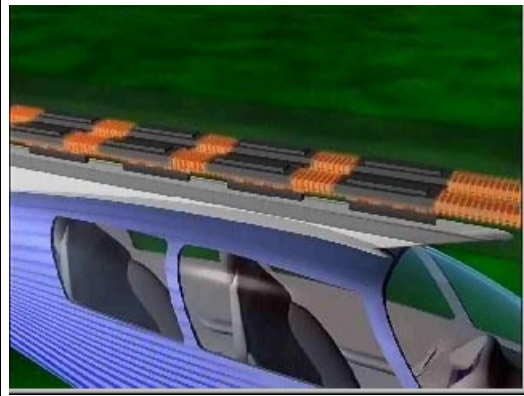


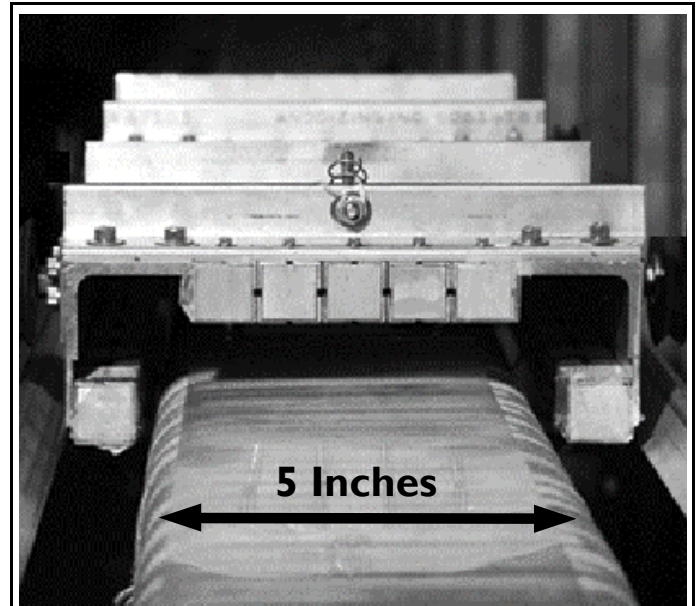
Maglev Technology The “Wheel” of the 21st Century



SkyTran’s PRT vehicle design is the first ever proposed that eliminates the use of wheels and mechanical rotary bearings. This revolutionary approach is possible by incorporating magnetic levitation (maglev) as a non-contact, no-friction bearing system that slashes costly maintenance because there are no moving parts to fail. Propelled by a linear motor, the vehicle requires no active electrical input for the magnets to levitate down the guideway at speeds of up to 150 mph. Energy efficiency is equivalent to a 200 mpg auto.

SkyTran uses a revolutionary maglev technology that stably rides an induced magnetic wave without requiring active electrical input to levitate. Unlike conventional active electrical input systems like the German Transrapid and Japanese HSST technologies, SkyTran’s breakthrough approach allows for the design of elegant and compact linear motor/magnetic bearing suspension devices without the complex feedback systems and auxiliary power supplies required by conventional maglev.

The magnetic bearings being developed for use in SkyTran use high performance permanent magnet materials combined with embedded conductive elements to provide an unprecedented combination of performance, safety, durability and economy. This approach is passively stable both laterally and vertically by improving upon the basic principle of electrodynamic suspension, producing lift from forward motion but also producing lateral centering forces to keep vehicles stable and on track without active control or unwanted vertical planar components that would hinder merging or diverging. And while in motion the vehicles are rigidly and precisely fixed in the vertical dimension by powerful repulsive magnetic forces and can carry wide ranging loads without requiring adjustment. These features allow the design of guideways that employ passive and fail-safe merge/diverge high speed switching operated solely by solid state devices on the vehicles—a technical achievement impossible to implement with conventional maglev designs. These proprietary switching methods are key to SkyTran’s vehicle design. This arrangement allows for reduced guideway structural requirements and allows the safe use of under hanging vehicles which bank naturally in response to turning forces, providing greatly improved passenger comfort, higher cornering speeds, switching speeds and reduced torsion on guideway support structure.



This photograph of an actual test of the first generation proprietary maglev technology used in SkyTran successfully demonstrated sustained, stable levitation and the feasibility of the compact bearing and guideway concept.

In the event of a catastrophic power loss, vehicles continue to levitate while gliding gently down to a low speed before settling onto the track surface unlike conventional maglev designs. The complete lack of moving parts in both guideways and vehicles along with non-contact, friction-free vehicle motion ensures the highest level of reliability with extremely low maintenance requirements. Tightly integrated propulsion is by either linear synchronous or linear induction motors, or both depending on the application. High force and power capabilities enable rapid acceleration and steep grade climbing. Regenerative braking capability like that used in hybrid automotive vehicles improves overall system efficiency.