

Forget the Fast Clock

2019 article by Byron Henderson

Exploring the alternative of 1:1 time for operations

Since the early days of the model railroading hobby, fast clocks have been used to attempt to disguise the short distances on layouts. In principle, it seems like a useful idea: run the clock faster than real life so that layout distance will seem longer. Years ago, very high clock ratios were suggested, such as 12:1 (5 real time minutes represents an hour). Many modelers overlaid these clock ratios on scale layout distances to create "Smiles". (The word "Smile" comes from "short mile", rather than "scale mile", and was first coined by Frank Ellsion, according to Bruce Chubb).

This allowed modelers to show "Smilepost" distances on model timetables that seemed more like prototype distances. To use an HO example, let's say we have two towns located 15 actual feet apart. In HO scale miles, that distance is equivalent to about one quarter mile -- pretty short by prototype standards. But apply a 12:1 fast clock and the same distance grows to about 3 "Smiles".

Taking it to the extreme

Well, if a little layout expansion through clock ratios is good, a lot must be a lot better, right? Magazine articles and books from a few years ago suggested clock ratios of 15:1 or even higher to "make the railroad more realistic." In some ways, this may have made model railroading seem more "serious" in a time when many of the best layouts were still mostly running in circles. Certainly, this made model timetables look better matched to their real-life equivalents. For through trains, the actual time it takes to run the model train from place to place is still very short, but the fast clock can suggest it's more akin to prototype time.

But time is a funny commodity. Unlike distance, which scales with our model scales, time is a constant (in fact, much of our present cosmology is based on this hypothesis). An N scale second is the same as an O scale second. Fast Clock ratios

and "smiles" are in some ways an attempt to selectively compress time as an element of the model railroading experience.

Why is time different than space?

But this can become a conflict as our human internal clocks continue to tick away at the same rate inside and outside of the layout room. While we can look at a well-modeled scene and everything is to scale and believable in the visual sense, time is a personal experience unaffected by the scale of the scene before us. And no matter what the Fast Clock says, we are experiencing time at the same (1:1) rate.

Some people (full disclosure: myself very much included) can find the experience of a high Fast Clock ratio somewhat disorienting due to the cognitive dissonance which is introduced to our operating experience. Some operators may find themselves feeling rushed by the hyperactive turning of the fast clock hands or digits, while others may simply "tune it out".

On the flip side, many layouts have operated for years with Fast Clocks without compromising the Grand Unified Theory of Everything or causing any cosmological constants to be violated. But I would like to discuss an argument for considering 1:1 (real time) clock ratios as a viable alternative for operating model railroads.

Travel time is not the only time

One of the limiting aspects of using a Fast Clock is that it only affects running time. The time that human operators require to read directions, think, and write orders and instructions does not compress, no matter the length of the layout. For new or visiting operators, the time spent running a train from location to location is often the least of their concerns. Reading and understanding procedures, finding and actuating layout controls, becoming oriented (and re-oriented) to locations on the layout, and communicating with other operators takes much of their focus and attention. Human reaction and thinking time (even before sampling too many rich snacks in the crew lounge) is much longer proportionally on the model than in the prototype because of shortened

distances between towns.

Meanwhile the Fast Clock ticks away relentlessly. For some operators, stress builds with every passing Fast Minute. This is the challenge of the Fast Clock: it only applies meaningfully to the movement of the train across the compressed layout -- not to the activities of the human operators who are also trying to march to its beat.

And the yard takes its lumps

Fast Clock operation only exacerbates the yard / road imbalance found on most model railroads. Operations in the yard don't compress on the model in the way running time is compressed out on the road on our always-too-short layouts. In fact, yard work in the model may take even longer than on the prototype since the switch engine can't "kick" cars to their final destination, but must push them all the way. And still those road trains keep coming, piling into the yard after their short run over the highiron. Small wonder that yard crews on many layouts feel unloved. (To read about other ways to deal with the yard / road imbalance, [click here](#).)

Choosing a much slower Fast Clock ratio (or better yet as far as the yard is concerned, 1:1 time) helps relieve some of the yard operator stress. It also can encourage yard operators to take the time to simulate prototype practices like air brake checks because the pace will be more realistic.

"Fine scale" operations

The growing trend among operators to do more than just bang cars around also creates Fast Clock challenges. Switching yards or towns as if scale brake crews must walk from one end of a siding to another, allowing time to pump up air, etc. can provide a very rich operating environment. Trying to simulate these prototype activities with a high Fast Clock ratio can be difficult or impossible.

The case for 1:1

My experience operating in many different environments with and without Fast Clocks suggests the natural ratio of 1:1 is something more layout owners should consider. The key challenges I observe in many operating sessions are related to

the interaction between the human operators and the model railroad, not with the passage of trains across the layout. In other words, Fast Clocks, designed to deal with the short duration of runs across the layout, are actually negatively affecting the many other activities inherent in an operating session. And for some operators, diminishing the enjoyment as well.

Our experience at Rick Fortin's ATSF Fourth District with a 1:1 clock ratio has been very successful. Rick's layout uses "Railroad Time" rather than the actual wristwatch time for our Pacific time zone. Rick has set up inexpensive wall clocks powered through a single power supply replacing their original batteries. This single supply may be switched on or off, permitting operations to be halted for a lunch break. Each session begins at 6:45 am, but the ratio is 1:1 – the same as a normal clock. Between sessions the clocks are manually reset to 6:45.

At 1:1 time, operators know instinctively how long various tasks will take. The lack of artificial time pressure allows crews to develop more operating expertise. Schedule times for trains are noted in 1:1 time, with each operating "day" beginning again at 6:45 am. Typical sessions last about 4 and one-half hours, not counting the lunch break.

But doesn't TT&TO demand a Fast Clock?

Many layout owners are considering Timetable and Train Order (TT&TO) operation, which typically involves many specifically-scheduled trains. Given the short distances between stations, doesn't 1:1 time create station times that are too close together?

Well, it might, if running time were the only thing that contributed to the time a crew is actually spending traveling between stations. In fact, though, the time for human operators to read paperwork, think, decide, line switches, etc., will often be a significant component of the overall time. The real time it takes to line switches, pull in, come to a safe stop, and reline the switch is significant, especially when considered against the 5- or 10-minute clearance times called for in typical TT&TO rules.

True, if there is only a distance of a few feet between stations, times may be unreasonably short. If the distances are that short on the physical layout, though, TT&TO operation may be challenging for that reason alone, without consideration of time.

What about day-night operations?

Some layout owners enjoy installing night lighting to provide added atmosphere and challenge. This would seem to require a high enough Fast Clock ratio to permit 24 simulated hours to pass during a regular session ... but judicious choice of the starting time for Railroad Time (say at 6 pm) would allow both day and night to be experienced with 1:1 clocks.

"But I want to duplicate the prototype 24-hour day"

If this is a major 'druther, only a Fast Clock may do. But when one considers the amount of traffic density that comes from compressing 24 fast time hours into the three- or four-hour session, is it really very different from just running the same trains in three or four 1:1 Railroad Time hours?

1:1 Railroad Time as an alternative

Clearly, 1:1 time won't suit every owner and crew. But Fast Clocks aren't *required* for serious operation any more than overalls and funny hats. The benefits of more relaxed and realistic operation are often well worth giving 1:1 a try. Even if you still decide to use a Fast Clock ratio, consider slowing as near to 1:1 as possible to ease the load on yard crews and other operators -- who will always be dealing with their 1:1 biological clocks.

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<https://www.layoutvision.com/forget-the-fast-clock>