

EXHIBIT B

DROID.003 Orbital Debris Assessment Report
(ODAR)

DROID.003-ODAR-1.0

This report is presented in compliance with NASA-STD-8719.14C, APPENDIX A.

Document data is not restricted.

This document contains no proprietary, ITAR, or export-controlled information.

Debris Assessment Software (DAS) version used in analysis: v3.2.6

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ODAR Self-Assessment Evaluation:

A self-assessment is provided below in accordance with the assessment format provided in Appendix A.2 of NASA-STD-8719.14C.

ODAR Requirement	Compliant or N/A	Not Compliant	Incomplete
4.3-1a	x		
4.3-1b	x		
4.3-2	x		
4.4-1	x		
4.4-2	x		
4.4-3	x		
4.4-4	x		
4.5-1	x		
4.5-2	x		
4.6-1a	x		
4.6-2	x		
4.6-3	x		
4.6-4	x		
4.7-1	x		
4.8-1	x		

Assessment Report Format:

This ODAR follows the format recommended in NASA-STD-8719.14C, Appendix A.1, sections 1 through 8 for the Turion Space satellite (DROID.003). Sections 9 through 14 apply to the launch vehicle ODAR and are not covered here.

1. Program Management and Mission Overview

Turion Space is a U.S. company headquartered in Irvine, California.

Program Manager

- Kevin Gellerman

Foreign Government or Space Agency Participation

- None

Mission Overview

DROID.003 is expected to launch in April 2027 into a circular sun-synchronous, low-Earth orbit (LEO). It will be launched into a Sun-Synchronous Orbit between 475 km at 97.3° and 525 km at 97.5°. Once deployed, DROID.003 will commission its subsystems and perform continuous operations for 5 years before allowing the spacecraft to passively deorbit. DROID.003 will be equipped with two electro-optical payloads subsystems, chemical propulsion system, reaction wheels, a Global Positioning System (GPS) receiver, star trackers, sun sensors, magnetorquers, and inertial measurement unit (IMU).

Launch

DROID.003 is planned to launch on a SpaceX Falcon 9 rocket in April 2027.

Mission Duration

The anticipated orbital lifetime of DROID.003 is less than 6 years in LEO.

Deployment Profile

DROID.003 is expected to deploy from the launch vehicle with the following orbital parameters:

Table 1. Orbital Parameters (TBC)

	Apogee	Perigee	Inclination
Max Insertion Orbit	525 km	525 km	$97.5^{\circ} \pm 0.1^{\circ}$
Min Insertion Orbit	475 km	475 km	$97.3^{\circ} \pm 0.1^{\circ}$
Operational Orbit	525 km	525 km	$97.4^{\circ} \pm 0.2^{\circ}$
Post Mission Disposal Orbit	350 km	350 km	$97.4^{\circ} \pm 0.2^{\circ}$

The nominal operational orbit for DROID.003 is a circular sun-synchronous at an altitude of 525 km (TBC). Once deployed from the launch vehicle, DROID.003 will station keep at 525 km (TBC) where it will remain until the DAS analysis demonstrates that the DROID.003 spacecraft must no longer maintain orbital station keeping and will passively deorbit (while continuing mission operations) in order to assure that the on-orbit mission lifetime (including de-orbiting) stays under 6 years¹.

2. Spacecraft Description

Physical description of the spacecraft

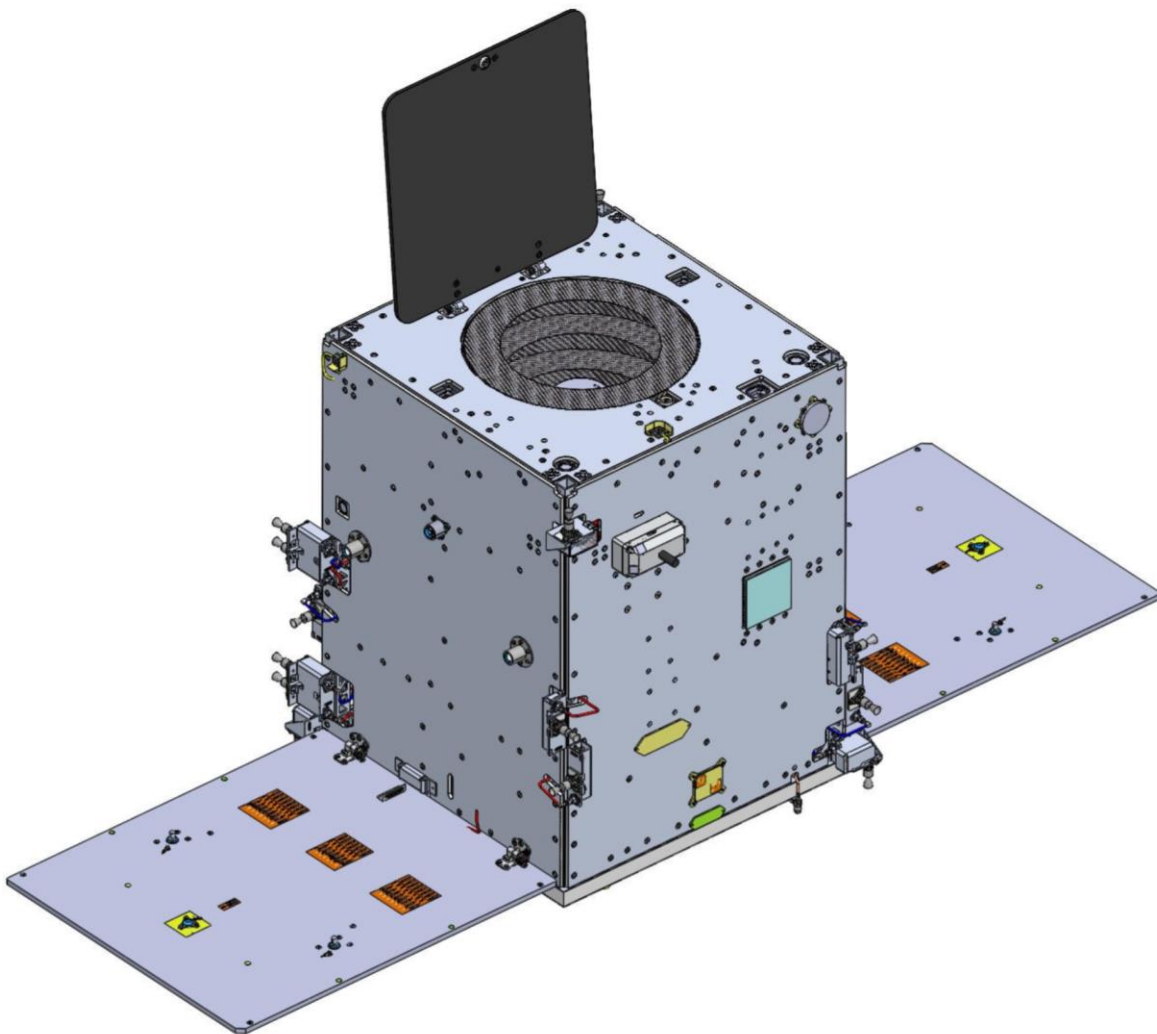
The DROID.003 satellite is a Turion spacecraft design based on Turion DROID bus architecture. Basic physical dimensions are 3309 x 1317 x 2130 millimeters (fully deployed) with a wet mass of approximately 474.35 kg. The DROID.003 spacecraft will deploy two solar arrays, with dimensions of 1128.5 x 973 millimeters each, following launch and deployment. The satellite is composed of a Turion DROID bus, two deployable solar panels, and payload. The payload is 2 remote sensing camera subsystems. The solar panels generate up to 618.69 W (BOL) of electrical DC power, which is stored in a 550 Wh commercial off-the-shelf (COTS) Li-Ion battery assembly. The solar array is deployed using an EBAD ejector release mechanism. The

¹ This data is currently in Q4, 2025 but is very sensitive to solar flux and will be reevaluated after launch and early operations to assure station keeping is stopped in time to assure a 6 year maximum on orbit lifetime even in the case of an early spacecraft failure.

bus is 3-axis stabilized, employing star trackers and sun sensors for attitude knowledge and reaction wheels and magnetorquers for attitude control.

Detailed illustrations of the DROID.003 spacecraft are provided in the figures below.

Figure 1. DROID.003 Space Vehicle External View



Spacecraft Mass

- Wet Mass: 474.35 kg

- Dry Mass: 414.35 kg

Description of propulsion system

The propulsion system includes sixteen 5 N hydrazine thrusters. These are monopropellant thrusters utilizing iridium as a catalyst. The propulsion system has a total Isp of 224 s, and total delta V of 272.5 m/s. The propellant for this system is high purity Hydrazine. The propellant is liquid at room temperature and will be maintained in a liquid state throughout the mission through the use of heaters.

Fluids Planned to be On-board

High Purity Hydrazine.

Attitude Control System:

The GNC subsystem has a sensor suite comprised of two star trackers, one IMU, one GPS receiver, three magnetometers, and three sun sensors. The actuator suite is comprised of four reaction wheels, and three magnetorquers. The GNC subsystem has several operational modes that enable the spacecraft to perform its mission:

- A detumbling mode is used to reduce angular rates below a threshold after launch vehicle separation or after a hardware failure in the guidance, navigation, and control (GNC) subsystem. The magnetometer is used to sense the orientation of the Earth's magnetic field and the magnetorquers are used to generate torques opposing the rotation of the spacecraft.
- A fine pointing mode is used to orient the spacecraft in either the velocity, anti-velocity, nadir, ground tracking, or inertially fixed directions. This mode is used for orbit maneuvers, ground communication, and payload activities.
- A coarse pointing mode is entered either by ground command or autonomously by the flight software when it detects conditions that pose a threat to the spacecraft's health. During this mode, the spacecraft will maintain its solar panels pointing towards the sun and will also track selected ground stations when they come within line-of-sight.

During normal operations, the four reaction wheels provide redundant 3-axis attitude control while the magnetorquers are used to maintain wheel speeds below their maximum limits. The nominal spacecraft orientation has the solar panels in the direction of the sun.

Description of any range safety or other pyrotechnic devices

Hydrazine propellant tanks are qualified to the required levels and approved for use.

Space vehicle separation will be accomplished using a debris-free low-shock release system as designed by approved integrators for our launch.

Solar array deployment will be achieved using an EBAD ejector release mechanism that does not release any debris. Solar arrays will be deployed via a torsion spring-based system that locks the arrays into a deployed position once the deployment sequence is complete.

Description of the electrical generation and storage system

Standard COTS Li-Ion battery cells are charged before payload integration and provide 550 Wh of electrical energy storage. A series of triple junction solar cells generate a maximum of 618.69 W of electrical power. The charge/discharge cycle is managed by the electronic power system which is monitored by the flight computer.

Identification of any other sources of stored energy not noted above

Reaction wheels store kinetic energy but can be disconnected from power at end of the operational lifetime.

Identification of any radioactive material on board

None.

Address the trackability of the spacecraft. Spacecraft operating in low-Earth orbit will be presumed trackable if each individual spacecraft is 10 cm or larger in its smallest dimension, excluding deployable components:

The spacecraft is in low-Earth orbit and has a smallest dimension measuring at least 1317 mm. This dimension is greater than 10cm, thus, it is trackable.

The statement shall also disclose the following:

How the operator plans to identify the spacecraft following deployment and whether spacecraft tracking will be active or passive:

Spacecraft tracking will be active. Prior to deployment an initial ephemeris is produced by the launch service that will be used to schedule a contact time window with the ground station. The accuracy of the ephemeris will depend on the launch vehicle's performance, delays, and deployment times. A more accurate ephemeris will be made available shortly after deployment. After deployment when the satellite establishes contact with the nearest available Turion Space contracted ground station, active satellite tracking will be employed to enhance and maintain satellite ephemeris data. The collected data will be used to identify the spacecraft from two-line element sets once they become available by the 18th Space Defense Squadron.

Whether, prior to deployment, the spacecraft will be registered with the 18th Space Control Squadron or successor entity:

Prior to deployment, the spacecraft will be registered with the 18th Space Defense Squadron via their Satellite Registration Form and Space Situational Awareness (SSA) Sharing Agreement.

The extent to which the spacecraft operator plans to share information regarding initial deployment, ephemeris, and/or planned maneuvers with the 18th Space Control Squadron or successor entity, other entities that engage in space situational awareness or space traffic management functions, and/or other operators:

Turion Space intends to provide the 18th Space Defense Squadron information regarding initial deployment, owner/operator (O/O) ephemeris, and planned maneuvers. This is intended to

provide better SSA and improve the accuracy of conjunction analysis (CA). The higher accuracy O/O ephemeris will improve the quality of the CA and reduce the frequency of Conjunction Data Messages. Turion Space intends to share ephemeris with other operators on an as-needed basis.

Planned Proximity Operations

Rendezvous and Proximity Operations (RPO) are intended to be conducted when and if the opportunity arises. The activity will be performed with a hard deck (approach no closer than) 10 km. Autonomous abort operations are in place should the DROID.003 lose track of the target (visually) or should the hard deck be breached.

3. Spacecraft Debris Released During Normal Operations

Assessment of Spacecraft Compliance with Requirements 4.3-1 and 4.3-2

Requirement 4.3-1: Mission Related Debris Passing Through LEO

- **Compliance statement:** No release of debris will occur during the lifetime of DROID.003. All deployments use an ejector release mechanism or spring pusher system, both of which do not generate any debris. Additionally, there is no probable scenario for unintentional debris generation.

Requirement 4.3-2: Mission Related Debris Passing Near GEO

- **Compliance statement:** This requirement is not applicable to this mission profile.

4. Spacecraft Intentional Breakups and Potential for Explosions

Potential causes of spacecraft breakup during deployment and mission operations

There is no credible scenario that would result in spacecraft breakup during normal deployment operations.

Summary of failure modes and effects analyses of all credible failure modes which may lead to an accidental explosion

The propulsion system does not use combustion as a method for thrust. Additionally, all components will be leak and proof tested according to the metallic pressure vessel safety standard AIAA-S-080 as required in the SpaceX RPUG v10. The battery safety systems are discussed in the assessment of spacecraft compliance with ODAR requirement 4.4-1, which describes the combined faults required for the mutually exclusive failures that lead to battery venting. The batteries are COTS batteries equipped with safety vent features that release excessive pressure build-up, precluding explosions.

Plan for any designed spacecraft breakup

There are no planned breakups.

List of components which shall be passivated at EOM including method of passivation and amount which cannot be passivated

- **Propulsion System** – residual propellant will be expended via EOM burns and/or venting to reduce the orbit altitude as much as possible.
- **Reaction Wheels** – reaction wheels will be spun down
- **Batteries** – batteries will not be passivated due to the low risk and low impact of a cell or cells rupturing and the extremely short lifetime at EOM.

