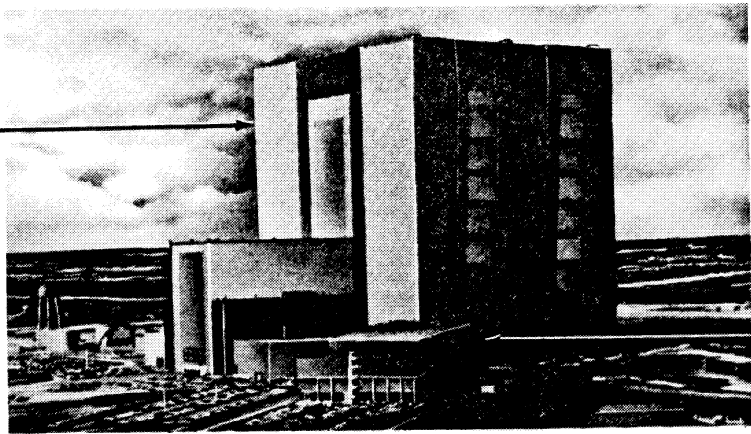


VEHICLE ASSEMBLY BUILDING

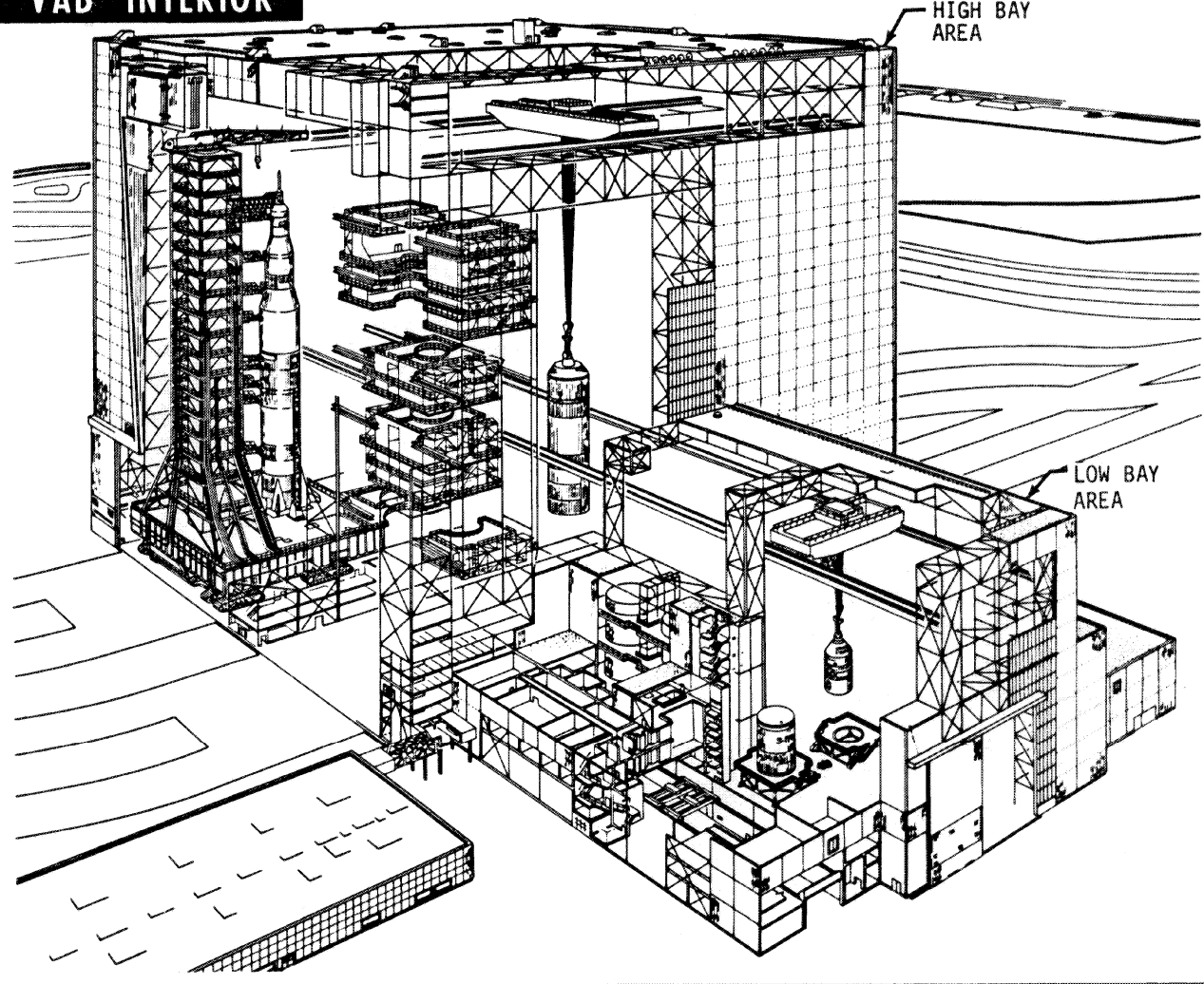
VEHICLE ASSEMBLY BUILDING



LAUNCH CONTROL CENTER

Figure 8-2

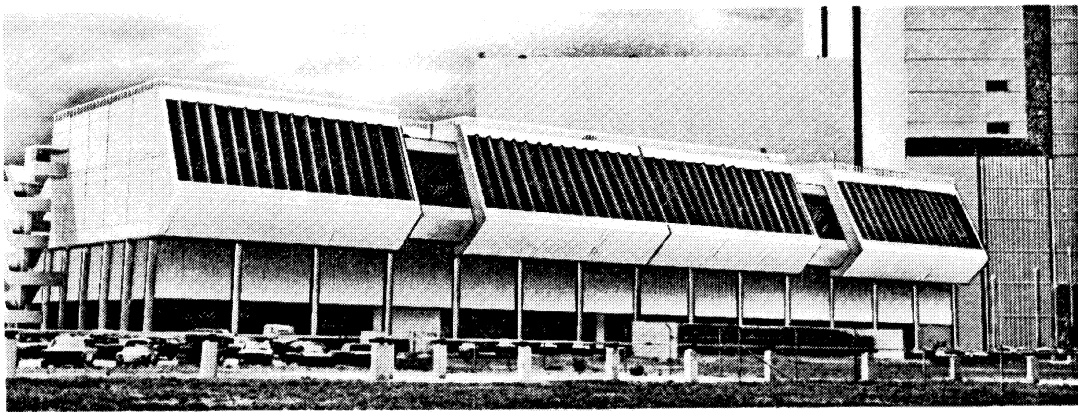
VAB INTERIOR



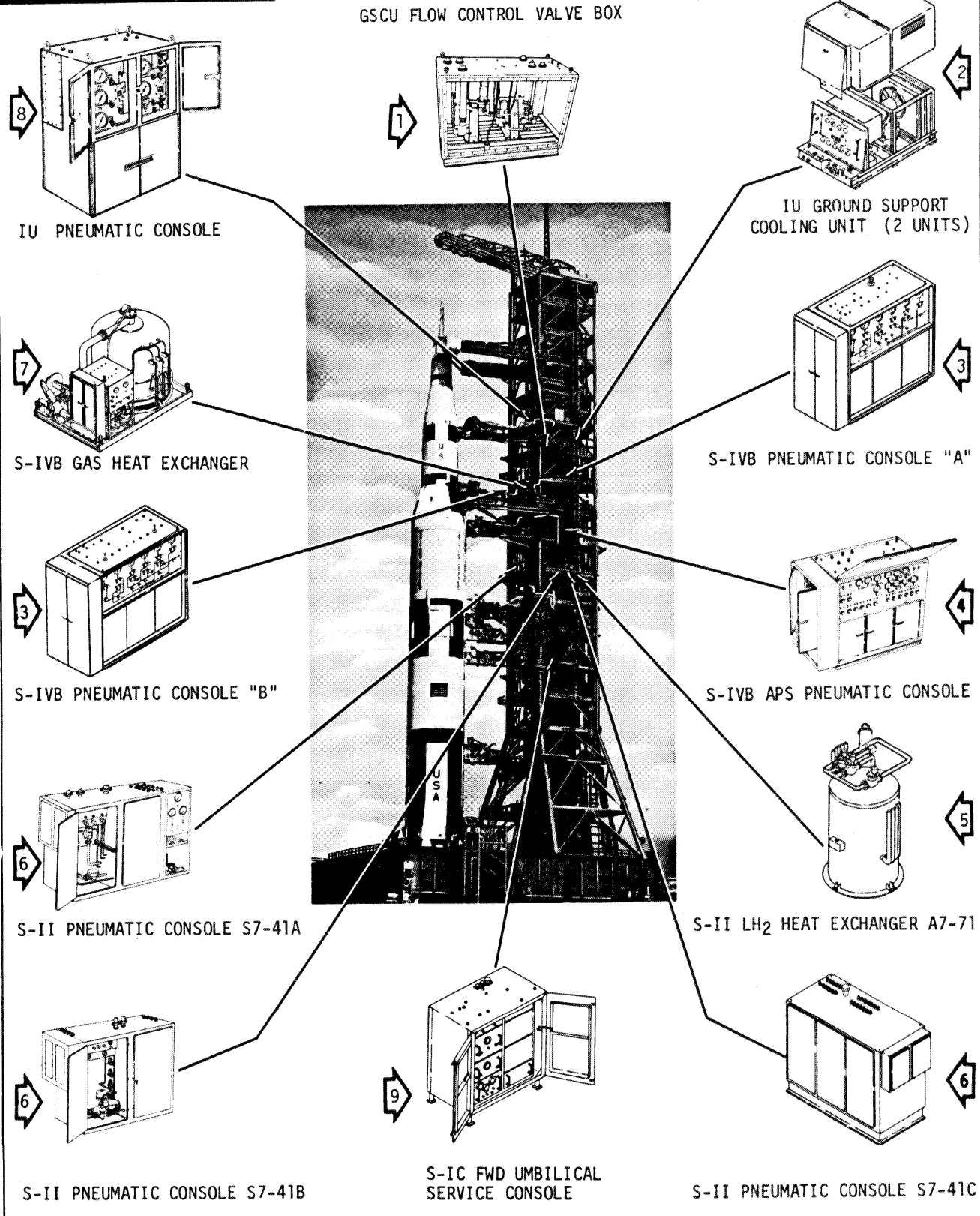
HIGH BAY AREA

LOW BAY AREA

LCC EXTERIOR



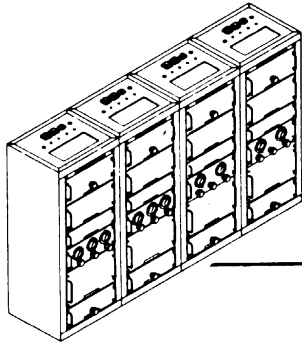
MOBILE LAUNCHER



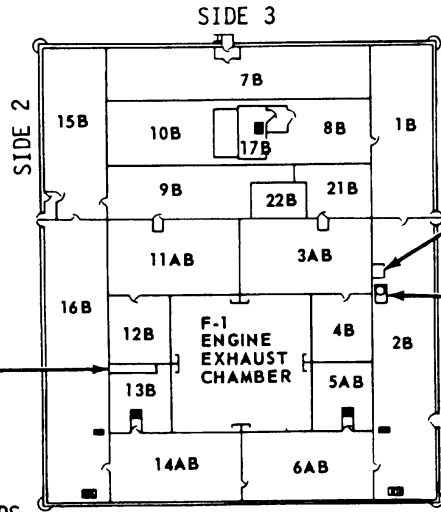
MOBILE LAUNCHER

- 1 GSCU Flow Control Valve Box
Selects either GSCU for operation of one unit while the other recirculates.
- 2 Ground Support Cooling Unit
