

Exhibit 1

DAS Survivability Analysis Logs

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

****INPUT****

Space Structure Name = ICEYE-US
Space Structure Type = Payload
Perigee Altitude = 550.000 (km)
Apogee Altitude = 567.000 (km)
Inclination = 97.600 (deg)
RAAN = 0.000 (deg)
Argument of Perigee = 0.000 (deg)
Mean Anomaly = 0.000 (deg)
Final Area-To-Mass Ratio = 0.0111 (m²/kg)
Start Year = 2021.600 (yr)
Initial Mass = 89.700 (kg)
Final Mass = 89.100 (kg)
Duration = 3.000 (yr)
Station-Kept = True
Abandoned = True

****OUTPUT****

Collision Probability = 3.4813E-05
Returned Message: Normal Processing
Date Range Message: Normal Date Range
Status = Pass

=====

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

03 29 2021; 17:19:19PM Processing Requirement 4.6 Return Status : Passed

=====
Project Data
=====

****INPUT****

Space Structure Name = ICEYE-US
Space Structure Type = Payload

Perigee Altitude = 550.000000 (km)
Apogee Altitude = 567.000000 (km)
Inclination = 97.600000 (deg)
RAAN = 0.000000 (deg)
Argument of Perigee = 0.000000 (deg)
Mean Anomaly = 0.000000 (deg)
Area-To-Mass Ratio = 0.011100 (m²/kg)
Start Year = 2021.600000 (yr)
Initial Mass = 89.700000 (kg)
Final Mass = 89.100000 (kg)
Duration = 3.000000 (yr)
Station Kept = True
Abandoned = True
PMD Perigee Altitude = 550.000000 (km)
PMD Apogee Altitude = 567.000000 (km)
PMD Inclination = 97.600000 (deg)
PMD RAAN = 0.000000 (deg)
PMD Argument of Perigee = 0.000000 (deg)
PMD Mean Anomaly = 0.000000 (deg)

****OUTPUT****

Suggested Perigee Altitude = 550.000000 (km)
Suggested Apogee Altitude = 567.000000 (km)
Returned Error Message = Passes LEO reentry orbit criteria.

Released Year = 2034 (yr)
Requirement = 61
Compliance Status = Pass

=====

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

03 29 2021; 17:25:58PM *****Processing Requirement 4.7-1
Return Status : Passed

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

Item Number = 1

name = ICEYE-US

quantity = 1
parent = 0
materialID = 9
type = Box
Aero Mass = 89.099998
Thermal Mass = 89.099998
Diameter/Width = 0.800000
Length = 3.200000
Height = 0.650000

name = Backplate
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 3.830000
Thermal Mass = 3.830000
Diameter/Width = 0.520000
Length = 0.670000
Height = 0.040000

name = Side Frame
quantity = 2
parent = 1
materialID = 9
type = Flat Plate
Aero Mass = 2.820000
Thermal Mass = 2.820000
Diameter/Width = 0.500000
Length = 0.670000

name = Top Frame
quantity = 1
parent = 1
materialID = 9
type = Flat Plate
Aero Mass = 2.900000
Thermal Mass = 2.900000
Diameter/Width = 0.470000
Length = 0.500000

name = Bottom Frame
quantity = 1
parent = 1

materialID = 9
type = Flat Plate
Aero Mass = 1.030000
Thermal Mass = 1.030000
Diameter/Width = 0.470000
Length = 0.500000

name = X Frame
quantity = 1
parent = 1
materialID = 9
type = Flat Plate
Aero Mass = 0.470000
Thermal Mass = 0.470000
Diameter/Width = 0.520000
Length = 0.670000

name = Solar Panel
quantity = 5
parent = 1
materialID = 9
type = Flat Plate
Aero Mass = 1.740000
Thermal Mass = 1.740000
Diameter/Width = 0.510000
Length = 0.670000

name = Separation ring
quantity = 1
parent = 1
materialID = 9
type = Flat Plate
Aero Mass = 1.500000
Thermal Mass = 1.500000
Diameter/Width = 0.400000
Length = 0.400000

name = SAR Outer Wing Panels
quantity = 2
parent = 1
materialID = 9
type = Box
Aero Mass = 6.000000
Thermal Mass = 6.000000

Diameter/Width = 0.400000
Length = 0.660000
Height = 0.020000

name = SAR Inner Wing Panels
quantity = 2
parent = 1
materialID = 9
type = Box
Aero Mass = 6.000000
Thermal Mass = 6.000000
Diameter/Width = 0.400000
Length = 0.680000
Height = 0.020000

name = SAR Center Panel
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 4.400000
Thermal Mass = 4.400000
Diameter/Width = 0.400000
Length = 0.520000
Height = 0.020000

name = Thrusters
quantity = 4
parent = 1
materialID = 9
type = Box
Aero Mass = 1.800000
Thermal Mass = 1.800000
Diameter/Width = 0.100000
Length = 0.100000
Height = 0.090000

name = RPU
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 3.500000
Thermal Mass = 3.500000

