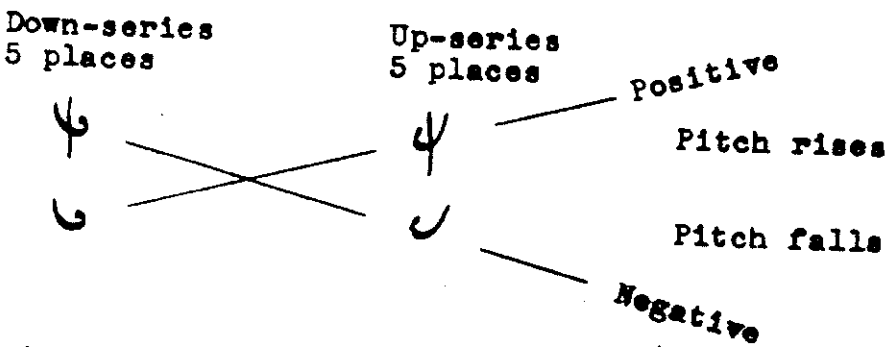
SEPTIMAL LINEAR ALTERATION SIGNS:



DUODECIMAL LINEAR ALTERATION SIGNS:



QUINTAL LINEAR ALTERATION SIGNS:



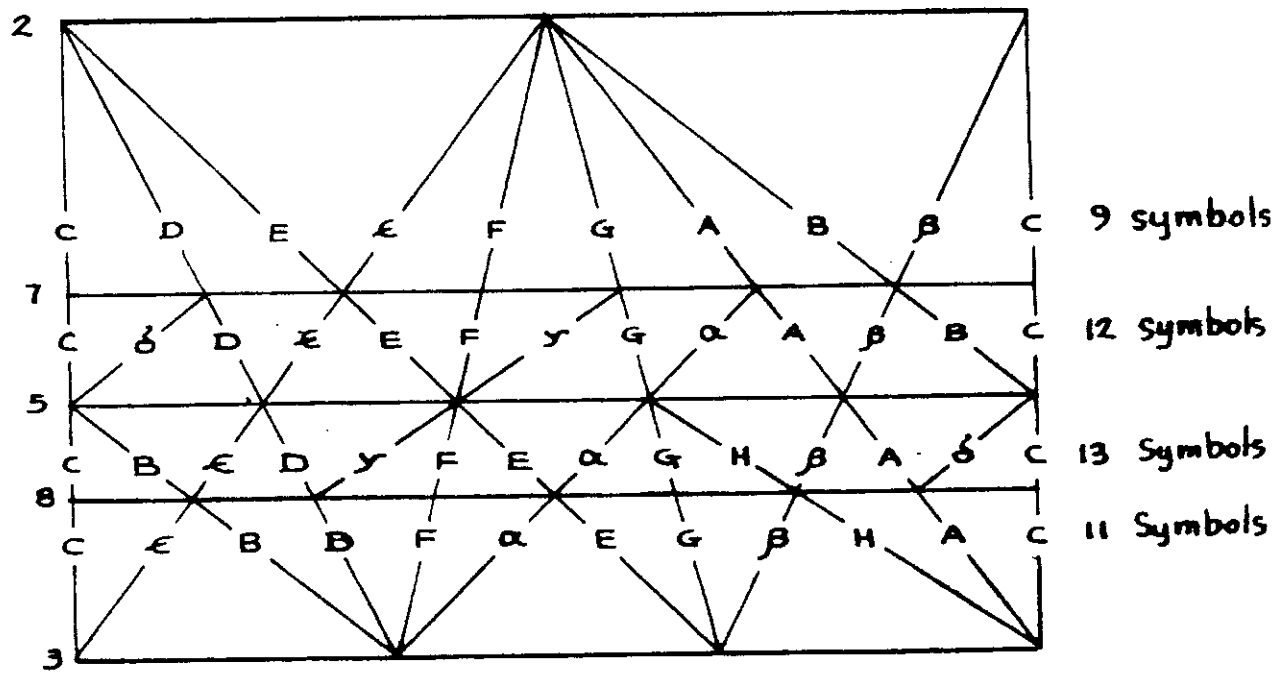
These are mirroring sets. One is not likely (it is to be hoped) to use both positive and negative alteration signs in the same context! Therefore there is little chance of visual confusion of the similar signs.

In some contexts one may wish to use highly specialized alteration signs. Novenal or Tridecimal alteration signs, for example. I have not adequately attended to these. I need to experiment more with the septimally negative and quintally positive systems before expressing a view on this.

BY WAY of further explanation--

Letters of the alphabet are not ill-suited to representing variables. If we are going to adapt traditional notation to new systems, obviously <u>something</u> is going to have to give. We cannot retain <u>all</u> levels of meaning. In this approach I have elected to retain the linear definition of the symbols, and to allow the melodic values to vary. This means, for example that sometimes linear B can be higher than C, or that linear E♭ may occur above E♮. The implication is that the symbol must rely upon context for it's meaning. And that a symbol out of context is meaningless. (I recognize that for some very gifted musicians the idea of "C-sharp" does have an absolute and independent existence. Perhaps this approach to notation is not for them.) On paper this will sometimes look a bit odd, but on the keyboard it works out. This little diagram may show as quickly as anything, what is happening to the melodic relation between the nominals as the size of the generating "Fifth" varies.

