Make It Move: Animating Objects for Construction

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About the speaker

Chris Medeck

AAS in Computer Animation in Fall 2000

3D artist for The Leonard Parker Assoc. for 8 years

Visualization Specialist/Manager at AECOM for 10

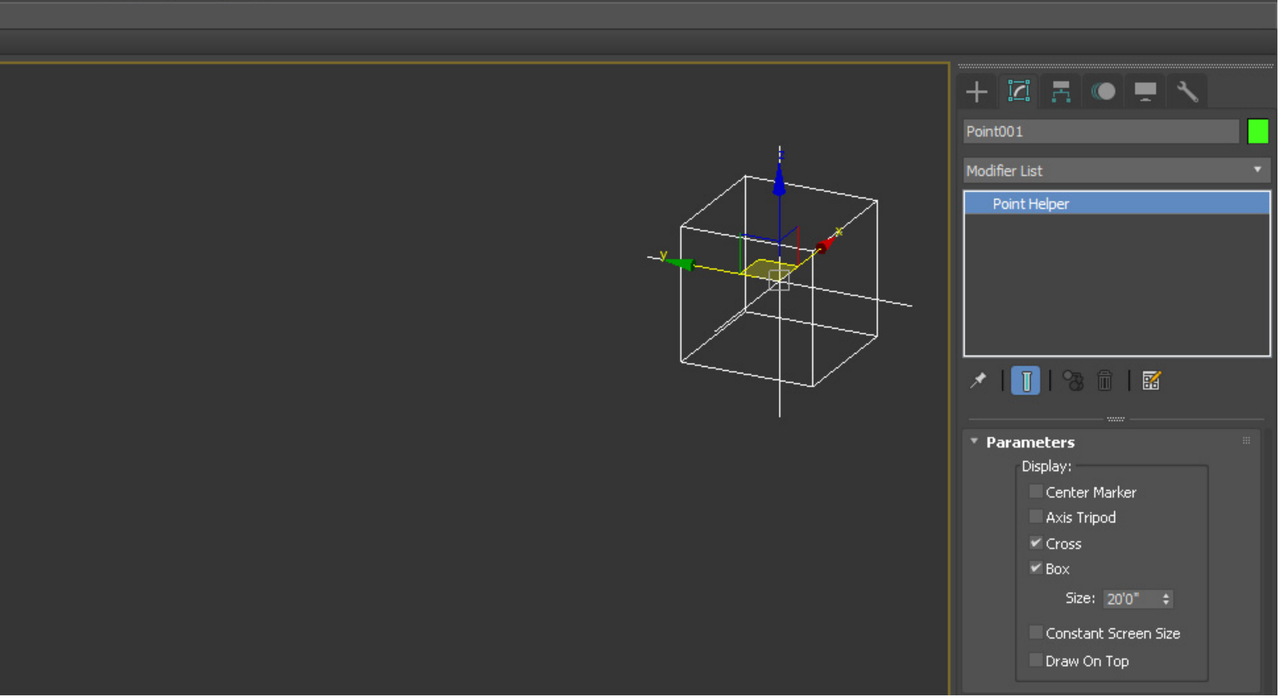
General tips when animating

It doesn’t have to be realistic, or even believable. Just understandable and pertinent.

Things can move in unnatural ways while off-camera, even jump positions instantaneously.

When animating rigged equipment, use controller objects for keyframing.