Supplies water-methanol to the heat exchanger in the IU thermal conditioning system to absorb heat in the IU generated by electronic equipment.
- 3 S-IVB Pneumatic Console A&B
Regulates and controls helium and nitrogen gases for leak testing, functional checkout, propellant loading, purge, and propellant unloading.
- 4 S-IVB APS Pneumatic Console
Regulate and distribute helium and nitrogen gases during checkout and propellant loading.
- 5 S-II LH₂ Heat Exchanger A7-71
Provides gases to the S-IC stage for the following:
 1. Fuel tank pressurization
 2. LOX tank pre-pressurization
 3. Thrust Chamber jacket chilldown
- 6 S-II Pneumatic Consoles S7-41A, B, & C
Regulate, control, and monitor gases for S-II stage during standby, prelaunch, and launch.
- 7 S-IVB Gas Heat Exchanger
Supplies cold helium or hydrogen for the following:
 1. Lox and Fuel Tank Pre-Pressurization
 2. Thrust chamber jacket chilldown
 3. Pressurize engine turbine start bottle
- 8 IU Pneumatic Console
Regulates, monitors, and controls pneumatic pressure to pressurize, checkout, and test the air bearing spheres and related pneumatic and electro-mechanical circuitry.
- 9 S-IC Forward Umbilical Service Console
Supplies nitrogen from three regulation modules to S-IC stage pneumatic systems through the forward umbilical plate.

