Advanced Camera Stabilization

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History and evolution of camera stabilization

History:

The Steadicam was invented by cameraman Garrett Brown and was introduced in 1975.
Originally called Brown Stabilizer
The Steadicam was first used in the Best Picture–nominated Woody Guthrie biopic *Bound for Glory* (1976)
http://www.steadishots.org/shots_detail.cfm?shotID=3

The Steadicam was first used in the Best Picture–nominated Woody Guthrie biopic *Bound for Glory* (1976),[3] debuting with a shot that compounded the Steadicam's innovation: cinematographer Haskell Wexler had Brown start the shot on a fully elevated platform crane which jibbed down, and when it reached the ground, Brown stepped off and walked the camera through the set. This technically audacious and previously impossible shot created considerable interest in how it had been accomplished, and impressed the Academy enough for Wexler to win the Oscar for Best Cinematography that year. It was then used in extensive running and chase scenes on the streets of New York City in *Marathon Man* (1976), which was actually released two months before *Bound for Glory*. It landed a notable third credit in Avildsen's Best Picture–winning *Rocky* (1976), where it was an integral part of the film's Philadelphia street jogging/training sequences and the run up the Art Museum's flight of stairs, as well as the fight scenes (where it can even be plainly seen in operation at the ringside during some wide shots of the final fight). Garrett Brown was the Steadicam operator on all of these.
Atonement: http://www.steadishots.org/shots_detail.cfm?shotID=298

Steadicam Merlin

Steadicam Merlin is available for rent at DOM, but now we have better/more practical/easier to use stabilization devices

Track and dolly (free for DOM members)

- Tripod Dolly - even terrain
- Dolly & Track - more uneven terrain
- Holds shot steady along the same plane
- Show example of Production Department’s work

Edelkrone

- Subtle movements
- Time lapse for video and stills
- Adds movement to b-roll shots, not good for interviews
- Robotic movement eliminates human error, very precise

PilotFly

- Half-way between the Movi and the Steadicam.
- Three motors. Stabilize it before you even put the camera on.
- Download Java and the associated software. Connect over bluetooth.
- Uses a micro-controller. It is a mini-brain! The software knows what settings to put it on. It has four modes of operation, one is manual and the others are three pre-sets.
- When it's on and connected, there are three buttons on the back that let you tilt, pan, etc. manually.
- Only two hours of battery life. The bigger the camera, the more the motors have to work, and therefore the shorter the battery life. You want mirrorless cameras because they are lights; you want to aim for about 2.8 pounds. No huge telephoto lens!

Movi

- Disclaimer: It is *EXTREMELY* fragile and expensive. Handle it with *great* care. Tighten the handles on the Movi with the included screwdriver.
- Motor controls the tilt, motor that controls the pan ("yaw"), motor controls the roll. These are the three axes.
- First, you must manually balance the camera on the Movi. Then you also use software to calibrate the "brain."
- Two types of handles -- the double side-by-side handles are a little more stable; the overhead single arm is good for getting low, like for following feet.
- It will remember the settings. So you can calibrate it all that morning.
- BATTERIES: Make sure your positive and negative cords are plugged into their respective outlets correctly, and *are not touching each other*. It is *very* dangerous. Also, the lower the battery, the worse it works. Keep them as fully charged as possible.
- MIMIC: The cool accessory. Probably pretty useless. It is a remote controller of the camera. Need to do more finetuning with this. You can put a monitor on the Mimic so

that one person is walking with it, and the other person is controller the camera movements themselves. Good for extremely complicated shots. Make sure it is facing the right direction when you're holding it. The button on one end of the Mimic lets you reset to the original position.

Balancing the Movi

1. Rest the Movi on its stand.
2. On/Off switch is on the back of the vertical rail of the Movi.
3. Lock two different plates onto the camera: one on the bottom (tripod plate) and one on the top (hot-shoe).
4. Slide it onto the two tracks on the Movi.
    a. Unclamp the tracks so that you can align them correctly.
    b. Slide the camera with the plates onto the aligned tracks.
    c. DO NOT let go -- it is not locked in yet, it can fall off the back.
5. Loosely hold the camera in place, lightly with a few fingers, to see how the camera is balanced currently. Then, adjust the balancing until it is balanced so that it does not fall backwards, forwards, or to either side. When you think it is correctly balanced, let go for a hot second and see if it works - but keep your hands hovering close by, just in case! This will take a while, a lots of minute adjustments.
6. Clamp the bottom track and then the upper one.
7. Test the camera when the lens is facing the ceiling. Very rarely does it need adjustment, but important to check. There are clamps on the cage that will let you adjust it if necessary.
8. Now you can auto-tune!

Using the Software

In the software ("Free Fly Configurator"): System → Auto-tune. This lets it calibrate its motion. The better you balance it originally, the less the motors have to compensate for you movement.

How the Plates Mount:

1. Allen wrench for the bottom plate, two little Allen wrenches for the hot shoe plate.
2. Tools included in the kit/box.
3. Tighten the little screws into the plates so they don't just fall out.

Putting it back in the Box:

1. Unscrew the screws keep the top handle connected to the device.
2. Oh heck no, I can't explain this in writing.

Quick Start Guide
Manual