

Curved-Dash Olds Replica Bicycle Trailer Design

Ken Patton & Pontiac Robotics Team

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Ken Patton bio

- Hometown: Des Moines, Iowa (currently live in Howell, Michigan)
- Training: BSME Michigan Tech, Houghton, MI
- MSME MIT, Cambridge, MA
- 26 year pro, currently engine design engineer at GM Powertrain
- FIRST Robotics mentor on Pontiac High School team since 1997
- Hobbies: robotics, sailboat racing, restoring old stuff



Bicycle Trailer Project Info

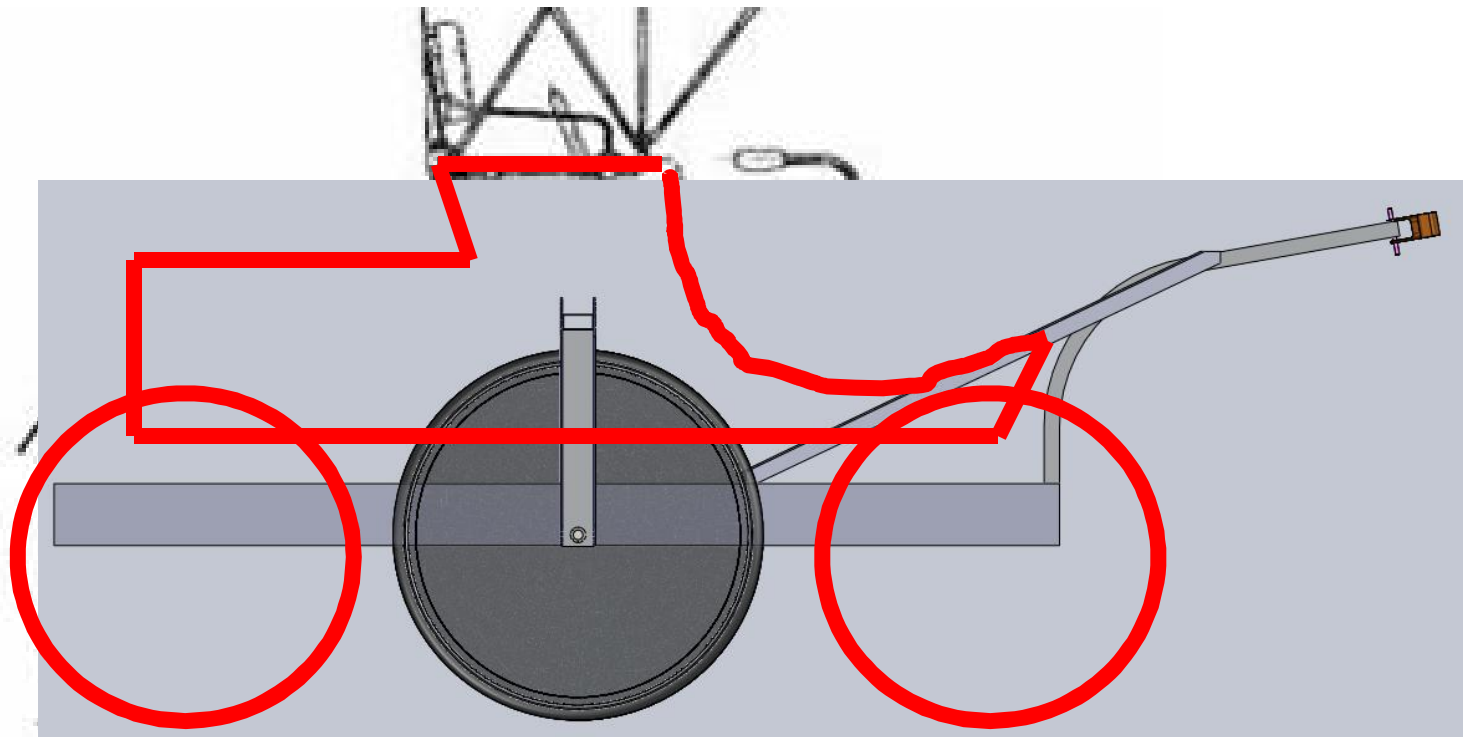
- Pontiac FIRST Robotics Team (Team 51, Wings of Fire) is using this as a skills-building exercise for our computer-aided-design (CAD) team – 9th grader Edi Preciado, 10th grader Ben Slade
- Engineers and students involved – the idea is to improve the CAD skills of our student members
- We are not bike or trailer experts! (we know our way around a robot though 😊)
- Rather than some dry exercise, we used this project as a challenge which forces us to learn new skills
- We use SolidWorks CAD software – it is an excellent full-featured CAD tool which is available to our robotics team through donation from Dassault Systems (maker of SolidWorks)



