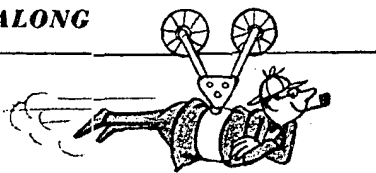


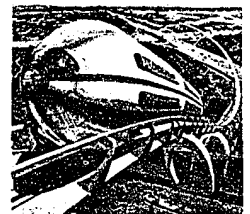
ROLLING ALONG



# Tomorrow's

See Front Cover

**Sixty miles — home to downtown — in a quarter of an hour! New super-trains, some without rails or wheels, will soon revolutionize city and suburban transit. Here's a preview of our exciting travel future**



By **RALPH STEIN**

**W**ILL YOU, SOME DAY SOON, drive to a strikingly modern station resting lightly on an airy web of struts, park your car and climb aboard a glistening, projectile-shaped, though earthbound, conveyance? Will this device thereupon hiss away and waft you silently and fleetly down the line at a speed of 120 to 300 mph?

You will, if the brainy types who are feverishly slaving away at devising a half-dozen kinds of such wondrous means of travel have their way. In cities as far apart as Tokyo, London and Dallas, busy engineers not only have detailed plans on their drawing boards but have actual full-size working prototypes of the rapid-transit systems of the future.

### Town to airport in 12 minutes

Seattle already has its 1.2-mile monorail, and Los Angeles is on the very verge of building a 90-mph Goodell Monorail to zip passengers from the airport into town, 17 miles away, in 12 minutes.

Murel Goodell of Goodell Monorail told me that he hopes to have his Los Angeles monorail built within 18 months, said he'd have three other lines running between airports and cities in five years.

But monorails are not the only new kind of transport the engineers are working on. Some systems have two rails, some no rails at all.

It's pretty obvious why we need such new methods of getting to work from ever-spreading suburbia or to the city from the airport.

Automobiles and buses are still our best means of getting around within suburbia and, in many cases, within cities and also for fun and vacations. But some people say that in addition to cars, we need a means of mass transport for the morning and evening scramble to and from our jobs. They claim that superhighways just don't have enough room on them for all the cars and buses during the mad rush hours. Nor, they say, do our cities yet have enough parking space for our cars once we get them there.

Millions of people must still use the commuter railroads, which even if they're clean, in good repair and on time — and many of them are not — still have the inbuilt vice of slowness.

All the other types of transport we use — cars, buses, aircraft — have doubled and redoubled their speeds in the last 50 years, but some commuter railroads are

just as slow or slower than they were when Grandpa rushed to the depot in his buggy to make the 7:10. For example, the steam commuter train from Norwalk, Conn., in 1893 took 61 minutes to get to New York. In 1963 the timetable shows it takes at least 60 minutes with an electric locomotive.

Despite the bleak state of many of the railroads which serve our urban areas, the idea of a multi-passenger string of cars following a rigidly established track is hard to beat. Weather hardly bothers it, hot rodders and cyclists seldom get in its way, and it can be closely controlled via signaling systems and timetables for a very high degree of safety and speed.

But that doesn't mean that the big-dome planners and engineers are merely thinking of modern variations on Richard Trevithick's 1804 model iron-wheeled iron horse.

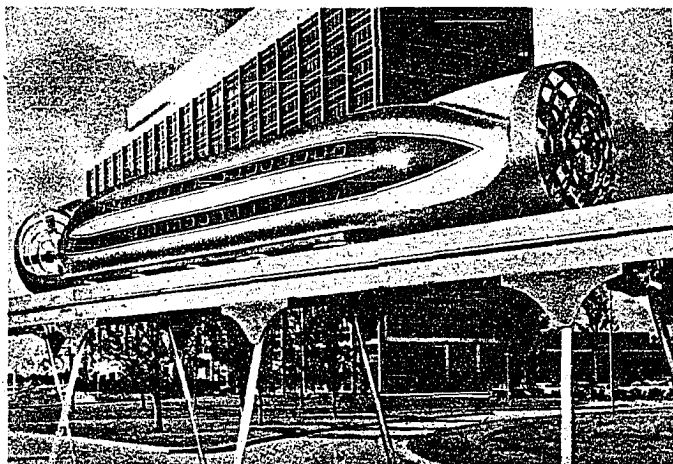
### No wheels at all

In fact some of the avant-garde engineers' brain children not only dispense with iron wheels, they have no wheels at all.

