Maglev Landing Aircraft: Reduction in Landing Accidents

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It is important to seek alternatives to eliminate airborne accidents caused by difficulties mostly in the landing of an aircraft. This problem can be eliminated by creating auxiliary maglev system that helps in the deceleration, levitation and stability of the aircraft during landing. To test the effects of the electromagnetic field in: deceleration, levitation, and stabilization of the aircraft on landing; a prototype runway of neodymium magnets configuration with a lineal synchronous motor was created. Also the prototype plane was fitted with magnets. Three sections of 20 tests each were conducted. In the first section the prototype of the plane landed on the runway without the magnetic field. In the second section the prototype landed with neodymium magnets and in the third section with an electromagnetic field in the runway. In the first section the effect on the deceleration was unstable. In the second section the effect was more stable in the deceleration of the aircraft. However, in the third section the landing of the aircraft had more deceleration and stability, there was also levitation during dampening of the landing gear. It was concluded that the maglev landing system has the effect of slowing the plane which helps the landing to be more stable and secure. Inductrack runway achieved 46% more stability than normal landing, 34% more deceleration than normal landing and 42% less braking distance than normal landing. In future research, more tests will be done to check its effectiveness. System sustainability on aircraft carriers will also be investigated.

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