

E L E P H A N T K E Y B O A R D

ELEPHANT KEYBOARD

interactive music instrument for elephants
 1x1x3m (3x3x9 ft), 450Kg (1000lb)
 teak keyboard, midi controlled synthesizer, computer, custom
 interface, amplifier and speakers

Don Ritter 2000

The Elephant Keyboard is an interactive music instrument which was designed to be played by elephants. This instrument was used within the Thai Elephant Orchestra project that took place during January, 2000 at the Thai Elephant Conservation Center in Lampang, Thailand. This project contained various acoustic musical instruments being played by elephants, including the electronic Elephant Keyboard.

The physical design of the Elephant Keyboard, interactive hardware construction, sound design and programming was carried out in Brooklyn, New York, while the wooden construction of the keyboard and its connection to the digital components was accomplished at the Conservation Center in Lampang, Thailand.

The Elephant Keyboard was designed to accommodate the 4000Kg (9000 lb) elephants by using strong keys of appropriate diameter, having the keys pivot toward the elephants and by placing the keys at a comfortable height for playing. The spacing of the eight keys permitted the instrument to be used in a duet by two elephants simultaneously.

After initial training sessions with various elephants and their individual trainers, it was determined that only a few young elephants had the musical ear to play the keyboard. Older elephants tended to push the keys rather than pull them, perhaps caused by their many years of labor pushing timber for the logging industry. The documentary video of the Elephant Keyboard contains footage of the instrument being constructed, training sessions, and recordings of the Elephant Keyboard being played in concert with various acoustic instruments.

documentary video: <http://www.aesthetic-machinery.com/elephant.html>

Performers on the Elephant Keyboard
 JoJo 9 year old male
 Luuk Khang 7 year old female
 Luuk Kob 6 year old male
 Phrathida 7 year old female

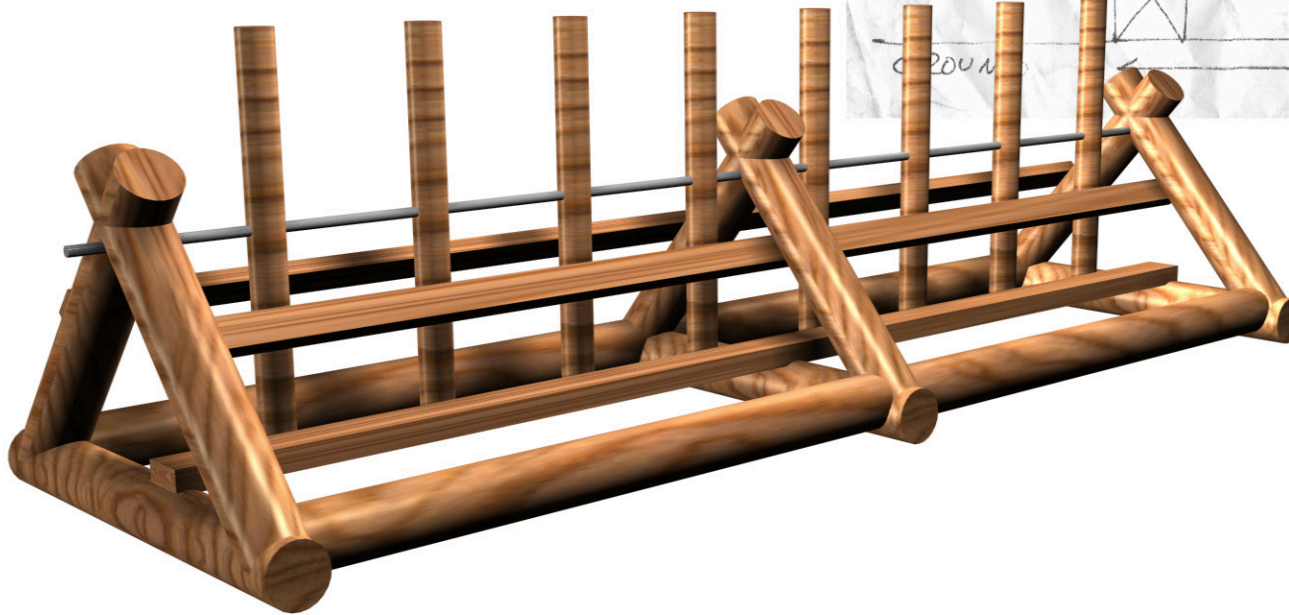
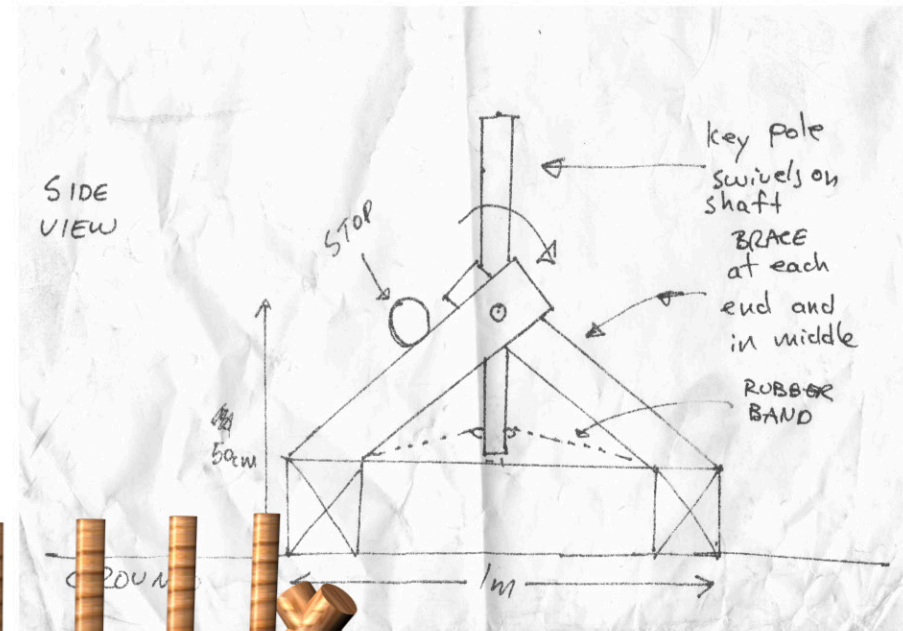
Elephant Keyboard concept, physical design, sound design, interactive programming and interface construction by Don Ritter.

