

# America Needs Maglev

**America Can't Afford to Waste \$Trillions Building Obsolete, 20th Century Transportation Networks. America MUST Leap Ahead with Revolutionary New Transportation Technologies.**



## Powell-Danby 2nd Generation Maglev Key Facts:

- Invented in America and built by Americans.
- 350 MPH, all-electric, and 100% sustainable.
- 2nd generation tech is both passenger and freight capable.
- One national maglev network could handle projected increase in highway, rail, and air traffic to 2100, for 50% the cost of expanding 3 existing networks.
- Roll-on / Roll-off truck capable: lowers US truck freight costs 50% or more, on-board charging, solves last-mile problems.
- 10-hour truck delivery to any point in the US, coast to coast.
- Freight: much cheaper than highway or air, competitive with rail.
- Passenger: cheaper and faster than air for 90% of all travel.
- Lowest cost operation & maintenance. Saves taxpayers hundreds of billions per year.
- Low risk technology -- tested extensively in Japan.
- Can use existing highway, rail, and power easements / rights-of-way. Easy migration pathway from old networks to new.

## Maglev for Jobs And Industry

- Millions of new jobs in manufacturing, construction, and operations
- Decrease transportation & logistics costs for almost all US industry 50%
- Empower small business by providing national logistics at same low price

## Maglev for Green America

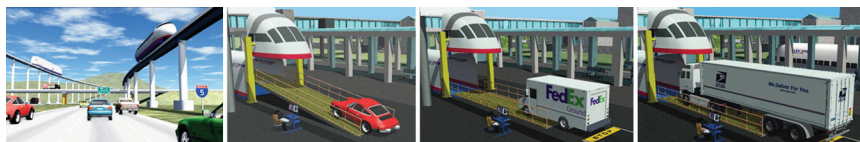
- Most energy efficient electric powered ground transportation technology possible
- Zero-pollution, silent, carbon-free can be powered by 100% renewable
- Non-contact, zero friction system ensures long system life

## Maglev for Everyday Americans

- Enables smart city design, reduces sprawl, less time in traffic
- Dramatically lowers average annual personal transportation expenses
- Lower state and federal taxes
- Less highway deaths

## America 2050 and Beyond

America's Economic and National Security absolutely depend on deploying the world's best transportation infrastructure. Even if we spend trillions of dollars repairing and expanding our highway, rail and aviation networks, we can only (at best) match competitors like China. More likely, we will fall further and further behind. Moreover, China, Japan, Korea, and India are all developing future transport options like maglev and hyperloop. We cannot let America fall behind!



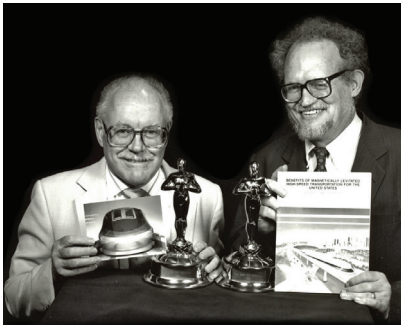
Maglev presents America with the chance to chart a new transportation future. Maglev will provide a uniquely powerful, integrated, and flexible transportation backbone to all modes of American transport. Do you want nationwide, just-in-time truck freight at very low cost? Maglev can do that. Do you want urban/suburban/intercity networks integrated with ridesharing networks of autonomous vehicles? Maglev can do that. Do you want a green, transit-oriented development strategy which does not leave small towns behind? Maglev can do that. Do you want to unleash American industry by vastly improving nationwide transportation and logistics. Maglev can and will accomplish all these things.

**WHAT WE ASK:** Protect America's future economic prosperity. Ensure that America, in its rush to repair failing infrastructure networks, does not lock America into obsolete transportation models. In addition to repairing existing transport infrastructure, we must: 1) Explicitly mandate DOT to develop next generation transport BEYOND highway, air, and rail legacy technologies. 2) Fund a National Levitated Transport Testing Center to competitively research, develop, and test all forms of levitated transport (maglev, hyperloop, etc.) and develop standards for next generation national networks.



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# Superconducting Maglev: Made in America



Our vision of 21st Century transport is based on the original Maglev inventions of Drs. James Powell and Gordon Danby in the 1960's and their continued work on a new, lower cost, 2nd generation system that can carry trucks, autos, and other freight as well as passengers. Using prefabricated, mass-produced monorail guideway beams and piers, 2nd generation Maglev routes can be quickly and easily erected alongside the Interstate Highways. Using flat panels placed on existing railroad tracks, frictionless Maglev vehicles can quietly glide into dense urban centers without having to expensively re-do existing infrastructure.

