

# Animation Checklist

by Keith Lango

## Arcs:

***Check to make sure your motions have good clean arcs. Turn on trajectories if your software supports them. If not, get out your dry erase marker and draw the arcs on your monitor.***

- Wrists- they do not look like a marionette.
- Elbows- if you're using IK arms, then you absolutely MUST check your elbow arcs.
- Feet- track the heel & the toes to see if you're getting clean arcs on both.
- Head- the most obvious motion hitches will show up in the head. It is usually a torso problem...it just shows up in the head arc.
- Knees- watch for pops and skips.
- Hips- the center of mass is vital to believable weight, so check the hip arcs.
- Props- so many time we forget that the prop the character is holding/using is as important to the motion as the character.
- Eyes- when they turn, are they linear turns? If so, add some arc.
- Face (lipsync)- make sure your face doesn't linearly go from static morph target to target. The face needs to feel organic.
- Tails- way overlooked, and very tricky to get right.
- No two motions should have same arcs.

### **Line of Action:**

***Make sure you're being strong with your lines. The difference between an OK pose and a GREAT pose most often lies in the line.***

- I have pushed my line so it reads clearly.
- My line is interesting.
- My line is strongly concave or convex.
- When going from one pose to another, my lines can be inverted for stronger contrast.
- If all I had was one still frame to show for this pose, my line of action captures the kinetic energy of the character like a good illustration would.

### **Offsets:**

***Find a part to emphasize by scheduling its late or early arrival. Offsets help keep things loose and lets your character breathe, combating the common "pose-move-pose-move" feel of most Pose-to-Pose animation.***

***Here are some questions to ask yourself concerning Offsets-***

- Have I checked for twins? Shifting one arm by a frame or two is not fundamentally addressing the issue of twinning. I need more than that.
- Does it make sense for me to offset the hand from the elbow or the elbow from the shoulder?
- Should my arms lead the torso or do they follow its weight?
- Should my hand lead the arm or follow its weight?
- Does my upper torso move independently from the hips?
- Should the head lead or follow?
- Does offsetting my rotation keys from the position keys add any life to the character?
- Do the fingers each move independently or collectively?
- Should the fingers flow after the hand or stay tight to it?
- Is this the right place to use an offset blink (aka "pixar")?

**Overlap & Followthrough:**

***What a LOT of pose-to-pose animation suffers from is the dreaded "hit & stick". You need to find a way to get that out of your animation while still keeping strong, clear poses and clean timing.***

- Am I overlapping too much? Is it too soft (mushy)?
- Am I not overlapping enough? Is it too hard (sticky)?
- Are my motions distracting (poppy)?
- Does it feel like my ease ins and outs are too linear (robotic)?
- Do my body parts overlap with believable physics? Are the hands too slow (heavy) or too fast (light)?

**Energy:**

***One of your primary tasks as a character animator is to manage your tension- your energy build up and release. Each character will build & release their energy in a very different way.***

- The amount of anticipation matches the speed of the subsequent action.
- My character flows well from one thing to another.
- My character's body language and gesture energy matches the tone & energy of the dialogue.
- My characters move around on their feet to keep them believable (Nothing says "I'm not believable" like frozen feet).
- My character's energy keeps building up during a hold (when appropriate). Tip: if the pose hit didn't have an extreme with a recoil, but is rather meant to build energy for release (like an anticipation hold) then you'll keep growing the energy up into the pose, like a long ease into the extreme.
- My character's energy keeps settling with gravity during a hold (when appropriate). Tip: If the pose hit and settled back after an extreme, you'll generally want to keep the held energy settling into gravity.

**Pace:**

***You need to keep things moving at a natural flow. If your shot feels dull, look at your pose holds and your transition timings. I'll bet you \$20 that all your holds are about the same length and all your pose transitions are about the same length.***

- My motions do not move too evenly across the shot.
- My motions do not move too quickly.
- My motions do not move too slowly.
- I have an appropriate mix of fast moves verse slower ones.
- I have mixed up the pacing of motion; such as fast flurries followed by long simmering holds- this creates great contrast!
- I have not made every move the same speed & flavor.
- I have considered how the pacing for Character A differs compared to Character B?

