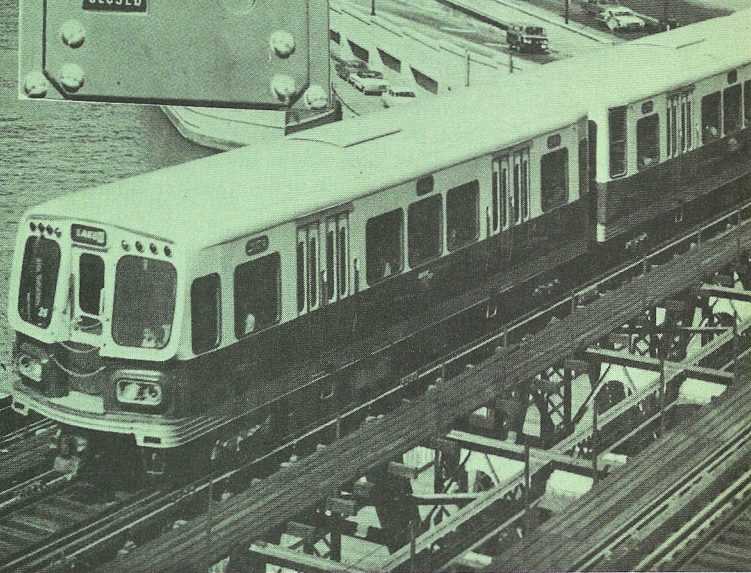


ELECTRONIC CONTROLS

FOR

LAKE ST. LINE

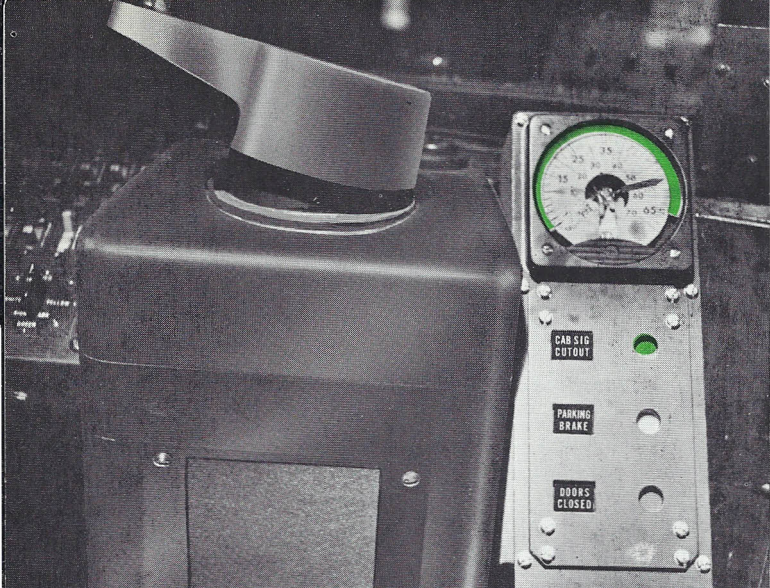


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Speedometer segments light up to show allowable speed ranges.

SIGNALS... RIGHT IN CAB

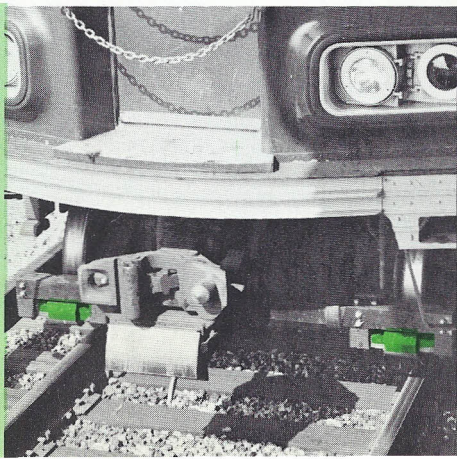
The Lake Street Line's new electronic control system, tells the motorman what to do—right in his cab.

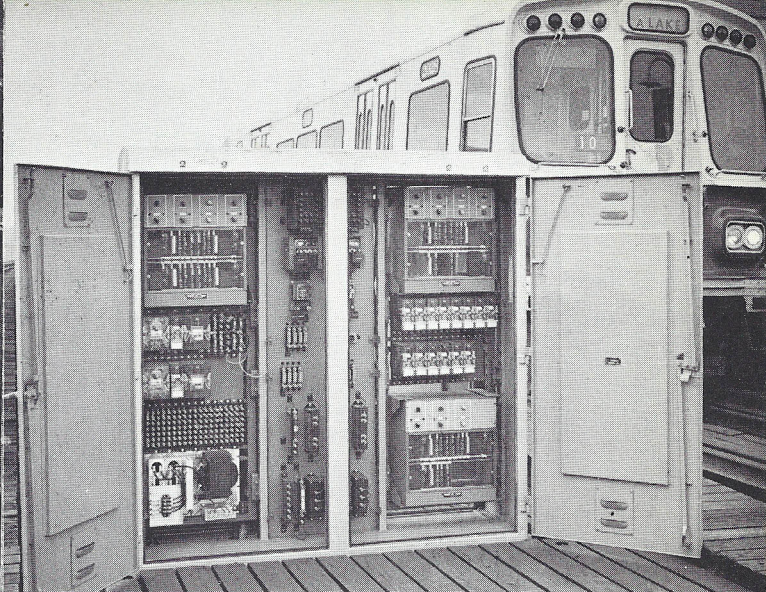
Lighted segments on his speedometer show him the highest speed he can go . . . and colored green, yellow, and red lights are included too.