Rationale for Non-Passivation

In the unlikely event that a battery cell ruptures, the small size, mass, and potential energy of these batteries is such that debris from the battery rupture would be contained within the vessel due to the lack of penetration energy.

Furthermore, by not passivating the batteries, the DROID.003 spacecraft can still be commanded in the event that a conjunction warning is received during the final months on orbit, and accurate tracking of the DROID.003 spacecraft can be maintained.

Assessment of Spacecraft Compliance with Requirements 4.4-1 through 4.4-4

Requirement 4.4-1: Limiting the risk to other space systems from accidental explosions during deployment and mission operations while in orbit about Earth or the Moon

- *For each spacecraft and launch vehicle orbital stage employed for a mission, the program or project shall demonstrate, via failure mode and effects analyses or equivalent analyses, that the integrated probability of explosion for all credible failure modes of each spacecraft and launch vehicle is less than 0.001 (excluding small particle impacts) (Requirement 56449).*

Battery explosion:

- **Effect:** All failure modes below might result in battery explosion with the possibility of orbital debris generation. However, in the unlikely event that a battery cell does explosively rupture, the small size, mass, and potential energy of these small batteries, coupled with the multiple enclosures surrounding the batteries, will ensure most if not all debris from the battery rupture should be contained within the spacecraft due to the lack of penetration energy.
- **Probability:** Extremely Low. It is believed to be less than 0.01% given that multiple independent (not common mode) faults must occur for each failure mode to cause the ultimate effect (explosion). The DROID.003 spacecraft uses Molicel INR-217000-M50A battery cells which have extensive flight heritage. The Battery Module Provider, Ibeos, assembles these batteries into protected Battery Modules that are specifically designed and qualified for spaceflight. The Battery Module includes robust current, voltage, and thermal protections that maintain the health of the batteries and contain energetic cell failures. Furthermore, Ibeos conducts extensive battery verification testing as outlined in their qualification test reports. Additionally, Ibeos conducts unit level acceptance and provides testing reports for each module that Ibeos produces. These tests are documented in Ibeos Document TRM-B28-M275-550-825 RevE. This testing includes Lot Sampling Testing, Environmental Acceptance Testing and Final Checkout After Assembling Battery Module
- **Failure Mode 1:** Internal cell short circuit

- **Mitigation:** Qualification and acceptance shock, vibration, thermal cycling, and vacuum tests followed by maximum system rate-limited charge and discharge to prove that no internal short circuit sensitivity exists.
- **Combined faults required for realized failure:** Environmental testing **AND** functional charge/discharge tests must both be ineffective in discovery of the failure mode.
- **Failure Mode 2:** Internal thermal rise due to high load discharge rate.
 - **Mitigation:** Battery cells and module are tested by Ibeos for high load discharge rates by short circuiting the terminal to determine the feasibility of an out-of-control thermal rise in the cell.
 - **Combined faults required for realized failure:** Spacecraft thermal design must be incorrect **AND** external over-current detection and disconnect function must fail to enable this failure mode.
- **Failure Mode 3:** Excessive discharge rate or short-circuit due to external device failure or terminal contact with conductors not at battery voltage levels (due to abrasion or inadequate proximity separation).
 - **Mitigation:** This failure mode is negated by:
 - Qualification tested short circuit protection on each external circuit, and
 - Design of battery packs and insulators such that no contact with nearby board traces is possible without being caused by some other mechanical failure
 - Obviation of such other mechanical failures by qualification and acceptance environmental tests (shock, vibration, thermal cycling, and thermal-vacuum tests)
 - **Combined faults required for realized failure:** An external load must fail/short-circuit **AND** external over-current detection **AND** disconnect function must all occur to enable this failure mode.
- **Failure Mode 4:** Inoperable vents
 - **Mitigation:** Battery venting is not inhibited by the battery holder design or the spacecraft design. The battery can vent gases to the external environment.

- **Combined faults required for realized failure:** The cell manufacturer and the satellite integrator must fail to install proper venting.
- **Failure Mode 5: Crushing**
 - **Mitigation:** Failure mode prevented by design. No moving parts appear near the battery assembly. Battery cells are housed in a protective housing that mitigates the threat of crush loading.
 - **Combined faults required for realized failure:** A catastrophic failure must occur in an external system AND the failure must cause a collision sufficient to crush the batteries leading to an internal short circuit AND the satellite must be in a naturally sustained orbit at the time the crushing occurs.
- **Failure Mode 6: Low level current leakage or short-circuit through battery pack case or due to moisture-based degradation of insulators.**
 - **Mitigation:** These modes are negated by a) battery holder/case design made of non-conductive plastic, and b) operation in vacuum such that no moisture can affect insulators.
 - **Combined faults required for realized failure:** Abrasion or piercing failure of circuit board coating or wire insulators **AND** dislocation of battery packs **AND** failure of battery terminal insulators **AND** failure to detect such failure modes in environmental tests must occur to result in this failure mode.
- **Failure Mode 7: Excess battery cell temperature due to orbital environment and high discharge combined.**
 - **Mitigation:** The spacecraft thermal design will negate this possibility. Thermal rise has been analyzed in combination with space environment temperatures showing that the batteries do not exceed normal allowable operating temperatures under a variety of modeled cases, including worst case orbital scenarios. Analysis shows these temperatures to be well below temperatures of concern for explosions.
 - **Combined faults required for realized failure:** incorrect thermal analysis AND thermal design AND mission simulations in thermal-vacuum chamber testing AND over-current monitoring and control must all fail for this failure mode to

occur.

Requirement 4.4-2: Design for passivation after completion of mission operations while in orbit about Earth or the Moon

- *Design of all spacecraft and launch vehicle orbital stages shall include the ability to deplete all onboard sources of stored energy and disconnect all energy generation sources when they are no longer required for mission operations or post-mission disposal or control to a level which cannot cause an explosion or deflagration large enough to release orbital debris or break up the spacecraft (Requirement 56450).*
- **Compliance statement:** All remaining propellant will be consumed or vented to lower the DROID.003 orbit altitude to the extent possible. The reaction wheels will be spun down to passivate the DROID.003 satellite. The electric power system is designed to allow for the disconnection of all output channels. In this EOM mode, all subsystems, except for the electric power system (EPS), will be cut off from power.

Requirement 4.4-3: Limiting the long-term risk to other space systems from planned breakups

- **Compliance statement:** This requirement is not applicable. There are no planned breakups.

Requirement 4.4-4: Limiting the short-term risk to other space systems from planned breakups

- **Compliance statement:** This requirement is not applicable. There are no planned breakups.

5. Spacecraft Potential for On-Orbit Collisions

In addition to the below requirements being met, it should be noted that DROID.003's propulsion system will allow Turion Space to react to potential collision events and avoid collisions.

Requirement 4.5-1: Limiting debris generated by collisions with large objects when operating in Earth orbit

- *For each spacecraft and launch vehicle orbital stage in or passing through LEO, the program or project shall demonstrate that, during the orbital lifetime of each spacecraft and orbital stage, the probability of accidental collision with space objects larger than 10 cm in diameter is less than 0.001 (Requirement 56506).*
- **Compliance statement:** Large object impact and debris generation probability: 0. The DROID.003 chemical propulsion system provides ample thrust for collision avoidance. The propellant budget accounts for both collision avoidance and deorbit activities.

Requirement 4.5-2: Limiting the probability of damage from small objects when operating in Earth or lunar orbit

- *For each spacecraft, the program or project shall demonstrate that, during the mission of the spacecraft, the probability of accidental collision with orbital debris and meteoroids sufficient to prevent compliance with the applicable post-mission disposal requirements is less than 0.01 (Requirement 56507).*
- **Compliance Statement:**
At the end of the 5-year operational period, the DROID.003 spacecraft may conduct a post-mission disposal (PMD) maneuver to lower the orbit altitude to as low as 350km (circular) to minimize the total satellite on-orbit lifetime.

Detailed description and assessment of efficacy of any planned debris avoidance capability intended to help in meeting requirement 4.5-1

There is no significant risk of collision based on DROID.003's orbital parameters and propulsion system. DROID.003 will be able to schedule and perform evasive propulsive maneuvers after being notified of a probable collision.

Turion will contact and work with any entity who owns a spacecraft that has the potential to collide with a DROID.003 satellite to avoid collision.

If at any time during the spacecraft's mission or de-orbit phase the spacecraft will operate in or transit through the orbits used by any planned or inhabitable spacecraft, including

the International Space Station, describe the design and operational strategies, such as coordination, that will be used to minimize the risk of collision and avoid posing any operational constraints to the spacecraft

During the de-orbit phase, the DROID.003 spacecraft will transfer the spacecraft from an altitude greater than that of the ISS and other inhabitable spacecraft to an altitude below that of the ISS and other inhabitable spacecraft; thus, this phase may transit through an orbit used by the ISS or another spacecraft. Following the end of its operational mission, the DROID.003 spacecraft will be actively deorbited, maintaining a circular orbit, until it is just above the operational orbits of the ISS and other inhabitable spacecraft and allowed to actively or passively decay below the inhabitable spacecraft. This approach has been suggested by NASA as the preferred approach to provide optimum orbit estimation for conjunction analysis. DROID.003 will actively deorbit until it has reached the final PMD altitude of 350km (circular) or all propellant has been consumed.

Certify that upon receipt of a space situational awareness conjunction warning, the operator will review and take all possible steps to assess the collision risk, and will mitigate the collision risk if necessary

Upon receipt of a SSA conjunction warning, Turion certifies that it will attempt to contact the operator of any active spacecraft involved in such a warning, share ephemeris data and other appropriate operational information with any such operator, and modify the spacecraft's attitude, orbit and/or operations to avoid a collision. If the operator of the other spacecraft does not have maneuvering capabilities or is not expedient in response, the operator for DROID.003 will upload potential maneuvers via application programming interface to the 18th Space Defense Squadron to avoid a collision. High-risk events will be mitigated to at least one and a half orders of magnitude below the collision probability mitigated action threshold of $1E-5$.

6. Spacecraft Post-mission Disposal Plans and Procedures

Description of spacecraft disposal option selected

Consistent with NASA-STD 8719.4C, DROID.003 will be disposed of via atmospheric reentry. The operational altitude in LEO includes significant atmospheric drag component that will quickly lead to atmospheric reentry once the operations, including station-keeping with maneuvers, are ceased.

At EOM, DROID.003 will maneuver towards a disposal altitude of 350 km where the system will be passivated and allowed to eventually deorbit. The orbit of DROID.003 will decay due to atmospheric drag, and the satellite will eventually de-orbit by atmospheric reentry. In the case where there is propellant in excess of what is needed to maneuver to the disposal altitude, it will be used in a series of propulsive maneuvers to further accelerate orbital decay and reentry or vented if control authority is compromised.

Systems or Components Required to Accomplish Post-mission Disposal Maneuvers

Since the insertion orbit and ConOps have been designed to allow for the DROID.003 to passively deorbit within a total on-orbit lifetime of 6 years, there is no requirement to deorbit the spacecraft and therefore the required subsystems to achieve deorbit is not applicable. However, DROID.003 will make every effort to minimize its on-orbit lifetime following the end of the operational mission by employing the remaining propellant to accelerate deorbit to the extent possible.

Post-mission Disposal Maneuver Plan

To accelerate reentry, DROID.003 will perform a PMD maneuver via a series of apogee and perigee burns in the anti-velocity direction to lower the satellite toward a maximum disposal orbit of approximately 350 x 350 km. In the case that DROID.003 reaches 350 km and has not expended all of its fuel, the remaining fuel will be used to lower the spacecraft further, accelerating the deorbit.

Calculation of area-to-mass ratio after post-mission disposal

The final area-to-mass ratio is calculated using the dry mass of the vehicle and the average cross-sectional area. Average cross-sectional area is calculated using the equation for estimated

average cross-sectional area for non-convex shapes from NASA-STD-8179.14C: $A_{avg} = (A_{max} + A_1 + A_2)/2$, where A_{max} is the maximum cross-sectional area, and A_1 and A_2 are the cross-sectional areas for the two viewing directions orthogonal to the maximum cross sectional area viewing direction.

DROID.003 Final (Deployed-configuration) area-to-mass ratio calculation:

- Spacecraft mass: 380.54 kg (wet mass)
- Cross-sectional area: 2.265 m² (average)
- Area-to-mass ratio: 0.00595 m²/kg (final)

Calculation of area-to-mass ratio for worst-case deorbit scenarios

Additional analysis is provided below for the two worst-case deorbit scenarios (those for deorbit time with the vehicle at the maximum altitude launch deployment with undeployed solar panels and for the vehicle at maximum altitude during the approach maneuver with deployed solar panels). The average cross-sectional area for these two cases is calculated using the same equation from NASA-STD-8179.14C, as previously provided.

DROID.003 Initial (Undeployed) area-to-mass ratio calculation:

- Spacecraft mass: 446.66 kg (wet mass)
- Cross-sectional area: 2.533 m² (average)
- Area-to-mass ratio: 0.00569 m²/kg (final)

Assessment of spacecraft compliance with ODAR requirements 4.6-1 to 4.6-4

Requirement 4.6-1(a): Disposal for space structures in or passing through LEO

- **Compliance statement:** The DROID.003 satellite reentry is COMPLIANT. After launch, DROID.003 will operate in an approximate 525 km (circular orbit) and maintain that orbit altitude throughout the mission. After that mission, DROID.003 will continue to operate while actively deorbiting. Based upon these ConOps, the DROID.003 spacecraft on-orbit lifetime will stay below 6 years. Under nominal operating conditions,

the DROID.003 on-orbit lifetime will be reduced slightly by using the remaining propellant to lower the orbit after conclusion of the operational mission.

