

09 28 2021; 12:38:03PM Activity Log Started
09 28 2021; 12:38:03PM Opened Project
C:\Users\lucas\AppData\Local\NASA\DAS3.1.0\whitney56\
09 28 2021; 12:38:08PM Closed Project
C:\Users\lucas\AppData\Local\NASA\DAS3.1.0\whitney56\
09 28 2021; 12:38:08PM Activity Log Started
09 28 2021; 12:38:09PM Opened Project
C:\Users\lucas\AppData\Local\NASA\DAS3.1.0\whitney56\
09 28 2021; 12:39:21PM Processing Requirement 4.3-1: Return Status : Not Run

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No Project Data Available
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End of Requirement 4.3-1
09 28 2021; 12:39:26PM Processing Requirement 4.3-2: Return Status : Passed

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No Project Data Available
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End of Requirement 4.3-2
09 28 2021; 12:52:34PM Processing Requirement 4.5-1: Return Status : Passed

=====
Run Data
=====

****INPUT****

Space Structure Name = Whitney
Space Structure Type = Payload
Perigee Altitude = 575.000 (km)
Apogee Altitude = 575.000 (km)
Inclination = 97.000 (deg)
RAAN = 0.000 (deg)
Argument of Perigee = 0.000 (deg)
Mean Anomaly = 0.000 (deg)
Final Area-To-Mass Ratio = 0.0350 (m²/kg)
Start Year = 2021.120 (yr)
Initial Mass = 112.000 (kg)
Final Mass = 111.000 (kg)
Duration = 3.000 (yr)
Station-Kept = True
Abandoned = True

****OUTPUT****

Collision Probability = 7.8117E-05
Returned Message: Normal Processing

Date Range Message: Normal Date Range
Status = Pass

=====

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

09 28 2021; 12:52:38PM Project Data Saved To File
09 28 2021; 13:07:47PM Requirement 4.5-2: Compliant

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Spacecraft = Whitney
Critical Surface = ADCS

=====

****INPUT****

Apogee Altitude = 575.000 (km)
Perigee Altitude = 575.000 (km)
Orbital Inclination = 97.000 (deg)
RAAN = 0.000 (deg)
Argument of Perigee = 0.000 (deg)
Mean Anomaly = 0.000 (deg)
Final Area-To-Mass = 0.0350 (m²/kg)
Initial Mass = 111.000 (kg)
Final Mass = 111.000 (kg)
Station Kept = Yes
Start Year = 2021.120 (yr)
Duration = 3.000 (yr)
Orientation = Random Tumbling
CS Areal Density = 5.000 (g/cm²)
CS Surface Area = 0.0100 (m²)
Vector = (0.000000 (u), 0.000000 (v), 0.000000 (w))
CS Pressurized = No
Outer Wall 1 Density: 2.700 (g/cm²) Separation: 0.100 (cm)

****OUTPUT****

Probability of Penetration = 2.4128E-05 (2.4128E-05)
Returned Error Message: Normal Processing
Date Range Error Message: Normal Date Range

=====

Spacecraft = Whitney
Critical Surface = Comms

=====

****INPUT****

Apogee Altitude = 575.000 (km)

Perigee Altitude = 575.000 (km)
Orbital Inclination = 97.000 (deg)
RAAN = 0.000 (deg)
Argument of Perigee = 0.000 (deg)
Mean Anomaly = 0.000 (deg)
Final Area-To-Mass = 0.0350 (m²/kg)
Initial Mass = 111.000 (kg)
Final Mass = 111.000 (kg)
Station Kept = Yes
Start Year = 2021.120 (yr)
Duration = 3.000 (yr)
Orientation = Random Tumbling
CS Areal Density = 5.000 (g/cm²)
CS Surface Area = 0.0050 (m²)
Vector = (0.000000 (u), 0.000000 (v), 0.000000 (w))
CS Pressurized = No
Outer Wall 1 Density: 2.700 (g/cm²) Separation: 0.100 (cm)

****OUTPUT****

Probability of Penetration = 1.2064E-05 (1.2064E-05)
Returned Error Message: Normal Processing
Date Range Error Message: Normal Date Range