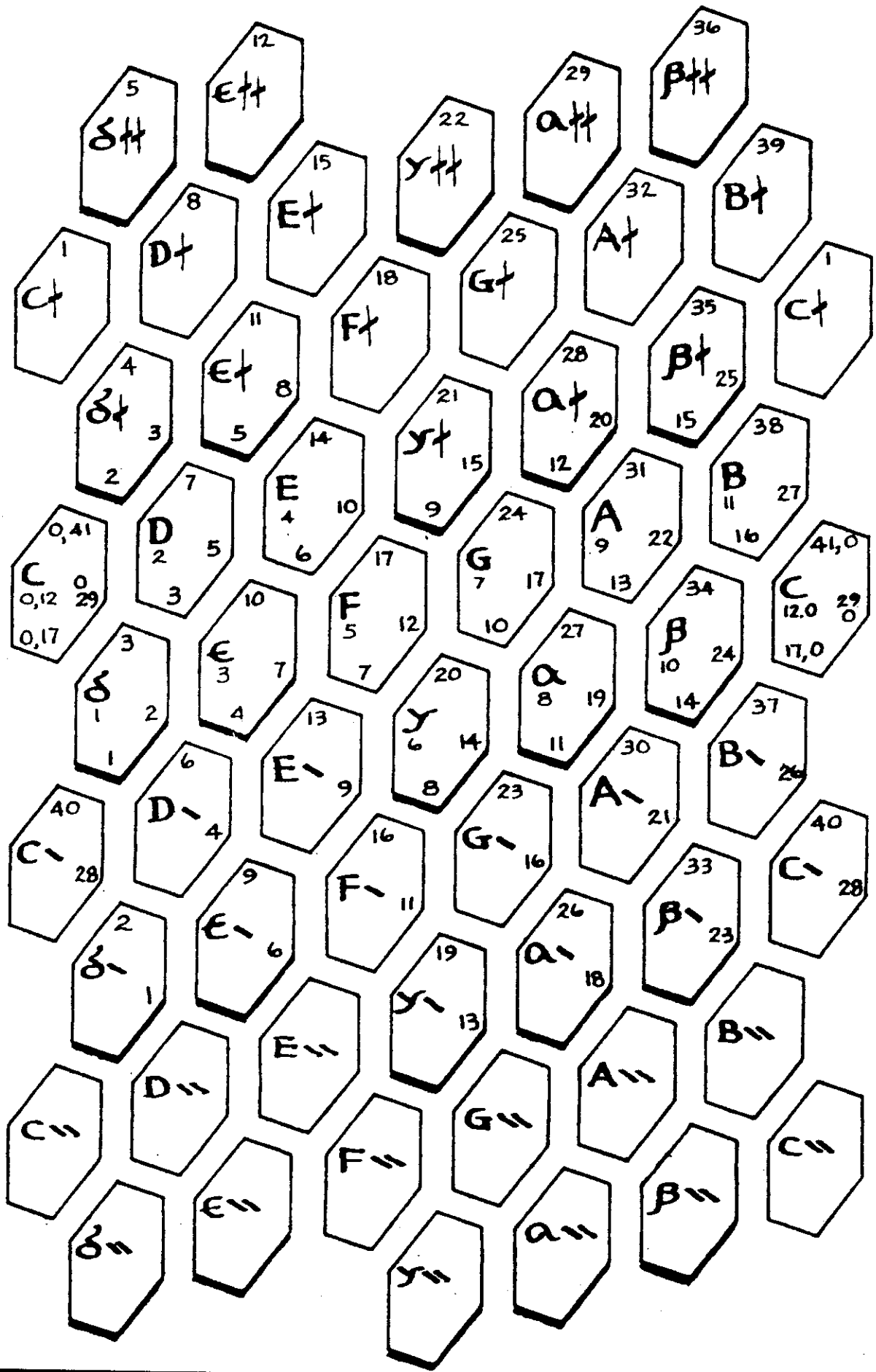
A System of Fluctuating Nominal Symbols



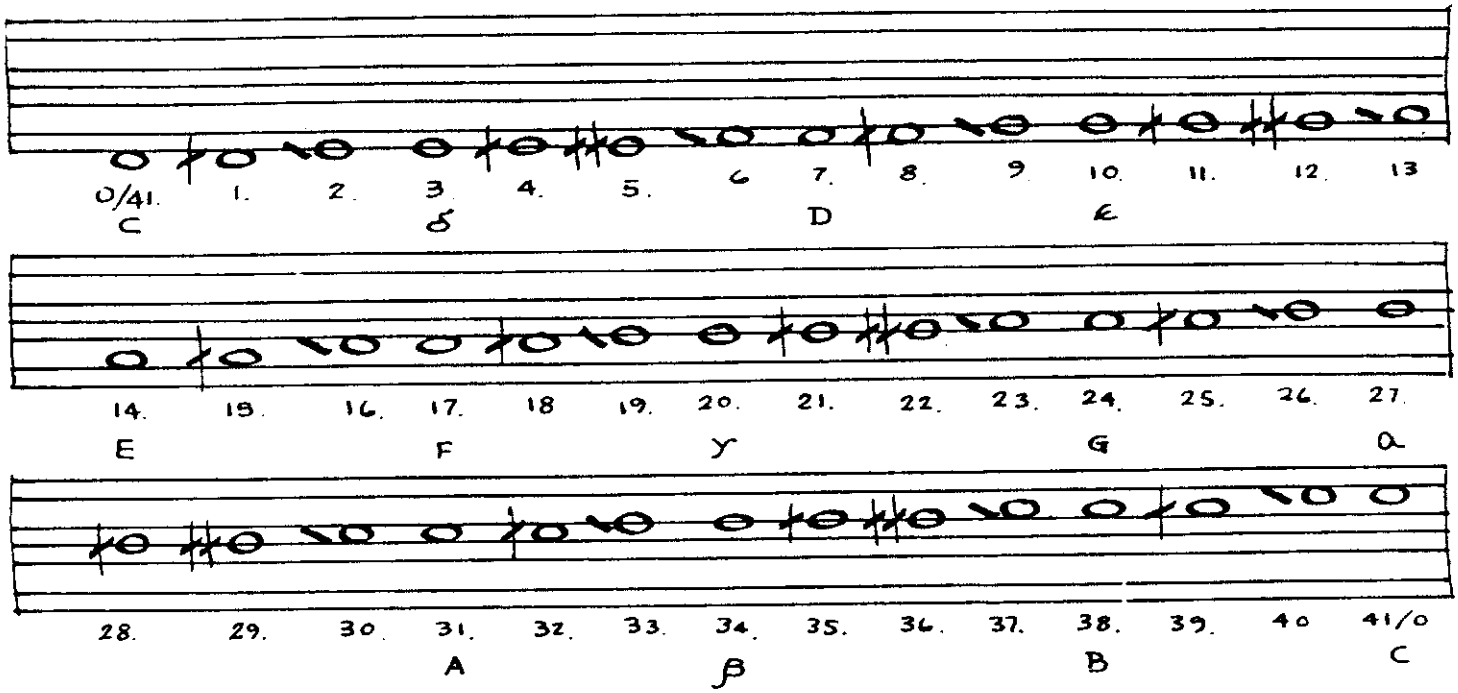
In the examples I have used 9, 12, 13, & 11 nominal symbols. I have avoided using 7 nominals for the time, because there is anything but a concord in the view that these represent a linear set! Nor have I touched on the use of 5 and 8 nominals, which may be useful in some circumstances.

Notations for systems developed by linear semi-fifths and linear semi-fourths remain to be explored. These are not for the Bosanquet keyboard. I will approach these questions elsewhere.

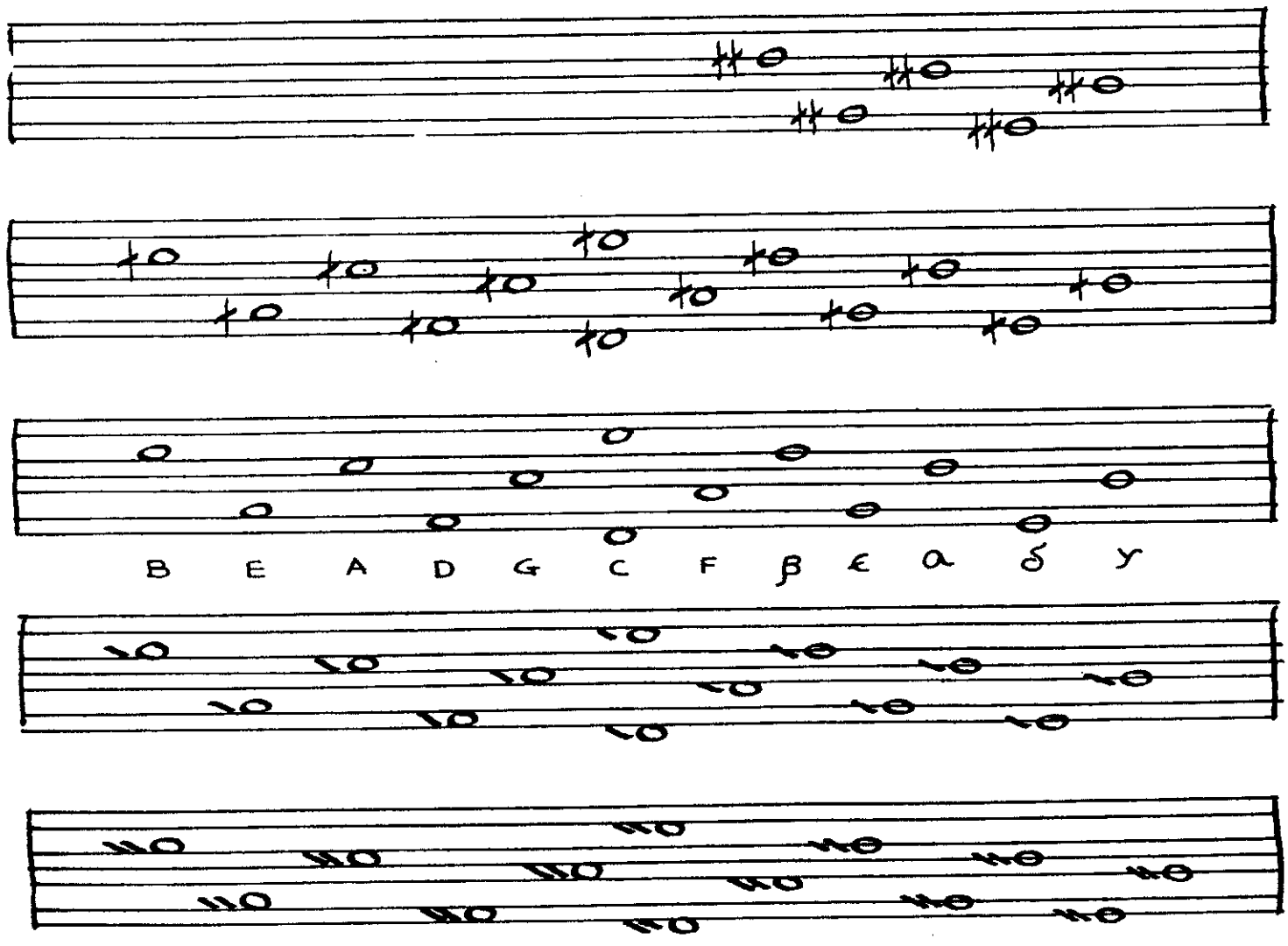
"Positive" notation of the Keyboard



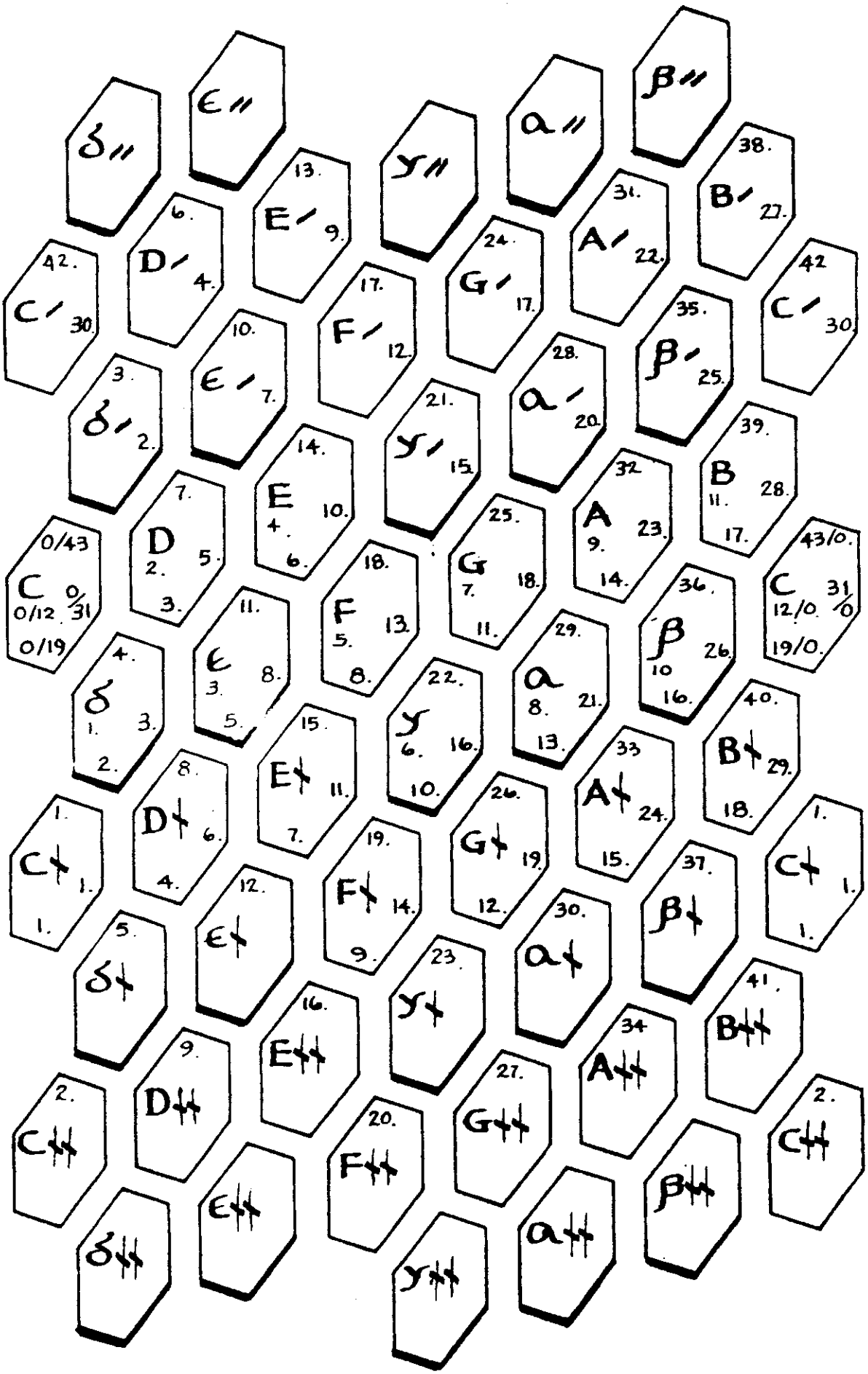
"Positive" notation of 41, in melodic series



