

## MAI - SkyBoat HELIOS hybrid airship

Peter Lobner, 8 February 2022

The SkyBoat HELIOS is a small, semi-buoyant, hybrid airship concept designed by The Design Bureau of Moscow Aviation Institute (OSKBES MAI), chief designer Vadim Demin. The initial target market is leisure flying and family air travel for up to four passengers. The craft is adaptable to other roles.

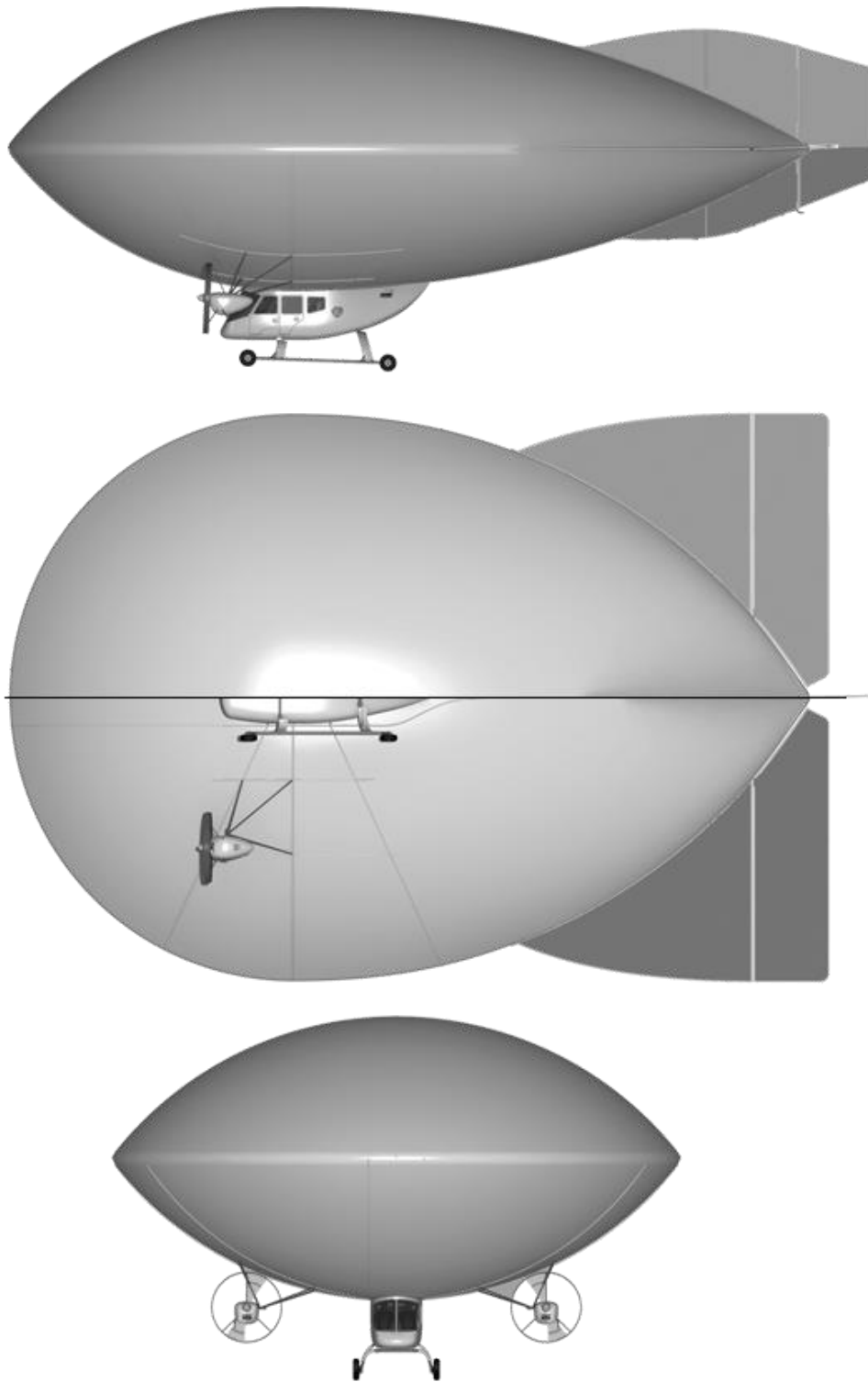
Their website is here: <http://www.oskbes.ru>



*Rendering of a SkyBoat HELIOS in flight. Source: OSKBES MAI*

In flight, aerostatic buoyancy provides about 50% of the lift, with the balance coming from aerodynamic lift generated by the hull and horizontal tail surfaces. This short takeoff and landing (STOL) craft has very low takeoff and landing speeds and does not stall like a conventional aircraft. It is designed to operate from an airport runway

or from a relatively smooth unprepared field. It also can operate from snow / ice surfaces and, with optional inflatable floats, from water.



