GUIDE TO BASIC MOTION TRACKING STABILISATION IN AFTER EFFECTS

Motion tracking is used in many different ways. It can be used for sticking an object into place on some footage, so it seems like it is part of the footage. It can also be used to stabilize shaky video footage. There are a lot more examples of how to use motion tracking, but we will be concentrating about the basics.

What we will do in this guide, is to motion track some footage, and stabilize the video footage via those tracking points.

We have some footage from the videocopilot.net homepage, which we will be using in this guide. The footage has some playing cards placed on the street, which makes those points easy to track:

When we are done with this first part of the guide, we should have succeeded in stabilizing the footage around the playing card on the left.
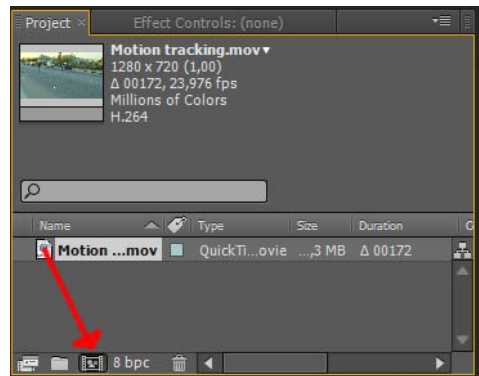
The first thing you have to do, is off course to import your footage, and make a new composition.
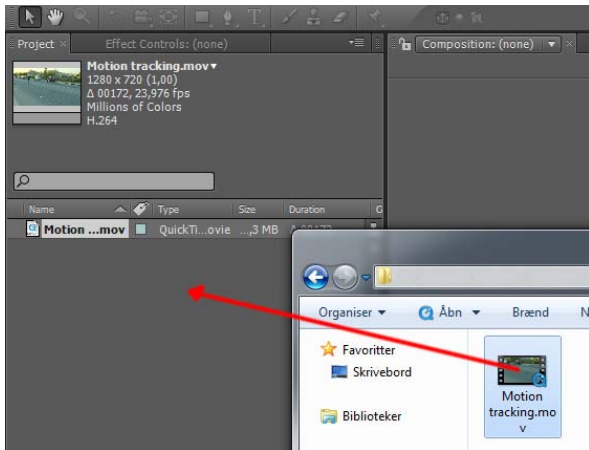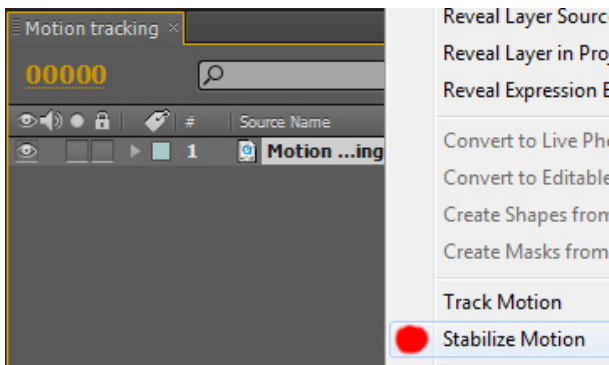

Click and drag from a folder into the project field in After Effects:

Then click and drag the imported footage, onto the "Create New Composition" button:

Now we need to track the motion in the footage.

With the time scrubber at frame 0 right click the motion tracking footage in the timeline, and click "Stabilize motion":
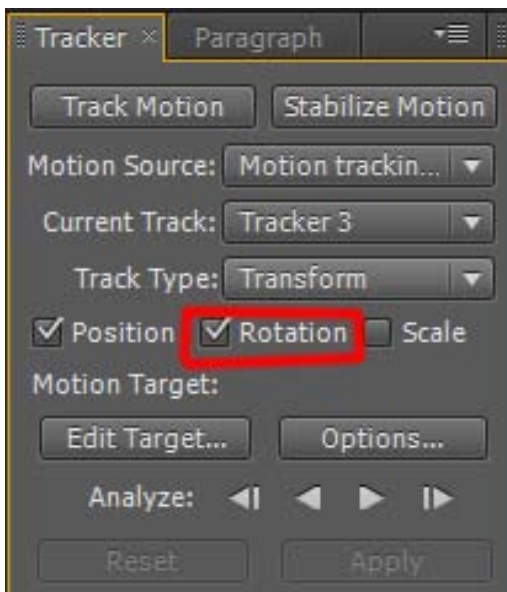

