

A – 3D view window. This is the place Where you will be making all the posing an manipulations.

B – Timeline. This is where the controls for keyframing and frame position controls are placed.

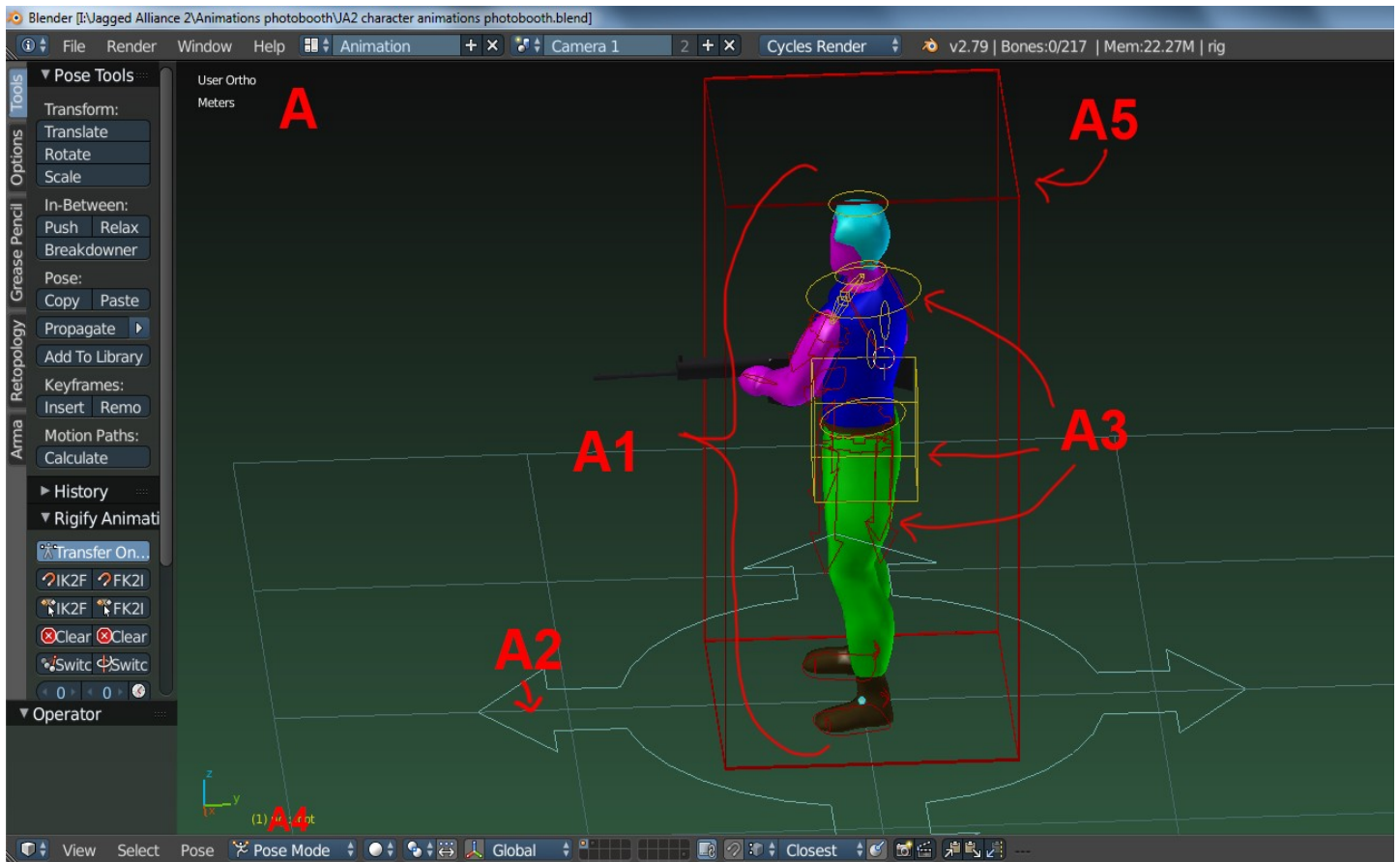
C – Dope Sheet. This a pretty dope window with lets you create different animation sets, copy, paste and move keyframes. You can have multiple sets of animations for the model, you switch between them in the dope sheet.

D – Transform Panel (N). This panel lets you control the selected object’s rotation position and scale. Its toggled by pressing “N”.

E – Additional viewport. Its just another viewport so you can have a different camera angle on stuff while you are working up close with the mesh. It can be controlled the same way as the main viewport

F – Outliner. Here you can select different parts of the scene as well as enable their display, as well select what will appear in the rendered scene.

G – Properties Panel. What you really need to know is it has the buttons that render the scenes. This panel also lets you set pretty much all the details concerning the selected object, but again, what you only need to do is press the “Animation” button to start rendering the animation.



