



**FIRST Robotic Competition  
Zero Gravity - Team 2180  
2009 Season**

**January 17<sup>th</sup>, 2008**



# Season at a Glance



## Winter – Hit the ground running!

- ü Attend the Kickoff on January 3<sup>rd</sup>, 2009
- ü Brainstorm
- q Design, Build & Test a robot
- q Ship our robot
- q Make travel arrangements
- q Submit for awards
- q Apply for scholarships
- q Collect “Consent and Release” forms
- q Compete in events



# Meeting Agenda



## January 17<sup>th</sup> Topics:

- q Review 2008 Lessons Learned
- q Review AI's
- q Review Schedule
- q Sub-Teams Status
- q Review Concept Robot Designs
- q Select Concept Robot Design
- q Complete Field Mockup Parts
- q Order Robot Prototyping Parts

## Looking Ahead

- q Preliminary Design Review of Mechanical, Electrical, Software Designs



# Review 2008 Lessons Learned



q SteinertRobotics.info team Forum Archive  
Link : [Lessons Learned 2008](#)



# Open Action Items



<b>AI No.</b>	<b>Action</b>	<b>Team</b>	<b>Assigned</b>	<b>Open Date</b>	<b>Due Date</b>
004	Complete Design Tool Recommendations	All	Mentors	11\24\08	12/15/08
006	Return drivers for USB-6008 DAQ CD	Software	Brazinski	12\08\09	1\01\09
008	Complete Electrical, Mechanical, Pneumatic Parts Inventory	All	Kohler	11\24\08	12/15/08
009	Complete Electrical, Mechanical, Pneumatic Wish List	All	All	11\24\08	12/15/08
010	Buy Field Mockup Parts	Field Mockup	Willert	01/12/09	01/17/09
011	Purchase Additional Control System	SHRPA	Breingan	01/12/09	01/17/09
012	Finalize Offsite Meeting site	SHRPA	Kohler	01/03/09	01/19/09



# Schedule - Week 1



Task	Week 1 (1/10/09)							Week 2 (1/17/09)						
	M	T	W	T	F	S	S	M	T	W	T	F	S	S
Place Order: Sm. Parts & Add. Hardware	C													
Brainstorm on all possible Robots/Tactics	X	X	C											
Proto Half Scale Robots					X	X	X	X	X	X	X	X	X	X
Field Construction					X	X	X	X	X	X	X	X	X	X
Decide on Robot Concept							X	X	X	X	X	X	X	X



# Schedule - Week 2



Task	Week 2 (1/17/09)						
	M	T	W	T	F	S	S
Electrical - Power & Control System							
Concept Design	X	X	X	X	X	X	
Fab prototype			X	X	X	X	
Fab Final System							
Programming - Autonomous Mode							
Concept Design	X	X	X	X	X	X	
Fab prototype			X	X	X	X	
Fab Final System							
Programming - Drive & Scoring System							
Concept Design	X	X	X	X	X	X	
Fab prototype			X	X	X	X	
Fab Final System							



# Schedule - Week 2



Task	Week 2 (1/17/09)						
	M	T	W	T	F	S	S
Mechanical - Drive Train							
Concept Design	X	X	X	X	X	X	
Fab Crude Proto to test power/speed			X	X	X	X	
Fab Final Drive							
Mechanical - Chassis							
Concept Design			X	X	X	X	
CAD modeling of all systems			X	X	X	X	
Fab Chassis							
Scoring System							
Concept Design	X	X	X	X	X	X	
Fab prototype			X	X	X	X	
Fab Final System							



## Sub Team Status



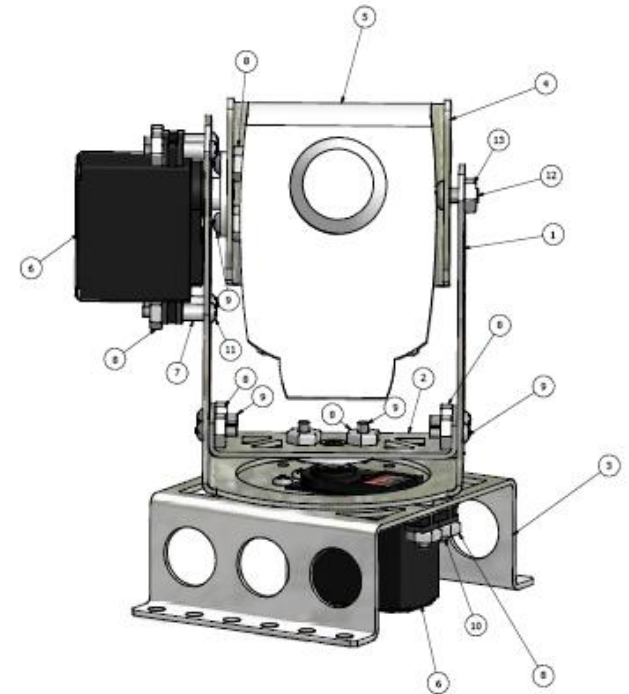
- Game Field Mockups (Tom Willert)
- System / Design (Bryan Rich)
- Mechanical (Brandon Rich)
- Electrical (Pat Callan)
- Programming (Ben McIntyre)
- Scoring (Sys/Mech Leads)
- Drivers
- PR / Team Spirit (Stephanie Moon)



## Efforts that can Start Now



- Start Weight Budget Spreadsheet
- Start Inspection BOM Cost Spreadsheet
- Order Bumper Material, Jaguars
- Build GE-09040: Trailer Hitch
- Build Camera Pan / Tilt Assembly
- Build Competition Operator Console
- Order Long Lead time materials





# Review Concept Designs





# Select Concept Design





## Order Parts



- Known Prototyping Parts List
  - Bumper Material (Resp. Person?)
  - Jaguars (Resp. Person?)
- Spare Parts List for competition
  - Wheels (Resp. Person?)



## Action Items



- q ? Start Weight Budget Spreadsheet
- q ? Start Inspection BOM Cost Spreadsheet
- q Dave K. - Order Bumper Material
- q ? Order Jaguars, Rover Wheels
- q Paul - GE-09040: Trailer Hitch
- q Sean C.- Camera Pan / Tilt Assembly
- q Tom C.- Competition Operator Console



# Meeting Minutes



- Mechanical Sub-Teams
  - Drivetrain
    - ü Test Friction
      - Develop design
      - Test design
      - Work w/ programming team
  - Ball Collecting
    - ü How to collect GP's
      - Work w/ scoring team to determine ball placement
  - Scoring
    - Evaluate Ball / Trailer interaction
    - Determine Robot scoring mechanism & plan B
      - Place
      - Dump
      - Drop
      - Shoot
      - Etc ...





# Meeting Minutes



- Software Team
  - Continued working w/ Basic FRC Robot project, setup default parameters
  - Experimented with Prototype robot Vision target parameters
  - Trying to get Dashboard to work