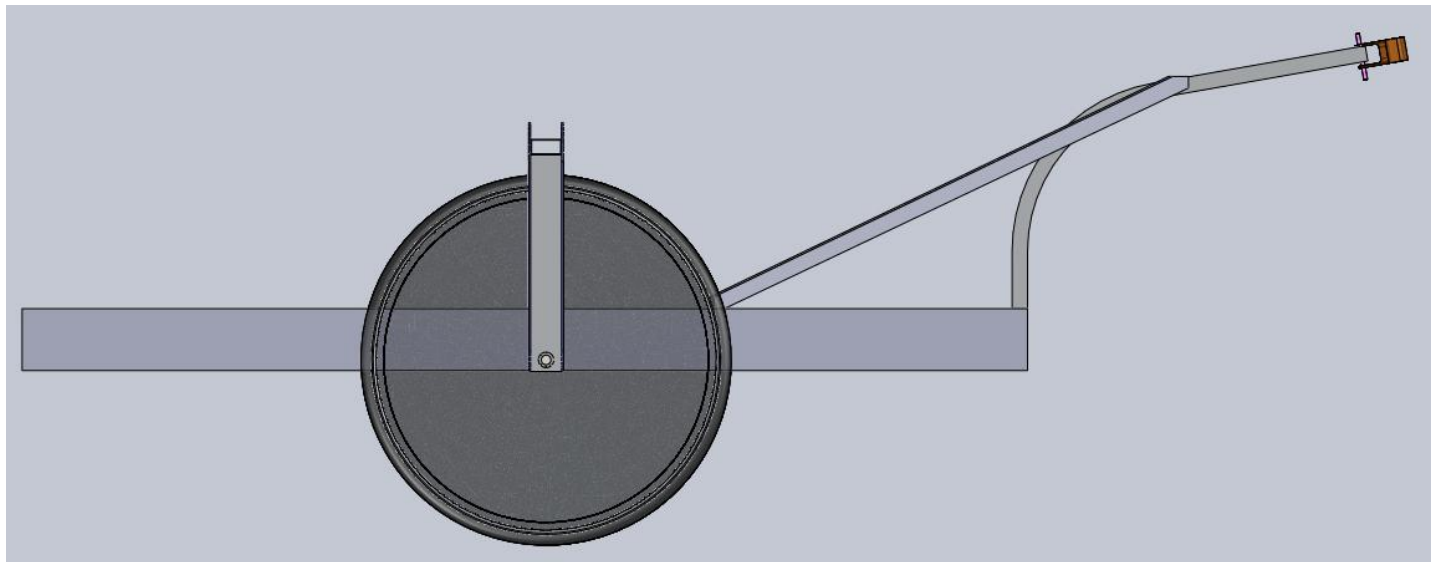
Bicycle Trailer Requirements

- Rough proportions of Curved-Dash Olds
- Holds ~500 lbs of cargo or 2-4 children (bike trailer function)
- CDO appearance for touring; CDO seat used in parade
- No brakes required
- Adjustable wheel fore-aft position to adapt to cargo weight distribution
- Good mass, center-of-gravity, and aerodynamic characteristics

