Floating and Platform Balances

An introduction
Floating and Platform Balances

- Introduce main types
- Discuss each in some detail including part identification and function
- Testing and Inspecting
- Cleaning tips
- Lubrication
- Performing repairs
Balance Assembly Type

Floating

Platform
Floating Balance

- Frame
- Helicoid spring
- Hollow Tube
- Mounting Post
- Regulator
- Balance wheel
- Spring stud
Floating Balance cont.

- Jewel
- Roller Pin
- Paired weight
- Hollow Tube
- Safety Roller
- Pivot Wire
Floating Balance cont.

Example

- Retaining screws
- Safety Roller
- Note: moving fork
- Jewel cover
Floating Balance cont.
Inspecting and Testing

(Balance assembly is removed from movement)

• Inspect pivot (suspension) wire for distortion, corrosion, breakage.
• Balance should appear to float between frame. Top and bottom distance.
• Balance spring should be proportional and not distorted in any way.
• Inspect jewels for cracks and or breakage.
• Roller pin should be centered when viewed from front. (beat)
• Rotate balance wheel three quarters of a turn (270°) and release. It should rotate smoothly with no distortion and should oscillate for several (3) minutes. Otherwise it needs attention.
Floating Balance cont.

Cleaning

- Make sure the main spring has been let down before working on movement.
- Use non-aqueous watch cleaner and/or rinse.
- Agitate in cleaner/rinse by hand or briefly in ultrasonic.
- Rinse twice and final in naphtha, Coleman fuel (or similar) or alcohol.
- Allow to dry. (heat can be used with caution – *ask me how I would do it.*)

Lubrication

- There are two opinions. To lube or not to lube.
- Place a vary small amount of watch oil on to the upper and lower jewel where the pivot wire passed through the jewel holes. Sometimes the roller pin needs a slight coating (film = barely see it)
- Some do not recommend any lubrication.
Repair work should be made by experienced clock and watch personnel with advanced skills.

Floating Balance cont.

Repairing

A skilled worker can complete the following:

• Replace wire
• Replace broken jewel
• Reshape spring (within reason)
• Adjust balance

Note: One can always clean a clock movement and then have a balance assembly serviced by a professional.
Floating Balance cont.

‘Floating’ Look Alike

- Regulator screw
- Balance Wheel
- Safety Roller
- Hair Spring
- Lower Jewel in pressed brass setting
- Regulator Adjustment Plate
- Mounting Post
- Hair Spring ‘stud’ pin
- Upper Jewel setting
Floating Balance cont.

‘Floating’ Look Alike cont.

- Regulator
- Hair Spring
- Slot
- Lower Jewel brass setting
- Hair Spring ‘stud’ pin hole
- Pivot
- Roller pin
- Hole Jewel
- Pivot
(Note: Several escapement types exist but cleaning and care pretty much the same.)
Platform Balance cont.

- Regulator Foot
- Escape Wheel
- EW Leaves
- Roller Table
- Safety Roller
- Pallet Fork
- Roller pin (jewel)
- Best tool ever
Platform Balance cont.

- Roller Table
- Balance Wheel and hair spring
- Balance Bridge
- Escape Wheel
- Pallet Fork Bridge jewel
- Pallet Fork Jewels
- Pallet Fork
- Pivots
- length can vary
(There are several styles of shock springs with slightly different means of attachment but all function the same). Incabloc
Platform Balance cont.

Examples

French Carriage Clock Movement

Seth Thomas Military Clock Movement

Cylinder - forkless
Platform Balance cont.
Inspecting and Testing

(Balance assembly is removed from movement – Power Down)

• Visually inspect for dirt, corrosion, breakage.
• Gently rotate assembly so that balance wheel rotates and check for smooth rotation. Balance wheel should want to run forever (seems like) when pallet fork removed.
• Most common problem usually old (sticky) oil or broken balance staff.
Platform Balance cont.

Cleaning

- Make sure main spring has been let down before working on movement/platform.
- **Remove stud pin** to release hair spring, from frame or regulator, and regulating pins. Disassemble all parts except components attached to balance wheel (hair spring and roller table).
- Use non-aqueous watch cleaner and/or rinse.
- Agitate in cleaner/rinse by hand or briefly in ultrasonic.
- Rinse twice and final in naphtha, Coleman fuel (or similar) or alcohol with exception of balance wheel. No alcohol on balance assembly.
- Allow to dry. (Heat not necessary since all parts are disassembled and open to air. Can dry with blow bulb but use caution since small parts tend to fly away.)
- Peg all holes and rub flat sides of cap jewels on clean towel.
Platform Balance cont.

Lubrication

• Place a very small amount of watch oil in all hole jewels or pivot holes.
• Cap jewels need to have oil placed between cap and hole jewel prior to assembly.
Common problems:

- Old sticky oil
- Balance staff – broken pivot
- Damaged jewel - cracked
- Hair spring – bent, mis-shaped, magnetized

Repair work should be made by experienced clock and watch personnel with advanced skills.

Note: One can always clean a clock movement and then have a balance assembly serviced by a professional to reduce cost.
References

Hermle Floating Balance
Do internet search on ‘clock floating balance’.

Platform Balance
Do internet search on ‘clock platform balance’.

Also check authors David Robertson and David J. LaBounty for cleaning and restoration tips.
Platform Balance cont.

Thank You Very Much

Questions?
Why is repair so expensive?

It takes tools and time, time, time, ............