Benefits of the Sterling Engine Model in Sensitive Environments

Outline:

Intro:

* Thesis:
  + Due to it’s versatility and relative safety surpassing that of the combustion engine, the sterling engine is a promising, efficient alternative to other heat engines for use in sensitive environments, such as that in the fragile confines of a vacuum.
* Fghg

Para 1:

* Explain the process of a sterling engine – uses temperature differential to drive pistons and thus creating rotational motion on an axel.
* Lack of combustion leads to a clear preference in space and underwater. This means a safer environment for human life and doesn’t risk jeopardising lives or missions due to lack of fire onboard vessel.
* Fjf

Para 2:

* Describe short comings in engine and it’s lacking power against combustion counterparts – leading to heavier machinery for the same output.
  + Note that low density gases (hydrogen, helium etc) may be used in the engine as opposed to dense, and thus costly, hydrocarbons.

Para 3:

* Highlight on closed-cycle nature of engine, with no dangerous exhaust which reduces dependency on environment to release exhaust gas.
* Describe how practically any waste heat from other machinery on the vessel may power the engine, with outside environment (cool in ocean, may be cool in space) allowing to dissipate this heat easily
  + This also means that fuel isn’t necessary for the engine, although could cease to function if no waste heat is available – necessitating (possibly) high energy needs to produce a heat reserve.

Conc:

* hffj