



Annex to Investor Letter & EmDrive Motors Deck



Intellectual
Property
Office

Certificate of Grant of Patent

Patent Number: GB2537119
Proprietor(s): Roger J Shawyer
Satellite Propulsion Research Ltd
Inventor(s): Roger J Shawyer

This is to Certify that, in accordance with the Patents Act 1977,

a Patent has been granted to the proprietor(s) for an invention entitled
"Superconducting microwave radiation thruster" disclosed in an
application filed **7 April 2015**.

Dated 11 August 2021

Tim Moss

Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office

The attention of the Proprietor(s) is drawn to the important notes overleaf.



LUNA UAV (Unmanned Air Vehicle)

Mass = 62.5kg

Flight time = 12 mins

Max velocity = 11 mph

Max acceleration = 0.005g

Max range = 1.6 miles

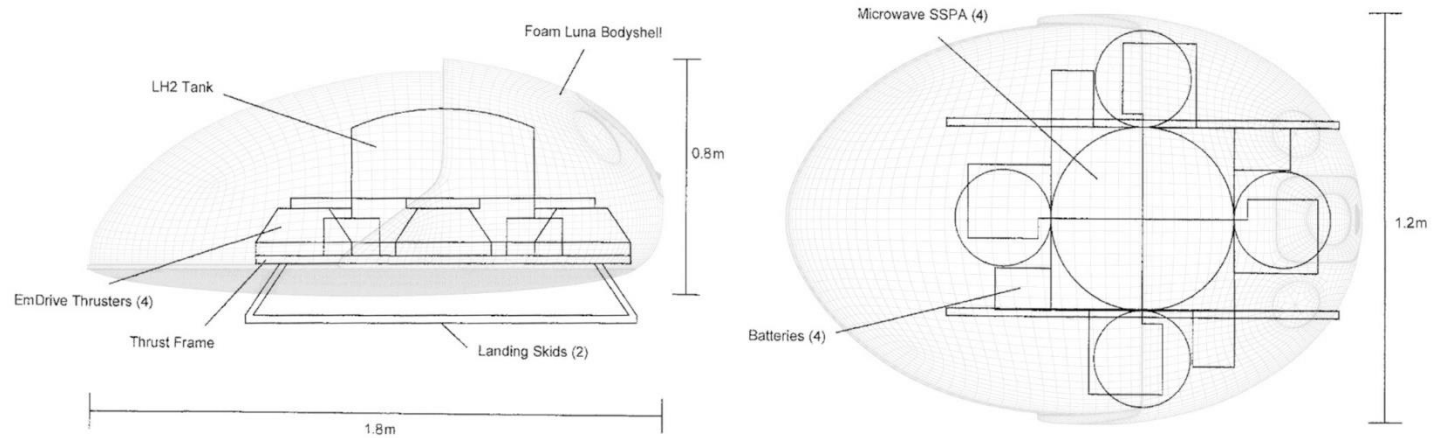
LH2 volume = 50 litres

Batteries = 4X 24V 16Ahr

Propulsion = 4X 500W 2G thrusters

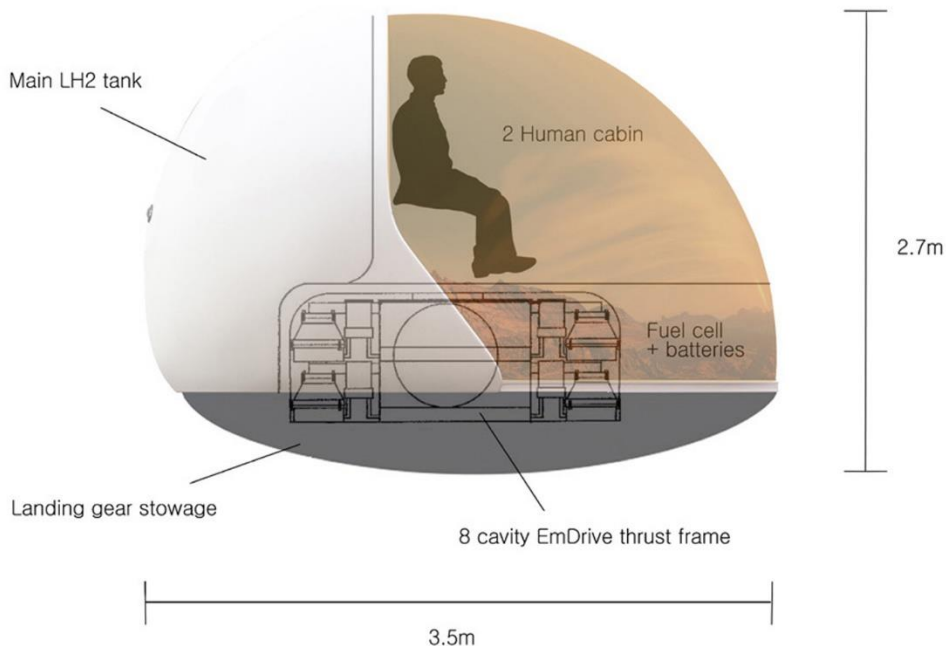
Frequency = 2.45GHz

Mode TE211





LUNA PAV (Personal Air Vehicle)



Eight, 3G thrusters give multiple redundancy, allowing up to four to fail.

