TRANSPORTATION

Rapid Transit Plans Grow

A hypothetical transit system in which fast moving vehicles would float above magnetic fields on cushions of air has been devised by students.

➤ TOMORROW'S engineers see the commuters of their generation traveling in vehicles "hurtling along at 350 miles per hour like electronic surfboards riding waves of magnetic force."

This visionary concept is the idea of a group of graduate students and seniors at the Massachusetts Institute of Technology, Cambridge. The project was to give the future builders "intensified decision-making experience in a large engineering undertaking." They were called upon to deal with the "psychological, social, economic and political aspects" of the plan as well as the technical.

The proposed hypothetical transit system, "Glideway," was designed for the Boston to Washington trade, and was estimated to cost $4.3 billion.

Under the student plan, Glideway vehicles, each moving independently, would float on thin cushions of air, never touching a 12-foot-wide glideway about an inch below them. Some cars would carry conventional seats. Some would carry autos with occupants inside.

Automatically triggered magnetic fields traveling along a double row of electric coils imbedded in the roadway would propel single cars along at nearly half the speed of sound.

Meanwhile, officials in Washington, D.C., reported no change in the vacuum that has characterized the development of the real life effort to develop high speed rapid transit between Washington and Boston, along the so-called Northeast Corridor. MIT personnel are participating in that, too, but it has nothing to do with the student effort.

This has been bogged down for months by the following:

1. A dispute within the Federal Government on who should control the program and what its scope should be.
2. The leisurely pace of the legislative process to provide funds.
3. The ill health of a leading commuter railroad, the New Haven, which is integrally linked with the Boston to Washington project.
4. Conflicting opinions on whether to go ahead with the tests of new equipment on traditional railroad tracks or to emphasize development of a jet tube concept.
5. Considerable technical decisions that can not even be worked on until policy decisions are made.

These are some of the factors that could be classed among the "social, psychological, economic and political aspects" considered by the students who planned "Glideway." In the case of the Boston-Washington transit issue, at least, the facts seem to indicate that it takes as much human effort on those aspects as it does on technology itself.

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TRANSPORTATION

Commuter Rail Cost Set

➤ A PRICE TAG of about $325 million goes along with the plan to provide 160-mile-per-hour rail commuter service between Boston or New York and Washington.

President Johnson wants to commit the nation's taxpayers to the extent of $20 million.

A bill to that effect is moving unspectacularly but steadily through Congress. This money would be used for test runs and for further studies.

That leaves a balance of $305 million. In addition, a vital link in the network—the New York, New Haven and Hartford—is in sick financial condition and needs public funds to keep it operating.

For its part, the Pennsylvania Railroad is on record as being willing to cooperate as soon as the Federal Government signs a contract to provide funds for the work.

A short haul test in the New Brunswick, N.J., area seems feasible under the $20 million legislation.

Possibly that experiment will show how soon or if a combination of Government and private enterprise can be put together to underwrite the overall job.

Technologically, there seems to be no problem. The Budd Company of Philadelphia recently unveiled a self-propelled unit capable of doing 160 mph. A combination of a 10-unit train is possible with each of the 10 cars carrying about 75 persons.

The cars could be propelled either by electricity or by an aircraft gas turbine engine. They can be set to run automatically or with engineers.

For intermediate stops between main terminals, individual cars could be uncoupled at the proper spots without stopping the rest of the train.

The $325 million is necessary to prepare tracks and roadbeds for the new high-speed cars. Involved here are grading, clearances and welded tracks. For high speed rail cars, tracks with many fewer joints are necessary.

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NASA

MOCK LANDING—A vertical lifting force here helps simulate the low gravitational force at the moon's surface in lunar landing tests being conducted at NASA's Langley Research Center, Hampton, Va.

TECHNOLOGY

Limbless Youth Drives Specially Engineered Car

➤ EVEN THOUGH he has no arms or legs, an 18-year-old youth is driving California's highways in comfort and safety.

This is made possible by modification of a popular-make automobile, including special control panels tailored to the young man's handicap. The ingenious device was designed by Carl Sumida of the University of California at Los Angeles Child Amputee Project.

The special control panels enable the amputee to guide and accelerate the car with his artificial right foot and brake it with his left. The ignition and automatic transmission are controlled with the right foot. Such items as light switches, window controls and windshield wipers are worked with the left foot.

Guidance of the vehicle operates on a "joy stick" principle. The right foot fits into a U-shaped device, which moves flexibly so that the foot is always in a vertical position and not twisted. A simple movement four inches to right or left achieves maximum turning. Only a power system is involved with no mechanical steering mechanism intervening.

The U-shaped device also contains the accelerator. It operates like a standard gas pedal.

The handicapped youth passed his driver's test with flying colors, and the State of California has issued him a driver's license.

The vehicle has been road-tested at maximum speed and has presented no problems in several hundred miles of performance to date.

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