

BoltMaster speeds E-L track work

Torque-wrench machines simultaneously tighten six bolts.

The Erie-Lackawanna is using four special machines to accelerate its track-bolt-tightening work. The machines—RMC BoltMasters—can tighten six bolts at one time, and the work has been programmed on an out-of-face basis. The decision to use the four BoltMasters followed last year's successful tests of a single such machine on the road's Allegheny-Meadville division.

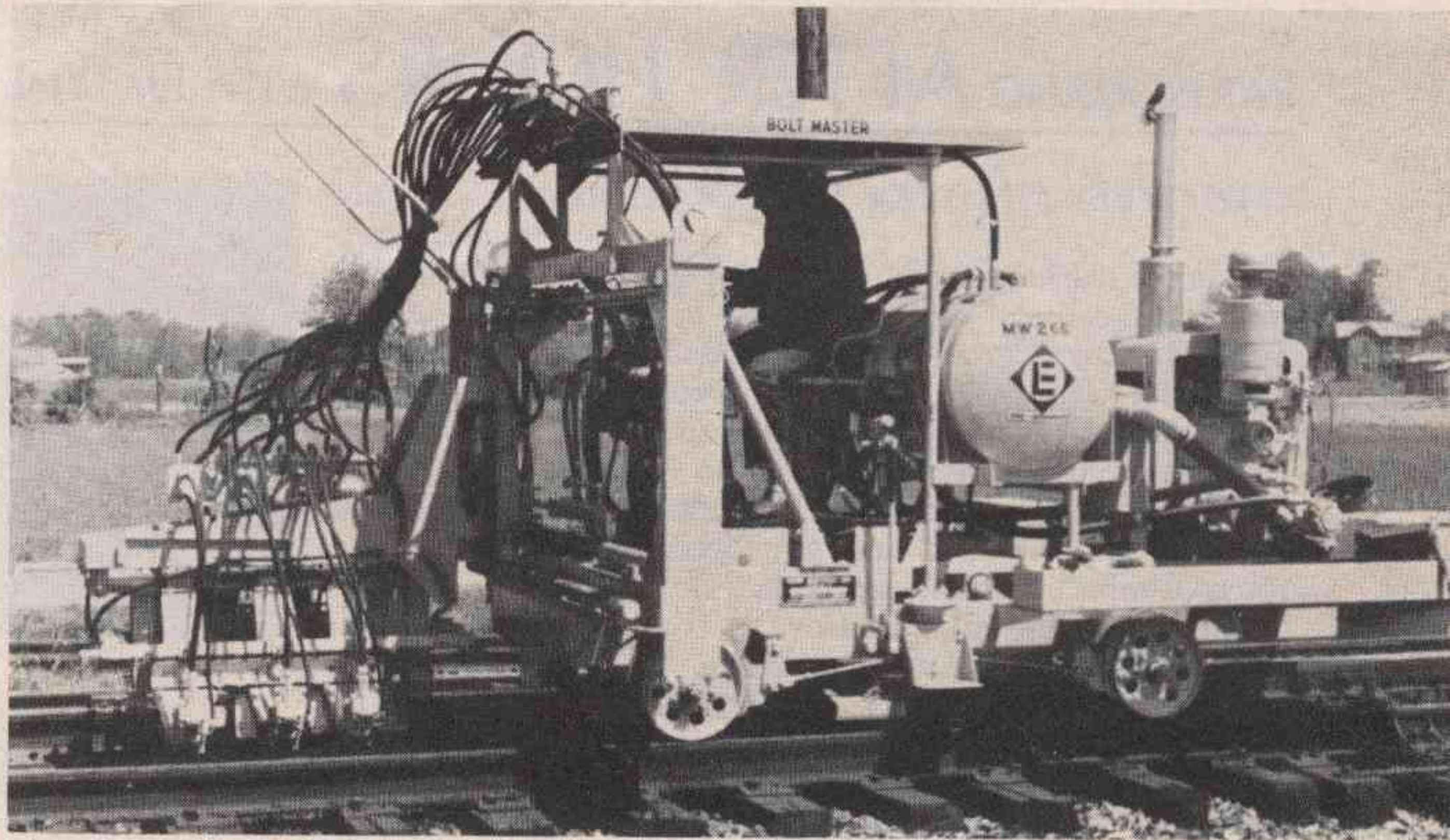
• **Service life prolonged.** All trackmen agree that track bolts must be kept tight. This practice prolongs the service life of rails, joints, ties and track surface. The E-L had been doing this work with its section forces equipped with power wrenches that work on one bolt at a time.