You should now get a tracking point in the scene, and the "Tracker" controls should appear in the bottom right corner of After Effects:
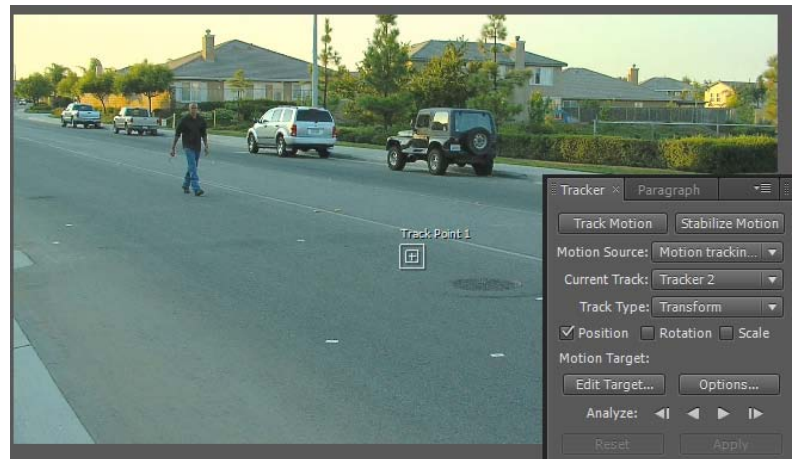
Because the camera is moving to an angle of the points, we also need to track the rotation.

Click the "Rotation" box in the "Tracker" field.

Now there should be two track points in the preview field:

The track points are made up of 3 pieces.

1. The search area. Depending on how shaky the footage is, this area needs to be bigger or smaller. This area searches for the pixels of the tracking area (2.) outside the tracking area.

2. The tracking area. This area encompasses the pixels you want to track. There is no fixed point that is tracked, only the pixels inside the tracking area, and After Effects tries to keep them all at the same point inside the area.

