Raising an Obelisk
Using Ancient Egyptian Technology

Handshouse Studio
Several theories for erecting obelisk

Engelbach and Chevrier

Fig. 3.10 An obelisk descending from the sand construction ramp onto its pedestal, according to Engelbach and Chevrier.

Fig. 3.11 Erecting an obelisk from a relatively low brick ramp with the help of ropes.
Auguste Choisy

“The Problem of the Obelisk”, R. Engelbach, 1923
Fig. 27.—SECTIONAL MODEL OF AN EMBANKMENT, TO SHOW METHOD OF ERECTING OBEISKS.
(Page 70.)

Model of erecting obelisks - “The Problem of the Obelisk”, R. Englebach, 1923
FIG. 28.—OBELISK AT THE TOP OF THE SLOPE, OVERHANGING THE SAND-FUNNEL.
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Fig. 30.—OBELISK ENGAGING IN THE SAND; ALL THE LASHINGS ARE RELEASED.

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Fig. 31.—OBELISK HALF-WAY DOWN THE FUNNEL.
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Fig. 32.—OBELISK AT REST AT THE BOTTOM OF THE FUNNEL, ITS EDGE ENGAGING IN THE NOTCH OF THE PEDESTAL.

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Fig. 33.—OBELISK AFTER IT HAS BEEN PULLED UPRIGHT.
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The Handshouse Studio Center of Gravity, Guided Rotation, Sand Flow Method of Raising an Obelisk Using Ancient Egyptian Technologies
Testing 6 foot obelisk model:
“Center of Gravity, Guided Rotation, Sand Flow Method”
Fig. 3.9 Erecting granite pillars in temples of the Fourth Dynasty.

“Building in Egypt”
Dieter Arnold, 1991

Center of Gravity
Guided Rotation

Fig. 3.21 Lowering ceiling blocks, suspended from three ropes, into the shaft of the Ka-tomb of Senwosret I at Lisht.
Sand Flow Method

“Building in Egypt”
Dieter Arnold, 1991

Fig. 3.25 Lowering heavy blocks of stone into sand-filled shafts by removing the sand from below the blocks.
From the papyrus Anastasi I:

Empty the space which has been filled with sand under the monument of thy Lord which has been brought up on the ground from the Red Mountain.
Obelisk on earth ramp and stone bearing wall. Obelisk center of gravity on wooden pivot block. Butt of obelisk resting on sand filled chamber. Pedestal stone with turning groove at base of chamber.
Constructing the bearing wall and pivot block. 
Placing pedestal stone
Sand box with side and rear openings
Obelisk rotates around wooden pivot block to 75 degree bearing wall face aligns obelisk with turning groove.
Full scale Obelisk - a 25 ton granite obelisk ready for raising.
Sand is removed symmetrically from side portals - causing obelisk rotation. Removing sand lowers obelisk towards pedestal stone.
Sand flows forming angle of repose
Sand flow
Sand removed by hand with hoes and baskets.
Guided rotation using 3” ropes and break blocks.
Three ropes guide the obelisk during rotation to control alignment and resist forward movement.
Monitoring the amount of rope stretch and obelisk alignment.
Obelisk on pedestal stone, resting at 75 degrees against the bearing wall - ready for final raising -

Fig. 3.14 Representation of the (symbolic) erection of an obelisk with ropes by Ptolemaios XII Neos Dionysos.
Obelisk engaged in turning groove on pedestal stone.

Cleaning sand from pedestal stone.
Harness and ropes configuration for hold back, lateral stabilization and forward pulling.
The final pull - Raising the obelisk from 75 to 90 degrees.
Obelisk raised