The BoltMaster has six hydraulic torque wrenches mounted on a head that can be swung on a transverse carriage from one rail to the other. Hence, the machine can be worked out of face, taking a joint on one rail, then the next joint on the opposite rail. The six wrenches engage the nuts of track bolts from both sides of the rail, and can be adjusted for different bolt centers as well as for different rail heights.

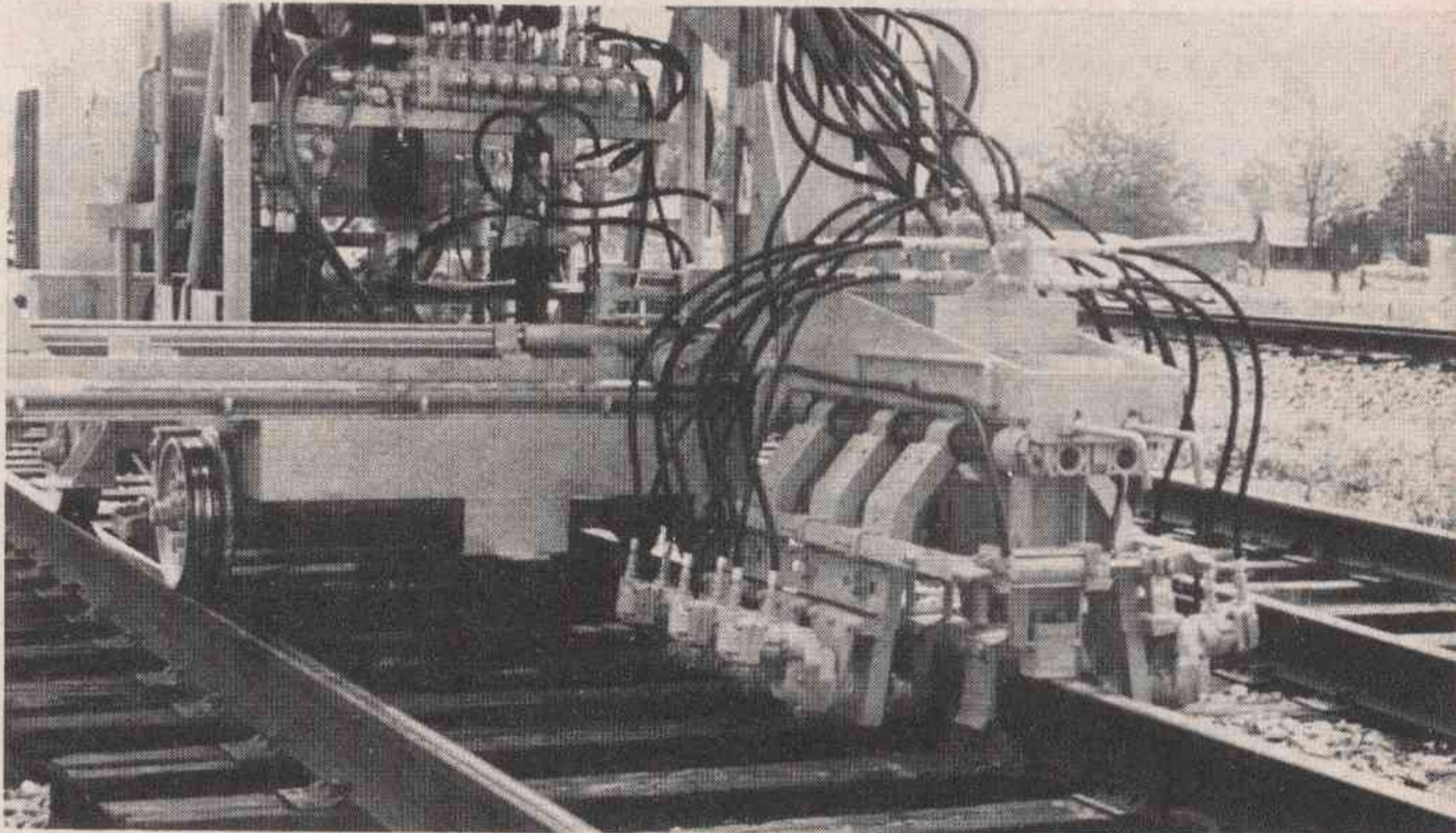
The wrench spindles are hydraulically operated. By means of separate control levers, the operator has the option of working any one of the six spindles individually or, through a master control, all of them simultaneously. The latter control can be adjusted also for four-bolt joints. The machine uses hydraulics for positioning the wrench head over the rail and for propulsion.

