

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

ANIMATION EDITOR

VERSION 1.3.10

TOMB EDITOR WAD TOOL MANUAL

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ROT Y P R

POS X Y Z

MODE

None

Smooth

Smooth Reverse

Linear

Linear Reverse

Symmetric Smooth

Symmetric Linear

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TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION

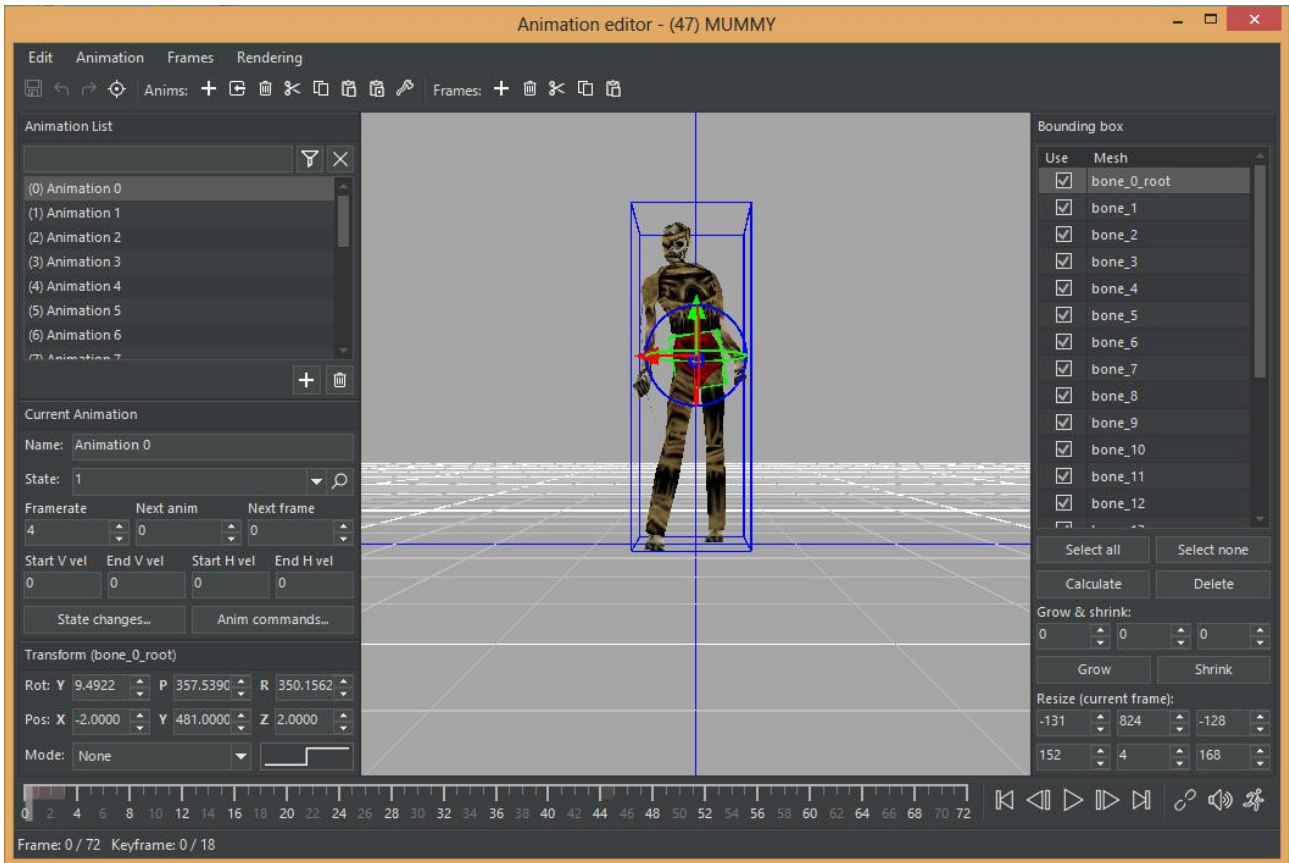


**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
INTERFACE**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR



TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



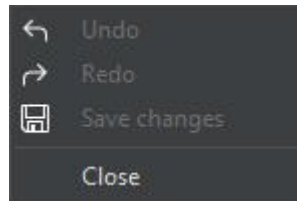
**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
DROP DOWN MENU EDIT**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR DROP DOWN MENU

EDIT



UNDO

Undo last operation.

HOTKEY:

.....



REDO

Redo last operation.

HOTKEY:

.....



SAVE CHANGES

Saves the changes to the animation object in the Wad2.

HOTKEY:

.....



CLOSE

Closes the Animation Editor.

HOTKEY:

.....

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



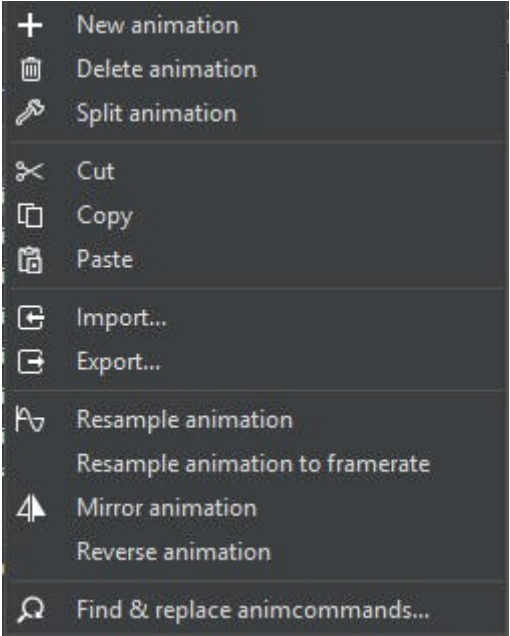
**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
DROP DOWN MENU ANIMATION**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR DROP DOWN MENU

ANIMATION



NEW ANIMATION
Start new animation.

HOTKEY:



DELETE ANIMATION
Delete animation.

HOTKEY:



SPLIT ANIMATION
Split animation.

HOTKEY:



CUT ANIMATION
Cut animation.

HOTKEY:



COPY ANIMATION
Copy animation.

HOTKEY:



PASTE ANIMATION
Paste animation.

HOTKEY:



IMPORT ANIMATION
Import animation.

HOTKEY:



EXPORT ANIMATION
Export animation.

HOTKEY:

TOMB EDITOR WAD TOOL MANUAL



RESAMPLE ANIMATION

Resample animation.

HOTKEY:

RESAMPLE ANIMATION TO FRAME RATE

Resample animation to frame rate.

HOTKEY:



MIRROR ANIMATION

Mirror animation.

HOTKEY:

REVERSE ANIMATION

Reverse animation.

HOTKEY:



FIND AND REPLACE

Find and replace animation commands.

HOTKEY:

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



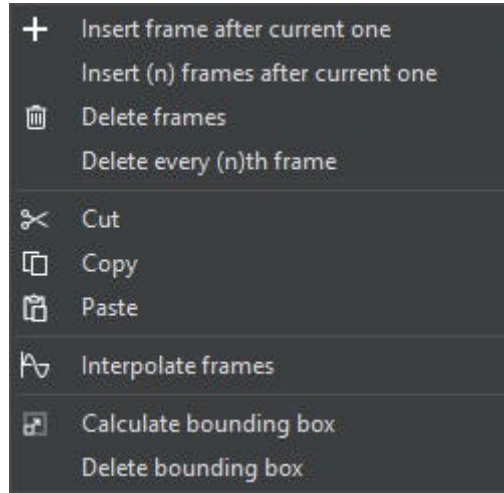
**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
DROP DOWN MENU FRAMES**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR DROP DOWN MENU

FRAMES



INSERT FRAME AFTER CURRENT

Insert frame after the current frame.

HOTKEY:

INSERT N FRAMES AFTER CURRENT

Insert N frames after the current frame.

HOTKEY:



DELETE FRAMES

Delete frames.

HOTKEY:

DELETE EVERY N th FRAME

Delete every N th frame.

HOTKEY:



CUT FRAMES

Cut frames.

HOTKEY:



COPY FRAMES

Copy frames.

HOTKEY:



PASTE FRAMES

Paste frames.

HOTKEY:



INTERPOLATE FRAMES

Interpolate frames.

HOTKEY:



CALCULATE BOUNDING BOX

Calculate bounding box.

HOTKEY:



DELETE BOUNDING BOX

Delete bounding box.

HOTKEY:

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



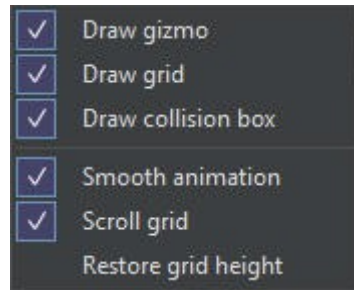
**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
DROP DOWN MENU RENDERING**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR DROP DOWN MENU

RENDERING



Note: The **GIZMO** is the three coloured arrow lines and rings that surround the selected object. It is used to move and rotate the object.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



TOMB EDITOR
WAD TOOL

ANIMATION EDITOR ICONS

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR ICONS



SAVE

Saves the Animation and returns to the [Wad Tool](#).



UNDO

Undo the last edit.



REDO

Redo the last edit.



RESET CAMERA

Reset the camera view to the default position in the [Animation Editor](#).

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



TOMB EDITOR
WAD TOOL

ANIMATION EDITOR
ICONS FOR ANIMATIONS

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR ICONS FOR ANIMATIONS



ADD ANIMATION

Start a new Animation for the object.



IMPORT

Import an animation.

The supported formats are:

Filmbox (*.fbx)

Collada (*.dae)

TombEditor XML (*.anim)



DELETE ANIMATION

Deletes an animation for the object.



CUT ANIMATION

Cuts an animation.



COPY ANIMATION

Copy an animation to the clipboard.



PASTE ANIMATION

Pastes an animation from the clipboard to the current animation frame.



REPLACE ANIMATION

Replaces an animation.



SPLIT ANIMATION

Splits an animation.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
ICONS FOR FRAMES**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR ICONS FOR FRAMES



ADD FRAME

Adds a new frame to the current animation.



DELETE FRAMES

Deletes frames from the current animation.



CUT FRAMES

Cuts frames from the current animation.



COPY FRAMES

Copy frames from the current animation to the clipboard.



PASTE FRAMES

Paste frames from the clipboard to the current animation.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
ANIMATION LIST**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR ANIMATION LIST



ADD ANIMATION

Start a new Animation for the object.



DELETE ANIMATION

Deletes an animation for the object.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
CURRENT ANIMATION**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR CURRENT ANIMATION

NAME	The name of the current animation.
STATE	The State ID of the current animation.
FRAME RATE	The frame rate for the animation.
END FRAME	The last frame of the animation.
NEXT ANIMATION	The animation that is started when the current animation is completed.
NEXT FRAME	The frame that is started when the current animation is completed.
START V VELOCITY	Start Vertical velocity of the object.
END V VELOCITY	End Vertical velocity of the object.
START H VELOCITY	Start Horizontal velocity of the object.
END H VELOCITY	End Horizontal velocity of the object.
STATE CHANGES...	Opens the State Changes Window for the Animation.
ANIM COMMANDS...	Opens the Animation Commands Window for the Animation.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION

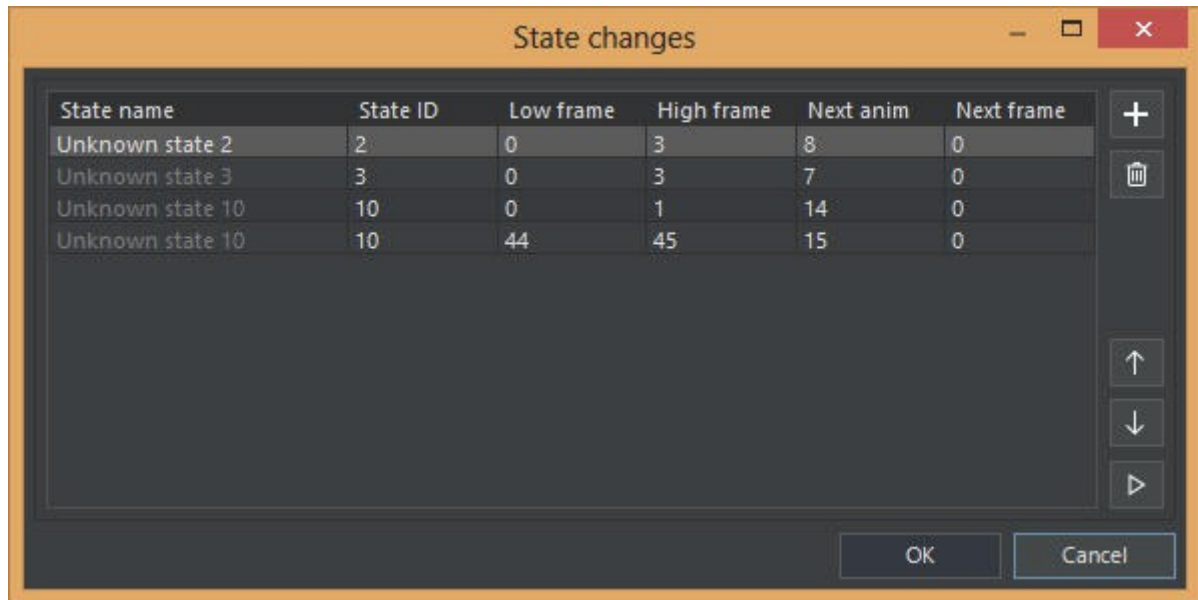


**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
STATE CHANGES**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR STATE CHANGES



ADD A NEW STATE CHANGE



DELETE A STATE CHANGE



MOVE THE STATE CHANGE UP THE LIST



MOVE THE STATE CHANGE DOWN THE LIST



PLAY THE STATE CHANGES IN CHAIN MODE

STATE NAME

The name of the **State ID**.

STATE ID

The number for the **State ID**.

LOW FRAME

The low frame number to activate the change of state.

HIGH FRAME

The high frame number to activate the change of state.

NEXT ANIMATION

The new animation to start for the change of state.

NEXT FRAME

The frame in the new animation to start for a change of state.

TOMB EDITOR WAD TOOL MANUAL

STATE IDs

If you have looked through any object's animations, you will see that each one has a **State ID** value assigned to it.

A **State ID** is a value that asks the game engine to respond to the object's animations in a certain manner.

For **LARA**, a **State ID** can achieve multiple purposes, such as:

Allowing Lara to do what she does.

The **State ID** tells the game engine what Lara is doing so that the game engine will let her do it.

For example: **State ID 71 (crouched)** and **State IDs 80, 81**, and **84-88** all allow Lara to enter crawlspaces. Attempting to use a different **State ID** in a crawlspace causes Lara to glitch and get stuck standing up through the ceiling.

Manipulating the camera

Some **State IDs** change the camera angle to make things interesting.

For example: **State ID 25** for Lara's back jump makes the camera face Lara at an angle from the front instead of from the back.

State IDs 36 and **37** for pushing and pulling blocks makes the camera move to the square on the left (if possible) to watch Lara.

When you are making custom animations, consider manipulating the **State IDs** to make some interesting camera angles as long as they do not conflict with other **State ID** purposes.

Setting Lara's direction for jumps

The following **State IDs** are for Lara's jumps:

- State ID 3** for a forward jump,
- State ID 25** for a backward jump,
- State ID 26** for a jump to the right,
- State ID 27** for a jump to the left,
- State ID 28** for a jump straight up.

