



ALDEN DAVe SYSTEMS (ADS)

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GREEN TRANSPORTATION SYSTEM

BREAKTHROUGH

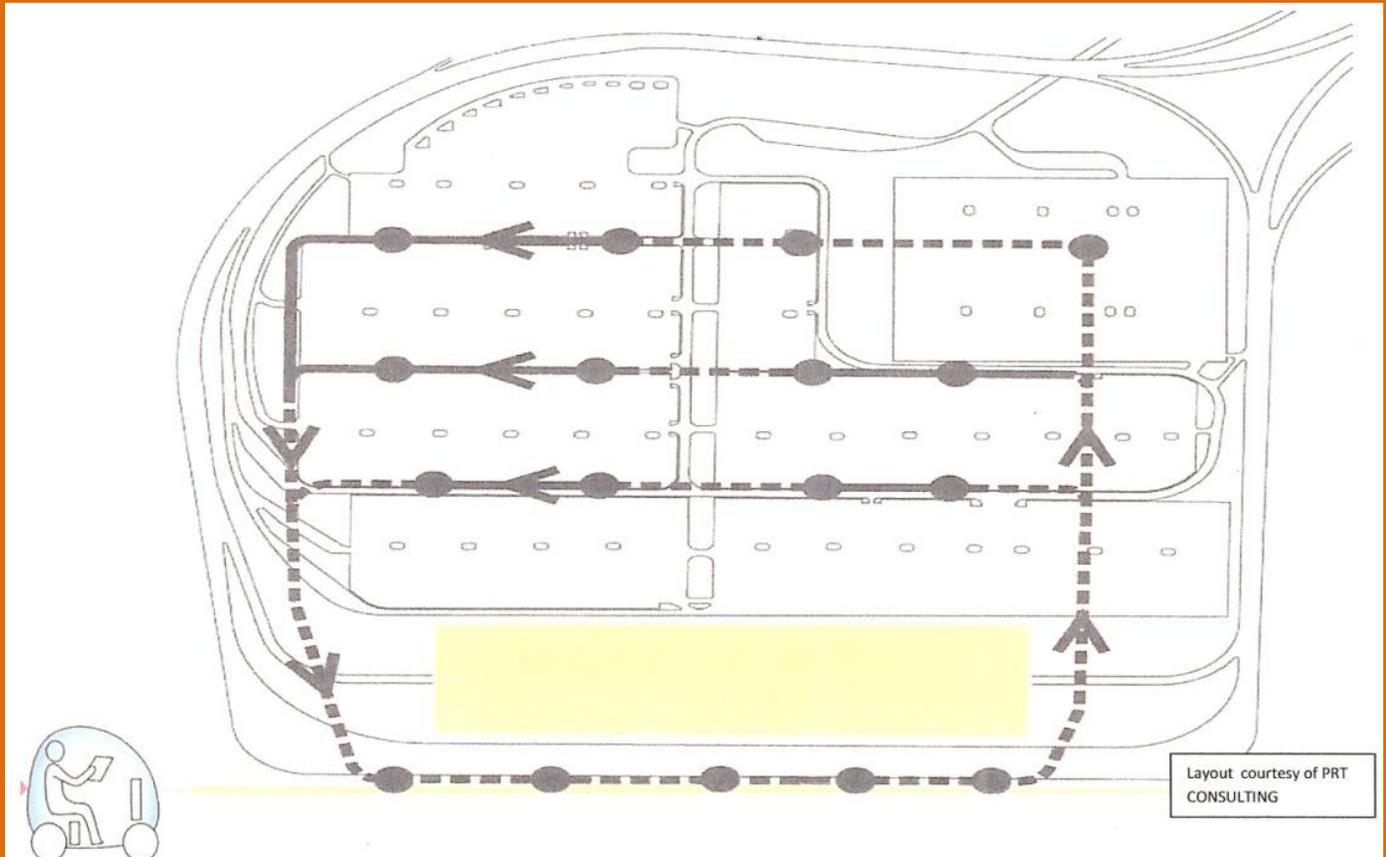
... ameliorating the ground transportation system crises with our simple, green system solution...

The DAVE (Dual-mode Autonomous Vehicle) System consists of a fleet of DAVes which can operate three ways:

- autonomously,
- under operator control,
- or under remote control from the CCC (Control and Communication Center).