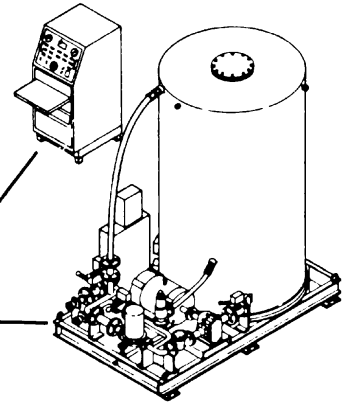
MOBILE LAUNCHER LEVEL A AND B



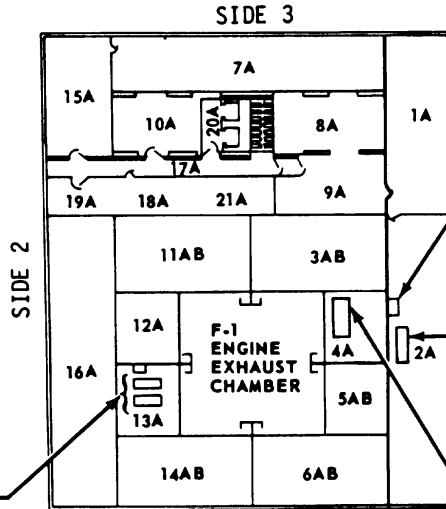
S-IC PNEUMATIC CHECKOUT RACKS
REGULATES CONTROLS, AND MONITORS NITROGEN FOR TEST AND CHECKOUT OF PRESSURE SWITCHES AND VALVES IN STAGE PROPULSION SYSTEM.



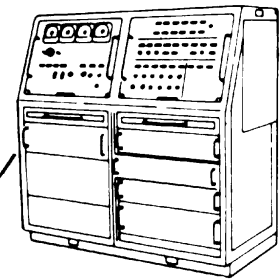
SIDE 1
LEVEL B (LOWER)



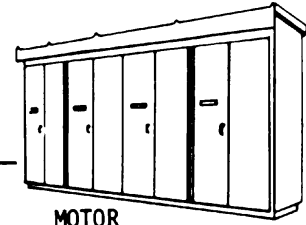
S-IC INERT PREFILL UNIT
SUPPLIES ETHYLENE GLYCOL TO F-1 ENGINE FUEL JACKETS TO ELIMINATE ENTRAPPED AIR.



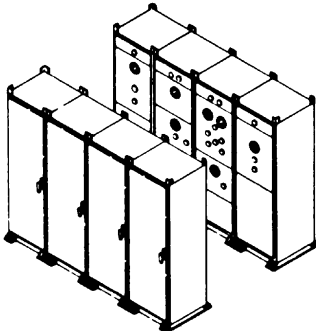
SIDE 1
LEVEL A (UPPER)