Each jump has two animations:

The first part sets the grab position command to create the curve of the jump.

The second part is the jump.

The **State ID** of the first animation determines the direction of the curve of the jump.

TOMB EDITOR WAD TOOL MANUAL

Determine how Lara reacts to the environment

Most **State IDs** have hard coded behaviours that occur when **Lara** does certain things during a certain **State ID**.

For example: **State ID 1** for Lara's run allows her to fall off ledges. **State ID 0** (walking), **State ID 2** (approach standstill), **State ID 16** (walk backwards), and **State ID 21-22** (walk sideways) do not allow her to fall.

State ID changes

Some **State IDs** exist only to serve as **State ID** changes and not for any actual animations.

For example: **State ID 68** when Lara flips from a forward to a backward jump or vice versa.

In most other cases, the **State ID** associated with the target animation is used for the **State ID** change.

For other objects such as baddies and doors, the principle of **State IDs** is the same, except **Manipulating the camera** and **Setting Lara's direction for jumps** will never apply.

Some objects such as those in the **ANIMATING** slots do not use different **State IDs**, so the value is left at 0.

TOMB EDITOR WAD TOOL MANUAL

STATE ID CHANGES

Some reactions during animations are hard coded, but others are not. The object and the game engine hold a conversation using **State IDs**. You now know how the object communicates to the game engine with its **State IDs**.

The game engine also sends **State IDs** of its own for the object to respond to. This can happen for some of the changes in environment around the object. Also for **LARA** with button presses by the player.

State ID changes are sets of values that allow the object to respond to these new **State IDs** under specific parameters. Each animation can have its own set of **State ID** changes. You can see them in the **Wad Tool Animation Editor** when clicking on the **State Change Editor Button**.

Each **State ID** change is structured of 5 values:

State ID	Sets which game engine's State ID for the object to respond to.
Low frame	Sets the lower boundary of the range of frames within which the object can respond to the new State ID .
High frame	Sets the upper boundary of the range of frames within which the object can respond to the new State ID .
Next animation	The new animation for the object to use when responding.
Next frame	The frame to start on in the new animation.

IMPORTANT: The object's current **State ID** restricts which **State IDs** the object can respond to. **You cannot simply make up your own responses.**

For example: For **LARA** pressing the sprint key while crawling does not generate any **State ID** from the game engine, so making a new **State ID** change with **State ID 73** for her crouching animation would do nothing. You would have to edit the game engine to make this work.

Some responses are hard coded for certain animation slots.

For example: When **Lara** vaults a 2-click block, she can either start running from the vault or put her right foot down. This vaulting animation is **State ID 2**.

If you try making another **State ID 2** animation and allow her to optionally break into a run with a **State ID** change for **State ID 1**, it will not work.

Animation 96 and **Animation 150** have hard coded responses. Because of such things you have to keep an open mind and accept when a **State ID** change will not work the way you want it to.

TOMB EDITOR WAD TOOL MANUAL

There are some unused responses for some **State IDs** and/or **animation slots**.

For instance: Lara's standing still animation, **Animation 103** with **State ID 2** can respond to **State ID 73** when the player holds the sprint key first before pushing the forward key. Trying this sequence of keys in any official TR3-5 game gives no response at all from **Lara**. She is stuck because this **State ID** change is missing. So it may be worth making a jump from one **State ID** to another even if you have not seen it done before. Do not expect it to work, but if it does, then you have discovered a new **State ID** link.

The **low frame and high frame** parameters typically cover the whole animation's frames. They are more specific for any animation where an object switches from one foot to the other, such as walking or running. With these parameters you can make sure that, when the object's animation is in the frames with his/her left foot on the ground, the next animation is the one starting on the left foot, not the one starting on the right foot. So this allows the animations to flow better.

When considering manipulating **State IDs** and **State ID** changes, the best way to start is observing the existing **State IDs** and **State ID** changes in object animations. Observe what the **State IDs** do and which **State IDs** can lead to which new **State IDs**.

If you are going to make animations for your setup check that your setup will work. Make some simple test animations with your **State IDs** and **State ID** changes and try it in a level.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
ANIMATION COMMANDS**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR

ANIMATION COMMANDS

Animation commands can be used to perform the given functions during a specific animation. Each animation can have its own animation commands.

Access them by pressing the [Animation Commands Button](#).

Select the Add Command function

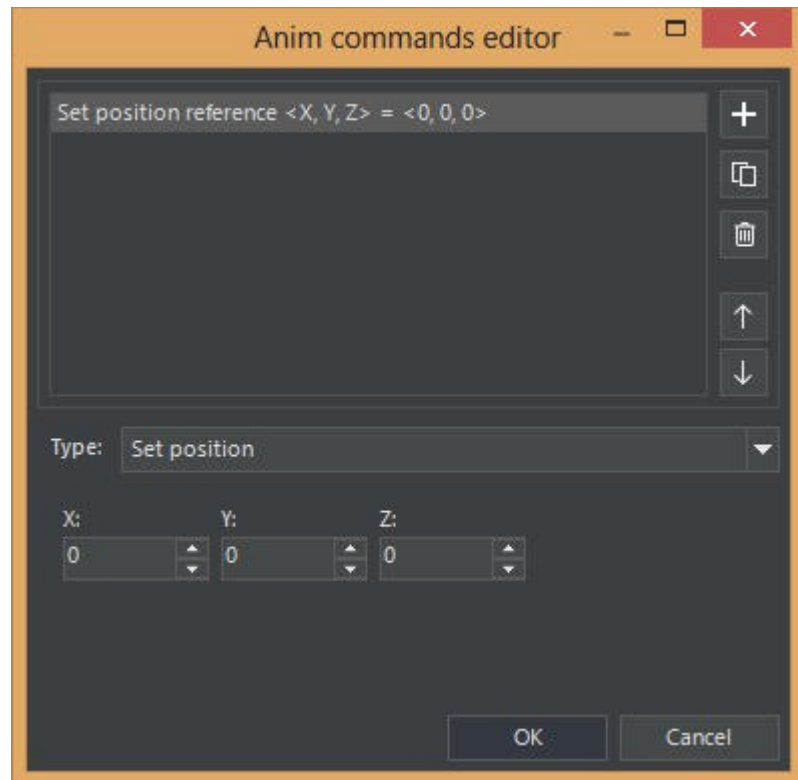


Select the Type of Animation Command.

The possible Animation Command functions are:

- Set Position**
- Set Jump Velocity**
- Empty Hands**
- Kill Entity**
- Play Sound**
- Play Flip Effect**

Set position

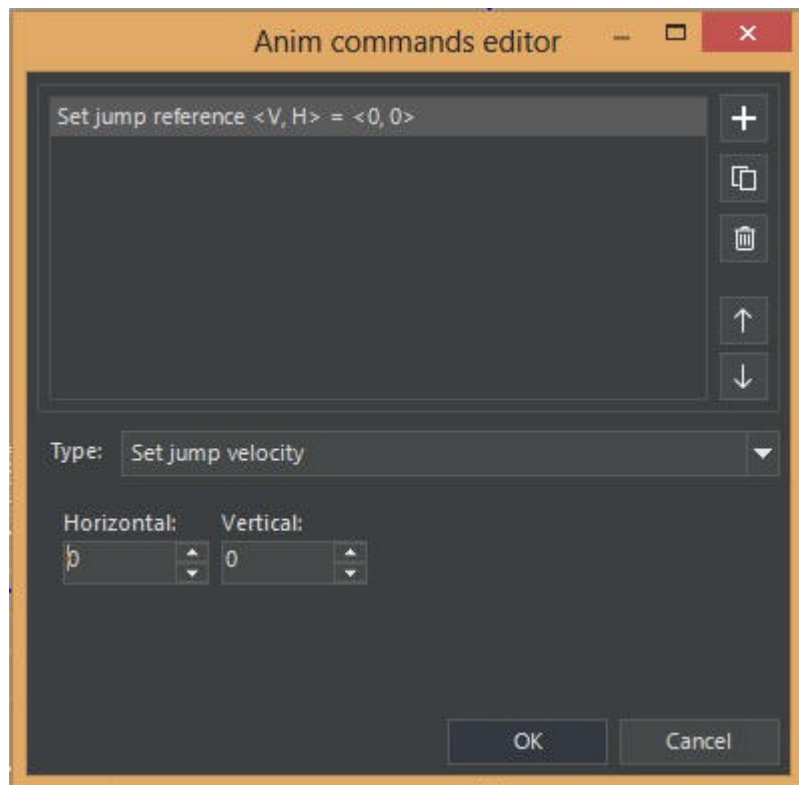


Once the animation is complete, it moves the object by the specified values in the 3 fields. These are the X, Y, and Z axis.

Select **OK** to apply the Animation Command and return to the [Animation Editor](#).

TOMB EDITOR WAD TOOL MANUAL

Set Jump Velocity



LARA object only. This sets up the curve of the jump for Lara, which is initiated once the animation is complete.

The two fields are the distance (Z axis) and the height (Y axis).

The Y axis is upside down, so normally the height is a negative value.

For Height (Vertical) :

It is difficult to determine how the height values work exactly.

–**100** is 6 clicks high

–**110** is 7 clicks high,

These values are used for Lara's current jumps.

But **10** is not necessarily equivalent to a click.

–**70** still lets Lara grab ledges 4 clicks higher than her,
as opposed to an expected 3 clicks of height if going by the values used.

The values go by a mathematical function of a second degree or higher.

This means as we add clicks to Lara's height, less and less of an additional value would be needed to reach the next click. It will take some experimenting with this value to reach a desired height in terms of clicks.

TOMB EDITOR WAD TOOL MANUAL

For distance (Horizontal) :

25 is equivalent to one square of a gap that Lara can cover if she grabs the ledge of the opposite side.

50 is used for her standing jumps which cover 2 squares,

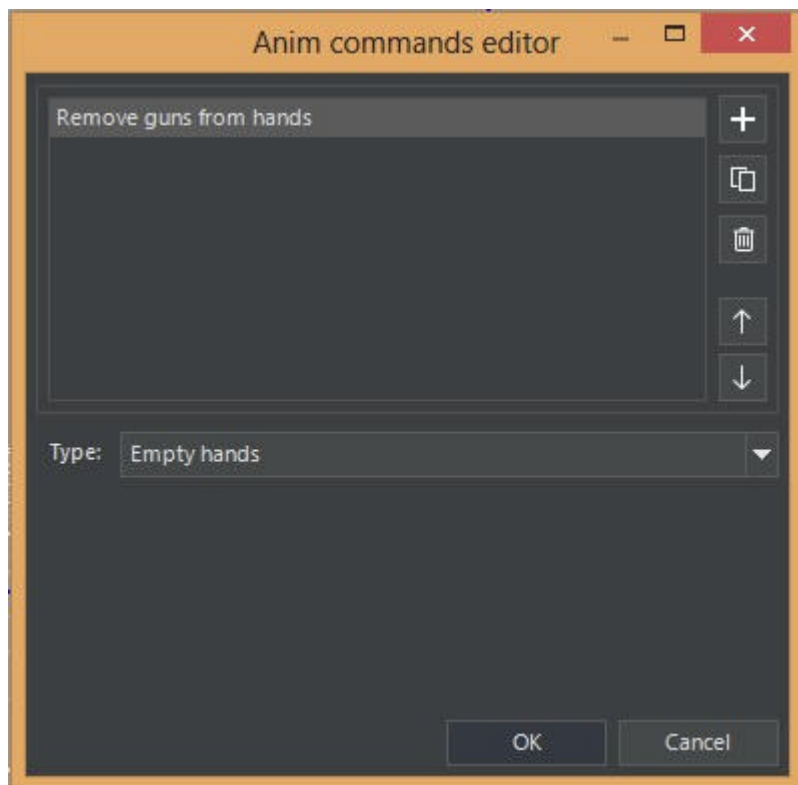
75 is used for her running jump which covers 3 squares.

Make sure the animation using this command has the appropriate **State ID**.

Select **OK** to apply the Animation Command and return to the **Animation Editor**.

TOMB EDITOR WAD TOOL MANUAL

Empty Hands



The game engine keeps track of whether Lara's guns are drawn or not, but sometimes this status gets buggy. Using this command, after the animation is complete Lara's gun status is restored so she can draw her guns.

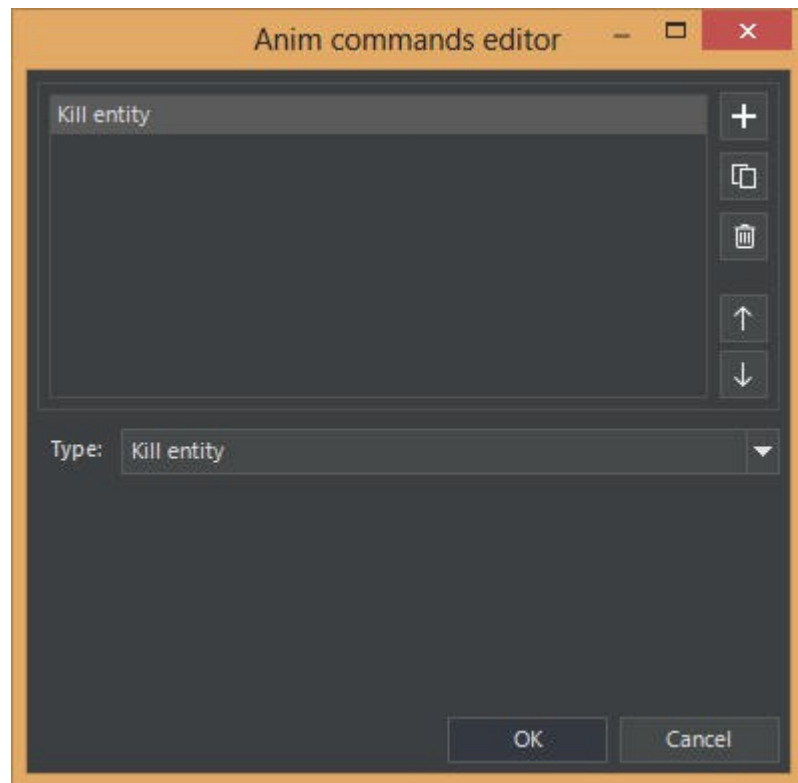
This command is missing from several TR4 animations:
her pedestal pickup animations,
her pole jump animation,
her prizing objects off the wall animation.

Notice that when you use these animations in-game, Lara can no longer grab ledges, crawl, etc. because the game thinks her guns are drawn (this was fixed in TRC). So if your animation has this bug add this command to fix it.

Select **OK** to apply the Animation Command and return to the **Animation Editor**.