Diameter/Width = 0.200000
Length = 0.200000
Height = 0.090000

name = OBC1
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 1.500000
Thermal Mass = 1.500000
Diameter/Width = 0.100000
Length = 0.160000
Height = 0.100000

name = Watchdog
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 0.530000
Thermal Mass = 0.530000
Diameter/Width = 0.140000
Length = 0.190000
Height = 0.030000

name = PCM Lite
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 0.400000
Thermal Mass = 0.400000
Diameter/Width = 0.100000
Length = 0.210000
Height = 0.020000

name = PCM
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 1.200000
Thermal Mass = 1.200000

Diameter/Width = 0.220000
Length = 0.220000
Height = 0.030000

name = CDR Lite
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 0.600000
Thermal Mass = 0.600000
Diameter/Width = 0.170000
Length = 0.200000
Height = 0.020000

name = OBC2
quantity = 1
parent = 1
materialID = 9
type = Box
Aero Mass = 1.000000
Thermal Mass = 1.000000
Diameter/Width = 0.110000
Length = 0.150000
Height = 0.100000

name = Contactor
quantity = 1
parent = 1
materialID = 23
type = Cylinder
Aero Mass = 0.500000
Thermal Mass = 0.200000
Diameter/Width = 0.050000
Length = 0.080000

name = Coil
quantity = 1
parent = 20
materialID = 38
type = Cylinder
Aero Mass = 0.300000
Thermal Mass = 0.300000
Diameter/Width = 0.040000

Length = 0.040000

name = Battery

quantity = 1

parent = 1

materialID = 9

type = Box

Aero Mass = 12.000000

Thermal Mass = 3.000000

Diameter/Width = 0.220000

Length = 0.390000

Height = 0.130000

name = Battery Pack

quantity = 20

parent = 22

materialID = 23

type = Box

Aero Mass = 0.450000

Thermal Mass = 0.090000

Diameter/Width = 0.100000

Length = 0.100000

Height = 0.050000

name = Battery Cell

quantity = 160

parent = 23

materialID = 54

type = Cylinder

Aero Mass = 0.045000

Thermal Mass = 0.045000

Diameter/Width = 0.018000

Length = 0.065000

name = ADCS

quantity = 1

parent = 1

materialID = 9

type = Box

Aero Mass = 0.500000

Thermal Mass = 0.500000

Diameter/Width = 0.100000

Length = 0.100000

Height = 0.050000

name = Reaction Wheel
quantity = 3
parent = 1
materialID = 9
type = Box
Aero Mass = 0.850000
Thermal Mass = 0.850000
Diameter/Width = 0.120000
Length = 0.120000
Height = 0.040000

name = MTQ
quantity = 3
parent = 1
materialID = 38
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 = 9
type = Box
Aero Mass = 0.300000
Thermal Mass = 0.300000
Diameter/Width = 0.060000
Length = 0.100000
Height = 0.050000

name = Upper Shelf
quantity = 1
parent = 1
materialID = 9
type = Flat Plate
Aero Mass = 0.800000
Thermal Mass = 0.800000
Diameter/Width = 0.470000
Length = 0.480000

name = Lower Shelf

quantity = 1
parent = 1
materialID = 9
type = Flat Plate
Aero Mass = 1.000000
Thermal Mass = 1.000000
Diameter/Width = 0.470000
Length = 0.480000

*****OUTPUT****

Item Number = 1

name = ICEYE-US
Demise Altitude = 77.993347
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Backplate
Demise Altitude = 68.586403
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Side Frame
Demise Altitude = 70.187332
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Top Frame
Demise Altitude = 67.294792
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Bottom Frame
Demise Altitude = 74.245392
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = X Frame
Demise Altitude = 76.746346

Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Solar Panel
Demise Altitude = 73.234772
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Separation ring
Demise Altitude = 71.111900
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = SAR Outer Wing Panels
Demise Altitude = 62.311825
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = SAR Inner Wing Panels
Demise Altitude = 62.649208
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = SAR Center Panel
Demise Altitude = 63.804691
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Thrusters
Demise Altitude = 60.109081
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = RPU
Demise Altitude = 58.793346
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = OBC1
Demise Altitude = 67.455612
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Watchdog
Demise Altitude = 72.560326
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = PCM Lite
Demise Altitude = 73.255760
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = PCM
Demise Altitude = 68.738152
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = CDR Lite
Demise Altitude = 72.018539
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = OBC2
Demise Altitude = 70.122650
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Contactor
Demise Altitude = 72.591301
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Coil
Demise Altitude = 55.211609
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Battery
Demise Altitude = 70.678383
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Battery Pack
Demise Altitude = 69.815002
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Battery Cell
Demise Altitude = 64.600395
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = ADCS
Demise Altitude = 69.888794
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Reaction Wheel
Demise Altitude = 66.435555
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = MTQ
Demise Altitude = 59.458580
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Star Tracker
Demise Altitude = 72.479568

Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Upper Shelf
Demise Altitude = 74.968582
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

name = Lower Shelf
Demise Altitude = 74.197090
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

=====
===== End of Requirement 4.7-1 =====
03 29 2021; 17:25:58PM Project Data Saved To File