REVIEW ON DETACHABLE CABIN USING MAGNETIC FIELD INAEROSPACE APPLICATION

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***Abstract*— Undoubtedly one of the greatest human desires or dream is to fly on the sky with over a specific speed, time , safety and quality, but in the some case the plane will get crash due to a very small technical fault or transform the weather and flight control or human error etc. Finally we are getting one doubt is it possible to survive a plane crash??,Yes its 100% possible ,by using the aircraft with a capsule to save all passengers along with their luggage with the help of magnetic field to detach the cabin from the airplane during emergence.**

Keywords— Aircraft, flight safety, waste system, magnetometer, parachutes, boosters, rubber tubes

I. INTRODUCTION

The history of aircraft structures underlies the history of aviation in general. Advances in materials and processes used to construct aircraft have led to their evolution from simple woodtrussstructurestothesleekaerodynamicflyingmachines of today. Combined with continuous power plantdevelopment, the structures of "flying machines" have changedsignificantly. The key discovery that "lift" could be created by passing air over the top of a curved surface set the development of fixed and rotary-wing aircraft in motion. George Cayley developed an efficient cambered airfoil in the early 1800s, as well as successful manned gliders later in that century. He established the principles of flight, including the existence of lift, weight, thrust, and drag. It was Cayley who first stacked wings and created a tri-wing glider that flew a man in1853.

An aircraft is a device that is used for, or is intended to be used for, flight in the air. Major categories of aircraft are airplane,rotorcraft,glider,andlighter-than-airvehiclesEachof these may be divided further by major distinguishing features of the aircraft, such as airships and balloons. Both are lighter-than-air aircraft but have differentiating features and are operated differently. The most common aircraft is the fixed-wing aircraft. As the name implies, the wings on this type of flying machine are attached to the fuselage and are not intended to move independently in a fashion that results in the creation of lift. One, two, or three sets of wings have all been successfullyutilized.

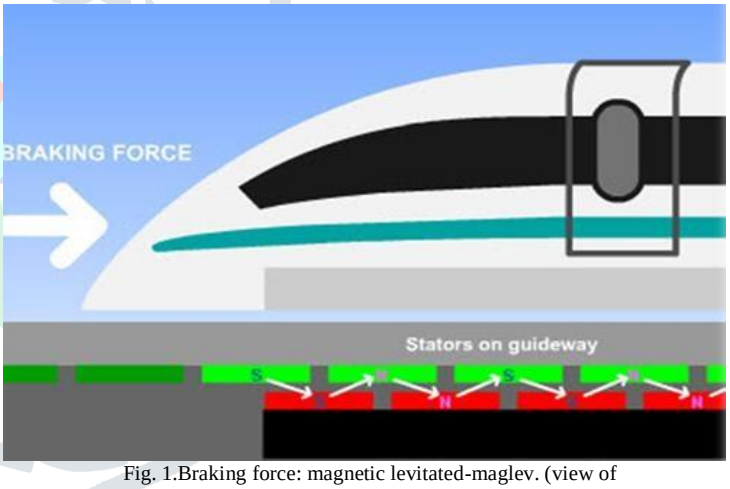


Fig. 1.Braking force: magnetic levitated-maglev. (view of electromagnets on train)

The simplest laws of physics can free the largest and most complex human issues. In this project, using the laws of magnetism (adsorption and desorption) and modeling of the magnetic trains (Maglev), is trying a new way to save and exit of passengers from aircraft invented the sky is falling

II. EXPERIENTAL DETAILS

When the two magnets of the same poles are brought together, they will repels each other as show in below fig2.

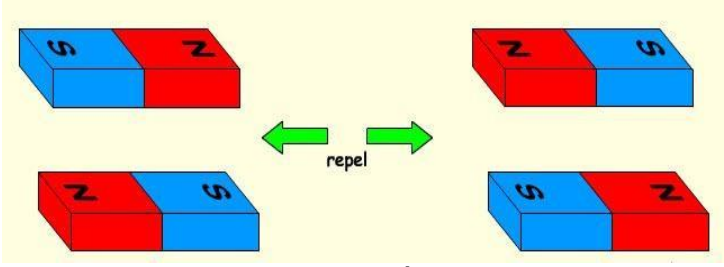


Fig.2. repeling

When the two magnets of the different poles such as north pole of the one facing and the south pole of the other, they will attract each other as shown in below fig3.