TOMB EDITOR WAD TOOL MANUAL

Kill Entity



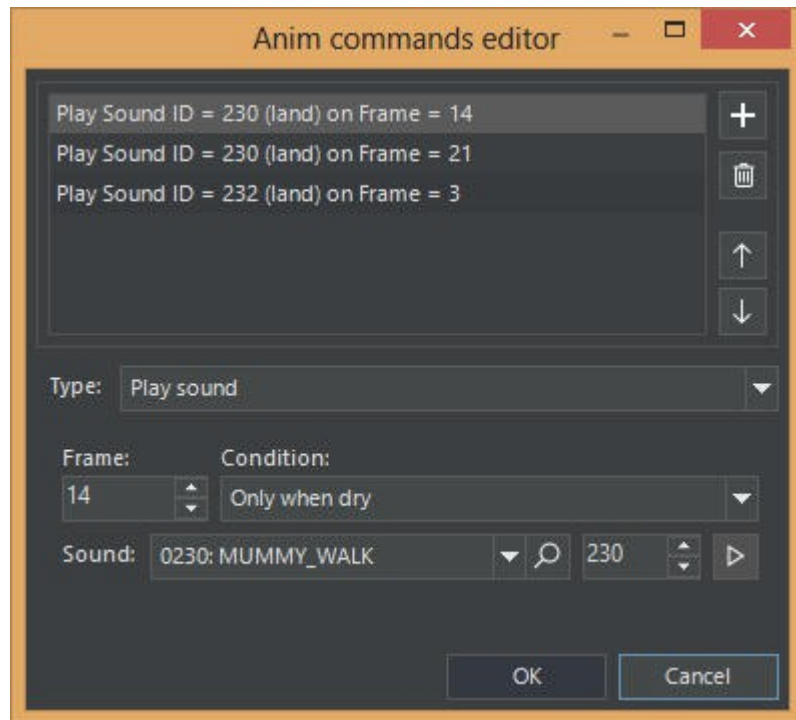
For baddies, it is for their death animation.

It is, oddly enough, used for switches as well, to activate switch triggers when the animation completes.

Select **OK** to apply the Animation Command and return to the [Animation Editor](#).

TOMB EDITOR WAD TOOL MANUAL

Play Sound



This is used to make sounds heard when a certain frame in the animation is played.

The first field specifies the frame to make the sound heard.

The second field is the Condition: **Always**
Only when Dry
Only in the Water

Always

The sound is always played. You should choose this for any objects other than Lara.

Only when Dry

The sound is only heard when Lara is on land.

Only in the Water

The sound is only heard when Lara is walking or wading in a body of water.

The third field is the Sound to play.

Use the scroll window to select the required sound.

Or input the number for the sound in the box.

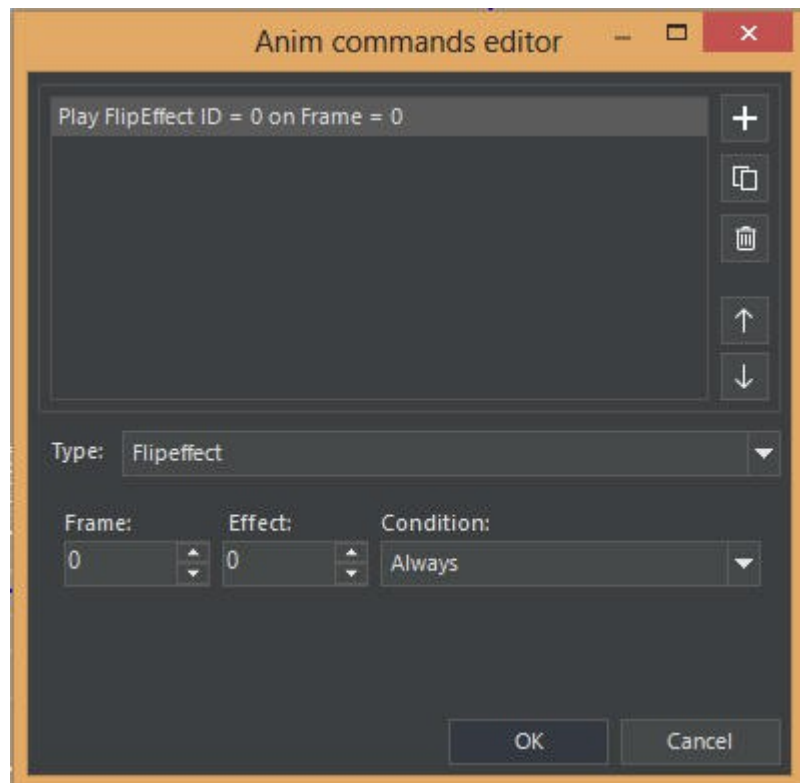


Select the play icon to play the selected sound.

Select **OK** to apply the Animation Command and return to the **Animation Editor**.

TOMB EDITOR WAD TOOL MANUAL

Play Effect



This is used to play a special effect when a certain frame in the animation is played.

The first field specifies the frame to play the flip effect.

The second field is the Flip Effect number.

The third field is the Condition:

- ALWAYS**
- LARA 's LEFT FOOT**
- LARA 's RIGHT FOOT**

Always

The Flip Effect is always played. You should choose this for any object other than Lara.

Lara 's Left Foot

The Flip Effect is only played when Lara is on her left foot.

Lara 's Right Foot

The Flip Effect is only played when Lara is on her right foot.

Select **OK** to apply the Animation Command and return to the **Animation Editor**.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

**ANIMATION EDITOR
TRANSFORM**

TOMB EDITOR WAD TOOL MANUAL

ANIMATION EDITOR TRANSFORM

ROT:	Y	Rotation (Banking)
	P	Rotation around the vertical axis.
	R	Rotation (Pitch).
POS :	X (Red)	Movement in the X axis (left right).
	Y (Green)	Movement in the Y axis (vertical).
	Z (Blue)	Movement in the Z axis (forward backward).

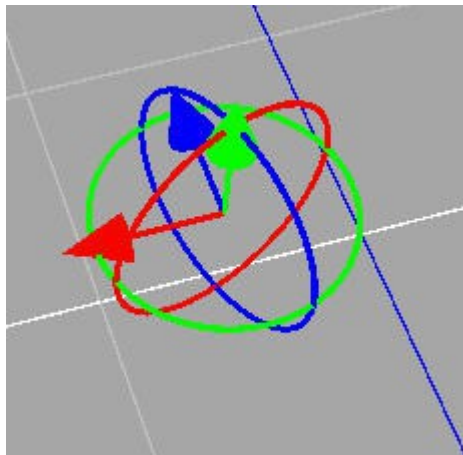
The three coloured arrow lines stand for the three axes **X**, **Y**, **Z**.

The red sphere rotates a Mesh to the left or right (**Banking**).

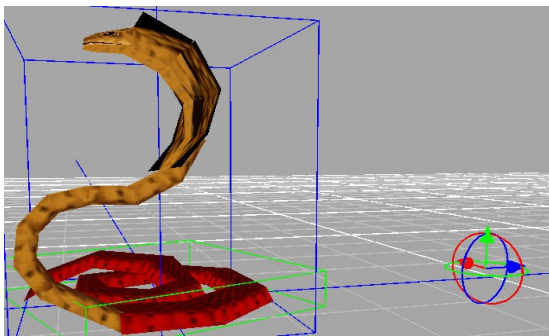
The blue sphere rotates a Mesh up and down (**Pitch**).

The green sphere rotates a Mesh around the vertical axis.

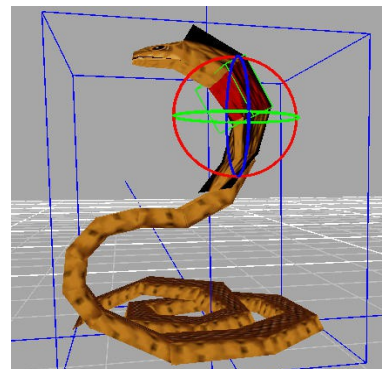
This object is called the **GIZMO**.



If one moves a mesh in a multi mesh object, it separates itself from the rest of the object and places itself a distance away from the remainder of the object. Not possible. Therefore one can only move the total object or a single mesh object.



Root Mesh Selected
Rotation Possible
Movement Possible



Joined Mesh Selected
Rotation Possible
Movement Not Possible

TOMB EDITOR WAD TOOL MANUAL

TRANSFORM INTERPOLATION

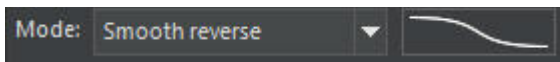
MODE : NONE



SMOOTH



SMOOTH REVERSE



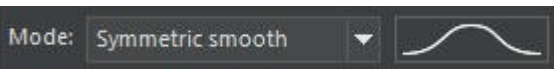
LINEAR



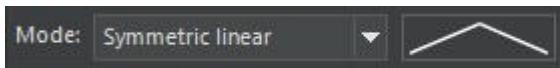
LINEAR REVERSE



SYMMETRIC SMOOTH



SYMMETRIC LINEAR



TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



TOMB EDITOR
WAD TOOL

ANIMATION EDITOR
FRAME CONTROL BAR

ANIMATION EDITOR

FRAME CONTROL BAR:



This bar controls the Animation actions in the Animation Editor.



GOTO START

Go to the first frame of the animation.



BACK ONE FRAME

Go back one frame of the animation.



PLAY

Play the animation.



FORWARD ONE FRAME

Go forward one frame of the animation.



GOTO END

Go to the last frame of the animation.



CHAIN PLAYBACK

Loop the playback continually.



TOGGLE SOUND PREVIEW

Play the sound effects for the animation. (Toggle ON/OFF).



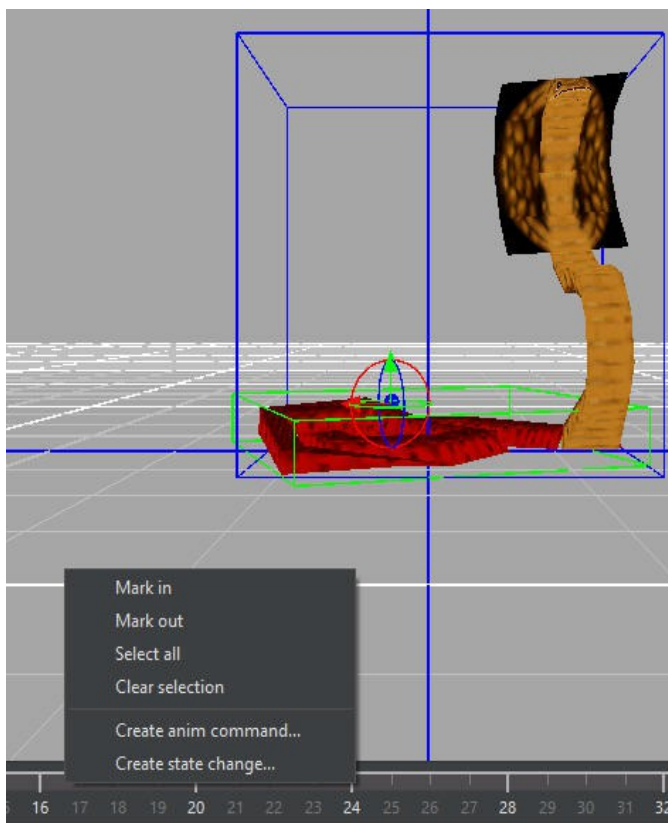
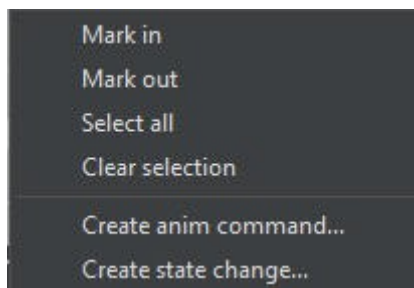
TOGGLE SOUND CONDITIONS

Toggle sound conditions ON/OFF.

TOMB EDITOR WAD TOOL MANUAL

To select a range of frames **mouse right click** on the frames bar as shown in the picture below. Set the **Mark In** frame. Repeat to select a **Mark Out** frame. The frame range is then set. Then select a function to do, Cut, Interpolate frames etc.

MARK IN	Sets the start frame for a edit range in the animation.
MARK OUT	Sets the end frame for a edit range in the animation.
SELECT ALL	Selects all of the frames in the animation.
CLEARSELECTION	Clears the frames selection.
CREATE ANIM COMMAND...	Creates a animation command on the frame.
CREATE STATE CHANGE...	Creates a State change the frame.



TOMB EDITOR WAD TOOL MANUAL

BOUNDING BOX

LIST OF BONES	Lists the bones (Meshes) of the object.
SELECT ALL	Selects all of the bones (Meshes) of the object.
SELECT NONE	Selects none of the bones (Meshes) of the object.
CALCULATE	Calculates the collision box.
DELETE	Deletes the collision box.

GROW AND SHRINK : Change the size of the collision box.
Input values into the X, Y, Z boxes.
Select **GROW** or **SHRINK** to change the size of the collision box.
The value is summed into the two opposite planes.
(left, right; top, bottom; front, back).

RESIZE CURRENT FRAME: Resizes the current frame collision box.
Input values into the X, Y, Z boxes.
One set for the left hand side of the box.
One set for the right hand side of the box.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

ANIMATION EDITOR

COMPARISON OF WALK AND RUN SPEEDS

TOMB EDITOR WAD TOOL MANUAL

COMPARISON OF WALK AND RUN SPEEDS

	WALK ANIM. No.	WALK Speed	RUN ANIM. No.	RUN (fly) Speed
LARA	1	15	0	47
AHMET	6	25	1	66
BABOON NORMAL	0	26	6	59
BABOON SILENT	0	26	-	-
BADDY 1	32	18	0	63
BADDY 2	32	18	0	63
BAT	-	-	1	60
BIG BEETLE	-	-	1	60
CROCODILE	5	22	2	40
DEMIGOD 1	1	27	2	69
DEMIGOD 2	1	23	2	59
DEMIGOD 3	1	23	2	59
DOG	3	12	7	52
ENEMY SUBMARINE	-	-	-	-
FROGMAN	-	-	-	-
GUIDE	0	22	1	59
HAMMERHEAD	-	-	-	-
HARPY	-	-	12	50
HORSE	4	16	10	69
HORSEMAN	5	14	15	47
HYDRA	-	-	-	-
JEAN YVES	-	-	-	-
KNIGHTS TEMPLAR	-	-	-	-
LASER HEAD	-	-	-	-
MUMMY	1	12	-	-
MUTANT	-	-	-	-
SAS	0	22	1	57
SCORPION	0	22	1	55
SETHA	8	22	10	73
SKELETON	-	-	28	52
SMALL SCORPION	0	5	1	20
SPHINX	4	31	0	74
TROOPS	0	21	1	52
VON CROY	0	22	1	59
WILD BOAR	-	-	0	45
WRAITH 1 FIRE WRAITH	-	-	-	-
WRAITH 2 ICE WRAITH	-	-	-	-
WRAITH 3 AIR WRAITH	-	-	-	-

Note: The speed is the change of position of the moveable for each frame during the game.

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

ANIMATION EDITOR

LARA STATE ID'S LIST

TOMB EDITOR WAD TOOL MANUAL

LARA'S STATE ID LIST

Here is a list of Lara's **State ID's** from **Tomb Raider 1-4** and **NEXT GENERATION**.