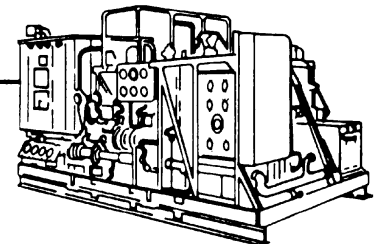
SYSTEM CHECKOUT CONSOLE



MOTOR CONTROL CENTER



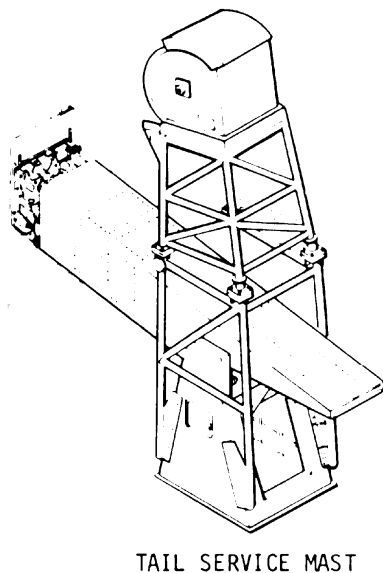
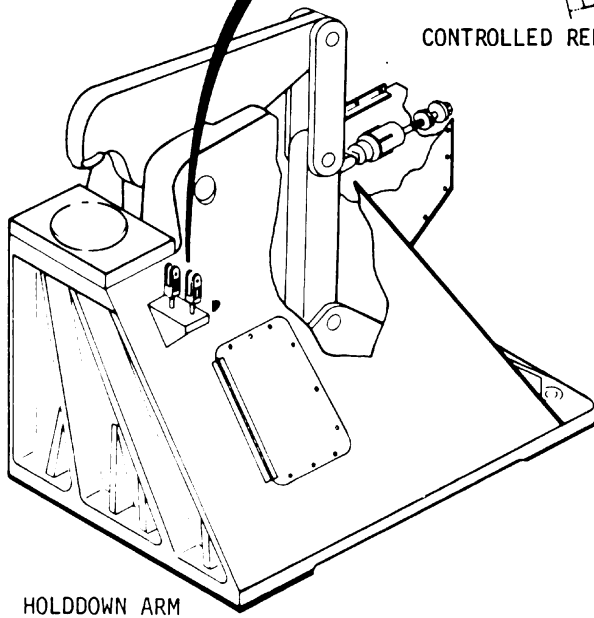
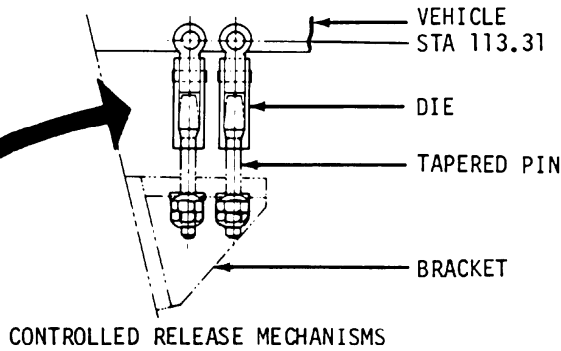
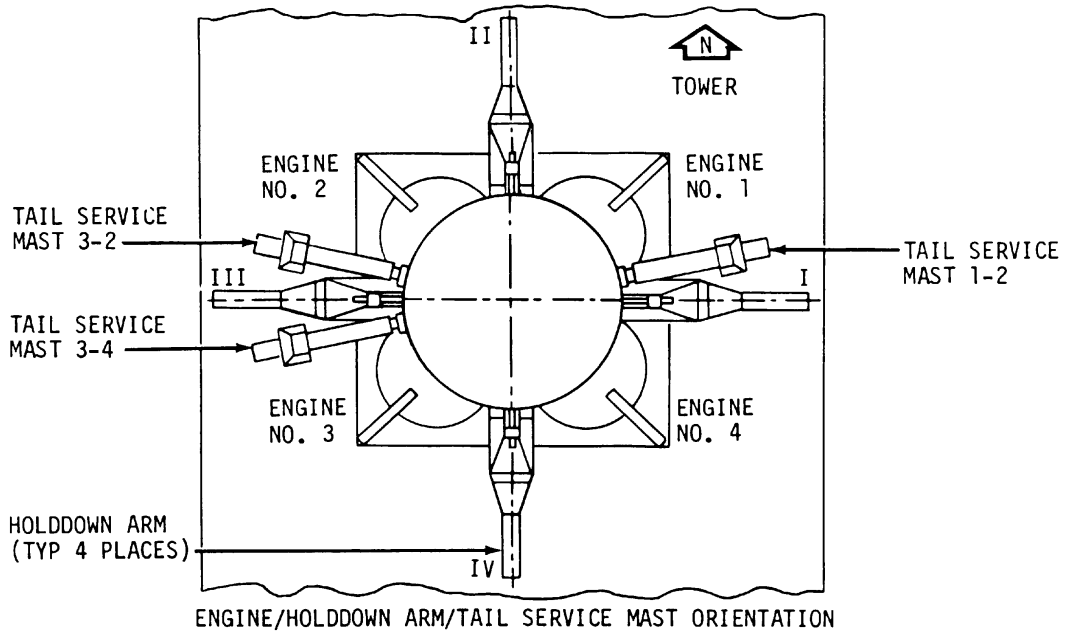
S-IC PNEUMATIC CONSOLE
REGULATES FACILITY GASES
SUPPLIES OPERATING PRESSURES TO S-IC STAGE
AND S-IC PNEUMATIC CHECKOUT RACKS



HYDRAULIC POWER UNIT

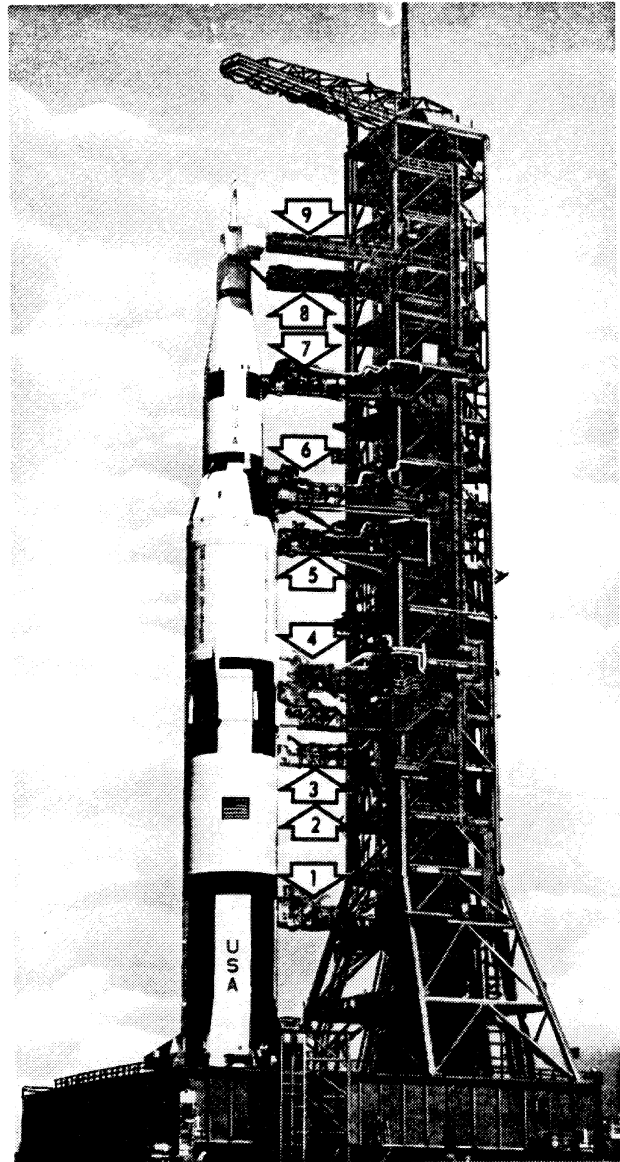
S-IC HYDRAULIC SUPPLY AND CHECKOUT UNIT
GIMBALS FOUR OUTBOARD F-1 ENGINES
CHECKS OUT "THRUST OK" PRESSURE SWITCHES
CONTROLS F-1 ENGINE VALVES

