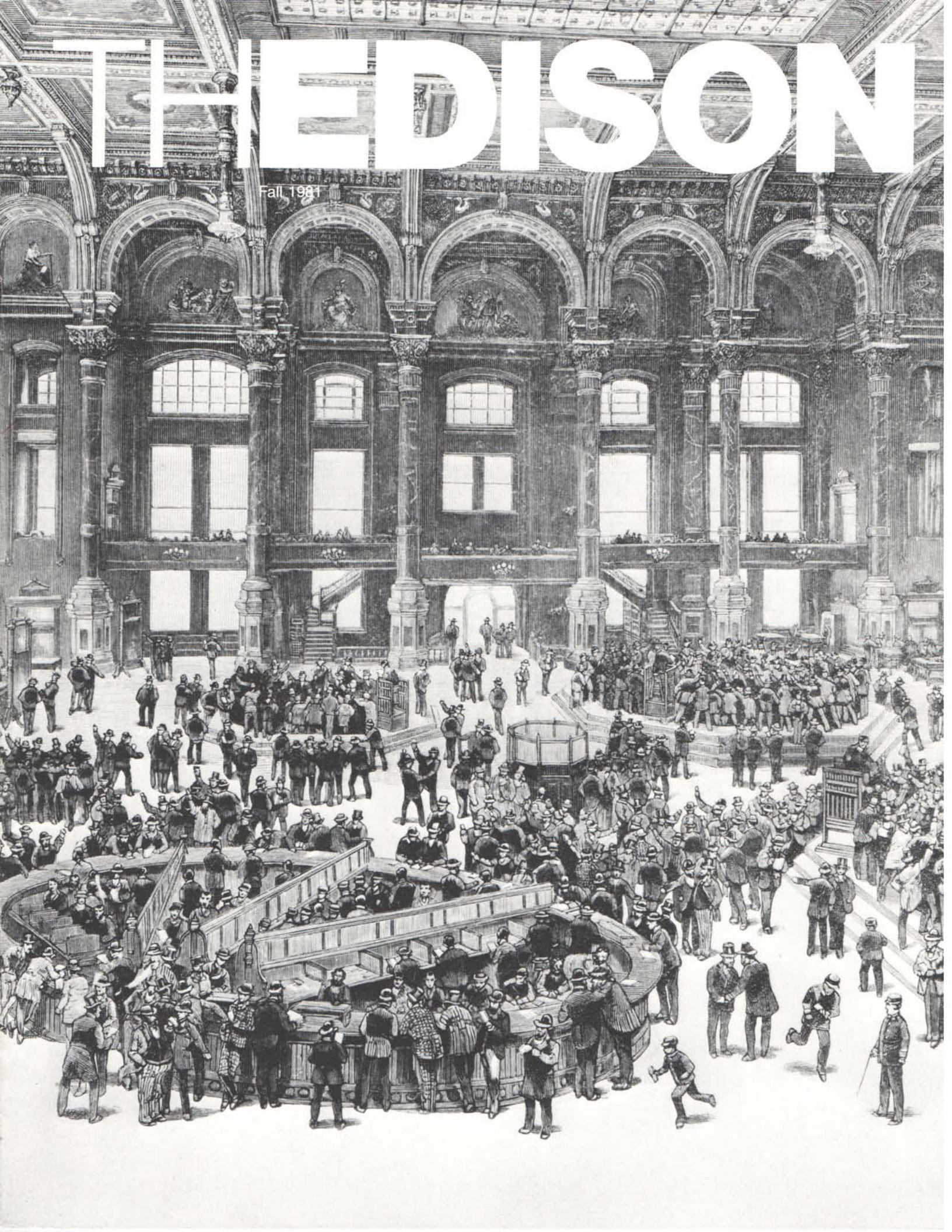
THE EDISON

Fall 1981



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Volume 3 Number 4

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