Figure 3. Orbital Decay Profile from 250 - 400 km Orbit

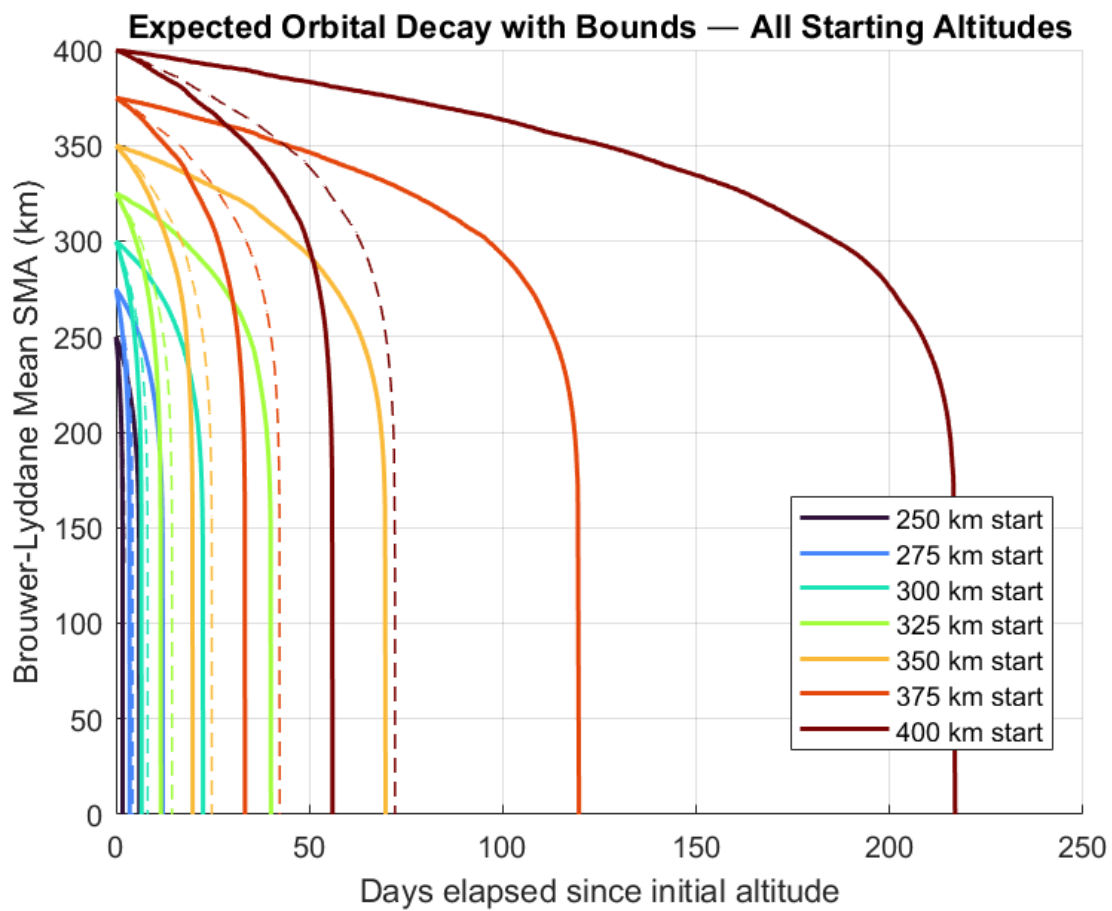
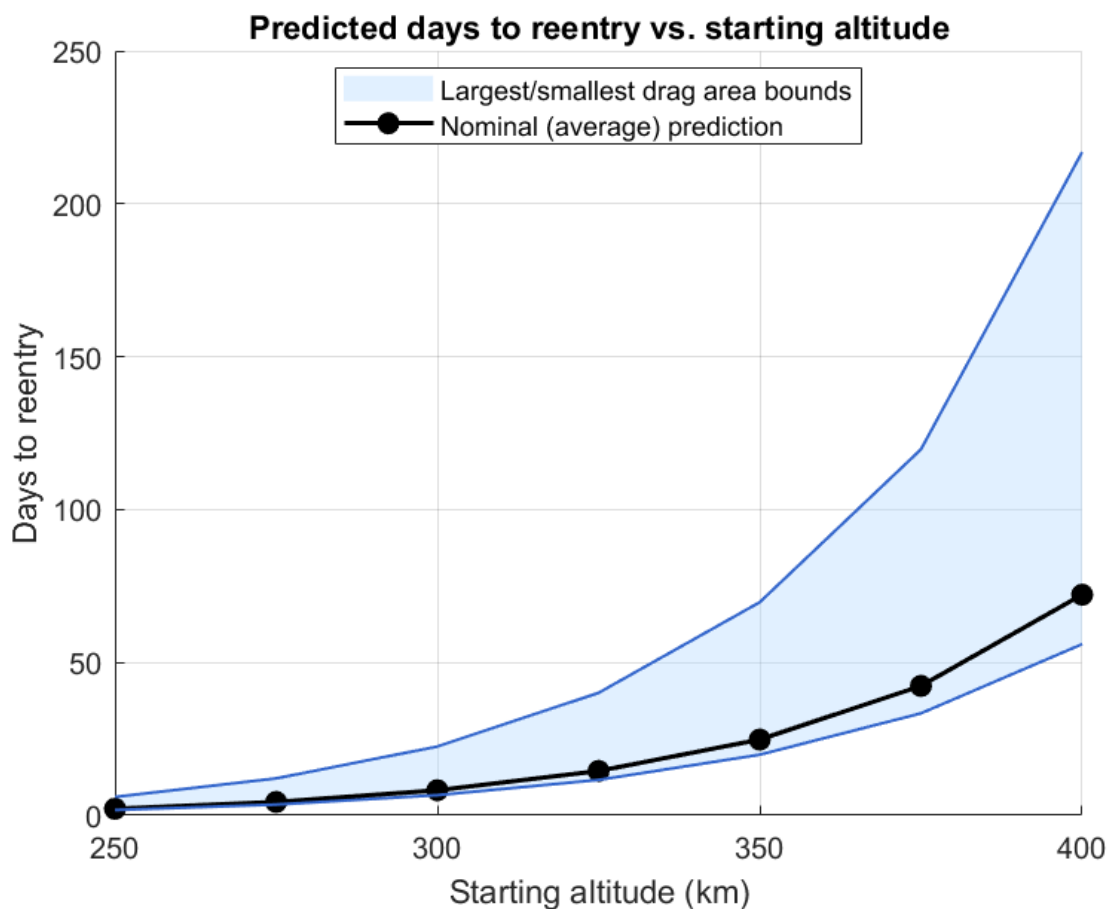


Figure 4. Predicted Days to Reentry vs. Starting Altitude



Requirement 4.6-2: Disposal for space structure near GEO

- **Compliance statement:** Not applicable

Requirement 4.6-3: Disposal for space structures between LEO and GEO

- **Compliance statement:** Not applicable

Requirement 4.6-4: Reliability of post-mission disposal operations

- **Compliance statement:** Propulsion and compute systems are single fault tolerant to disposal.

Although DROID.003 does not necessitate a controlled reentry, provisions have been made for controlled reentry as an alternative. This involves controlling reentry through prescribed propellant burns and burn timing to force DROID.003 to make contact in the southern pacific ocean, a large, uninhabited area. The following deorbit analysis was conducted to show feasibility.

Assumptions:

- Disposal begins at 300 km opportunistically
- Constant thrust performed in the anti-velocity direction
- Control (thrust) cutoff dictated by remaining fuel
- Mean thrust magnitude is biased

Monte Carlo Dispersions		
Parameter	Mean	Standard Deviation
Drag Coefficient	2.2	0.2
Drag Area	1	0.2
ECI Position Error (m)	0	300
Thrust Magnitude (%)	100	5
Thrust Azimuth Misalignment (deg)	0	1
Thrust Elevation Misalignment (deg)	0	1

Initial Conditions	
Parameter	Value
Starting Altitude (km)	300
Control Loss Altitude (km)	125
Mass (kg)	600
Thrust (N)	40/20

The results of the Monte Carlo analysis for both full thruster availability as well as half thruster availability (i.e. due to a fault in one of the propulsion system controllers) show that the controlled reentry can be executed successfully.

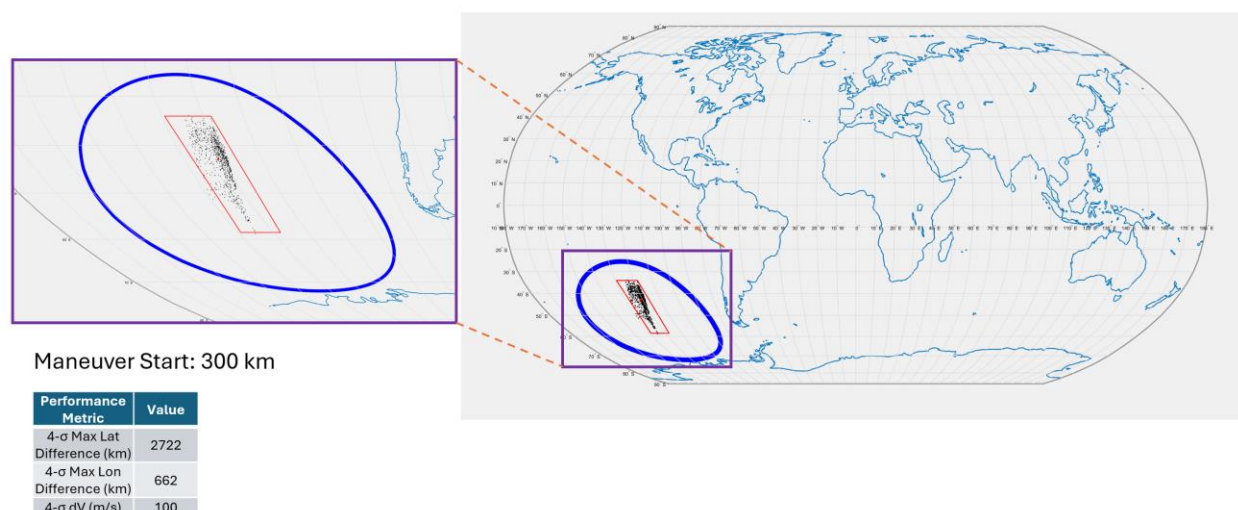


Figure 1 Full Thruster Availability Deorbit Monte Carlo Results

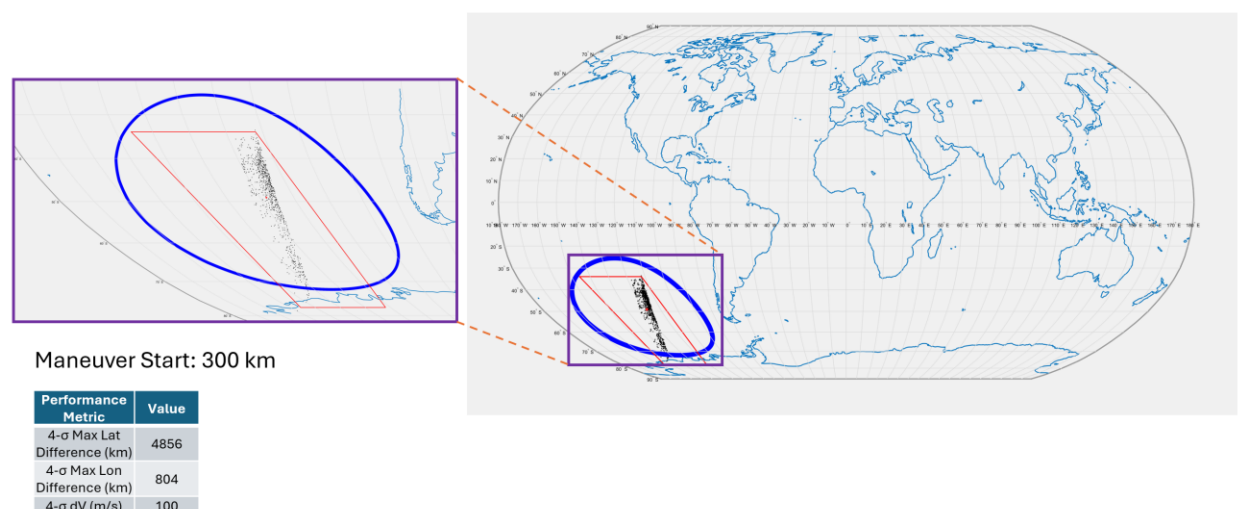


Figure 2 Half Thruster Availability Deorbit Monte Carlo Results

7. Spacecraft Reentry Hazards

Summary of objects expected to survive uncontrolled reentry

For DROID.003, very few spacecraft parts are at risk of surviving reentry. The parts with an impacting kinetic energy of greater than 15 joules cause a risk of human casualty of 1:11700.

Compliance Assessment for Requirement 4.7-1

Limit the risk of human casualty.

Requirement 4.7-1(a):

- *The potential for human casualty is assumed for any object with an impacting kinetic energy in excess of 15 joules. For uncontrolled reentry, the risk of human casualty from surviving debris shall not exceed 0.0001 (1:10,000) (Requirement 56626).*
- **Compliance statement:** The calculated risk of human casualty is 1:11700.

Requirement 4.7-1(b):

- **Compliance statement:** Not applicable because controlled reentry is not an element of the EOM disposal plan

Requirement 4.7-1(c):

- **Compliance statement:** Not applicable because controlled reentry is not an element of the EOM disposal plan

8. Special Classes of Space Missions

Not applicable.

Annex A – DAS 3.2.6 Log Results

07 01 2026; 10:52:09AM Project Data Saved To File

07 01 2026; 10:52:12AM Processing Requirement 4.3-1: Return Status : Not Run

=====

No Project Data Available

=====

===== End of Requirement 4.3-1 =====

07 01 2026; 10:52:14AM Processing Requirement 4.3-2: Return Status : Passed

=====

No Project Data Available

=====

===== End of Requirement 4.3-2 =====

07 01 2026; 11:18:25AM Processing Requirement 4.5-1: Return Status : Passed

=====

Run Data

=====

****INPUT****

Space Structure Name = SV1 LEO

Space Structure Type = Payload

Perigee Altitude = 480.000 (km)

Apogee Altitude = 520.000 (km)

Inclination = 98.000 (deg)

RAAN = 0.000 (deg)
 Argument of Perigee = 0.000 (deg)
 Mean Anomaly = 0.000 (deg)
 Final Area-To-Mass Ratio = 0.0051 (m²/kg)
 Start Year = 2027.249 (yr)
 Initial Mass = 447.000 (kg)
 Final Mass = 387.000 (kg)
 Duration = 5.000 (yr)
 Station-Kept = True
 Abandoned = True
 Long-Term Reentry = False

****OUTPUT****

Collision Probability = 7.6413E-05
 Returned Message: Normal Processing
 Date Range Message: Normal Date Range
 Status = Pass

=====

===== End of Requirement 4.5-1 =====

07 01 2026; 11:18:28AM Project Data Saved To File
 07 01 2026; 11:18:29AM Requirement 4.5-2: Compliant

===== End of Requirement 4.5-2 =====

07 01 2026; 11:18:31AM Processing Requirement 4.6 Return Status : Passed

=====

Project Data

=====

****INPUT****

Space Structure Name = SV1 LEO

Space Structure Type = Payload

Perigee Altitude = 480.000000 (km)

Apogee Altitude = 520.000000 (km)

Inclination = 98.000000 (deg)

RAAN = 0.000000 (deg)

Argument of Perigee = 0.000000 (deg)

Mean Anomaly = 0.000000 (deg)

Area-To-Mass Ratio = 0.005068 (m²/kg)

Start Year = 2027.249000 (yr)

Initial Mass = 447.000000 (kg)

Final Mass = 387.000000 (kg)

Duration = 5.000000 (yr)

Station Kept = True

Abandoned = True

PMD Perigee Altitude = 480.000000 (km)

PMD Apogee Altitude = 520.000000 (km)

PMD Inclination = 98.000000 (deg)

PMD RAAN = 0.000000 (deg)

PMD Argument of Perigee = 0.000000 (deg)

PMD Mean Anomaly = 0.000000 (deg)

Long-Term Reentry = False

****OUTPUT****

Suggested Perigee Altitude = 480.000000 (km)

Suggested Apogee Altitude = 520.000000 (km)

Returned Error Message = Passes LEO reentry orbit criteria.

