

Small Solar Oven Subteam Fall 2010

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Members: Joe Beaudette, Lauren Nielson, Leif Paulson, and Rachel Philipson

This semester, the small solar oven sub-team set out to build a compact and lightweight solar box cooker for use in the Ithaca climate. In addition to promoting the solar oven project at Cornell, we wanted to promote the sustainable solar cooking technology in Ithaca, given the resounding interest in environmentalism throughout the community. However, traditional box cookers constructed by the ESW teams have been designed for nearly vertical incident solar radiation characteristic of tropical climates, namely Nicaragua - and are not overly mobile. In order to have a functional oven available for demonstration at Cornell, we had to decide on a design with an angled window to accommodate for solar elevation, as shown below.

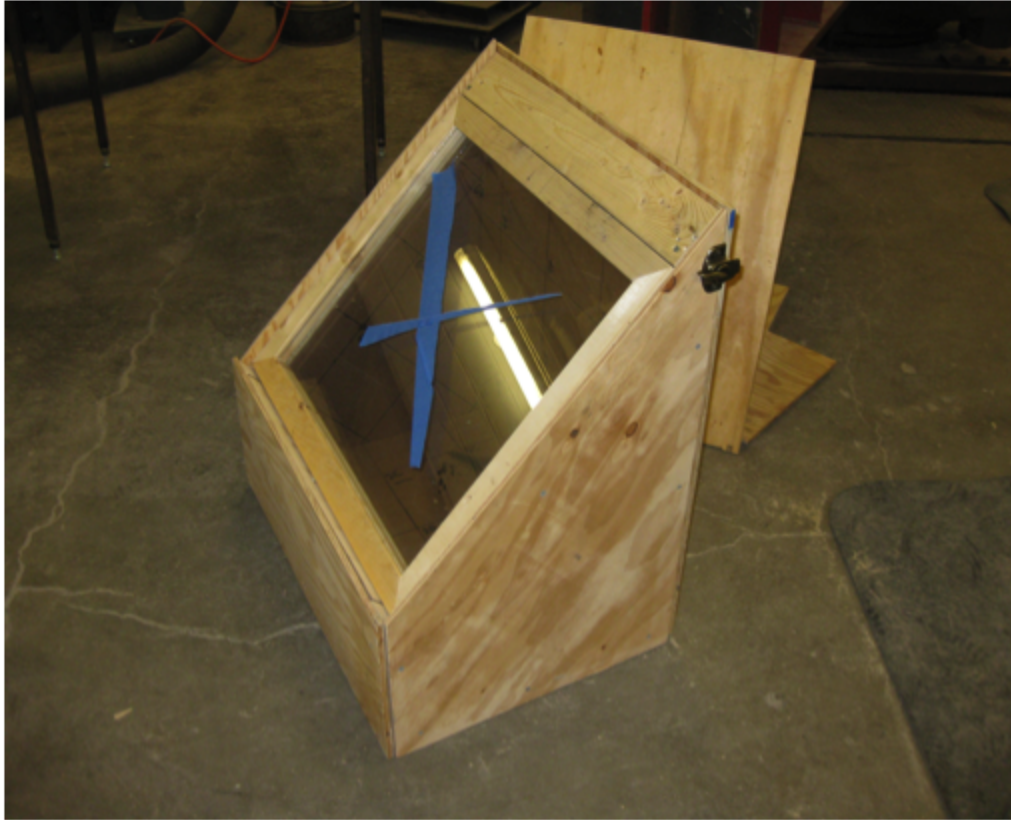


Figure 1: Completed Small Solar Oven

Our team also addressed the issue of the prop rods used to hold up the lids on the large ovens were not working very well. Forces from the wind would cause the prop rods to break and the hinges attaching the oven lids to the oven body to become loose. We decided to address this issue by designing the adjustable prop rod shown below. Instead of the old design with a wooden rod with discreet holes, this design uses a 3/8" metal pole with a hydraulic fitting and a screw to tighten the rod in place. Additionally, a hold was drilled into the flat side of the tee so that it can be attached to the oven wall. Though this design has not yet been tested (we have yet to devise an experimental apparatus), we are confident that the new prop rod will work better than the previous design and we plan to use this on new ovens, and retrofit old ovens with the new design.

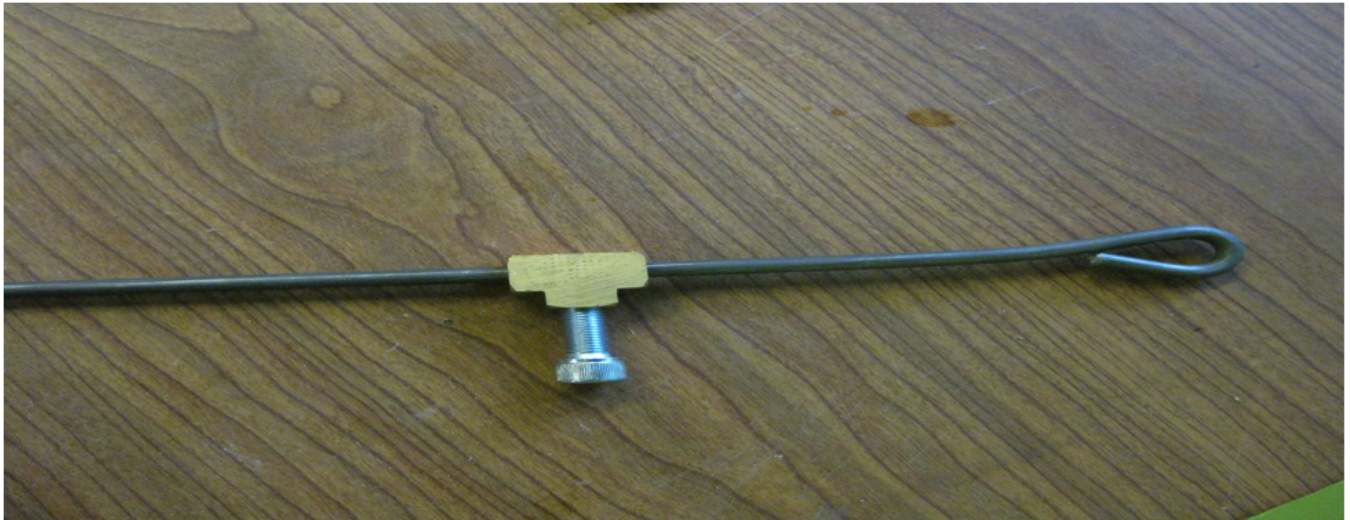


Figure 2: New Prop Rod Design

For More Information:

[*Project Proposal*](#)

[*Mid-Semester Short Technical Update*](#)

[*Final Report*](#)