Construction of wooden components within the Elephant Keyboard by staff at the Thai Elephant Conservation Center under direction of Don Ritter and Nipakorn Singhputhankul.



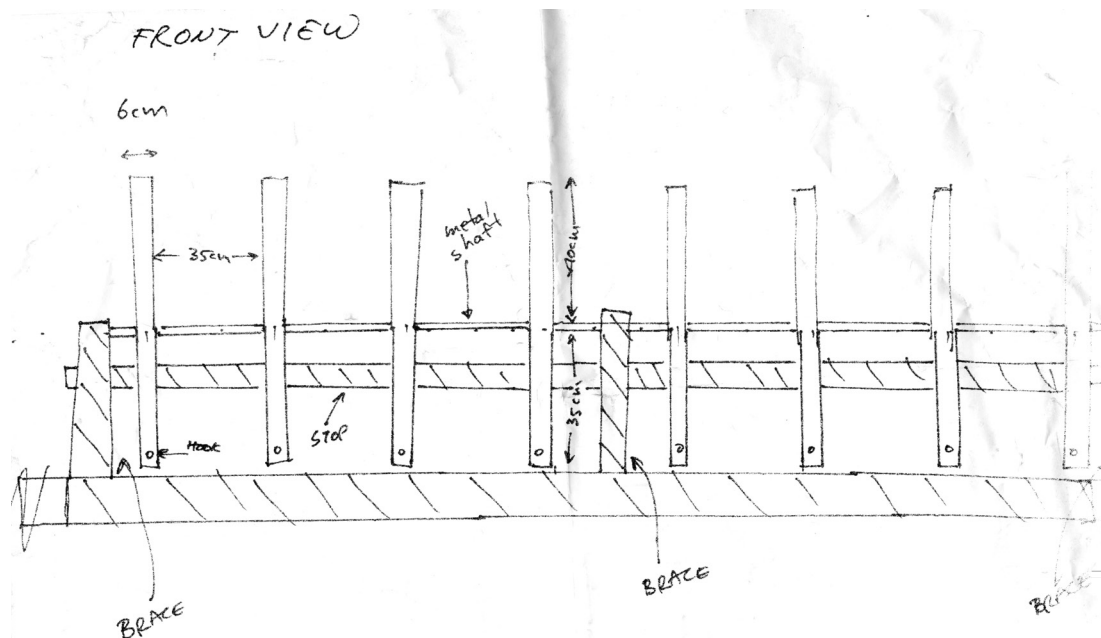
TECHNICAL DESCRIPTION

Eight keys made of solid teak are supported by a teak structure, permitting each spring loaded key to swivel approximately 45 degrees vertically when pulled by an elephant's trunk. A mercury switch located on each key communicates its position to a computer 25m (75 ft) away through a custom interface, and this computer controls a synthesizer that plays musical sequences according to the specific key pulled, the duration a key is held and the speed of a pulled key. The resulting eight channel music is amplified and played through a pair of speakers on the keyboard which face the performing elephants. The musical sequences are based on the five note pentatonic scale used in traditional Thai music. The placement of the keys was designed to accommodate two elephants on the keyboard simultaneously.



