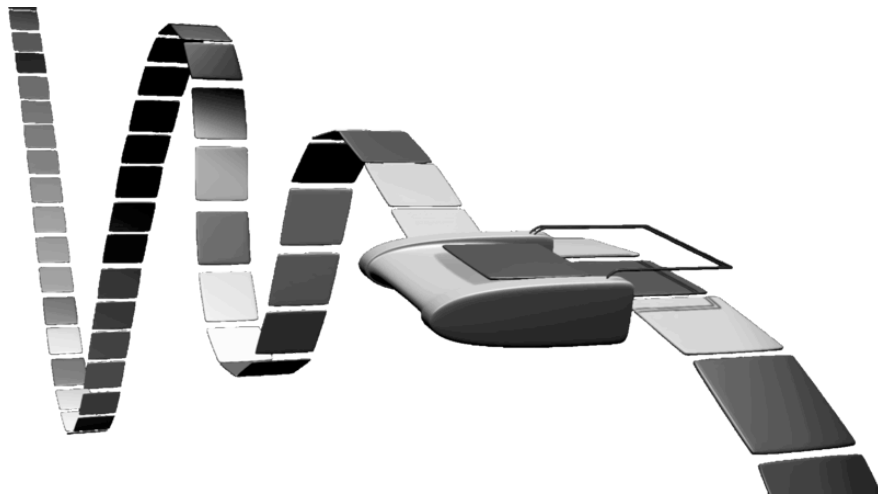


Turing Machine

twelve cards for any instruments



Program Note:

A Turing Machine is a theoretical computer, which stores and manipulates information on an infinitely long strip of tape. The tape serves as both data and instructions, and is shuffled backward and forward as information is read and stored. Specific symbols trigger computational processes: addition, subtraction, storage, etc.

Turing Machine is built on the idea that a musical event can be heard while also affecting the order of neighboring events and the larger structure of the music. In the piece, a series of 5" x 5" cards hold musical phrases. The cards are arranged in a line, similar to the imaginary strip of tape mentioned above. Performers scan left-right-left over these cards, playing one phrase at a time. Each phrase has side-effects which cause a modification of future musical events. As performers work through the process of the piece, materials are gradually removed until left with nothing.

The music is fragmented, with phrases emerging from silence as performers move through the piece at their own pace. Phrases may repeat many times, or may not be heard at all. The cards are arranged into three sections delineated by harmonic content, but performers do not move through the sections in unison, blurring any sharp division.

Performance Note:

Turing Machine is a piece for ensemble with open instrumentation. The score consists of 12 unique pages. Each "page" is a 5" x 5" square, with a musical phrase along each of the four edges. The pages are divided up into three groups of four pages each, and each group uses a different set of harmonies.

Each performer plays from a set of all 12 pages, and orders the pages as follows: the three harmonic groupings should be ordered from lowest to highest page numbers, but the order of the pages within the groups is up to the performer. In other words, there are three groups of pages: A: [1, 2, 3, 4] B: [5, 6, 7, 8] C: [9, 10, 11, 12]. The pages should be arranged so that group A appears before group B and B before C, but the page order within each group is open. A performer will only play from one group at a time.

The three harmonic materials (A, B, C) also correspond to three sections. Each performer moves through the sections in the same order (A, B, C), but at their own pace - as explained below.

The performers all start together with the first grouping of pages, group A. The four pages can be in any order, and any rotational orientation. Starting from the left, and moving from left to right, then back from right to left, players play the phrases given along the bottom of each page. Many phrases have an arrow printed above them, which points either to the left or to the right. This indicates that after the phrase is played, the adjacent card in the direction of the arrow should be rotated one turn clockwise. The first and fourth cards "wrap around" and modify each other. In other words, if the first card indicates to rotate the card to its left, the fourth card should be rotated - the same applies if the fourth card indicates to rotate the card to its right.

If a phrase has a large "X" above it, after playing that phrase, the card is removed from play. When all of the cards in a group have been removed, the performer should move on to the next group. When all groups have been removed, that performer is done playing. The process of rotating and removing the cards determines the form and duration of the piece.

Tempo is free, and if a phrase happens to be repeated, it should be played at a new tempo. Fermatas should be interpreted liberally, as a way to radically expand or contract the duration of a phrase. Each performer should surround their phrases with silence, and the overall sound should be multi-layered with punctuations of silence and extreme contrasts in dynamic level.

Notes which use triangular noteheads have a flexible register. If the triangle points up, the note can appear in the given octave, or any octave higher. If the triangle points down, the note can appear in the given octave or lower. The pitch class should remain the same.

