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PROPULSION SYSTEM FOR A LIGHTER-THAN-AIR VEHICLE

ABSTRACT

The invention is a propulsion system for a lighter-than-air vehicle, the vehicle 10 having a longitudinal 12, lateral 16 and vertical axis 14. In detail, the propulsion system includes a thrust producing assembly 26 rotatably mounted on the vehicle 10, the assembly 26 rotatable about an axis of rotation in a plane at an acute angle to the vertical axis 14 of the vehicle, the assembly rotatable in the plane from a position wherein the thrust axis of the assembly is aligned with the longitudinal axis 12 to a position at least plus or minus ninety degrees thereto. A powerplant assembly is coupled to the thrust producing assembly 26 to provide power thereto. The powerplant assembly includes a fuel efficient powerplant assembly 32A, 32B mounted within the vehicle 10 having sufficient power for cruise conditions, the fuel efficient powerplant having an output drive shaft 46 coupled to the thrust producing assembly 26. A light weight, high power powerplant assembly 71 is mounted directly to the thrust producing assembly 26 having sufficient power for docking conditions. A first clutch 39A, 39B is provided for de-coupling the fuel efficient powerplant 32A, 32B from the thrust producing assembly 26 and a second clutch means 73 is provided for de-coupling the light weight, high power powerplant 71 from the thrust producing assembly. An actuation system 74 is provided for rotating the thrust producing assembly about the axis of rotation.

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