**Experimental Procedures:**

Before beginning the experiment, follow the safety warning from the document “Brayton Cycle.”

For this experiment, follow along with the professor as he discusses the SR-30 engine and all of its components. Make sure there is nothing blocking the intake and exhaust of the engine. Next, set up the computer by opening the program pDAQVIEW located on the upper right hand corner of the desktop. Next, select “Open” under the “File” tab. After that, double click on “Back Up.” On the tool bar, choose the Bar Graph icon which is the third icon from the right. Click the fourth icon from the right on the tool bar, which shows a folder and a play button. This will begin the data logging. Click the play button again to stop.

The data is now saved. The data has to be converted from binary data. Click “Tools” in the menu bar and then click “Convert Binary Data.” Choose the .BIN extension in the Select Files to convert tab. Click “Format” and choose ASCII TEXT SPREADSHEET and click “OK.” Select the file that you have saved from the data logging and click “Convert.” When a window pops up, click “Yes to ALL.” To put the data in Excel, click “Open,” then “My Computer,” then “Local Disk (C:),” then “Program Files,” then “pDAQVIEW,” then “Application,” then “Data,” then “ASCII,” then “PDAQ,” then “Next” 3 times. One person will remain on the computer to ensure that the data is logging.

Now that the engine is set up, it is time to work with the engine. Put on the ear muffs for protection. Turn on the machine with the Master Key. One person will press the green start button and slowly push the throttle to 10,000 RPM. After the ignition has taken place, slowly push the throttle until the speed indicator reads the target speed that has been determined by the professor for each run. Let the engine reach steady state and record the data from the T.I.T., E.G.T., pressure, and RPM. Another person will use a laser thermometer to measure the heat in the exhaust. Press the red button to stop the engine. Do the experiment six times with increasing target speeds.