I’m using APA format instead of MLA because this is a scientific paper

1. Fahlstrom, S., Pihl-Roos, R. (2016). *Design and construction of a simple turbojet engine.* Uppsala Universitet. https://www.diva-portal.org/smash/get/diva2:974874/FULLTEXT01.pdf

   I chose this source because it covers an experiment with an extremely similar goal to mine, which is to reduce the complexity of a turbojet engine. In this scientific paper, the writer goes over all the trials of building a turbojet engine, and I highly valued the information that was discussed here. In addition to the technical aspects, I also used this paper as an example of formatting to be used in my own paper.

2. (1998). *Turbine engine basics.* Purdue AAE Propulsion Page. Purdue University https://engineering.purdue.edu/~propulsi/propulsion/jets/basics.html

   I chose this source because it goes into great detail on the benefits and disadvantages of different types of turbojet compressors. Before viewing this article, I had already decided that I would use a linear compressor for the sake of construction simplicity, but I wanted to know if this would negatively affect the performance of my engine. This source clearly stated that information that I was looking for in a way that was clear and concise.

3. *Jet engine pressure distribution. (No original source?)*

https://i.pinimg.com/originals/97/44/79/97447973a6c2d6f7cfa6be62602e87cb.jpg

This was one of my first sources, and perhaps one of my most valuable considering that it is merely a diagram and graph. The reason why it is so important is that it shows me the exact conditions required in a turbojet for it to function properly. It was essential for me to understand this so that I could properly simplify the turbojet design while still satisfying what is necessary for self-sustaining combustion.

4. Kashkhan. (2009). *Specific impulse vs. mach number of several types of rocket and air-breathing engines.* English Wikipedia. https://commons.wikimedia.org/wiki/File:Specific-impulse-kk-20090105.png#/media/File:Specific-impulse-kk-20090105.png

This source was important to me because it showed the efficiency benefit of turbojet engines as opposed to rocket engines. It also revealed to me the huge gap in efficiency between the two types of propulsion systems. Because of this realization, it helped me to conceptualize the ways in which my engine design could be beneficial to the rest of the world.

5. Li, J., Liu, K. (2018). *Combustion characteristics experimental study of solid hydrocarbon propellant for air-turbo rocket.* JPP. https://arc.aiaa.org/doi/10.2514/1.B36917

I used this source for similar reasons to (Fahlstrom, 2016), as it was also a research paper that covered a very similar topic to mine: The design of a solid-fuel turbojet. This paper discussed some very significant technical concepts, and helped me to realize some of the challenges associated with solid-fuel integration in a turbojet engine. Though the paper never discussed actual aspects of assembly, it was still very beneficial.

6. Lee, J. (2018). *How to calculate time to heat an object.* Sciencing. https://sciencing.com/calculate-time-heat-object-8223103.html

Initially, I was very concerned with how the internal components of the turbojet would respond to the extreme temperatures of combustion. I used this source to learn more about thermal physics so I could incorporate it into my predictive calculations. While I didn't include these calculations in the final draft of the paper, the information gained from the article helped give me better insight into the effects of heating on structural integrity.

7. *High-speed aerodynamics - compressibility effects.* Flight Mechanic. https://www.flight-mechanic.com/compressibility-effects/#:~:text=In%20a%20converging%20shaped%20passage,pressure%20and%20density%20both%20increase.&text=Supersonic%20airflow%

When I designed the initial draft of the DAST engine, there was much that I didn't understand about flow dynamics in confined spaces. This article helped me understand the ways in which air density and velocity are influenced by pipe geometry. Because of this, I was able to design Prototype 1 with optimized flow characteristics, aiding significantly in the successful results achieved during the test.

8. Jafari, S. (2019). *Modeling and control of the starter motor and start-up phase for gas turbines.* Cranfield University. file:///home/chronos/u-d982e7bf94c8d13476f0657cf30af2435755f417/MyFiles/Downloads/electronics-08-00363.pdf

Early on in the design of the Prototype 1 experiment, it was realized that a quantifiable benchmark was necessary to gauge the performance of the turbine. Since this concept was completely novel, no information was readily available. This research paper helped me to identify the angular velocity required in a turbojet for self-sustaining combustion. This information, when used in conjunction with (Salt, 2021), helped me to formulate a benchmark turbine velocity.

9. Salt, J. (2021). *Understanding model jet engines.* RC Helicopter Fun. https://www.rchelicopterfun.com/model-jet-engines.html

As mentioned previously, a benchmark was necessary to gauge the performance of Prototype 1. This benchmark would ideally be based on the angular velocity required of the compressors for self-sustaining combustion to occur. As the information provided in

(Jafari, 2019) was only applicable to industrial-sized gas turbines, the idling RPM values of RC hobby turbojets listed here were used to appropriately scale this information.

10. Nallard, O. (2020). *Air-breathing rocket engines: the future of space flight.* Physicsworld. https://physicsworld.com/a/air-breathing-rocket-engines-the-future-of-space-flight/

While the SABRE propulsion system has some similarities to the DAST engine, the main reason why this article was cited is that it explained how advantageous a turbojet-rocket hybrid could be in the aerospace industry. Because of this, it helped me to determine how my research could benefit the world, showing me the bigger picture, not just the technical aspects.