



NAME: PROPULSION SYSTEMS LABORATORY COMPLEX

CAPITAL COST	SURVEY DATE	BLDG.
34,653,797	APRIL 1975	64

DESCRIPTION: The Propulsion Systems Laboratory Complex consists of four (4) test chambers, control and data acquisition centers and supporting structures such as cooling towers, air heaters, components laboratory and equipment building. It is used to test full scale turbojet, ramjet or rocket engines under simulated altitude conditions with controlled temperature and pressure to determine such characteristics as: thrust, fuel consumption, air flow, stall limits, blow-out limits, operating temperatures, acceleration characteristics, vibration and starting characteristics.

The Propulsion Systems Laboratory Complex has the following basic characteristics and capabilities:

Altitude Capability	- 5,000 ft. to 70,000 ft.
Test Section Dimensions	- Chambers 1 & 2 - 14 ft. dia. x 24 ft. lg. Chambers 3 & 4 - 25 ft. dia. x 40 ft. lg.
Max. Engine Thrust	- Chambers 1 & 2 - 50,000 lb. Chambers 3 & 4 - 100,000 lb.
Combustion Air	- 450 lb/sec. at 45 psig
Heated Air	- 375 lb/sec. at 40 ^o -600 ^o F
Dehydrated Air	- 250 lb/sec. at 45 psig dried to 9 gr/lb.
Refrigerated Air	- 110 lb/sec. to -50 ^o F
Altitude Exhaust	- to 500 lb/sec.

The Propulsion Systems Laboratory (PSL) Complex consists of the following:

<u>BLDG./FAC. NUMBER</u>	<u>TITLE OR DESCRIPTION</u>	<u>CAPITAL COST</u>
64	PSL Equipment Building	\$ 17,516,093
65	PSL Altitude Chambers (2)	2,105,597
66	PSL Access Building	920,514
67	PSL Primary Coolers (2)	759,300
68	PSL Secondary Cooler	301,327
69	PSL Tie Lines	791,239
70	PSL Cooling Tower No. 3	307,329
73	Control Components Laboratory	126,773
74	PSL Cooling Tower Water Pump Building	246,607
75	PSL Substation "J"	494,216
76	PSL Combustion Air Heaters (3)	319,480
95	PSL Desiccant Air Dryer	382,688
96	PSL Fuel Storage Building	30,000
97	PSL Oxidant Storage Building	25,000
123	PSL Primary and Secondary Cooler	2,572,124
124	PSL Heater Building	214,058
125	PSL Engine Test Building	5,438,966
126	PSL Cooling Tower No. 6	2,102,488



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APRIL 1975

