

## COMBUSTION RESEARCH LAB

### CELL 21 FACILITY OUTLINE

#### DESCRIPTION :

CRL Cell 21 contains an Altitude Rocket Ignition Test Stand. Ignition tests are performed at altitude or sea-level conditions. Gaseous oxygen is used with one of the following fuels; hydrogen, methane, RP-1, or liquid propane. A programmable controller is used to tailor each test run to desired duration and number of cycles. Transient data recording is available via analog data transmission lines to the TRADAR 2.0 computer located at the RAC building. Data reduction and recovery can be performed immediately after the conclusion of each test using a mainframe computer system, with data reduction programs being provided through the Computer Services Division.

#### CAPABILITIES :

- \* ROCKET ENGINE IGNITION TESTING AT SEA-LEVEL OR ALTITUDE CONDITIONS
- \* CYCLE TESTS
- \* LONG DURATION TESTS

#### COMPUTER SUPPORT :

- \* ACCESS MAINFRAMES VIA MODEM
- \* IBM COMPATIBLE PERSONAL COMPUTER

#### DATA ACQUISITION SYSTEMS :

- \* HIGH SPEED DATA ACQUISITION USING TRADAR 2.0 COMPUTER  
100 channels at 100 samples/sec./channel
- \* VISICORDER CHART RECORDER  
12 channel of data logging capability
- \* ESCORT SYSTEM  
111 data channels at 1 sample/sec./channel
- \* HIGH SPEED MOVIE CAMERA - 16 mm, 128 or 400 fps
- \* VIDEO CAMERA AND VCR - Monitored from Control Room
- \* 35mm CAMERA

SERVICES :

- \* GASEOUS OXYGEN  
1 TRAILER AT 50000 CUBIC FOOT CAPACITY, 2400 PSIG MAX
- \* GASEOUS HYDROGEN  
2 TRAILERS AT 70000 CUBIC FOOT CAPACITY, 2400 PSIG  
MAX
- \* LIQUID PROPANE  
8 GALLON TANK AT 1500 PSIG MAX
- \* RP-1  
8 GALLON TANK AT 1500 PSIG MAX
- \* METHANE GAS  
6 K-BOTTLES AT 2100 PSIG MAX
- \* LIQUID NITROGEN FOR CHILLING FUEL OR OXIDIZER
- \* GASEOUS NITROGEN - 2200 PSIG MAX VIA CENTRAL SUPPLY
- \* AIR VIA CENTRAL SUPPLY - 125 PSIG MAX
- \* CITY WATER SUPPLY - 40 PSIG