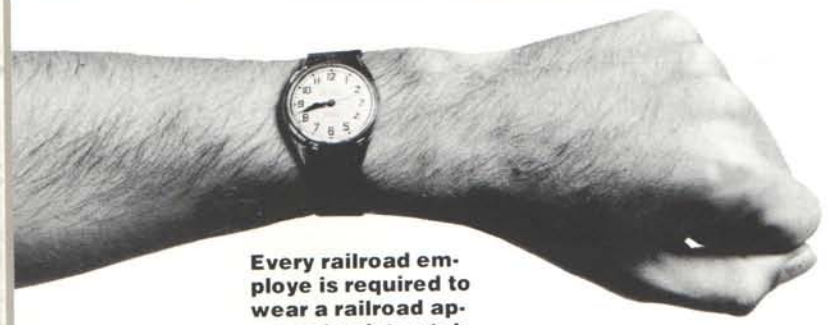
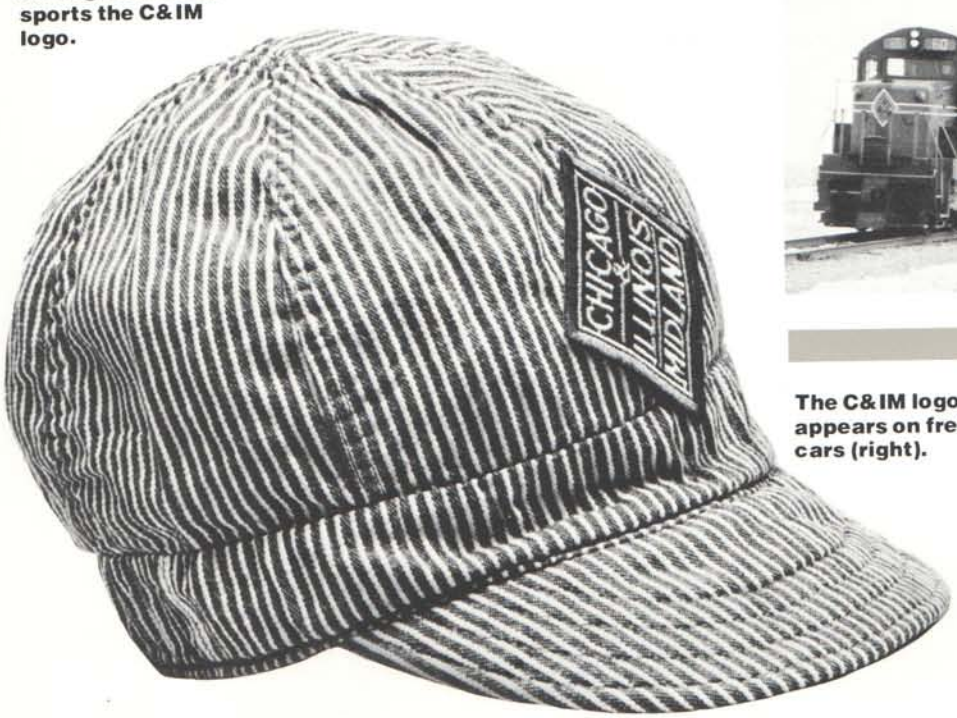


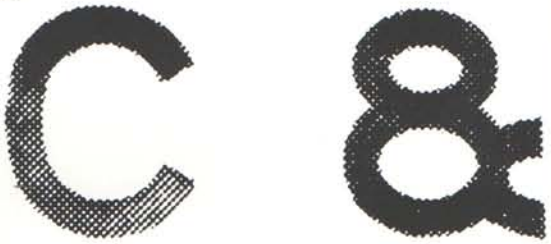
Every railroad employe is required to wear a railroad approved wristwatch.