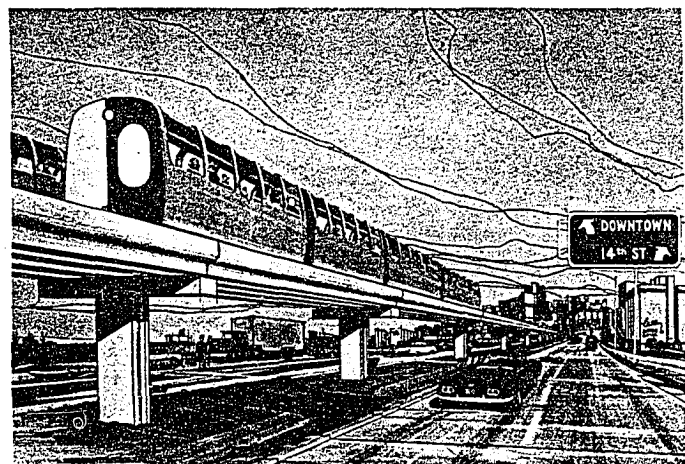
For example, the proposed wheel-less British Hovertrain on our cover is to glide



Ralph Stein



**LEVATRIN:** Riding on an eighth-inch-thick cushion of air, it could shuttle between cities 90 miles apart in 38 minutes, say Ford engineers



**AUTOMATIC:** A Westinghouse project, this completely automated train would be operated by electronic computers, could run underground



**TEXAS**

# Railroads in the Sky

along on a one-half-inch cushion of compressed air generated within the train. Its track is to be a cement trough to "keep it from slipping sideways. According to inventor Christopher Cockerell, forward motion (of 300 mph!) would be accomplished by electric power. But instead of electric motors in the car an ingenious new method would be used.

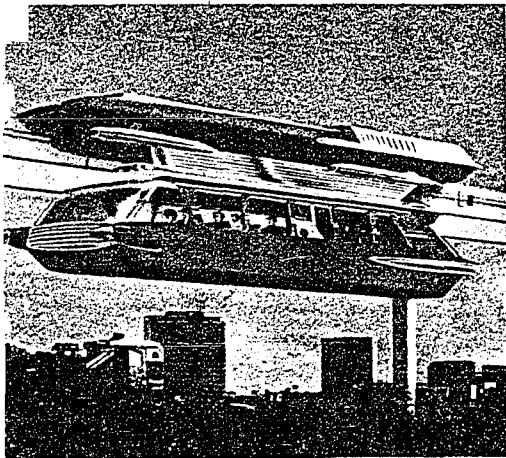
Electric induction motors as we're used to them are circular with an armature whizzing around within coils. But these Britishers envision unrolling such a motor so that the armature (miles of it) would lie in the trough while the coils would be attached to the underside of the car. The only attachment between coils and armature would be the magnetism which zips the car along its trough. The English call this a "linear" motor.

