CLAIMS

~~What is claimed is:~~

1. A theater system, comprising:
    a. a theater housing;
    b. a theater seating assembly disposed at least partially within the theater housing, the theater seating assembly comprising:
        i. a seat support seat support base (110, 210a, 210b,210c,201d);
        ii. a first seat support (100a,200a), comprising:
            1. a first lift arm (120a, 220a) pivotally connected to the seat support seat support base (210a,210b);
            2. a first lift arm actuator (130a, 221a) operatively connected to the first lift arm (220a);
            3. a first passenger seat beam rotator (140a,240a) operatively connected to the first lift arm (220a) distally from the seat support base (110,210a,210b,210c,210d); and
            4. a first passenger seat beam rotator actuator (141a,241a) operatively connected to the first passenger seat beam rotator (140a,240a), the first passenger seat beam rotator actuator (141a,241a) operative to effect a change in passenger seat row pitch independently of rotation of the first lift arm (120a,220a);
        iii. a second seat support (100b,200b) disposed distally from the first seat support (100a,200a) in a mirror configuration with respect to a seat axis

defined by a longitudinal distance between the first seat support (100a,200a) and the second seat support (100b,200b), comprising:

1. a second lift arm (120b,220b) pivotally connected to the seat support seat support base (110,210a,210b,210c,210d); and
2. a second lift arm actuator (130b,221b) operatively connected to the second lift arm (120b,220b) and configured to coordinate movement of the second lift arm with the first lift arm;
3. a second passenger seat beam rotator (140b,240b) operatively connected to the second lift arm (120b,220b); and
4. a second passenger seat beam rotator actuator (141b,241b) operatively connected to the second passenger seat beam rotator (140b.240b) distally from the seat support base (110,210a,210b,210c,210d), the second passenger seat beam rotator actuator (140b,241b) operative to effect a change in passenger seat row pitch independently of rotation of the second lift arm (120b,220b) cooperatively with the first passenger seat beam rotator actuator (140a,241a);

iv. a passenger seat assembly (160,260) operatively connected to the first passenger seat beam rotator (140a,240a) and to the second passenger seat beam rotator (140b,240b), the passenger seat assembly (160,260) disposed substantially parallel to the seat axis, the passenger seat assembly comprising a passenger seating area; and

v. a system controller (70, 201,202) operatively in communication with the first lift arm actuator (121a,221a), the second lift arm actuator (121b,221b), the first passenger seat beam rotator actuator (141a,241a), and the second passenger seat beam rotator actuator (141b,241b), the system controller operative to coordinate movement of the first lift arm and the second lift arm in their respective X-Y planes while simultaneously effecting a change to ~~the~~ a pitch angle of the passenger seat assembly; and

c. an audiovisual projector operatively in communication with the system controller.

2. The theater system of Claim 1, wherein a predetermined portion of the passenger seat assembly extends outward and through an aisle area on each side of the passenger seat assembly into left and right equipment spaces where they then attach to the rotators.

3. The theater system of Claim 1, wherein the housing further comprises a floor, a portion of the floor elevated with respect to a predetermined portion of the passenger seat assembly to promote shielding of dropped objects from an upper passenger seating area of the passenger seat assembly to a lower passenger seating area of the passenger seat assembly.

4. The theater system of Claim 1, further comprising a fixed canopy disposed over each passenger seating area of the passenger seat assembly which moves with its associated passenger seating area.

5. A method of providing a theater experience using a theater system comprising a theater housing; a theater seating assembly disposed at least partially within the theater housing, the theater seating assembly comprising a seat support seat support base (110, 210a, 210b,210c,201d), a first seat support (100a,200a), comprising a first lift arm (120a, 220a)

pivotally connected to the seat support seat support base (110, 210a,210b); a first lift arm actuator (130a, 221a) operatively connected to the first lift arm (120a,220a); a first passenger seat beam rotator (140a,240a) operatively connected to the first lift arm (220a) distally from the seat support base (210a,210b,210c,210d); and a first passenger seat beam rotator actuator (141a,241a) operatively connected to the first passenger seat beam rotator (240a), the first passenger seat beam rotator actuator (141a,241a) operative to effect a change in passenger seat row pitch independently of rotation of the first lift arm (120a,220a); a second seat support (100b,200b) disposed distally from the first seat support (100a,200a) in a mirror configuration with respect to a seat axis defined by a longitudinal distance between the first seat support (100a,200a) and the second seat support (100b,200b), comprising a second lift arm (120b,220b) pivotally connected to the seat support seat support base (110,210a,210b,210c,210d); and a second lift arm actuator (130b,221b) operatively connected to the second lift arm (120b,220b) and configured to coordinate movement of the second lift arm with the first lift arm; a second passenger seat beam rotator (140b,240b) operatively connected to the second lift arm (120b,220b); and a second passenger seat beam rotator actuator (141b,241b) operatively connected to the second passenger seat beam rotator (140b,240b) distally from the seat support base (110,210a,210b,210c,210d), the second passenger seat beam rotator actuator (140b,241b) operative to effect a change in passenger seat row pitch independently of rotation of the second lift arm (120b,220b) cooperatively with the first passenger seat beam rotator actuator (141a,241a); a passenger seat assembly (160,260) operatively connected to the first passenger seat beam rotator (140a,240a) and to the second passenger seat beam rotator (140b,240b), the passenger seat assembly (160,260) disposed substantially parallel to the seat axis, the passenger seat assembly comprising a passenger seating area; and a system controller (70, 201,202)