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This musical score consists of several staves. At the top, a staff in treble clef features a melodic line with dynamic markings *fu*, *d*, *ff*, and *fu*. Below it, a grand staff (treble and bass clefs) contains a complex piano accompaniment. A large 'X' is placed over the middle section of the grand staff. The bottom staff, in bass clef, contains a bass line with dynamic markings *f*, *mf*, *mp*, *p*, and *mp*. A bracket labeled '3' spans a section of the bass line, with the instruction 'Harmonic (If Possible)' written above it. A large number '3' is also present in the center of the score. Various other markings include slurs, accents, and articulation marks.

dd *d* *du* *f* *d* *f* *du*

ff *mp* *mf* *mp*

pp *ff* *p* *mf*

9 8 8

3 3

Change Octaves During Tremolo

Harmonic (If Possible)

4

Detailed description: This musical score is for a drum set, featuring five staves. The top staff contains a complex rhythmic pattern with dynamic markings *dd*, *d*, *du*, *f*, *d*, *f*, and *du*. Below this, a large 'X' is placed over a section of the score. The middle-left staff is marked *ff* and *mp*, with a triplet of eighth notes and a note marked 'v'. The middle-right staff is marked *mf* and *mp*, with a triplet of eighth notes. The bottom staff is marked *pp*, *ff*, *p*, and *mf*, and includes the instruction 'Change Octaves During Tremolo'. A large number '4' is centered in the middle of the page. Arrows indicate connections between different parts of the score.

The musical score consists of four staves. The top staff features a melodic line with dynamic markings *fu* and *dd* \leftarrow *du*. The second staff from the top contains a *Timbre Trill* with a large 'X' and the number '5' next to it. The third staff includes a triplet and dynamic markings *pp*, *mp*, and *f*. The bottom staff has dynamic markings *mp*, *mf*, and *mp*, along with a triplet. Arrows indicate connections between the staves, and a large 'X' is placed over the second staff.

f *fu* *f* *du*

du

fu

ff

mp *mf* *f*

mf *mp*

6

This musical score consists of four staves. The top staff features a melodic line with dynamic markings *f*, *fu*, *d*, and *du*. It includes slurs and a bracket labeled ε . The second staff from the top contains a complex passage with a large 'X' over it, dynamic markings *f* and *d*, and slurs with a bracket labeled ε . The third staff is labeled 'Timbre Trill' and includes dynamic markings *mf* and *mp*. The bottom staff shows a melodic line with dynamic markings *mf*, *mp*, *mf*, and *mp*, and a triplet of eighth notes. Arrows indicate connections between the staves, and a large 'X' is placed over the second staff.

7

ff *f* *d* *f* *f*

d *fu* *d* *f* *d* *f*

mf *f* *mp*

Timbre Trill *mf* *f*

8

This musical score features four staves with various dynamic markings and articulations. The top staff is marked *ddd* and *fu*. The left staff contains markings *ff*, *fu*, *zfs*, *zfs*, *du*, *zfs*, and *d*. The bottom staff is marked *p* and *mp*. The right staff is marked *mp* and *mf*. A large 'X' is placed in the center of the page, and the number '9' is positioned below it. Arrows indicate connections between the staves.

dd *f* *fu* *dd* *f* *du*

mp *mf* *mp* *f*

mf *ff* *pp* *f* *mp*

10

du *f* *d* *f* *fu*

f *mf* *mp* *mf* *f*

sfz *du* *sfz* *mf* *fu*

d *pp*

Harmonic (if Possible)

Harmonic (if Possible)

7:4

11

Detailed description: This page of a musical score contains four staves. The top staff is a vocal line with lyrics 'du', 'd', and 'fu' and dynamic markings *f*, *d*, and *f*. The second staff from the top is a piano accompaniment with lyrics 'fu', 'du', 'fu', 'mf', and 'f'. The third staff is another vocal line with lyrics 'sfz du sfz' and 'mf fu'. The bottom staff is a piano accompaniment with a 7:4 time signature, starting with a forte (*f*) dynamic and ending with a pianissimo (*pp*) dynamic. A large 'X' is placed over the second and third staves. Arrows indicate connections between the vocal lines and the piano accompaniment. The text 'Harmonic (if Possible)' appears twice, once above the second staff and once above the third staff.

du *d*

dd *fu* *dd* *f*

X

12

ppp *f*

f *ff*

Increasingly Wide Vibrato

3

ε

The image shows a musical score for piano with several staves. The top staff features a melodic line with dynamics *du* and *d*, and a bracket labeled ϵ . The middle section contains a large 'X' over a staff with dynamics *dd*, *fu*, *dd*, and *f*. Below this is a staff with a triplet of eighth notes, dynamics *f* and *ff*, and the instruction 'Increasingly Wide Vibrato'. The bottom staff shows a melodic line with dynamics *ppp* and *f*. Arrows indicate the flow and duration of various musical elements.