CLAIMS

1. A method, comprising:

   obtaining data related to an amusement ride vehicle disposed on a track and a compound curve portion of the track via one or more sensors;

   determining, via a processor, a selected reaction plate of a plurality of reaction plates to actuate based on the obtained data using a closed-loop system to maintain an air gap between the plurality of reaction plates and a linear induction motor (LIM) installed in the track; and

   actuating actuators coupling the selected reaction plate to a side of the amusement ride vehicle, as determined throughout traversal of the compound curve portion of the track by the amusement ride vehicle, to bend the selected reaction plate to maintain the air gap below an air gap threshold distance throughout the traversal of the compound curved portion.

2. The method of claim 1, wherein the one or more sensors comprise proximity sensors coupled to the amusement ride vehicle, wherein the proximity sensors are configured to obtain data related to the air gap between the plurality of reaction plates and the LIM.

3. The method of claim 1, wherein the LIM comprises linear coil windings installed in a ferrite core.

4. The method of claim 1, comprising utilizing the one or more sensors to send feedback to the processor, the feedback including changes in the air gap after the actuators actuate at a segment of the compound curve portion, so the processor can account for the changes in subsequent actuations at the segment of the compound curve portion.

5. The method of claim 1, wherein the selected reaction plate comprises a flexible material, and wherein actuating the actuators to bend the selected reaction plate comprises actuating the actuators to bend the flexible material of the selected reaction plate.

6. The method of claim 1, wherein the side of the amusement ride vehicle comprises a bottom of the amusement ride vehicle.

7. The method of claim 1, wherein the selected reaction plate includes a bottom side made of aluminum that faces the LIM and a top backing plate made of iron.

8. The method of claim 1, comprising determining, based on the data obtained from the one or more sensors, an amount of power to supply to the LIM throughout the traversal of the compound curve portion of the track by the amusement ride vehicle.

9. A method, comprising:

obtaining data related to positioning of an amusement ride vehicle relative to a compound curve portion of a track via one or more sensors;

determining, via a processor, a selected reaction plate of a plurality of reaction plates to actuate based on the obtained data using a closed-loop system to maintain an air gap between the plurality of reaction plates and a linear induction motor (LIM) installed in the compound curve portion of the track; and

actuating actuators coupling the selected reaction plate to a side of the amusement ride vehicle, as determined throughout traversal of the compound curve portion of the track by the amusement ride vehicle, to bend the selected reaction plate along a longitudinal axis of the selected reaction plate, a latitudinal axis of the selected reaction plate, or both to maintain the air gap below an air gap threshold distance throughout the traversal of the compound curved portion.

10. The method of claim 9, wherein the one or more sensors comprise proximity sensors coupled to the amusement ride vehicle, wherein the proximity sensors are configured to obtain data related to the air gap between the plurality of reaction plates and the LIM.

11. The method of claim 9, wherein the LIM comprises linear coil windings installed in a ferrite core.

12. The method of claim 9, comprising utilizing the one or more sensors to send feedback to the processor, the feedback including changes in the air gap after the actuators actuate at a

segment of the compound curve portion so the processor can account for the changes in subsequent actuations at the segment of the compound curve portion.

13. The method of claim 9, wherein the side of the amusement ride vehicle comprises a bottom of the amusement ride vehicle.

14. The method of claim 9, comprising determining, based on the data obtained from the one or more sensors, an amount of power to supply to the LIM throughout the traversal of the compound curve portion of the track by the amusement ride vehicle.

15. A method, comprising:

obtaining data related to an amusement ride vehicle disposed on a track and a compound curve portion of the track via one or more sensors;

determining, via a processor, a selected reaction plate of a plurality of reaction plates to actuate based on the obtained data using a closed-loop system to maintain an air gap between the plurality of reaction plates and a linear induction motor (LIM) installed in the track, wherein the selected reaction plate comprises a flexible material; and

actuating actuators coupling the selected reaction plate to a side of the amusement ride vehicle, as determined throughout traversal of the compound curve portion of the track by the amusement ride vehicle, to bend the flexible material of the selected reaction plate to maintain the air gap below an air gap threshold distance throughout the traversal of the compound curved portion.

16. The method of claim 15, wherein the one or more sensors comprise proximity sensors coupled to the amusement ride vehicle, wherein the proximity sensors are configured to obtain data related to the air gap between the plurality of reaction plates and the LIM.

17. The method of claim 15, wherein the LIM comprises linear coil windings installed in a ferrite core.

18. The method of claim 15, comprising utilizing the one or more sensors to send feedback to the processor, the feedback including changes in the air gap after the actuators actuate at a segment of the compound curve portion so the processor can account for the changes in subsequent actuations at the segment of the compound curve portion.

19. The method of claim 15, wherein the side of the amusement ride vehicle comprises a bottom of the amusement ride vehicle.