## Another air train

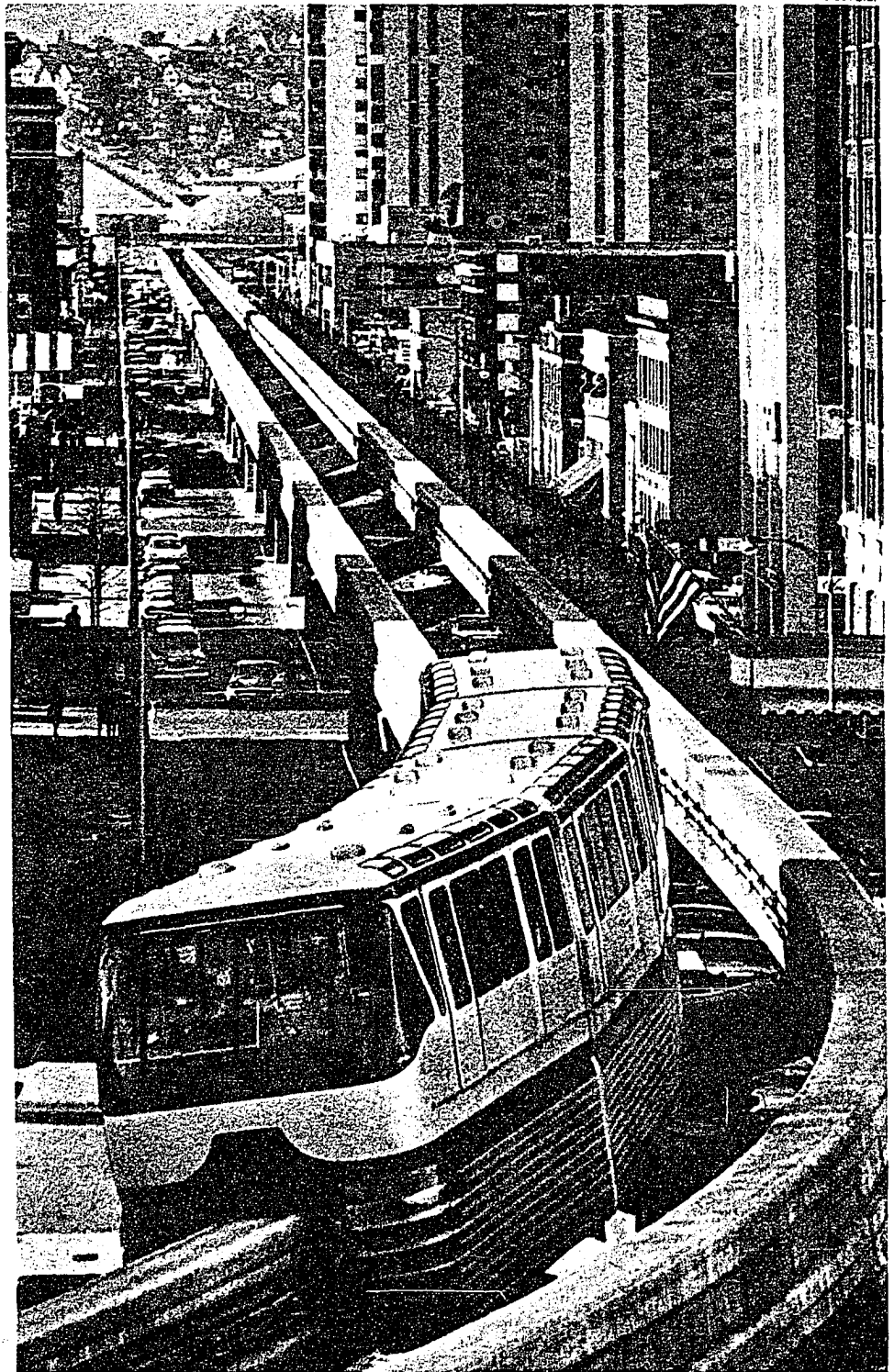
Not unlike this "Hovercar" is our own Ford Motor Company's "Levatrain." It too is supported by an air film through "Levapads" which are disc-like affairs perforated with holes through which compressed air is blown.

Unlike the Hovercar, the Levatrain is to be supported on smooth metal rails embraced top and sides by the Levapads. But the Levatrain is to ride on an air film only an eighth of an inch thick instead of the Hovercar's half inch. Ford claims this is a more economical use of air and power.

Instead of the Hovercar's electric propulsion the Levatrain is to have a gas-turbine-driven propeller to move it ahead. Ford considered building a full-size demonstration Levatrain. An old DC-3 airplane fuselage minus wings and tail was to be rebuilt into a Levatrain to — *continued on next page*



**MONORAIL:** Dallas and Houston have tried system successfully. Above: the newest Goodell Monorail model



**SEATTLE MONORAIL:** Last year's World's Fair visitors and thousands of others have ridden this pioneer American version of modern city transit. This one rolls on rubber tires, is electric-powered

Continued from preceding page

## Will trains run through skyscrapers?

tear around at 200 mph on a five-mile circular track they were going to build for it. But when the hard-nosed boys in the accounting department began adding things up, they found the experimental model would cost about \$5 million. So Ford's Levatrain is back on the old drawing board.

Of all the new types of rail transport it's the Monorail which seems to tickle people's imaginations most. Monorails are by no means new. A monorail (three quarters of a mile long) delighted fair-goers at the Lyons Exposition in France way back in 1872. And of course the West German Wuppertal monorail trains have been running successfully over a ten-mile track for 60 years.

### The bicycle monorail

My favorite monorail is the one built in England in 1907 by Louis Brennan. This one, a full-sized flat car with a cabin in front, balanced itself like a bicycle on a single rail laid on the ground, keeping itself upright by means of gyroscopes. It worked fine until the day all the fancy passengers Mr. Brennan was taking for a demonstration ride suddenly decided to stand on one side of the car, laying the thing over on its side, putting a crimp in Mr. Brennan's plans. I understand the car is still in London gathering dust in a garage.

