

PRELIMINARY

5.0 TERMINAL SERVICING

5.1 Airplane Servicing Arrangement - Typical Turnaround

5.2 Terminal Operations - Turnaround Station

5.3 Terminal Operations - En Route Station

5.4 Ground Servicing Connections

5.5 Engine Starting Pneumatic Requirements

5.6 Ground Pneumatic Power Requirements

5.7 Conditioned Air Requirements

5.8 Ground Towing Requirements

PRELIMINARY

5.0 TERMINAL SERVICING

During turnaround at the terminal, certain services must be performed on the aircraft, usually within a given time, to meet flight schedules. This section shows service vehicle arrangements, schedules, locations of service points, and typical service requirements. The data presented in this section reflect ideal conditions for a single airplane. Service requirements may vary according to airplane condition and airline procedure.

Section 5.1 shows typical arrangements of ground support equipment during turnaround. As noted, if the auxiliary power unit (APU) is used, the electrical, air start, and air-conditioning service vehicles would not be required. Passenger loading bridges or portable passenger stairs could be used to load or unload passengers.

Sections 5.2 and 5.3 show typical service times at the terminal. These charts give typical schedules for performing service on the airplane within a given time. Service times could be rearranged to suit availability of personnel, airplane configuration, and degree of service required.

Section 5.4 shows the locations of ground service connections in graphic and in tabular forms. Typical capacities and service requirements are shown in the tables. Services with requirements that vary with conditions are described in subsequent sections.

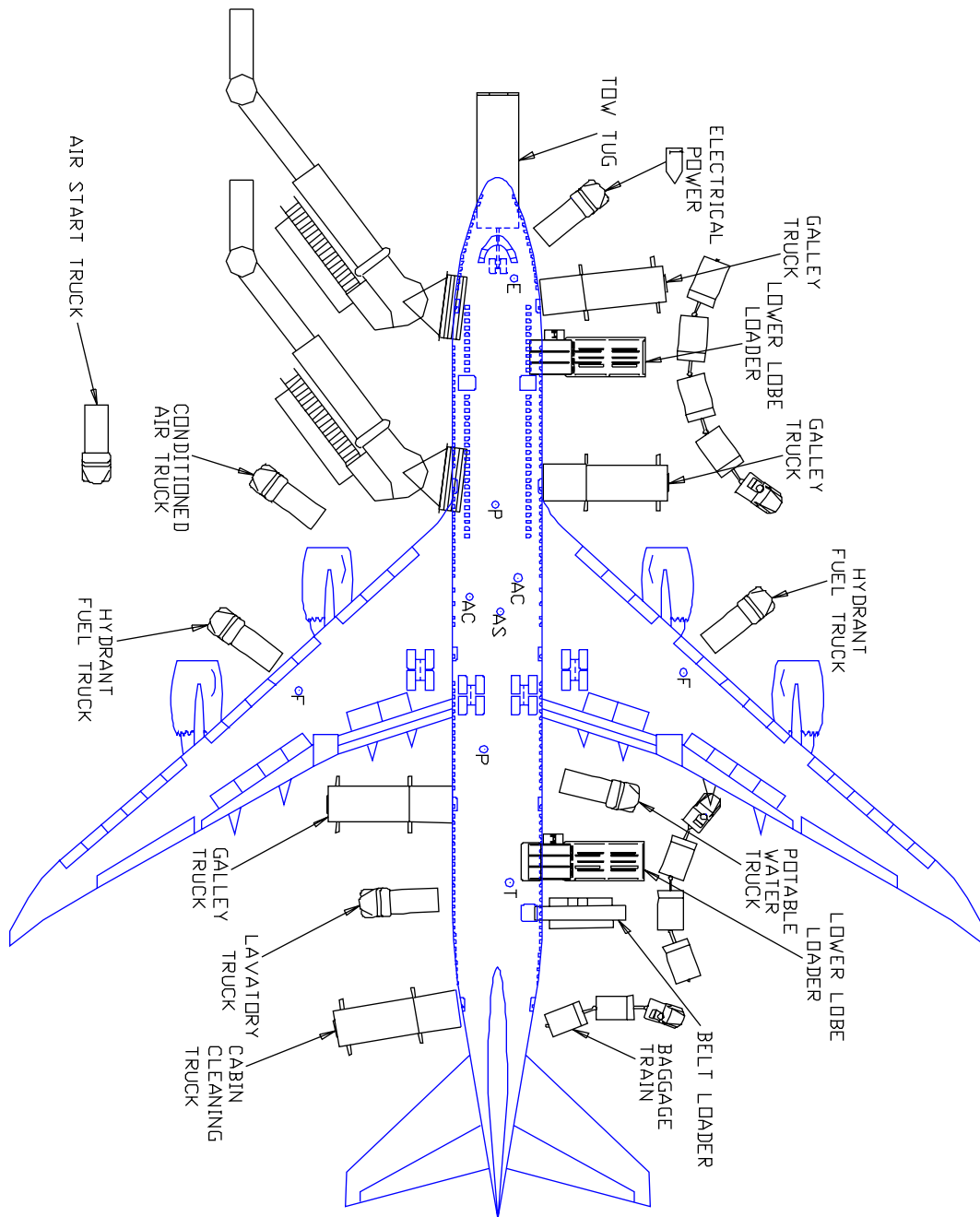
Section 5.5 shows typical sea level air pressure and flow requirements for starting different engines. The curves are based on an engine start time of 90 seconds.