"crouch" means her position on one knee,

"crawl" means her position on both hands and both knees:

TR1

- State ID 0 = walk forwards
- State ID 1 = run (can rotate left/right)
- State ID 2 = stand still, or going into stand still (player does not fall of edges)
- State ID 3 = forward jump, or going into forward jump (player can move left/right)
- State ID 5 = hop backwards
- State ID 6 = turn in place
- State ID 7 = turn in place
- State ID 8 = death
- State ID 9 = falling
- State ID 10 = hanging onto ledge, or going up/down ladder without feet
- State ID 11 = mid-air grab (player does not bounce off of walls)
- State ID 13 = at a standstill underwater
- State ID 14 = letting go of rope in TR4? (not used)
- State ID 15 = start a standing jump
- State ID 16 = walk backwards
- State ID 17 = swimming
- State ID 18 = Lara shooting through the water, Lara stops swimming
- State ID 19 = pulling up (player cannot move; also used for start of death slide)
- State ID 20 = turning? (not used)
- State ID 21 = walk sideways
- State ID 22 = walk sideways
- State ID 23 = roll in place
- State ID 24 = slide forward
- State ID 25 = backwards jump
- State ID 26 = side jump right
- State ID 27 = side jump left
- State ID 28 = jump straight upwards
- State ID 30 = shimmy left
- State ID 31 = shimmy right
- State ID 32 = sliding backwards
- State ID 33 = swim on surface standstill
- State ID 34 = swim on surface forward
- State ID 35 = Jump into water
- State ID 36 = push forward
- State ID 37 = pull backwards
- State ID 38 = push/pull standstill
- State ID 39 = picking up an object
- State ID 40 = underwater switch, use lever switch, use push switch
- State ID 41 = reset lever switch

TOMB EDITOR WAD TOOL MANUAL

State ID 42 = key use
State ID 43 = puzzle use
State ID 44 = death underwater
State ID 45 = used for dive roll and roll in place (not sure how it differs from 23)
State ID 46 = crushed by boulder
State ID 47 = swim on surface backwards
State ID 48 = swim on surface to left
State ID 49 = swim on surface to right
State ID 52 = swan dive or going into swan dive
State ID 53 = "death mode" swan dive (Lara can break her neck at this point),
also used for "swan flips" TR2 and on.

State ID 54 = handstand

TR2

State ID 55 = climb out of water, or go from wading to standing in water
State ID 56 = standstill on ladder
State ID 57 = climb up ladder
State ID 58 = climb left on ladder
State ID 60 = climb right on ladder
State ID 61 = climb down ladder
State ID 65 = wade forwards
State ID 66 = roll underwater
State ID 67 = pickup flare, pickup underwater?, pickup in crouch?
(there are duplicate pickup animations that use both 39 and 67.)

State ID 68 = used for player pressing roll during forward or backward jump
(for reversing direction)

State ID 70 = zipline

TR3

State ID 71 = crouched
State ID 72 = crouch roll forward (not used)
State ID 73 = sprinting
State ID 74 = sprint roll
State ID 75 = grab paper-thin ledge, grab monkey swing
State ID 76 = monkey swing forward
State ID 77 = monkey swing shimmy left
State ID 78 = monkey swing shimmy right
State ID 79 = monkey swing turnaround? (not used)
State ID 80 = crawl position
State ID 81 = crawl forwards
State ID 82 = rotate left monkey swing
State ID 83 = rotate right monkey swing
State ID 84 = turn left in crawl position
State ID 85 = turn right in crawl position

TOMB EDITOR WAD TOOL MANUAL

State ID 86 = crawl backwards
State ID 87 = pull up into crouch
State ID 88 = slip out from crawlspace

TR4

State ID 89 = used for many interactive objects in TR4
State ID 90 = rotate left rope, crowbar pickup
State ID 91 = rotate right rope
State ID 92 = push giant button
State ID 93 = trapdoor pull up
State ID 95 = use rotating switch (hypostyle hall)
State ID 96 = use cog switch
State ID 97 = use lever switch
State ID 98 = reach-in-hole pickup
State ID 99 = standstill pole
State ID 100 = climb up pole
State ID 101 = slide down pole
State ID 102 = rotate left pole
State ID 103 = rotate right pole
State ID 104 = pull chain switch
State ID 105 = turn left in crouched position
State ID 106 = turn right in crouched position
State ID 107 = shimmy concave corner to left (also with ladders)
State ID 108 = shimmy concave corner to right (also with ladders)
State ID 109 = shimmy convex corner to left (also with ladders)
State ID 110 = shimmy convex corner to right (also with ladders)
State ID 111 = standstill rope
State ID 112 = climb up rope
State ID 113 = swing rope
State ID 114 = start swinging rope
State ID 115 = go from ladder to shimmy position? (not used)
State ID 116 = Approach puzzle/pickup
State ID 117 = double doors

TOMB EDITOR WAD TOOL MANUAL

NEXT GENERATION

State ID 118 = NO STATE DOZY
State ID 119 = STATE_TR_POSE TIGHTROPE
State ID 120 = NO STATE TIGHTROPE
State ID 121 = STATE_TR_WALK TIGHTROPE
State ID 122 = STATE_TR_FALL_122 TIGHTROPE
State ID 123 = STATE_TR_FALL_123 TIGHTROPE
State ID 124 = NO STATE TIGHTROPE
State ID 125 = NO STATE TIGHTROPE
State ID 126 = STATE_SWITCH_ON_126 DOVESWITCH (ROME-LEVELS)
State ID 127 = NO STATE TIGHTROPE
State ID 128 = STATE_PB_HANGING SWING POLE
State ID 129 = STATE_PB_LEAP_OFF SWING POLE
State ID 130 = UNKNOWN
State ID 131 = NO STATE HEADGEAR AND LISTEN VCI-LEVELS
State ID 132 = NO STATE HEADGEAR
State ID 133 = UNKNOWN
State ID 134 = UNKNOWN
State ID 135 = UNKNOWN
State ID 136 = UNKNOWN
State ID 137 = NO STATE PICK UP ITEM VCI-LEVELS

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

ANIMATION EDITOR

ENEMY STATE ID'S LIST

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

AHMET

- 1 - WAIT**
- 2 - WALK**
- 3 - RUN**
- 4 - STAND ATTACK**
- 5 - RUNNING ATTACK**
- 6 - RUNNING ATTACK**
- 7 - DIE**

BABOON NORMAL

BABOON SILENT

- 2 - WALK**
- 3 - STAND WAIT**
- 4 - RUN**
- 5 - BOW**
- 6 - SIT WAIT**
- 7 - SIT AND EAT**
- 8 - SIT AND SCRATCH**
- 9 - SOMERSAULT**
- 10 - PICKUP**
- 11 - DIE**
- 12- THROW**
- 13 - JUMP UP**
- 14 - SIT JUMP UP**
- 21 JUMP AND CLIMB**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

BADDY 1
BADDY 2

- 0 - WAIT**
- 1 - WALK**
- 2 - RUN**
- 10 - DRAW UZI PISTOL**
- 11 - HOLSTER UZI PISTOL**
- 12 - DRAW SWORD**
- 13 - SHEATH SWORD**
- 14 - SHOOT UZI PISTOL**
- 15 - SWORD SLASH DOWN**
- 16 - SWORD LOW SLASH LEFT**
- 17 - SWORD HIGH SLASH RIGHT**
- 18 - MONKEY BARS JUMP UP**
- 19 - MONKEY BARS HANG**
- 20 - MONKEY BARS TRAVERSE**
- 21 - MONKEY BARS HANG AND SHOOT**
- 22 - MONKEY BARS DROP DOWN**
- 23 - TURN ROLL**
- 24 - JUMP UP**
- 25 - WAIT CROUCH DOWN**
- 26 - CROUCH DOWN**
- 27 - PICK UP AMMO**
- 28 - STAND UP WAIT**
- 29 - STAB FORWARDS WALK**
- 30 - RUN SOMERSUALT FORWARD**
- 31 - POINT UZI PISTOLS**
- 32 - SHOT DEAD**
- 33 - JUMP FORWARD**
- 34 - FALLING IN AIR**
- 35 - SHOT ON MONKEY BARS**
- 36 - MONKEY BARS FALL DOWN**
- 37 - MONKEY BARS DEAD**
- 38 - JUMP LAND**
- 39 - CLIMB UP 4 CLICK LEDGE**
- 40 - CLIMB UP 3 CLICK LEDGE**
- 41 - CLIMB UP 2 CLICK LEDGE**
- 42 - JUMP DOWN 4 CLICK LEDGE**
- 43 - JUMP DOWN 3 CLICK LEDGE**
- 44 - STUNNED FACE**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

BAT

- 1 - TAKE OFF**
- 2 - FLY**
- 3 - ATTACK**
- 4 - HURT**
- 5 - DIE**
- 6 - HANG WAIT**

BIG BEETLE

- 1 - WAIT**
- 2 - TAKE OFF**
- 3 - FLY**
- 4 - CLAW ATTACK**
- 5 - LAND**
- 6 - HURT**
- 7 - HURT**
- 8 - DIE**
- 9 - HOVER**

CROCODILE

- 1 - WAIT**
- 2 - RUN**
- 3 - WALK**
- 4 - TAIL ATTACK**
- 5 - STANDING ATTACK**
- 7 - DIE ON LAND**
- 8 - SWIM**
- 9 - SWIM ATTACK**
- 10 - DIE IN WATER**

DEMIGOD 1

- 0 - WAIT**
- 1 - WALK**
- 2 - RUN**
- 8 - DIE 1**
- 13 - CROUCH DOWN**
- 14 - BANG HAMMER**
- 15 - DIE 2**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

DEMIGOD 2

- 0 - WAIT**
- 1 - WALK**
- 2 - RUN**
- 3 - AIM STAFF**
- 4 - SHOOT STAFF**
- 5 - WAIT CHARGE STAFF**
- 6 - CHARGE STAFF**
- 7 - CHARGE STAFF WAIT**
- 8 - DIE 1**
- 15 - DIE 2**

DEMIGOD 3

- 0 - WAIT**
- 1 - WALK**
- 2 - RUN**
- 3 - AIM STAFF**
- 4 - SHOOT STAFF**
- 5 - WAIT CHARGE STAFF**
- 6 - CHARGE STAFF**
- 7 - CHARGE STAFF WAIT**
- 8 - DIE 1**
- 9 - RAISE LOWER STAFF**
- 10 - RAISE LOWER STAFF**
- 11 - CROUCH DOWN**
- 12 - SHOOT STAFF**
- 15 - DIE 2**

DOG

- 1 - STAND WAIT**
- 2 - WALK**
- 3 - RUN**
- 5 - SNEAK WALK**
- 6 - RUN ATTACK 1**
- 7 - HOWL**
- 8 - SIT WAIT**
- 9 - STAND ATTACK**
- 10 - RUN ATTACK 2**
- 11 - DIE**
- 12 - SNEAK ATTACK**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

GUIDE

- 1 - WAIT**
- 2 - WALK**
- 3 - RUN**
- 7 - LOOK DOWN**
- 11- LOOK AT MAP**
- 13- WAVE LEFT HAND**
- 22- TURN LEFT**
- 31- SWIPE TORCH TO RIGHT**
- 32- SWIPE TORCH DOWN**
- 35- TURN RIGHT**
- 36- CROUCH DOWN**
- 37- RAISE TORCH**
- 38- RAISE TORCH HIGH**
- 39- RAISE TORCH HIGH**
- 40- WALK**
- 41- WAIT**
- 42- WAIT**
- 43- CROUCH DOWN**

HAMMERHEAD

- 0 - SWIM SLOW SPEED**
- 1 - SWIM NORMAL SPEED**
- 2 - SWIM FAST**
- 3 - ATTACK**
- 4 - FAST ATTACK**
- 5 - DIE**
- 6 - SLOW ATTACK**

HARPY

- 1 - HOVER WAIT**
- 2 - FLY SLOW DOWN**
- 3 - WAIT ON GROUND**
- 4 - FLY FAST**
- 5 - FLY FAST**
- 6 - FLYING ATTACK**
- 7 - SPIN OVER**
- 8 - FLY FAST TO HOVER**
- 9 - HIT INJURED**
- 10 - DYING ON GROUND**
- 11 - DIE**
- 12 - FLY BACK THEN FORWARD**
- 13 - FLY FAST**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

HORSE

- 1 - WAIT**
- 2 - CANTER**
- 3 - TROT**
- 4 - REAR UP**
- 5 - GALLOP**

HORSEMAN

- 1 - RIDE HORSE CANTER**
- 2 - RIDE HORSE TROT**
- 3 - WAIT ON HORSE**
- 4 - MOVE AXE ON HORSE**
- 5 - MOUNT HORSE**
- 6 - HORSE CANTER RIGHT SLASH AXE**
- 7 - HORSE CANTER HORSEMAN RIGHT KICK**
- 8 - FALL OFF HORSE**
- 9 - WAIT ON FOOT**
- 10 - WALK**
- 11 - RUN**
- 12 - WALK RIGHT SLASH AXE**
- 13 - WALK LEFT SLASH AXE**
- 14 - FORWARD SLASH AXE**
- 15 - PARRY SHIELD**
- 16 - DIE ON FOOT**
- 17 - RIDE HORSE GALLOP**

JEAN YVES

- 1 - SITTING ARMS BEHIND HEAD**
- 2 - SITTING WRITING 1**
- 3 - SITTING WRITING 2**
- 4 - SITTING MOVE RIGHT ARM**
- 5 - STANDING MOVE RIGHT ARM**
- 6 - STANDING MOVE RIGHT ARM 2**
- 7 - STANDING LOOK LEFT RIGHT**
- 8 - CROUCH DOWN REACH LEFT ARM**
- 9 - SITTING READING 1**
- 10 - SITTING READING 2**
- 11 - SITTING READING 3**
- 12 - SITTING READING RIGHT HAND STROKE HEAD**
- 13 - FILING CABINET STANDING BEND TO LEFT**
- 14 - FILING CABINET STANDING LOOK LEFT RIGHT**
- 15 - FILING CABINET STANDING LOOK LEFT**
- 16 - FILING CABINET STANDING LOOK RIGHT**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

KNIGHTS TEMPLAR

- 1 - WAIT**
- 2 - CREEP WALK**
- 3 - SWORD SLASH FORWARD**
- 4 - SWORD SLASH RIGHT**
- 5 - SWORD SLASH LEFT**
- 6 - CROUCH DOWN**
- 7 - PARRY SHIELD**
- 8 - PARRY SHIELD**

MUMMY

- 1 - WAIT**
- 2 - WALK**
- 3 - WALK ARMS FORWARD**
- 4 - WALK ATTACK RIGHT PUNCH**
- 5 - SHOT MOVE BACKWARDS**
- 6 - SHOT FALL BACK**
- 7 - SHOT FALL DOWN**
- 8 - DEAD**
- 9 - COME ALIVE**
- 10 - STANDING ATTACK**

MUTANT

- 1 - RISE UP**
- 2 - WAIT**
- 3 - SPIT ATTACK**
- 4 - ROAR**
- 5 - WAVE AND ROAR**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

SAS

- 1 - WAIT STANDING 1**
- 2 - WALK**
- 3 - RUN**
- 4 - WAIT STAND 2**
- 5 - SHOOT GUN AIM 1**
- 6 - SHOOT GUN AIM 2**
- 7 - DIE**
- 8 - AIM 1**
- 9 - AIM 2**
- 10 - AIM 3**
- 11 - SHOOT GUN AIM 3**
- 13 - SHOOT GUN AIM 4**
- 14 - AIM 4 STAND 1**
- 15 - FIRE GRENADE**
- 16 - AIM 3 STAND 1**