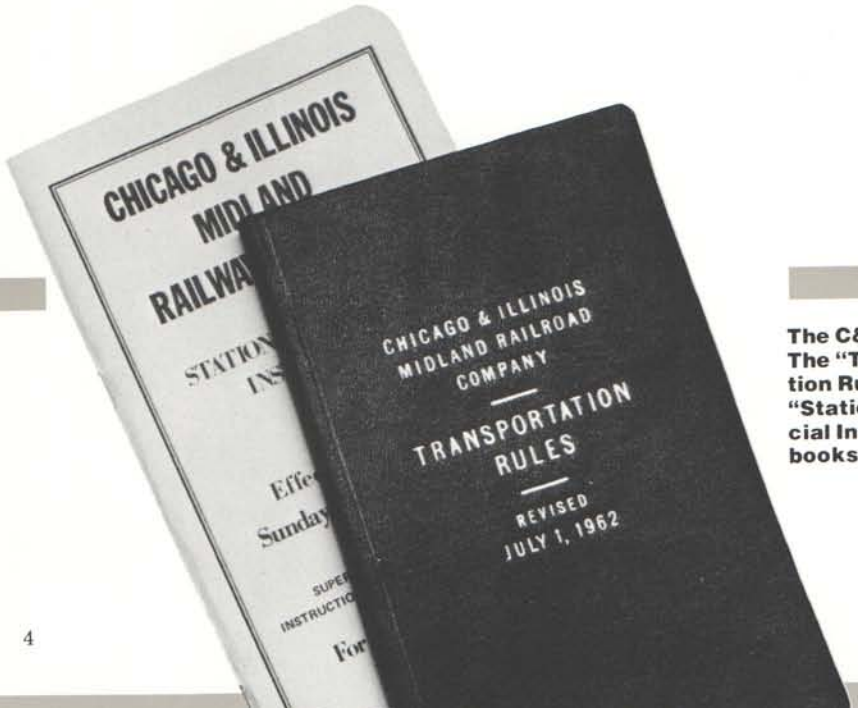
The Chicago & Illinois Midland logo evolved from those of the Bluff Line and the Chicago, Peoria & St. Louis Railways, which became part of the C&IM in 1926.

An engineer's cap sports the C&IM logo.



The C&IM logo as it appears on freight cars (right).





The C&IM bibles: The "Transportation Rules" and the "Station and Special Instructions" books.

The Little Railroad That Could

C&IM 100-ton gondolas, filled with coal, climb steep Petersburg Hill.

Over the years, some railroads have disappeared because of loss of traffic, inflation or over-regulation. Between 1929 and 1979, the number of miles of railroad lines in the United States decreased by 26 percent, from 249,433 to 184,500 miles. But the Chicago & Illinois Midland Railway Company, a wholly owned subsidiary of Commonwealth Edison, keeps chugging along. Why?

"Black gold," according to C&IM's Superintendent Asa "Ace" Alstott, a railroad career man. "Compared to other railroads in the country, we're solid. Others have closed due to inflation or diversified tremendously because of deregulation," he points out. "The C&IM, on the other hand, exists primarily to haul Commonwealth Edison coal, and it's a pretty steady customer."

About 97 percent of the C&IM's business is carrying coal for Edison. Local freight runs make up the remainder. Last year, the C&IM transported more than eight million tons of coal for Edison. According to the Association of American Railroads, coal is the No. 1 commodity moved by railroads nationwide, and it accounted for 35 percent of the total tonnage in 1980.

By railroad standards, the C&IM is small compared with the amount of tonnage it does haul. The railroad employs approximately 350 people. It owns five switcher locomotives along with 10 cabooses. Its railroad car fleet consists of 950 100-ton gondolas and 245 100-ton hopper cars for a total of 1,195 coal cars.

Situated in central Illinois, the C&IM operates over 121 miles of track extending from Pekin through Springfield to Taylorville. From Pekin in the north, the track runs southwest past Powerton Station and on to the Edison-owned rail-to-barge transfer plant at Havana which the C&IM operates. The trackage continues southeast to Springfield, where the general offices and repair facilities are located. Then, by joint trackage rights, the railway progresses south over Illinois Central Gulf rails to Cimic, where C&IM system rails begin again. From this point, the track proceeds past Peabody Mine No. 10, which delivers coal directly to Kincaid Station on a conveyor belt. Then comes Taylorville, the end of the line.

Originally, the C&IM hauled coal from the fields of central Illinois to the generating stations of Edison in Chicago. In those days, the C&IM not only carried the coal but stoked its engines with it because carrier officials believed the railroad should burn the fuel it hauled. By 1955, the C&IM was one of the last railroads in the United States to switch from coal-fired to diesel-electric engines.