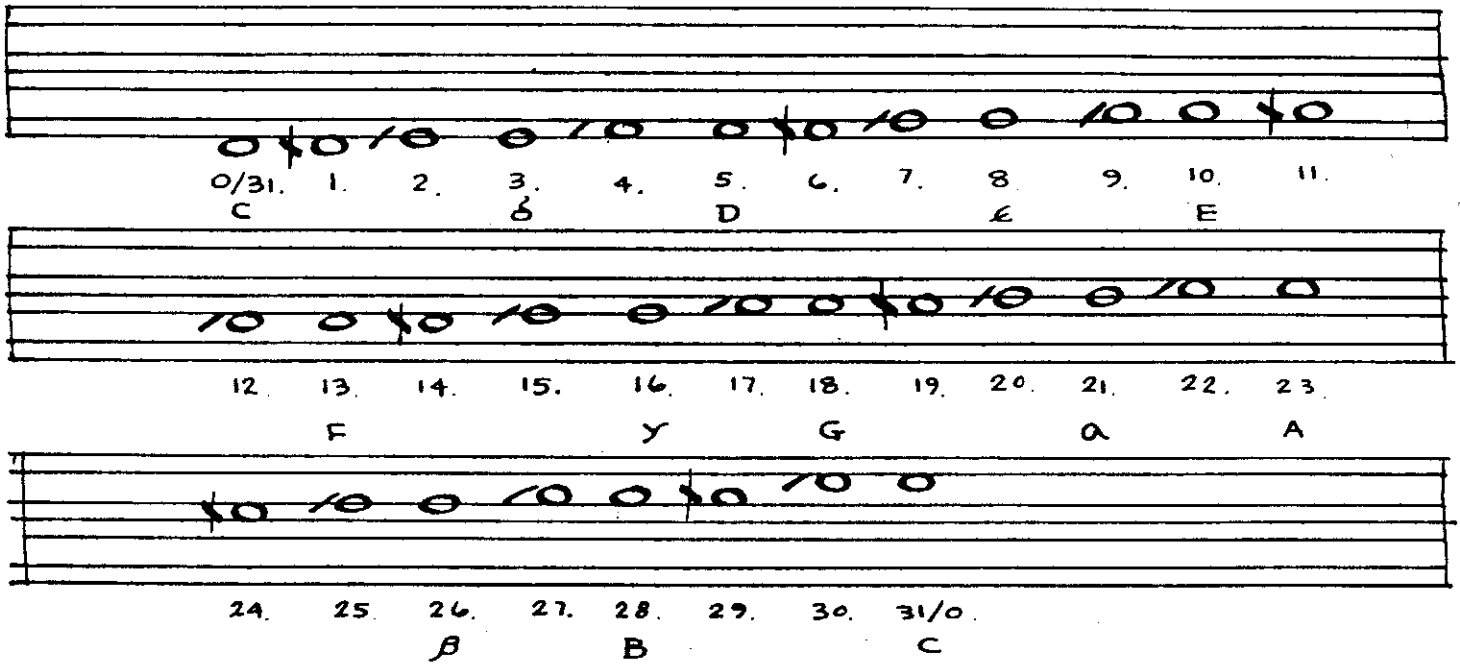
"Positive" notation of keyboard, in linear series



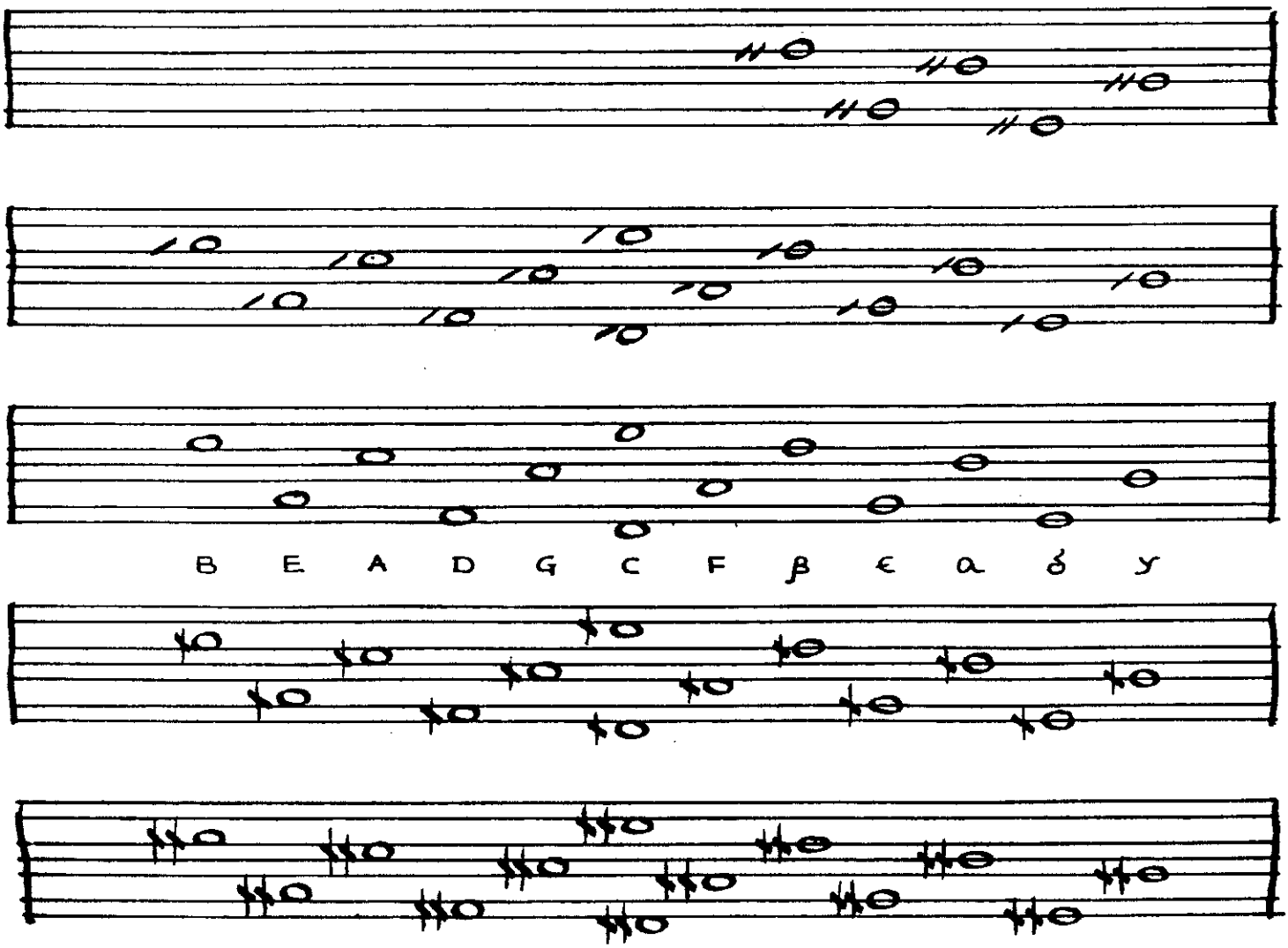
"Negative" notation of the keyboard



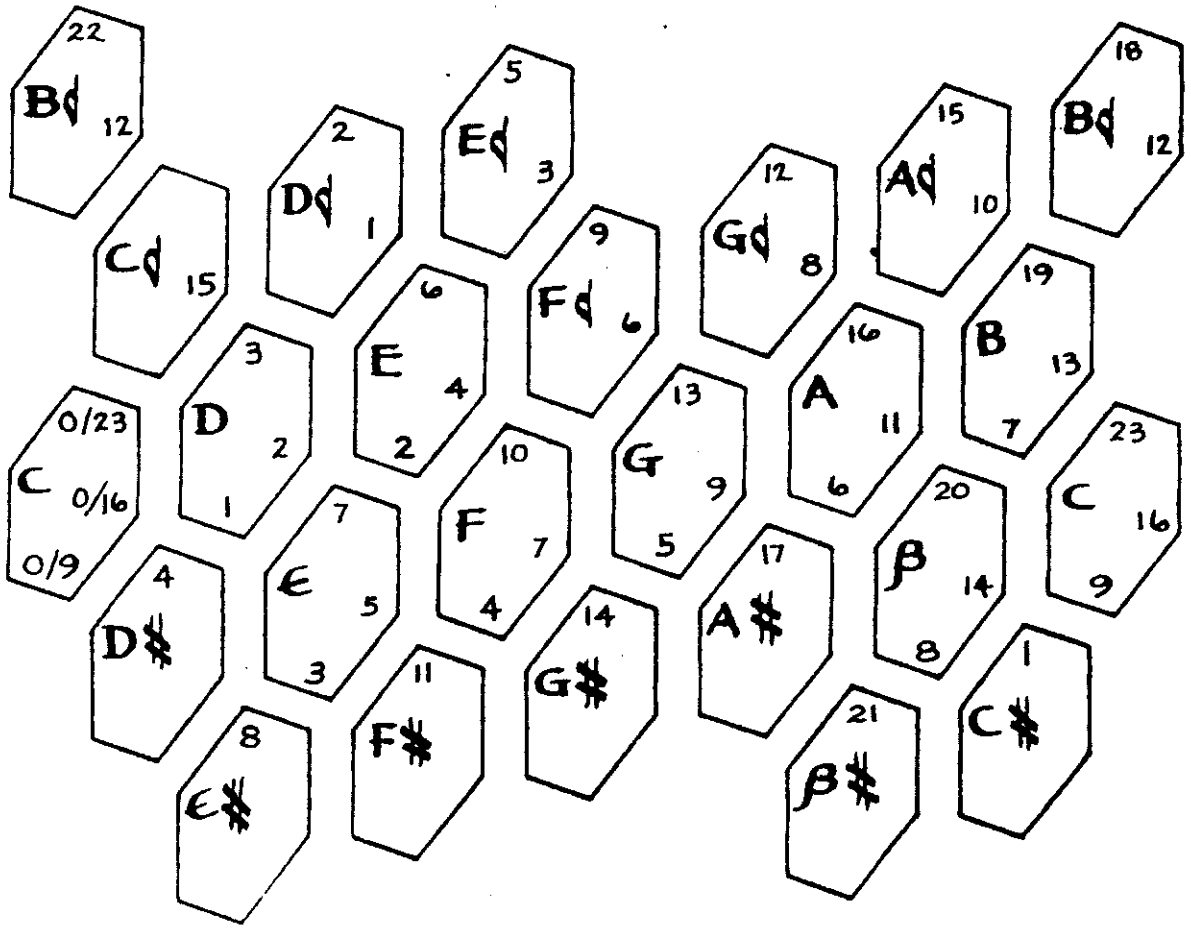
"Negative" notation for 31, in melodic series



