



High Pressure Combustion Laboratory

Description:

Four test cells, each 12 x 10 x 20 feet, with smaller reinforced concrete control rooms attached. Earthen embankments separate cells from small nearby shop building.

Date of initial operation - October, 1945.

Purpose of Equipment:

To conduct research on fuels, oxidants, materials of construction and cooling methods for liquid-fuel rocket motors.

Research Projects:

- a) Determination of jet velocity, fuel consumption and combustion characteristics of rocket-motor fuels.
- b) Evaluation of temperature-resistant materials for rocket motors.
- c) Study of the fundamentals of chemical reactions in rocket motors.
- d) Investigation of internal coolants and film-cooling systems for rocket motors.

Illustrations:

- 1) Test run of liquid-fuel rocket motor to investigate combustion chamber cooling by water injection.
- 2) Acid-aniline type rocket motor equipped with water injection system to study means of cooling nozzles.
- 3) Peroxide type rocket motor to investigate addition of alcohol to increase thrust.
- 4) Experimental ceramic rocket nozzle for investigation of new nozzle materials.