For their invention of Maglev, Powell and Danby were awarded the prestigious Benjamin Franklin Medal for Engineering in April 2000, in the company of the Wright Brothers, Albert Einstein, Werner Von Braun, Alexander Graham Bell, Nikola Tesla and other American giants of science and technology.

The engineering design of Powell and Danby's superconducting Maglev system has already been proven by Japan. Prototype magnets for the much more capable Quadrupole magnets have been designed, built, and tested for magnetic power. Our engineering improvements for the 3rd generation includes High Temperature Superconducting (HTS) wire for construction of the magnets, this will permit using much lower cost liquid nitrogen as a coolant for the magnets rather than liquid helium, and operate at lower cost, for the 3rd Generation HTS Maglev 2000 system.

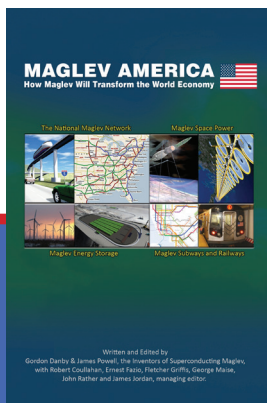
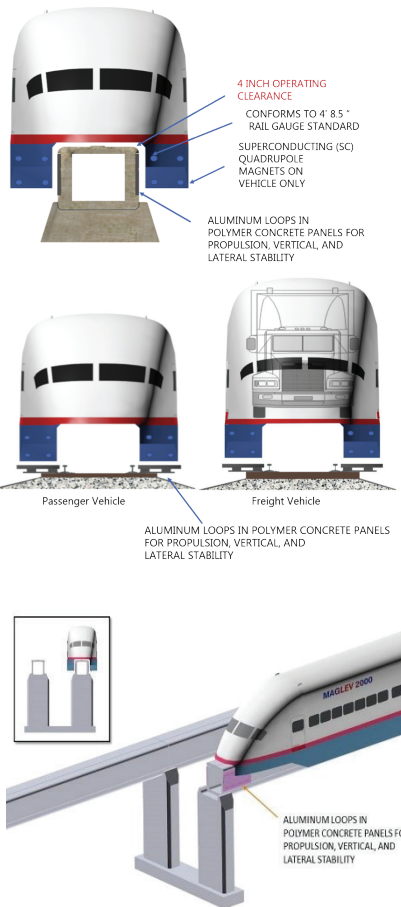
The new Maglev2000 offers unique enhanced capabilities over all other system, including:

- Powerful Quadrupole superconducting magnets that can transport trucks, autos, as well as passengers at an average speed of 300 mph,
- Levitated travel above existing conventional railroad tracks, adapted for Maglev at exceptionally low cost and without operational interference with the operation of conventional wheeled equipment,
- Unique electronic switching without mechanical movement of guideways.
- Much lower cost and faster guideway erection using prefabricated components, manufactured, and delivered to construction sites,
- Large revenues from truck transport, enable the construction of a National Maglev Network with private investment that can operate without government subsidies.

The aluminum loop guideway panel provides vertical lift and stability, lateral stability, and linear synchronous propulsion. It has 3 sets of multi-turn aluminum loops: 1) a sequence of 4 short independent Figure of 8 loops; 2) a sequence of 4 short dipole loops; and 3) 1 long dipole loop. When the panels are mounted on the vertical sides of the monorail guideway beam, the Figure of 8 loops provide levitation and vertical stability.

A guideway consists of a beam (girder) and two levitation (guidance) rails. Guideways can be constructed at grade (ground-level) or elevated including columns with concrete, steel, or hybrid beams. Maglev elevated guideways minimize land occupation and prevent collision with other forms of traffic at-grade intersections. Low-cost guideways are designed and constructed as single or double tracks. Guideways are configured to enable communications and power distribution services, including electric vehicle (EV) charging stations.

To remain economically competitive, make our highways safer, and increase the efficiency of our logistics system, the United States must develop its own ultra-high-speed, all-weather, all-electric, 30,000-mile-long Interstate Maglev Network, capable of carrying passenger vehicles, delivery vans and highway freight trucks in roll-on, roll-off vehicles that would connect all major cities in the lower 48 States.



To explore this vision and understand the available technologies and benefits:

Powell, James, Gordon Danby, James Jordan, Robert Coullahan, Ernie Fazio, Bud Griffiths, George Maise and John Rather, Maglev America: How Maglev Will Transform the World Economy



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