**Silhouette:**

***Make your poses read in an instant, not in an hour.***

- My poses read clearly in plain black & white.
- I have checked for funky lines in the silhouette; i.e. elbows or knees sticking out unnaturally.
- I have checked the spine in my line of action.

**Timing:**

***...is everything. Well, almost everything.***

- My character's gestures & actions lead words appropriately in dialog.
- My character's moves are never linear or even.
- My physics (weight) are believable
- Long holds are broken up using secondary action (scratching, wiping nose, weight shift, etc.).

**Motion Pathologies:**

***Does anything have a funky motion that just looks off?***

- I have checked for IK pops.
- I have checked for hitches in the arcs.
- I have smoothed out any hiccups in line of motion.
- I have eliminated any and all distracting moves.
- I have checked that I do not overshoot on moves too much or not enough.
- There is enough "life" on my moving holds (but not so much that I am adding noise to the signal).
- I have cleaned out any and all distracting, nasty geometry intersections (the small, single frame ones in the middle of big moves will not be noticed).

**Staging:**

***Can we see your action from the best possible angle? And remember: the ONLY view that matters is the camera view.***

- I have composed images on thirds.
- My character is not staged directly down the middle (unless I have a reason to).
- My lines of action have visual angles that lead my viewer's eye where it needs to go.
- I have kept the integrity of the layout composition.
- It is visually clear and obvious when my character is doing something important.
- When I watch my animation, my eyes go where they are supposed to and do not awkwardly jump from cut to cut.

**Acting:**

***Will we believe your character is sincere? Are they REAL???***

- My motion stays true to character. i.e. Buzz Lightyear will not flail like a spaz as Woody would.
- My acting matches the dialog intensity.
- My hands & body do not merely illustrate words that the character is saying.
- My eye emotions match the dialog.
- I have used the eyes to reveal my character's inner thoughts or emotions.
- Emotion is driving my character's action and motion.
- I have kept it simple and not overacted.
- Any emotional shifts occur when my character is still.
- There is only one owner of the shot at a time and they are never upstaged (secondary and background characters are not distracting with their motions).
- If ownership is transferred from one character to another, it is a clean hand off.

### **That's A Lot to Check. Anything Else?**

One simple discipline that I have found always helps me is this: About the time you think you're done with your shot, make a preview of your animation. Then, while it plays repeatedly, step away from the keyboard and grab a pencil & some note paper. Let the preview play over and over, until you start to see every frame. Start taking notes of what needs to be fixed. Find EVERY single glitch, hitch and problem you can find and write it down to be fixed. Don't stop writing these things down until you've noted every issue you've spotted. Spend at least 5 minutes watching this shot loop over and over. Then, when you can't possibly find anything else to pick, go back to your file and fix everything on your check list. So many times we think we're done before we're really done with a shot. This simple exercise will force you to stop and see the animation for what it is. By noting every problem, you're ensuring that you won't forget something. Then, when you've fixed every problem on your list, repeat the process again. Trust me, you WILL find more problems, stuff you didn't see before. It usually takes me about 3 or 4 times of doing this last pass-last gasp effort to really put the piece over the top.

### **Conclusion:**

I hope this is useful to some of you out there. It may seem tedious and rather dull to have to comb over your shots like this, but that's the effort that's needed to take simply OK animation and push it to the next level. If this were easy or simple or fast, then everybody would be doing it. But those who put in the effort to really push their shots the furthest they can go, they'll be the ones everybody looks at and wonders "*Gee, what a lucky dog that he got into XYZ studios.*" Luck doesn't have much to do with success. Going beyond the simple application of a singular method and pushing yourself and your work to the highest level you can. *That* has a lot to do with success.