

# Public Transportation System

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**Abstract** - A land transportation system for a vehicle that is supported and guided by air bearings. The vehicle requires no driver or motorman because a guideway determines the direction of travel, except at switch-points in the network. The vehicle is propelled by a linear synchronous motor when on the guideway. The linear synchronous motor primary is embedded in the guideway. A linear inductor alternator provides on-board electric power. A pair of linear induction motors are used to accelerate the vehicle from a station stop up to guideway synchronous speed, to provide a magnetically attractive element to permit switching in guideway tracks, and to provide dynamic braking when stopping at the destination station. No physical contact is required between the guideway and any part of the vehicle while in motion in order to produce tractive effort or for the generation of electric power on board the vehicle to supply auxiliaries such as a motor driving a fan, interior lights, and vehicle-to-wayside communications equipment.

**Key Words:** Public Transportation, Mass Transportation, System, Rapid, Personal

## 1. INTRODUCTION

With the improvement of the public transportation infrastructure, an increasing awareness of the environment, and the rising cost of gasoline, many people have begun using various forms of public transportation. Rather than using their own vehicles, people have increasingly used railway transportation, buses, and/or ferries for their travel needs. Because of this increase in use of public transportation, public transit planning systems have been developed. These systems provide users with directions to travel between a starting location to a destination location via various forms of public transportation. Typically, in these systems, a query including a starting location and a destination is received, and the transit planning systems provide step by step directions to reach the destination using one or more forms of public transportation. For example, the directions can include a sequence of which public transit vehicles (e.g., buses, trains, etc.) are used and which stops at public transit locations need to be made in order to reach the destination of the trip. The directions may include a transfer to another transit vehicle required at the different transit locations along the trip. Thus, the planning systems provide a mechanism that offers information for people to easily plan their trips using public transportation. Typically, to determine the directions for a trip, these conventional transit planning systems analyze, at query time, various routes between the starting and destination locations of the trip in order to determine the optimal path to reach the

destination. This approach is useful when there are a relatively small number of potential routes between the locations due to a limited number of available transit options. However, due to the expansion of the public transportation infrastructure and the ability to transfer between different transportation systems (e.g., transfer between a train and bus at a common station), the number of possible routes between any given starting location and destination location has grown significantly. Thus, the time needed during query time to calculate the optimal path to reach a destination has also increased dramatically thereby increasing the time that users have to wait to receive results.

### 1.1 Aim

This type of transportation system means the development of public transportation or Mass transportation will reduce traffic Congestion. This Transportation System Will Reduce environment pollution. It will create smooth transportation system and reduce travel time. Also provide sufficient comfortability while using the public transportation system.

### 1.2 Objective of Invention/Specific Problem Solved

Problem of traffic condition in peak hours in day due to heavy truck will have low cost fuel in night so they will travel in night and having low traffic congestion in day. Problem of Fuel and increases in the cost of fuel will decrease because it is economical as the cost and it is one of the renewable sources of fuel. It is the fast transportation system which based on electric power and running on magnetic force and easy way to travel. It is the most durable and fast personal transportation due to monorail system. It is the best ever fast transportation system of high-efficiency, continuous, electric powered transportation for urban areas comprise a plurality.

## 2. Brief about Invention

The basic need is a system of transportation that attains significant increase in the efficiency of transportation, including Practical alternative to vehicular traffic congestion; Practical alternative to air-polluting drives; Virtual elimination of prevailing danger and high rate of serious highway accidents that are inherent in masses of speeding vehicles under control of motorists who differ in ability, temper, judgment and physical condition. The disclosed system is based on a guideway track or "monorail" of deep channel or W configuration having an upraised carriage supporting rib or rail in the bottom of the channel with troughs or gutters on either side to collect water, dirt, etc. A pair of linear induction motors are used to accelerate the