Section 5.6 shows pneumatic requirements for heating and cooling (air conditioning) using high pressure air to run the air cycle machine. The curves show airflow requirements to heat or cool the airplane within a given time and ambient conditions. Maximum allowable pressure and temperature for air cycle machine operation are 60 psia and 450^oF, respectively.

Section 5.7 shows pneumatic requirements for heating and cooling the airplane, using low pressure conditioned air. This conditioned air is supplied through an 8-in ground air connection (GAC) directly to the passenger cabin, bypassing the air cycle machines.

Section 5.8 shows ground towing requirements for various ground surface conditions.

PRELIMINARY

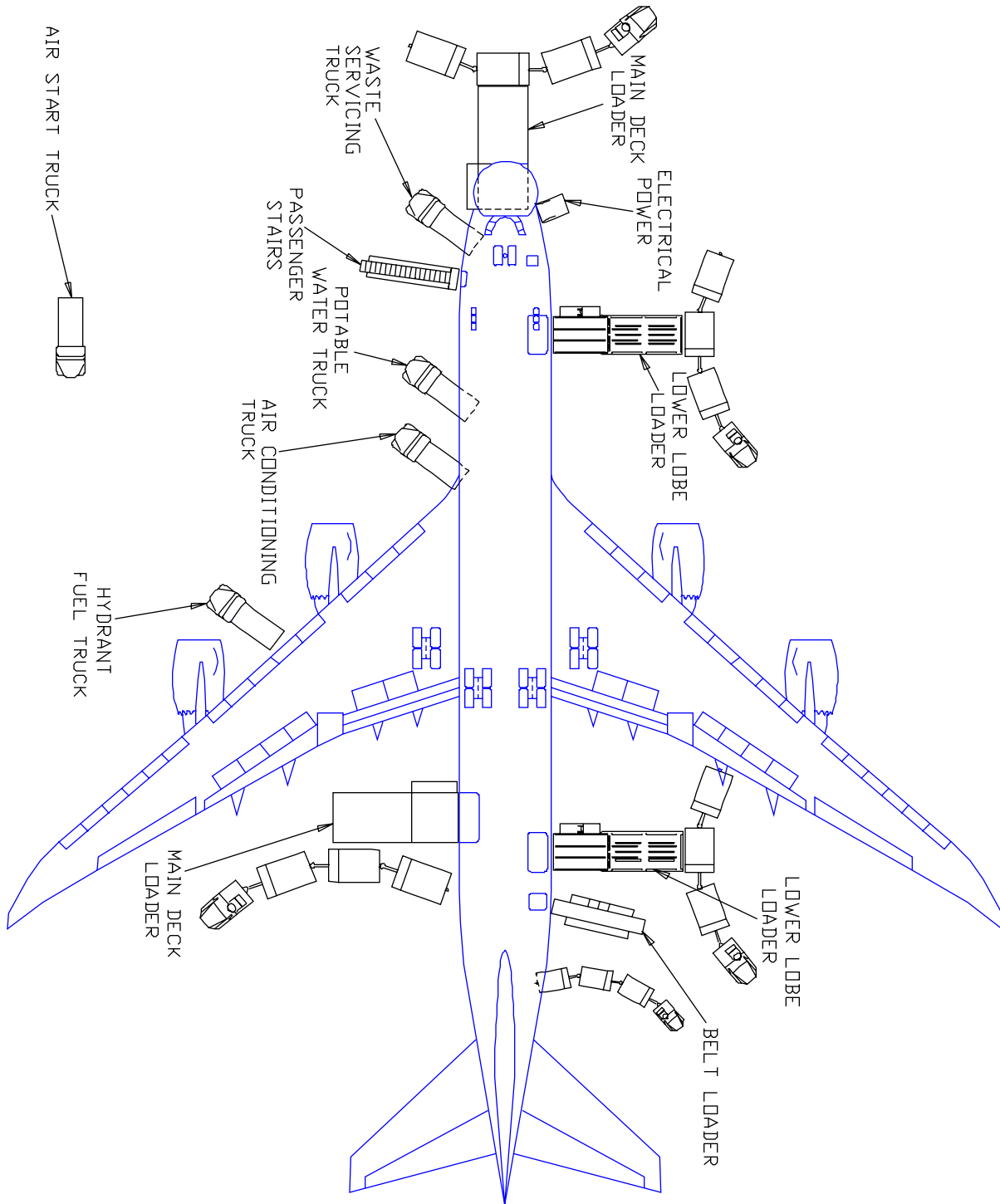


LEGEND:

