

CYBERTRAN®: TRANSPORTATION TO THE FUTURE

A

new concept in mass transit, the CyberTran® system, is being developed at the Idaho National Engineering Laboratory (INEL), a facility operated for the U.S. Department of Energy, in southeastern Idaho.

Fast and Lightweight

CyberTran® (Cybernetic Transportation) utilizes computer-controlled, lightweight, low-occupancy vehicles that travel in elevated guideways at high speeds. The vehicles carry

6 to 14 passengers at speeds of up to 150 mph in intercity corridors or 14 to 32 people at speeds of up to 80 mph in urban and intracity areas.

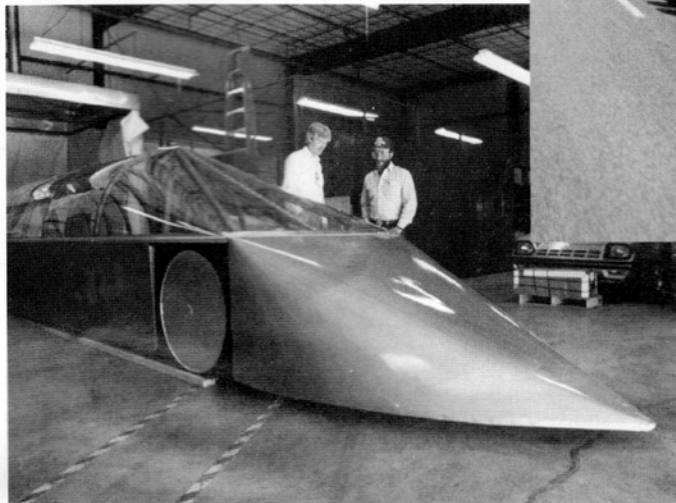
Affordable

Because the vehicles are very light weight, the requirements for power and guideway strength are less. Therefore, CyberTran® can be built at a cost of \$2 million to \$4 million per mile which is 10% to 20% of conventional light rail systems. The electrically powered, steel-wheel-on-steel-rail vehicles use only 30% of the energy of automobiles and aircraft.

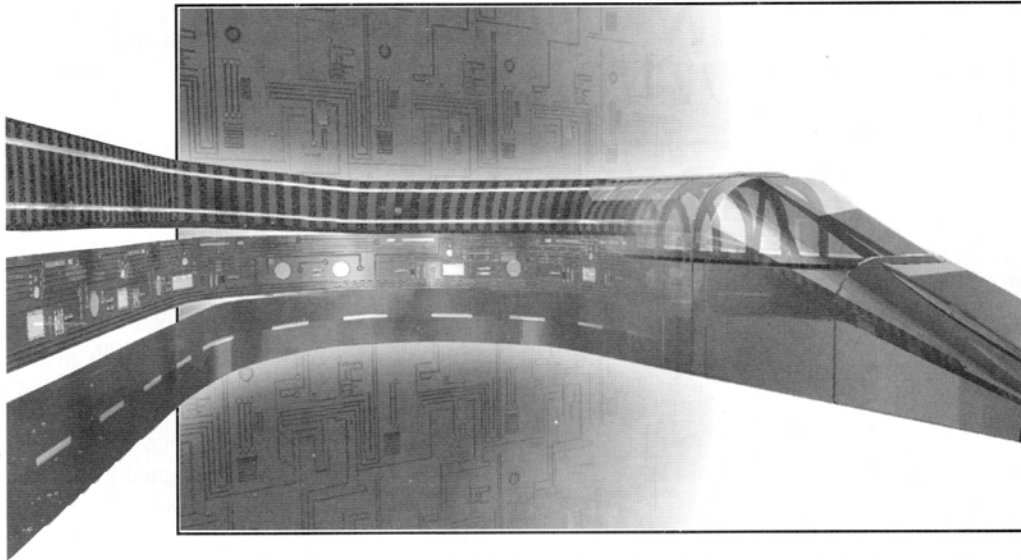
Computerized control of the vehicles and a rugged, simplified propulsion system result in a highly reliable system with low operating and maintenance costs. The system is designed to be built and operated without requiring a subsidy from public funds.

Powered by two 100-hp electric motors, the vehicles are 38 ft long, 6 ft wide, and 6 ft high, and weigh less than 10,000 lb when loaded. The vehicle and guideway components are designed for mass production. Manufacturing facilities can be built in cities where one or more

The Idaho National Engineering Laboratory is testing a new concept in high-speed mass transit, the CyberTran® system.