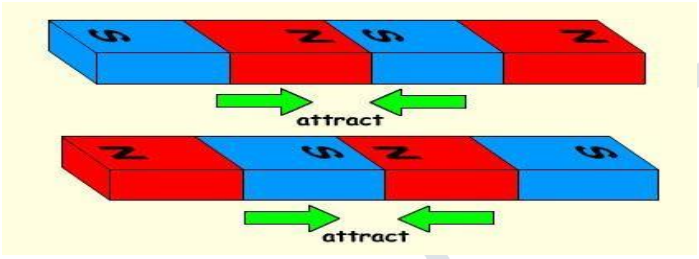


Fig.3. attracting

Aircraft structural members are designed to carry a load or to resist stress. In designing an aircraft, every square inch of wing and fuselage, every rib, spar, and even each metal fitting must be considered in relation to the physical characteristics of the material of which it is made. Every part of the aircraftmust be planned to carry the load to be imposed upon it. The determination of such loads is called stress analysis. Although planning the design is not the function of the aircraft technician, it is, nevertheless, important that thetechnician understand and appreciate the stresses involved in orderto avoidchangesintheoriginaldesignthroughimproperrepairs.

The electromagnets in many EMS(electromagnet suspension)and EDS(Electrodynamic suspension) designs requires between 1 and 2 kilowatts per ton. The use of superconductor magnets can reduced the electromagnets energy consumption. Example for A 50 ton transrapid maglev vehicle can lift an additional 20 tons for a total of 70 tons, generally which consumes 70KW to 140KW [94-188hp] most energy use for the TRI is for propulsion and overcoming air resistance at speeds over 100mps(180 km/h).

Figure4 shows a system that was introduced by a German scientist. Its system is called Trans rapid .This design uses EMS technology. EMS is also known as electromagnetic suspension altering. EMS systems use the attractive property of magnets as shown in figure3. Since the same pole of magnets attracted to each other, the stator and support magnets are attracted to each other in figure3. It causes the train to not land on the track. It adjusts the power of the magnetic field produced by electromagnets that levitate an object into the air.

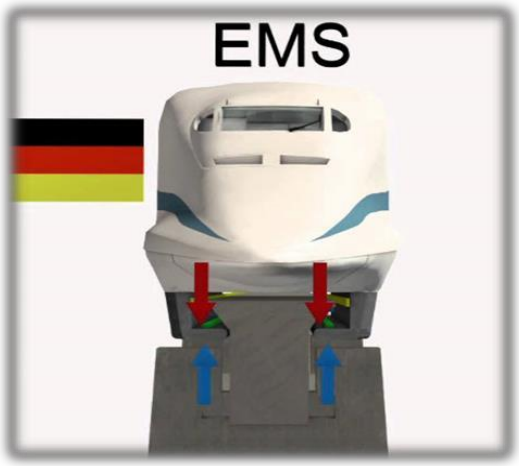
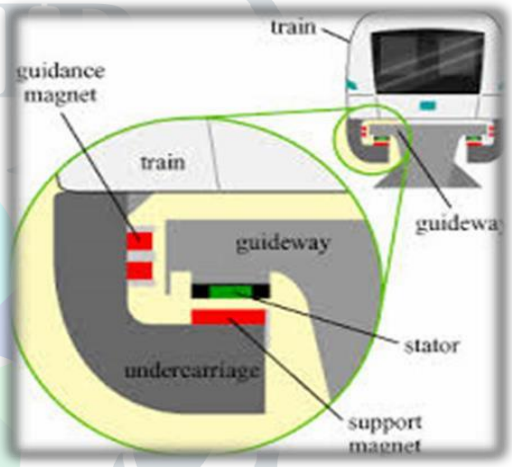


Fig.4. a) EMS system



a

b) guidance magnet on the side of the track

Asshowninfigure4,thereisaguidancemagnetontheside of the track that generates the magnetic force that prevents the train from moving side to side. It also designed as the C-form to keep the train in the bounce. As shown in the figures5 and6,thetraincan'ttouchanysideofthetracklevitatinginthe air because of the magnetic force pushing the train to the middle.