SCORPION

- 1 - WAIT**
- 2 - WALK**
- 3 - RUN**
- 4 - LUNGE CLAW ATTACK**
- 5 - LUNGE STING ATTACK**
- 6 - DIE**
- 7 - STANDING STING ATTACK**
- 8 - STANDING CLAW ATTACK**

SETHA

- 1 - WAIT**
- 2 - WALK**
- 3 - RUN**
- 4 - CROUCH DOWN**
- 5 - JUMP FORWARDS**
- 6 - BACK AWAY**
- 7 - SHOT MOVE BACKWARDS**
- 8 - FORWARD ATTACK**
- 9 - ATTACK TO WAIT**
- 10 - ROAR**
- 11 - STANDING ATTACK**
- 12 - HIGH JUMP ATTACK**
- 13 - JUMP ATTACK**
- 14 - JUMP TO WAIT**
- 15 - JUMP ATTACK**
- 16 - SOMERSAULT BACKWARDS**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

SKELETON

- 0 - COME ALIVE**
- 1 - STAND UP**
- 2 - WAIT**
- 3 - LOOK AROUND 1**
- 4 - LOOK AROUND 2**
- 5 - LOOK AROUND 3**
- 6 - LOOK AROUND 4**
- 7 - WAIT LOOK**
- 8 - ATTACK SLASH LEFT**
- 9 - ATTACK SLASH RIGHT**
- 10 - ATTACK SLASH DOWN**
- 11 - PULL SWORD BACK**
- 12 - SHOT FALL BACK**
- 13 - SHOT FALL DOWN**
- 14 - COME ALIVE AGAIN**
- 15 - RUN CREEP**
- 16 - RUN**
- 17 - MOVE SHIELD**
- 18 - STAB SLASH**
- 19 - JUMP 1 FORWARDS**
- 20 - JUMP 2 FORWARDS**
- 21 - JUMP 3 FORWARDS**
- 22 - JUMP 3 FORWARDS**
- 23 - JUMP FALL**
- 24 - ON BACK**
- 25 - DEAD FOR A WHILE**

SMALL SCORPION

- 1 - WAIT**
- 2 - WALK**
- 3 - RUN**
- 4 - LUNGE CLAW ATTACK**
- 5 - STING ATTACK**
- 6 - DEAD**
- 7 - DEAD**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

SPHINX

- 1 - SIT WAIT**
- 2 - SIT WAIT**
- 3 - STAND UP**
- 4 - WALK**
- 5 - RUN**
- 6 - BACK AWAY**
- 7 - REAR KICK**
- 8 - ROAR**
- 9 - WAIT**

TROOPS

- 1 - WAIT GUN READY**
- 2 - WALK**
- 3 - RUN**
- 4 - WAIT LOWERED GUN**
- 5 - SHOOT GUN STANDING**
- 6 - SHOOT GUN WALKING**
- 7 - DIE 1**
- 8 - AIM GUN**
- 9 - WALK**
- 10 - STEP BACK AIM**
- 11 - SHOOT GUN**
- 12 - CROUCH DOWN**
- 13 - CROUCH DOWN SHOOT GUN**
- 14 - GET UP**
- 15 - DIE 2**
- 16 - SHOT WOUNDED**
- 17 - LOOK AROUND**

TOMB EDITOR WAD TOOL MANUAL

ENEMY STATE ID'S

VON CROY

- 1 - WAIT**
- 2 - WALK**
- 3 - RUN**
- 4 - MONKEY BARS HANG**
- 5 - MONKEY BARS TRAVERSE**
- 6 - SWORD SLASH DOWN**
- 7 - LOOK DOWN**
- 8 - WAIT SWORD DRAWN**
- 9 - WAIT SWORD DRAWN**
- 10 - WAIT SWORD DRAWN**
- 11 - LOOK AT MAP**
- 12 - HALT SIGN LEFT HAND**
- 13 - WAVE HAND COME**
- 14 - TURN OPEN USING LEFT HAND**
- 15 - JUMP FORWARD**
- 16 - JUMP FORWARD**
- 17 - CLIMB UP 1**
- 18 - CLIMB UP 2**
- 19 - CLIMB UP 3**
- 20 - OPEN LOCK**
- 21 - SWORD SLASH LEFT RIGHT**
- 22 - TURN TO LEFT**
- 23 - JUMP DOWN 4**
- 24 - JUMP DOWN 3**
- 25 - JUMP DOWN 1**
- 26 - JUMP DOWN 2**
- 27 - HANG ON LEDGE**
- 28 - SHIMMY ALONG LEDGE**
- 30 - PULL UP FTOM LEDGE**
- 31 - SWORD SLASH RIGHT**
- 32 - POINT SWORD**
- 33 - JUMP HANG ON LEDGE**
- 34 - BEND DOWN**
- 35 - TURN TO RIGHT**
- 36 - LOOK AROUND**
- 37 - LOOK AROUND RUN**

WILD BOAR

- 1 - WAIT**
- 2 - RUN**
- 3 - STANDING ATTACK HEAD BUTT**
- 4 - RUN ATTACK KICK**
- 5 - DIE**

TOMB EDITOR WAD TOOL MANUAL

TOMB RAIDER NEXT GENERATION



**TOMB EDITOR
WAD TOOL**

ANIMATION EDITOR

SNAKE EXAMPLE

TOMB EDITOR WAD TOOL MANUAL

SNAKE EXAMPLE

ANIMATION

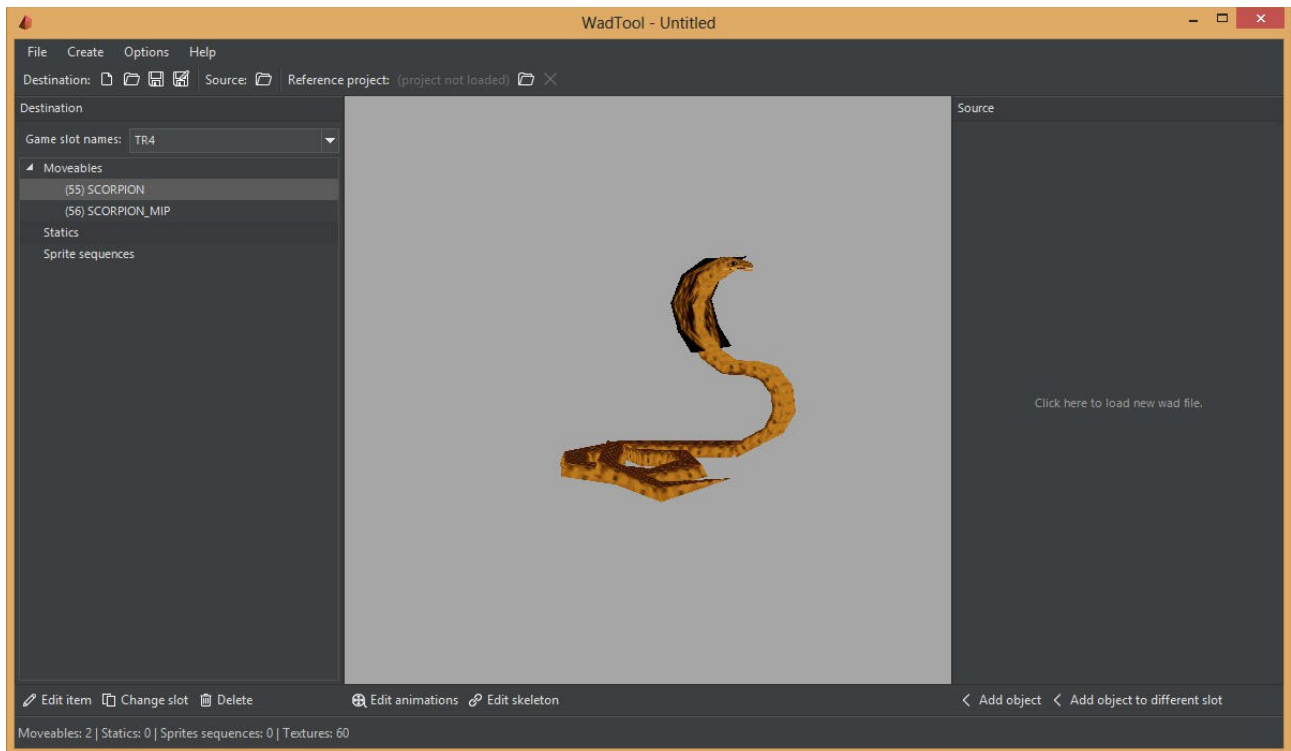
An animation is simply a series of slightly different pictures known as frames. The human eye can only see pictures. If pictures are played one after another then it appears to us as movement, that is a video movie.

The example is to **create a simple animation which is sixteen frames long**. In each frame the snake's head will gradually turn to the right. When completed there will be an animation in which the **snake head turns to the right** (frames 40 to 56).

The snake wad is: **SnakeWadForWMTute.zip**

The snake is from the TR3 Temple level and it is stored in the Scorpion Slot.
The snake uses TR3 sound 318 and TR3 sound 324. Copy them into the project sounds folder.
Edit the scorpion sound files in the project xml file. Edit the play sound Id in the animation.

Start the **Wad Tool** and load the Wad in the left hand window.



Click on the object "Scorpion" and then the **EDIT ANIMATION** icon



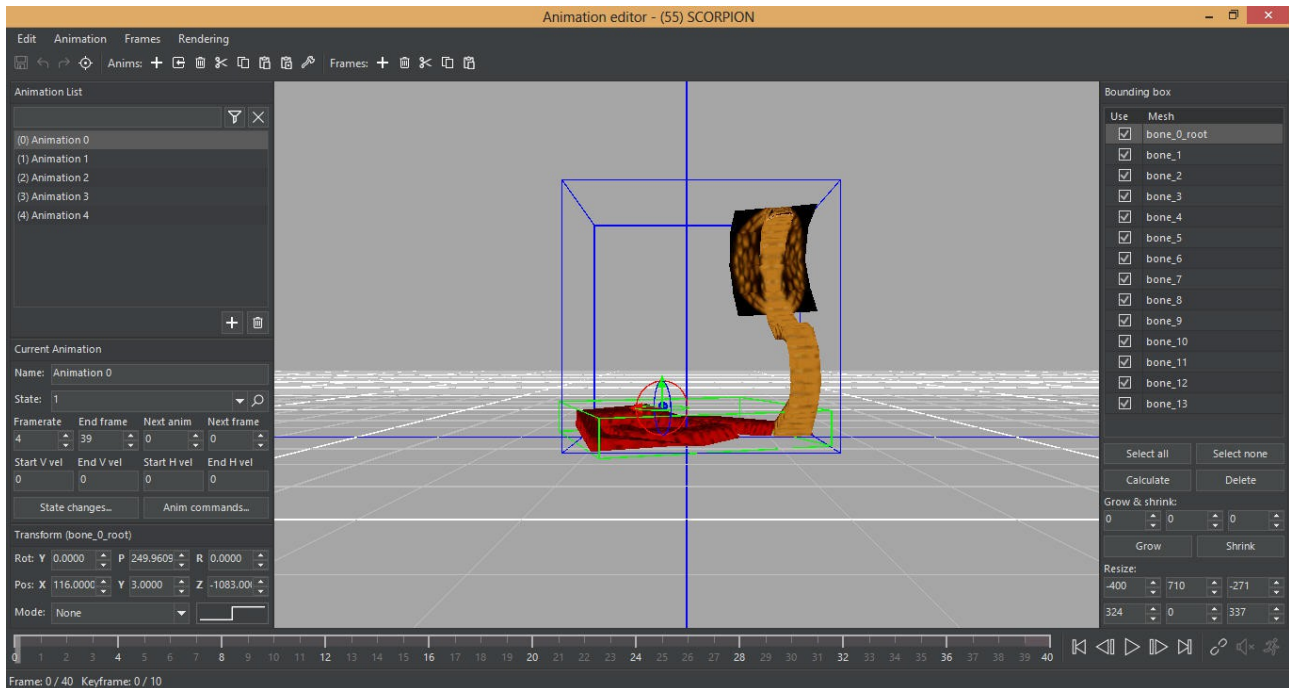
EDIT ANIMATION

Opens the **Animation Editor** Window for the selected **Destination Wad2** moveable object.

TOMB EDITOR WAD TOOL MANUAL

The **Animation Editor** opens with the snake object.

The **Animation 0** is selected and the **bone_0_root** is initially selected as shown below.



Now to add frames to **Animation 0** which has a frame rate of 4.

As the frame rate is 4 when one real frame is added it creates 4 frames onto the animation.

Note: If the animation frame rate is 1, when one real frame is added it creates 1 frame onto the animation. If the animation frame rate is 2, when one real frame is added it creates 2 frames onto the animation.

Note: Increasing the frame rate creates more frames between the real frames thus slowing the animation down.

ADD ONE FRAME AND EDIT POSITION.

Click the **Add one frame icon** on the interface. One real frame is added to the Animation and its length increases from 40 to 44 frames.

Select **frame 44** on the frame bar.

Now to adjust the position of the snake. Select a bone and in the Transform section click the arrow for the Rotation : P. This rotates the bone around the vertical axis. Child bones will rotate with the selected bone. Select another bone and repeat this process until you are happy with the snake's position.

TOMB EDITOR WAD TOOL MANUAL

Click the **Add one frame icon** on the interface. Select **frame 48** on the frame bar.
Adjust the position of the snake until you are happy.

Click the **Add one frame icon** on the interface. Select **frame 52** on the frame bar.
Adjust the position of the snake until you are happy.

Click the **Add one frame icon** on the interface. Select **frame 56** on the frame bar.
Adjust the position of the snake to its **final end position**.

The Animation now has 56 frames. However the **End Frame** is still set at **39**.
Increase the **End Frame** value to **56**.

Select the **Play icon** to view the new longer Animation.

INTERPOLATE FRAMES

The Add one frame process is time consuming, so there is a faster method for longer Animations using the **Interpolate frames** function.
From the initial condition (40 frames):

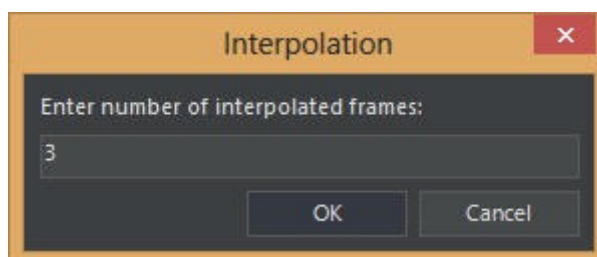
Click the **Add one frame icon** on the interface.
One real frame is added to the Animation and its length increases from 40 to 44 frames.

Select **frame 44** on the frame bar.
Now to adjust the position of the snake to its **final end position**.
Select a bone and in the Transform section click the arrow for the Rotation : P .
This rotates the bone around the vertical axis. Child bones will rotate with the selected bone. Select another bone and repeat this process until you are happy with the snake's **final end position**.

Now for a final animation length of 56 frames it is necessary to add $56 - 44 = 12$ frames.
As the animation has a frame rate of 4 this means $12/4 = 3$ real frames to add.

Select frame 40 on the frame bar **mouse right click** and set a **Mark In** frame.
Select frame 44 on the frame bar **mouse right click** and set a **Mark Out** frame.
Frames 40 to 44 is highlighted on the frame bar.

On the **Drop Down menu** select **Frames, Interpolate frames**.
Input **3** (real frames). Select **OK**.