A – 3D view window. This is the place Where you will be making all the posing an manipulations.

A1 – The model itself, I have switched off the selection so you can't really select it. This is to make posing easier, so you don't constantly switch out of posing mode by selecting the mesh by mistake.

A2 – The main position helper objects. This lets you move the whole model around the scene. Be warned though, the cameras are centered around the center of the scene, you should keep the model in there and generally refrain from moving it too much from that global position. Use the bounding box (A5) for reference.

A3 – Helper objects. This is what does the magic of animating/posing the model. When you are in the pose mode (A4), you can select the helper objects and then manipulate them like you would normal blender objects: G – grab, R – rotate, S – scale (you shouldn't scale them though, can have weird consequences). To insert the keyframe for selected elements press “ i ”

A4 – Mode. Generally you should be in the pose mode all the time. The pose mode is where you animate the model.

A5 – 1x1x2m bounding box. Its there to give an idea how the animation looks in relation to one square in JA2 (with is 1x1m). It will help you to keep the merc on his square during animation, so pay attention to it and try to not step out of the bound if its not needed.



B – Timeline. This is where the controls for keyframing and frame position controls are placed. The lighter gray are the frames that will get rendered, the length is set via B2 and B3

B1 – This long vertical line indicates on with frame you are currently viewing, the number of the current frame is shown in B4

B2 – This is the first, starting frame of the range that will be rendered

B3 – This the last frame of the frame range that will get rendered. Everything between this and starting frame (B2) will be rendered, so make sure the range covers only the stuff you actually want to render without any extras.

B4 – Current frame indicator

B5 – Animation play controls. From left to right: first frame of the range, previous frame, play animation backward, play animation forward, next frame, last frame of the range.

B6 – Active keying set. Basically here you choose what data will be keyframed if you press the “set keyframe” hotkey/button. “LocRotScale” will store the location, rotation and scale of all of the selected and keyframed objects. This is the catch-all option and the one I use most often.

B7 – Insert keyframe (i). This inserts the keframe for all selected objects at the current frame. This is you bread and butter for animating. I usually keyframe the extreme poses and let the computer interpolate the inbetween frames, adjusting when necceray.

B8 – Remove keframe (alt+i). removes the keframe from selected objects.



C – Dope Sheet. This a pretty dope window with lets you create different animation sets, copy, paste and move keyframes. You can have multiple sets of animations for the model, you switch between them in the dope sheet.

You can manipulate the keyframes using the controls very much like the 3d viewport controls, G for moving the frame, SHIFT+D for duplicating. Also the selection methods like box select (B) and SHIFT+click and such also work here.

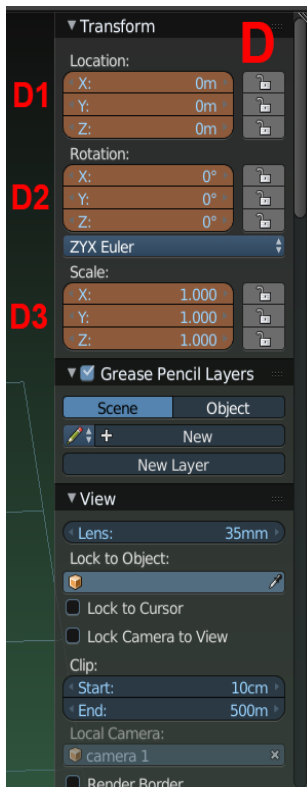
You can roll out the Dope Sheet Summary to see keyframes for all of the helper obejcts, here you can manipulate them individually. Say if you want to copy the feet positions, you select the feet keyframes, press CTRL+C to copy them so you can use them in different animation.

C1 – This is the indicator of on with frame you are on.

C2 – Keyframes. Each of those lithe rhombuses is a keyframe, you can manipulate those and move them around the timeline, duplicate, copy, paste and remove them. Selected keyframes will light up when selected

C3 – Action browser. Each separate animation is an “action” you can select the animations using this. NOTE: you need to have the rig selected to properly assign the animations to be played.

C4 – Action controls. + adds a new action as a copy of current one. X removes the current action from selected element. To completely remove the action from the file press SHIFT while pressing X.

