

# Keep time on your side

**Hours and minutes** regulate everything in railroading from train orders and track warrants to schedules and hours of service. A rail-roader's safety depends on timekeeping, making a reliable watch as important to him as his heartbeat. Here's how timekeeping, schedules, and rules allow trains to move safely.

**First, some background.** As railroads expanded and train speeds increased in the 19th century, governing scheduled movements by local time based on high noon was no longer safe. In 1883, railroad operating officials assembled in Chicago at the General Time Convention (a predecessor of today's Association of American Railroads) and adopted Standard Time, then a development no more welcome to many citizens than Daylight Saving Time has become now.

Officials also saw the need for rules uniformity, as railroads each developed their own rules before then. A committee formed in 1887 and produced the Code of Train Rules, which later became the Standard Code.

The Standard Code's first three rules deal with

Standard Time, indicating the importance of timekeeping. Rule 1 describes how Standard Clocks are synchronized. Rule 2 requires employees to use a reliable watch while on duty, and Rule 3 has them compare it with a standard clock before going on duty. These requirements are still included in

all modern-day rule books, including the General Code of Operating Rules (GCOR) and Northeast Operating Rules Advisory Committee (NORAC).

**In TTTO operation,** accurate timekeeping joined schedules and train orders so crews could decide about their movements. Consider No. 1, a first-class westward train on single track whose schedule has it depart A at 8:55 a.m. and B at 9:15 a.m., arriving at C at 9:55 a.m. A freight is ready to depart C at 8:15 a.m. Its conductor holds a train order to run extra from C to A. Here's how he decides where to meet No. 1.

Rule 92 demands that a train not leave a station before its scheduled leaving time. Rule S-87 adds a margin of safety with its requirement to clear the time of opposing regular trains not less than five minutes. The conductor calculates his running time, which allows him to clear on a passing siding at B by 8:55 a.m. Knowing that the schedule holds No. 1 at B until 9:15 a.m., he proceeds.

Contemporary rules have a dispatcher making most movement decisions, but time remains important to safe

railroading. Issuing track warrants make a good example. The employee copying a warrant reads back the instructions the dispatcher has dictated, a practice rooted in train orders. After hearing them repeated correctly, the dispatcher says "OK" and gives the time to complete the warrant. It



Legendary railroad photographer Dick Steinheimer took this evocative photograph of a Tidewater Southern Ry. section foreman consulting his trusty Hamilton Railway Special near Escalon, Calif., in 1960. Richard Steinheimer photo

becomes effective when the employee adds these items to the warrant and repeats them. As with a schedule's departure time, the designated movement may begin at this time, not before.

**The photo reminds us** that safety requires other employees to heed schedules and times, too. *The Railroader*, an exquisite National Geographic short film, contains a wonderful scene of a Cumbres & Toltec Scenic track crew changing a tie, spike mauls marking time against the schedule of a regular train approaching in the distance. Track car line-ups informed workers of extra trains and rules required flag protection in both directions from a work site. Written authorities protect today's track foremen and signal maintainers. While the form of written authority varies, GCOR, NORAC, and individual railroad rules specify

how to authorize a vehicle to hi-rail from A to B or establish times and working limits within which trains may proceed only after the employee in charge first protects workers and equipment and then gives permission.

All this depends on watch accuracy. Classic railroad-grade Hamiltons, like the one pictured, could vary no more than 30 seconds from correct time. Periodically, designated watch inspectors checked accuracy and issued employees certificates to be submitted for their railroad's files.

Typical layout operation allows for most of these practices, whether using scale clocks or real time. Comparing watches as habitually as the rules demand is another. I end every crew briefing by doing so, honoring the familiar ritual of a conductor and engineer comparing theirs before starting a run. It's a good way to keep time on your side. **MR**

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— JERRY