Released Year = 2036 (yr)

Requirement = 61

Compliance Status = Pass

=====

===== End of Requirement 4.6 =====

07 01 2026; 11:18:38AM *****Processing Requirement 4.7-1

Return Status : Passed

*******INPUT*******

Item Number = 1

name = SV1 LEO

quantity = 1

parent = 0

materialID = 9

type = Box

Aero Mass = 387.000000

Thermal Mass = 387.000000

Diameter/Width = 2.076200

Length = 3.309400

Height = 1.234100

name = LAUNCH VECHILE SEPARATION (FLYAWAY)

quantity = 1

parent = 1

materialID = 8

type = Box

Aero Mass = 1.780000

Thermal Mass = 1.780000

Diameter/Width = 0.686000

Length = 0.686020

Height = 0.031496

name = CM-02316 (POS X- TOP PLATE- HONEYCOMB)

quantity = 1

parent = 1

materialID = 5

type = Box

Aero Mass = 129.464980

Thermal Mass = 4.702000

Diameter/Width = 0.986000

Length = 0.991000

Height = 0.012700

name = CM-03324 (BEAM- CORNER- POS Z- POS Y)

quantity = 1

parent = 3

materialID = 8

type = Box

Aero Mass = 2.351640

Thermal Mass = 2.351640

Diameter/Width = 0.048260

Length = 1.289600

Height = 0.048260

name = CM-03326 (BEAM- CORNER- NEG Z- POS Y)

quantity = 1

parent = 3

materialID = 8

type = Box

Aero Mass = 2.313250

Thermal Mass = 2.313250

Diameter/Width = 0.048260

Length = 1.289600

Height = 0.048260

name = CM-03327 (BEAM- CORNER- POS Z- NEG Y)

quantity = 1

parent = 3

materialID = 8

type = Box

Aero Mass = 2.306900

Thermal Mass = 2.306900

Diameter/Width = 0.048260

Length = 1.289600

Height = 0.048260

name = CM-03225 (BEAM- CORNER- NEG Z- NEG Y)

quantity = 1

parent = 3

materialID = 8

type = Box

Aero Mass = 2.373790

Thermal Mass = 2.373790

Diameter/Width = 0.048260

Length = 1.289600

Height = 0.048260

name = CM-03149 (TORQUE ROD)

quantity = 3

parent = 3

materialID = 38

type = Cylinder

Aero Mass = 0.000490

Thermal Mass = 0.000490

Diameter/Width = 0.019228

Length = 0.193104

name = CM-03148 (ADAP PLT- TORQUE ROD)

quantity = 6

parent = 3

materialID = 8

type = Flat Plate

Aero Mass = 0.035080

Thermal Mass = 0.035080

Diameter/Width = 0.035000

Length = 0.073025

name = CM-02685 (GUSSET- MTG- SPAR PNL- HONEYCOMB)

quantity = 24

parent = 3

materialID = 9

type = Box

Aero Mass = 0.029250

Thermal Mass = 0.029250

Diameter/Width = 0.033000

Length = 0.033000

Height = 0.023000

name = CM-03785 (GUSSET- MTG- STRUT)

quantity = 20

parent = 3

materialID = 9

type = Box

Aero Mass = 0.035710

Thermal Mass = 0.035710

Diameter/Width = 0.045000

Length = 0.045000

Height = 0.023000

name = CM-03571 (GUSSET- CORNER- CAMERA MOUNT)

quantity = 10

parent = 3

materialID = 9

type = Box

Aero Mass = 0.211150

Thermal Mass = 0.211150

Diameter/Width = 0.050000

Length = 0.095000

Height = 0.047000

name = CM-03786 (TRUSS- SPAR TO OUTER PANEL)

quantity = 8

parent = 3

materialID = 9

type = Box

Aero Mass = 0.183090

Thermal Mass = 0.183090

Diameter/Width = 0.054000

Length = 0.231000

Height = 0.044000

name = CM-03569 (BRACKET- INSECTOID MOUNT)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 0.401620

Thermal Mass = 0.401620

Diameter/Width = 0.125000

Length = 0.150000

Height = 0.049000

name = CM-02883 (GUSSET- SIDE- BAFFLE)

quantity = 35

parent = 3

materialID = 9

type = Box

Aero Mass = 0.026370

Thermal Mass = 0.026370

Diameter/Width = 0.034750

Length = 0.034750

Height = 0.025000

name = CM-02306 (BRACKET- MTG- ADCS)

quantity = 4

parent = 3

materialID = 8

type = Box

Aero Mass = 2.297190

Thermal Mass = 2.297190

Diameter/Width = 0.170090

Length = 0.195072

Height = 0.144605

name = CM-03180 (REACTION WHEEL)

quantity = 4

parent = 3

materialID = 5

type = Cylinder

Aero Mass = 4.380000

Thermal Mass = 4.380000

Diameter/Width = 0.130000

Length = 0.194056

name = CM-03080 (ASSY- STRUCTUAL- PANEL- HONEYCOMB- MID)

quantity = 1

parent = 3

materialID = 5

type = Flat Plate

Aero Mass = 17.473000

Thermal Mass = 17.473000

Diameter/Width = 0.986540

Length = 0.993000

name = CM-02874 (MPS- 4- SLOT)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 1.730000

Thermal Mass = 1.730000

Diameter/Width = 0.109220

Length = 0.128778

Height = 0.108128

name = AVIONICS OUTER HOUSING

quantity = 1

parent = 3

materialID = 9

type = Box

Aero Mass = 2.169300

Thermal Mass = 1.740000

Diameter/Width = 0.192000

Length = 0.282794

Height = 0.083791

name = ASSY AVIONICS BOARD

quantity = 1

parent = 20

materialID = 19

type = Flat Plate

Aero Mass = 0.429300

Thermal Mass = 0.429300

Diameter/Width = 0.152400

Length = 0.269240

name = CM-02696 (GUSSET- MTG- SPAR PANEL- HONEYCOMB- POS Y)

quantity = 6

parent = 3

materialID = 9

type = Box

Aero Mass = 0.022190

Thermal Mass = 0.022190

Diameter/Width = 0.028400

Length = 0.034750

Height = 0.024000

name = CM-03879 (STRUT- CORNER BEAM- CONNECTION)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 1.025950

Thermal Mass = 1.025950

Diameter/Width = 0.025000

Length = 0.888000

Height = 0.025000

name = CM-03784 (STRUT- CORNER BEAM CONNECTION)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 1.026420

Thermal Mass = 1.026420

Diameter/Width = 0.025000

Length = 0.888000

Height = 0.025000

name = CM-03783 (STRUT- TRIANGULATION)

quantity = 4

parent = 3

materialID = 9

type = Box

Aero Mass = 0.339760

Thermal Mass = 0.339760

Diameter/Width = 0.030000

Length = 0.345029

Height = 0.025000

name = CM-03726 (PLT- ADAPTER- SPLITTER- COMBINER MODULE)

quantity = 1

parent = 3

materialID = 8

type = Box

Aero Mass = 0.105600

Thermal Mass = 0.105600

Diameter/Width = 0.105000

Length = 0.120000

Height = 0.006350

name = CM-03175 (ADAPTER- PLATE- SATLAB RADIO)

quantity = 1

parent = 3

materialID = 9

type = Flat Plate

Aero Mass = 0.114300

Thermal Mass = 0.114300

Diameter/Width = 0.105728

Length = 0.127318

name = CM-03570 (BRACKET- CORNER MOUNT- RPO CAMERA)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 0.260400

Thermal Mass = 0.260400

Diameter/Width = 0.070711

Length = 0.075000

Height = 0.056770

name = CM-03372 (BRACKET- MTG- STAR TRACKER)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 0.184980

Thermal Mass = 0.184980

Diameter/Width = 0.090755

Length = 0.094742

Height = 0.034285

name = CM-03815 (TRUSS- TOP PLATE TO SIDE PANEL)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 0.158610

Thermal Mass = 0.158610

Diameter/Width = 0.053459

Length = 0.192938

Height = 0.044000

name = CM-03865 (GUSSET- CORNER- CAMERA MOUNT- THRDED HOLE)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 0.228980

Thermal Mass = 0.228980

Diameter/Width = 0.050000

Length = 0.095000

Height = 0.047000

name = CM-03371 (BRACKET- MTG- IR CAMERA- RPO)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 0.362210

Thermal Mass = 0.362210

Diameter/Width = 0.106000

Length = 0.109800

Height = 0.076000

name = CM-03176 (BRACKET- PDB)

quantity = 1

parent = 3

materialID = 7

type = Box

Aero Mass = 0.939620

Thermal Mass = 0.939620

Diameter/Width = 0.176530

Length = 0.597600

Height = 0.050800

name = CM-02882 (ASSY- BAFFLE)

quantity = 1

parent = 3

materialID = -2

type = Cylinder

Aero Mass = 11.459210

Thermal Mass = 11.459210

Diameter/Width = 0.639472

Length = 0.954321

name = CM-02334 (ASSY- STRUCTUAL- PANEL- SPAR- HONEYCOMB)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 1.183000

Thermal Mass = 1.183000

Diameter/Width = 0.150000

Length = 0.939540

Height = 0.012700

name = CM-02335 (ASSY- STRUCTUAL- PANEL- SPAR- HONEYCOMB)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 1.264000

Thermal Mass = 1.264000

Diameter/Width = 0.162000

Length = 0.939540

Height = 0.012700

name = CM-02332 (ASSY- STRUCTUAL- PANEL- SPAR- HONEYCOMB)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 1.724000

Thermal Mass = 1.724000

Diameter/Width = 0.181000

Length = 0.939540

Height = 0.025400

name = CM-02333 (ASSY- STRUCTUAL- PANEL- SPAR- HONEYCOMB)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 1.265000

Thermal Mass = 1.265000

Diameter/Width = 0.162000

Length = 0.939540

Height = 0.013000

name = CM-02687 (PLATE- NUT- BND- BAFFLE)

quantity = 14

parent = 3

materialID = 9

type = Box

Aero Mass = 0.102570

Thermal Mass = 0.102570

Diameter/Width = 0.060000

Length = 0.080700

Height = 0.022491

name = CM-03137 (FLEXURE- MTG- HDRM)

quantity = 1

parent = 3

materialID = 65

type = Box

Aero Mass = 0.420950

Thermal Mass = 0.420950

Diameter/Width = 0.067500

Length = 0.174333

Height = 0.019500

name = CM-03616 (BRACKET- INTERFACE- HDRM)

quantity = 1

parent = 3

materialID = 65

type = Box

Aero Mass = 0.070000

Thermal Mass = 0.070000

Diameter/Width = 0.052653

Length = 0.059260

Height = 0.014070

name = CM-02629 (HINGE- STATIC- LENS COVER)

quantity = 2

parent = 3

materialID = 8

type = Box

Aero Mass = 0.159960

Thermal Mass = 0.159960

Diameter/Width = 0.095000

Length = 0.108000

Height = 0.066152

name = CM-02686 (BRACKET- MTG- BND- LONG BASE BAFFLE)

quantity = 1

parent = 3

materialID = 9

type = Box

Aero Mass = 0.661100

Thermal Mass = 0.661100

Diameter/Width = 0.050000

Length = 0.427857

Height = 0.039450

name = CM-02688 (BRACKET- MTG- BND- BASE- BAFFLE)

quantity = 3

parent = 3

materialID = 9

type = Box

Aero Mass = 0.611340

Thermal Mass = 0.611340

Diameter/Width = 0.050000

Length = 0.398322

Height = 0.039450

name = CM-03006 (BRACKET- BLKHEAD- UMBILICAL)

quantity = 1

parent = 3

materialID = 8

type = Box

Aero Mass = 0.070000

Thermal Mass = 0.070000

Diameter/Width = 0.050000

Length = 0.123000

Height = 0.025000

name = CM-04597 (INSECTOID- SIDE MOUNT- NO IMU)

quantity = 3

parent = 3

materialID = 8

type = Box

Aero Mass = 0.750000

Thermal Mass = 0.750000

Diameter/Width = 0.069062

Length = 0.167626

Height = 0.067090

name = CM-04596 (INSECTOID- SIDE MOUNT- W/ IMU)

quantity = 1

parent = 3

materialID = 8

type = Box

Aero Mass = 0.860000

Thermal Mass = 0.860000

Diameter/Width = 0.090562

Length = 0.167626

Height = 0.067090

name = CM-03345 (STAR TRACKER)

quantity = 2

parent = 3

materialID = 8

type = Box

Aero Mass = 0.480000

Thermal Mass = 0.480000

Diameter/Width = 0.063665

Length = 0.173251

Height = 0.049746

name = CM-04599 (BOSON- IR SENSOR)

quantity = 2

parent = 3

materialID = 5

type = Box

Aero Mass = 0.620000

Thermal Mass = 0.620000

Diameter/Width = 0.095250

Length = 0.135737

Height = 0.095250

name = CM-03220 (EBAD RELEASE MECHANISM)

quantity = 1

parent = 3

materialID = 8

type = Cylinder

Aero Mass = 0.160000

Thermal Mass = 0.160000

Diameter/Width = 0.036830

Length = 0.074803

name = ASSY BACKPLANE (OUTER HOUSING)

quantity = 2

parent = 3

materialID = 9

type = Box

Aero Mass = 1.200000

Thermal Mass = 1.040000

Diameter/Width = 0.117000

Length = 0.323000

Height = 0.035000

name = ASSY PCBA BOARD

quantity = 2

parent = 51

materialID = 19

type = Flat Plate

Aero Mass = 0.160000

Thermal Mass = 0.160000

Diameter/Width = 0.107950

Length = 0.314960

name = ASSY POWER DISTRIBUTION MODULE (OUTER HOUSING)

quantity = 1

parent = 3

materialID = 9

type = Box

Aero Mass = 0.630000

Thermal Mass = 0.450000

Diameter/Width = 0.156845

Length = 0.286385

Height = 0.021888

name = ASSY POWER DISTRIBUTION MODULE BOARD

quantity = 1

parent = 53

materialID = 19

type = Flat Plate

Aero Mass = 0.180000

Thermal Mass = 0.180000

Diameter/Width = 0.152400

Length = 0.286385

name = CM-03727 (MODULE- SPLITTER- COMBINER- S- BAND- TX-RX)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 0.180000