HOLDDOWN ARMS/TAIL SERVICE MAST



MOBILE LAUNCHER SERVICE ARMS

- 1 S-IC Intertank (preflight). Provides lox fill and drain interfaces. Umbilical withdrawal by pneumatically driven compound parallel linkage device. Arm may be reconnected to vehicle from LCC. Retract time is 8 seconds. Reconnect time is approximately 5 minutes.
- 2 S-IC Forward (preflight). Provides pneumatic, electrical, and air-conditioning interfaces. Umbilical withdrawal by pneumatically driven block and tackle/lanyard device. Secondary mechanical system. Retracted at T-19 seconds. Retract time is 8 seconds.
- 3 S-II Aft (preflight). Provides access to vehicle. Arm retracted prior to liftoff as required.
- 4 S-II Intermediate (inflight). Provides LH₂ and lox transfer, vent line, pneumatic, instrument cooling, electrical, and air-conditioning interfaces. Umbilical withdrawal systems same as S-IVB Forward with addition of a pneumatic cylinder actuated lanyard system. This system operates if primary withdrawal system fails. Retract time is 6.4 seconds (max).
- 5 S-II Forward (inflight). Provides GH₂ vent, electrical, and pneumatic interfaces. Umbilical withdrawal systems same as S-IVB Forward. Retract time is 7.4 seconds (max).
- 6 S-IVB Aft (inflight). Provides LH₂ and lox transfer, electrical, pneumatic, and air-conditioning interfaces. Umbilical withdrawal systems same as S-IVB Forward. Also equipped with line handling device. Retract time is 7.7 seconds (max).
- 7 S-IVB Forward (inflight). Provides fuel tank vent, electrical, pneumatic, air-conditioning, and preflight conditioning interfaces. Umbilical withdrawal by pneumatic disconnect in conjunction with pneumatic/hydraulic redundant dual cylinder system. Secondary mechanical system. Arm also equipped with line handling device to protect lines during withdrawal. Retract time is 8.4 seconds (max).
- 8 Service Module (inflight). Provides air-conditioning, vent line, coolant, electrical, and pneumatic interfaces. Umbilical withdrawal by pneumatic/mechanical lanyard system with secondary mechanical system. Retract time is 9.0 seconds (max).
- 9 Command Module Access Arm (preflight). Provides access to spacecraft through environmental chamber. Arm may be retracted or extended from LCC. Retracted 12° park position until T-4 minutes. Extend time is 12 seconds from this position.



