

ASME Beetlebots Information Session

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ASME Beetlebots Competition

What: 3-minute arena fight between two robots.

Where: April 12

When: Villanova University

Who: American Society of Mechanical Engineers and robot enthusiasts

Why: Fun, educational, promote robotics



Beetlebot Rules

- **2 lb weight limit** but no size limit
- Radio-controlled (2 or more frequencies)
- 4'x4'x4' arena. At least one hazard (circular saw)
- Fight to the “death” or based on aggression, damage, and strategy
- Banned weapons:

Liquid projectiles, flammable liquid, flame-based weapons, any kind of explosive or intentionally ignited solid, nets, tape, glue, or any other entanglement device, radio jamming, tazers, tesla coils, or any other high-voltage device or untethered projectiles.

Hack RC Cars

The 27MHz band (Aircraft/Car/Boat)

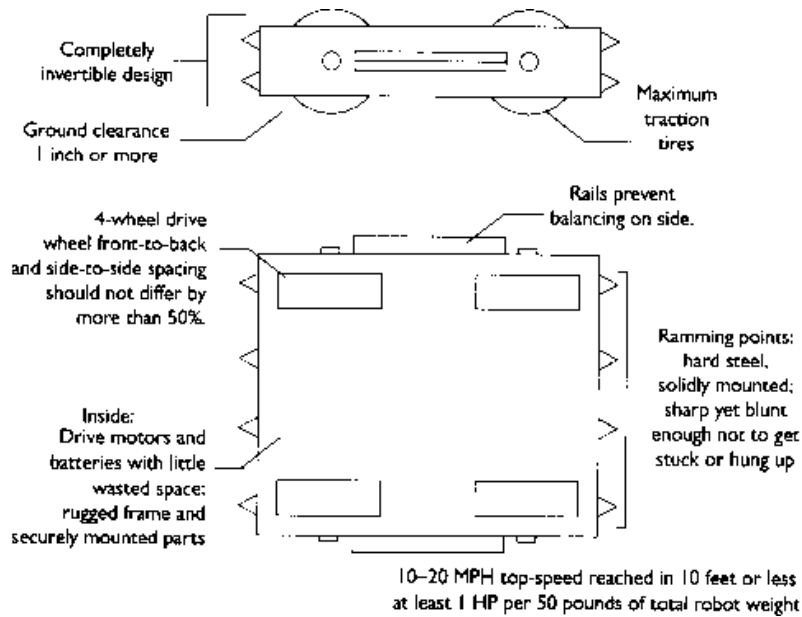
26.995 MHz --- Chan. 1 --- Brown
27.045 MHz --- Chan. 2 --- Red
27.095 MHz --- Chan. 3 --- Orange
27.145 MHz --- Chan. 4 --- Yellow
27.195 MHz --- Chan. 5 --- Green
27.255 MHz --- Chan. 6 --- Blue



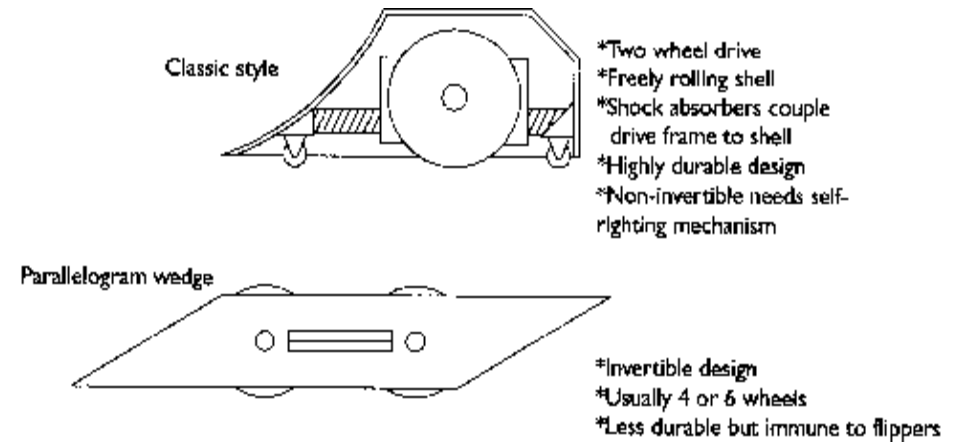
Weapons (Build Your Own Combat Robot Chap. 10)