Thermal Mass = 0.180000

Diameter/Width = 0.087200

Length = 0.093000

Height = 0.016000

name = CM-0477 (SRS- 4 TRANSCEIVER- SATTLAB)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 0.250000

Thermal Mass = 0.250000

Diameter/Width = 0.087200

Length = 0.093000

Height = 0.018000

name = CM-03075 (RADIO- KA- BAND TRANSMIT)

quantity = 1

parent = 3

materialID = 8

type = Box

Aero Mass = 1.500000

Thermal Mass = 1.500000

Diameter/Width = 0.105156

Length = 0.202565

Height = 0.046939

name = BATTERY BOX (OUTER BOX)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 5.950000

Thermal Mass = 3.250000

Diameter/Width = 0.147244

Length = 0.231546

Height = 0.090068

name = BATTERY INNER COMPONENTS

quantity = 1

parent = 58

materialID = 46

type = Box

Aero Mass = 2.700000

Thermal Mass = 2.700000

Diameter/Width = 0.074000

Length = 0.116000

Height = 0.045000

name = CM-00942 (CONTROLLER- X ACT FLEXCORE)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 0.750000

Thermal Mass = 0.750000

Diameter/Width = 0.113490

Length = 0.120650

Height = 0.048150

name = CM-03348 (COLOSSUS- PROCESSOR MODULE)

quantity = 1

parent = 3

materialID = 5

type = Box

Aero Mass = 0.990000

Thermal Mass = 0.990000

Diameter/Width = 0.100000

Length = 0.118200

Height = 0.043300

name = CM-04835 (BRACKET- ANGLE)

quantity = 30

parent = 3

materialID = 5

type = Box

Aero Mass = 0.012060

Thermal Mass = 0.012060

Diameter/Width = 0.020000

Length = 0.030000

Height = 0.015000

name = CABLES

quantity = 1

parent = 3

materialID = 19

type = Cylinder

Aero Mass = 11.070000

Thermal Mass = 11.070000

Diameter/Width = 0.007925

Length = 213.000000

name = CM-02329 (NEG Z- SIDE PNL- HONEYCOMB)

quantity = 1

parent = 1

materialID = 5

type = Box

Aero Mass = 94.485431

Thermal Mass = 8.400000

Diameter/Width = 0.989000

Length = 1.281000

Height = 0.012700

name = CM-03243 (BRACKET- MX3 SPC MOUNT- - Z PANEL)

quantity = 1

parent = 64

materialID = 8

type = Box

Aero Mass = 0.777240

Thermal Mass = 0.777240

Diameter/Width = 0.234500

Length = 0.296000

Height = 0.038000

name = CM-03895 (BRACKET- MX3 SPC MOUNT- - Z PANEL)

quantity = 1

parent = 64

materialID = 8

type = Box

Aero Mass = 0.806330

Thermal Mass = 0.806330

Diameter/Width = 0.234500

Length = 0.296000

Height = 0.038000

name = CM-02324 (GUSSET- CORNER- PROP BAY)

quantity = 14

parent = 64

materialID = 9

type = Box

Aero Mass = 0.127290

Thermal Mass = 0.127290

Diameter/Width = 0.060000

Length = 0.070000

Height = 0.044260

name = CM-03234(GUSSET- CORNER- MIDPLATE)

quantity = 8

parent = 64

materialID = 9

type = Box

Aero Mass = 0.160870

Thermal Mass = 0.160870

Diameter/Width = 0.065000

Length = 0.085000

Height = 0.044260

name = CM-03282 (GUSSET- MTG- SIDE PNL- HONEYCOMB- SHORT)

quantity = 19

parent = 64

materialID = 9

type = Box

Aero Mass = 0.048170

Thermal Mass = 0.048170

Diameter/Width = 0.033620

Length = 0.044000

Height = 0.026000

name = CM-03005 (BRKT- BLKHEAD- PROP UMBILICAL)

quantity = 1

parent = 64

materialID = 8

type = Box

Aero Mass = 0.022300

Thermal Mass = 0.022300

Diameter/Width = 0.030000

Length = 0.060000

Height = 0.025000

name = CM-02648 (GUSSET- MTG- SIDE PNL- HONEYCOMB)

quantity = 28

parent = 64

materialID = 9

type = Box

Aero Mass = 0.057490

Thermal Mass = 0.057490

Diameter/Width = 0.044000

Length = 0.045619

Height = 0.026000

name = CM-03546 (SPAR- STRUCTUAL- LH- OUTER- PROP BAY)

quantity = 2

parent = 64

materialID = 9

type = Box

Aero Mass = 2.791850

Thermal Mass = 2.791850

Diameter/Width = 0.239859

Length = 0.283153

Height = 0.069850

name = CM-03231 (SPAR- STRUCTUAL- OUTER PROP BAY- Z- SPAR)

quantity = 2

parent = 64

materialID = 9

type = Box

Aero Mass = 6.338510

Thermal Mass = 6.338510

Diameter/Width = 0.297358

Length = 0.368300

Height = 0.069850

name = CM-02318 (SPAR- STRUCTUAL- RH- OUTER PROP BAY

quantity = 2

parent = 64

materialID = 9

type = Box

Aero Mass = 2.790810

Thermal Mass = 2.790810

Diameter/Width = 0.239859

Length = 0.297358

Height = 0.069850

name = CM-03319 (BRKT- TANK- FUEL)

quantity = 6

parent = 64

materialID = 5

type = Box

Aero Mass = 0.925030

Thermal Mass = 0.925030

Diameter/Width = 0.236000

Length = 0.250000

Height = 0.110000

name = CM-03320 (PLT- MTG- FLEXURE- FUEL TANK)

quantity = 3

parent = 64

materialID = 9

type = Flat Plate

Aero Mass = 0.375340

Thermal Mass = 0.375340

Diameter/Width = 0.122500

Length = 0.236000

name = CM-03322 (PLATE- INSULATION- FUEL TANK- FLEXURE SIDE)

quantity = 3

parent = 64

materialID = -1

type = Flat Plate

Aero Mass = 0.054380

Thermal Mass = 0.054380

Diameter/Width = 0.122500

Length = 0.236000

name = CM-03232 (SPAR- STRUCTUAL- INNER PROP BAY)

quantity = 4

parent = 64

materialID = 9

type = Box

Aero Mass = 1.110150

Thermal Mass = 1.110150

Diameter/Width = 0.170000

Length = 0.298679

Height = 0.045000

name = CM-02319 (SPAR- STRUCTUAL- Z- PROPULSION BAY)

quantity = 2

parent = 64

materialID = 9

type = Box

Aero Mass = 3.681430

Thermal Mass = 3.681430

Diameter/Width = 0.297358

Length = 0.357000

Height = 0.069850

name = CM-03233 (GUSSET- Z- SPAR CONNECTION)

quantity = 4

parent = 64

materialID = 9

type = Box

Aero Mass = 0.338680

Thermal Mass = 0.338680

Diameter/Width = 0.096520

Length = 0.133350

Height = 0.069850

name = CM-03321 (PLATE- MTG- FIXED- FUEL TANK)

quantity = 3

parent = 64

materialID = 9

type = Flat Plate

Aero Mass = 0.744370

Thermal Mass = 0.744370

Diameter/Width = 0.111850

Length = 0.269000

name = CM-03456 (BRKT- TANK TO MIDPLATE- LH- WIDE)

quantity = 1

parent = 64

materialID = 9

type = Box

Aero Mass = 0.217740

Thermal Mass = 0.217740

Diameter/Width = 0.085000

Length = 0.120000

Height = 0.060000

name = CM-03457 (BRACKET- TANK TO MP- RH- WIDE)

quantity = 1

parent = 64

materialID = 9

type = Box

Aero Mass = 0.217630

Thermal Mass = 0.217630

Diameter/Width = 0.085000

Length = 0.120000

Height = 0.060000

name = CM-03246 (BRACKET- TANK TO MP- RH)

quantity = 2

parent = 64

materialID = 9

type = Box

Aero Mass = 0.186040

Thermal Mass = 0.186040

Diameter/Width = 0.085000

Length = 0.100000

Height = 0.060000

name = CM-03245 (BRACKET- TANK TO MP-RH)

quantity = 2

parent = 64

materialID = 9

type = Box

Aero Mass = 0.186040

Thermal Mass = 0.186040

Diameter/Width = 0.085000

Length = 0.100000

Height = 0.060000

name = CM-03564 (PLATE- INSULATION- FUEL TANK- MIDPLATE- WIDE)

quantity = 2

parent = 64

materialID = -1

type = Flat Plate

Aero Mass = 0.029270

Thermal Mass = 0.029270

Diameter/Width = 0.060000

Length = 0.120000

name = CM-03441 (PLATE- INSUALTION- FUEL TANK- MP SIDE)

quantity = 4

parent = 64

materialID = -1

type = Flat Plate

Aero Mass = 0.024280

Thermal Mass = 0.024280

Diameter/Width = 0.060000

Length = 0.100000

name = CM-03323 (PLATE- INSULATION- FUEL TANK- FIXED SIDE)

quantity = 3

parent = 64

materialID = -1

type = Flat Plate

Aero Mass = 0.071990

Thermal Mass = 0.071990

Diameter/Width = 0.111850

Length = 0.269000

name = CM-03328 (PLATE- MTG- GEAR PUMP)

quantity = 2

parent = 64

materialID = 9

type = Box

Aero Mass = 0.382600

Thermal Mass = 0.382600

Diameter/Width = 0.041585

Length = 0.242500

Height = 0.027725

name = CM-03437 (PLATE- MTG- GEAR PUMP COMPONENT)

quantity = 2

parent = 64

materialID = 8

type = Box

Aero Mass = 0.058570

Thermal Mass = 0.058570

Diameter/Width = 0.067500

Length = 0.097000

Height = 0.037000

name = CM-03433 (CLAMP- MTG- GEAR PUMP)

quantity = 2

parent = 64

materialID = 7

type = Box

Aero Mass = 0.122460

Thermal Mass = 0.122460

Diameter/Width = 0.064473

Length = 0.080000

Height = 0.050760

name = CM-03430 (GEAR PUMP)

quantity = 2

parent = 64

materialID = 54

type = Cylinder

Aero Mass = 2.270000

Thermal Mass = 2.270000

Diameter/Width = 0.064625

Length = 0.218340

name = CM-03870 (GUSSET- CORNER BEAM- SIDE MOUNT)

quantity = 2

parent = 64

materialID = 9

type = Box

Aero Mass = 0.153340

Thermal Mass = 0.153340

Diameter/Width = 0.060000

Length = 0.070000

Height = 0.050000

name = CM-03787 (GUSSET- CORNER BEAM)

quantity = 1

parent = 64

materialID = 9

type = Box

Aero Mass = 0.151120

Thermal Mass = 0.151120

Diameter/Width = 0.050000

Length = 0.060000

Height = 0.047000

name = CM-03431 (CONTROLLER- ENGINE)

quantity = 2

parent = 64

materialID = 8

type = Box

Aero Mass = 2.110000

Thermal Mass = 2.110000

Diameter/Width = 0.251406

Length = 0.316100

Height = 0.030498

name = CM-03429 (FUEL TANK)

quantity = 3

parent = 64

materialID = 66

type = Cylinder

Aero Mass = 6.300000

Thermal Mass = 6.300000

Diameter/Width = 0.253924

Length = 0.500974

name = CM-03432 (FUEL LINES)

quantity = 1

parent = 64

materialID = 54

type = Cylinder

Aero Mass = 2.016400

Thermal Mass = 2.016400

Diameter/Width = 0.006350

Length = 14.110000

name = CM-02330 (POS Y- SIDE PNL- HONEYCOMB)

quantity = 1

parent = 1

materialID = 5

type = Box

Aero Mass = 8.539000

Thermal Mass = 8.539000

Diameter/Width = 0.984000

Length = 1.281000

Height = 0.012700

name = CM-03079 (NEG X- BASE PLT- HONEYCOMB)

quantity = 1

parent = 1

materialID = 5

type = Box

Aero Mass = 38.500000

Thermal Mass = 38.500000

Diameter/Width = 1.018000

Length = 1.023000

Height = 0.070155

name = CM-02331 (NEG Y- SIDE PNL- HONEYCOMB)

quantity = 1

parent = 1

materialID = 5

type = Box

Aero Mass = 8.474000

Thermal Mass = 8.474000

Diameter/Width = 0.984000

Length = 1.281000

Height = 0.012700

name = CM-02328 (POS Z- SIDE PNL- HONEYCOMB)

quantity = 1

parent = 1

materialID = 5

type = Box

Aero Mass = 8.437000

Thermal Mass = 8.437000

Diameter/Width = 0.989000

Length = 1.281000

Height = 0.012700

name = CM-04572 (POS Z SOLAR PANEL DEPLOYED)

quantity = 1

parent = 1

materialID = 5

type = Flat Plate

Aero Mass = 9.820000

Thermal Mass = 9.820000

Diameter/Width = 0.973000

Length = 1.128500

name = CM-04571 (NEG Z SOLAR PANEL DEPLOYED)

quantity = 1

parent = 1

materialID = 5

type = Flat Plate

Aero Mass = 9.820000

Thermal Mass = 9.820000

Diameter/Width = 0.973000

Length = 1.128500

name = CM-03049 (LENS COVER OUTER PANELS)

quantity = 2

parent = 1

materialID = -2

type = Flat Plate

Aero Mass = 0.735845

Thermal Mass = 0.610000

Diameter/Width = 0.711200

Length = 0.711200

name = CM-03048 (LENS COVER CORE)

quantity = 1

parent = 104

materialID = 5

type = Box

Aero Mass = 0.251690

Thermal Mass = 0.251690

Diameter/Width = 0.711000

Length = 0.711000

Height = 0.010160

name = CM-02628 (HINGE- DYNAMIC- LENS COVER)

quantity = 2

parent = 1

materialID = 8

type = Box

Aero Mass = 0.080710

Thermal Mass = 0.080710

Diameter/Width = 0.044000

Length = 0.094767

Height = 0.033692

name = CM-03136 (BRACKET- HDRM-LENS COVER)

quantity = 1

parent = 1

materialID = 9

type = Box

Aero Mass = 0.080000

Thermal Mass = 0.080000

Diameter/Width = 0.050000

Length = 0.094000

Height = 0.032000

name = CM-03346 (SENSOR- SUN- COARSE)

quantity = 2

parent = 1

materialID = 5

type = Box

Aero Mass = 0.010000

Thermal Mass = 0.010000

Diameter/Width = 0.026670

Length = 0.026670

Height = 0.009525

name = CM-03316 (SUN SENSOR ADAP PLT)

quantity = 3

parent = 1

materialID = 9

type = Box

Aero Mass = 0.040000

Thermal Mass = 0.040000

Diameter/Width = 0.054000

Length = 0.054000

Height = 0.025300

name = CM-03612 (COVER- THRUSTER- DUAL)