operatively in communication with the first lift arm actuator (121a,221a), the second lift arm actuator (121b,221b), the first passenger seat beam rotator actuator (141a,241a), and the second passenger seat beam rotator actuator (141b,241b), the system controller operative to coordinate movement of the first lift arm and the second lift arm in their respective X-Y planes while simultaneously effecting a change to ~~the~~ a pitch angle of the passenger seat assembly; and an audiovisual projector operatively in communication with the system controller, the method comprising:

a. positioning the first lift arm and the second lift arm and rotating the passenger seat assembly to a passenger boarding position sufficient to allow a passenger to sit in the passenger seat assembly;

b. allowing a passenger to board the passenger seat assembly;

c. using the system controller to substantially synchronously control the first lift arm and the second lift arm via their associated arm actuators to effect a motion of each arm with respect to the seat support base by adjusting an angular relationship between a first lift arm lowered position to a second lift arm raised position at a first predetermined set of times; and

d. using the system controller to substantially synchronously control the first passenger seat beam rotator and the second passenger seat beam rotator via their associated passenger seat beam rotator actuators to adjust an angular relationship between the first lift arm and the second lift arm and their associated passenger seat beam rotators rather than pivoting the passenger seat assembly with a rotating floor.

6. The method of providing an immersive theater experience of Claim 5, wherein altering positions of the passenger seat assembly occurs while a raising and lowering function is taking place.

7. The method of providing an immersive theater experience of Claim 5, wherein the floor further comprises a nesting slot configured to accept a seat row beam therein, the method further comprising nesting the seat row beam into the nesting slot in a first position, thereby hiding the seat row beam from audience view while in the first lift arm lowered position.

8. The method of providing an immersive theater experience of Claim 5, further comprising coordinating movement of the first seat support, the second seat support, and rotation of the passenger seat assembly with the audiovisual projector.

9. The method of providing an immersive theater experience of Claim 5, further comprising imparting a surge translation while the first lift arm and the second lift arm are in a raised show position by combining the motions of lift and rotate.

10. The method of providing an immersive theater experience of Claim 5, further comprising using a pitch function to maintain the passenger seat assembly at a predetermined position with positive and negative pitch available in the raised show position.

11. The method of providing an immersive theater experience of Claim 5, wherein the passenger seat assembly (160,260) comprises a first seat beam (260a) operatively connected to the first passenger seat beam rotator (140a,240a) at a first end of the first passenger seat beam rotator (140a,240a) and to the second passenger seat beam rotator (140b,240b) at a corresponding first end of the second passenger seat beam rotator (140b,240b) substantially parallel to the seat axis and a second seat beam (260b) operatively connected to the first passenger seat beam rotator (140a,240a) at a second end of the first passenger seat beam rotator

(140a,240a) distally from the first end and the second passenger seat beam rotator (140b,240b) at a corresponding second end of the second passenger seat beam rotator (140b,240b) substantially parallel to the first seat beam (260a), the method further comprising controlling a rotate function of the passenger seat beam rotator actuators to bring the first seat beam (260a) and its associated passenger seats up and over the second seat beam (260b) and its associated passenger seats, thereby allowing control over mutual row position during lift and during a show.

12. The method of providing an immersive theater experience of Claim ~~10~~11, further comprising using the rotate function to allow the first seat beam (260a) and the second seat beam (260b) and their associated passenger seats rows to flatten out, front to back, in order to “hop” over a lower theater screen or wall during lift and achieve a predetermined final vertical relationship once past that hurdle.

13. The method of providing an immersive theater experience of Claim ~~10~~11, further comprising performing a second function to alter mutual positions of the first seat beam (260a) and the second seat beam (260b) and their associated passenger seats relative to one another while a lift function is taking place.

14. The method of providing an immersive theater experience of Claim ~~10~~11, further comprising controlling pitch of the first seat beam (260a) and the second seat beam (260b) and their associated passenger seats by forcing rotation of their respective passenger seat beam rotators relative to ~~the~~ a facility floor (101).