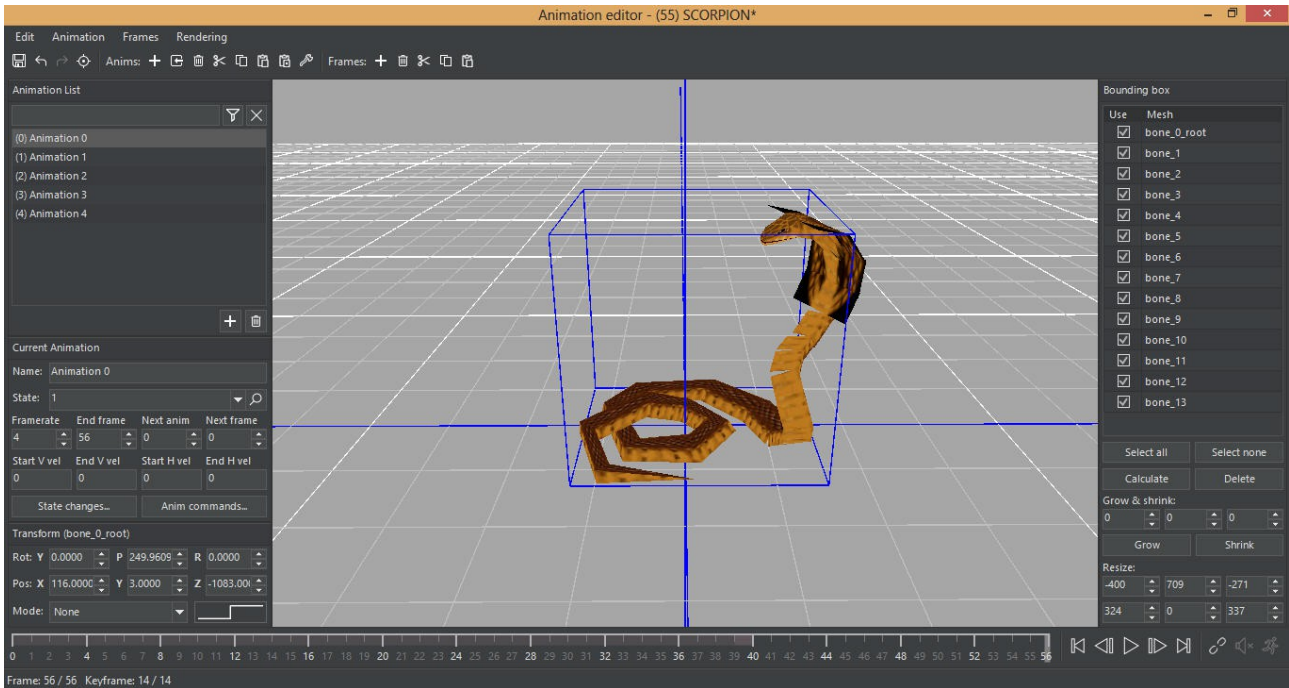


TOMB EDITOR WAD TOOL MANUAL

12 frames are added between frame 40 and frame 44 to increase the animation to 56 frames.

The Animation now has **56** frames. However the **End Frame** is still set at **39**. Increase the **End Frame** value to **56**.

Select the **Play icon** to view the new longer Animation.



Snake Animation 0 Complete

Animation 0 works in a loop. When the extended animation is run it will be noticed that there is a position jump of the snake from the last frame to the first frame. Not good for continuity. To improve the continuity add some additional frames to move the snake back to the same position as the first frame. Do not forget to increase the end frame value so that the complete animation is run.

Save the changes made in the **Animation Editor** and save the wad2 in the **Wad Tool**.

Now edit the snake sounds, State Id's and Animation Commands.

Save the changes made in the **Animation Editor** and save the wad2 in the **Wad Tool**.

TOMB EDITOR WAD TOOL MANUAL

SNAKE SOUNDS

The snake uses TR3 sound 318 and TR3 sound 324.

Copy them into the **project Sounds folder**.

Macaque_Roll :	TR3 sound 318	Play sound 1
Cobra Hiss :	TR3 sound 324	Play sound 0

Original TR3 :

animation 3: frame 8 sound 324

animation 4: frame 15 sound 324 frame 55 sound 324 frame 79 sound 318

The snake is in the scorpion slot so the scorpion sound slots are now available to be used by the snake.

TR4 sound ID 216 SCORPION_SCREAM	sc_scrm
TR4 sound ID 217 SCORPION_FEET	sc2 sc3 sc6 sc7
TR4 sound ID 218 SCORPION_CLAWS	sc_clk1 sc_clk2
TR4 sound ID 219 SCORPION_TAIL_WHIP	sc_whip

Rename TR3 sound 324 to sc_scrm that is TR4 Sound ID 216

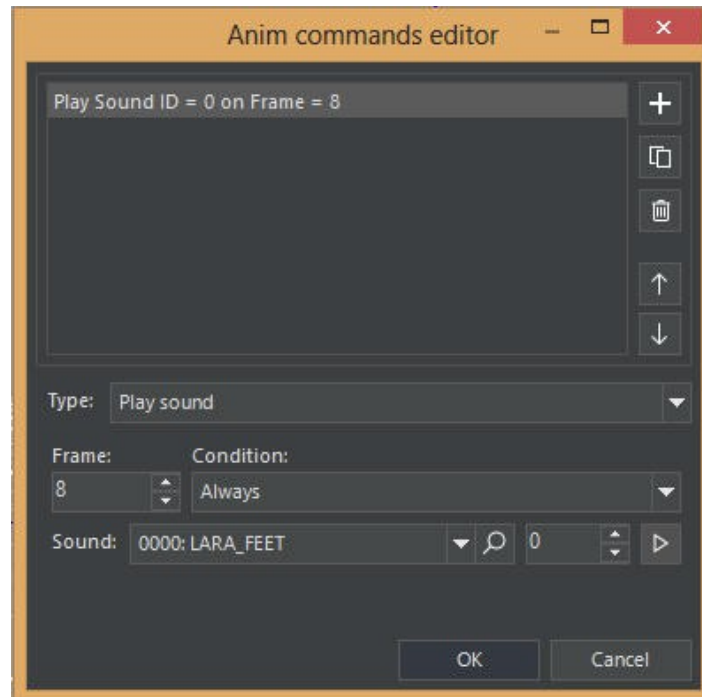
Rename TR3 sound 318 to sc_whip that is TR4 Sound ID 219

Now to edit the Animation Commands.

The Play sound 0 and Play sound 1 are set to the correct sound Id code that is in the project sounds.xml file.

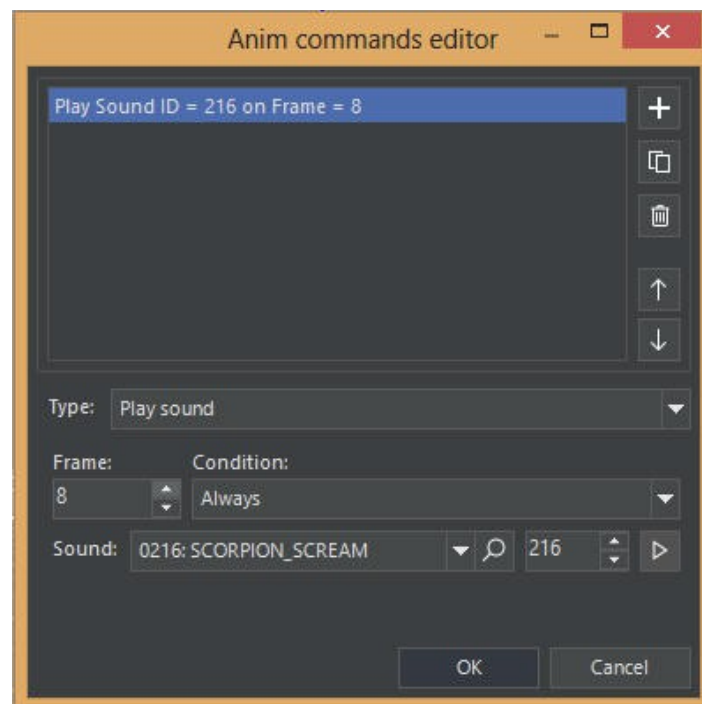
TOMB EDITOR WAD TOOL MANUAL

Select **Animation 3** and **Animation Commands**.



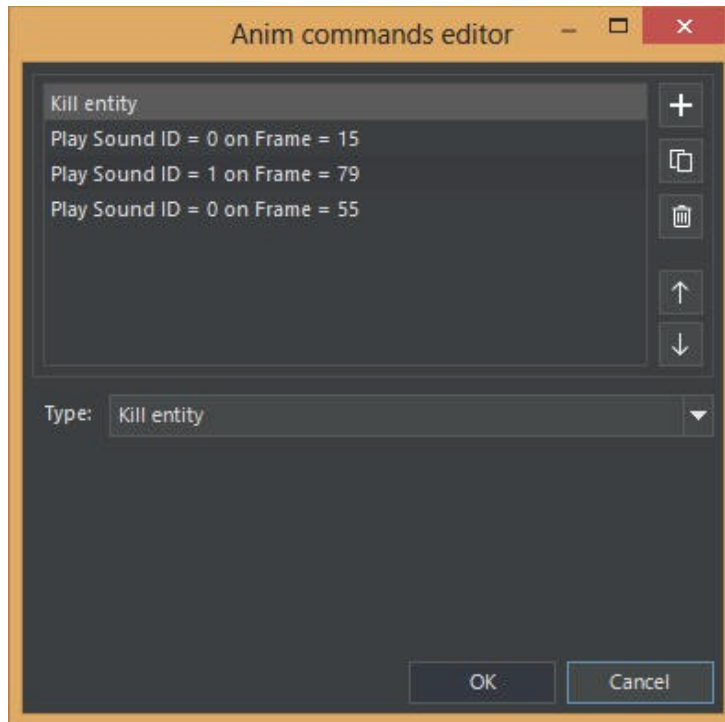
Add a new command: Input Play sound,
set frame 8, set always, and select the sound 216: SCORPION_ SCREAM.

Delete the incorrect command. Select **OK**.

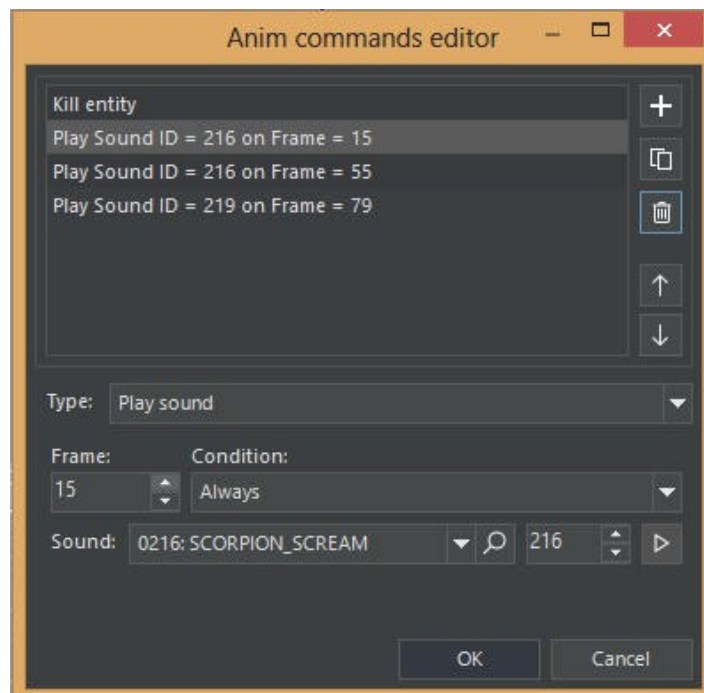


TOMB EDITOR WAD TOOL MANUAL

Select **Animation 4** and **Animation Commands**.



Add new commands: Input Play sound,
set frame 15, set always, and select the sound 216: SCORPION_SCREAM.
set frame 55, set always, and select the sound 216: SCORPION_SCREAM.
set frame 79, set always, and select the sound 219: SCORPION_TAIL_WHIP.
Delete the incorrect commands. Select **OK**.



TOMB EDITOR WAD TOOL MANUAL

STATE IDS

Now to look at the State Id's for the animations.

The snake is a foreign enemy in the host slot Scorpion.

A TR4 host slot will only work with its own State Id's.

You can not input your own state changes.

It is necessary to edit the initial state Id's to get the enemy to work.

SNAKE IN TR3 SLOT	SNAKE IN SCORPION SLOT TR4
0 – BITE TO WAIT.....	2 - LIE DOWN
1 – WAIT.....	1 - WAIT
2 - BITE ATTACK.....	4 - BITE ATTACK
3 - LIE DOWN.....	3 - LIE DOWN
0 - DIE	6 - DIE

SCORPION SLOT TR4

- 1 - WAIT**
- 2 - WALK**
- 3 - RUN**
- 4 - LUNGE CLAW ATTACK**
- 5 - LUNGE STING ATTACK**
- 6 - DIE**
- 7- STANDING STING ATTACK**
- 8 - STANDING CLAW ATTACK**

To get a better idea of how the enemy works draw an Animation Flow Diagram with the State Id's marked.

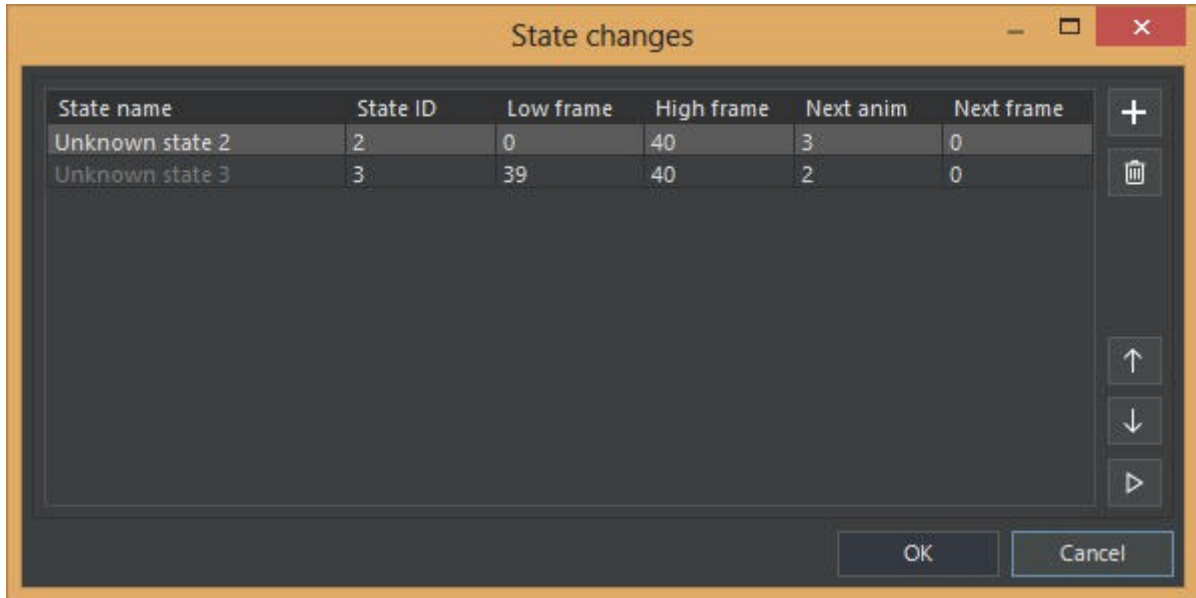
Red arrow lines and red states indicate a change of state during the Animation.