LAUNCH PAD A, LC-39

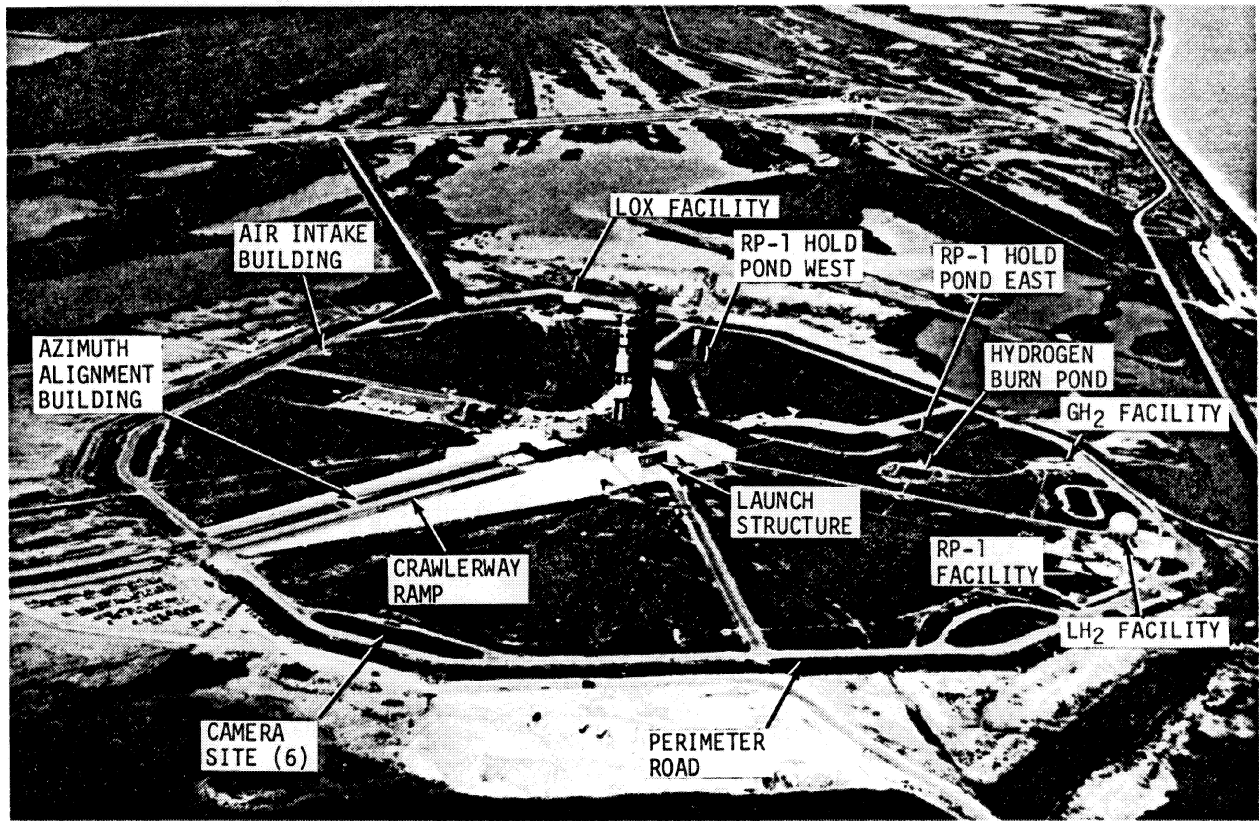
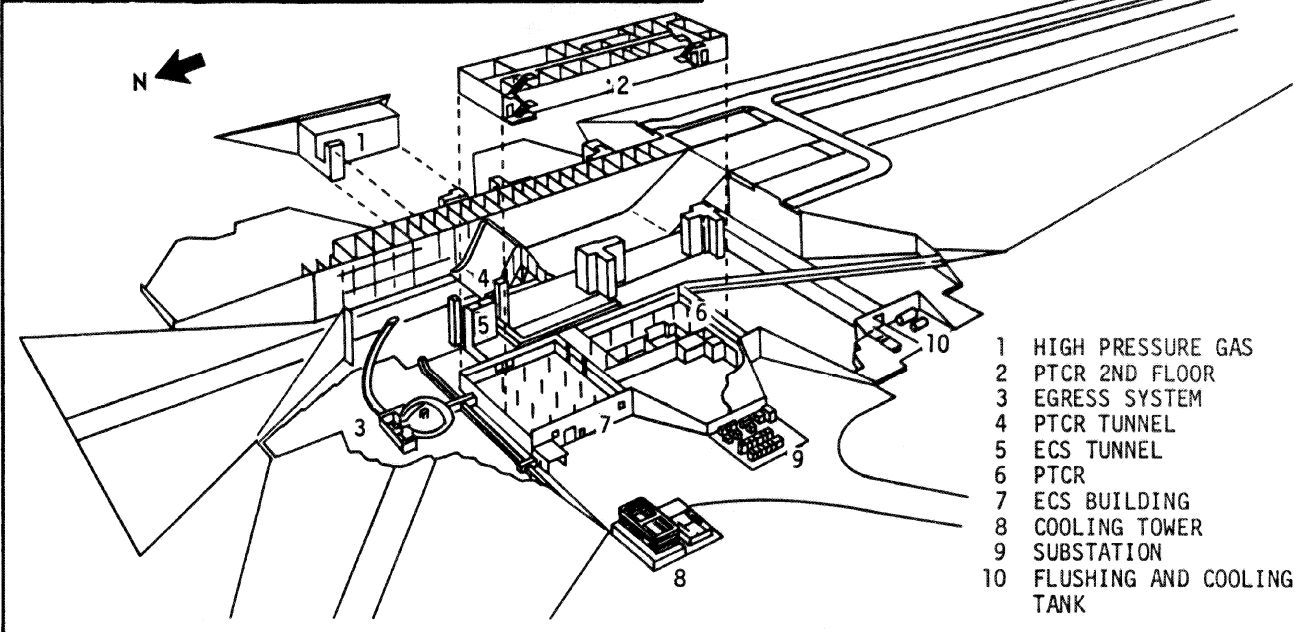