quantity = 4

parent = 1

materialID = 7

type = Box

Aero Mass = 0.087780

Thermal Mass = 0.087780

Diameter/Width = 0.107900

Length = 0.135200

Height = 0.065100

name = CM-03838 (COVER- INSULATION- DUAL UPPER)

quantity = 2

parent = 1

materialID = 7

type = Box

Aero Mass = 0.099500

Thermal Mass = 0.099500

Diameter/Width = 0.104800

Length = 0.208500

Height = 0.046700

name = CM-03839 (COVER- INSUALTION- DUAL- LOWER)

quantity = 2

parent = 1

materialID = 7

type = Box

Aero Mass = 0.108710

Thermal Mass = 0.108710

Diameter/Width = 0.116800

Length = 0.200300

Height = 0.045200

name = CM-03836 (COVER- INSULATION- Z LAT- FUEL LINE)

quantity = 4

parent = 1
materialID = 7
type = Box
Aero Mass = 0.098990
Thermal Mass = 0.098990
Diameter/Width = 0.100880
Length = 0.142240
Height = 0.066675

name = CM-03614 (COVER- THRUSTER- AXIAL)
quantity = 4
parent = 1
materialID = 7
type = Box
Aero Mass = 0.081350
Thermal Mass = 0.081350
Diameter/Width = 0.072315
Length = 0.128598
Height = 0.058404

name = CM-03613 (COVER- THRUSTER- LATERAL)
quantity = 6
parent = 1
materialID = 7
type = Box
Aero Mass = 0.058670
Thermal Mass = 0.058670
Diameter/Width = 0.059022
Length = 0.171157
Height = 0.038271

name = CM-03595 (COVER- INSULATION- GEAR PUMP)

quantity = 2

parent = 1

materialID = 7

type = Box

Aero Mass = 0.129980

Thermal Mass = 0.129980

Diameter/Width = 0.063500

Length = 0.167640

Height = 0.027305

name = CM-03837 (COVER- INSULATION- POY LAT- FUELINE)

quantity = 1

parent = 1

materialID = 7

type = Box

Aero Mass = 0.129370

Thermal Mass = 0.129370

Diameter/Width = 0.100880

Length = 0.142240

Height = 0.083175

name = CM-03833 (COVER- INSULATION- THRUSTER- POS X-Y)

quantity = 1

parent = 1

materialID = 7

type = Box

Aero Mass = 0.027680

Thermal Mass = 0.027680

Diameter/Width = 0.064389

Length = 0.097968

Height = 0.023212

name = CM-03826 (COVER- INSULATION- F/D VALVES)

quantity = 4

parent = 1

materialID = 7

type = Box

Aero Mass = 0.028660

Thermal Mass = 0.028660

Diameter/Width = 0.038100

Length = 0.122615

Height = 0.016827

name = CM-03835 (COVER- INSULATION- THRML- NEG X)

quantity = 2

parent = 1

materialID = 7

type = Box

Aero Mass = 0.048680

Thermal Mass = 0.048680

Diameter/Width = 0.102550

Length = 0.133454

Height = 0.023212

name = SR-5M TRIAD THRUSTER

quantity = 18

parent = 1

materialID = 36

type = Box

Aero Mass = 0.114000

Thermal Mass = 0.114000

Diameter/Width = 0.055030

Length = 0.082306

Height = 0.049910

name = CM-03615 (PLT- INSULATION- THRUSTER TO BRKT)

quantity = 18

parent = 1

materialID = -1

type = Flat Plate

Aero Mass = 0.012610

Thermal Mass = 0.012610

Diameter/Width = 0.052503

Length = 0.060904

name = CM-03600 (BRKT- MTG- THRUSTER- DUAL)

quantity = 4

parent = 1

materialID = 9

type = Box

Aero Mass = 0.439860

Thermal Mass = 0.439860

Diameter/Width = 0.121150

Length = 0.131027

Height = 0.068651

name = CM-03909 (GUSSET- THRSTER BRKT TO SIDE PNL)

quantity = 12

parent = 1

materialID = 8

type = Box

Aero Mass = 0.011220

Thermal Mass = 0.011220

Diameter/Width = 0.022784

Length = 0.027815

Height = 0.019050

name = CM-03908 (PLT- INSUALTION- THRUSTER GUSSET)

quantity = 24

parent = 1

materialID = -1

type = Flat Plate

Aero Mass = 0.001360

Thermal Mass = 0.001360

Diameter/Width = 0.016866

Length = 0.020244

name = CM-03610 (PLT- MTG- THIN- THRUSTER SOLENOID)

quantity = 14

parent = 1

materialID = 8

type = Box

Aero Mass = 0.033250

Thermal Mass = 0.033250

Diameter/Width = 0.026844

Length = 0.070520

Height = 0.013489

name = CM-03602 (BRKT- MTG- THRUSTER AXIAL)

quantity = 4

parent = 1

materialID = 9

type = Box

Aero Mass = 0.304370

Thermal Mass = 0.304370

Diameter/Width = 0.081103

Length = 0.110549

Height = 0.070670

name = CM-03611 (PLT- WIDE- THRUSTER SOLENID)

quantity = 4

parent = 1

materialID = 8

type = Box

Aero Mass = 0.061610

Thermal Mass = 0.061610

Diameter/Width = 0.034966

Length = 0.070520

Height = 0.018237

name = CM-03601 (BRKT- MTG- THRUSTER- LATERAL)

quantity = 6

parent = 1

materialID = 9

type = Box

Aero Mass = 0.297510

Thermal Mass = 0.297510

Diameter/Width = 0.059732

Length = 0.171157

Height = 0.045637

name = CM-03834 (COVER- INSULATION- THRML- POS X- NEG Y)

quantity = 1

parent = 1

materialID = 7

type = Box

Aero Mass = 0.033100

Thermal Mass = 0.033100

Diameter/Width = 0.079375

Length = 0.095250

Height = 0.023212

name = CM-04081 (PANEL ACCESS)

quantity = 4

parent = 1

materialID = 8

type = Flat Plate

Aero Mass = 0.165280

Thermal Mass = 0.165280

Diameter/Width = 0.165100

Length = 0.234950

name = CM-04082 (PANEL ACCESS- SMALL)

quantity = 1

parent = 1

materialID = 8

type = Flat Plate

Aero Mass = 0.115850

Thermal Mass = 0.115850

Diameter/Width = 0.165100

Length = 0.165100

name = CM-03605 (PLT- INSULATION- THRUSTER- DUAL)

quantity = 4

parent = 1

materialID = -1

type = Flat Plate

Aero Mass = 0.016430

Thermal Mass = 0.016430

Diameter/Width = 0.040100

Length = 0.128486

name = CM-03604 (PLT- INSULATION- THRUSTER- LATERAL)

quantity = 6

parent = 1

materialID = -1

type = Flat Plate

Aero Mass = 0.017480

Thermal Mass = 0.017480

Diameter/Width = 0.043351

Length = 0.122914

name = CM-03603 (PLT- INSULATION- THRUSTER- AXIAL)

quantity = 4

parent = 1

materialID = -1

type = Flat Plate

Aero Mass = 0.009290

Thermal Mass = 0.009290

Diameter/Width = 0.041122

Length = 0.070670

name = CM-04082-02 (PANEL- ACCESS- SMALL)

quantity = 1

parent = 1

materialID = 8

type = Flat Plate

Aero Mass = 0.113680

Thermal Mass = 0.113680

Diameter/Width = 0.165100

Length = 0.165100

name = CM-03141 (COVER- UMBILICAL)

quantity = 1

parent = 1

materialID = 8

type = Flat Plate

Aero Mass = 0.135680

Thermal Mass = 0.135680

Diameter/Width = 0.060000

Length = 0.195000

name = CM-03142(COVER- UMBILICAL- PROPULSION)

quantity = 1

parent = 1

materialID = 8

type = Flat Plate

Aero Mass = 0.055560

Thermal Mass = 0.055560

Diameter/Width = 0.038000

Length = 0.123007

name = CM-03143 (ADAPTER- PLT- S- BAND ANTENNA)

quantity = 2

parent = 1

materialID = 9

type = Flat Plate

Aero Mass = 0.112840

Thermal Mass = 0.112840

Diameter/Width = 0.100983

Length = 0.120716

name = CM-01456 (ANTENNA- DUAL S- BAND)

quantity = 2

parent = 1

materialID = 23

type = Flat Plate

Aero Mass = 0.060000

Thermal Mass = 0.060000

Diameter/Width = 0.081064

Length = 0.097070

name = CM-03130 (ANTENNA- KA- BAND- HORN ARRAY)

quantity = 1

parent = 1

materialID = 5

type = Box

Aero Mass = 1.230000

Thermal Mass = 1.230000

Diameter/Width = 0.159397

Length = 0.224790

Height = 0.079314

name = CM-02656 (RADIO- L-BAND- 28 V)

quantity = 2

parent = 1

materialID = 5

type = Box

Aero Mass = 1.300000

Thermal Mass = 1.300000

Diameter/Width = 0.200000

Length = 0.200000

Height = 0.100000

name = CM-03076 (ANTENNA- S- BAND- DUPLEX- SMA)

quantity = 1

parent = 1

materialID = 5

type = Cylinder

Aero Mass = 0.090000

Thermal Mass = 0.090000

Diameter/Width = 0.096000

Length = 0.100000

name = CM-03144 (ADAPTER PLATE- S -BAND- ANTENNA)

quantity = 1

parent = 1

materialID = 9

type = Flat Plate

Aero Mass = 0.079170

Thermal Mass = 0.079170

Diameter/Width = 0.127910

Length = 0.127910

name = Telescope Assembly

quantity = 1

parent = 1

materialID = 5

type = Cylinder

Aero Mass = 28.430000

Thermal Mass = 28.430000

Diameter/Width = 0.560000

Length = 0.750000

name = Q6516-01-0011

quantity = 1

parent = 1

materialID = 71

type = Flat Plate

Aero Mass = 5.984580

Thermal Mass = 5.984580

Diameter/Width = 0.464000

Length = 0.464000

name = Q6516-01-0012

quantity = 3

parent = 1

materialID = 8

type = Box

Aero Mass = 0.003800

Thermal Mass = 0.003800

Diameter/Width = 0.021000

Length = 0.022000

Height = 0.010000

name = Q6516-01-0015

quantity = 3

parent = 1

materialID = 65

type = Cylinder

Aero Mass = 0.238100

Thermal Mass = 0.238100

Diameter/Width = 0.015000

Length = 0.300000

name = Q6516-01-0016

quantity = 1

parent = 1

materialID = 8

type = Flat Plate

Aero Mass = 0.126420

Thermal Mass = 0.126420

Diameter/Width = 0.200000

Length = 0.200000

name = Q6516-01-0021

quantity = 1

parent = 1

materialID = 8

type = Cylinder

Aero Mass = 0.092240

Thermal Mass = 0.092240

Diameter/Width = 0.075500

Length = 0.137000

name = Q6516-01-0023

quantity = 1

parent = 1

materialID = 8

type = Box

Aero Mass = 0.101760

Thermal Mass = 0.101760

Diameter/Width = 0.063750

Length = 0.131060

Height = 0.030000

name = Q6516-01-0101-01

quantity = 3

parent = 1

materialID = -2

type = Flat Plate

Aero Mass = 0.051990

Thermal Mass = 0.051990

Diameter/Width = 0.077000

Length = 0.145000

name = Q6516-01-0101-03

quantity = 3

parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.152200
Thermal Mass = 0.152200
Diameter/Width = 0.077000
Length = 0.422000

name = Q6516-01-0101-04
quantity = 3
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.055250
Thermal Mass = 0.055250
Diameter/Width = 0.064070
Length = 0.184610

name = Q6516-01-0101-05
quantity = 6
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.042760
Thermal Mass = 0.042760
Diameter/Width = 0.064070
Length = 0.144000

name = Q6516-01-0101-06
quantity = 1

parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.049320
Thermal Mass = 0.049320
Diameter/Width = 0.064070
Length = 0.180000

name = Q6516-01-0101-07
quantity = 2
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.045010
Thermal Mass = 0.045010
Diameter/Width = 0.064070
Length = 0.160000

name = Q6516-01-0101-08
quantity = 2
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.049320
Thermal Mass = 0.049320
Diameter/Width = 0.064070
Length = 0.180000

name = Q6516-01-0101-09
quantity = 2

parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.098620
Thermal Mass = 0.098620
Diameter/Width = 0.064070
Length = 0.350000

name = Q6516-01-0101-10
quantity = 2
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.066420
Thermal Mass = 0.066420
Diameter/Width = 0.064070
Length = 0.242500

name = Q6516-01-0101-11
quantity = 1
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.065660
Thermal Mass = 0.065660
Diameter/Width = 0.064070
Length = 0.242500

name = Q6516-01-0101-12
quantity = 2

parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.017300
Thermal Mass = 0.017300
Diameter/Width = 0.064070
Length = 0.068000

name = Q6516-01-0101-13
quantity = 4
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.015810
Thermal Mass = 0.015810
Diameter/Width = 0.058000
Length = 0.064070

name = Q6516-01-0101-14
quantity = 4
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.010580
Thermal Mass = 0.010580
Diameter/Width = 0.043000
Length = 0.064070

name = Q6516-01-0101-15
quantity = 10

parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.011400
Thermal Mass = 0.011400
Diameter/Width = 0.042410
Length = 0.064070

name = Q6516-01-0101-16
quantity = 2
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.015060
Thermal Mass = 0.015060
Diameter/Width = 0.053450
Length = 0.064070

name = Q6516-01-0121
quantity = 1
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.847860
Thermal Mass = 0.847860
Diameter/Width = 0.517190
Length = 0.581120

name = Q6516-01-0122
quantity = 3

parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.084560
Thermal Mass = 0.084560
Diameter/Width = 0.110800
Length = 0.260790

name = Q6516-01-0131
quantity = 1
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.832260
Thermal Mass = 0.832260
Diameter/Width = 0.517190
Length = 0.581120

name = Q6516-01-0132
quantity = 3
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.088490
Thermal Mass = 0.088490
Diameter/Width = 0.110800
Length = 0.260790

name = Q6516-01-0201
quantity = 3

parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.265780
Thermal Mass = 0.265780
Diameter/Width = 0.035000
Length = 1.400240

name = Q6516-01-0202-01
quantity = 3
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.122820
Thermal Mass = 0.122820
Diameter/Width = 0.109000
Length = 0.235500

name = Q6516-01-0202-03
quantity = 3
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.134160
Thermal Mass = 0.134160
Diameter/Width = 0.140000
Length = 0.195000

name = Q6516-01-0202-05
quantity = 3

parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.013060
Thermal Mass = 0.013060
Diameter/Width = 0.025400
Length = 0.109000