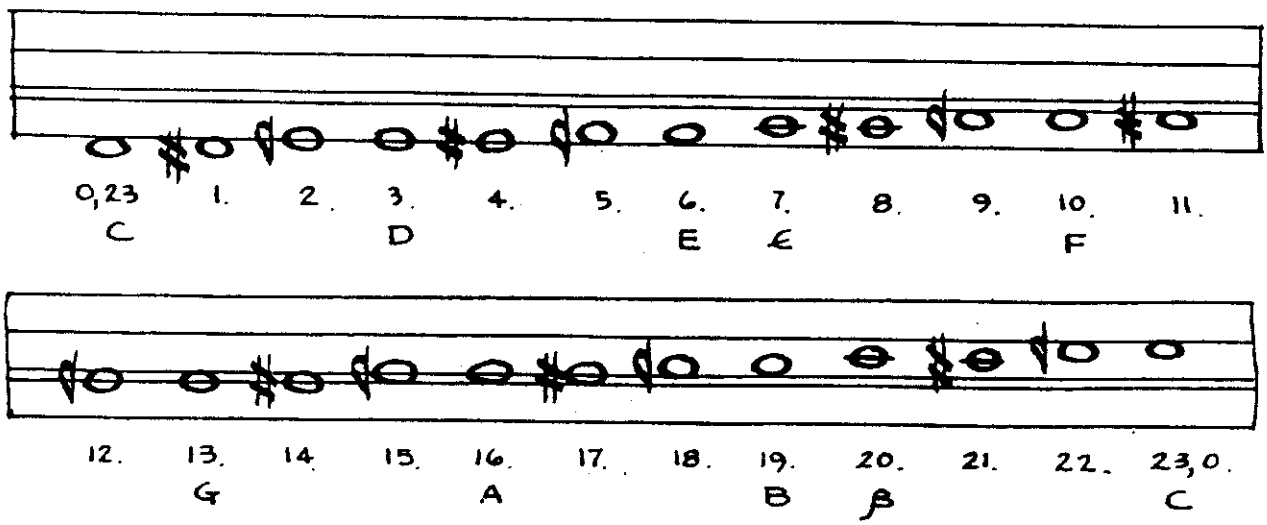
"Negative" notation for the keyboard, in linear series



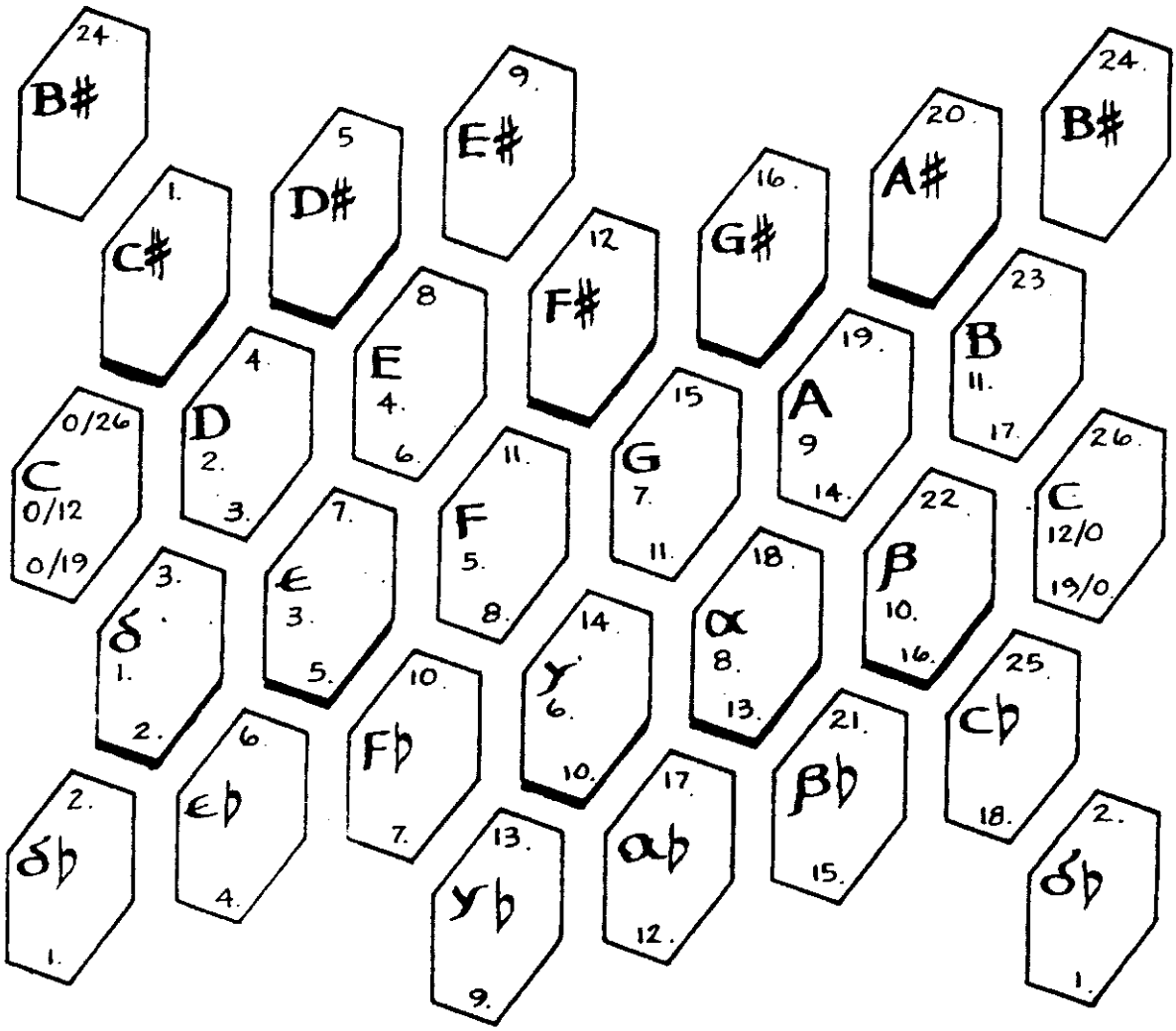
Keyboarding "Septimally Negative" systems



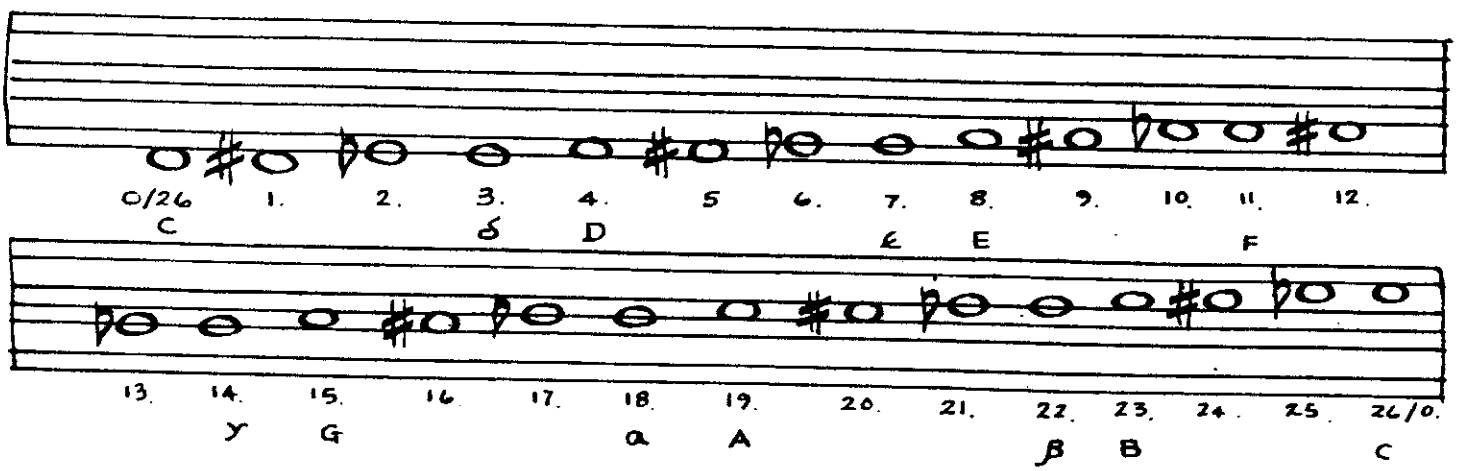
and notation



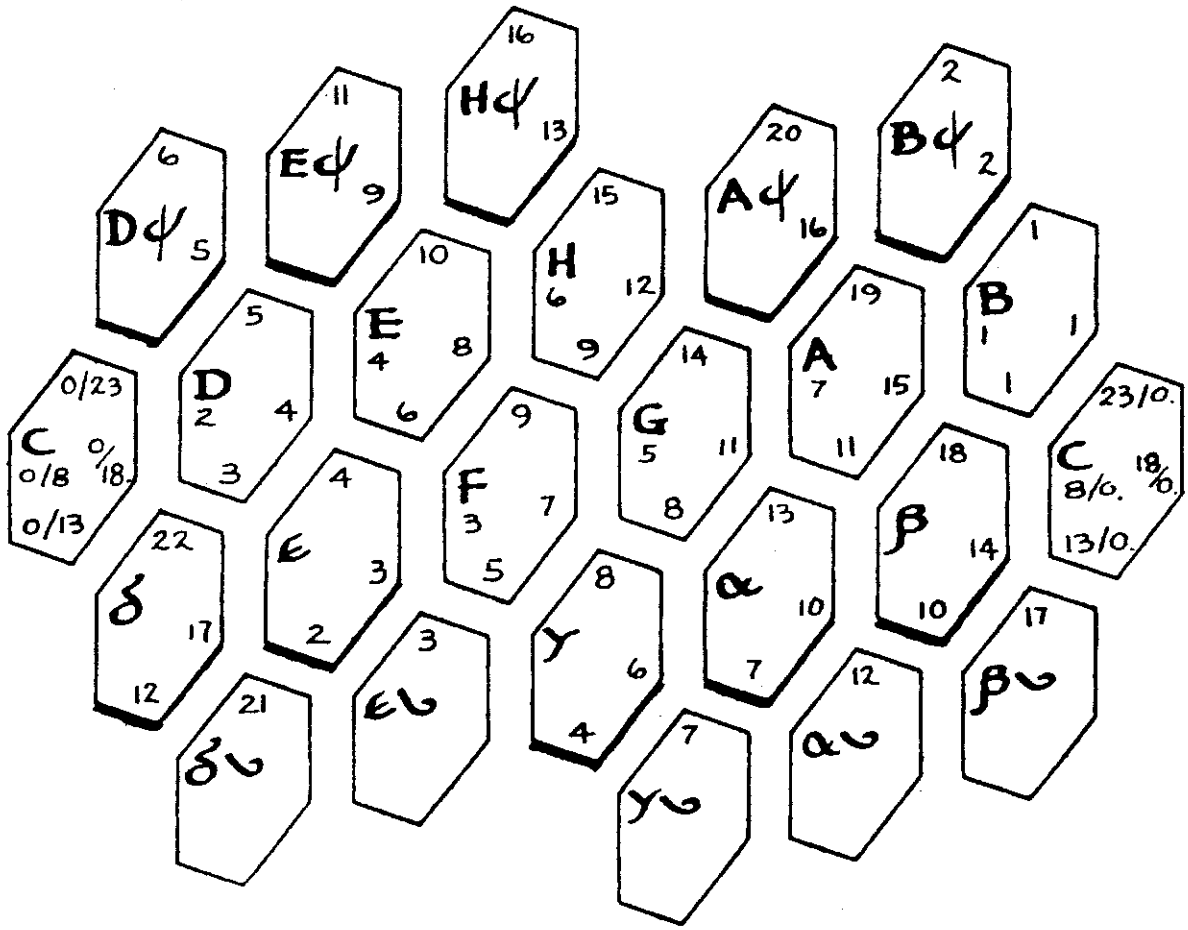
Keyboarding "Septimally Positive" Systems