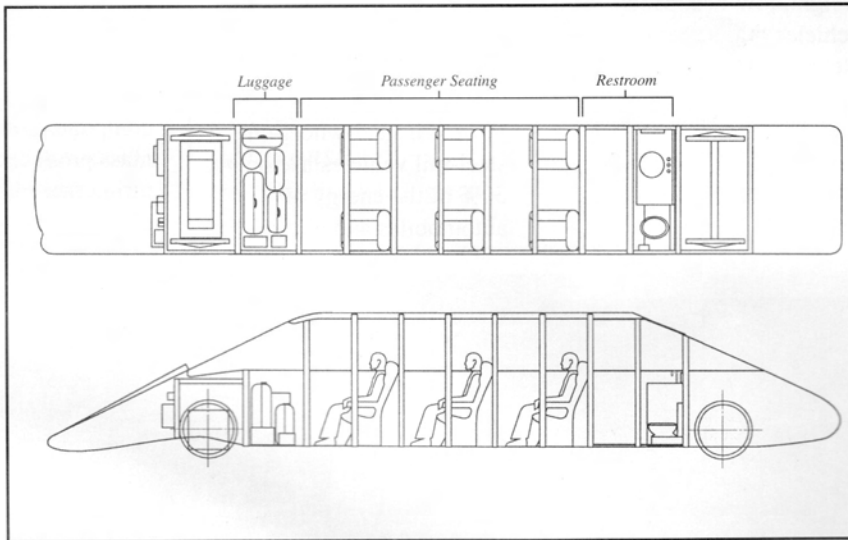


Clockwise from left: 1. In the laboratory with inventor Dr. John Dearien. 2. First engineering prototype vehicle during speed and stability tests. 3. Second engineering test prototype vehicle on early steel truss design on its way to Boise, Idaho for Car Free Day.



The CyberTran® concept is a derivation of three different technology paths: mass transit rail systems, computer technology development, and small capacity transportation vehicles.

Vehicle capacity shown at six passengers for intercity travel. Shorter routes can have vehicles with up to thirty-two passengers each.



CyberTran® systems are to be constructed. The system uses commercially available electronic components in the computer control and communications subsystems.

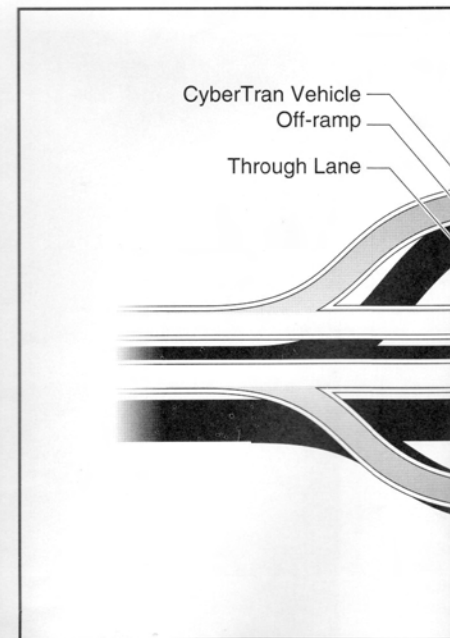
Safe

Each system has two one-way guideways which are separated for safety and vibration isolation. Each vehicle is equipped with a collision avoidance system that allows it to monitor the location and speed of preceding vehicles and feed this information into its

