





Mid-Term Review

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Summary of Presentation

- Our Project
- Current Status
 - Design
 - Building
- Prototype Design Tests
- Potential Issues
- Revised Schedule
- Travel Budget
- Summary

CELEBRATING 25 YEARS!

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Motivation SAE AERO DESIGN

SAE Collegiate Design Series

Competition Field



Skeleton Before Wrapping

Construction Underway





Wood for Wing Spar

Wing Spar

Current Status: Building/Ordering

- Completed:
 - Main wing
 - Vertical Stabilizer
 - Rudder
 - Ailerons
- Ready to build:
 - Tailboom
 - Fuselage
 - Horizontal Stabilizer
 - Landing Gear

- Hobbytown:
 - Received last ordered parts (2/15):
 - Regulation motor arrived
 - Rest of wood for 1st plane
 - Need to order:
 - Monokote
 - Battery Pack
 - Servos & Couplers
 - Motor Mount

Landing Gear











Wing Bending and Wing Torsion



Treffitz Plane Analysis



• AVL model

• The 2 degree twist assures a CL local curve is smooth along the wingspan and the minimum Oswald efficiency is about 98%

Tail-size Modification

- The Static Margin was estimated to be 0.29.
- Large static stability margin. The aircraft was then considered hard to maneuver.



Prototype Test: Physical

- Static Thrust of Motor
- Size, test & Install servos
- C.G. estimation
- Static structural tests
- When prototype completed:
 - First flight test with & without payloads...

Potential Issues

Prototype: Need test flight

We need a plane our pilot feels comfortable flying

Revised Schedule



	6	Task Name	Duration	Start	Finish	Predecessors	Resource Names	February 11	February 21	March 1	March 11	March 21	April 1	April 11	April 21
	Ť.,							M	E	B	М	Е	B	М	E
1		Finish Plane Construction	2 days	Fri 2/17/12	Sun 2/19/12										
2	.	Begin Testing analysis	45 days	Tue 2/21/12	Sun 4/22/12	1									
3	.	Revise Plane/Build Second	20 days	Tue 2/21/12	Mon 3/19/12	1									
4	.	SAE Report	24 days	Thu 2/16/12	Mon 3/19/12				1	:					
5	T	COE Open House	1 day	Thu 4/12/12	Thu 4/12/12										
6	1	AD Competition	2 days	Fri 4/27/12	Sun 4/29/12										

Travel Budget:

- Gas
 - 289 miles/car each direction at \$3.60/gallon and 20 mpg = \$210
- Hotel in Marietta, GA
 - \$90/room/night
 - 1 room Friday and 2 rooms Saturday = \$286.20 with tax
- Total Travel Expenses
 - **~**\$500

Questions