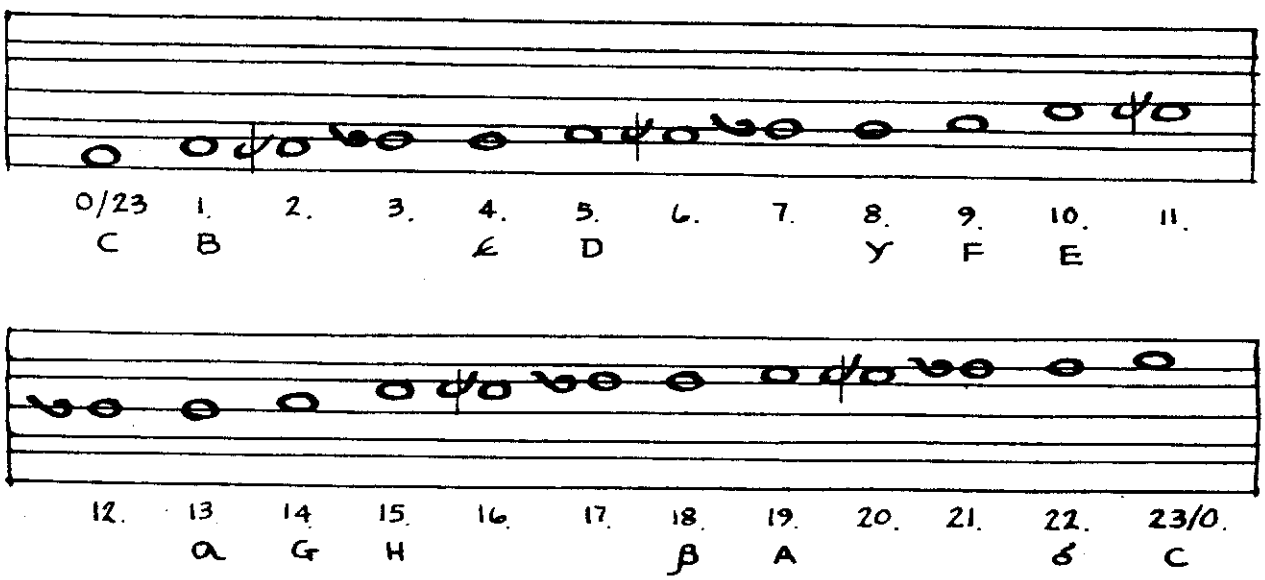
and notation:



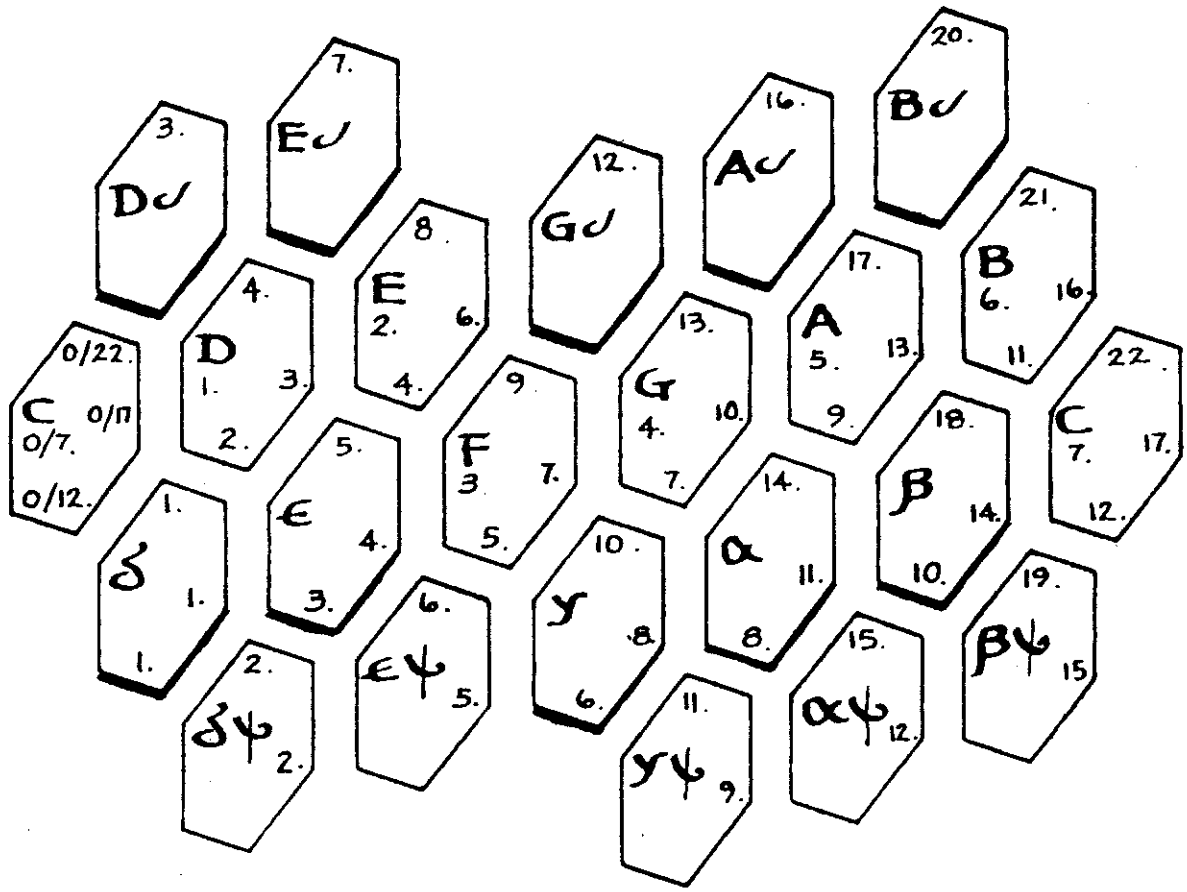
Keyboarding "Quintally Positive" Systems



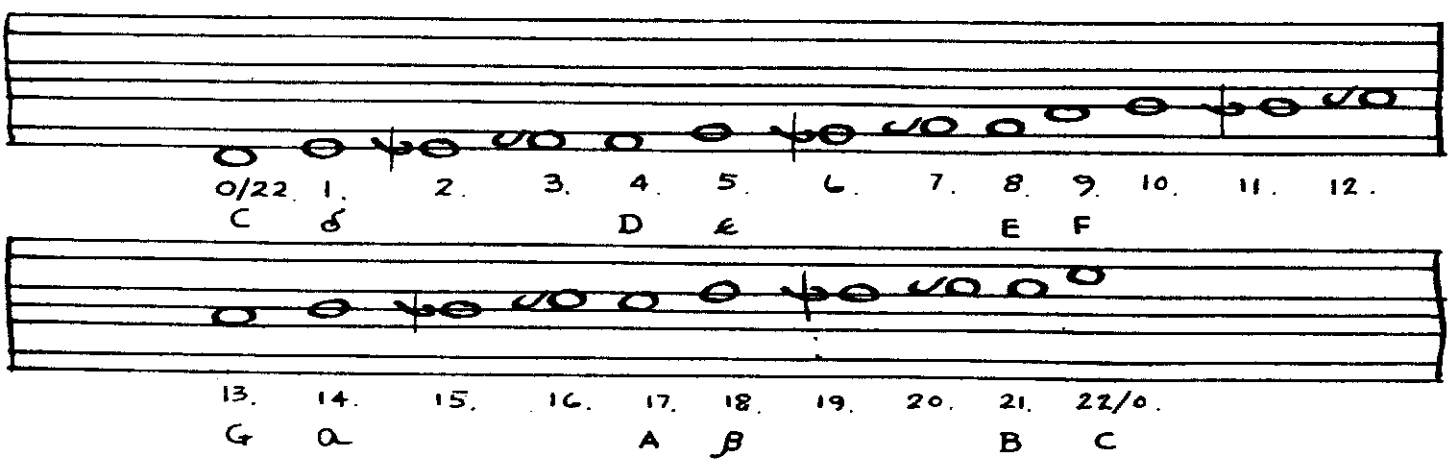
and notation



Keyboarding "Quintally Negative" Systems



and notation



Appendix to xen3a. [in progress]

When Wilson wrote this article for Xenharmonikon he was concerned only with keyboards generated by “fifths or “fourths” as first proposed by Bosanquet. Later this was replaced with his Gral keyboard guide but the question of notation was not returned to.

The following is based on Wilson’s idea of notation at the time by Praveen Venkataramana showing how it can be applied to first to Equal Temperaments up to 72 but also including Moments of Symmetries and Constant Structures. Horograms being covered by the former.

Wilson’s table from his Xenharmonikon 2 article is included to provide an easy reference after Venkataramana tables.