Blue arrow lines and blue states indicate no change of state during the Animation.

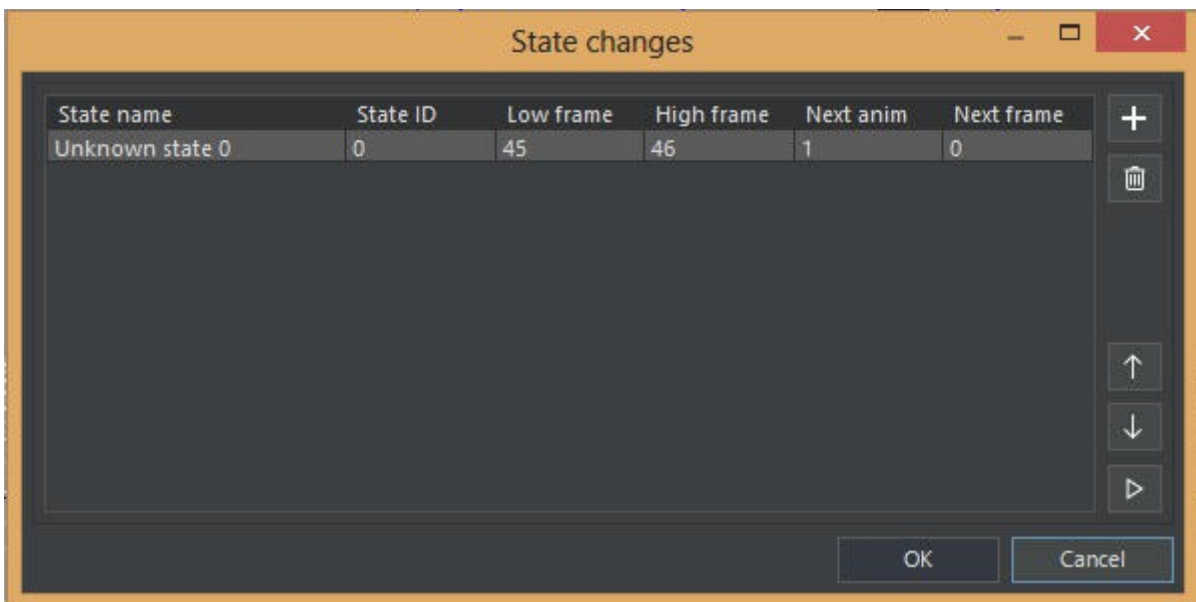
TOMB EDITOR WAD TOOL MANUAL

This is for the Animation Flow Diagram from TR3 with State Id's used in TR3.

Animation 0 State changes Initial Values Snake from TR3



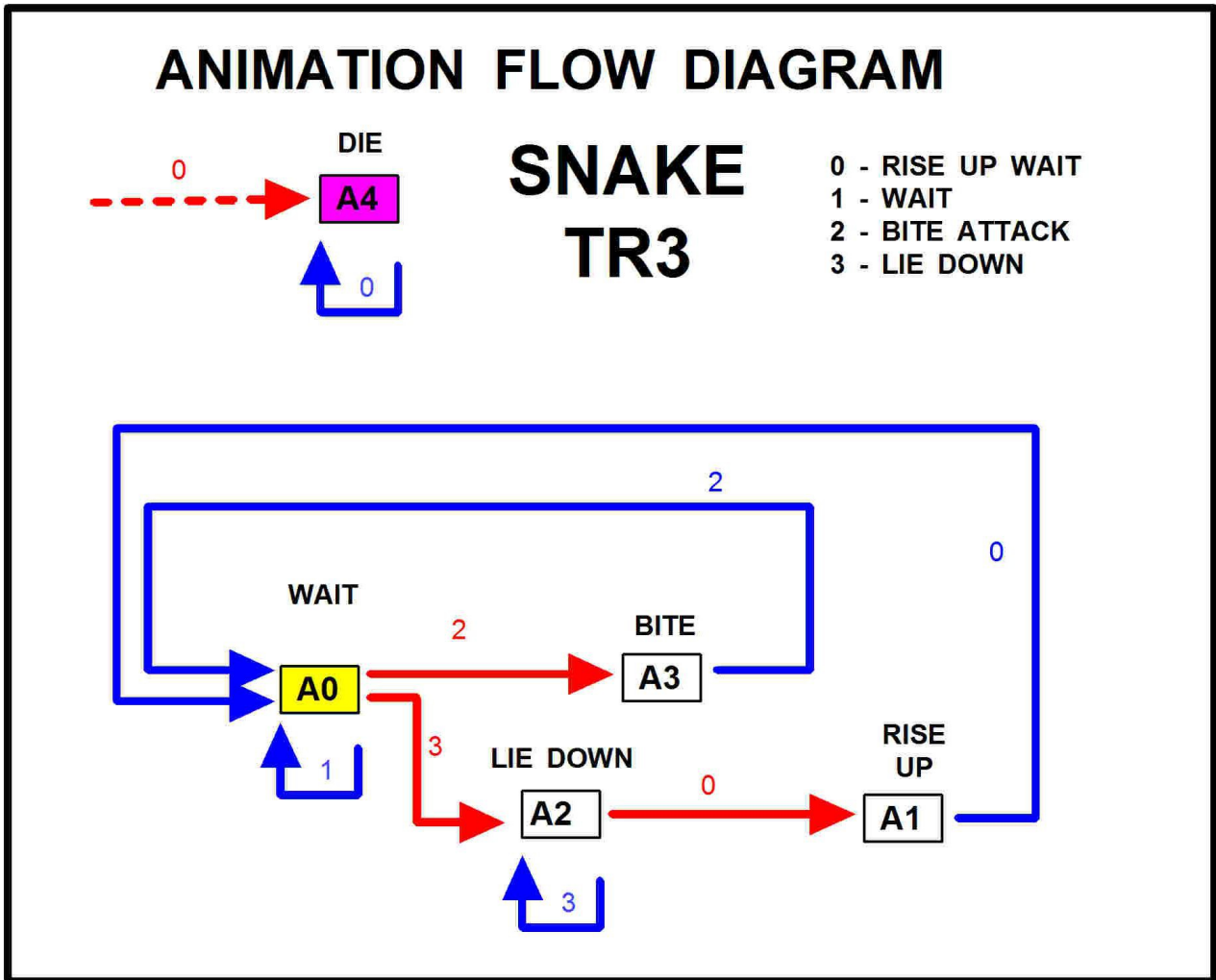
Animation 2 State changes Initial Values Snake from TR3



- Animation 0 has a state Id of 1
- Animation 1 has a state Id of 0
- Animation 2 has a state Id of 3
- Animation 3 has a state Id of 2
- Animation 4 has a state Id of 0

TOMB EDITOR WAD TOOL MANUAL

This is the Animation Flow Diagram from TR3 with State Id's used in TR3.
This will not work in TR4 without modification (State Id's different).



The Animation starts at Animation 0 frame 0 when the moveable is triggered.

When the snake is triggered it waves about waiting to strike (Animation 0).

If Lara comes within range State Id 2 is initiated and the snake bites and returns to the Wait (Animation 0).

When Lara goes outside the strike range State Id 3 is initiated and the snake lies down (Animation 2)

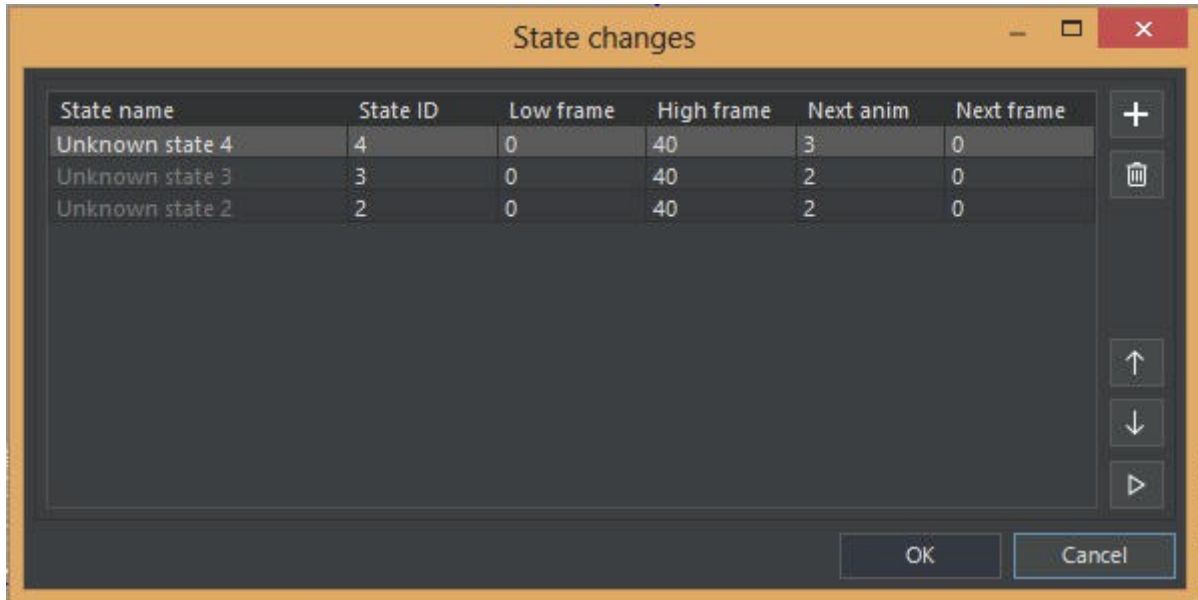
If Lara comes back into the strike range State Id 0 is initiated and the snake rises up to the Wait (Animation 0).

When the snake is killed the engine activates Animation 4.

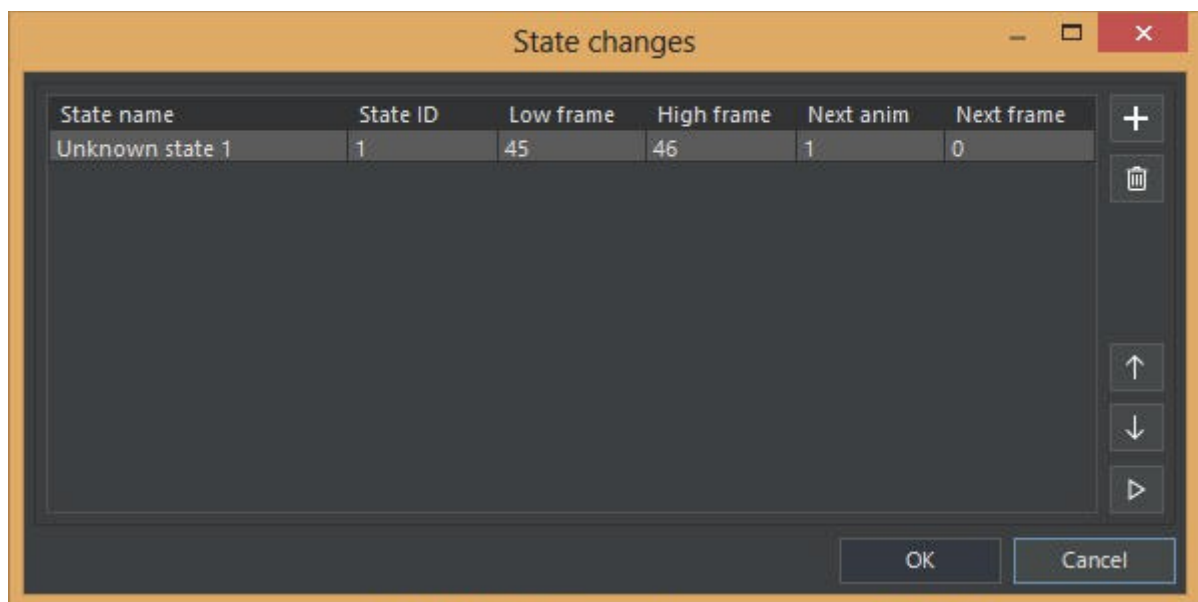
TOMB EDITOR WAD TOOL MANUAL

This is for the Animation Flow Diagram from TR3 with the Scorpion State Id's used in TR4.

Animation 0 State changes Snake in Scorpion slot TR4



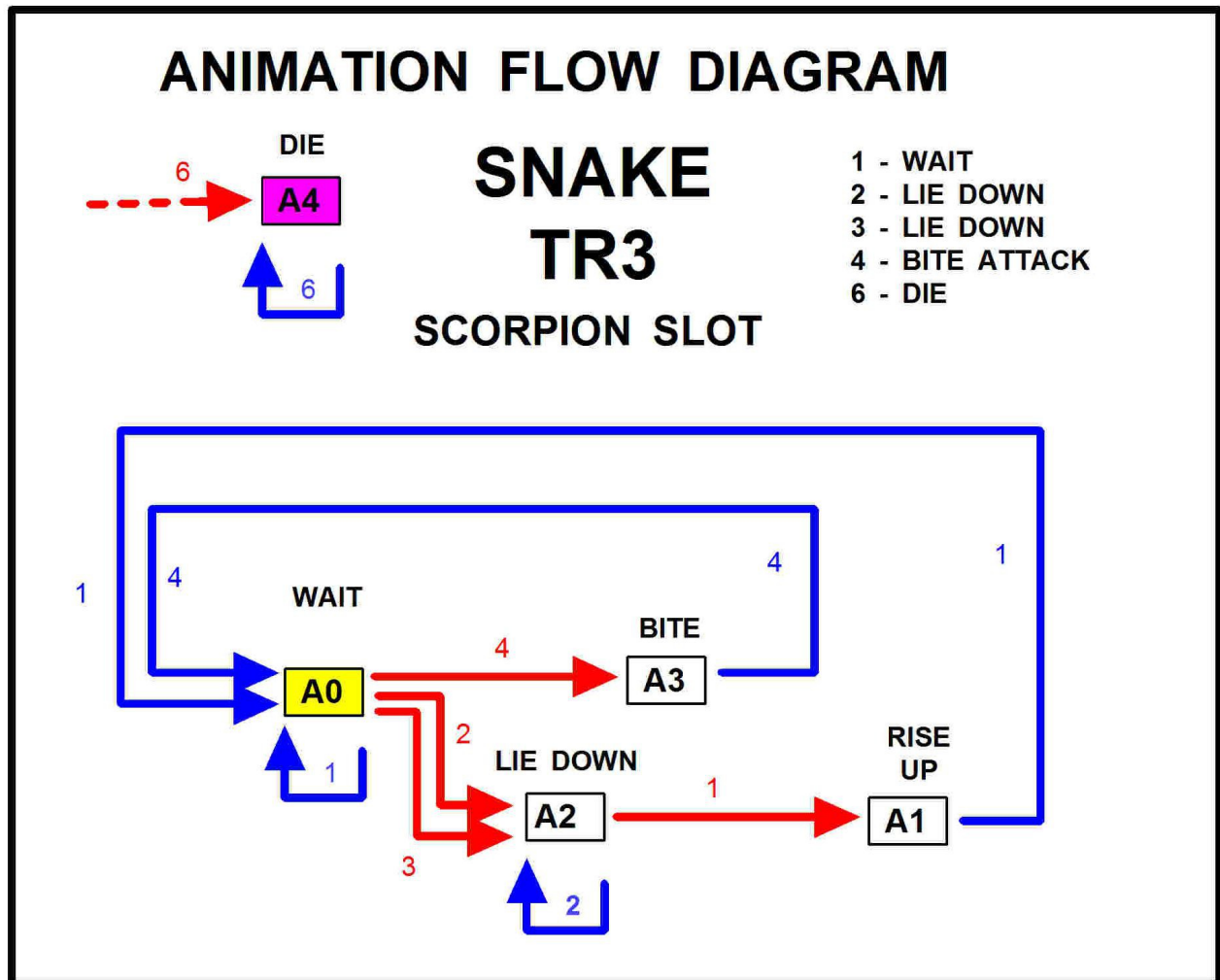
Animation 2 State changes Snake in Scorpion slot TR4



- Animation 0 has a state Id of 1
- Animation 1 has a state Id of 1
- Animation 2 has a state Id of 2
- Animation 3 has a state Id of 4
- Animation 4 has a state Id of 6

TOMB EDITOR WAD TOOL MANUAL

This is the Animation Flow Diagram from TR3 with the Scorpion State Id's used in TR4.



