

T.O.G POWER TRAILER

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Problem Identification

Current disaster relief trailers are large, loud, and are intended for street use only. The power trailer currently in use are large, multi kW diesel generators. These trailers are not ideal for residential use where noise pollution is frowned upon, especially at night. The trailers used in these situations are not designed to operate off-road or debris strewn areas. Their ground clearance is around 12" and is limited by their axles.

Technical Specifications

- Fit through 7' 8.125" wide by 7' 5.75" tall shipping container door
- 800 Ah battery bank
- 4kW gas generator
- 2000W inverter
- 150W solar panel
- 13 gal water tank
- Water filtration system
- Water pump
- Storage area
- Modular Design
- ~ 21in ground clearance

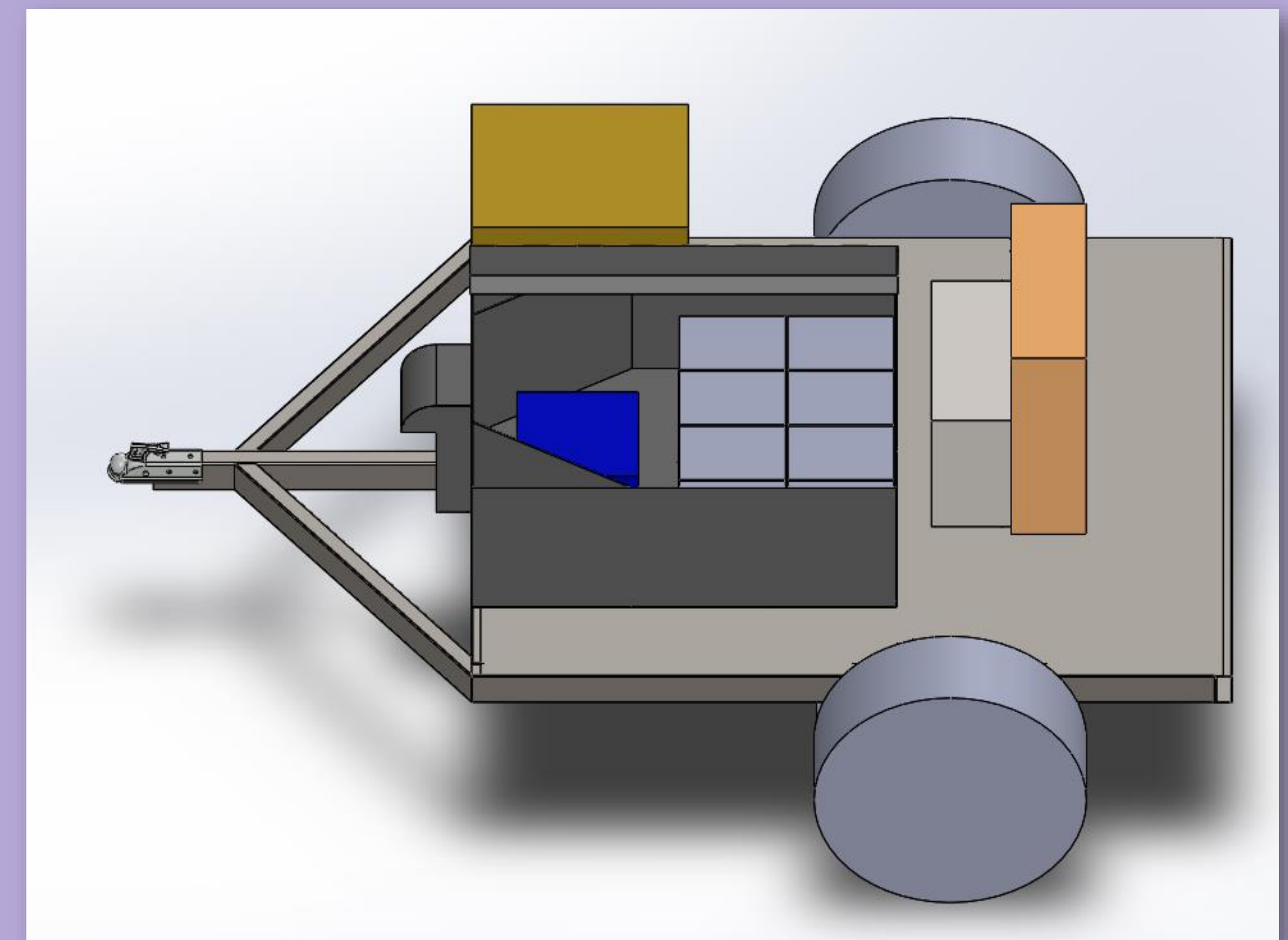
Product Development Process

First Semester

- Design and Component Brainstorming
- Proposal Execution and Submission
- Prototype Design
- Prototype Build Analysis and Testing
- Prototype refinement/troubleshooting
- Prototype Demonstration

Second Semester

- Develop Final Project Details
- Procure Materials
- Final Build and Refinement
- Final Presentation



ID	Task	Task Name	Duration	Start	Finish	Predecessors	August	September	October	November	December	January	February	March	April	May	June
1	Design & Component Brainstorming	21 days	Mon 9/9/19	Sun 10/6/19				TOG									
2	Proposal Execution & Submission	6 days	Mon 10/7/19	Sun 10/13/19				TOG									
3	Assign Team Member Roles and Responsibilities	1 day	Mon 10/14/19	Mon 10/14/19				TOG									
4	Prototype Design	14 days	Mon 10/14/19	Thu 10/31/19				TOG									
5	Prototype Material Procurement	2 days	Fri 11/1/19	Mon 11/4/19				TOG									
6	Prototype Build	7 days	Tue 11/5/19	Wed 11/13/19				TOG									
7	Prototype Build Analysis and Testing	2 days	Thu 11/14/19	Fri 11/15/19				TOG									
8	Prototype Refinement/Troubleshooting	7 days	Sat 11/16/19	Mon 11/25/19				TOG									
9	Prototype Revision Report	2 days	Tue 11/26/19	Wed 11/27/19				TOG									
10	Revision Implementation	3 days	Thu 11/28/19	Sun 12/1/19				TOG									
11	Prototype Demonstration	6 days	Mon 12/2/19	Sun 12/8/19				TOG									
12	Develop Final Product Details	31 days	Sun 12/8/19	Fri 1/17/20				TOG									
13	Procure Material	14 days	Sat 1/18/20	Wed 2/5/20				TOG									
14	Final Build and Refinement	39 days	Wed 2/5/20	Sat 3/28/20					TOG								
15	Final Testing	5 days	Mon 3/30/20	Fri 4/3/20	14				TOG								
16	Final Presentation	1 day	Mon 4/6/20	Mon 4/6/20					TOG								
17	Revision to Professional Comments	6 days	Tue 4/7/20	Tue 4/14/20					TOG								

Current Competition and Previous Work

The TOG Power Trailer does not have direct competition. Trailers used in rescue and relief operations are larger command center and storage trailers. These trailers, like those built by ProPac, are standard box trailers fitted with emergency supplies and not intended for off road use. FEMA's MERS program uses trailers or large trucks in this role. Powr2 has recently developed a large scale 60kWh lithium battery trailer with a computer system capable of interfacing with most generators intended for use with larger industrial generators for large events and film production.

Future Work

- Finish the trailer
- Empire-Cat scaled up version
- Design refinement
- Break into recreational market
- Second generation trailer
- Increase solar capacity
- Partnership with Global Water for filtration system

Lessons Learned

- Time management
- Leadership
- Budgeting
- Project planning
- Manufacturing processes
- Research/double check information provided