• **Adjusts expansion.** As used by the E-L, the BoltMaster first loosens all nuts of the bolts in a joint to allow the rail expansion to adjust itself, and then for tightening the bolts to a predetermined tension. In adjusting the wrench spindles to the desired torque, the bolts of a joint are tightened to the correct tension by hand wrenches, and the hydraulic pressure on the machine's spindles is set accordingly. This amounts to about 550 foot-pounds on the hydraulic-pressure scale of the machine.

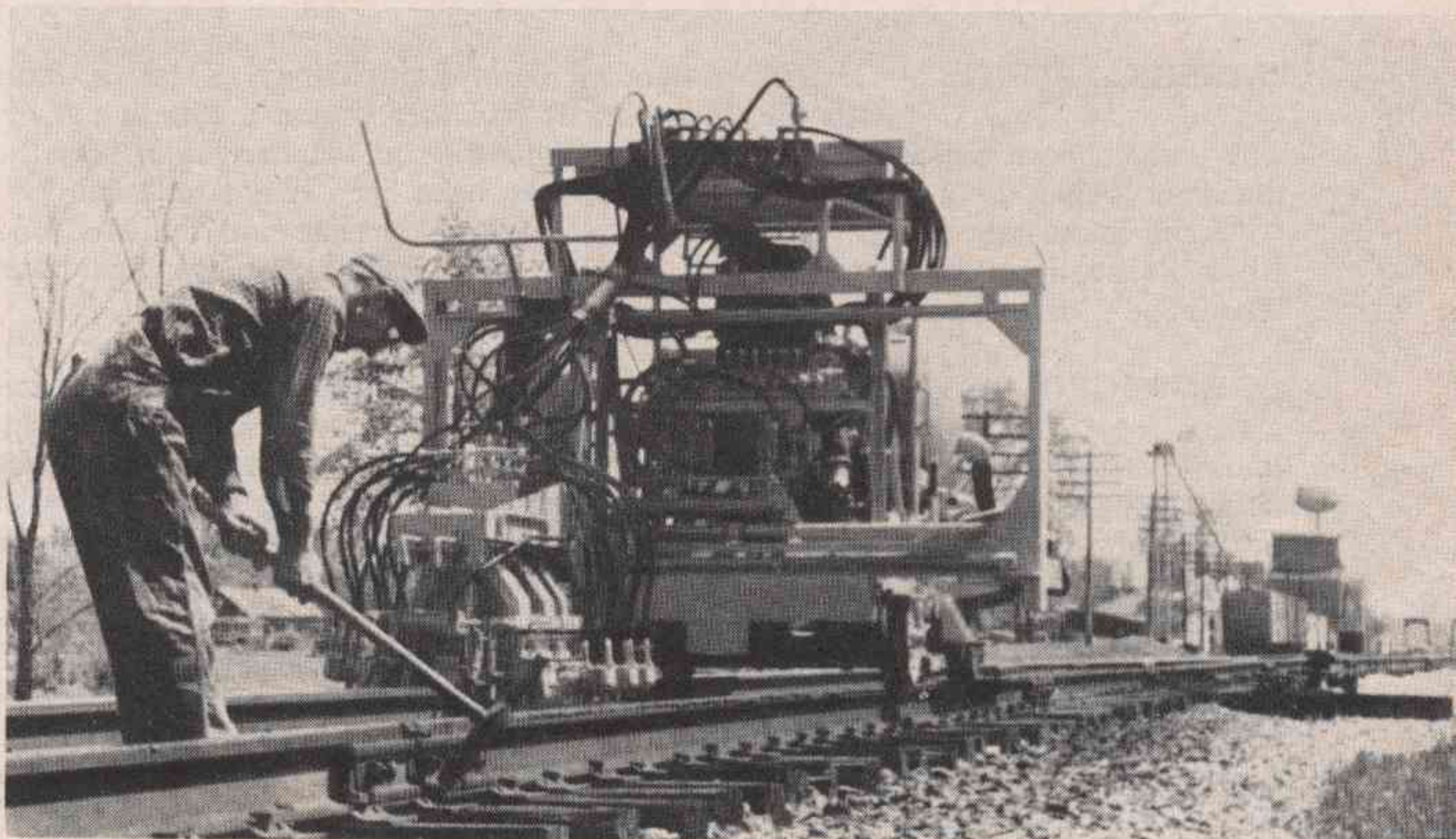
In double-track territory, the E-L uses a force of four men with the machine, consisting of an assistant foreman, a division machine operator and