In the mid-1960s, Edison built the Kincaid Station across the road from Peabody Mine No. 10, whose coal formerly had been hauled to the Havana dock. At this point, things looked bleak for the C&IM. However, shortly thereafter the U.S. Congress enacted the Clean Air Act, which effectively prohibited the burning of high sulfur Illinois coal in metropolitan areas. As a result, the C&IM once again came to life and today serves as a terminal carrier for Edison's low sulfur western coal.

Some of the coal destined for Edison's generating stations originates at the Black Butte mine in southwestern Wyoming, where the Union Pacific railroad transports the train to Council Bluffs, Iowa, and then turns the cars over to the Chicago & North Western railway. The C&NW then moves the train from Council Bluffs to East Peoria, where the C&IM crews steer the train toward Havana or Powerton Station.

Coal also is shipped from the Decker and Big Horn mines in southern Montana and northern Wyoming. The Burlington Northern then carries the fuel to East Peoria, where the C&IM crews board the BN train and take it to Havana or Powerton.

Upon delivery at Havana, the coal is dumped into 15-barge tows, the equivalent of two 110-car unit coal trains. The coal is then barged up the Illinois River to Edison's generating stations in the Chicago area.

At Powerton, the cars are placed on three Edison tracks adjacent to the coal car dumper. As the crew cuts off the road engines and returns them to the Powerton depot to be serviced for their return trip, an Edison locomotive moves the cars through the dumper by remote control. The cars remain together as they are dumped since they are equipped with rotary couplers.

Because the operations of the parent and subsidiary company are so closely intertwined, they conduct their business at "arm's length."

I M

An antique C&IM switch key, which was used to open and close tracks.

The bandana is a familiar symbol of the C&IM engineer.

Executive Vice President and General Manager William G. Harvey notes: "Besides being regulated by the Illinois Commerce Commission like Edison, the C&IM is regulated by the Interstate Commerce Commission. Maintaining our relationship at 'arm's length' becomes imperative because we don't want to engage in any conflict of interest with the Edison company."

The relationship, however, has benefits for both parties. Edison, on the one hand, provides the C&IM with an almost guaranteed source of business. C&IM, in turn, helps Edison keep fuel transportation costs down. The railroad also pays its parent company a fair dividend.

In addition to delivering coal to Commonwealth Edison, the C&IM operates the Havana coal transfer plant and guarantees rail access to Edison's interests in central Illinois. The C&IM also offers rail service that is more responsive to Edison's needs than an independent railroad would be willing to provide. For example, last February Kincaid Station needed to ship a damaged turbine rotor for repair. "We ran a local freight two days earlier than normal at no extra charge to move the rotor as soon as it was ready to ship," Harvey explains. "Since the cost of an outage of a unit at Kincaid is estimated to be approximately $250,000 per day, our responsive service saved Edison money."

Saving money isn't the only reason the C&IM is a beneficial holding, according to its Vice President and Assistant Treasurer, Ken Jesiolowski. Except for years when bonds were retired or when large capital expenditures were advanced, the C&IM has paid regular dividends to Edison, the most recent being $2 million in September for a year-to-date total of $6 million.

"Virtually all of our coal operations today consist of run-through unit trains, which means the trains containing a fixed number of coal cars are dedicated exclusively to moving coal and contain no other commodity," Jesiolowski says. "These trains, averaging 110 cars, are transported from the mine to the destinations and vice versa without any switching enroute. Switching requires extra personnel and time, which all add up to money."

Get C&IM people talking about the railroad, and they inevitably bring up "the book" at least once or twice in the conversation. The book is "The Chicago & Illinois Midland," a 240-page tome that describes the railroad's history in detail.

The C&IM dates back to 1881 when the four-mile Pawnee Railroad was built from Pawnee westward to a rail connection with the North-South Illinois Central Gulf system at Cimic for the transportation of farm products.

In 1905, the Illinois Midland Coal Company, headed jointly by utility magnate Samuel Insull and coal tycoon Frank Peabody, acquired the Pawnee to provide rail access to its developing coal-rich fields in central Illinois and transport its coal from there to Edison's generating stations in the north. Insull and Peabody named the newly acquired railroad the Chicago & Illinois Midland after its corporate backers—the Chicago Edison Company (now Commonwealth Edison Company) and the Illinois Midland Coal Company—rather than after its major terminals.

