MEETING MINUTES

Topic: Summer Team Design Disassembly

Wednesday, September 12, 2018
10:00 am to 11:00 am

Minutes recorded by _Jacob Barker_____

Meeting called by __Jacob Barker_____

Attendees: __Jacob Barker, Samm Metcalfe, Ashley Shumaker_

Please bring: _Anemometer and Thermometer_____

Table 1. Record of meeting.

10:00 am to 10:10 am	**Band Heater test** ● Tested band heater over time ● Measured band heater surface to test effectiveness and 3D printed plastic to test whether it was in danger of melting ● After 2:30, the band heater had reached 560 °F , decided to stop the test for safety ● Thermal fuse was supposed to shut off heater at 250°, obviously isn't working ● Plastic only increased 5° over test period, but may get too hot if the test were longer (if thermal fuse would have worked properly)	Samm's Apartment

10:10 am to 10:20 am	**Wind Speed Test (attempt)**
	● Attempted to measure the windspeed output from the turbine section
	● Heated combustion chamber to about 200-250, charged compressor, and spun turbine as fast as possible
	● Anemometer was not able to register a wind speed, was not fast enough
	● Problems preventing faster rotation:
	  ○ Flexible design, blades rubbed on casing
	  ○ Blades very flexible, wasted a lot of energy from incoming flow
	  ○ Shaft extremely heavy
	  ○ Greased bearings stop rotation
		Samm's Apartment

10:20 am to end	**Disassembly of Device**
	● Completely disassembled device to learn more
	  ○ Found dimensioning/tolerancing to be very poor. Casing pieces did not fit together well at all.
	  ○ Had to bend one compressor section to remove/install it
		Samm's Apartment

	○ Fastener holes poorly aligned, fasteners did not fit well, most were missing nuts to tighten properly ▪ Sealed using duct tape ○ Turbine sections spaced randomly using sharpie markings on shaft ○ Band heater bent to fit on "combustion chamber" section ○ Duct tape was the only thing used to attach combustion chamber section to turbine housing ▪ Primary reason design was so flimsy ○ Shaft EXTREMELY heavy when removed. Size should be greatly reduced. ○ Documented everything with photographs	