3. The rotation tracking point. This point should always be inside the tracking area. The position can be changed, but only if you want to track the rotation contrary to the tracking area.
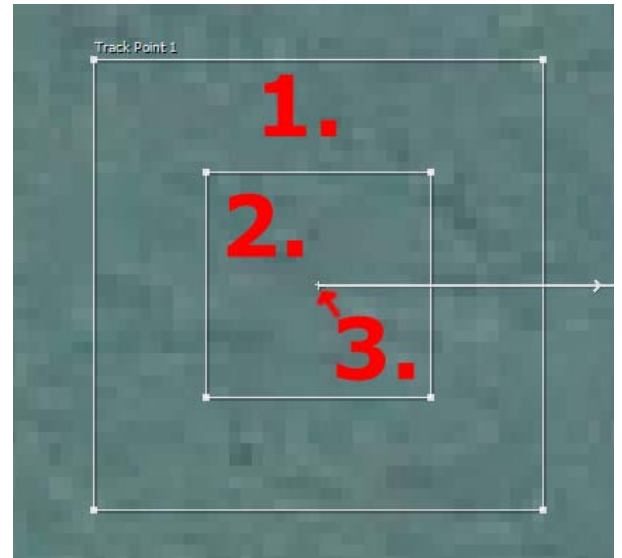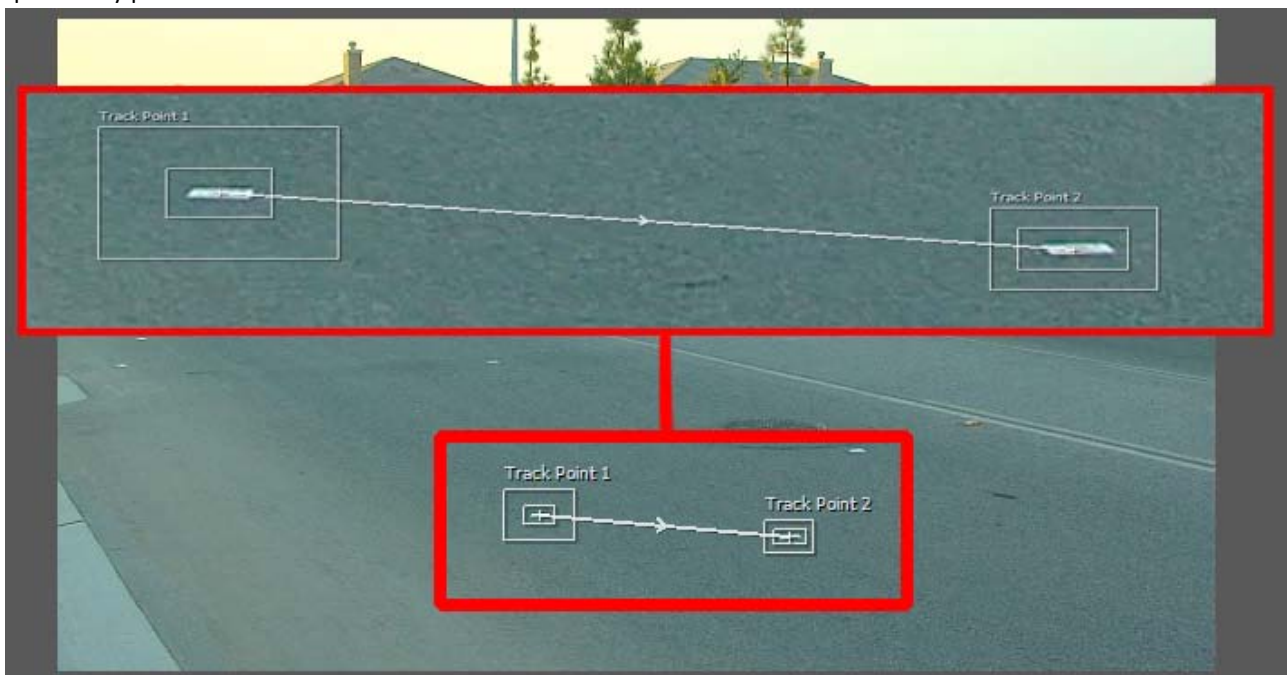

You now need to position and scale the tracking points to the places you want to track.
The "Track point 1" is where your tracking data will be applied, and the "Track point 2" is from where the rotation is measured.
In our footage, we have the playing cards on the street we want to track.
I placed my point like this:

Now we just need to get after effects to analyze our footage. Click the "Analyze forward" button in the "Tracker" field:

Note: If the track points start freaking out, and starts to jump around, click the stop button, and then you have to tweak the position and scale of the track points.