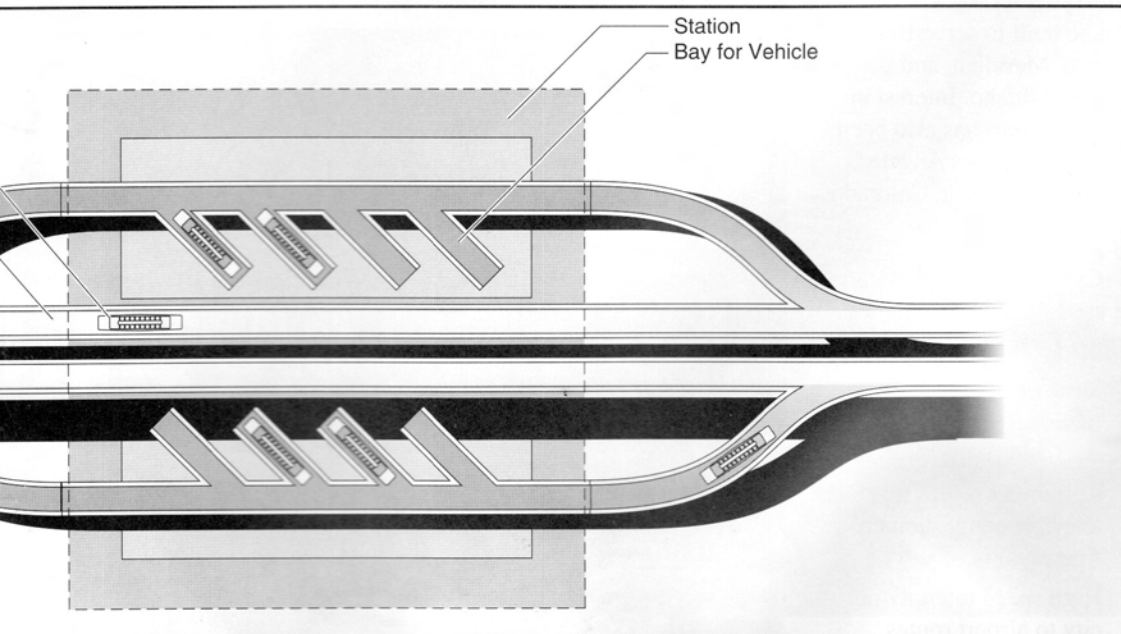
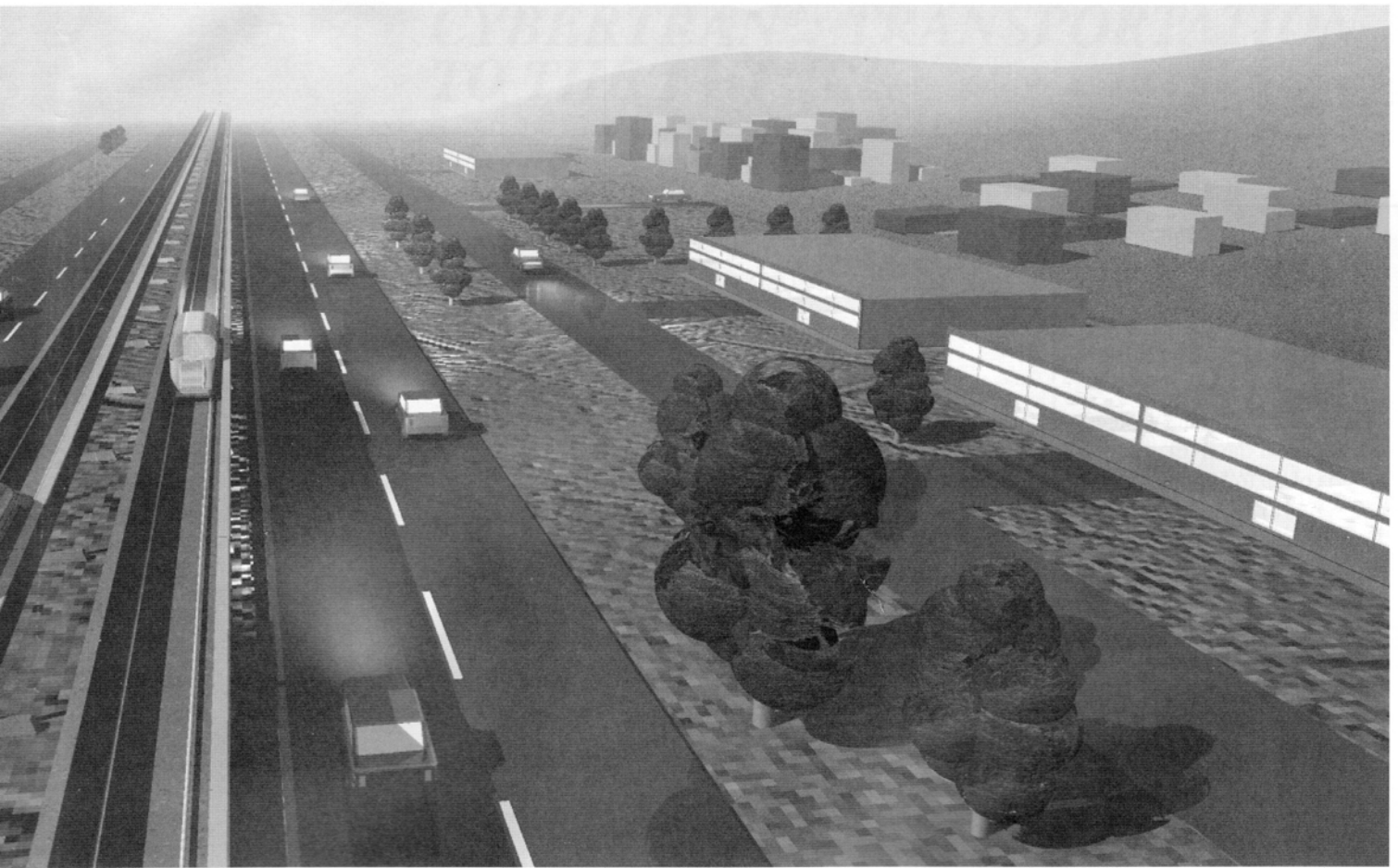
onboard computers for appropriate acceleration or braking action. Redundant onboard computers in conjunction with redundant system control computers operate the system as a safe, efficient, 24-hour per day, on-demand transportation system.