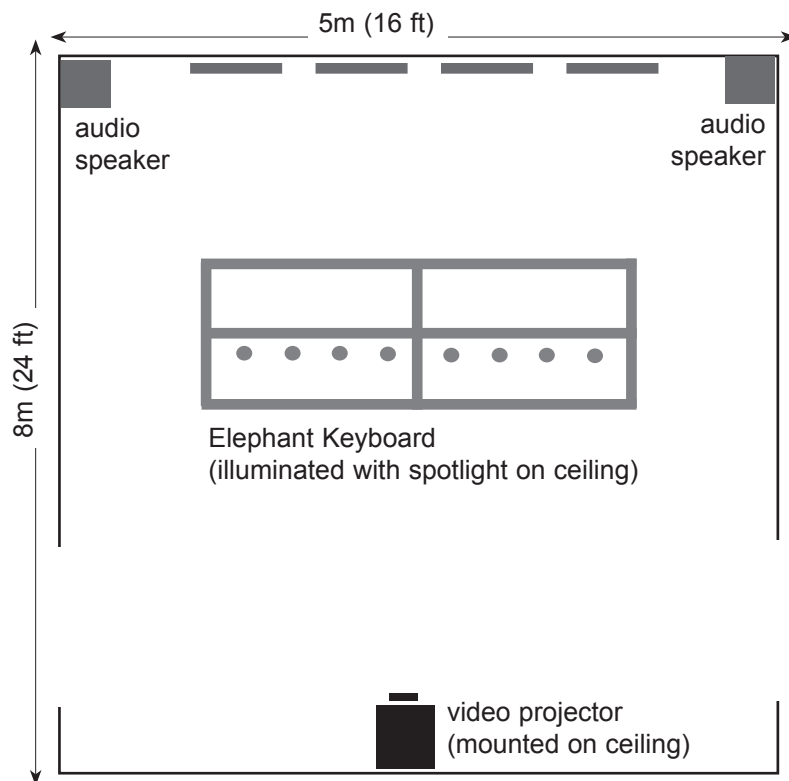
INTERACTIVITY

The position and activation of the keys on the Elephant Keyboard are determined by a series of mercury switches which are attached to the keys. The key positional information is connected to a custom built interface which communicates to a computer running custom software. The software determines which key has been pulled, the speed it has been pulled, and the duration that a key is held. These parameters control a series of pentatonic sequences using a timbre determined by the particular key selected. Each sequence contains a series of notes which change slightly over time. For example, if a particular key is held its tempo will increase, and for another key the pitch will decrease over time.



The Elephant Keyboard can be displayed in a gallery or museum where it can be played by the public. The suggested configuration is to have a completely operational reproduction of the keyboard accompanied by a documentary video of the instrument being played by elephants.

Because of the weight of the original instrument and its current location in Thailand, reconstruction of the wooden structure is required at the exhibiting location. An inexpensive wood can be used for construction to be carried out by a carpenter under the direction of Don Ritter. Estimated time for construction is 3 days.



Equipment to be provided by Don Ritter

- 1 computer and interactive software
- custom interface to be attached to wooden structure of Elephant Keyboard
- 1 synthesizer
- DVD recording of documentary video

Equipment to be provided by Exhibiting Location

- exhibition space (minimum 15x15 ft/5x5 m)
- reconstruction of wooden structure of Elephant Keyboard
- 1 stereo amplifier, 2 audio speakers, wiring
- 1 video projector and screen(6x9 ft/2x3m)
- 1 DVD player
- secure location for computer, synthesizer, amplifier, etc.
- 1 spot light on Elephant Keyboard



C R E D I T S

Recorded and constructed at the Thai Elephant Conservation Center, Lampang, Thailand, January 2000. Access to elephants provided through Richard Lair

Video documentation shot by Tamara Barton and Kurt Ossenfort; video editing, titling and 3D animation by Don Ritter

Photographic images by Neil Budzinski, Tamara Barton and Kurt Ossenfort