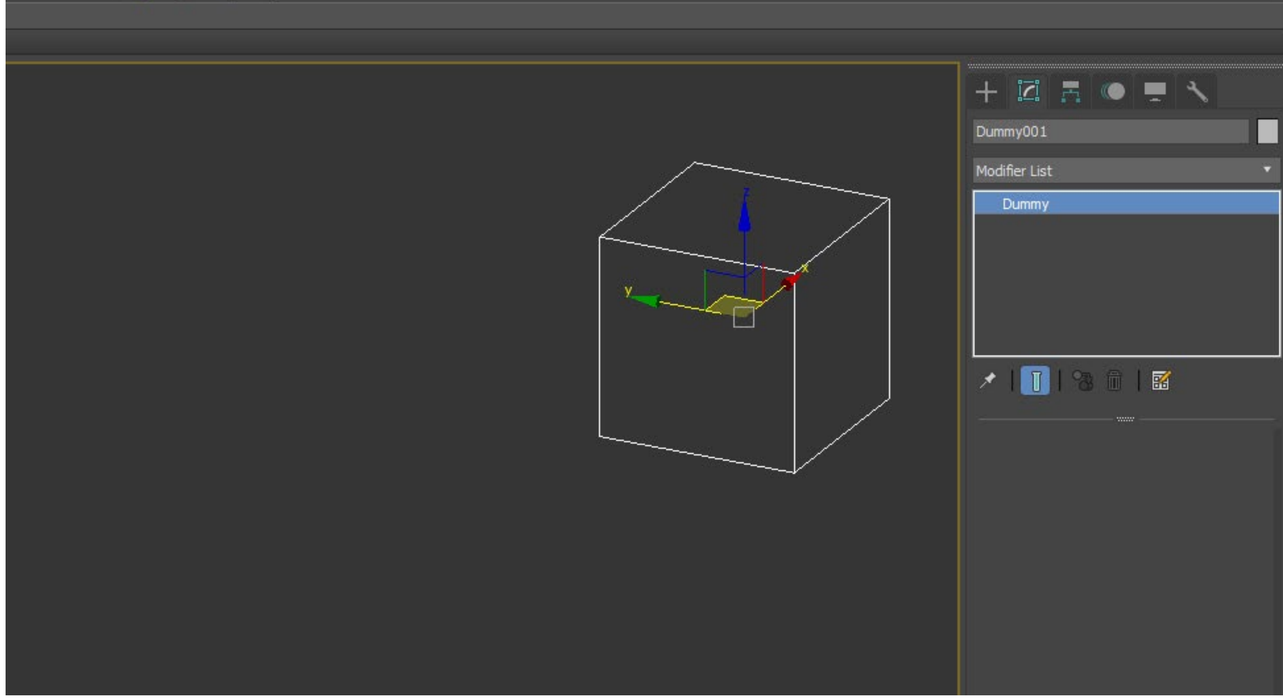
Dummy helper objects are good, but Point objects are better.