# COMBUSTION RESEARCH LAB

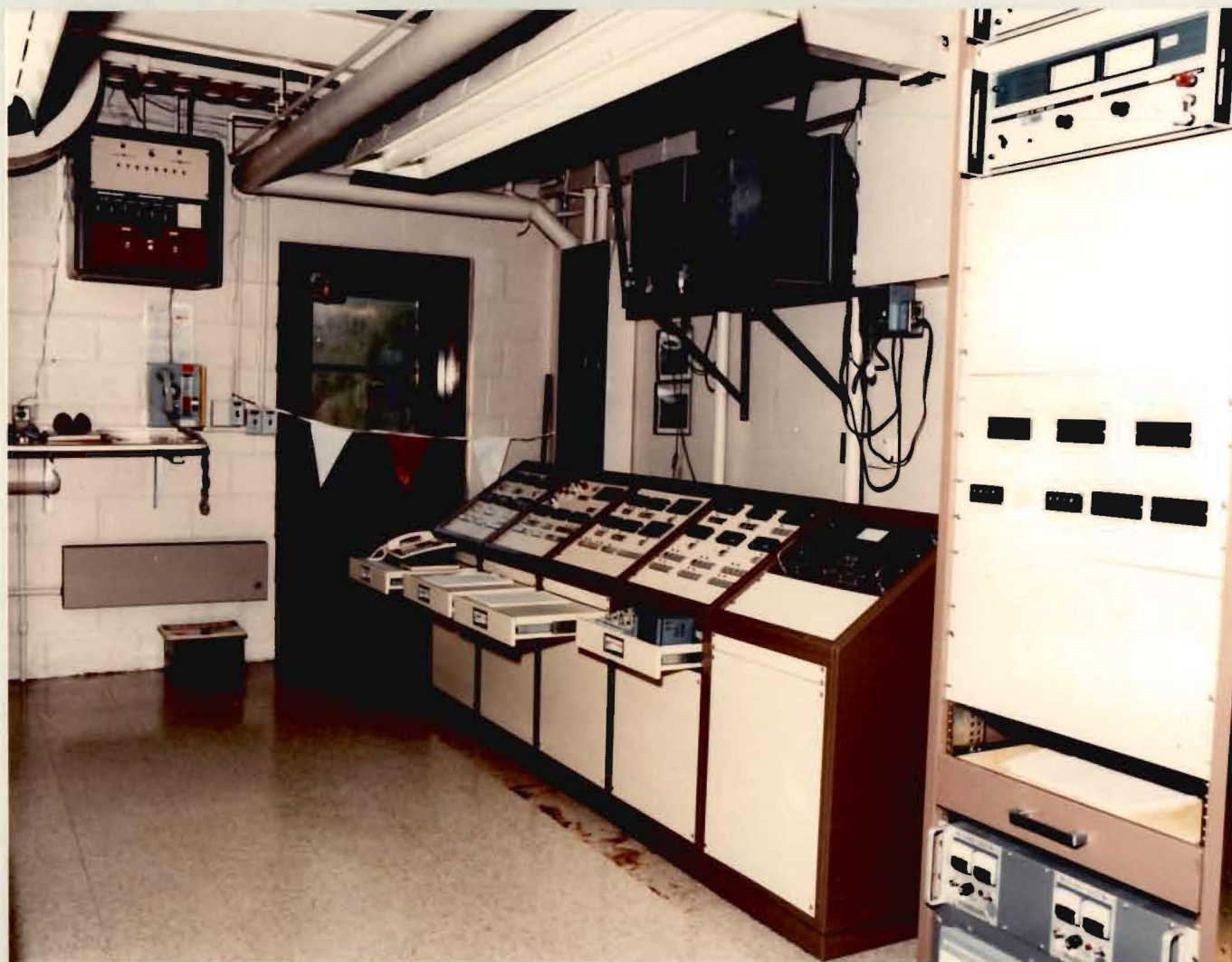
## CELL 14 CONTROL ROOM



CD-88-35801



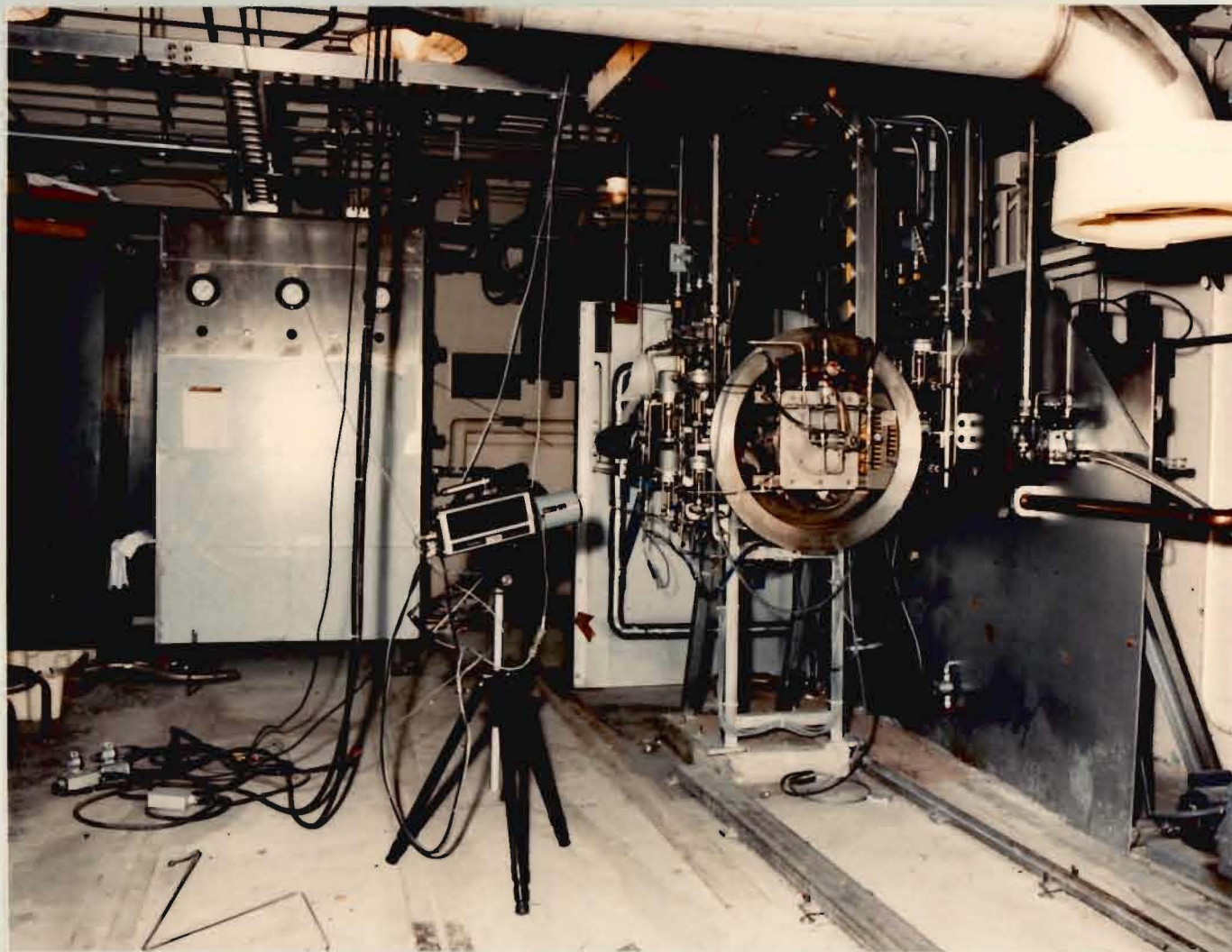
## COMBUSTION RESEARCH LAB CELL 21 CONTROL ROOM



CD-88-35809

# COMBUSTION RESEARCH LAB

## CELL 21



CD-88-35808

COMBUSTION RESEARCH LABORATORY  
FACILITIES CATALOG

Prepared for  
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Space Propulsion Technology Division  
Aerospace Engineering Branch

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