In 1926, the C&IM purchased the right-of-way of the bankrupt Chicago, Peoria and St. Louis railroad, extending from Springfield to Pekin via Havana, to complete the railroad as it's known today. As demands for power and coal grew, Edison built a rail-to-barge transfer facility at Havana on the newly acquired trackage to reduce transportation costs from the mines to the generating stations in Chicago. During this time, Edison also constructed Powerton Station along the C&IM, which could haul coal from the mines directly to the new facility.

One C&IM story recalls a 1922 local football game featuring ringers from Notre Dame playing for Carlinville against ringers from the University of Illinois playing for Taylorville. The Notre Dame coach (not Knute Rockne) arrived in Taylorville aboard a C&IM train.

May 8, 1953, marked another historical event. On that day, 100 years of passenger service between Springfield and Peoria ended.

During the summer of 1975, the C&IM was selected to handle the American Freedom Train from Peoria to Springfield, the line's first steam locomotive operation in nearly 20 years. This passenger train full of American heritage was making a tour nationwide, stopping in major cities to let the public view the artifacts displayed in the cars. Following its public exhibit in Springfield, the train traveled to its next destination on the rails of the Illinois Central Gulf.

Where would the C&IM be today without Edison's coal-hauling business?

"In one word, dead," Alstott contends.

For now, though, the C&IM's future rests secure. In 1978, Edison formed a task force to come up with a long-range plan for the railroad in light of Powerton Station's switch to low sulfur western coal. Its conclusion: "Retaining C&IM operations in their present form would give Edison maximum flexibility in the future."

C&IM President Bide L. Thomas, also an Edison executive vice president, agrees: "The C&IM is a valuable asset, and it provides us with a nice hedge for the future."

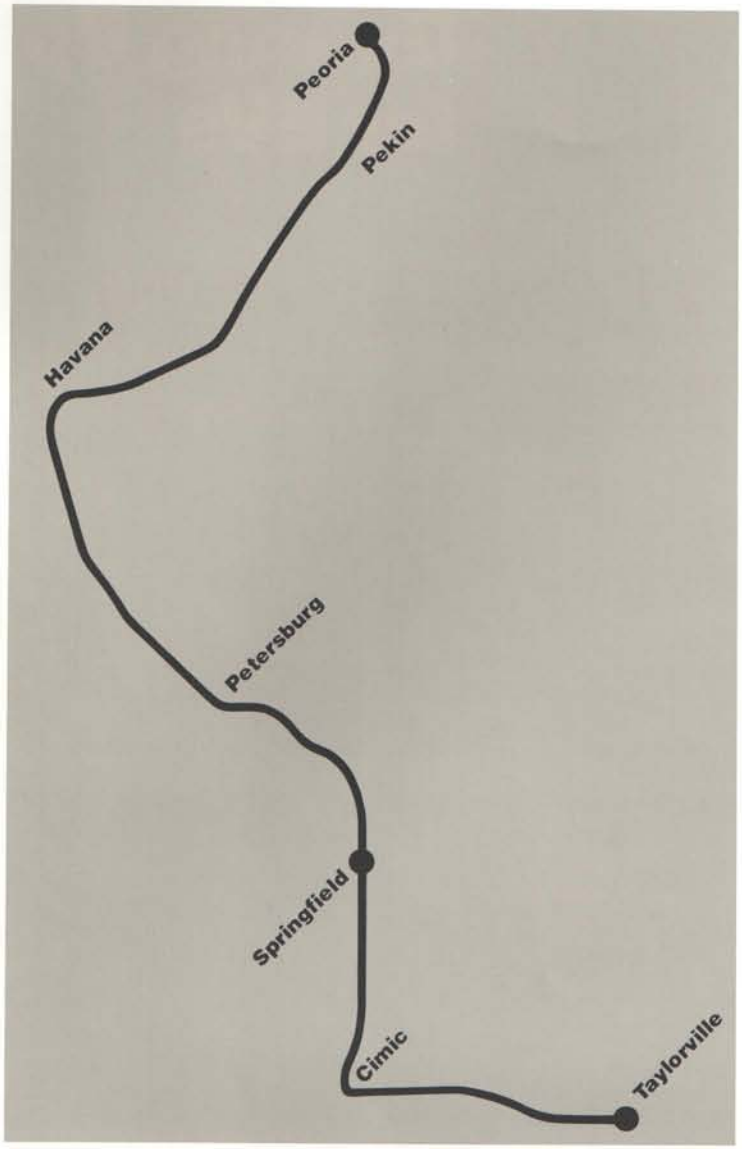
Like traffic policemen, members of the train crew can signal to the engineer with their hands, flags or in this instance, a lantern.