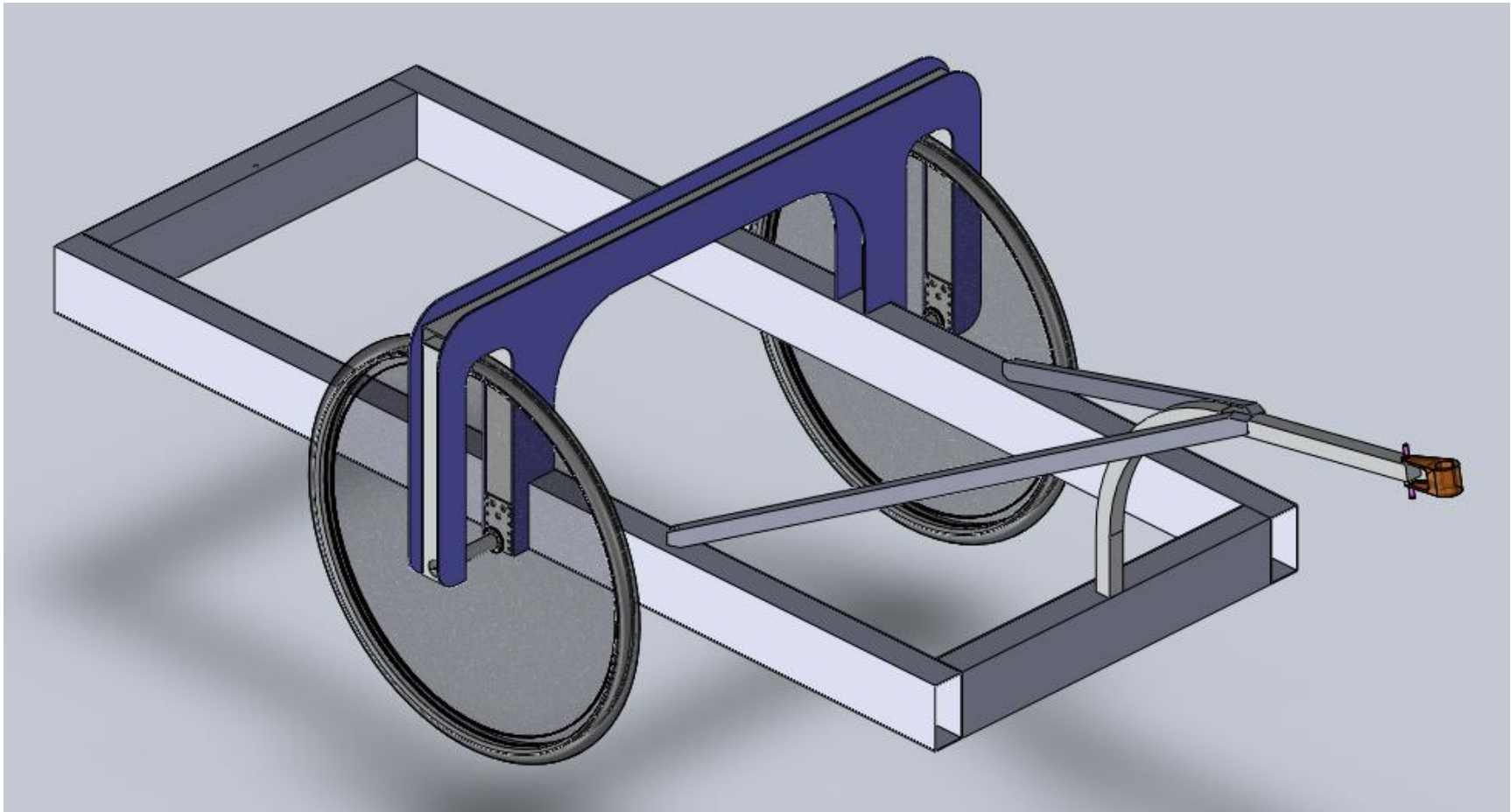
Bicycle Trailer Concept



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