Kraig Grady 2/10/20

A COMPENDIUM OF LINEAR NOTATIONS

Novenally Negative: fifth flatter than 5/9

Examples (+9 fifths = -1 scale degree): 2, 11, 20, 29, 38

With half accidentals (+9 fifths = -2 scale degrees): 4, 13, 22, 31, 40

Novenally Positive: fifth sharper than 5/9

Examples (+9 fifths = +1 scale degree): 7, 16, 25, 34

With half accidentals (+9 fifths = +2 scale degrees): 5, 14, 23, 32, 41

Septimally Negative: fifth flatter than 4/7

Examples (+7 fifths = -1 scale degree): 2, 9, 16, 23, 30, 37

With half accidentals (+7 fifths = -2 scale degrees): 4, 11, 18, 25, 32, 39

Septimally Positive: fifth sharper than 4/7

Examples (+7 fifths = +1 scale degree): 5, 12, 19, 26, 33, 40

With half accidentals (+7 fifths = +2 scale degrees): 3, 10, 17, 24, 31, 38

Duodecimally Negative: fifth flatter than 7/12

Examples (+12 fifths = -1 scale degree): 7, 19, 31, 43

With half accidentals (+12 fifths = -2 scale degrees): 2, 14, 26, 38

Duodecimally Positive: fifth sharper than 7/12

Examples (+12 fifths = +1 scale degree): 5, 17, 29, 41

With half accidentals (+12 fifths = +2 scale degrees): 10, 22, 34

Quintally Negative: fifth flatter than 3/5

Examples (+5 fifths = -1 scale degree): 2, 7, 12, 17, 22, 27, 32, 37, 42

With half accidentals (+5 fifths = -2 scale degrees): 4, 9, 14, 19, 24, 29, 34, 39

Quintally Positive: fifth sharper than 3/5

Examples (+5 fifths = +1 scale degree): 3, 8, 13, 18, 23, 28, 33, 38, 43

With half accidentals (+5 fifths = +2 scale degrees): 6, 11, 16, 21, 26, 31, 36, 41

Octally Negative: fifth flatter than 5/8

Examples (+8 fifths = -1 scale degree): 5, 13, 21, 29, 37

With half accidentals (+8 fifths = -2 scale degrees): 2, 10, 18, 26, 34, 42

Octally Positive: fifth sharper than 5/8

Examples (+8 fifths = +1 scale degree): 3, 11, 19, 27, 35

With half accidentals (+8 fifths = +2 scale degrees): 6, 14, 22, 30, 38

LINEAR NOTATIONS FOR EDO'S UP TO 72 TONES PER OCTAVE, BY SIZE

EDO	Size of Fifth	Notation
1	0	quintally 3bly negative
1	0	septimally 4bly negative
1	1	quintally 2bly positive
1	1	octally 3bly positive
1	1	septimally 3bly positive
1	1	novenally 4bly positive
2	1	quintally negative
2	1	septimally negative
2	1	novenally negative
2	1	octally 2bly negative
2	1	duodecimally 2bly negative
2	2	quintally 4bly positive
3	1	quintally 4bly negative
3	2	octally positive
3	2	quintally positive
3	2	septimally 2bly positive
3	2	duodecimally 3bly positive
3	2	novenally 3bly positive
4	2	quintally 2bly negative
4	2	septimally 2bly negative
4	2	novenally 2bly negative
4	2	octally 4bly negative
4	2	duodecimally 4bly negative
4	3	quintally 3bly positive
4	3	octally 4bly positive
5	3	octally negative
5	3	duodecimally positive
5	3	septimally positive
5	3	novenally 2bly positive
6	3	quintally 3bly negative
6	3	septimally 3bly negative
6	3	novenally 3bly negative
6	4	octally 2bly positive
6	4	quintally 2bly positive
6	4	septimally 4bly positive
7	4	quintally negative
7	4	duodecimally negative
7	4	novenally positive
7	4	octally 3bly negative

7	5	quintally 4bly positive
8	4	quintally 4bly negative
8	4	septimally 4bly negative
8	4	novenally 4bly negative
8	5	quintally positive
8	5	septimally 3bly positive
8	5	duodecimally 4bly positive
9	5	septimally negative
9	5	quintally 2bly negative
9	5	duodecimally 3bly negative
9	6	octally 3bly positive
9	6	quintally 3bly positive
10	6	octally 2bly negative
10	6	duodecimally 2bly positive
10	6	septimally 2bly positive
10	6	novenally 4bly positive
11	6	novenally negative
11	6	septimally 2bly negative
11	6	quintally 3bly negative
11	7	octally positive
11	7	quintally 2bly positive
12	7	quintally negative
12	7	septimally positive
12	7	novenally 3bly positive
12	7	octally 4bly negative
12	8	octally 4bly positive
12	8	quintally 4bly positive
13	7	novenally 2bly negative
13	7	septimally 3bly negative
13	7	quintally 4bly negative
13	8	octally negative
13	8	quintally positive
13	8	septimally 4bly positive
14	8	quintally 2bly negative
14	8	duodecimally 2bly negative
14	8	novenally 2bly positive
14	9	octally 2bly positive
14	9	quintally 3bly positive
15	8	novenally 3bly negative
15	8	septimally 4bly negative
15	9	octally 3bly negative
15	9	duodecimally 3bly positive
15	9	septimally 3bly positive
16	9	septimally negative

16	9	novenally positive
16	9	quintally 3bly negative
16	9	duodecimally 4bly negative
16	10	quintally 2bly positive
17	9	novenally 4bly negative
17	10	quintally negative
17	10	duodecimally positive
17	10	septimally 2bly positive
17	11	octally 3bly positive
17	11	quintally 4bly positive
18	10	septimally 2bly negative
18	10	quintally 4bly negative
18	11	quintally positive
18	11	octally 2bly negative
19	11	duodecimally negative
19	11	septimally positive
19	11	quintally 2bly negative
19	11	novenally 4bly positive
19	12	octally positive
19	12	quintally 3bly positive
20	11	novenally negative
20	11	septimally 3bly negative
20	12	octally 4bly negative
20	12	duodecimally 4bly positive
20	12	septimally 4bly positive
20	13	octally 4bly positive
21	12	quintally 3bly negative
21	12	duodecimally 3bly negative
21	12	novenally 3bly positive
21	13	octally negative
21	13	quintally 2bly positive
22	12	novenally 2bly negative
22	12	septimally 4bly negative
22	13	quintally negative
22	13	duodecimally 2bly positive
22	13	septimally 3bly positive
22	14	octally 2bly positive
22	14	quintally 4bly positive
23	13	septimally negative
23	13	novenally 2bly positive
23	13	quintally 4bly negative
23	14	quintally positive
23	14	octally 3bly negative
24	13	novenally 3bly negative

24	14	quintally 2bly negative
24	14	septimally 2bly positive
24	15	quintally 3bly positive
25	14	novenally positive
25	14	septimally 2bly negative
25	16	octally 3bly positive
26	14	novenally 4bly negative
26	15	septimally positive
26	15	duodecimally 2bly negative
26	15	quintally 3bly negative
26	16	octally 2bly negative
26	16	quintally 2bly positive
27	15	septimally 3bly negative
27	16	quintally negative
27	16	duodecimally 3bly positive
27	16	septimally 4bly positive
27	17	octally positive
27	17	quintally 4bly positive
28	16	quintally 4bly negative
28	16	duodecimally 4bly negative
28	16	novenally 4bly positive
28	17	quintally positive
28	17	octally 4bly negative
28	18	octally 4bly positive
29	16	novenally negative
29	16	septimally 4bly negative
29	17	duodecimally positive
29	17	quintally 2bly negative
29	17	septimally 3bly positive
29	18	octally negative
29	18	quintally 3bly positive
30	17	septimally negative
30	17	novenally 3bly positive
30	19	octally 2bly positive
31	17	novenally 2bly negative
31	18	duodecimally negative
31	18	septimally 2bly positive
31	18	quintally 3bly negative
31	19	quintally 2bly positive
31	19	octally 3bly negative
32	18	septimally 2bly negative
32	18	novenally 2bly positive
32	19	quintally negative
32	19	duodecimally 4bly positive

32	20	quintally 4bly positive
33	18	novenally 3bly negative
33	19	septimally positive
33	19	duodecimally 3bly negative
33	19	quintally 4bly negative
33	20	quintally positive
33	21	octally 3bly positive
34	19	novenally positive
34	19	septimally 3bly negative
34	20	quintally 2bly negative
34	20	duodecimally 2bly positive
34	20	septimally 4bly positive
34	21	octally 2bly negative
34	21	quintally 3bly positive
35	19	novenally 4bly negative
35	22	octally positive
36	20	septimally 4bly negative
36	21	quintally 3bly negative
36	21	septimally 3bly positive
36	22	quintally 2bly positive
36	22	octally 4bly negative
36	23	octally 4bly positive
37	21	septimally negative
37	21	novenally 4bly positive
37	22	quintally negative
37	23	octally negative
37	23	quintally 4bly positive
38	21	novenally negative
38	22	duodecimally 2bly negative
38	22	septimally 2bly positive
38	22	quintally 4bly negative
38	23	quintally positive
38	24	octally 2bly positive
39	22	septimally 2bly negative
39	22	novenally 3bly positive
39	23	quintally 2bly negative
39	23	duodecimally 3bly positive
39	24	octally 3bly negative
39	24	quintally 3bly positive
40	22	novenally 2bly negative
40	23	septimally positive
40	23	duodecimally 4bly negative
41	23	novenally 2bly positive
41	23	septimally 3bly negative

41	24	duodecimally positive
41	24	quintally 3bly negative
41	24	septimally 4bly positive
41	25	quintally 2bly positive
41	26	octally 3bly positive
42	23	novenally 3bly negative
42	25	quintally negative
42	26	octally 2bly negative
42	26	quintally 4bly positive
43	24	novenally positive
43	24	septimally 4bly negative
43	25	duodecimally negative
43	25	septimally 3bly positive
43	25	quintally 4bly negative
43	26	quintally positive
43	27	octally positive
44	24	novenally 4bly negative
44	25	septimally negative
44	26	quintally 2bly negative
44	26	duodecimally 4bly positive
44	27	quintally 3bly positive
44	27	octally 4bly negative
44	28	octally 4bly positive
45	26	septimally 2bly positive
45	26	duodecimally 3bly negative
45	28	octally negative
46	26	septimally 2bly negative
46	26	novenally 4bly positive
46	27	duodecimally 2bly positive
46	27	quintally 3bly negative
46	28	quintally 2bly positive
46	29	octally 2bly positive
47	26	novenally negative
47	27	septimally positive
47	28	quintally negative
47	29	octally 3bly negative
47	29	quintally 4bly positive
48	27	septimally 3bly negative
48	27	novenally 3bly positive
48	28	quintally 4bly negative
48	28	septimally 4bly positive
48	29	quintally positive
49	27	novenally 2bly negative
49	29	quintally 2bly negative