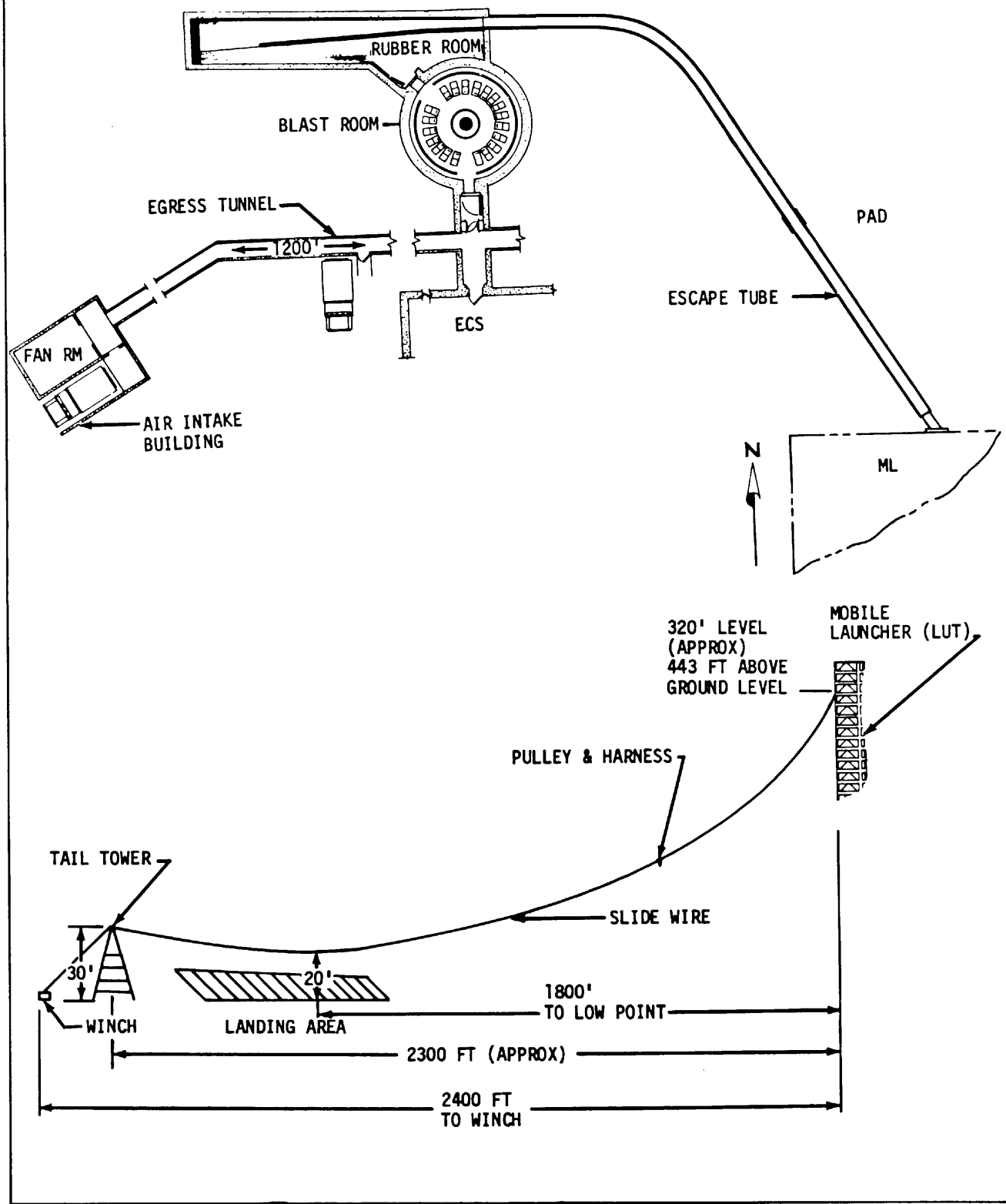
Figure 8-9

LAUNCH STRUCTURE EXPLODED VIEW



- 1 HIGH PRESSURE GAS
- 2 PTCR 2ND FLOOR
- 3 EGRESS SYSTEM
- 4 PTCR TUNNEL
- 5 ECS TUNNEL
- 6 PTCR
- 7 ECS BUILDING
- 8 COOLING TOWER
- 9 SUBSTATION
- 10 FLUSHING AND COOLING TANK

EGRESS SYSTEM



MOBILE SERVICE STRUCTURE