Name	Design Criteria	Effective against	Ineffective against
Ram-Push	Traction (large foam tires), high vs. low speed, armored	Rotary weapons	Lifters, good armor
Wedge	Powerful drive train, well-designed scoop, armored	Spinners, rams. Disable vs. damage	Wedges, lifters, clamps
Lift	Active lift mechanism and good center-of-gravity	Wedges, rams	Spinners, thwack
Launch	Fast and energetic hurling mechanism. Springs?	Wedges, rams, slow lifters	Spinners, thwack
Clamp	Leverage and good COG, well-balanced frame	Wedges, rams	Spinners, thwack
Thwack	Narrow wheels, fast spinning	Lifters	Wedges, drums, spinners
Spinner	Fast flywheel and rugged	Lifters, clamps, hammer	Ram, wedge
Saw	Emergency rescue blades	Not effective	All
Drum	Bearing blocks	Thwack, lifters	Wedge
Hammer	180-degree swing	Weak top armor, thwack, wedge, ram, saw	Crusher, spinner, lifters
Crusher	Large powerful claws	Weak rams, hammer	Wedge, lifter, thwack, spinner
Spear	Fast re-cocking spear	Clamp, launcher, spears	Wedge, rams, spinner

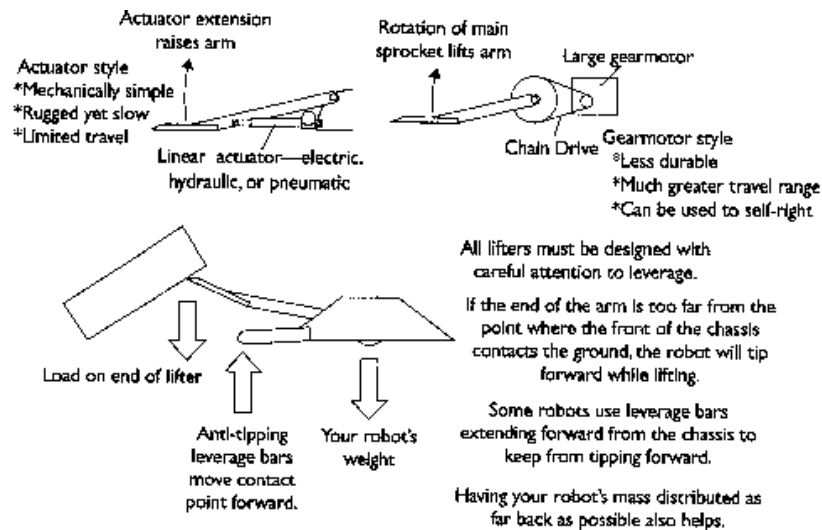
Rambot



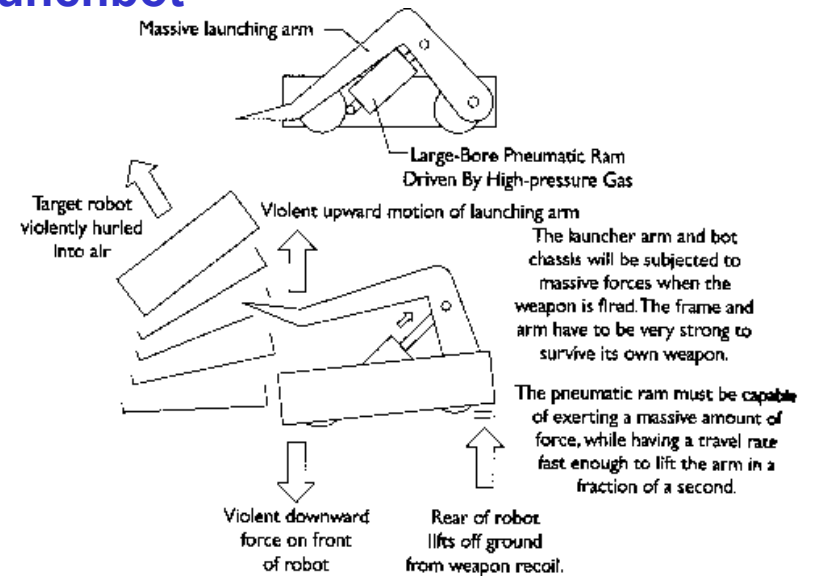
Wedgebot



Liftbot

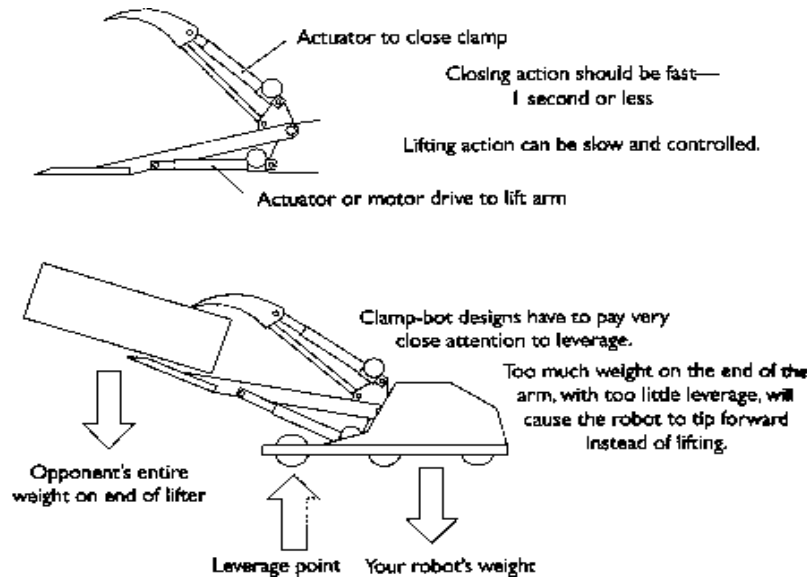


Launchbot

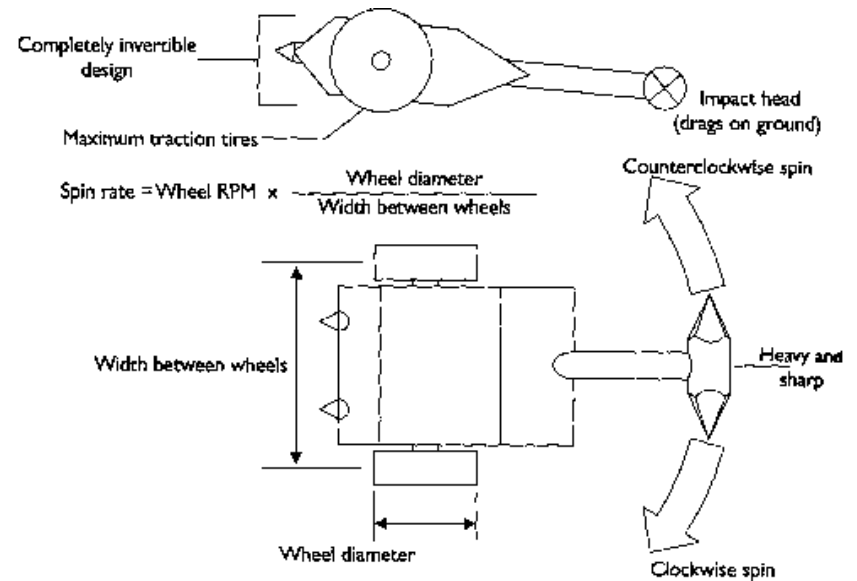


Warning: This kind of weapon system can be very dangerous to construct and operate.