49	30	quintally 3bly positive
49	31	octally 3bly positive
50	28	novenally 2bly positive
50	28	septimally 4bly negative
50	29	duodecimally 2bly negative
50	29	septimally 3bly positive
50	31	octally 2bly negative
51	28	novenally 3bly negative
51	29	septimally negative
51	30	quintally 3bly negative
51	30	duodecimally 3bly positive
51	31	quintally 2bly positive
51	32	octally positive
52	29	novenally positive
52	30	septimally 2bly positive
52	30	duodecimally 4bly negative
52	31	quintally negative
52	32	octally 4bly negative
52	32	quintally 4bly positive
52	33	octally 4bly positive
53	29	novenally 4bly negative
53	30	septimally 2bly negative
53	31	duodecimally positive
53	31	quintally 4bly negative
53	32	quintally positive
53	33	octally negative
54	31	septimally positive
54	32	quintally 2bly negative
54	33	quintally 3bly positive
54	34	octally 2bly positive
55	31	septimally 3bly negative
55	31	novenally 4bly positive
55	32	duodecimally negative
55	32	septimally 4bly positive
55	34	octally 3bly negative
56	31	novenally negative
56	33	quintally 3bly negative
56	33	duodecimally 4bly positive
56	34	quintally 2bly positive
57	32	novenally 3bly positive
57	32	septimally 4bly negative
57	33	duodecimally 3bly negative
57	33	septimally 3bly positive
57	34	quintally negative

57	35	quintally 4bly positive
57	36	octally 3bly positive
58	32	novenally 2bly negative
58	33	septimally negative
58	34	duodecimally 2bly positive
58	34	quintally 4bly negative
58	35	quintally positive
58	36	octally 2bly negative
59	33	novenally 2bly positive
59	34	septimally 2bly positive
59	35	quintally 2bly negative
59	36	quintally 3bly positive
59	37	octally positive
60	33	novenally 3bly negative
60	34	septimally 2bly negative
60	37	octally 4bly negative
60	38	octally 4bly positive
61	34	novenally positive
61	35	septimally positive
61	36	quintally 3bly negative
61	37	quintally 2bly positive
61	38	octally negative
62	34	novenally 4bly negative
62	35	septimally 3bly negative
62	36	duodecimally 2bly negative
62	36	septimally 4bly positive
62	37	quintally negative
62	38	quintally 4bly positive
62	39	octally 2bly positive
63	37	duodecimally 3bly positive
63	37	quintally 4bly negative
63	38	quintally positive
63	39	octally 3bly negative
64	36	septimally 4bly negative
64	36	novenally 4bly positive
64	37	septimally 3bly positive
64	37	duodecimally 4bly negative
64	38	quintally 2bly negative
64	39	quintally 3bly positive
65	36	novenally negative
65	37	septimally negative
65	38	duodecimally positive
65	41	octally 3bly positive
66	37	novenally 3bly positive

66	38	septimally 2bly positive
66	39	quintally 3bly negative
66	40	quintally 2bly positive
66	41	octally 2bly negative
67	37	novenally 2bly negative
67	38	septimally 2bly negative
67	39	duodecimally negative
67	40	quintally negative
67	41	quintally 4bly positive
67	42	octally positive
68	38	novenally 2bly positive
68	39	septimally positive
68	40	quintally 4bly negative
68	40	duodecimally 4bly positive
68	41	quintally positive
68	42	octally 4bly negative
68	43	octally 4bly positive
69	38	novenally 3bly negative
69	39	septimally 3bly negative
69	40	duodecimally 3bly negative
69	40	septimally 4bly positive
69	41	quintally 2bly negative
69	42	quintally 3bly positive
69	43	octally negative
70	39	novenally positive
70	41	duodecimally 2bly positive
70	44	octally 2bly positive
71	39	novenally 4bly negative
71	40	septimally 4bly negative
71	41	septimally 3bly positive
71	42	quintally 3bly negative
71	43	quintally 2bly positive
71	44	octally 3bly negative
72	41	septimally negative
72	43	quintally negative
72	44	quintally 4bly positive

LIST OF LINEAR NOTATIONS FOR EDO'S FROM 1 TO 72, BY NOTATION TYPE

EDO	Size of Fifth	Notation
2	1	duodecimally 2bly negative
14	8	duodecimally 2bly negative
26	15	duodecimally 2bly negative
38	22	duodecimally 2bly negative
50	29	duodecimally 2bly negative
62	36	duodecimally 2bly negative
10	6	duodecimally 2bly positive
22	13	duodecimally 2bly positive
34	20	duodecimally 2bly positive
46	27	duodecimally 2bly positive
58	34	duodecimally 2bly positive
70	41	duodecimally 2bly positive
9	5	duodecimally 3bly negative
21	12	duodecimally 3bly negative
33	19	duodecimally 3bly negative
45	26	duodecimally 3bly negative
57	33	duodecimally 3bly negative
69	40	duodecimally 3bly negative
3	2	duodecimally 3bly positive
15	9	duodecimally 3bly positive
27	16	duodecimally 3bly positive
39	23	duodecimally 3bly positive
51	30	duodecimally 3bly positive
63	37	duodecimally 3bly positive
4	2	duodecimally 4bly negative
16	9	duodecimally 4bly negative
28	16	duodecimally 4bly negative
40	23	duodecimally 4bly negative
52	30	duodecimally 4bly negative
64	37	duodecimally 4bly negative
8	5	duodecimally 4bly positive
20	12	duodecimally 4bly positive
32	19	duodecimally 4bly positive
44	26	duodecimally 4bly positive
56	33	duodecimally 4bly positive
68	40	duodecimally 4bly positive
7	4	duodecimally negative
19	11	duodecimally negative
31	18	duodecimally negative

43	25	duodecimally negative
55	32	duodecimally negative
67	39	duodecimally negative
5	3	duodecimally positive
17	10	duodecimally positive
29	17	duodecimally positive
41	24	duodecimally positive
53	31	duodecimally positive
65	38	duodecimally positive
4	2	novenally 2bly negative
13	7	novenally 2bly negative
22	12	novenally 2bly negative
31	17	novenally 2bly negative
40	22	novenally 2bly negative
49	27	novenally 2bly negative
58	32	novenally 2bly negative
67	37	novenally 2bly negative
5	3	novenally 2bly positive
14	8	novenally 2bly positive
23	13	novenally 2bly positive
32	18	novenally 2bly positive
41	23	novenally 2bly positive
50	28	novenally 2bly positive
59	33	novenally 2bly positive
68	38	novenally 2bly positive
6	3	novenally 3bly negative
15	8	novenally 3bly negative
24	13	novenally 3bly negative
33	18	novenally 3bly negative
42	23	novenally 3bly negative
51	28	novenally 3bly negative
60	33	novenally 3bly negative
69	38	novenally 3bly negative
3	2	novenally 3bly positive
12	7	novenally 3bly positive
21	12	novenally 3bly positive
30	17	novenally 3bly positive
39	22	novenally 3bly positive
48	27	novenally 3bly positive
57	32	novenally 3bly positive
66	37	novenally 3bly positive
8	4	novenally 4bly negative
17	9	novenally 4bly negative
26	14	novenally 4bly negative

35	19	novenally 4bly negative
44	24	novenally 4bly negative
53	29	novenally 4bly negative
62	34	novenally 4bly negative
71	39	novenally 4bly negative
1	1	novenally 4bly positive
10	6	novenally 4bly positive
19	11	novenally 4bly positive
28	16	novenally 4bly positive
37	21	novenally 4bly positive
46	26	novenally 4bly positive
55	31	novenally 4bly positive
64	36	novenally 4bly positive
2	1	novenally negative
11	6	novenally negative
20	11	novenally negative
29	16	novenally negative
38	21	novenally negative
47	26	novenally negative
56	31	novenally negative
65	36	novenally negative
7	4	novenally positive
16	9	novenally positive
25	14	novenally positive
34	19	novenally positive
43	24	novenally positive
52	29	novenally positive
61	34	novenally positive
70	39	novenally positive
2	1	octally 2bly negative
10	6	octally 2bly negative
18	11	octally 2bly negative
26	16	octally 2bly negative
34	21	octally 2bly negative
42	26	octally 2bly negative
50	31	octally 2bly negative
58	36	octally 2bly negative
66	41	octally 2bly negative
6	4	octally 2bly positive
14	9	octally 2bly positive
22	14	octally 2bly positive
30	19	octally 2bly positive
38	24	octally 2bly positive
46	29	octally 2bly positive

54	34	octally 2bly positive
62	39	octally 2bly positive
70	44	octally 2bly positive
7	4	octally 3bly negative
15	9	octally 3bly negative
23	14	octally 3bly negative
31	19	octally 3bly negative
39	24	octally 3bly negative
47	29	octally 3bly negative
55	34	octally 3bly negative
63	39	octally 3bly negative
71	44	octally 3bly negative
1	1	octally 3bly positive
9	6	octally 3bly positive
17	11	octally 3bly positive
25	16	octally 3bly positive
33	21	octally 3bly positive
41	26	octally 3bly positive
49	31	octally 3bly positive
57	36	octally 3bly positive
65	41	octally 3bly positive
4	2	octally 4bly negative
12	7	octally 4bly negative
20	12	octally 4bly negative
28	17	octally 4bly negative
36	22	octally 4bly negative
44	27	octally 4bly negative
52	32	octally 4bly negative
60	37	octally 4bly negative
68	42	octally 4bly negative
4	3	octally 4bly positive
12	8	octally 4bly positive
20	13	octally 4bly positive
28	18	octally 4bly positive
36	23	octally 4bly positive
44	28	octally 4bly positive
52	33	octally 4bly positive
60	38	octally 4bly positive
68	43	octally 4bly positive
5	3	octally negative
13	8	octally negative
21	13	octally negative
29	18	octally negative
37	23	octally negative

45	28	octally negative
53	33	octally negative
61	38	octally negative
69	43	octally negative
3	2	octally positive
11	7	octally positive
19	12	octally positive
27	17	octally positive
35	22	octally positive
43	27	octally positive
51	32	octally positive
59	37	octally positive
67	42	octally positive
4	2	quintally 2bly negative
9	5	quintally 2bly negative
14	8	quintally 2bly negative
19	11	quintally 2bly negative
24	14	quintally 2bly negative
29	17	quintally 2bly negative
34	20	quintally 2bly negative
39	23	quintally 2bly negative
44	26	quintally 2bly negative
49	29	quintally 2bly negative
54	32	quintally 2bly negative
59	35	quintally 2bly negative
64	38	quintally 2bly negative
69	41	quintally 2bly negative
1	1	quintally 2bly positive
6	4	quintally 2bly positive
11	7	quintally 2bly positive
16	10	quintally 2bly positive
21	13	quintally 2bly positive
26	16	quintally 2bly positive
31	19	quintally 2bly positive
36	22	quintally 2bly positive
41	25	quintally 2bly positive
46	28	quintally 2bly positive
51	31	quintally 2bly positive
56	34	quintally 2bly positive
61	37	quintally 2bly positive
66	40	quintally 2bly positive
71	43	quintally 2bly positive
1	0	quintally 3bly negative
6	3	quintally 3bly negative