When the crewman swings the lantern at a right angle to the track, it signals the engineer to stop.

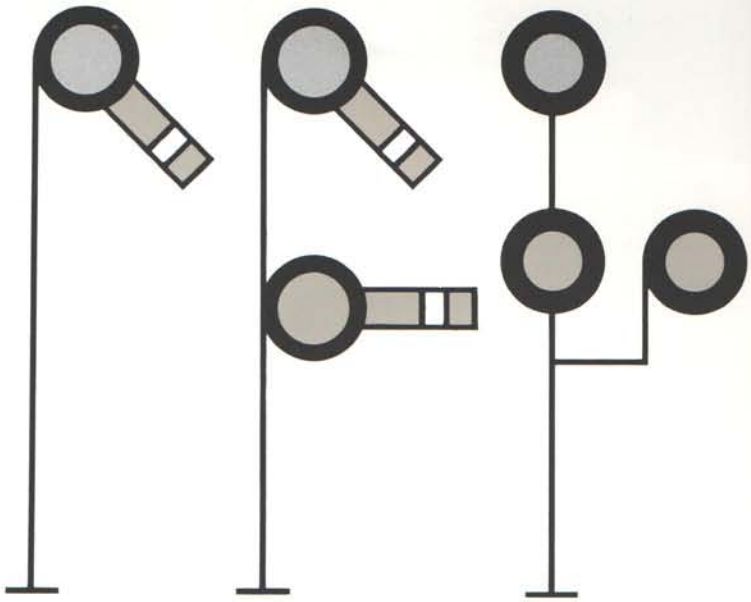
If the lantern is held horizontally at arm's length, the engineer should reduce the train's speed.

The engineer can proceed when the crewman is raising and lowering the lantern up and down.

If the crewman swings the lantern vertically in a circle at a right angle to the track, that tells the engineer to back up the train.