=====
Spacecraft = Whitney
Critical Surface = Solar Panels
=====

****INPUT****

Apogee Altitude = 575.000 (km)
Perigee Altitude = 575.000 (km)
Orbital Inclination = 97.000 (deg)
RAAN = 0.000 (deg)
Argument of Perigee = 0.000 (deg)
Mean Anomaly = 0.000 (deg)
Final Area-To-Mass = 0.0350 (m²/kg)
Initial Mass = 111.000 (kg)
Final Mass = 111.000 (kg)
Station Kept = Yes
Start Year = 2021.120 (yr)
Duration = 3.000 (yr)
Orientation = Random Tumbling
CS Areal Density = 5.000 (g/cm²)
CS Surface Area = 0.9000 (m²)
Vector = (0.000000 (u), 0.000000 (v), 0.000000 (w))
CS Pressurized = No
Outer Wall 1 Density: 5.000 (g/cm²) Separation: 0.050 (cm)

****OUTPUT****

Probability of Penetration = 2.2779E-04 (2.2782E-04)
Returned Error Message: Normal Processing
Date Range Error Message: Normal Date Range

=====
Spacecraft = Whitney
Critical Surface = Batteries
=====

****INPUT****

Apogee Altitude = 575.000 (km)
Perigee Altitude = 575.000 (km)
Orbital Inclination = 97.000 (deg)
RAAN = 0.000 (deg)
Argument of Perigee = 0.000 (deg)
Mean Anomaly = 0.000 (deg)
Final Area-To-Mass = 0.0350 (m²/kg)
Initial Mass = 111.000 (kg)
Final Mass = 111.000 (kg)
Station Kept = Yes
Start Year = 2021.120 (yr)
Duration = 3.000 (yr)
Orientation = Random Tumbling
CS Areal Density = 5.000 (g/cm²)
CS Surface Area = 0.0200 (m²)
Vector = (0.000000 (u), 0.000000 (v), 0.000000 (w))
CS Pressurized = No
Outer Wall 1 Density: 5.000 (g/cm²) Separation: 0.250 (cm)

****OUTPUT****

Probability of Penetration = 5.0627E-06 (5.0627E-06)
Returned Error Message: Normal Processing
Date Range Error Message: Normal Date Range

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End of Requirement 4.5-2 =====

09 28 2021; 13:07:48PM Processing Requirement 4.6 Return Status : Passed

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Project Data
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****INPUT****

Space Structure Name = Whitney
Space Structure Type = Payload

Perigee Altitude = 575.000000 (km)
Apogee Altitude = 575.000000 (km)
Inclination = 97.000000 (deg)
RAAN = 0.000000 (deg)
Argument of Perigee = 0.000000 (deg)
Mean Anomaly = 0.000000 (deg)
Area-To-Mass Ratio = 0.035000 (m²/kg)
Start Year = 2021.120000 (yr)
Initial Mass = 112.000000 (kg)
Final Mass = 111.000000 (kg)
Duration = 3.000000 (yr)
Station Kept = True
Abandoned = True
PMD Perigee Altitude = 575.000000 (km)
PMD Apogee Altitude = 575.000000 (km)
PMD Inclination = 97.000000 (deg)
PMD RAAN = 0.000000 (deg)
PMD Argument of Perigee = 0.000000 (deg)
PMD Mean Anomaly = 0.000000 (deg)

****OUTPUT****

Suggested Perigee Altitude = 575.000000 (km)
Suggested Apogee Altitude = 575.000000 (km)
Returned Error Message = Passes LEO reentry orbit criteria.

Released Year = 2026 (yr)
Requirement = 61
Compliance Status = Pass

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

09 28 2021; 13:08:21PM *****Processing Requirement 4.7-1
Return Status : Passed

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

Item Number = 1

name = Whitney
quantity = 1
parent = 0
materialID = 5
type = Box
Aero Mass = 111.000000
Thermal Mass = 111.000000
Diameter/Width = 0.300000
Length = 1.000000
Height = 0.300000

name = Batteries
quantity = 64
parent = 1
materialID = 5
type = Cylinder
Aero Mass = 0.062500
Thermal Mass = 0.062500
Diameter/Width = 0.020000
Length = 0.100000

name = Bus Structure
quantity = 1
parent = 1
materialID = 5
type = Box
Aero Mass = 28.000000
Thermal Mass = 28.000000
Diameter/Width = 0.300000
Length = 0.800000
Height = 0.300000

name = RW
quantity = 3
parent = 1
materialID = 5
type = Cylinder
Aero Mass = 3.200000
Thermal Mass = 3.200000
Diameter/Width = 0.150000
Length = 0.100000

name = Avionics
quantity = 1
parent = 1
materialID = 5
type = Box
Aero Mass = 20.420000
Thermal Mass = 20.420000
Diameter/Width = 0.300000
Length = 0.300000
Height = 0.300000

name = Tanks
quantity = 1
parent = 1
materialID = 5
type = Cylinder
Aero Mass = 1.500000
Thermal Mass = 1.500000

