DeltaGliderEX

PILOT'S OPERATING HANDBOOK

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1. General Information

1.1 How to use this manual

N/A

1.2 General description

Like great sea vessels, the DeltaGliderEX, new's vessel from SpaceTech, opens new frontiers. This finest engineering knowledge of the 23rd century carries the most sophisticated solutions in terms of reliability, flexibility and cost. The DeltaGliderEX is powered by four hybrid engines for atmospheric and space operations and by an electrical engine (not yet avalaible).

1.3 Dimensions

Length : 47 m ;
Height (except wingtips) : 10.2m landed, in flight : 8.15m ;
Wing span : 46.2 m ;
Attachment points : 3.

2. Operating Limitations

1.4 Operating Category

Form Aircraft operations to advanced space vessels operations.

1.5 Weight Limitations

145 tons empty ;
220 tons full (from earth) ;
50 tons of fuel for Earth's orbitation.

1.6 Acceleration Limitations

N/A

1.7 Dynamic Pressure Limitations

Max Dynnamic pressure during reentry : 18kPa.

1.8 Temperature Limitations

N/A

1.9 Systems Limitations

N/A

3. Emergency Procedures

N/A

4. Normal Operating Procedures

1.10 Pre-Flight Checks

N/A

1.11 Startup

N/A

1.12 Taxiing

Use rudder for steerring (best result at *10 time warp).

1.13 Hovering

Only suitable on low gravity body. Can also help for atmospheric takeoff/landing.

1.14 Takeoff

Rotation : 100m/s on Earth, 150m/s on Mars (with hovers and RCS help).
Make use of trim, stick and keyboard.

1.15 Ascent

Optimum climb rate on Earth

Below 30km : 30/35m/s ;
Below 60km : 20m/s.

Gain Speed at 60km of altitude. Above, the nanochambers will not provide enough thrust.

1.16 Atmospheric Sub-Orbital Cruise

Optimum atmospheric cruising on Earth : M15, 60km, 32% thrust.

1.17 Orbital Cruise

N/A

1.18 Rendezvous and Docking

Use top dockport for docking

1.19 Payload Operations

Use PylonMFD or AttachmentMFD

1.20 Passenger Operations

N/A

1.21 Undocking

Use default Orbiter's key : Ctrl-D

1.22 De-Orbiting
Use Nanocambers.
Suggested Earth's re-entry Perigee : 4430kM

1.23 Atmospheric Deceleration
Use +90° pitch level, stay between 60 and 80km of altitude. Apply pitch >35°/<45° when VACC goes positive.

1.24 Atmospheric Descent
Stay between -100 and -50 m/s VACC with pitch >35° and<45° (use KillRot autopilot).

1.25 Atmospheric Final Approach and Landing
Use classic plane profil and regular ATC procedures.
Vref: 140 m/s IAS
Gear down: 800 Meters AGL

1.26 Micro/Non-Atmospheric Deceleration
Use NanoChambers (with retrograde attitude), Retro, RCS and Hovers.

1.27 Micro/Non-Atmospheric Descent
Use Hovers, RCS, Retro and NanoChambers (with retrograde attitude).

1.28 Micro/Non-Atmospheric Final Approach and Landing
Use Hovers and RCS.

5. Performance

1.29 Takeoff Performance
N/A

1.30 Climb Performance
N/A

1.31 Endurance and Range
1 equatorial journey with atmospheric flight ;
1 journey to moon orbit from Earth.

1.32 Non-Powered Descent Profile
Stay at -30 m/s VACC

1.33 Powered Acceleration
The HAP gestion is automatic. Switching mode comes at 30km and 65km of altitude

6. Weight and Balance

1.34 Flight Planning
N/A

7. Aircraft Systems

1.35 Fuselage and Structure
Nanolathed factoring

1.36 Engines and Thrusters
N/A

1.37 Electrical Systems
APU
Fusion reactor

1.38 Hydraulic Systems
Biomecanical engineering

1.39 Fuel Systems
Use Cryo-compressed cartridges (6 slots).

1.40 Life Support Systems
N/A

1.41 Controls and Avionics
N/A

8. Maintenance
N/A

9. Keys
G - Gear
K - Nose
D - Bay
Ctrl B - Aerobrakes
O - Top hatch

10. Q/A :
It rolls to left !
It rolls to right !
It's Coriolis forces.