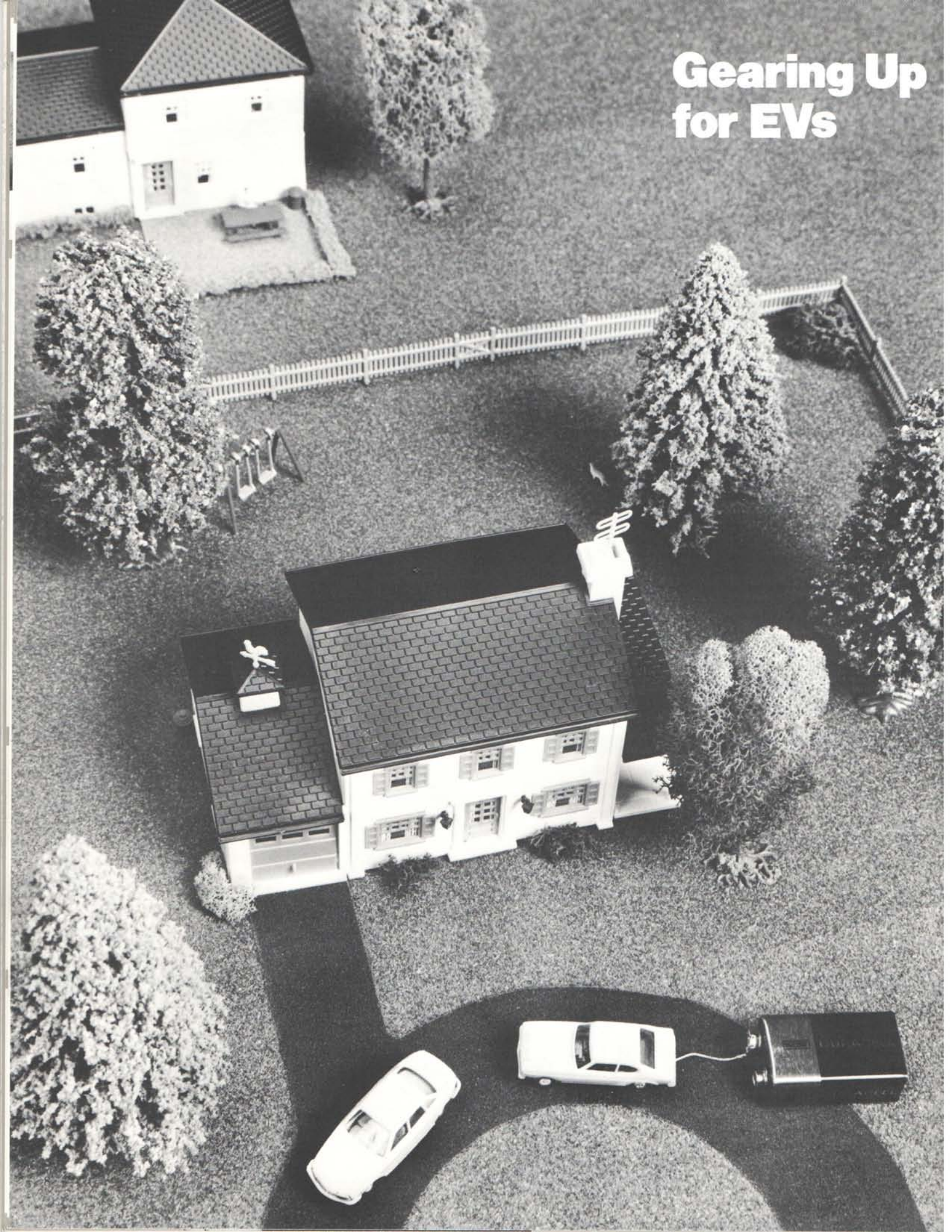
The C&IM route extends over 121 miles of track from Pekin through Springfield to Taylorville.



These automatic block signals, the traffic lights for the engineer, are giving the all clear sign.

In the past, kerosene fueled the railroad lanterns. Today's version relies on battery power.

Gearing Up for EVs



Some day, you're going to own an electric vehicle (EV). The only question is when.

Although still being developed, EVs have plenty to offer, especially in urban areas where about three-fourths of the approximately 150 million vehicles in the United States are based. Since EVs do not use gasoline, they could reduce U.S. petroleum use by as much as 28 percent—about half of our current imports, cut emissions of hydrocarbons and carbon monoxide in half, and slash noise pollution by as much as one-third, according to three separate research organizations.

Routine maintenance of a well-designed EV poses few problems. It has virtually no need for periodic tune-ups, and fewer moving parts should hold expensive repairs to a minimum, so the EV owner may look forward to substantially lower operating costs than the owner of a conventional car.

EVs also hold great promise for electric utilities which face an expanding gap between daily maximum and minimum power demands. General demand peaks at mid-afternoon and then slowly tapers off to minimum levels in pre-dawn hours. EVs are one way to improve productivity through increased sales at night, when most EVs presumably would be recharged.

But Edison Vice President John Eilering cautions that utility marketers will have to get in on the ground floor, not only to help launch EVs, but also to help shape the EV market at its outset so this nighttime recharging pattern will develop. If not given incentives to recharge at night, he reasons, customers are not likely to care when their batteries are topped off. This could add to daily peak loads instead of filling off-peak valleys.

"Each garage eventually will have two electrical outlets," Eilering predicts, "one with the 'high price spread' for daytime use, and the other with the 'low price spread' for off-peak use." Thus, with time-of-day pricing or a storage rate in effect, customers would be encouraged to reduce transportation costs by taking advantage of lower nighttime electricity prices, and utilities would profit from increased productivity by supplying that power with their most efficient generating units.