11	6	quintally 3bly negative
16	9	quintally 3bly negative
21	12	quintally 3bly negative
26	15	quintally 3bly negative
31	18	quintally 3bly negative
36	21	quintally 3bly negative
41	24	quintally 3bly negative
46	27	quintally 3bly negative
51	30	quintally 3bly negative
56	33	quintally 3bly negative
61	36	quintally 3bly negative
66	39	quintally 3bly negative
71	42	quintally 3bly negative
4	3	quintally 3bly positive
9	6	quintally 3bly positive
14	9	quintally 3bly positive
19	12	quintally 3bly positive
24	15	quintally 3bly positive
29	18	quintally 3bly positive
34	21	quintally 3bly positive
39	24	quintally 3bly positive
44	27	quintally 3bly positive
49	30	quintally 3bly positive
54	33	quintally 3bly positive
59	36	quintally 3bly positive
64	39	quintally 3bly positive
69	42	quintally 3bly positive
3	1	quintally 4bly negative
8	4	quintally 4bly negative
13	7	quintally 4bly negative
18	10	quintally 4bly negative
23	13	quintally 4bly negative
28	16	quintally 4bly negative
33	19	quintally 4bly negative
38	22	quintally 4bly negative
43	25	quintally 4bly negative
48	28	quintally 4bly negative
53	31	quintally 4bly negative
58	34	quintally 4bly negative
63	37	quintally 4bly negative
68	40	quintally 4bly negative
2	2	quintally 4bly positive
7	5	quintally 4bly positive
12	8	quintally 4bly positive

17	11	quintally 4bly positive
22	14	quintally 4bly positive
27	17	quintally 4bly positive
32	20	quintally 4bly positive
37	23	quintally 4bly positive
42	26	quintally 4bly positive
47	29	quintally 4bly positive
52	32	quintally 4bly positive
57	35	quintally 4bly positive
62	38	quintally 4bly positive
67	41	quintally 4bly positive
72	44	quintally 4bly positive
2	1	quintally negative
7	4	quintally negative
12	7	quintally negative
17	10	quintally negative
22	13	quintally negative
27	16	quintally negative
32	19	quintally negative
37	22	quintally negative
42	25	quintally negative
47	28	quintally negative
52	31	quintally negative
57	34	quintally negative
62	37	quintally negative
67	40	quintally negative
72	43	quintally negative
3	2	quintally positive
8	5	quintally positive
13	8	quintally positive
18	11	quintally positive
23	14	quintally positive
28	17	quintally positive
33	20	quintally positive
38	23	quintally positive
43	26	quintally positive
48	29	quintally positive
53	32	quintally positive
58	35	quintally positive
63	38	quintally positive
68	41	quintally positive
4	2	septimally 2bly negative
11	6	septimally 2bly negative
18	10	septimally 2bly negative

25	14	septimally 2bly negative
32	18	septimally 2bly negative
39	22	septimally 2bly negative
46	26	septimally 2bly negative
53	30	septimally 2bly negative
60	34	septimally 2bly negative
67	38	septimally 2bly negative
3	2	septimally 2bly positive
10	6	septimally 2bly positive
17	10	septimally 2bly positive
24	14	septimally 2bly positive
31	18	septimally 2bly positive
38	22	septimally 2bly positive
45	26	septimally 2bly positive
52	30	septimally 2bly positive
59	34	septimally 2bly positive
66	38	septimally 2bly positive
6	3	septimally 3bly negative
13	7	septimally 3bly negative
20	11	septimally 3bly negative
27	15	septimally 3bly negative
34	19	septimally 3bly negative
41	23	septimally 3bly negative
48	27	septimally 3bly negative
55	31	septimally 3bly negative
62	35	septimally 3bly negative
69	39	septimally 3bly negative
1	1	septimally 3bly positive
8	5	septimally 3bly positive
15	9	septimally 3bly positive
22	13	septimally 3bly positive
29	17	septimally 3bly positive
36	21	septimally 3bly positive
43	25	septimally 3bly positive
50	29	septimally 3bly positive
57	33	septimally 3bly positive
64	37	septimally 3bly positive
71	41	septimally 3bly positive
1	0	septimally 4bly negative
8	4	septimally 4bly negative
15	8	septimally 4bly negative
22	12	septimally 4bly negative
29	16	septimally 4bly negative
36	20	septimally 4bly negative

43	24	septimally 4bly negative
50	28	septimally 4bly negative
57	32	septimally 4bly negative
64	36	septimally 4bly negative
71	40	septimally 4bly negative
6	4	septimally 4bly positive
13	8	septimally 4bly positive
20	12	septimally 4bly positive
27	16	septimally 4bly positive
34	20	septimally 4bly positive
41	24	septimally 4bly positive
48	28	septimally 4bly positive
55	32	septimally 4bly positive
62	36	septimally 4bly positive
69	40	septimally 4bly positive
2	1	septimally negative
9	5	septimally negative
16	9	septimally negative
23	13	septimally negative
30	17	septimally negative
37	21	septimally negative
44	25	septimally negative
51	29	septimally negative
58	33	septimally negative
65	37	septimally negative
72	41	septimally negative
5	3	septimally positive
12	7	septimally positive
19	11	septimally positive
26	15	septimally positive
33	19	septimally positive
40	23	septimally positive
47	27	septimally positive
54	31	septimally positive
61	35	septimally positive
68	39	septimally positive

SOME LINEAR NOTATIONS

Novenally Positive: 25edo

C C𝄲 D< D D𝄲 E< E E𝄲 ε ε𝄲 F< F F𝄲 G< G G𝄲 A< A A𝄲 B< B B𝄲 β β𝄲 C< C

Novenally Negative: 20edo

C C𝄳 D D𝄳 E E𝄳 ε> ε ε𝄳 F F𝄳 G G𝄳 A A𝄳 B B𝄳 β> β β𝄳 C

Octally Positive: 19edo

C C@ B𝄫 B B@ D D@ F F@ E𝄫 E E@ G G@ β β@ A𝄫 A A@ C

Octally Negative: 21edo

C C% B B% D𝄫 D D% F𝄫 F F% E E% G𝄫 G G% β𝄫 β β% A A% C𝄫 C

Duodecimally 2bly Positive: 22edo

C δ δ^ δ𝄎 D ε ε^ ε𝄎 E F γ γ^ γ𝄎 G α α^ α𝄎 A β β^ β𝄎 B C

Septimally 2bly Positive: 24edo

C C^ C♯ C♯^ D D^ D♯ D♯^ E E^ F F^ F♯ F♯^ G G^ G♯ G♯^ A A^ A♯ A♯^ B B^ C

Quintally 2bly Positive: 21edo

C C^ B ε ε^ D γ γ^ F F^ E α α^ G G^ H β β^ A δ δ^ C (*Note*: B is the same as C𝄾, and C is the same as B 𝄽)

Quintally 2bly Negative: 19edo

C C^ δ D D^ ε E E^ F F^ γ G G^ α A A^ β B B^ C (Note: δ is the same as C𝄾, and C is the same as δ𝄽)

Septimally 2bly Negative: 25edo

C C^ C≷ D D^ D≷ E E^ ε ε^ ε≷ F F^ F≷ G G^ G≷ A A^ A≷ B B^ β β^ β≷ C

Novenally 2bly Negative: 22edo

C C^ D D^ E E^ E𝄳 E𝄳^ ε ε^ F F^ G G^ A A^ B B^ B𝄳 B𝄳^ β β^ C

Quintally 3bly Positive: 24edo

C C^ C^^ B B^ B^^ D D^ D^^ F F^ F^^ E E^ E^^ G G^ G^^ β β^ β^^ A A^ A^^ C (*Note*: B is the same as C𝄾, and C is the same as B𝄽)

Octally 4bly Positive: 20edo

C C^ C^^ Bvv Bv B D F F^ F^^ Evv Ev E G β β^ β^^ Avv Av A C (*Note*: C^^^^ is the same as C@, and Bvvvv is the same as B𝄫)

A CLASSIFICATION OF TONAL SYSTEMS, AND A PROPOSED STANDARDIZATION OF SIGNATURES

Issued by Erv Wilson March 1, 1965

3bly positive	2bly positive	Positive	Neutral	Negative	
|	|	5	12	19	Singulary systems
|	10	17	24	31	Binary systems
15	22	29	36	43	Ternary systems
27	34	41	48	(55)	Quarternary systems
39	46	53	(60)	(67)	Quinary systems

Illustrative definition;

Singulary system:	One unit interval separates C from C#
Binary systems:	Two unit intervals separate C from C#
Ternary systems:	Three unit intervals separate C from C#
Quarternary systems:	Four unit intervals separate C from C#
Quinary systems:	Five unit intervals separate C from C#

Negative systems:	B# is one unit interval below C
Neutral systems:	B# is equivalent to C
Positive systems:	B# is one unit interval above C
2bly positive systems:	B# is two unit intervals above C
3bly positive systems:	B# is three unit intervals above C

Note: The signs 𝄫, ♭, 𝄮, ♯, 𝄪 are, without exception, as derived by Fourths.

Fractional Signature:											Applicable Systems:	
Whole	𝄫		♭		𝄮		♯		𝄪		5 12 19	Singulary
1/2	𝄫	𝄳	♭	𝄬	𝄮	𝄲	♯	𝄰	𝄪		10 17 24 31	Binary
1/3	𝄫	𝄳	𝄭	♭	𝄬	𝄱	𝄮	𝄲	♯	𝄰	𝄪	15 22 29 36 43	Ternary
1/4	𝄫	𝄳	𝄭	♭	𝄬	𝄱	𝄮	𝄲	𝄯	♯	𝄰	𝄪	27 34 41 48 55	Quarternary
1/5	(Not designed.)											39 46 53 60 67	Quinary

12 is the Neutral, Singulary system and requires the Whole signature.
22 is the 2bly Positive, Ternary system and requires the 1/3 signature.
31 is the Negative, Binary system and requires the 1/2 signature.
41 is the Positive, Quarternary system and requires the 1/4 signature.
53 is the Positive, Quinary system and requires the 1/5 signature.