This is done by scrubbing the timeline back to where the tracking still was fine, and reposition the point, and then click analyze forward, to overwrite the faulty tracking data.
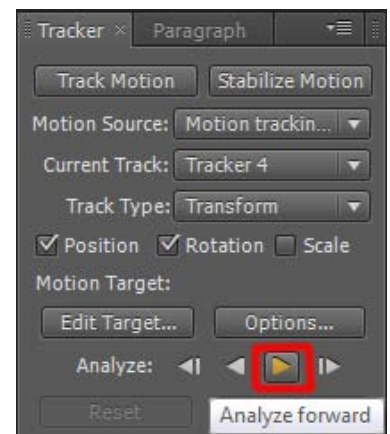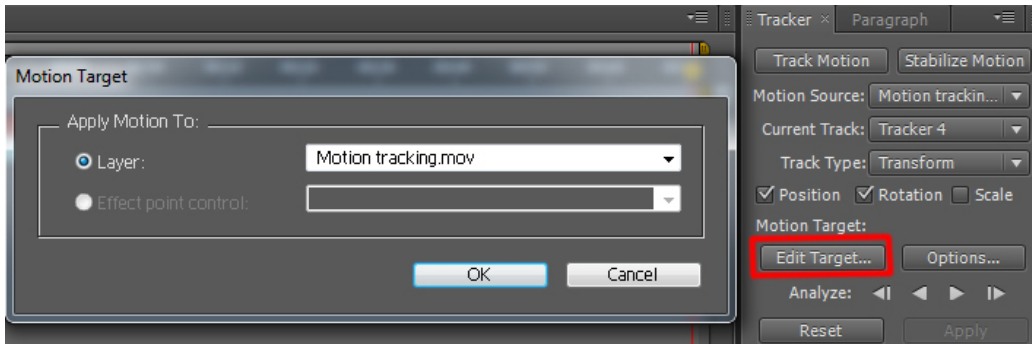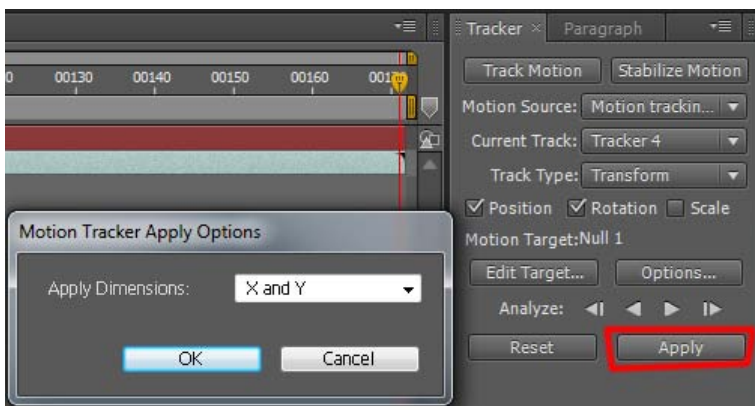
When it is done, the track should look like this:
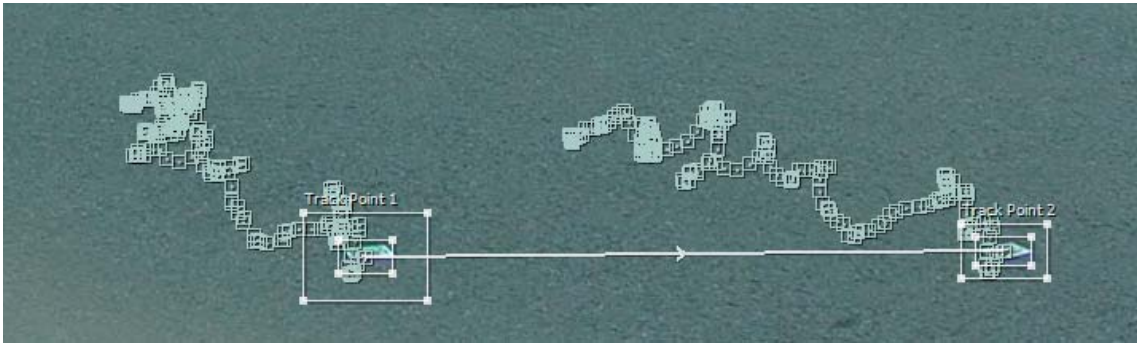
Now we need to apply the information to our main footage.
In the "Track" field click the "Edit Target…" button, choose the "Motion tracking.mov" layer, and click "OK".


Now we have selected our footage, and only need to apply the tracking to it. Click the "Apply" button in the "Tracker" field, and choose X and Y and click "OK".


Now the tracking data has been applied to our footage, and you can try scrubbing through the footage, and see the playing card staying in place.