Stand-by LH2 tanks and batteries give 10 minute operation for any emergency landing, and a ballistic parachute is incorporated.

Simple pilot controls are based on flight proven Drone control software, with autonomous operation as an option.

EmDrive offers silent, reliable, solid-state propulsion with no moving parts.

Liquid Hydrogen (LH2) is a green renewable fuel, with water vapour as exhaust.

The PAV gives safe Urban Canyon operation.

Total LH2 volume 2,400 litres. Take-off Mass = 940kg

Maximum velocity = 230 km/hr Maximum acceleration 0.4g

Maximum Operating Time = 2.5 Hours



LUNA PSV (Personal Space Vehicle)

Mission. Reusable Manned Moon landing and return

Payload. 3 Tonne manned capsule or unmanned cargo.

Total launch mass. 12,945 kg

Diameter 9m

Height 6m

LH2 volume 60,721 litres

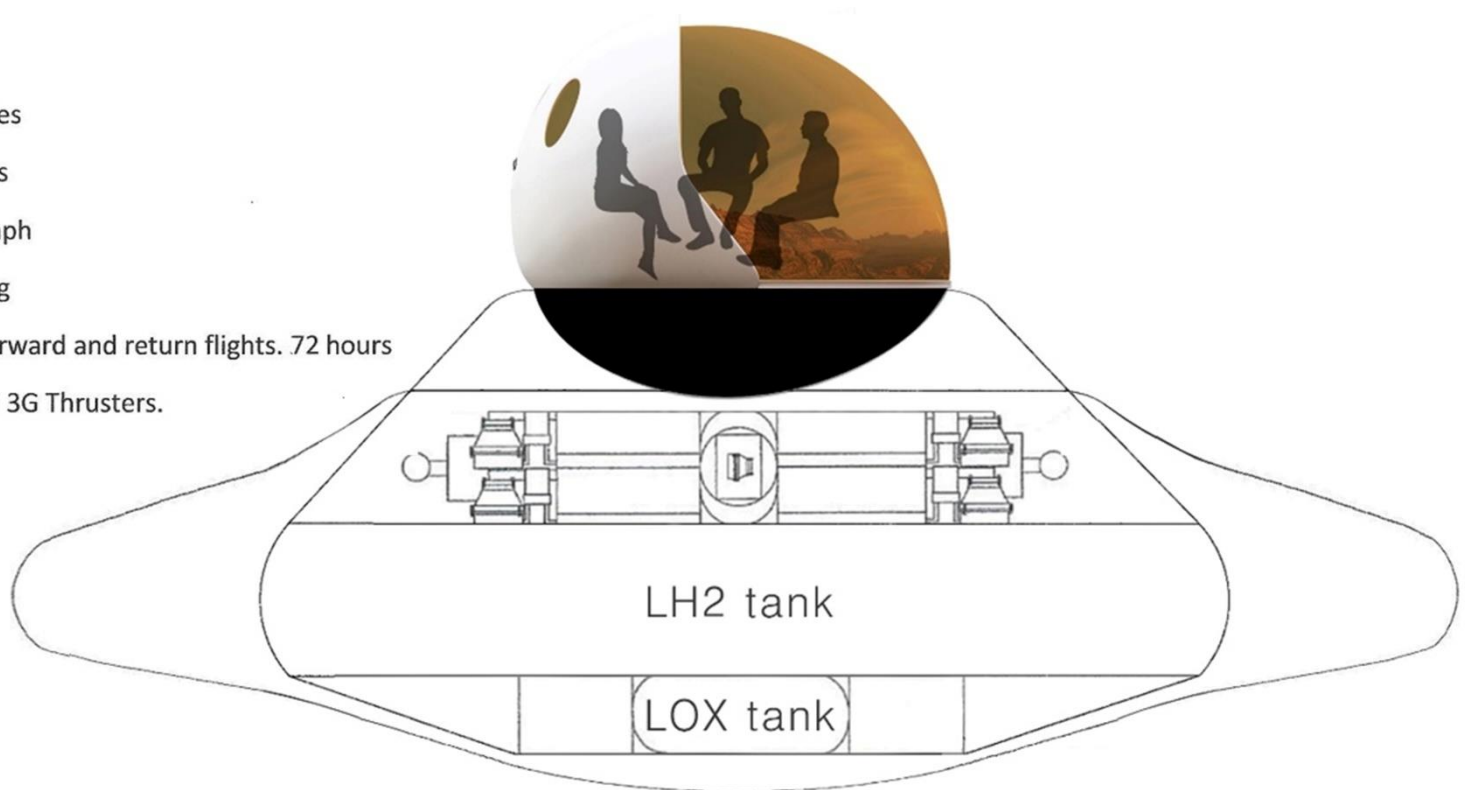
LOX volume 2,485 litres

Max velocity 10,125 mph

Max acceleration 0.01g

Total Flight Time for forward and return flights. 72 hours

Propulsion. 8x 4.25kW 3G Thrusters.





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