AVIATION HIGH SCHOOL




SCORE

100

WING DESIGN STRENGTH TEST

Engineers' Scoring Guide

Group interviewed: _____

Interviewed by: _____
Name position
organization

CRITERIA	SCORE	REMARKS
TECHNICAL PERFORMANCE • Strength • Weight of final design • Efficiency (strength/weight) • Difficulty of fabrication	OUT OF 20	
DESIGN PROCESS • Logical design changes / evolution: made with good reason, not just random • All team members contributed to design • All team members understand concepts	OUT OF 20	
QUALITY/ASSEMBLY/CONSTRUCTION • Basic quality of finished product (visually) • Flat structure (few bows) • Bond integrity (stuff is well glued together) • Proper use of materials (only allowed materials were used)	OUT OF 20	
TESTING Precision and accuracy • measured in centimeters or millimeters • interface mounted and clamped properly • actuators placed in appropriate locations • water level measured accurately Verified measurements Describe test hardware • description • sketch • labeled photographs	OUT OF 20	

CRITERIA	SCORE	REMARKS
REPORT & DOCUMENTATION Report and poster or webpage of technical measures and testing Observations • quantitative data for all of group's wing tests • qualitative data for all of group's wing tests Analysis • Graph showing efficiency for all of group's wings • Graphs of bending moment and shear diagram @ failure Conclusion & Evaluation • Why did the wing perform the way it did? • Using the same materials, how could wing efficiency be improved even further? • What variables influenced wing strength and testing? How could those variables be controlled? • How is this model a good representation of real wings? In what ways could the model be improved? Comprehension of physics • buckling • tension • compression • loads • mass • weight • length • efficiency Description of failure mode tension compression	OUT OF 20	