THE BOLTMASTER is a self-propelled hydraulically operated track machine that can tighten or loosen one or all nuts in a rail joint simultaneously.



WRENCH HEAD on the BoltMaster machine can be swung from one rail to the other so that the bolts in all joints may be tightened out of face.



MACHINE is moved back and laborer strikes joint to loosen frozen bars so that rail expansion can adjust itself. E-L has put four such machines to work.

RAILROADING AFTER HOURS WITH JIM LYNE

EMPLOYEE-EMPLOYER COOPERATION—"The enthusiastic support to the truckers, by the Teamsters and their wives, in their recent anti-railroad demonstrations, has never been equaled by an employee group in our railroad industry." So writes Conductor George E. Hinds from Detroit.

Mr. Hinds believes greater effort should be made by railroads to arouse employees' interest in cooperating with management on questions of mutual interest—and that "concerted action by railroads and their employees would reap a veritable gold mine in benefits to both." He feels, though, that as long as the work rules controversy is going on, the desired cooperation will be hard to achieve. It is really a tragedy that the common interests of **everybody** in and around the railroads are not more adequately realized.

I agree 100% with Mr. Hinds, both in his desire for cooperation and the difficulty of achieving it. Nevertheless (as I see it) the effort must continue. Greater grass-roots publicity among employees about the efforts the railroads are making to increase their traffic might help. Nothing boosts employee morale more certainly than to see business growing. Anybody any constructive suggestions to offer?

WHAT PASSENGERS WANT MOST—On the quality of passenger service—which in some places is excellent and in others not—a lot of mail comes my way. PTM John Bickley of the Grand Trunk has shown me an enthusiastic letter from a customer praising the cleanliness of GT stations and equipment and the general excellence of its service.

I have at least an equal number of letters reflecting on the quality of service elsewhere. The disturbing thing about this situation is that the entire industry tends to be blamed for the shortcomings (usually unavoidable) of a few. Here's a case where being a "brother's keeper" is a role assigned to all of us in and around the railroad business.

DOING THE KIDS' HOMEWORK—A lot of school kids—assigned to write papers on various subjects—have hit upon the device of asking railroads and other businesses for information. Supplying it would require all the digging in reference sources that the kids are supposed to do for themselves.