"A single EV driven 12,000 miles a year would be equivalent to a residential customer using 6,000 kilowatt hours a year—only at night, imposing no peak demands on the system...a marketer's dream!" Eilering exclaims.

A substantial side benefit of this combination is that improved productivity also could mitigate the effects of inflation and ease the upward pressure on electricity prices in general.

What kind of marketing support will Edison give EVs in northern Illinois, where 200,000 such vehicles could be in use by as early as 1990? Since mass production still has not begun, Eilering points out, it's impossible to set firm strategy at this time. However, he adds, the range of possibilities extends from new pricing mechanisms to wiring customer homes for 220-volt recharging service to providing coin-operated charging terminals in shopping mall parking lots. Other possibilities include offering EV financing and even opening EV dealerships, where Edison would not only sell the vehicles but also service them and perhaps even lease batteries to replace worn-out units—something likely to occur every two or three years.

Although none of these tactics are assured, Edison's Transportation Superintendent, Bill Broadfoot, says once EVs are perfected and meet Edison's minimum performance standards, they could comprise anywhere from one-third to one-half of the company's passenger vehicle fleet, a move which would increase consumer awareness and demonstrate the confidence necessary to spur widespread acceptance. Meeting consumer acceptance, the company feels, will require a single-charge range of at least 60 miles with expressway capabilities of 60 mph.

Most EVs on the road today fall short of these standards in one way or another, according to Broadfoot. Some he says, are capable of 80 mph and more, while others can stretch a battery charge to 100 miles and more. Those capable of both, however, cost more than $18,000.

But these are only passing problems, as evidenced by the fact that Detroit automakers are seriously talking about gearing up for mass production of marketable EVs by the mid-1980s. Once Detroit starts turning them out on assembly lines, the price is almost certain to fall in line with those on conventional cars' stickers.

The initial EV market is most likely to embrace families with second and third cars for commuting and daily errands. The U.S. Department of Transportation figures that 90 percent of all one-way passenger car trips in this country are 20 miles or less, and more than half are less than five miles long. EVs fall neatly into this driving pattern, but will not be able to carry the family on the coveted annual summer vacation which often requires much greater range than EVs can provide.

Some families may indeed rely on EVs for their primary transportation needs, and use public transportation for the relatively infrequent longer trips. But visionaries in the EV development program are looking to the day when electrified coils are laid on highways to enable EVs to recharge as they move along the interstate system, far surpassing the range of internal combustion engines. "Electrified in this fashion," notes one researcher, "one could drive from San Francisco to New York without stopping to recharge."

Until that day arrives, EVs will continue to rely on energy stored in batteries, the problem which doomed EVs in the face of cheap gasoline and improved internal combustion engines back in the 1920s.

Since the oil embargo of 1973, however, more progress has been made in battery technology than has occurred during the previous 75 years. Radically new battery designs calling for nickel, zinc, chlorine and other materials now are being developed to augment or replace the standard lead-acid battery now used in most conventional cars for starting internal combustion engines. In fact, one manufacturer recently unveiled a zinc-chlorine system which it says will power an EV to speeds of 55 mph over a 200-mile range between charges and has a life span of some 200,000 miles of driving.

Improved lead-acid batteries now are being used in EVs. These were designed mainly for use in golf carts and are capable of standing up to the deep discharges required for EV use. Even with such improvements, they weigh up to 60 pounds and present EV designers with the need to beef up the vehicle's structure to support the increased weight. The 60-pound EV battery can store about 4,100 Btu of energy; a single gallon of gasoline weighs less than six pounds but stores 120,000 Btu of energy. This difference means that EVs using lead-acid and comparable new designs of batteries will weigh about twice as much as conventional cars, akin to figuring gasoline at 85 times its actual weight. About half of the EV's weight will be concentrated in its batteries and motor system, while only about one-fourth of the weight of a standard subcompact is comprised of its gas tank and engine. But combined with electric motors and controllers, which are well developed and quite reliable, the more substantial EV body structure is likely to make EVs very reliable and long-lasting machines.

Today, EVs are having their ups and downs, to be sure, but one thing remains clear: some day, you are going to own one and wonder what all the fuss was about back in 1981.