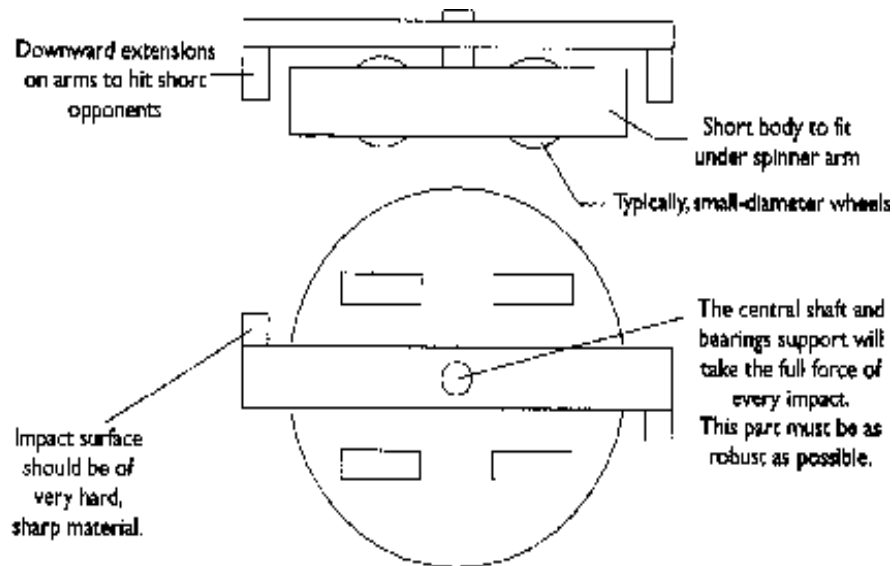
Clampbot



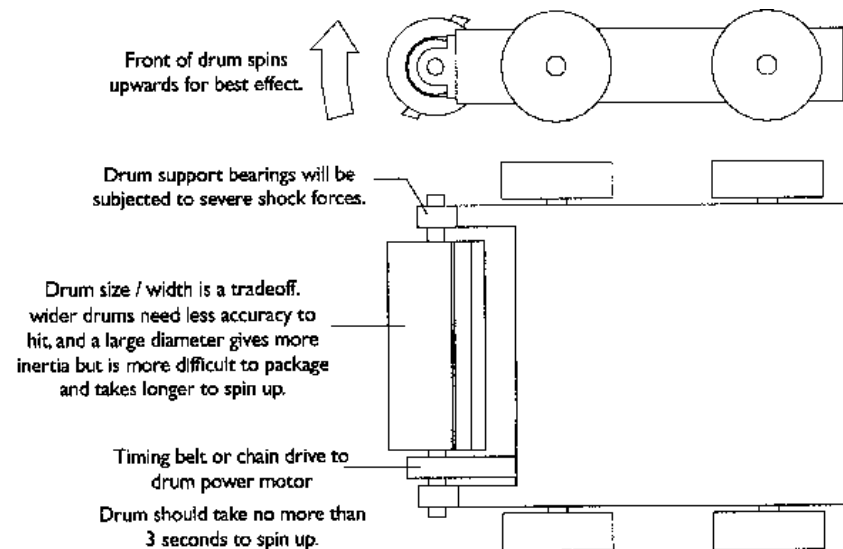
Thwackbot



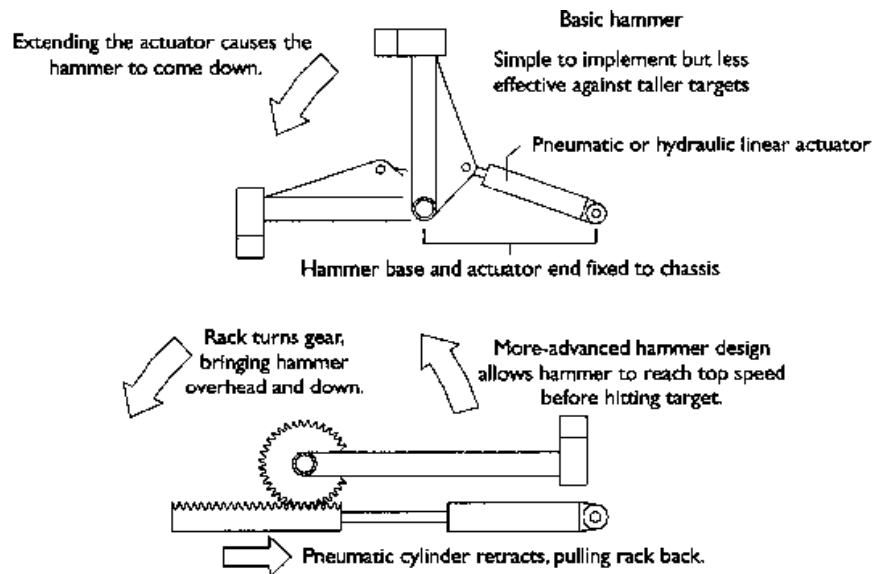
Spinbot



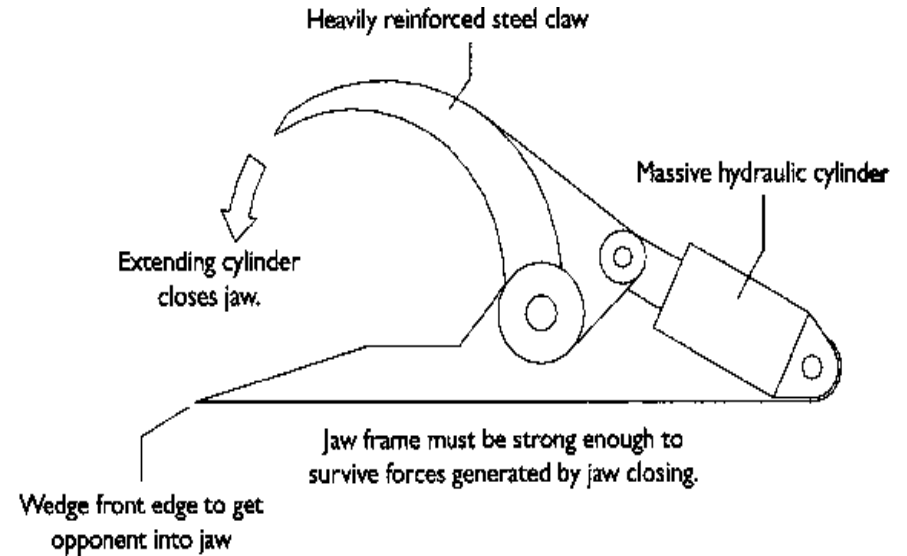
Drumbot



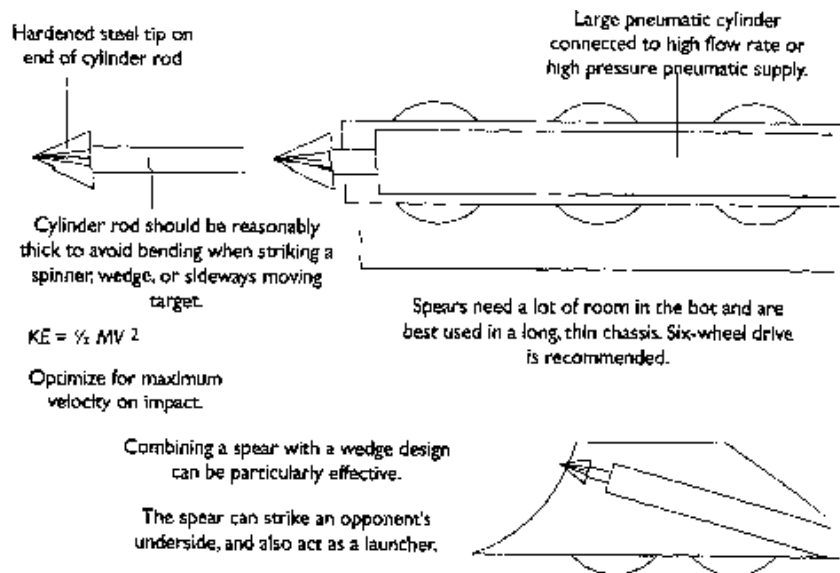
Hammerbot



Crusherbot



Spearbot



Drexel Dragonbot



Schedule

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		26 Info Session (Dr. Oh)	27	28 US FIRST 9-5 PM	29 US FIRST 9-5 PM	30 RC Servos & Crystals (Keith Sevcik)
31 School begins	1	2 Plastics (Bill Green)	3	4	5 Gripper Designs (Pragny Choksi)	6
7	8	9 Test Run	10	11	12 Battle Day Go Drexel	

Action Items

Form Team and Strategy

- Email list of team members
- Robot name
- Weapon Strategy
- Bring Elenco car kit and crystals
- Visit Target, Toys R Us, K-Mart, Home Depot.
- List 5 potential weapons and 5 potential armor materials

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