This sort of contretemps can't happen to the modern types such as the Goodell Monorail proposed for Los Angeles or the Alweg Monorail in Seattle. Neither of these tries to balance itself like a cyclist. Mr. Goodell's aluminum monorail train is firmly hung from a track upon which rubber tires bear without the ghost of a chance of derailment.

The rubber-tired Alweg Monorail train rides above and straddles its track, which is really a cement beam, and is electrically powered from contact rails. In Seattle, it has traveled at 55 miles per hour. But its makers, The Wegematic Corporation, claim that with a longer run to gather speed, 85 miles an hour is possible. That's somewhat slower than the Goodell Monorail.

Another outfit interested in monorails is the Lockheed Aircraft Corporation which has a "small investment" in the Japanese single-rail project of the Nihon-Lockheed Co. Other American firms like Firestone, General Electric and Westinghouse are keeping a watchful eye on monorail developments too;

they'd be happy to supply the bits and pieces for building the things.

In fact Westinghouse Electric has a transit plan of its own, "The Westinghouse Transit Expressway." This cheap and ingenious system is not a monorail — it uses two troughs on an aerial roadway. The cars are to be light aluminum air-conditioned 20-bucket-seaters weighing 8,600 pounds — only about twice the weight of a luxury automobile — and ride silently on rubber tires.

### Nobody but us passengers

They are to be electrically powered and as completely automatic — no motorman — as an automatic elevator. Electronic computers are to run the whole shebang — from assembling trains to selling tickets. Even the yards will be mechanized, like an automatic garage. About the only humans will be the passengers. An electronic controller at each station will feed information to a central computing control office. There a few real live people will operate the system and, I suppose, bring in the coffee at coffee-break time. This whole thing sounds like a model-railroader's dream, but full-size.

But where would you put all these delightful new transit systems — these Hovertrains, Levatrans, Monorails and Transit Expressways? Mostly along turnpikes and freeways is the answer. The thin pylons which support their rights of way take up surprisingly little room. Within cities you'd have something of a problem. Some of the systems like the Westinghouse proposal can dive underground into tunnels. The Monorails can run over city streets — the Seattle Monorail cuts off

very little light and air, but even so people "would rather have them on somebody else's street," one Monorail man said to me. Perhaps, to get rather science-fictiony, the solution will be to run Monorails in cities high in the air with their tracks leaping from the top of one skyscraper to the next, or even *through* some of the higher ones since buildings aren't all the same height.

Money is another problem, even for low-cost systems like the Westinghouse proposal which is claimed to cost only two to three million dollars a mile. But the federal government is getting increasingly concerned over the transit situation.

A bill in Congress, sponsored by Senator Harrison A. Williams of New Jersey, offers \$500 million as an initial three-year authorization to get new mass transport started — either rail, bus, monorail or what have you — whether the service is publicly or privately owned. The Federal share would be up to two thirds of a given project's cost — its sponsors to provide the rest.

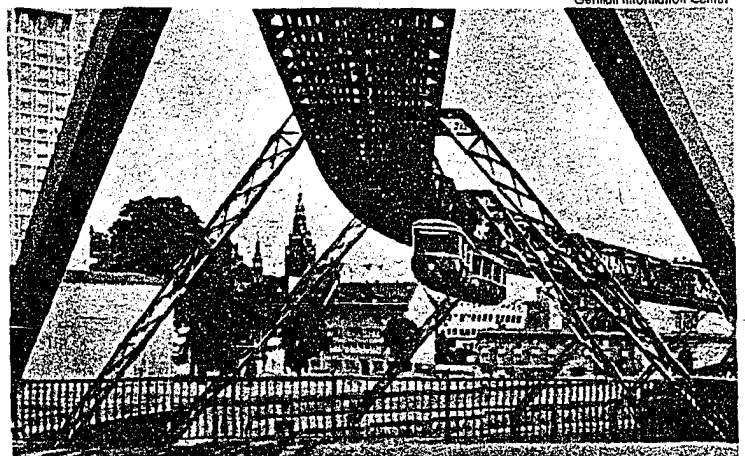
### Car lovers carry on

So you may yet see fabulous new modes of transport burgeoning all over the place.

On the other hand, many of us will just take a quick look at you from our car windows as you whoosh along above on the turnpike in the Hovertrain-Levacar-Monorail Transit Express.