*SkyBoat HELIOS. Source: OSKBES MAI*



*Rendering of a SkyBoat HELIOS in flight.*



*Closeup view of the four-passenger gondola and the two fixed Rotax engines supported from the gas envelope.  
Source, both graphics: OSKBES MAI*

## General characteristics of the *SkyBoat HELIOS*

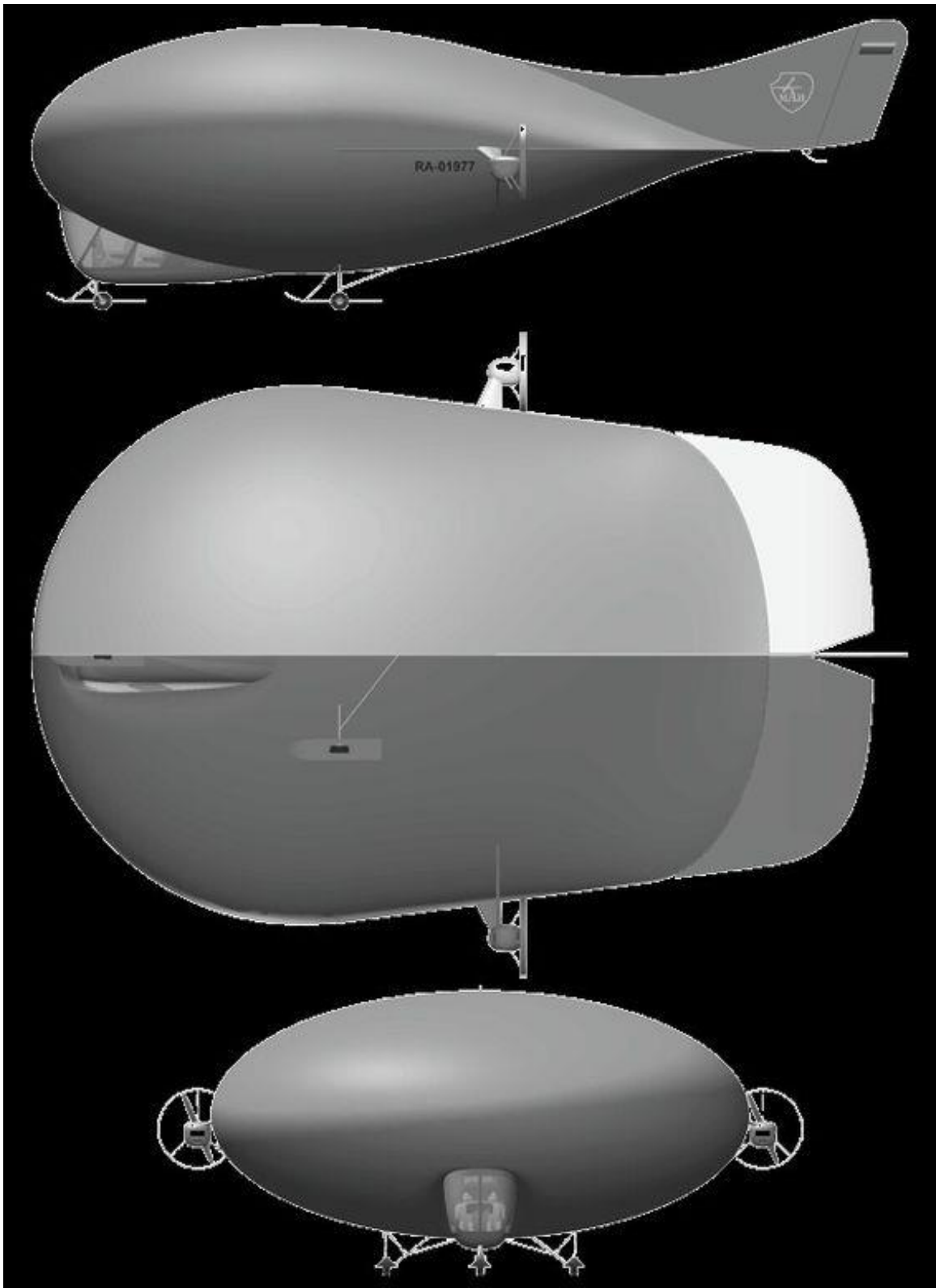
Parameter	SkyBoat HELIOS
Length	23.5 m (77 ft)
Width	15.2 m (50 ft)
Height, overall	9.7 m (31.8 ft)
Envelope volume	1,036 m <sup>3</sup> (36,585 ft <sup>3</sup> )
Propulsion	2 x 74.6 kW (100 shp) Rotax 912i engines, each driving a fixed, shrouded, tractor propeller flanking the gondola and supported from the gas envelope.
Takeoff weight, max	1,300 kg (2,866 lb)
Payload	558 kg (1,230 lb)
Takeoff run	0 to 20 m (0 to 67 ft)
Accommodations	4 max (pilot + 3)
Speed, cruise	80 to 90 kph (50 to 56 mph)
Speed, max	100 kph (62 mph)
Rate of climb	10.5 m/sec (34.4 ft/sec)
Range, max	420 km (260 miles)
Endurance	8 hours

On the ground, the heavier-than-air SkyBoat HELIOS behaves much like a winged aircraft, in that it can be readied for flight and taxied to the takeoff point without a ground crew. It also can land and taxi to its parking spot without assistance from a ground crew.

As of early 2022, a prototype of the SkyBoat HELIOS has not yet been built and flown.

### Earlier MAI design related to the Skyboat HELIOS

The Skyboat HELIOS is the culmination of an effort at MAI to design a small, hybrid airship that could be used for leisure flying and family air travel as well as other applications. Among the earlier designs is the more lenticular design with flank-mounted pusher propellers and all-terrain landing gear shown in the following diagram.



*Likely early version of the OSKBES MAI Skyboat. Source: MAI*

## For more information

- “SkyBoat HELIOS – The hybrid airship,” Moscow Aviation Institute product brochure: <http://www.oskbes.ru/handbill-helios-e.pdf>

### **Other *Modern Airships* articles**

- *Modern Airships - Part 1*: <https://lynceans.org/all-posts/modern-airships-part-1/>
- *Modern Airships - Part 2*: <https://lynceans.org/all-posts/modern-airships-part-2/>
- *Modern Airships - Part 3*: <https://lynceans.org/all-posts/modern-airships-part-3/>