

Aeromobiles in Aeroducts



A SUPERIOR TRANSPORTATION SYSTEM
devised by
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presented to **FUTURE CONCEPTS IN HIGHWAY
DESIGN EXHIBIT**

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INTRODUCTION

The following proposal for a mass transportation system is the result of 10 years experience in building, testing and field trials on 13 full scale air cushion vehicles on all types of terrain and conditions of weather by Bertelsen Manufacturing Co., Inc., the pioneer in ground effect research.

The novelty and the unique capability of the proposed system arises from the suspension of the vehicles in transit on an air cushion totally free and independent of conditions on the surface yet confined to a small fixed height above the surface.

Air lubrication and the law of gravity cooperate to orient and direct a frictionless vehicle in a groove. Gravity keeps the slippery craft inexorably centered in the lowest point in the hollow while longitudinal thrust forces accelerate it down the groove pathway.

Given this basic concept, there is inherent in it properties of complete guidance of vehicles with immediate automation capability and all this portends for time saving and safety. Furthermore, the zero friction allows greater speeds economically, the air cushion support of the entire base of the craft allows more massive weight carrying than is now possible with complete weather independence and more comfort in ride.

But the big bonus of air cushion suspension is economy. The vehicles cost less because they are far simpler

than automobiles with few moving parts.

Because the air cushion distributes the load of the vehicle uniformly over every square inch of its entire base, the Aeroduct right of way is far cheaper per mile than concrete highways for cars, trucks and buses which exert pressures on the road of thousands of pounds per square foot. The light footed ACVs commonly operate on pressures of ten pounds per square foot. Groove or tube Aeroducts need be little heavier than minimum strength to resist wind and weather, yet carry enormous tonnages in high volume at tremendous speeds automatically.

PROPOSAL

We have done sufficient preliminary investigation in both full scale and model vehicles to demonstrate the properties of guidance and orientation of air cushion vehicles in grooves.

We propose that:

1. A full scale pilot project be built between two points at least several miles apart over varied terrain in northern climate, preferably where safe, high speed, all weather commuting or shipping is needed. Several lanes should be authorized, but only one built to start the service.
2. That several full scale Aeromobiles be authorized, but only one Aeromobile for six to ten passengers or 2,000 Lbs. payload be built at first to

operate automatically singly on the groove or tube right of way.

3. That a complete study be made of the operations over at least two years of daily operation in all weather.
4. That installation and operation cost studies on the Aeroducts elevated, on the surface or underground be done with respect to nation-wide utilization of the automated service.
5. That improvements in both vehicle and right of way derived from continuous testing be integrated in a regular program. Subsequent lanes should be built incorporating derived improvements.
6. Larger and improved follow-on vehicles for both passenger and freight should be built with higher operating speeds.
7. The electronic equipment needed for complete automation and control of unlimited numbers of vehicles in the system be designed and installed.

WHY ARE AEROMOBILES IN AERODUCTS THE BEST MASS TRANSPORTATION SYSTEM?

1. Safer - Inherent guidance is provided by gravity for the frictionless vehicle in a groove, hence no steering needed, complete automation is possible. No human error enters.
2. Faster - Much higher speeds are

possible with increased safety because of railroad reliability of guidance, zero friction.

3. Cheaper - Great savings in highway construction result from the simple groove or tube of light weight metal or composite.
4. All Weather - Complete weather independence of the air cushion results because of the nature of the air cushion to pass over any precipitation and to blow clean its own track.
4. Comfort - The air cushioned ride of the vehicle on smooth surface grooves or tubes with programmed accelerations at very high speeds provides the shortest and most comfortable ride.
6. Capacity - More people and more tons of goods per mile per hour traverse between any two points with higher speeds, multiplexed right of ways, zero delays and automation.
7. Compatibility - The air cushion vehicle in its own ducts is completely compatible with and complementary to all existing transportation modes. Furthermore, on the Aeroducts, complete intermixing of automated personal Aeromobiles, air cushion buses, freight transports, police, fire and service vehicles is totally feasible and natural.
8. Utility - Every man is assured the permanent right to "drive" to and from his home and every

destination regardless of his age, his health, his visual acuity, his alertness, his blood alcohol level, or his accident record with conventional cars and roads or possession of a driver's license.

RANDOM FEATURES OF THE AEROMOBILE - AERODUCT SYSTEM

The Aeroduct System will:

- be as fast, certain, safe and reliable regardless of climate or conditions of weather including heavy snow, glare ice, rain, extremes of temperature, and low visibility;
- have top speeds limited only by G forces in turns and total distance between points;
- permit full integration and intermixing of the heaviest freight, largest public passenger service with personal vehicle and taxicabs, all automated and all very high speed to provide a single all purpose high capacity system destined to supersede rail, highway and water transport;
- eliminate parking lots, parking delays, parking time limits, costs, scarcities and walking from remote parking places;
- obviate all stop crossings, all intersections, all 90° access, bicycle or pedestrian access and their hazards;
- allow personal and public vehicle speeds above 200 m.p.h. with complete safety;
- at once increase travel into cities and relieve congestion and glut of vehicles both moving and parked in densest areas;
- reduce death and injury from the present terrible toll to an irreducible minimum;
- provide total mass transit for all links and interfaces including airport to city, rail, stadium and ball park, exposition, to supplement or supplant all existing transportation with faster automated service;
- require no driver skill, competence, attention, alertness, soberness, ability, time or energy;
- allow inexpensive elevation over other traffic, buildings, obstacles;
- provide personal transit for everyone from home directly to destination and return without walking, parking or waiting at stations;
- give a new facility of higher speeds completely compatible for private vehicle, hired cab, public passenger bus and freight lorry from anywhere to anywhere automatically;
- be compatible with and superimposed upon, without interruption of, or interference with, existing roads, streets, rails, etc.;

- result in less cost for private and public vehicles and vehicle miles/hour, and right of way per mile;
- have wider road width maximum for freight vehicles; have unlimited weight carrying capacity for freight;
- permit 100% controlled access for all travel anywhere;
- obviate all pedestrian injury and death;
- allow increase in capacity by duplication of lanes vertically or horizontally inexpensively.

REFERENCES

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