vehicle from a station stop up to guide way synchronous speed, to provide a magnetically attractive element to permit switching in guide way tracks, and to provide dynamic braking when stopping at the destination station. No physical contact is required between the guide way and any part of the vehicle while in motion in order to produce attractive effort or for the generation of electric power on board the vehicle to supply auxiliaries such as a motor driving a fan, interior lights, and vehicle-to-wayside communications equipment. A slurry of particles of carbonaceous material in water, and hydrogen from an internal source, are fed into a hydro-gasification reactor under conditions whereby methane rich producer gases are generated and fed into a steam pyrolytic reformer under conditions whereby synthesis gas comprising hydrogen and carbon monoxide are generated. The remaining synthesis gas generated by the steam pyrolytic reformer is either used as fuel for a gaseous fueled engine to produce electricity and/or process heat or is fed into a Fischer-Tropsch or similar reactor under conditions whereby a liquid fuel is produced. Electric and hybrid electric automobiles have been proposed as "green" alternatives to fossil fuel-powered auto mobiles. These automobiles often are powered by a recharge able lithium-ion or nickel metal hydride battery incorporated in the vehicle. Consequently, use of electric and hybrid electric trucks has been limited to urban areas where the trucks are not required to travel long distances.

### 3. SUMMARY

This invention details a personal rapid transit concept, wherein a linear synchronous motor (LSM) propels a lightweight, four to six passenger vehicles at an approximately 20 miles per hour on an elevated guideway. The vehicle is suspended and guided by air bearings. Nothing on the vehicle physically touches the guide way. The linear synchronous motor (LSM), with its primary in the guideway, propels the vehicle at a constant speed. Hence the vehicle can be designed to be essentially passive, devoid of the accessories, sensors, and gadgets that are inherent in other propulsion systems. Such items are parasites that add weight and complexity, compromise reliability and maintainability, and increase costs of not only the vehicle but also the guide way and central computer system. In this concept a linear alternator is the source for vehicle heating, lighting, etc. Total weight of the vehicle loaded is 1740 pounds. Of that weight, 640 pounds is payload. This will accommodate four average-sized adults or any combination of adults and children whose total weight does not exceed that figure. The "personal" aspect of the now familiar term Personal Rapid Transit (PRT) is primary in this concept. The fact that hundreds of millions of personal automobiles have been marketed to the public is ample evidence that it prefers the size of vehicle adopted in the PRT system described here. This is a system of "on-demand" vehicles. Linear synchronous motors with the primaries "buried" in the guideway maintain a constant 20 mph in urban areas, with the option in outlying areas to run the same vehicle over a 40 mph guideway. No speed control electronics or computer feedback is required. The vehicle is

essentially passive; no third rail power pickups are in the guideway and only the reaction member of the LSM is in the vehicle. Suspension and guidance of the vehicle is accomplished by a type of air bearings presently manufactured for suspension only. Very little equipment is mounted on the vehicle. Power consumption is kept to an absolute minimum, a primary criterion of this concept. The vehicle does not stop or slow down until it reaches the destination chosen by the rider at the starting point. (An "off-at-the-next-stop" button could be incorporated in the vehicle, but not without extra cost and complexity.) It is therefore a primary object of this present invention to provide a transportation system employing small, light-weight vehicles, propelled efficiently and quietly on an elevated guideway, at a speed which is in synchronism with the traveling magnetic wave set up by commercial electric power.

Most appropriate way to reduce the traffic congestion in day time, less transportation cost that affect the market value of any material which related with transportation. Environmentally safe and efficient fuel costing, one of the best renewable sources. A land transportation system for a vehicle that is supported and guided by air bearings. The vehicle requires no driver or motorman because a guide way determines the direction of travel, except at switch-points in the network. Each driver can go quickly, conveniently and directly when he chooses from any point of origin to any desired destination without having to go to public stations, await public conveyance schedules, struggle through transfer points, and travel in discomfort. All of the cited needs can be met practically and economically by means of continuous, electric-powered, public transportation that is self-liquidating under moderate usage, and by all-electric, dual propulsion of automotive vehicles.

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