If you take a look at the values of the footage in the timeline, you can see that it has got at lot of information applied to it in its position and rotation data.
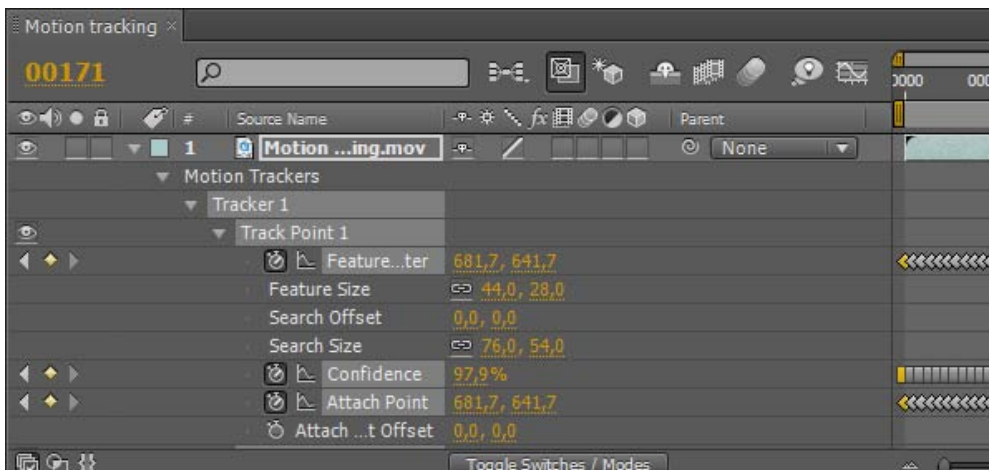
Now to finalize this stabilization, we need to scale and position the footage just right, so we don't get those black areas in the sides.

Close all the rollouts of the motion tracking.mov layer in the timeline, and select the motion tracking.mov layer, then press "P", now click the stopwatch to the left of the position (so its off), to remove all keyframes:
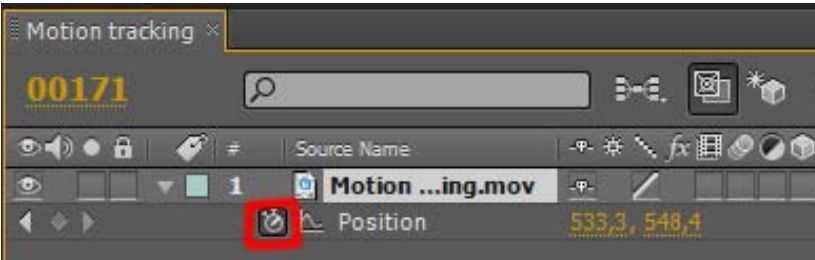

Now scrub the timeline to where the footage is the "worst" (lot of black/transparent areas), and scale and move the footage.

I ended up with these values for the scale and position:
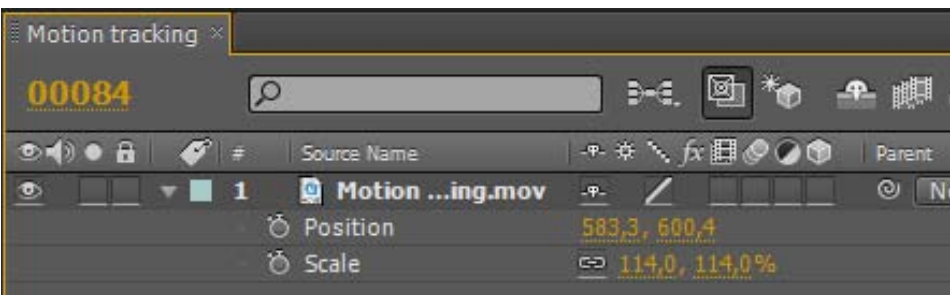
To avoid scaling the footage more than we have to, I left some black/transparent areas at some frames, which we will fix with a plug-in called "Motion Tile".

With the motion tracking.mov layer in the timeline selected, click the search field in the effects and presets, and write "tile":
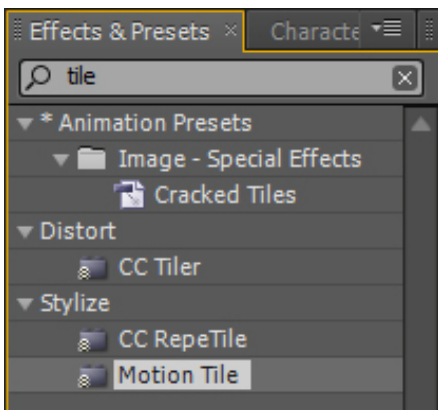
Then double click the "Motion Tile" label under the stylize category, to apply it to the footage.

This effect will tile the edges of our footage, to fill the black areas with a mirror version of the footage (a bit like the clone tool in Photoshop).

