

E. TASK**OPERATION OF SYSTEMS****OBJECTIVE**

To determine that the applicant exhibits commercial pilot knowledge of the elements of operation of systems, as applicable to the balloon used for the practical test, by explaining:

KEY ELEMENTS

- Fuel system, burners, pilot lights, and associated gauges
- flight instruments and gauges
- venting and or deflation systems
- Avionics/communications systems, as appropriate

SCHEDULE

- Discuss objectives
- Review material
- Conclusion

EQUIPMENT

- Balloon Flight Manual
- Hand outs

INSTRUCTOR ACTIONS

- Discuss lesson objectives
- Present lecture
- Questions
- Homework

STUDENT ACTIONS

- Participate in discussion
- Take notes

COMPLETION STANDARDS

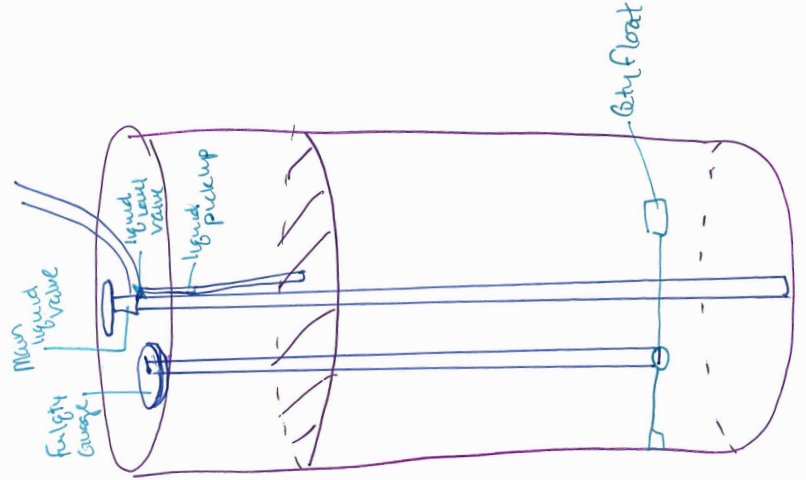
- Participate in discussion
- Take notes

E. TASK

OPERATION OF SYSTEMS

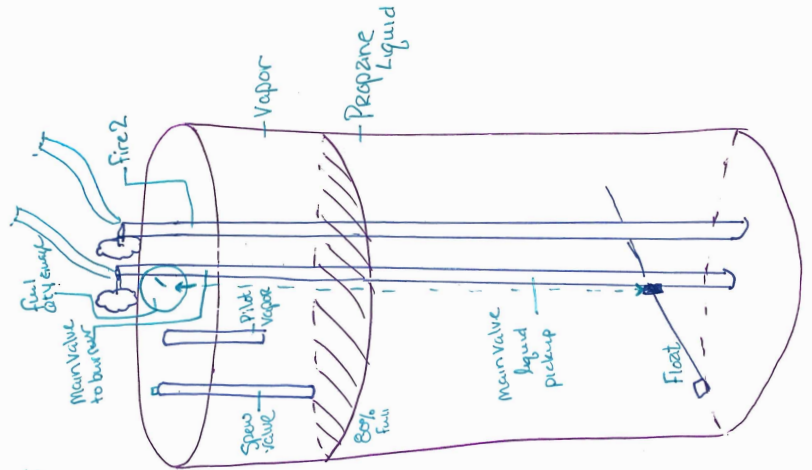
FUEL SYSTEM

Fuel System 2



Fuel System 1

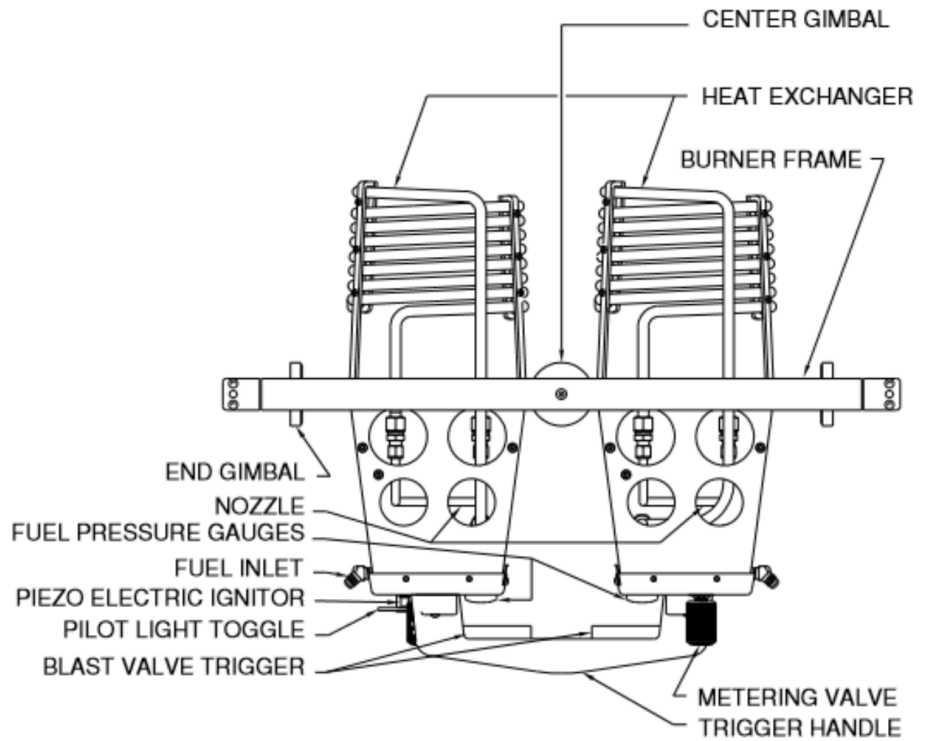
- Propane weighs 4.2 lbs per gal.
- Popoff Valve Blows @ 850 lbs
- 1 gal produces 91,000 BTU of heat
- Vaporizer Burner



E. TASK

OPERATION OF SYSTEMS

BURNERS



HP III Dual Burner Systems

Note: Optional glow valve not shown for clarity.

