Moonship-1

Concept of Operation

Moonship first version will be built as a demo version to check the usage of advanced unmanned carriage/supply space craft that can help for future mission for the moon.

Moonship will have an onboard computer system that can perform most of the maneuvers throughout the mission.

Fuel status will act as the main factor to consider when building the moonship.

We will try to make the ship lighter without fuel and make every necessary step to save conserved fuel capacity at ever stage of the mission.

Moonship will have two separate engine processes for landing and relaunching stages.

Moonship will have a 4-leg stand system that can deploy during the landing and packdown during the relaunching.

After reaching the moon orbit, moonship’s main power system will turn-on.

Onboard computers will send the current mission status and wait until ground control will confirm the next step.

Onboard computers will be pre-programmed to do the maneuvers automatically.

But onboard computers will broadcast the mission status with ground control frequently.

Camera system will actively observe about the environment around the moonship and selected landing zone.

When the moonship is about 50,000ft up from moon surface and 500km range from landing zone, descent stage will active. Engines will be positioned and prepared for burnout.

Engines will burn for 30seconds max to bring spacecraft from 50,000ft to 10,000ft.

Moonship will still be about 45degree angel from vertical stage.

So, thruster in the upper area of the spacecraft will burn and adjust the angel to vertical when it reaches 700ft above the moon surface.

Descent engines will burn to reduce the acceleration towards surface (computers will calculate and the burning energy release for the landing.)

When space craft is above the 500ft from the landing zone, legs will automatically deployed for the landing.

After the successful landing, moonship will send the full mission status to the ground control.

Ground control will decide when to deploy the rover from the moonship.

All the power supplies except necessary power requirements will be shut down.

To recharge the batteries, moonship will deploy solar panels.

After the rover return to the moonship, all the systems will activate, and onboard computers will inform the ground control.

After checking the system status and fuel status, mission control will confirm the relaunch.

Onboard computers will automatically start the engines.

Moonship will lift-off from moon surface.

Eventually it will reach the moon’s orbit and start the return journey.

When it reaches the range of earth it will automatically adjust the trajectory.

Entering the earth’s atmosphere with the correct trajectory is very important.

Slight errors of calculations can make huge disaster.

Sensors of the front automatically activate the heat shield for protection. (In any emergency, piece where the rover is located inside the spacecraft will separate from the space craft and will attempt to land by its own.)

Thrusters of the upper will correct the trajectory while the engines will start to slow down the acceleration of space craft due to gravity of the earth.

Space craft will successfully lands on the landing zone on earth.