name = Q6516-01-0203-01
quantity = 9
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.024250
Thermal Mass = 0.024250
Diameter/Width = 0.037660
Length = 0.146760

name = Q6516-01-0203-03
quantity = 12
parent = 1
materialID = -2
type = Flat Plate
Aero Mass = 0.025170
Thermal Mass = 0.025170
Diameter/Width = 0.040860
Length = 0.146760

name = Q6516-01-0203-05
quantity = 3

parent = 1

materialID = -2

type = Flat Plate

Aero Mass = 0.026130

Thermal Mass = 0.026130

Diameter/Width = 0.042200

Length = 0.152380

name = Q6516-01-0204

quantity = 6

parent = 1

materialID = -2

type = Flat Plate

Aero Mass = 0.005610

Thermal Mass = 0.005610

Diameter/Width = 0.025400

Length = 0.052560

name = Q6516-01-0205_1

quantity = 3

parent = 1

materialID = 72

type = Box

Aero Mass = 0.271740

Thermal Mass = 0.271740

Diameter/Width = 0.066150

Length = 0.106910

Height = 0.038000

name = Q6516-01-0205_2

quantity = 3

parent = 1

materialID = 72

type = Box

Aero Mass = 0.271740

Thermal Mass = 0.271740

Diameter/Width = 0.066150

Length = 0.106910

Height = 0.038000

name = Q6516-01-0206

quantity = 6

parent = 1

materialID = 72

type = Box

Aero Mass = 0.015100

Thermal Mass = 0.015100

Diameter/Width = 0.029000

Length = 0.032000

Height = 0.027000

name = Q6516-01-0301

quantity = 1

parent = 1

materialID = 71

type = Flat Plate

Aero Mass = 0.243350

Thermal Mass = 0.243350

Diameter/Width = 0.120000

Length = 0.120000

name = Q6516-01-0302
quantity = 3
parent = 1
materialID = 72
type = Cylinder
Aero Mass = 0.030540
Thermal Mass = 0.030540
Diameter/Width = 0.060000
Length = 0.158910

name = Q6516-01-0304
quantity = 1
parent = 1
materialID = 65
type = Flat Plate
Aero Mass = 0.354830
Thermal Mass = 0.354830
Diameter/Width = 0.145000
Length = 0.154770

name = Q6516-01-0401
quantity = 1
parent = 1
materialID = 65
type = Box
Aero Mass = 0.100320
Thermal Mass = 0.100320
Diameter/Width = 0.061880
Length = 0.127380

Height = 0.022000

name = Q6516-01-0402

quantity = 1

parent = 1

materialID = 65

type = Cylinder

Aero Mass = 0.390540

Thermal Mass = 0.390540

Diameter/Width = 0.013000

Length = 0.768340

name = Q6516-01-0403

quantity = 1

parent = 1

materialID = 59

type = Box

Aero Mass = 0.013290

Thermal Mass = 0.013290

Diameter/Width = 0.028330

Length = 0.032220

Height = 0.023770

name = Q6516-01-0404

quantity = 1

parent = 1

materialID = 65

type = Flat Plate

Aero Mass = 0.001850

Thermal Mass = 0.001850

Diameter/Width = 0.020990

Length = 0.023070

name = Q6516-01-0405

quantity = 1

parent = 1

materialID = 54

type = Cylinder

Aero Mass = 0.000230

Thermal Mass = 0.000230

Diameter/Width = 0.008500

Length = 0.012000

name = Q6516-01-0406

quantity = 1

parent = 1

materialID = 65

type = Cylinder

Aero Mass = 0.000650

Thermal Mass = 0.000650

Diameter/Width = 0.007500

Length = 0.007660

name = Q6516-01-0407

quantity = 1

parent = 1

materialID = 65

type = Box

Aero Mass = 0.000220

Thermal Mass = 0.000220

Diameter/Width = 0.005000

Length = 0.007340

Height = 0.003000

name = Q6516-01-0408

quantity = 4

parent = 1

materialID = 59

type = Flat Plate

Aero Mass = 0.000001

Thermal Mass = 0.000001

Diameter/Width = 0.002300

Length = 0.002300

name = Q6516-01-0409

quantity = 1

parent = 1

materialID = 77

type = Flat Plate

Aero Mass = 0.000190

Thermal Mass = 0.000190

Diameter/Width = 0.017120

Length = 0.019260

name = Q6516-01-0412

quantity = 1

parent = 1

materialID = 59

type = Flat Plate

Aero Mass = 0.000050

Thermal Mass = 0.000050

Diameter/Width = 0.005000

Length = 0.005000

name = 10L 256TO1 KF1 KL3 HL 3X0.5 15 KWL3 KWN1 KWS1 M10039

quantity = 1

parent = 1

materialID = 58

type = Cylinder

Aero Mass = 0.015630

Thermal Mass = 0.015630

Diameter/Width = 0.010000

Length = 0.042400

name = T-750-A-050-OT

quantity = 1

parent = 1

materialID = 56

type = Cylinder

Aero Mass = 0.007380

Thermal Mass = 0.007380

Diameter/Width = 0.019050

Length = 0.028700

name = DM1220RC005535 A6112

quantity = 1

parent = 1

materialID = 56

type = Cylinder

Aero Mass = 0.009000

Thermal Mass = 0.009000
Diameter/Width = 0.012000
Length = 0.017600

name = W 6182
quantity = 1
parent = 1
materialID = 56
type = Cylinder
Aero Mass = 0.000130
Thermal Mass = 0.000130
Diameter/Width = 0.005000
Length = 0.002000

name = CM-02043
quantity = 1
parent = 1
materialID = 23
type = Flat Plate
Aero Mass = 0.026200
Thermal Mass = 0.026200
Diameter/Width = 0.063500
Length = 0.063500

name = Q6516-01_FPA_SCRAPPER
quantity = 1
parent = 1
materialID = 8
type = Flat Plate
Aero Mass = 0.017630

Thermal Mass = 0.017630
Diameter/Width = 0.069000
Length = 0.069000

name = Q6516-01-0501
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.308720
Thermal Mass = 0.308720
Diameter/Width = 0.177790
Length = 0.248910
Height = 0.147610

name = Q6516-01-0502
quantity = 1
parent = 1
materialID = 8
type = Flat Plate
Aero Mass = 0.038700
Thermal Mass = 0.038700
Diameter/Width = 0.095000
Length = 0.095000

name = Q6516-01-0511
quantity = 1
parent = 1
materialID = 71
type = Flat Plate

Aero Mass = 0.004370

Thermal Mass = 0.004370

Diameter/Width = 0.029000

Length = 0.029000

name = Q6516-01-0512

quantity = 1

parent = 1

materialID = 71

type = Flat Plate

Aero Mass = 0.007140

Thermal Mass = 0.007140

Diameter/Width = 0.029000

Length = 0.029000

name = Q6516-01-0513

quantity = 1

parent = 1

materialID = 8

type = Box

Aero Mass = 0.033740

Thermal Mass = 0.033740

Diameter/Width = 0.048780

Length = 0.058680

Height = 0.020000

name = Q6516-01-0514

quantity = 1

parent = 1

materialID = 65

type = Flat Plate

Aero Mass = 0.005410

Thermal Mass = 0.005410

Diameter/Width = 0.040750

Length = 0.040750

name = Q6516-01-0515

quantity = 1

parent = 1

materialID = 8

type = Flat Plate

Aero Mass = 0.002530

Thermal Mass = 0.002530

Diameter/Width = 0.029700

Length = 0.029700

name = Q6516-01-0516

quantity = 1

parent = 1

materialID = 8

type = Flat Plate

Aero Mass = 0.000760

Thermal Mass = 0.000760

Diameter/Width = 0.029700

Length = 0.029700

name = Q6516-01-0601

quantity = 3

parent = 1

materialID = 65

type = Cylinder

Aero Mass = 0.074630

Thermal Mass = 0.074630

Diameter/Width = 0.014000

Length = 0.160570

name = Q6516-01-0602

quantity = 6

parent = 1

materialID = 65

type = Box

Aero Mass = 0.026220

Thermal Mass = 0.026220

Diameter/Width = 0.023000

Length = 0.027710

Height = 0.013500

name = Q6516-01-0603

quantity = 6

parent = 1

materialID = 65

type = Box

Aero Mass = 0.044140

Thermal Mass = 0.044140

Diameter/Width = 0.042550

Length = 0.045000

Height = 0.014000

name = Q6516-01-0701

quantity = 1

parent = 1
materialID = 8
type = Flat Plate
Aero Mass = 4.738510
Thermal Mass = 4.738510
Diameter/Width = 0.614680
Length = 0.620000

name = Q6516-01-2101
quantity = 3
parent = 1
materialID = 72
type = Box
Aero Mass = 0.637410
Thermal Mass = 0.637410
Diameter/Width = 0.067330
Length = 0.175000
Height = 0.065860

name = Q6516-01-2102
quantity = 3
parent = 1
materialID = 72
type = Flat Plate
Aero Mass = 0.050990
Thermal Mass = 0.050990
Diameter/Width = 0.030000
Length = 0.125000

name = Q6516-01-2103

quantity = 3

parent = 1

materialID = 72

type = Flat Plate

Aero Mass = 0.091490

Thermal Mass = 0.091490

Diameter/Width = 0.030000

Length = 0.175000

name = Q6516-01-2104

quantity = 2

parent = 1

materialID = 72

type = Box

Aero Mass = 0.041840

Thermal Mass = 0.041840

Diameter/Width = 0.030000

Length = 0.050000

Height = 0.011330

name = Q6516-01-2105

quantity = 2

parent = 1

materialID = 72

type = Flat Plate

Aero Mass = 0.017420

Thermal Mass = 0.017420

Diameter/Width = 0.030000

Length = 0.050000

name = Q6516-01-2106

quantity = 1

parent = 1

materialID = 72

type = Box

Aero Mass = 0.078700

Thermal Mass = 0.078700

Diameter/Width = 0.030000

Length = 0.095000

Height = 0.011330

name = Q6516-01-2107

quantity = 1

parent = 1

materialID = 72

type = Flat Plate

Aero Mass = 0.034100

Thermal Mass = 0.034100

Diameter/Width = 0.030000

Length = 0.100000

name = Q6516-01-2108

quantity = 3

parent = 1

materialID = 72

type = Cylinder

Aero Mass = 0.011800

Thermal Mass = 0.011800

Diameter/Width = 0.012170

Length = 0.018000

name = Q6516-01-2112
quantity = 3
parent = 1
materialID = 72
type = Cylinder
Aero Mass = 0.008530
Thermal Mass = 0.008530
Diameter/Width = 0.010160
Length = 0.024000

name = Q6516-01-2113
quantity = 6
parent = 1
materialID = 72
type = Cylinder
Aero Mass = 0.002060
Thermal Mass = 0.002060
Diameter/Width = 0.006350
Length = 0.011250

name = Q6516-01-2115
quantity = 12
parent = 1
materialID = 72
type = Cylinder
Aero Mass = 0.019200
Thermal Mass = 0.019200
Diameter/Width = 0.016710
Length = 0.024000

name = Q6516-01-2116

quantity = 12

parent = 1

materialID = 72

type = Cylinder

Aero Mass = 0.010940

Thermal Mass = 0.010940

Diameter/Width = 0.010260

Length = 0.024000

*****OUTPUT****

Item Number = 1

name = SV1 LEO

Demise Altitude = 78.002274

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = LAUNCH VECHILE SEPARATION (FLYAWAY)

Demise Altitude = 76.052488

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02316 (POS X- TOP PLATE- HONEYCOMB)

Demise Altitude = 75.734078

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03324 (BEAM- CORNER- POS Z- POS Y)

Demise Altitude = 72.938891

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03326 (BEAM- CORNER- NEG Z- POS Y)

Demise Altitude = 72.980346

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03327 (BEAM- CORNER- POS Z- NEG Y)

Demise Altitude = 72.990648

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03225 (BEAM- CORNER- NEG Z- NEG Y)

Demise Altitude = 72.907856

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03149 (TORQUE ROD)

Demise Altitude = 75.717184

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03148 (ADAP PLT- TORQUE ROD)

Demise Altitude = 74.240073

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02685 (GUSSET- MTG- SPAR PNL- HONEYCOMB)

Demise Altitude = 74.378335

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03785 (GUSSET- MTG- STRUT)

Demise Altitude = 74.601575

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03571 (GUSSET- CORNER- CAMERA MOUNT)

Demise Altitude = 73.391023

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03786 (TRUSS- SPAR TO OUTER PANEL)

Demise Altitude = 74.618369

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03569 (BRACKET- INSECTOID MOUNT)

Demise Altitude = 73.375599

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02883 (GUSSET- SIDE- BAFFLE)

Demise Altitude = 74.628753

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02306 (BRACKET- MTG- ADCS)

Demise Altitude = 69.434025

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03180 (REACTION WHEEL)

Demise Altitude = 60.794940

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03080 (ASSY- STRUCTUAL- PANEL- HONEYCOMB- MID)

Demise Altitude = 59.676865

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02874 (MPS- 4- SLOT)

Demise Altitude = 67.714569

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = AVIONICS OUTER HOUSING

Demise Altitude = 71.657312

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = ASSY AVIONICS BOARD

Demise Altitude = 69.388105

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02696 (GUSSET- MTG- SPAR PANEL- HONEYCOMB- POS Y)

Demise Altitude = 74.722234

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03879 (STRUT- CORNER BEAM- CONNECTION)

Demise Altitude = 73.281613

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03784 (STRUT- CORNER BEAM CONNECTION)

Demise Altitude = 73.271490

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03783 (STRUT- TRIANGULATION)

Demise Altitude = 73.671593

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03726 (PLT- ADAPTER- SPLITTER- COMBINER MODULE)

Demise Altitude = 74.443629

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03175 (ADAPTER- PLATE- SATLAB RADIO)

Demise Altitude = 74.394535

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03570 (BRACKET- CORNER MOUNT- RPO CAMERA)

Demise Altitude = 72.774491

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03372 (BRACKET- MTG- STAR TRACKER)

Demise Altitude = 73.690949

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03815 (TRUSS- TOP PLATE TO SIDE PANEL)

Demise Altitude = 74.655592

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03865 (GUSSET- CORNER- CAMERA MOUNT- THRDED HOLE)

Demise Altitude = 73.207251

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03371 (BRACKET- MTG- IR CAMERA- RPO)

Demise Altitude = 73.329087

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03176 (BRACKET- PDB)

Demise Altitude = 74.088391

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02882 (ASSY- BAFFLE)

Demise Altitude = 73.633528

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02334 (ASSY- STRUCTUAL- PANEL- SPAR- HONEYCOMB)

Demise Altitude = 73.437724

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02335 (ASSY- STRUCTUAL- PANEL- SPAR- HONEYCOMB)