Diameter/Width = 0.100000
Length = 0.200000

name = Radio Stack 1
quantity = 1
parent = 1
materialID = 5
type = Box
Aero Mass = 2.500000
Thermal Mass = 2.500000
Diameter/Width = 0.100000
Length = 0.100000
Height = 0.100000

name = Radio Stack 2
quantity = 1
parent = 1
materialID = 5
type = Box
Aero Mass = 2.500000
Thermal Mass = 2.500000
Diameter/Width = 0.100000
Length = 0.100000
Height = 0.100000

name = SAR Antenna Battens
quantity = 13
parent = 1
materialID = -1
type = Cylinder
Aero Mass = 0.400000
Thermal Mass = 0.400000
Diameter/Width = 0.050000
Length = 0.600000

name = Solar Array
quantity = 2
parent = 1
materialID = -1
type = Flat Plate
Aero Mass = 2.400000
Thermal Mass = 2.400000
Diameter/Width = 0.500000
Length = 0.900000

name = Torque Rods
quantity = 3
parent = 1
materialID = 19
type = Cylinder

Aero Mass = 0.600000
Thermal Mass = 0.600000
Diameter/Width = 0.030000
Length = 0.200000

name = Star Tracker
quantity = 2
parent = 1
materialID = 5
type = Box
Aero Mass = 0.300000
Thermal Mass = 0.300000
Diameter/Width = 0.050000
Length = 0.100000
Height = 0.050000

name = Thruster
quantity = 1
parent = 1
materialID = 5
type = Box
Aero Mass = 2.500000
Thermal Mass = 2.500000
Diameter/Width = 0.100000
Length = 0.100000
Height = 0.100000

name = Payload
quantity = 1
parent = 1
materialID = 5
type = Box
Aero Mass = 4.000000
Thermal Mass = 4.000000
Diameter/Width = 0.100000
Length = 0.200000
Height = 0.100000

name = Boom
quantity = 3
parent = 1
materialID = -1
type = Cylinder
Aero Mass = 1.300000
Thermal Mass = 1.300000
Diameter/Width = 0.075000
Length = 1.000000

name = SAR Antenna Ribs
quantity = 12

parent = 1
materialID = 54
type = Flat Plate
Aero Mass = 0.100000
Thermal Mass = 0.100000
Diameter/Width = 0.010000
Length = 1.500000

name = SAR Antenna Hub
quantity = 1
parent = 1
materialID = 5
type = Box
Aero Mass = 6.000000
Thermal Mass = 6.000000
Diameter/Width = 0.150000
Length = 0.150000
Height = 0.150000

*****OUTPUT*****

Item Number = 1

name = Whitney
Demise Altitude = 77.999268
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Batteries
Demise Altitude = 76.356552
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Bus Structure
Demise Altitude = 63.594826
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = RW
Demise Altitude = 65.885750
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Avionics
Demise Altitude = 54.441658
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Tanks
Demise Altitude = 71.560356
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Radio Stack 1
Demise Altitude = 65.064056
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Radio Stack 2
Demise Altitude = 65.064056
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = SAR Antenna Battens
Demise Altitude = 77.703583
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Solar Array
Demise Altitude = 77.651222
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Torque Rods
Demise Altitude = 73.779228
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Star Tracker
Demise Altitude = 75.105164
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Thruster
Demise Altitude = 65.064056
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Payload
Demise Altitude = 66.552734
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Boom
Demise Altitude = 77.548439
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = SAR Antenna Ribs
Demise Altitude = 76.667824
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = SAR Antenna Hub
Demise Altitude = 61.131695
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

===== End of Requirement 4.7-1 =====
09 28 2021; 13:08:21PM Project Data Saved To File