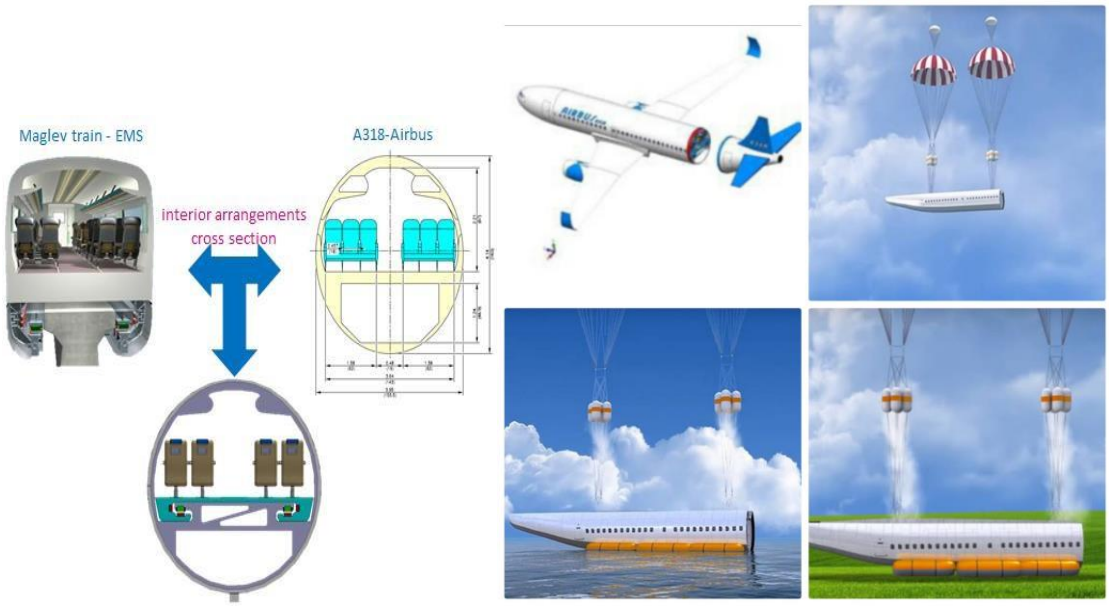


Fig.5. interior arrangements cross section

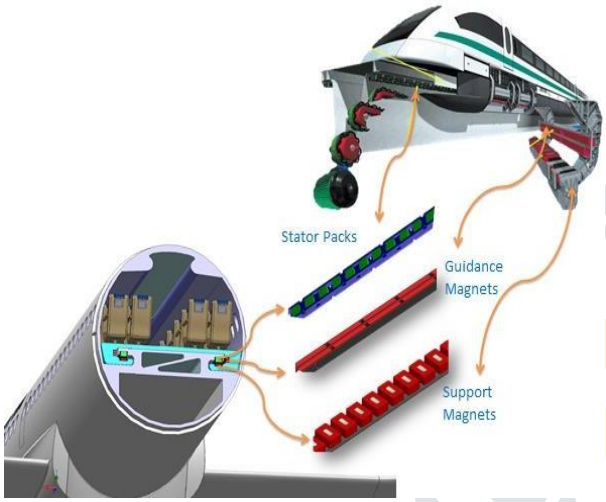


Fig.6. A view of the magnetic pressure

III. EXPECTED OUTCOME

Fig.8. result of new design 2

Finally, if the air when the plane crashed, the magnetic pressure is activated by using the 250 to 300 KW of powerand the passenger seat along with the 160 to 200 ton of the cabin or capsule would detach from the rest of the plane and safely land on the ground or water with aid of attached parachutes, boosters and rubber tubes which would automatically inflate on water.

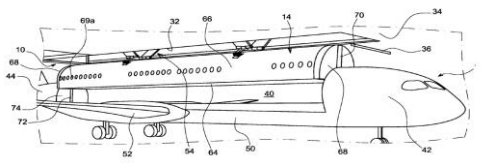


Fig.7. result of new design1

As literature survey reveals that the present design plane are capable of producing around 1000KW electric power. As such in The 'Boeing 787' is the most electric aircraft currently in service. It has two alternators for each of its two engines, each alternator generating 350 kW. Maximum production capacity is 1,000 kW, enough to light and power all the homes in a town with a population of around 2000.The electromagnets train in many EMS & EDS design requires only between 1 to 1.25 KW per ton but by use of super conductor magnets can reduced the electromagnetic energy consumption.

ACKNOWLEDGMENT

We would like to thank Asst. professors Mr. Nagaraj sir, Mr. Vidaydar sir and Mr .Madhusudhan Reddy sir, Head Of The Mechanical Department, The Oxford College of Engineering Bengaluru, for them full support&co-opertion to make this conceptual design.

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