Demise Altitude = 73.334029

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02332 (ASSY- STRUCTUAL- PANEL- SPAR- HONEYCOMB)

Demise Altitude = 72.817734

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02333 (ASSY- STRUCTUAL- PANEL- SPAR- HONEYCOMB)

Demise Altitude = 73.343515

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02687 (PLATE- NUT- BND- BAFFLE)

Demise Altitude = 74.010317

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03137 (FLEXURE- MTG- HDRM)

Demise Altitude = 63.546888

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03616 (BRACKET- INTERFACE- HDRM)

Demise Altitude = 69.475504

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02629 (HINGE- STATIC- LENS COVER)

Demise Altitude = 74.464406

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02686 (BRACKET- MTG- BND- LONG BASE BAFFLE)

Demise Altitude = 73.272496

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02688 (BRACKET- MTG- BND- BASE- BAFFLE)

Demise Altitude = 73.293072

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03006 (BRACKET- BLKHEAD- UMBILICAL)

Demise Altitude = 74.810707

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-04597 (INSECTOID- SIDE MOUNT- NO IMU)

Demise Altitude = 71.592329

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-04596 (INSECTOID- SIDE MOUNT- W/ IMU)

Demise Altitude = 71.316634

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03345 (STAR TRACKER)

Demise Altitude = 72.570181

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-04599 (BOSON- IR SENSOR)

Demise Altitude = 72.495149

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03220 (EBAD RELEASE MECHANISM)

Demise Altitude = 71.074680

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = ASSY BACKPLANE (OUTER HOUSING)

Demise Altitude = 72.149885

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = ASSY PCBA BOARD

Demise Altitude = 71.245280

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = ASSY POWER DISTRIBUTION MODULE (OUTER HOUSING)

Demise Altitude = 74.113158

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = ASSY POWER DISTRIBUTION MODULE BOARD

Demise Altitude = 73.143589

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03727 (MODULE- SPLITTER- COMBINER- S- BAND- TX-RX)

Demise Altitude = 73.038630

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-0477 (SRS- 4 TRANSCEIVER- SATTLAB)

Demise Altitude = 72.136316

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03075 (RADIO- KA- BAND TRANSMIT)

Demise Altitude = 68.650381

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = BATTERY BOX (OUTER BOX)

Demise Altitude = 66.853262

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = BATTERY INNER COMPONENTS

Demise Altitude = 42.366485

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-00942 (CONTROLLER- X ACT FLEXCORE)

Demise Altitude = 70.070039

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03348 (COLOSSUS- PROCESSOR MODULE)

Demise Altitude = 67.916591

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-04835 (BRACKET- ANGLE)

Demise Altitude = 74.779578

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CABLES

Demise Altitude = 75.460242

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02329 (NEG Z- SIDE PNL- HONEYCOMB)

Demise Altitude = 74.863815

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03243 (BRACKET- MX3 SPC MOUNT- - Z PANEL)

Demise Altitude = 72.461489

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03895 (BRACKET- MX3 SPC MOUNT- - Z PANEL)

Demise Altitude = 72.377850

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02324 (GUSSET- CORNER- PROP BAY)

Demise Altitude = 73.032321

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03234(GUSSET- CORNER- MIDPLATE)

Demise Altitude = 72.950218

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03282 (GUSSET- MTG- SIDE PNL- HONEYCOMB- SHORT)

Demise Altitude = 73.292229

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03005 (BRKT- BLKHEAD- PROP UMBILICAL)

Demise Altitude = 74.234848

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02648 (GUSSET- MTG- SIDE PNL- HONEYCOMB)

Demise Altitude = 73.174698

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03546 (SPAR- STRUCTUAL- LH- OUTER- PROP BAY)

Demise Altitude = 67.909038

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03231 (SPAR- STRUCTUAL- OUTER PROP BAY- Z- SPAR)

Demise Altitude = 63.318554

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02318 (SPAR- STRUCTUAL- RH- OUTER PROP BAY)

Demise Altitude = 68.209040

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03319 (BRKT- TANK- FUEL)

Demise Altitude = 72.412022

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03320 (PLT- MTG- FLEXURE- FUEL TANK)

Demise Altitude = 72.557222

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03322 (PLATE- INSULATION- FUEL TANK- FLEXURE SIDE)

Demise Altitude = 74.703952

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03232 (SPAR- STRUCTUAL- INNER PROP BAY)

Demise Altitude = 71.531177

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02319 (SPAR- STRUCTUAL- Z- PROPULSION BAY)

Demise Altitude = 67.680673

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03233 (GUSSET- Z- SPAR CONNECTION)

Demise Altitude = 72.852742

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03321 (PLATE- MTG- FIXED- FUEL TANK)

Demise Altitude = 70.581098

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03456 (BRKT- TANK TO MIDPLATE- LH- WIDE)

Demise Altitude = 73.290748

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03457 (BRACKET- TANK TO MP- RH- WIDE)

Demise Altitude = 73.290767

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03246 (BRACKET- TANK TO MP- RH)

Demise Altitude = 73.282387

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03245 (BRACKET- TANK TO MP-RH)

Demise Altitude = 73.282387

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03564 (PLATE- INSULATION- FUEL TANK- MIDPLATE- WIDE)

Demise Altitude = 74.607955

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03441 (PLATE- INSUALTION- FUEL TANK- MP SIDE)

Demise Altitude = 74.617358

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03323 (PLATE- INSULATION- FUEL TANK- FIXED SIDE)

Demise Altitude = 74.666014

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03328 (PLATE- MTG- GEAR PUMP)

Demise Altitude = 71.899756

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03437 (PLATE- MTG- GEAR PUMP COMPONENT)

Demise Altitude = 74.152582

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03433 (CLAMP- MTG- GEAR PUMP)

Demise Altitude = 73.419022

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03430 (GEAR PUMP)

Demise Altitude = 58.905618

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03870 (GUSSET- CORNER BEAM- SIDE MOUNT)

Demise Altitude = 72.794079

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03787 (GUSSET- CORNER BEAM)

Demise Altitude = 72.391613

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03431 (CONTROLLER- ENGINE)

Demise Altitude = 68.744084

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03429 (FUEL TANK)

Demise Altitude = 0.000000

Debris Casualty Area = 2.701157

Impact Kinetic Energy = 3147.979858

name = CM-03432 (FUEL LINES)

Demise Altitude = 73.366888

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02330 (POS Y- SIDE PNL- HONEYCOMB)

Demise Altitude = 73.291239

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03079 (NEG X- BASE PLT- HONEYCOMB)

Demise Altitude = 0.000000

Debris Casualty Area = 1.870897

Impact Kinetic Energy = 28495.756582

name = CM-02331 (NEG Y- SIDE PNL- HONEYCOMB)

Demise Altitude = 73.322973

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02328 (POS Z- SIDE PNL- HONEYCOMB)

Demise Altitude = 73.355008

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-04572 (POS Z SOLAR PANEL DEPLOYED)

Demise Altitude = 71.627067

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-04571 (NEG Z SOLAR PANEL DEPLOYED)

Demise Altitude = 71.627067

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03049 (LENS COVER OUTER PANELS)

Demise Altitude = 77.689119

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03048 (LENS COVER CORE)

Demise Altitude = 77.352263

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02628 (HINGE- DYNAMIC- LENS COVER)

Demise Altitude = 76.677063

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03136 (BRACKET- HDRM-LENS COVER)

Demise Altitude = 76.782289

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03346 (SENSOR- SUN- COARSE)

Demise Altitude = 76.934315

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03316 (SUN SENSOR ADAP PLT)

Demise Altitude = 76.916370

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03612 (COVER- THRUSTER- DUAL)

Demise Altitude = 77.428171

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03838 (COVER- INSULATION- DUAL UPPER)

Demise Altitude = 77.486345

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03839 (COVER- INSUALTION- DUAL- LOWER)

Demise Altitude = 77.437214

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03836 (COVER- INSULATION- Z LAT- FUEL LINE)

Demise Altitude = 77.385313

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03614 (COVER- THRUSTER- AXIAL)

Demise Altitude = 77.357838

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03613 (COVER- THRUSTER- LATERAL)

Demise Altitude = 77.517110

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03595 (COVER- INSULATION- GEAR PUMP)

Demise Altitude = 76.811135

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03837 (COVER- INSULATION- POY LAT- FUELINE)

Demise Altitude = 77.283653

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03833 (COVER- INSULATION- THRUSTER- POS X-Y)

Demise Altitude = 77.584946

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03826 (COVER- INSULATION- F/D VALVES)

Demise Altitude = 77.483947

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03835 (COVER- INSULATION- THRML- NEG X)

Demise Altitude = 77.545600

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = SR-5M TRIAD THRUSTER

Demise Altitude = 75.637702

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03615 (PLT- INSULATION- THRUSTER TO BRKT)

Demise Altitude = 77.755472

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03600 (BRKT- MTG- THRUSTER- DUAL)

Demise Altitude = 75.269055

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03909 (GUSSET- THRSTER BRKT TO SIDE PNL)

Demise Altitude = 77.086347

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03908 (PLT- INSUALTION- THRUSTER GUSSET)

Demise Altitude = 77.821476

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03610 (PLT- MTG- THIN- THRUSTER SOLENOID)

Demise Altitude = 76.721810

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03602 (BRKT- MTG- THRUSTER AXIAL)

Demise Altitude = 75.651762

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03611 (PLT- WIDE- THRUSTER SOLENOID)

Demise Altitude = 76.161983

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03601 (BRKT- MTG- THRUSTER- LATERAL)

Demise Altitude = 75.804625

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03834 (COVER- INSULATION- THRML- POS X- NEG Y)

Demise Altitude = 77.527986

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-04081 (PANEL ACCESS)

Demise Altitude = 77.051249

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-04082 (PANEL ACCESS- SMALL)

Demise Altitude = 77.051334

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03605 (PLT- INSULATION- THRUSTER- DUAL)

Demise Altitude = 77.797107

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03604 (PLT- INSULATION- THRUSTER- LATERAL)

Demise Altitude = 77.796975

Debris Casualty Area = 0.000000

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name = CM-03603 (PLT- INSULATION- THRUSTER- AXIAL)

Demise Altitude = 77.813373

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name = CM-04082-02 (PANEL- ACCESS- SMALL)

Demise Altitude = 77.068303

Debris Casualty Area = 0.000000

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name = CM-03141 (COVER- UMBILICAL)

Demise Altitude = 76.141702

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03142(COVER- UMBILICAL- PROPULSION)

Demise Altitude = 76.406119

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03143 (ADAPTER- PLT- S- BAND ANTENNA)

Demise Altitude = 76.478658

Debris Casualty Area = 0.000000

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name = CM-01456 (ANTENNA- DUAL S- BAND)

Demise Altitude = 76.776259

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03130 (ANTENNA- KA- BAND- HORN ARRAY)

Demise Altitude = 73.639258

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02656 (RADIO- L-BAND- 28 V)

Demise Altitude = 73.507081

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03076 (ANTENNA- S- BAND- DUPLEX- SMA)

Demise Altitude = 76.891097

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-03144 (ADAPTER PLATE- S -BAND- ANTENNA)

Demise Altitude = 77.105211

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Impact Kinetic Energy = 0.000000

name = Telescope Assembly

Demise Altitude = 65.407013

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = Q6516-01-0011

Demise Altitude = 0.000000

Debris Casualty Area = 1.137637

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name = Q6516-01-0012

Demise Altitude = 77.468587

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name = Q6516-01-0015

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Impact Kinetic Energy = 0.000000

name = Q6516-01-0016

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Impact Kinetic Energy = 0.000000

name = Q6516-01-0021

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Impact Kinetic Energy = 0.000000

name = Q6516-01-0023

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name = Q6516-01-0122

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name = Q6516-01-0131

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name = Q6516-01-0132

Demise Altitude = 77.674714

Debris Casualty Area = 0.000000

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name = Q6516-01-0201

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name = Q6516-01-0202-01

Demise Altitude = 77.491618

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name = Q6516-01-0202-03

Demise Altitude = 77.450078

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = Q6516-01-0202-05

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name = Q6516-01-0205_1

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name = Q6516-01-0205_2

Demise Altitude = 73.935915

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name = Q6516-01-0302

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name = Q6516-01-0304

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name = Q6516-01-0401

Demise Altitude = 0.000000

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name = Q6516-01-0402

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name = Q6516-01-0403

Demise Altitude = 76.551727

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name = Q6516-01-0404

Demise Altitude = 76.657294

Debris Casualty Area = 0.000000

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name = Q6516-01-0405

Demise Altitude = 77.857557

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name = Q6516-01-0406

Demise Altitude = 76.869494

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name = Q6516-01-0407

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name = Q6516-01-0408

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name = Q6516-01-0409

Demise Altitude = 77.987666

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = Q6516-01-0412

Demise Altitude = 77.808809

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Impact Kinetic Energy = 0.000000

name = 10L 256TO1 KF1 KL3 HL 3X0.5 15 KWL3 KWN1 KWS1 M10039

Demise Altitude = 74.262799

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = T-750-A-050-OT

Demise Altitude = 75.771225

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = DM1220RC005535 A6112

Demise Altitude = 73.947541

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = W 6182

Demise Altitude = 77.514754

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = CM-02043

Demise Altitude = 77.058400

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = Q6516-01_FPA_SCRAPPER

Demise Altitude = 77.446641

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = Q6516-01-0501

Demise Altitude = 77.238542

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name = Q6516-01-0502

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name = Q6516-01-0512

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name = Q6516-01-0513

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name = Q6516-01-0514

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name = Q6516-01-0515

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name = Q6516-01-0516

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name = Q6516-01-0601

Demise Altitude = 71.670273

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name = Q6516-01-0603

Demise Altitude = 71.635154

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name = Q6516-01-0701

Demise Altitude = 71.678500

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = Q6516-01-2101

Demise Altitude = 73.184895

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name = Q6516-01-2103

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name = Q6516-01-2104

Demise Altitude = 75.361002

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name = Q6516-01-2105

Demise Altitude = 76.348295

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Impact Kinetic Energy = 0.000000

name = Q6516-01-2106

Demise Altitude = 75.106260

Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = Q6516-01-2107

Demise Altitude = 76.183994

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Impact Kinetic Energy = 0.000000

name = Q6516-01-2108

Demise Altitude = 74.472029

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name = Q6516-01-2112

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Impact Kinetic Energy = 0.000000

name = Q6516-01-2115

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Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

name = Q6516-01-2116

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Debris Casualty Area = 0.000000

Impact Kinetic Energy = 0.000000

===== End of Requirement 4.7-1 =====

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07 01 2026; 11:18:47AM Project Data Saved To File

07 01 2026; 11:18:48AM Project Data Saved To File

07 01 2026; 11:18:49AM Project Data Saved To File

END OF ODAR FOR TURION SPACE