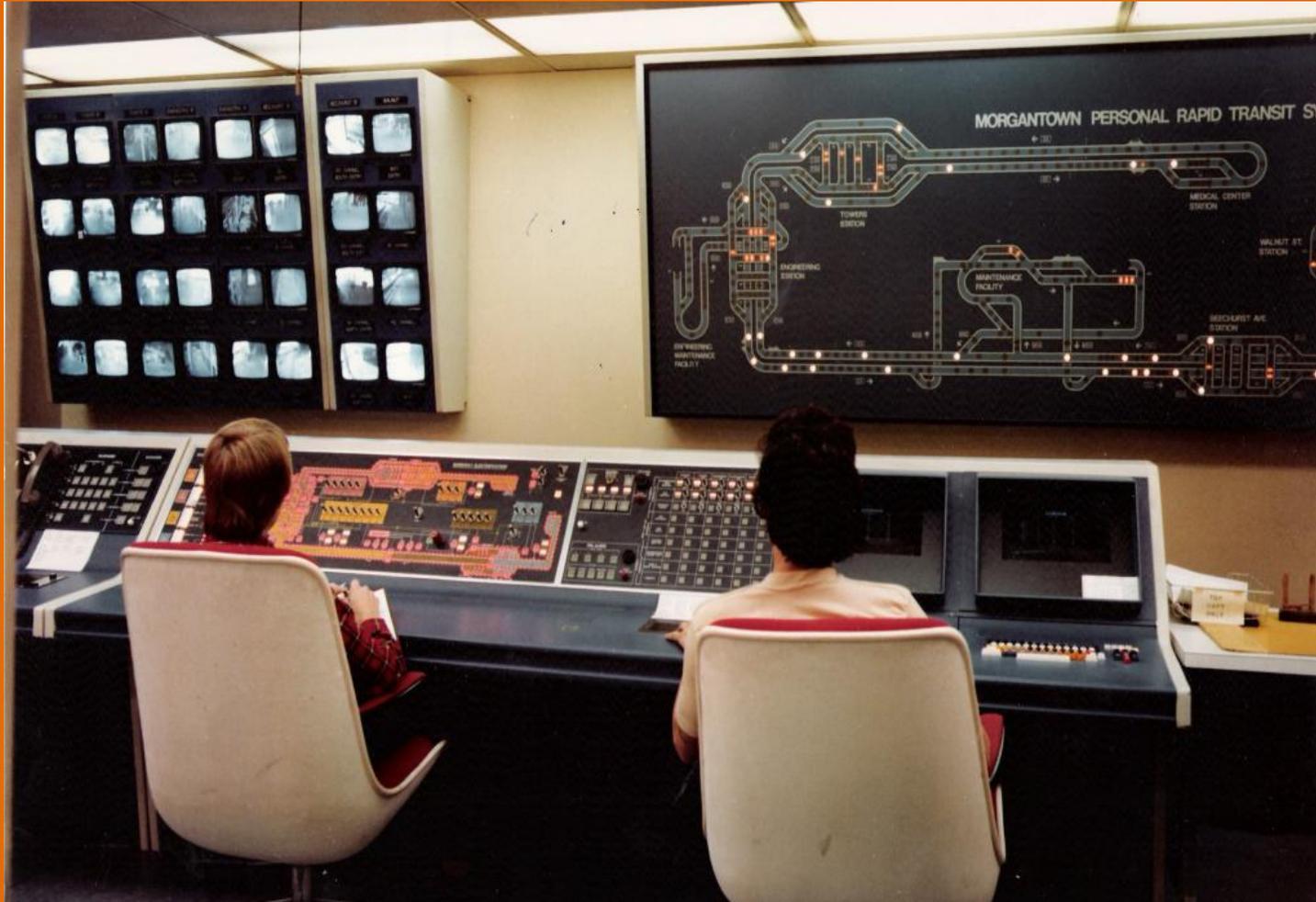
DAVE is a truly personal means of transportation, but it goes far beyond the capabilities of the Morgantown and other, present Personal Rapid Transit (PRT) systems.

Users can call a DAVE to their location with a mobile or landline phone and activate a DAVE with a credit or debit card. A DAVE follows a virtual map in its computer:



The DAVE can go from any one point to any other point on the “DAVEWay” routes.

DAVe has sensors that allow it to operate among pedestrians, vehicles and other obstacles. For safety and security, a DAVE also has 360 degree cameras which record people and activity within and around the vehicle. Like the automobile or taxi, the DAVE goes from where and when the passenger wants directly to where she/he wants. The central computer in the CCC provides safety redundancy and maximizes the utilization of the inventory of DAVes. Pictured below is the CCC in the forerunner Morgantown PRT system.