PILOT LIGHT

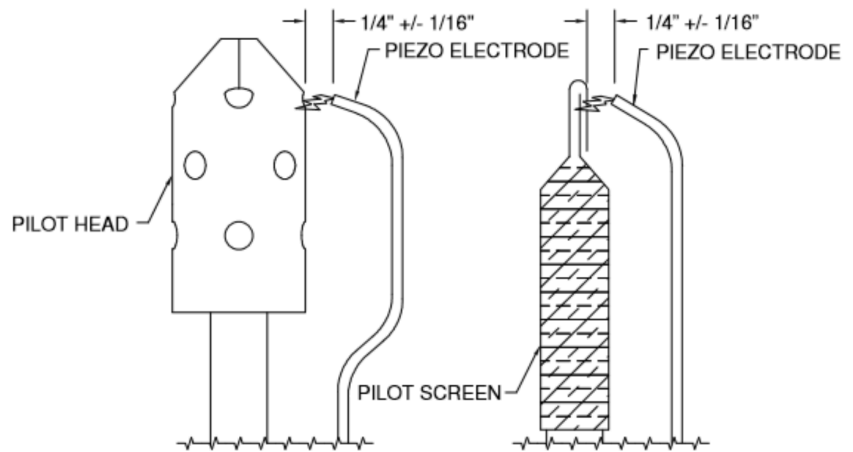


Figure 2.3 Adjustment of Piezo Electrode

E. TASK

OPERATION OF SYSTEMS

**FLIGHT
INSTRUMENTS**

ALTIMETER

DIGITAL ALTIMETER SETTING

VSI

FUEL PRESSURE GUAGE

FUEL TANK GUAGES

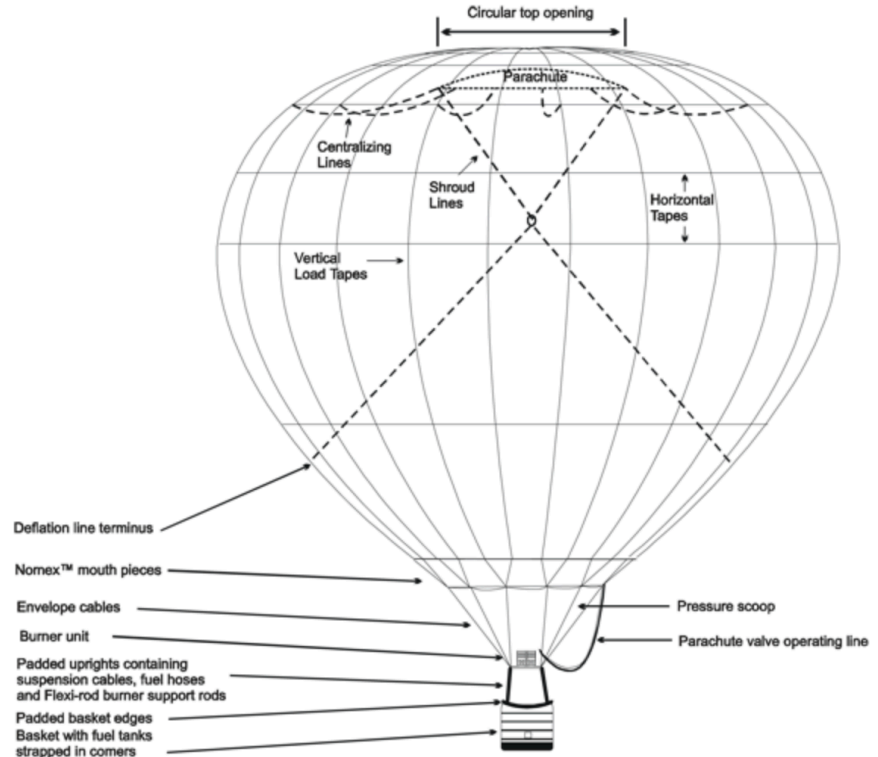
ENVELOPE TEMP. GUAGE

E. TASK**OPERATION OF SYSTEMS****VENTING &
DEFLATION
SYSTEMS****Parachute:**

The top of the balloon has a large opening covered on the inside by a circular piece of fabric called a parachute which can awith lines all around coming down to a cord going to the basket.

A parachute vent is opened by pulling on the control line. Once the control line is released, the pressure of the remaining hot air pushes the vent fabric back into place. A parachute vent can be opened briefly while in flight to initiate a rapid descent. (Slower descents are initiated by allowing the air in the balloon to cool naturally.)

In the picture to the right, crew members are securing the parachute during balloon inflation.

**Turning Vents:**

Turning vents allow the balloon to rotate (yaw).

A cord going down the the basket can be pulled to open one side of a flap on the balloon allowing air to escape horizontally tangent to to the balloon causing it to rotate.

E. TASK

OPERATION OF SYSTEMS

**AVIONICS/
COMMUNICATION
SYSTEMS**

RADIO OPERATION: HANDS ON DEMO