Some of us will always love automobiles.

**RALPH STEIN** is THIS WEEK's *Automobile Editor*. His "Rolling Along" column appears every month.



GERMANY: Monorail has run in industrial Wuppertal for 60 years

German Information Center

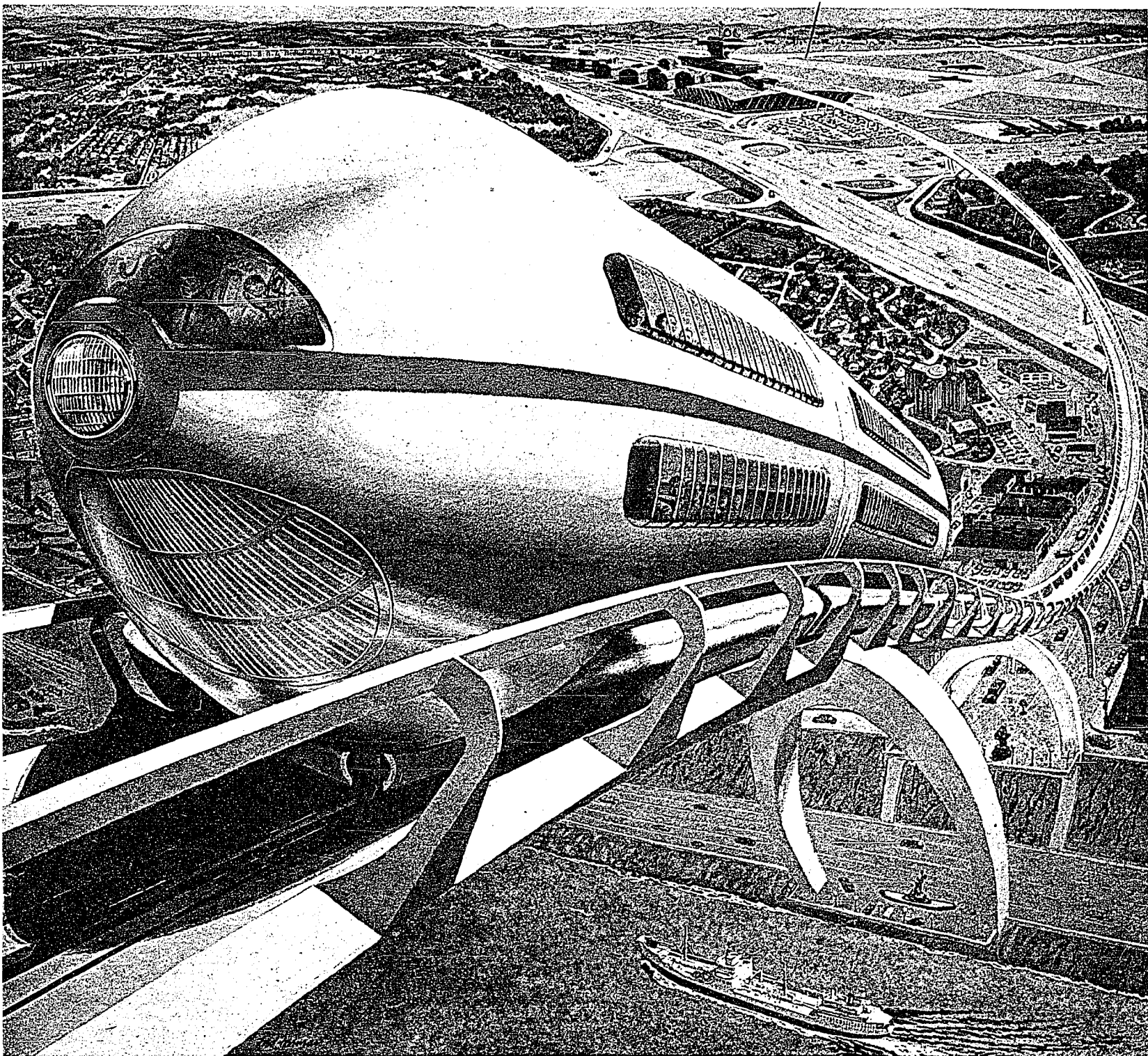
# Get Set for the 300<sub>mph</sub> Sky Train!

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HERE COMES THE HOVERTRAIN: It's designed to do five miles a minute on a cushion of air between it and the track