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.