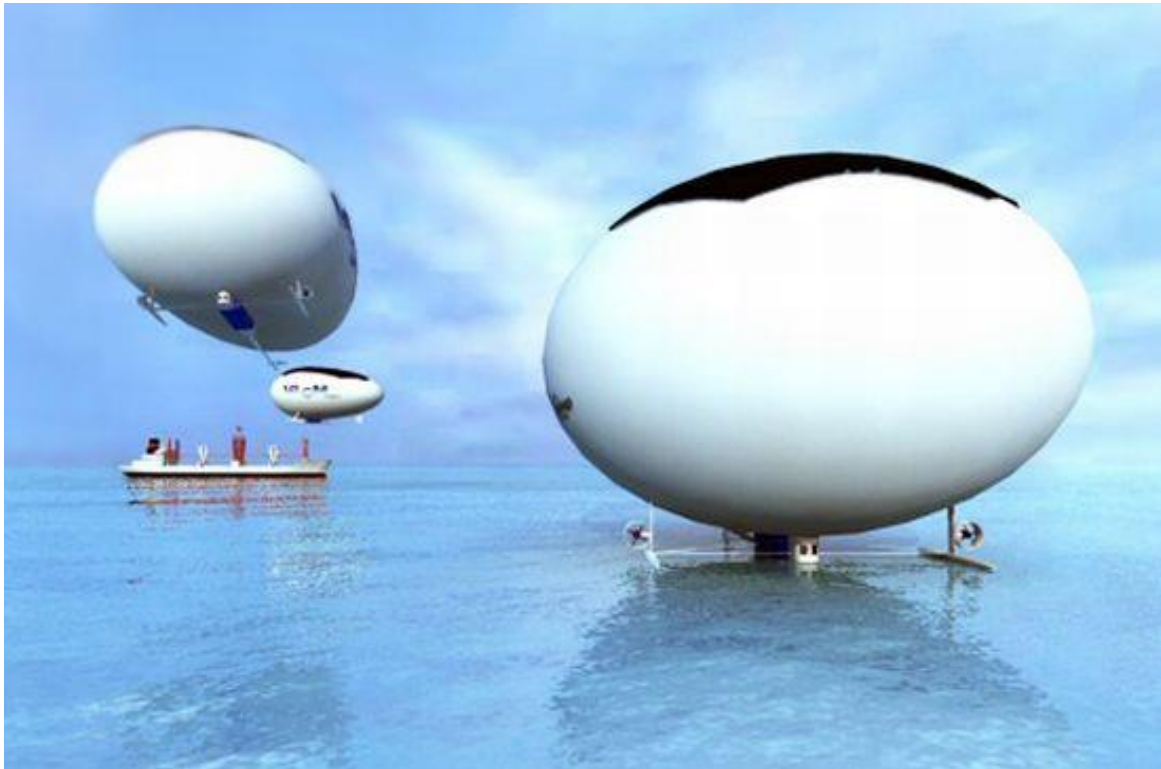


SolarAirShip High-Speed Solar Airship (HSSA)

Peter Lobner, 31 July 2019

The High Speed Solar Airship (HSSA) was a 2010 concept by the firm SolarAirShip for a cost-effective means to haul cargo in an airship using off-the-shelf components and a large solar array on the hull to generate electric power for propulsion and airship systems. High-speed flight was possible by operating the airship at high altitude (30,000 feet), where thinner air enabled higher airspeed and the jet stream could boost speed on west-to-east routes to about 182 mph during the day and about 165 mph at night when propulsion power was reduced.



The semi-rigid HSSA airship had a length of 320 feet (97.5 m) with a helium gas envelope volume of 2 million ft³ (56,633 m³). The airship was designed to carry 60 tons (54.4 metric tons) of cargo. Load exchange was to be accomplished with water ballast.

The HSSA was to be powered by 24,000 ft² (2,230 m²) of thin-film solar cells in an integrated array on the top of the gas envelope,

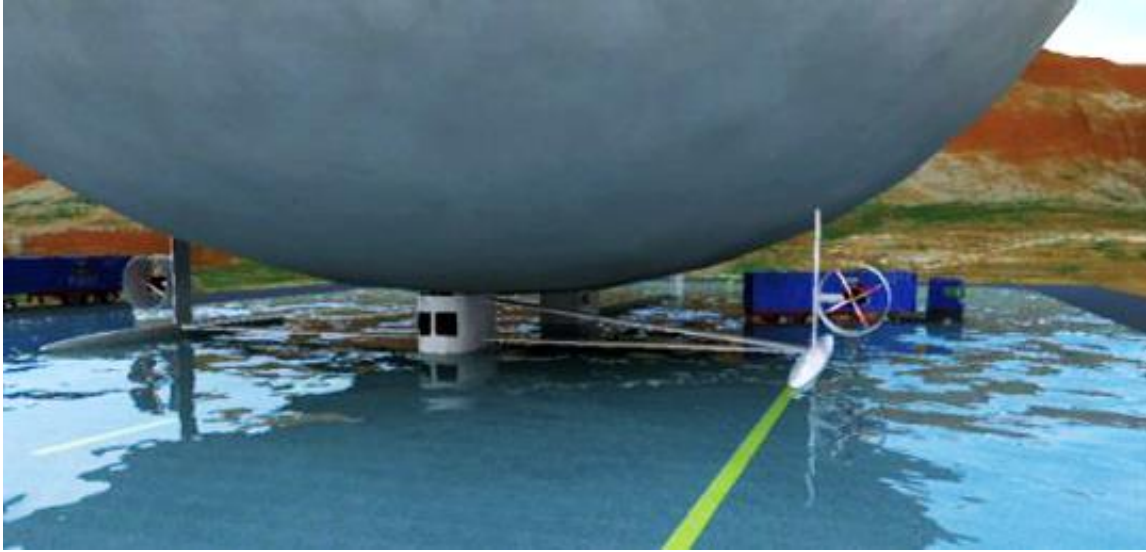
generating 62.7 kW at sea level. At an altitude of 30,000 ft (9,144 m), the solar cells were expected to generate about 30% more power (about 81.5 kW) due to the greater intensity of sunlight and colder temperatures at higher altitudes.



SolarAirShip did some limited flight testing with a 1:20 scale model. A production airship was estimated to cost \$5 million in 2010. No full-scale prototype was developed.







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