

Mass properties and mode frequencies of mAEWing1 FEM v1.1 (4/24/2015)

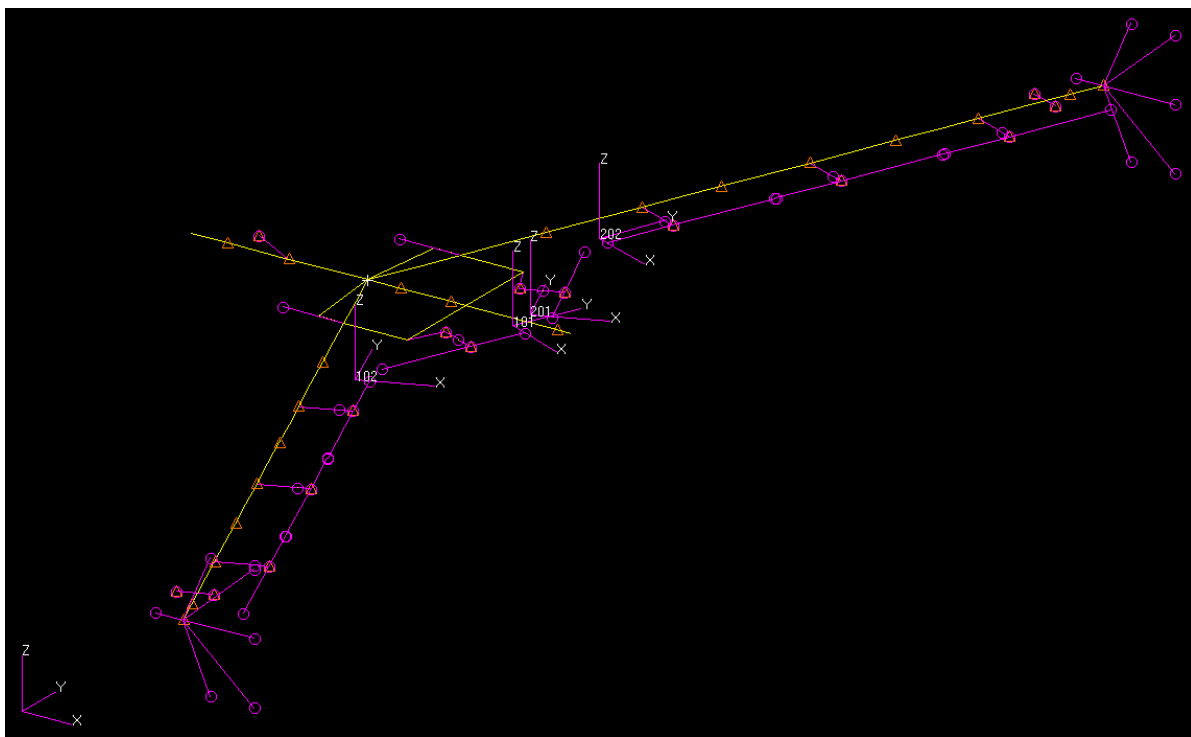
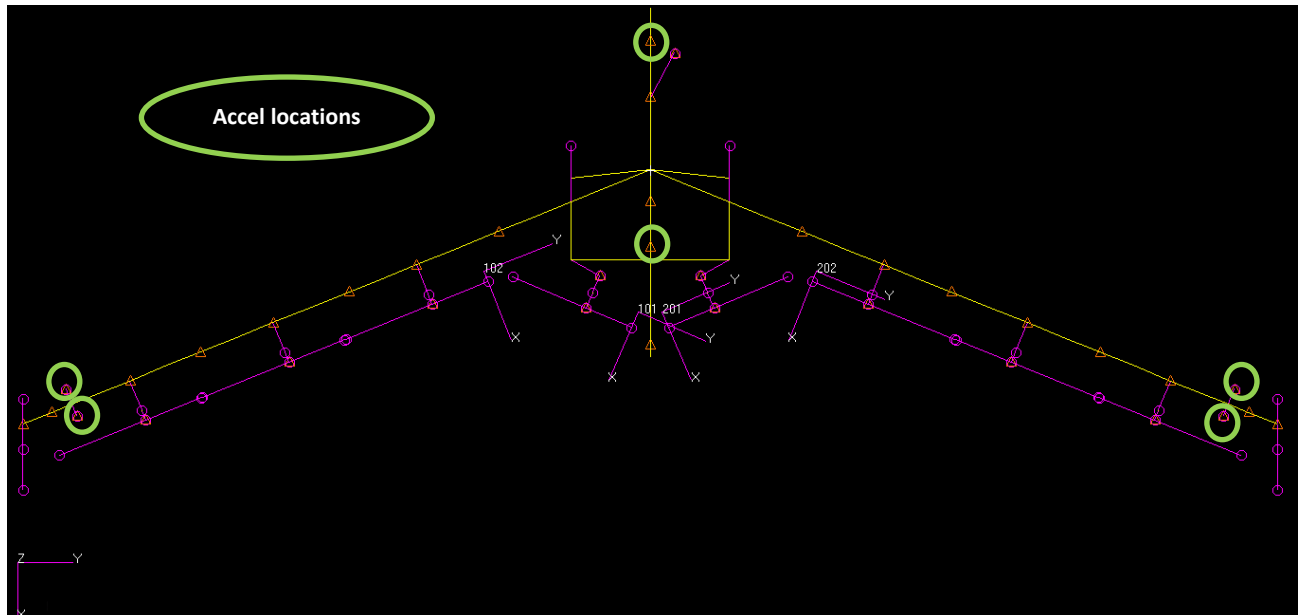


Figure 1 Finite element beam-rod model of mAEWing1 v1.1 (4/24/2015)

Table 1 MASS properties for mAEWing1 FEM v1.1

Property	mAEWing1 FEM v1.1	BFF
Total weight, lb	12.06	11.99
C.G. location (From nose), inches	24.94	23.29
Pitching moment of inertia, I_{yy} , lb-in ²	1126.44	1245.83
Rolling moment of inertia, I_{xx} , lb-in ²	9538.47	8529.45

Table 2 Mode frequencies comparison FEM v1.1

mAEWing1 Modes	mAEWing1 (Hz) FEM v1.1	BFF (Hz)
6 Rigid modes	0.00	0.00
1 st Sym bending mode	5.47	5.67
1 st A/S bending mode	8.59	8.37
1 st Sym torsion mode	18.50	18.44
1 st A/S torsion mode*	17.61	19.82
2 nd Sym bending mode	21.31	23.17
2 nd A/S bending mode	29.16	28.60
<i>*Lower frequency for 1ST A/S torsion mode for mAEWing1 FEM v1 than Sym torsion mode</i>		