MEETING MINUTES

Topic: Client Meeting

Thursday, October 4, 2018
3:45 pm to 4:00 pm

Minutes recorded by   Jacob Barker

Meeting called by   Jacob Barker

Attendees: Jacob Barker, Samm Metcalfe, Ashley Shumaker

Table 1. Record of meeting.

3:45 pm to end	**Discuss Updates with Client**	
	• Downsized tube from 6 inches to 4 inches	
	• Make sure to label thermocouples with different states	
	• Updated combustion chamber	
	o Hollow out center of combustion chamber	
	o Combustion chamber is essentially a converging/diverging nozzle	
	· Will get supersonic flow (if you have enough mass flow)	
	· Reference compressible flow calculations for choked	
	· Make sure you never go above Mach 1	
	• Based on stagnation conditions	
	• Choked flow-max mdot through throat of nozzle	Room 324C
	• A/A*~2.0 means flow coming in at A will be Mach 0.3 from the tables	
	• Flow above mach 1 will cause shockwaves/diamond expansion	
	o When flow goes across a shockwave, it is not isentropic	
	· Losing energy to heating up the air—not able to used for the properties you want	
	• In summary: open up the outlet for the combustion chamber	
	• Euler turbomachinery equations for torque speed characteristics	
	• Blade printing	
	• OSHA finger	
	o Tapered finger used to put into devices to see if it passes	
	• Look to increase surface area for preheating combustion chamber	
	o Look into heat exchanger for combustion chamber	
	o Make your own fins with thermal adhesive	

	◦ Look for cylindrical aluminum extruded heat sinks · Don't restrict the flow too much with internal baffles/fins • Look at loading cases for shaft analysis ◦ Euler turbomachinery equations ◦ Will it meet a certain load case with a certain factor of safety	