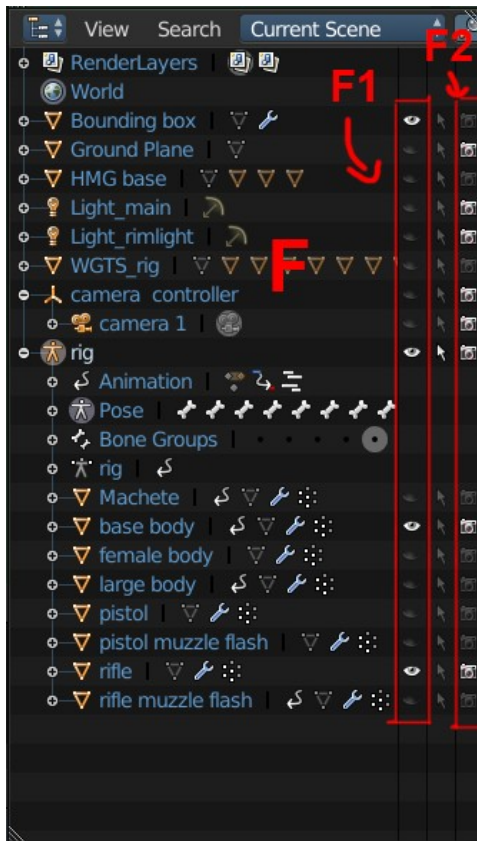


D – Transform Panel (N). This panel lets you control the selected object's rotation position and scale. Its toggled by pressing “N”.

D1 – Location of selected objects, you can tweak it here to move objects along particular axis

D2 – Rotation transform of selected objects. This is the most common used part of the transform panel. Do note that depending on what is selected the rotation might be either in Euler or Quaternion. It changes the way gimbaling works.

D3 – Scale control. I think the only reason to use this is if you want to hide an object (say muzzle flash). In such case you set the scales to 0.



F – Outliner. Here you can select different parts of the scene as well as enable their display, as well select what will appear in the rendered scene.

NOTE: if you select an action in the Dope Sheet it will be assigned to the currently selected object.

F1 – VIEWPORT visibility. This will display the object in the VIEWPORT, but it will NOT render the element. The eye indicates that the object will be visible.

F2 – Render restrictions. Here you choose what elements of the scene will be rendered. Generally render only what you need. However do leave the Ground Plane, lights and camera on so the sprite renders out properly.

Between F1 and F2 is the selection restriction, for the sake of simplicity I only enabled rig to be selectable.



G – Properties Panel. What you really need to know is it has the buttons that render the scenes. This panel also lets you set pretty much all the details concerning the selected object, but again, what you only need to do is press the “Animation” button to start rendering the animation.

G1 – Render out the current frame. NOTE: it will only show a single camera view. You can get different ones, but it would require you to manually switch out inputs for the viewer in the compositing, don’t worry about it too much. Use the auxiliary viewport to get better idea how the animation looks.

G2 – Render whole animation. It renders out ALL of the frames that are between the start and finish of the animation. REMEMBER to change start and finish frames accordingly in the timeline (B2 and B3). Other than that all you need to do is press this button and wait for Blender to finish rendering.

Once the rendering finishes you will get a preview of a single frame, you can close it with ESC to bring back the viewport. The results of the rendering are saved in the “output” folder where you have the .blend stored.

Further workflow:

1. You need to crop the resulting images. Personally I use photoshop action with the following settings:
 - a) Top: 189px
 - b) Left: 190px
 - c) Bottom: 310px
 - d) Right: 311px
2. You need to index all of the files so they use the proper palette (the .act file you can download along with the .blend file). I use photoshop action to do that.
3. After all of the images are cropped and indexed you need to rename them all so they follow this naming convention: 0-X (ie. 0-0, 0-1, 0-131 etc.) the count starts at 0. I use the Bulk Rename Utility for this.
4. After that you need to place the renamed (and indexed and cropped) files into the “extract” folder in the make script folder.
5. You need to edit “!make_sti from render.bat” in order to input settings for total frame number and keyframing

```
sticom.exe new -o "sti\%_FILE_NAME%.sti" -i "extract\0-%%d.bmp%" -r 0-135 -p "JA2  
character model palette v3.act" --offset (-60,-77) -k "0x11 0x00 0x00 0x00 0x00 0x00 0x00  
0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00" -F
```

- a) the “0-135” indicates what files to use in order to make the animation, in this case its 17 frame animation ($17 * 8 = 136$, counting starts from 0 so the last frame is number 135).
- b) make sure that the palette you use is the latest one present on the google drive as indicated by “v[number]”
- c) If the sprites were generated without any tweaks to the camera, and were cropped using settings listed above the offset of -60,-70 will work on all of the animations that you will get from rendering out using my settings.
- d) Next are the STI keyframes:
 - first number is a HEXADECIMAL of a number of frames for the animation (in this case its 17 frames so the hex number 0x11). You can convert decimal to hex using your calculator
 - next are the blank frames, you need to put in enough of “0x00” so their number is animation frames – 1, in this case the animation has 17 frames so there are 16 “0x00”

With this done you can run the bat and it will create a new .sti file in the “sti” folder. If all goes well it should be fully functional animation you can use in JA2.