The technology for doing all this is available, and demonstrated in our, early YouTube DVD: <http://www.youtube.com/watch?v=IGzNS5roflo>

The community use of conveyances for short trips has been proven by such systems as Zipcar (<http://www.zipcar.com>), adding 3,000 members per month: http://www.boston.com/business/globe/articles/2006/08/13/zipcar_is_g geared_toward_growth) and Velib in Paris (80,000 renters/day, <http://wheels.blogs.nytimes.com/2009/02/11/vandalism-vexes-paris-bike-rental-system>). Some 50 cities have bike-sharing programs.



Two major improvements over these systems by DAVE are the minimization of vandalism provided by the in-vehicle monitoring, and the DAVE System automatically moving empty vehicles quickly, often from the most economic parking areas, and directly to where they are needed or will be needed.

ADS's design uses advanced, proven components and technology, and features, most significantly, software which enables the DAVE System to operate without infrastructure of any kind. The DAVes are far safer than manually controlled vehicles, because DAVE's detection of obstacles, and its response time is almost instantaneous, compared to the 2.5 seconds response time of humans. DAVE can sense the distance to an obstacle or person as it approaches such. It can decrease speed and, as necessary, apply braking. This type of control is shown in our aforementioned video.

The DAVes will drive on existing roads, multi-use lanes, sidewalks, alley ways, bike lanes/paths and pedestrian paths, as available and allowed, much like golf carts, Segways, scooters, LEVs, NEVs and bicycles do:

Open aisles available for DAVes at Logan Airport



And the same spaces at Baltimore-Washington International Airport:

Outdoor, available paths:



When DAVE, light-duty guideways do need to be built or elevated, the cost is still lower, compared to all competing PRT systems, and the aesthetics, far more attractive, as pictured below, in an artist's concept:



The elimination of station and guideways infrastructure represents a major capital cost reduction for installers of this System: of over 50%, compared to PRT. Our DAVE (Dual-mode



Autonomous Vehicle uses the space of a slightly enlarged, electrically-powered wheel chair and would go anywhere a powered wheelchair can go. The DAVE System will also operate other vehicles, such as this

solar, electric golf cart, and the standard, industrial utility vehicle and electric roadable car, such

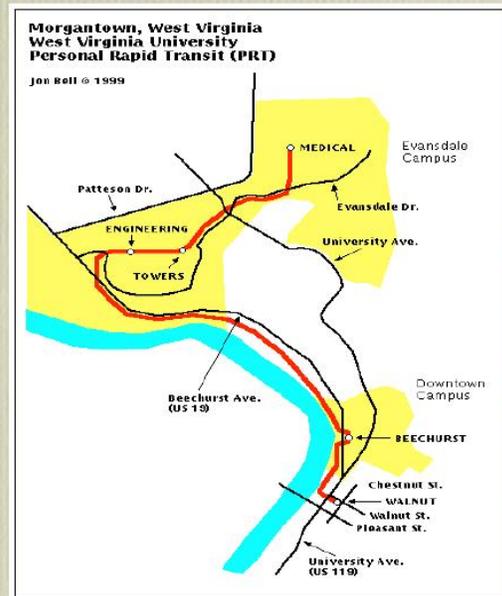


as the SmartCars as shown below:

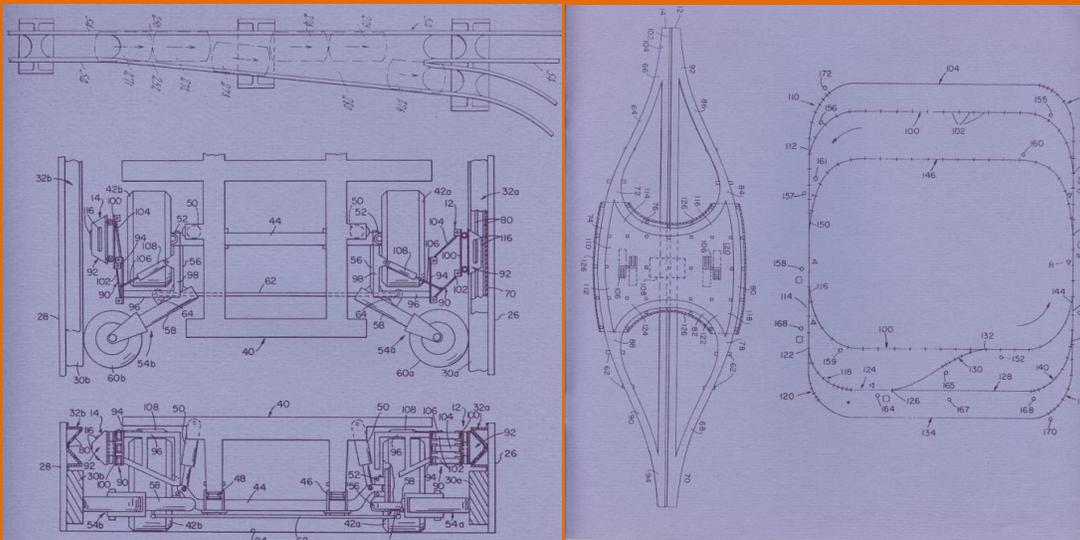


The basic system design work of ADS has been ongoing since 2004, using the requirements of Plymouth Rock Studio (PRS), University of Massachusetts/Dartmouth, Logan Airport, Foxwoods Casino, Falmouth/Woods Hole, San Jose, Santa Cruz and the Harvard/Allston/ Longwood medical campuses connection and others. Several of the ADS team were responsible for the concepts and some of the construction of the fully automated Personal Rapid System in Morgantown West Virginia (http://en.wikipedia.org/wiki/Morgantown_Personal_Rapid_Transit) . Boeing was the general contractor, brought in by Alden.

PRT at Morgantown, W. Va.



Below is the drawing from the patent on the Alden in-vehicle switch, used in the Morgantown PRT. This patent was one of 37 worldwide patents on different aspects of the system, including Morley's moving-cell, vehicle control system, shown to the right, below.



The top executives at the planned, \$400,000,000 Plymouth Rock Studios have met with ADS and have indicated that they wish to consider using the DAVe System. (See

<http://plymouthrockstudios.com/home.html> .) They wish to meet again as soon as the first shovel is in the ground.

Paramount Studio in Hollywood uses 350 golf carts to move people and material between the many soundstage studios. 100 DAVes might do the same amount of work at PRS because the dispatching of DAVes is optimized.

When a studio person needs a DAVE, she/he telephones for one. (Think of it as the “Dial-A-DAVe System”.) The nearest, idle DAVE is dispatched by the computer at the CCC. PRS will be in the business of renting studios and facilities to motion picture and TV/video production companies. The CEO of PRS stressed to us that these rentals have to produce profits for PRS.

A DAVE could be rented by the minute by the production companies. Thus, with material handling and transportation immediately available at the touch of a button, and only for the time they need it, they save money. Because facilities and production crews are often costing thousands of dollars per minute, the DAVE system puts money in their pockets for a win-win situation. The CEO at PRS feels that the studios in Hollywood are all good prospects for our DAVE System.

The University of West Virginia had savings with our PRT, simply by being able to schedule classes for students with only one intervening class session, even though the classrooms might be miles apart. They also saved by eliminating bus transportation for the students between campuses.

Some University of Massachusetts Dartmouth professors and executives met with us and saw these advantages, plus safety, especially for women at night, along with proper utilization of parking lots for students and faculty.

At Logan Airport, 60% of people surveyed were willing to pay five dollars or more for them to be taken, with their bags, from their cars in the parking garage directly to the terminal. Elimination of confusion, anxiety and personal safety concerns ranked high in their choice of this automatic transportation.

An industrial, earlier version of DAVE, namely AGV (Automated Guided Vehicles), from another company, is used at the University of Ohio Medical Center for moving trays of meals between the kitchen and the hospital, right among staff workers along corridors and on elevators. It has paid for itself in five years by replacing food handlers. This installation is shown in our afore-mentioned DVD.

At UMass/ Dartmouth and PRS, ADS has offered to be or find a concessionaire to finance the fleet of DAVes and installation of the CCC.

ADS will use off-the-shelf vehicles and supply electric and/or mechanical linkages to control their steering, speed and braking. Thus, these linkages and the software for the DAVE computers and the computer in the CCC are what ADS will provide. Once established, ADS will outsource all but the software development and maintenance. ADS will do all those things necessary to make a sale: marketing, selling, arranging individual system financing or concessionairing, if desired by the customer.