Point Helper

Has several display options

Size is easily controlled without affecting linked objects



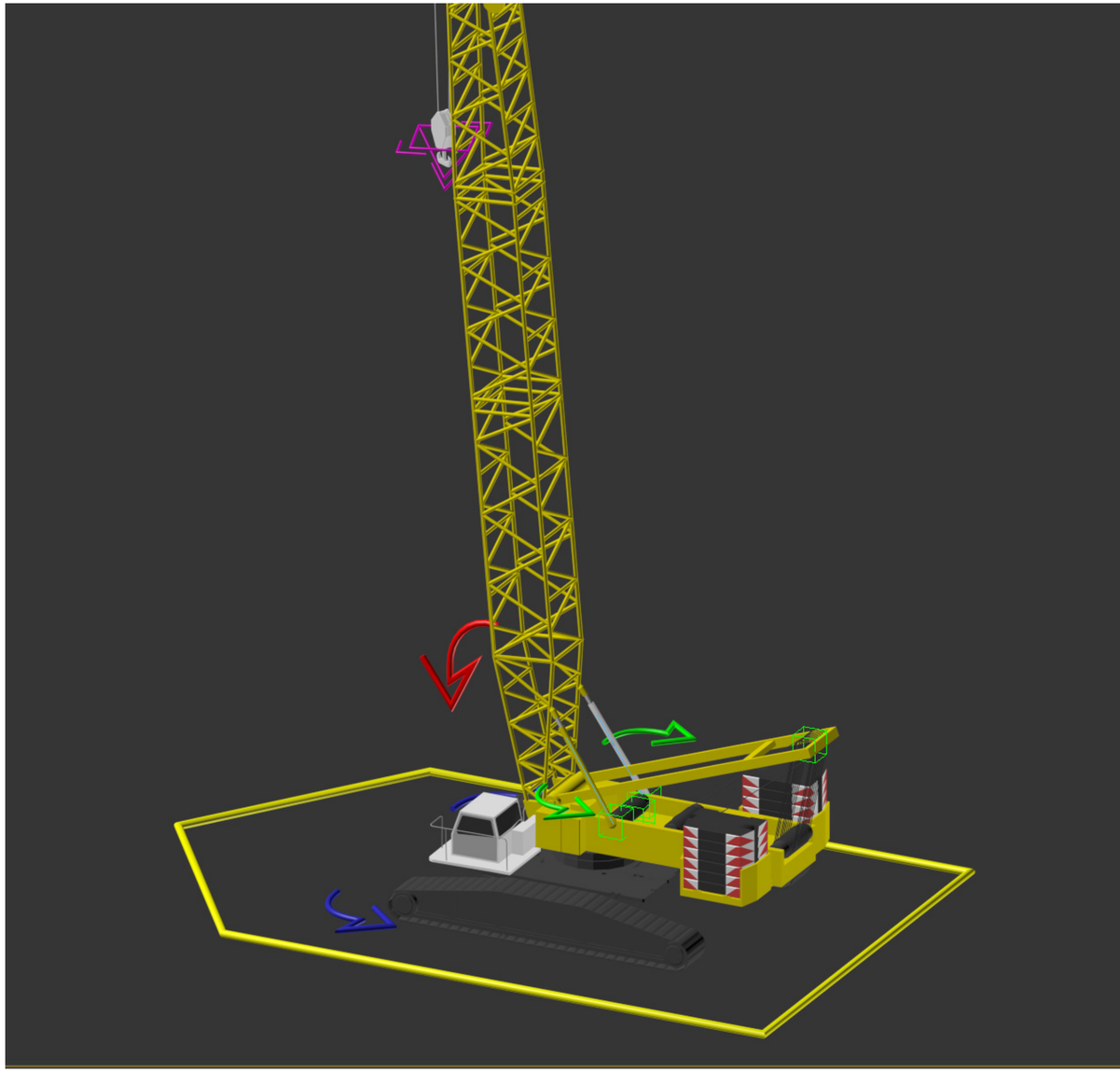
Dummy Helper

Has no options once it is created

Only way to change the size is by scaling, which can scale any objects linked to it

Rigging

- Moving parts are controlled by controller objects, in this case splines
- The big yellow pentagon moves the entire rig
- The green arrows rotate the upper portion
- The red arrow raises and lowers the boom
- The purple diamond raises and lowers the hook
- Ignore the blue arrows, I didn’t rig this!



Linking, Cloning, and Visibility

Moving a bridge girder with a crane, a quick and dirty method of animation

This method is not the best way to animate. So why teach it??

- It is easy and can be mastered quickly.
- It does not require the use of any special animation controllers.

Let’s break a bridge…(live demo)

Link Constraints

Moving a fan housing with a pallet and pallet jack, a better way to animate

Like the Select and Link tool, a Link Constraint creates a Parent/Child relationship.

Unlike Select and Link, you can assign a different parent over time.

Let’s move a pallet…(live demo)

Path Constraints and Link Constraints

Driving a car along a path with stops

Animating along a path is relatively easy, and it is possible to keyframe stops along the way.

Using multiple paths offers more flexibility and is easier to update when there are changes to timing and paths.

Let’s drive…(live demo)

Animation position controllers…

- Attachment
- AudioPosition
- Bezier Position
- Linear Position
- Noise Position
- Path Constraint
- Position Constraint
- Position Expression
- Position List
- Position Motion Capture
- Position Reaction
- Position Script
- Position XYZ
- Ray to Surface Position
- SlavePos
- Spring
- Surface
- TCB Position

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