Now in the effect controls, we need to set some values, for the height of the tile, and the width. We also need to set "Mirror Edges" so that we don't just double our footage. My values are:
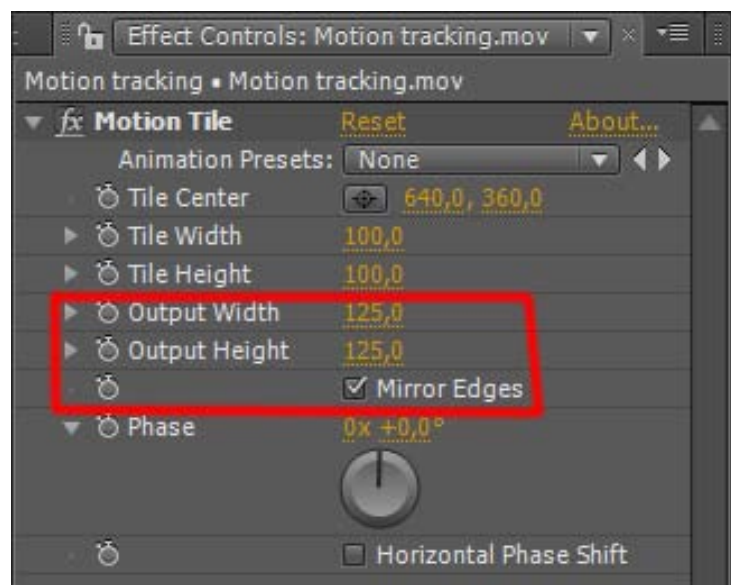
Note: The higher the values in the output width and height, the bigger the footage will actually get, and take up more and more CPU power.

You can still tweak the values for position scale and the motion tile, to get it perfect.
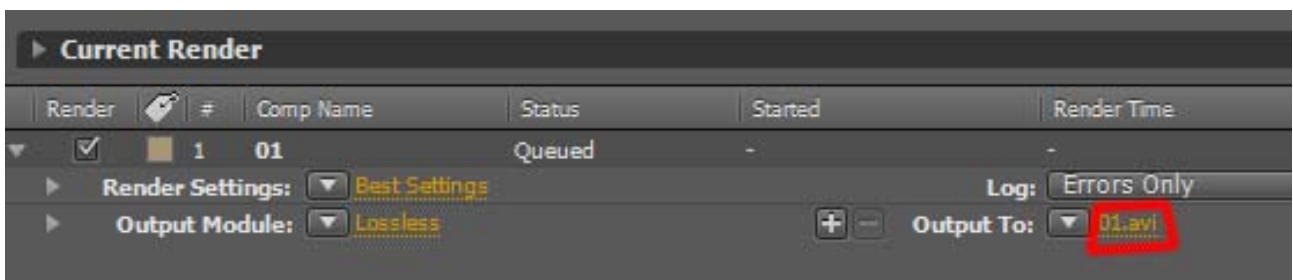
RENDERING

Some people render their AE results via an export. This is considered bad practice. The right way to render your results is to use the render queue.

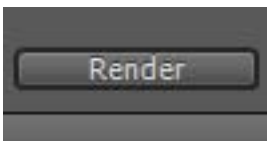Choose "Composition" → "Add to Render Queue"

As a default the settings are set to a lossless AVI format, which is okay for this composition.
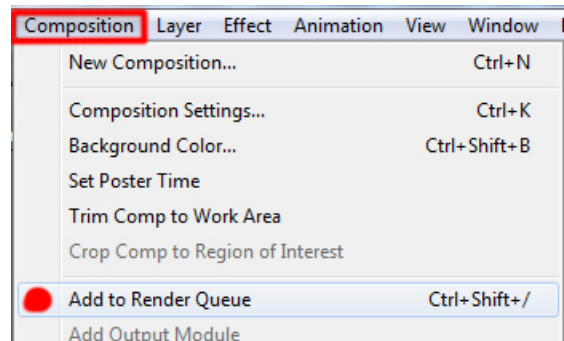
Click the "output to:" filename, (01.avi) and choose your output directory:

Then Click "Render":

Now you are done.

I hope this basic guide has given you some insight into stabilization.

This is off course the easiest way to stabilize footage in after effects, but it is also very effective.