Bench Notes: Self Winding Clock Co. No. 37-SS

There are several interesting "bench facts" about this rather collectable self-winding clock which are worth clarifying. Below is a picture of a typical No. 37-SS, this one in quite good condition.



The 37-SS is considered the Broadcast Studio model, "SS" presumably for Sweep Second. The very visible red hand was required by folks in the broadcast industry who wished to synchronize broadcast events and needed to be able to see the second hand from a distance. Rough guess is that this model first emerged somewhere in the late 1930s or so. We have seen some early examples built in the No. 29 style wooden cases, but most are found in brown formed sheet steel cases.

Winding Noise. The earliest movements were hourly wind. As time went on, complaints arose over the disturbing winding sound. Many SWCC models tend to wind in about 8-10 seconds, but the design of the sweep second transfer mechanism presents additional friction. This was overcome with a stronger spring. This results in 12-15 second winding on this model (sometimes longer). So, now we have a long, noisy wind which greatly annoyed operators and disk jockeys in an environment sensitive to studio noise.

A rather clever fix for this winding noise was the evolution to a 12-tooth cam replacing the single hourly cam which allows the clock to wind briefly every 5 minutes. This greatly lessened the annoyance factor. Further refinements included additional felt sound deadening in the cases and on the aluminum dials. We have some models here which are very silent and almost undetectable in their wind. We believe them to be early 1950s manufacture.

Please be aware that many 37-SS units are found with severely deteriorated sound deadening felt, while in others this felt is still intact. Deterioration is particularly prominent where clocks were stored in extreme environments, such as attics or on the floor of damp basements where mold takes its toll. When the felt is found in deteriorated condition, it is sometimes accompanied by complaints of movement problems brought on by fragments of felt fallen into the movement. The only solution is to remove this deteriorated felt, and replace it with a suitable substitute (we have recommendations).

German Die-Cast Motor. Our observation is that many modern movements (late 50s forward) used a German-manufactured die-cast motor to replace the vibrating armature motor (with the large coils) used from the late 1890s through 1960s. Many of these have FR prefix in the serial number, although some FR prefix serial number movements do not have this motor.

Clocks equipped with this die cast German motor will wind in about 2 seconds or less, once per hour. Disappointedly, these motors were prone to contact and commutator failure (due to the fragile components coupled with extremely high surge currents needed to start them). See picture below. This was a die cast motor as found, disassembled to show the self-destruction which occurs inside this motor. They are often found with dead spots, which prevents normal, reliable winding. These motors present an unusual repair and restoration challenge, but we have developed methods for accomplishing it.



Escapement Verge. Another interesting item in the 37-SS is the escapement verge. For over 5 decades, these verges were fabricated from tool steel and heat-treated pallets for hardness. These tool steel verges were quite robust. Many we find

are still restorable although periodically we need to replace them as well. Most SWCC 37-SS were equipped with a brass verge with hard chrome plate. While it did reduce cost of manufacture, these verges rapidly wear through the chrome and leave the soft brass exposed. This creates serious friction and pitting which decreases reliability of the clock. We believe the verges may have lasted 10 years at best, vs. many decades with the original tool steel designs. The original tool steel verges could often be reconditioned and adjusted, but not the hard chrome plated versions. Of course, dusty or dirty environments accelerate wear.

Below and on the left are examples of the hard chrome-plated brass verges. On the right are examples of hard tool steel verges, unfinished.



We have seen numerous brass verges used in the 37-SS with serial numbers ranging from the early 300,000 range to over 400,000.

Cases, Dials, Wiring. It is rare to find a 37-SS with a pristine dial AND metal case. Dials can often be cleaned (please do NOT try this yourself) and even polished in some situations (really, do NOT try to polish a dial yourself!). Cases can be restored; we have done many complete restorations including case work. The paint color can be closely replicated and the results can be absolutely stunning. Some folks prefer a "beat up" clock. We appreciate originality but don't see how that has a positive effect on the experience of owning the piece when damage is severe. That said, our first step in the restoration is to conservatively polish out damage as best possible before graduating to anything more invasive. Rust is a tough topic since it practically never cleans up.

Internal case wiring is precious! It should never be ripped out and replaced—NEVER! It can nearly always be restored, appearance greatly improved, and repaired. Original pin terminals or lugs can be restored and re-used. It is an atrocity to see this wiring cut up and twist connected to a plastic style battery holder. This should be avoided for countless reasons; we offer a fantastic, well-proven selection of original-style No. 6 batteries that can simply power the clock or precisely time-synchronize it as well. These products maintain the original case wiring of the 37-SS.

Outlook. Unfortunately, many clocks were collected and destroyed when SWCC was bought by Western Union to settle SWCC's lawsuit against WU for poor maintenance practices and neglecting maintenance contracts. This may partially explain why so many clocks are found in rather un-maintained condition. Since the clocks were leased and therefore owned by SWCC, this was in fact a legitimate but unfortunate decision. This ended the SWCC 70-plus year reign including the synchronization service, except with avid and caring collectors. Considering the number produced, there are fewer sweep second models left in circulation today. The vast majority of the clocks we see today are older units which were retired or left abandoned, and therefore not tracked down when the collect-and-destroy order was issued.