Comfortable

The vehicles feature doors for each seat section. Head and shoulder clearance is very good, and the transparent top gives the passenger a totally new transportation experience. Onboard toilets



and baggage compartments for the intercity model, as well as TV, modem, and telephone connections, provide a passenger service and comfort level comparable to modern jet aircraft.



CyberTran® uses steel rails mounted in elevated guideways. It is designed to go in the median strip between existing divided highways.

A typical CyberTran® system station.

The terminals will feature multiple loading points that speed passenger loading, credit card fare purchase, and access to other transportation modes.

Guideways Along Highways

Tracks are designed to be placed within the median strip of existing interstate highways. Design of the guideways allows the system

(two lanes of vehicle flow) to be placed in a right-of-way width of less than 16 ft. The CyberTran® is ideal for many areas of the United States where traffic congestion and air pollution are problems.

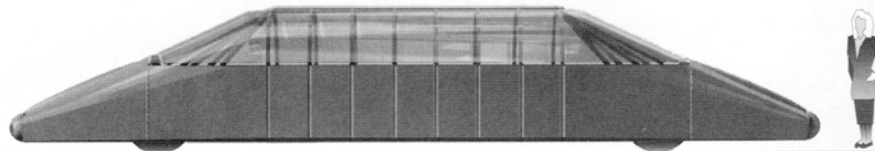
**CyberTran®
Demonstration Project**

The first two phases of the CyberTran® test program have been completed. A prototype CyberTran® vehicle was tested at the INEL at speeds of up to 55 mph, and a test series to prove the tracking and self-steering capability of the single axle propulsion units was successful. The test vehicle, powered by two electric motors and tested at full operational weight, met all test objectives. The third phase of testing, involving high-speed dynamics and computer system control, is planned. An innovative design in brushless DC motors will power the test vehicle. The motors, built by IWon Motronics, will increase reliability and reduce both initial costs and maintenance costs. Computer simulation of the CyberTran® to speeds of 160 mph has been successfully completed by the Transportation Test Center, Pueblo, Colorado.

The Treasure Valley of Idaho (Boise area) has initiated a Transportation Alternatives Study. The CyberTran® system is being evaluated and if selected, the first demonstration project of the CyberTran® technology

WHAT IS CYBERTRAN®?

CyberTran® is not a train. It is a steel rail-based transportation system consisting of hundreds of small, light, fast, individual electric vehicles



Vehicle

- Light weight
- Individual vehicles
- Computer controlled

Performance

- Energy Efficient
- 30 to 150 mile per hour speeds

Stations

- Off-line loading and unloading

Passenger capacity

- Six to thirty-two people per vehicle
- 10,000 passengers per direction per hour

Access

- Eight doors - four per each side
- ADA compatible

Power

- Two 100 horsepower electric motors
- Third rail pick-up



will be built to serve Boise, Nampa, Meridian, and Caldwell, Idaho. Interest in future systems has also been expressed for Los Angeles, Seattle, and Aspen, Colorado.

Applications

CyberTran® systems can be used for three different types of transportation:

1. Slow; scenic routes (national parks, ski areas, etc.)
2. Commuter routes (to alleviate congestion on freeways)
3. High speed intercity or city to airport routes.



Interior view of CyberTran® showing high visibility and passenger comfort.



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The INEL is a facility operated for the U.S. Department of Energy