

## High-speed rail transport for the Northeast Corridor

After World War II it became an item of near faith that air transport of passengers was the mode of the present and future. Ignored were the large numbers of people who couldn't afford or who refused to ride airliners. Also ignored was the successful European and Japanese experience of providing more efficient passenger service with trains than with airlines for short hauls between cities.

Now, the U.S. Department of Transportation has pronounced that railroad passenger service between major urban areas in the United States need not continue its 25-year-decline. In a report issued last week by DOT Secretary John A. Volpe, called "Northeast Corridor Transportation," the department calls trains the best way to move large numbers of people between Boston, Mass., and Washington, D.C. The implication of the report may be that trains are best for such other megalopolitan regions as Chicago-Detroit, San Francisco-San Diego or the Gulf Coast, as well.

Recommended by DOT for the Northeast Corridor is an "Improved High Speed Rail" (IHSR) system with increased speeds and frequent trains. Travel times envisioned are New York-Washington, two hours, and Boston-New York, two and three-quarters hours. Departures every half hour on a non-reservation basis would attract heavy patronage and would make the system economically self-sustaining, says the study.

Rail transport in the Eastern Corridor, as elsewhere, underwent a steady deterioration after World War II. Some passengers conjectured the railroads were deliberately discouraging passengers; at any rate, schedules were inconvenient, rolling stock archaic, washrooms dirty and even the windows were sometimes broken. Then came the "Metroliner" and "Turbotrain" demonstration projects on the East Coast, which proved that high-speed, clean, comfortable trains could attract passengers—even at considerably lower speeds than projected for the IHSR.

"The traveler," says the study, "is not, per se, an air traveler. He has a remarkable similarity of profile, riding the airline to Boston, the Metroliner to New York, and driving to Baltimore from Washington. He makes his decision on the basis of services offered and he is divertible." And, the study adds, a major problem affecting travelers is increasing travel time due to air service congestion. Trains offer not only elimination of this problem, but also direct transportation without time-consuming trips between city and airport.

The report, a departmental one, by no means neglects other possibilities for interurban transportation in the Northeast Corridor. But even after considering these other possibilities—primarily short take off and landing (STOL) and vertical take off and landing (VTOL) aircraft—it still favors high-speed trains for this decade and perhaps beyond.

"Clearly, in terms of service . . ." says the report, "the travel time and flexibility of STOL and VTOL offer the greatest potential benefits. However, the uncertainty of passenger acceptance and the major problem of achieving community acceptance create serious doubt that these potential benefits can be realized in the 70's." Among the obstacles to community acceptance are the need for land for STOL or VTOL ports, noise, air pollution and safety considerations. In addition, the capital investment—or capital loss, if patronage did not materialize—for VTOL and STOL aircraft would be far greater than for the improved rail service.

The report, however, suggests continued research and development in a number of areas, particularly toward possibly removing some of the VTOL and STOL liabilities. It also recognizes that no single mode of transportation will meet all needs, and it suggests improvements in the Eastern Corridor highway system, as well as R&D into more sophisticated improvements such as automated highways. It also calls for R&D into even better rail transport than envisioned in IHSR—even faster tracked air-cushion vehicles.

The best thing about the proposed high-speed rail service: It could be in full operation in three years. □

## MHD for electrical power: Interior grant gives boost

Magnetohydrodynamics (MHD) is a technique for generation of electric power from hot, ionized gases. It promises (because of its greater thermal efficiency) to eliminate the thermal pollution associated with conventional nuclear and fossil-fueled power plants, as well as the air pollution associated with the fossil-fueled ones.

But neither industry nor Government had made substantial amounts of money available for research and development, and MHD looked like a good idea that would never come true.

The Interior Department's Office of Coal Research now announces that it has signed an agreement with Avco Corp. to develop MHD for generation of electric power. About \$2.5 million will be spent over a two-year period of which \$2 million will come from the Government; the electric utility industry and Avco will make up the rest.

OCR estimates it will take six to ten years to make MHD commercially feasible. The major R&D obstacle is finding the right high-temperature-resistant materials; doubt about the feasibility of developing them was part of the reason for the earlier difficulty in obtaining funds.

But a more important reason may have been that the electric utility industry traditionally has spent virtually nothing on R&D. The \$2.5 million, although only a little more than one-half the level of spending for MHD recommended by the President's Office of Science and Technology in 1969, is a hopeful beginning. □

### Ancient algae: Possible index to the Precambrian

Fossilized algae almost two billion years old have been found near Eveleth, Minn. The fossils, says Preston Cloud of the University of California at Santa Barbara, may eventually serve as a valuable index to the ages of rock strata from the earliest, longest and least understood geological era, the Precambrian, which ended 600 million years ago.

The Minnesota fossils, dated at about 1.7 billion years, are among the oldest confirmed examples of fossil algae yet discovered. Up to now the oldest known algal fossils have been the Gunflint fossils, discovered on Lake Superior's north shore. Other older fossils have been reported dating back some 3.2 billion years or more, but Cloud believes they are still open to question. The new fossils, he says, are

slightly older than the Gunflint fossils, perhaps by a few million years.

"But the real significance is not the age," he continues. "They are not all that much older than the Gunflint fossils." Their true importance is that they can be readily separated from the rock deposits in which they occur, permitting a more detailed comparison with similar living organisms. Cloud hopes that studies of the Minnesota fossils, which are very similar to the blue-green algae found in present-day ponds and lakes, will reveal evolutionary changes in blue-green algae. If the time sequence of the evolution of this variety of algae can be determined, rocks of unknown age can be dated by the fossilized algae embedded in them.