The Animation starts at Animation 0 frame 0 when the moveable is triggered.

When the snake is triggered it waves about waiting to strike (Animation 0).

If Lara comes within range State Id 4 is initiated and the snake bites and returns to the Wait (Animation 0).

When Lara goes outside the strike range State Id 3 or State Id 2 is initiated and the snake lies down (Animation 2).

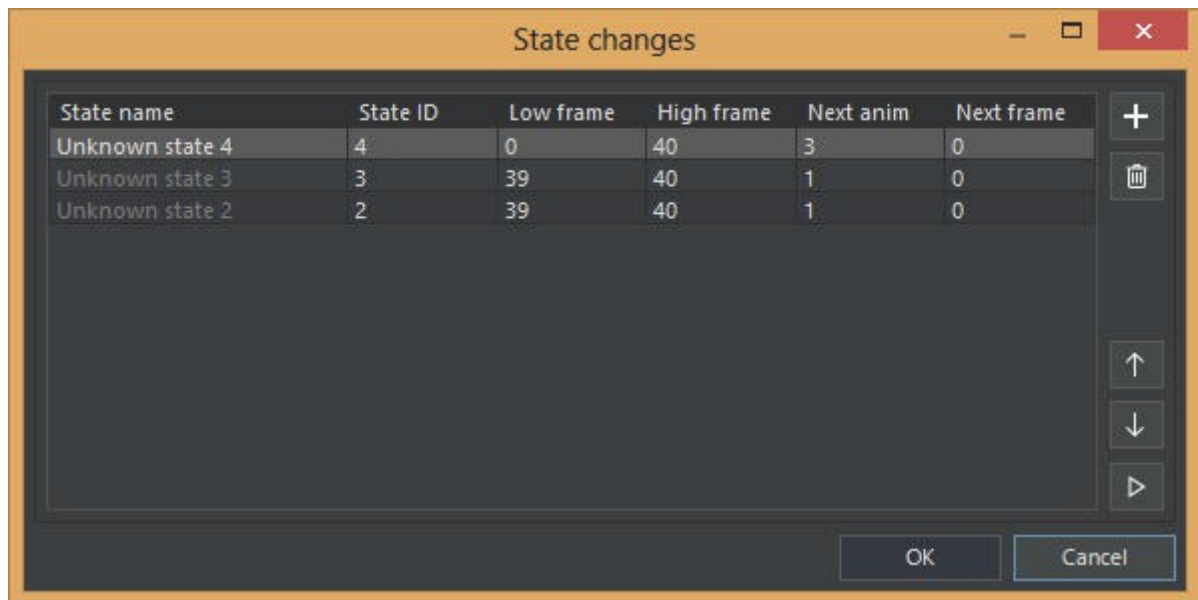
If Lara comes back into the strike range State Id 1 is initiated and the snake rises up to the Wait (Animation 0).

When the snake is killed the engine sets state Id 6 and activates Animation 4.

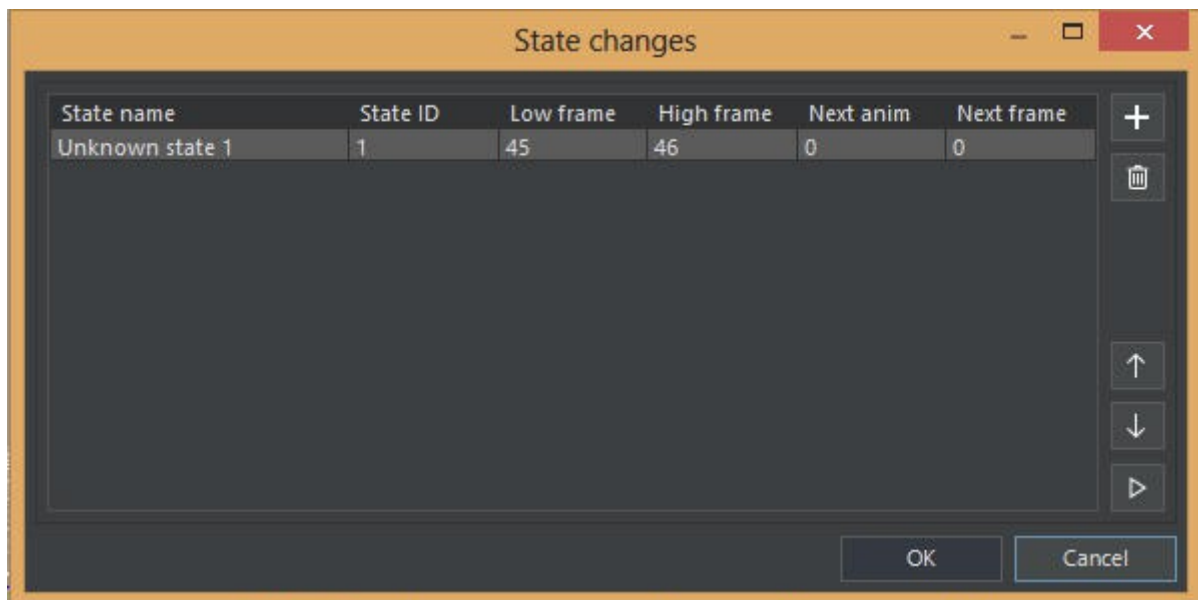
TOMB EDITOR WAD TOOL MANUAL

This is for the improved Animation Flow Diagram for the snake from TR3 with the Scorpion State Id's used in TR4.

Animation 2 State changes Snake in Scorpion slot TR4



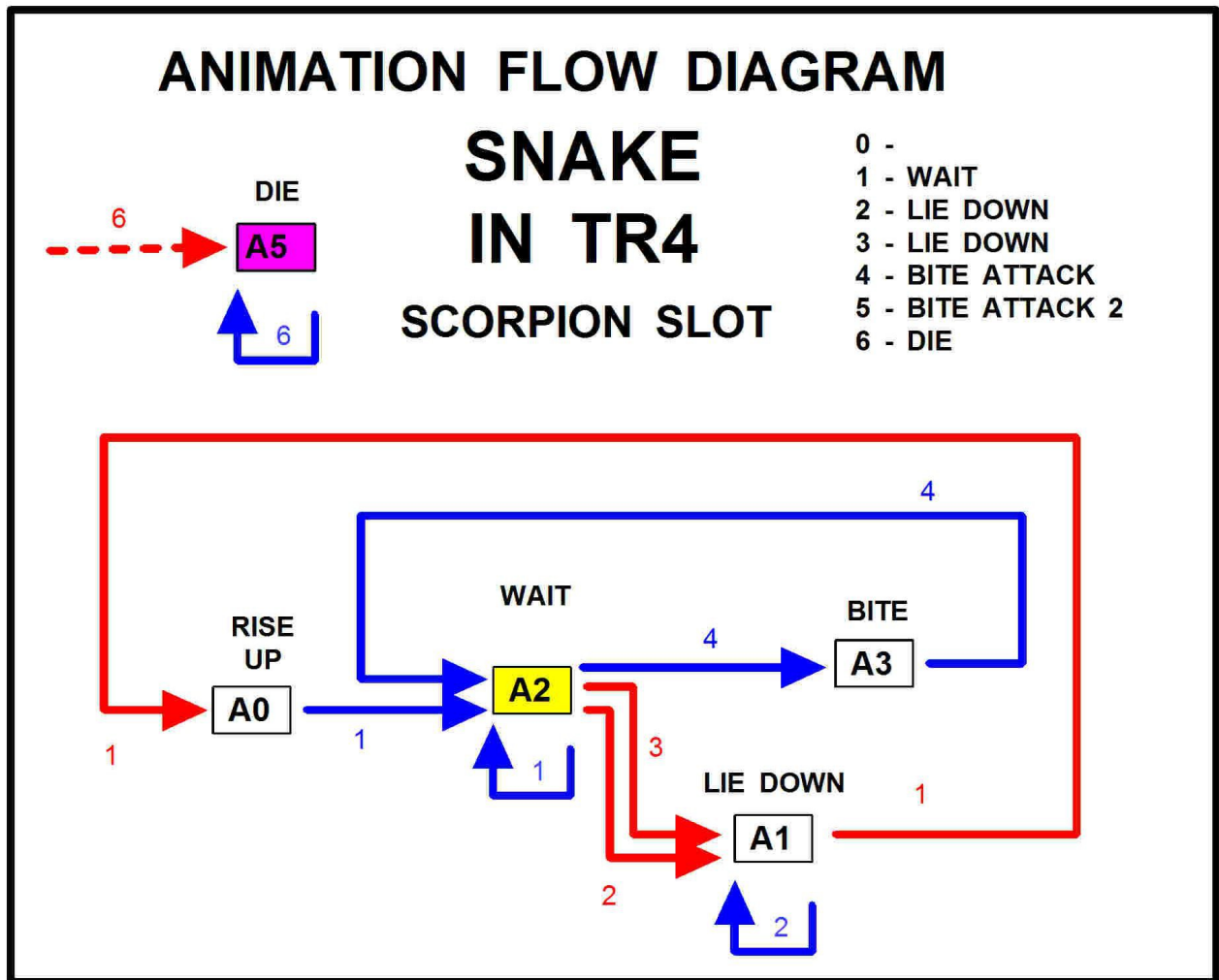
Animation 1 State changes Snake in Scorpion slot TR4



- Animation 0 has a state Id of 1
- Animation 1 has a state Id of 2
- Animation 2 has a state Id of 1
- Animation 3 has a state Id of 4
- Animation 5 has a state Id of 6

TOMB EDITOR WAD TOOL MANUAL

This is the improved Animation Flow Diagram from TR3 with the Scorpion State Id's used in TR4. This is the TR3 rattlesnake available on the TR search website.



The Animation starts at Animation 0 frame 0 when the moveable is triggered.

When the snake is triggered it rises up (Animation 0) and then the waves about waiting to strike (Animation 2).

If Lara comes within strike range State Id 4 is initiated and the snake bites and returns to the rise up (Animation 0) and then the Wait (Animation 2).

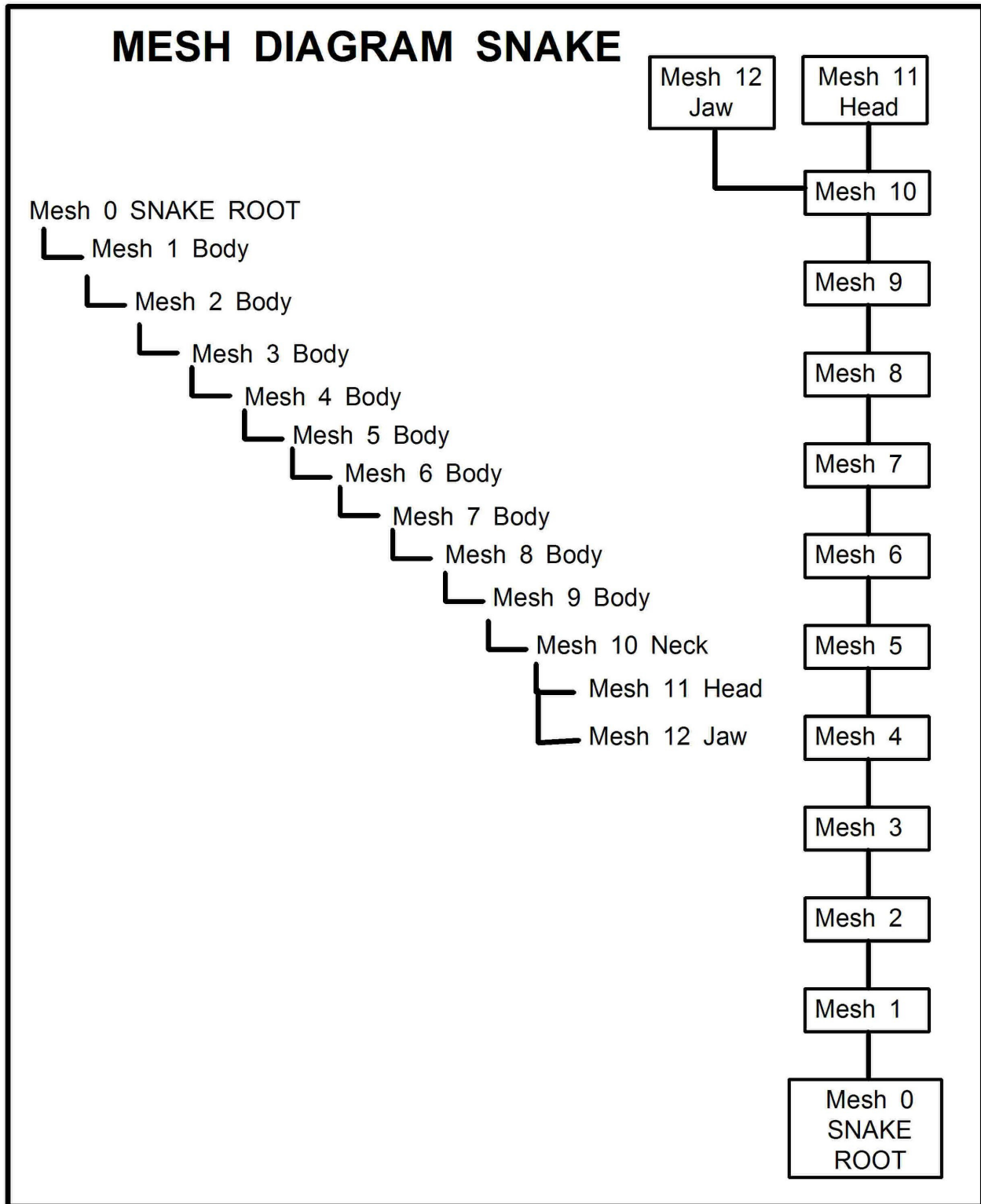
When Lara goes outside the strike range State Id 3 or State Id 2 is initiated and the snake lies down (Animation 1).

If Lara comes within strike range State Id 1 is initiated and the snake rises up (Animation 0) and then waves about waiting to strike (Animation 2).

When the snake is killed the engine sets state Id 6 and activates Animation 5.

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This is the Mesh Diagram for the Snake.



TOMB EDITOR WAD TOOL MANUAL