High frequency electronic impulses, fed into the rails by the automatic system, are received by coils mounted just above the rails on the leading end of the first car. Solid state electronic equipment, in a case beneath the car, interprets the impulses and controls the cab signal.

Each time the speed limit must be reduced, the new speed range lights up on the speedometer, the lights change to the appropriate color, and a bell rings to warn the motorman to adjust to the new limit. If he doesn't get his speed down within two and a half seconds, the system applies the brakes automatically.

The coils shown just ahead of the wheels receive electronic commands sent through the rails.





Trackside electronic equipment registers position of each train . . . tells each how fast it can go.

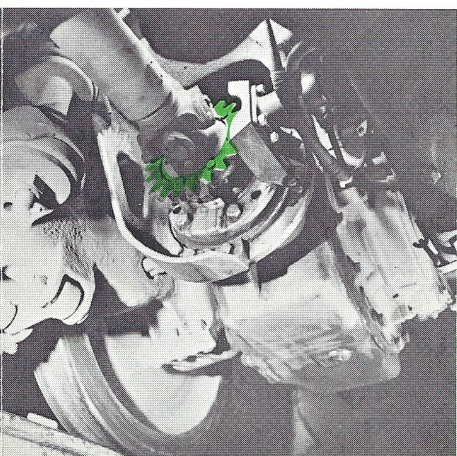
HOW IT WORKS

As each train moves along, its steel wheels and axles complete a circuit across the rails that tells the system where the train is.

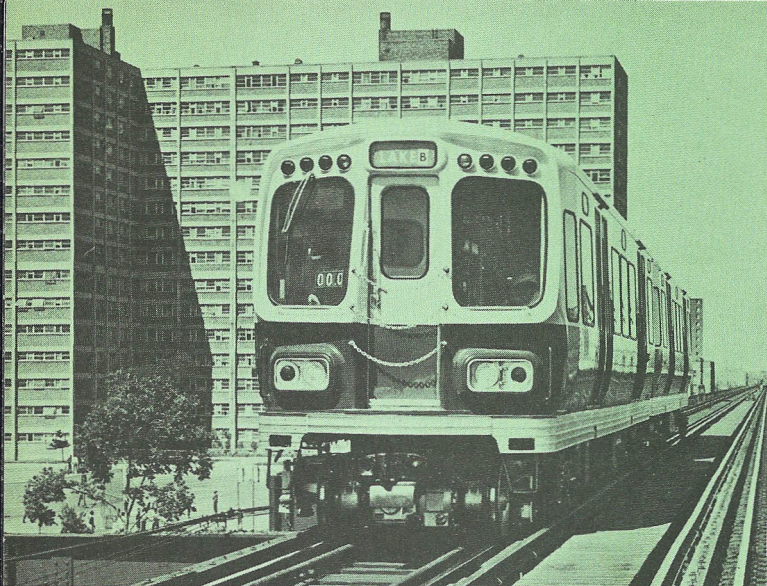
Thus informed, trackside equipment operates to send speed commands to each train, so that all trains are kept safely separated, yet are allowed to run as fast as conditions permit.

Train speed is measured by a toothed wheel attached to the driveshaft. As each tooth passes a detecting element, an electronic pulse is generated. Thus speed is accurately determined by the number of pulses generated per second.

The system is fail safe. If a train should receive no command, it stops. Also, a command intended for one train cannot reach another. Commands are fed to the rails ahead of each train, and the train itself completes—and ends—the command circuit.



Speed measurement is simple but accurate, a toothed wheel on the driveshaft and an electronic counter.



Keeping pace with expanding Chicago, CTA's long range action plan is continuously bringing new benefits to its riders, like these sleek new Lake Street cars, air conditioned and electronically controlled.

ANOTHER "FIRST" FOR CTA

CTA is the first rapid transit line in the nation to be protected by this modern signal and speed control equipment. Besides its immediate benefits of improved safety and in maintaining speed even in poor visibility, this system is a basic step toward fully automatic control. Also, because the new high frequency circuits need no special insulated rail joints, the system is economical to install and maintain, well suited for use with smooth riding continuous welded rails, and provides a better way to furnish electric traction to the trains.

CTA has scored many firsts for passenger comfort, safety, and service since it took over Chicago's transit in 1947. A few examples:

Largest single purchase of air conditioned cars by any U.S. transit.

First to combine rail rapid transit and multi-lane expressway traffic on the same grade right-of-way.

Operates the world's fastest rapid transit . . . the Skokie Swift.

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