Paul Beach, UP's eastern advertising manager, had a letter from a youngster saying: "We are studing [sic] Australia. We would like some information on Australia and if you will have a train leaving in about 20 years." The amount of research into the location of Australia and how to get there, that the lad was willing to do on his own hook, seemed to be rather limited. I didn't hear whether Paul wrote the essay for the boy or not—nor, if so, what mark the teacher gave him on it.

"AINSHEA BUTTE?"—GN Superintendent Tom Lamphier at Klamath Falls tells me they recently had to abandon a station out his way—which bore the unusual name recorded here. And the derivation was the question: "Ain't she a beaut?" Just who she may have been is not revealed.

"Some interesting names," he goes on to say, "on our line and the McCloud River Railroad between Lookout and Mount Shasta include 'Chippy Spur' and 'Hambone'—derivation unknown."

D&RGW GEOLOGY—General Foreman Seel of the PRR at Philadelphia has let me look at just about the handsomest geological handbook (pictures and maps) I've ever seen. It's a guidebook to the geology to be noted along the D&RGW—and was published in 1922 by the U.S. Geological Survey. Mr. Seel tells me there were similar books published, covering the SP Lines (Shasta and Coast routes in a separate volume), the Santa Fe, the Northern Pacific and the Overland route.

When considering the proper functions of the federal government (as "conservative" as I am) I've always felt that useful and important research reports of a kind not likely to be practicable for private enterprise—is a justifiable and desirable governmental activity. Out in that D&RGW territory they used to have dinosaurs almost as big as locomotives. The handbook conveys not only geological information, but a great deal of historical data as well. Ever hear, for instance, of the state of "Jefferson"?



LYNE

two laborers. One laborer protects the operation with a flag and the other drives down any high spikes at joints that would interfere with the proper application of the wrench spindles. He also replaces any broken bolts, cracked bars or missing nutlocks that are found, obtaining the required items from a supply carried on the BoltMaster.

The assistant foreman watches while the spindles are being operated to see that all are working. If one is not, he signals the operator by raising the appropriate number of fingers to identify the inoperable spindle. After receiving such a signal, the operator stops the action of all spindles so as not to back off the other nuts, and then activates the one engaging the frozen nut to loosen it. Generally, the nut can be backed off. If not, the operator reverses the direction of the spindle, twisting the bolt until it breaks. This ability of the machine eliminates the need for torch cutting. A new bolt is then applied and all bolts are tightened uniformly.

● **Rusted bars.** Sometimes when the bolts are loosened, the bars are found to be rusted to the rails, preventing expansion adjustment. In such cases, the wrenches are disengaged, the head raised and the machine moved back to allow the laborer to hit a bolt head with a maul once or twice to loosen the rust, thereby enabling the rail to move and adjust the gap.

When working on single-track lines, the number of workers is the same as in double-track territory, except that an additional flagman is used. On branch-line single track where the bars and bolts have rusted considerably, the road may operate a Fairmont W72 oil sprayer to oil the joints. This is done well in advance of the bolt tightening to give the oil a chance to seep into the threads.

Use of the BoltMaster on the road's Allegheny-Meadville division in 1962 proved it could accelerate the bolt-tightening work considerably. For one thing, it works in a forward direction at all times without the necessity to turn the machine to work on the other rail. In 219 hours and 10 minutes of on-track working time, the BoltMaster tightened 30,562 joints over 107.29 miles of track. This was an average rate of 26 seconds per joint tightened.

This year the work of each of the four machines is scheduled in accordance with programs developed from track inspections. A typical program is that developed by J. P. Morrissey, division engineer on the road's Marion-Kent division. His machine will work over 191 miles of track on 18 out-of-face stretches, ranging from 0.80 to 80.0 miles in length, between Mile Post 188 and Mile Post 387, and 210 miles of track at 16 out-of-face stretches from Mile Post 0 to 249.57.