o POTABLE WATER, AIR CONDITIONING, OR GROUND POWER MAY BE SUPPLIED FROM THE PASSENGER BRIDGE IF SO EQUIPED

**5.1.1 AIRPLANE SERVICING ARRANGEMENT - TYPICAL TURNAROUND
MODEL 747-8**

PRELIMINARY

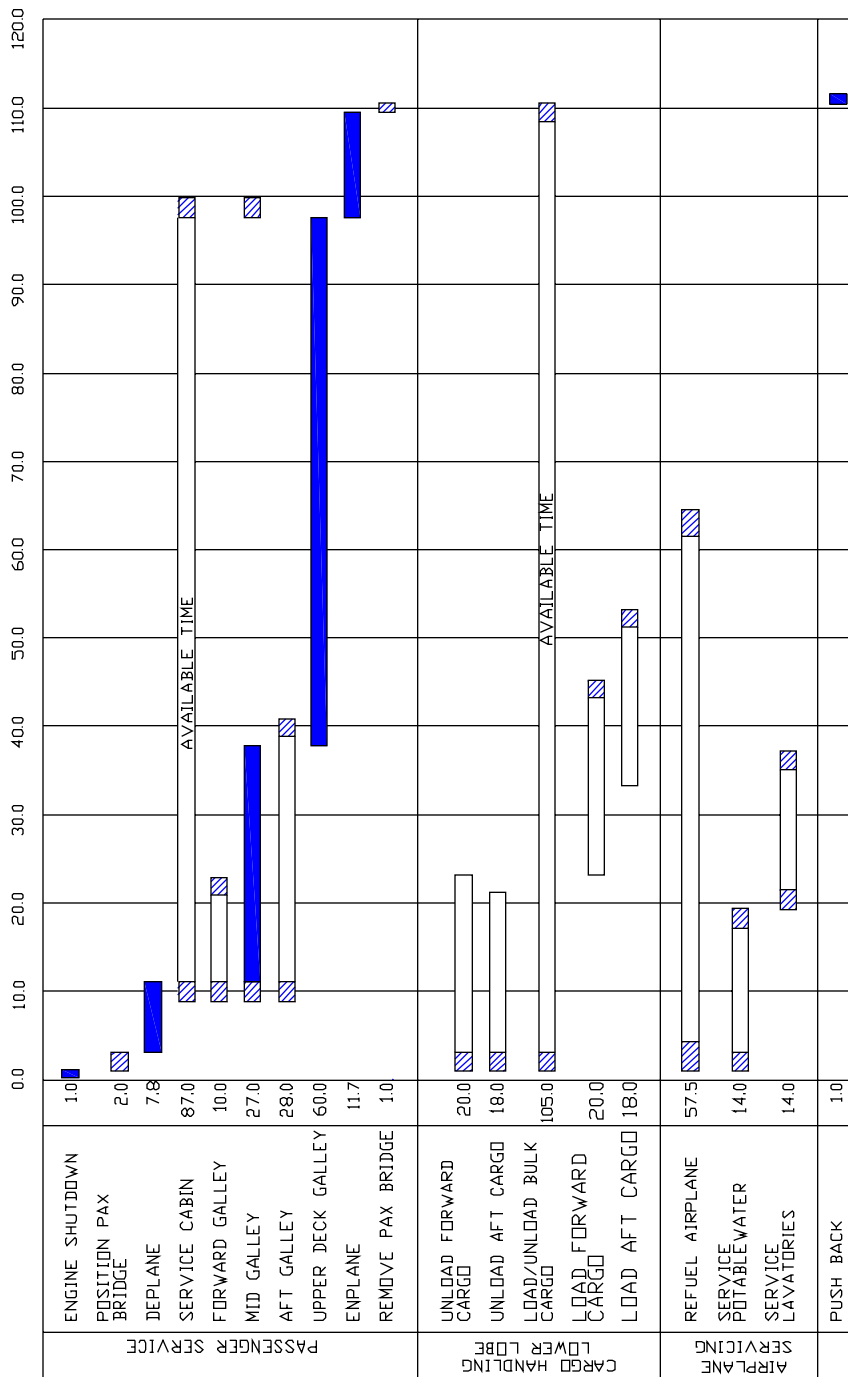


5.1.2 AIRPLANE SERVICING ARRANGEMENT - TYPICAL TURNAROUND
MODEL 747-8F

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PRELIMINARY

747-8 TURNTIME ANALYSIS
467 PASSENGERS, 2 DOORS
110.5 MINUTES

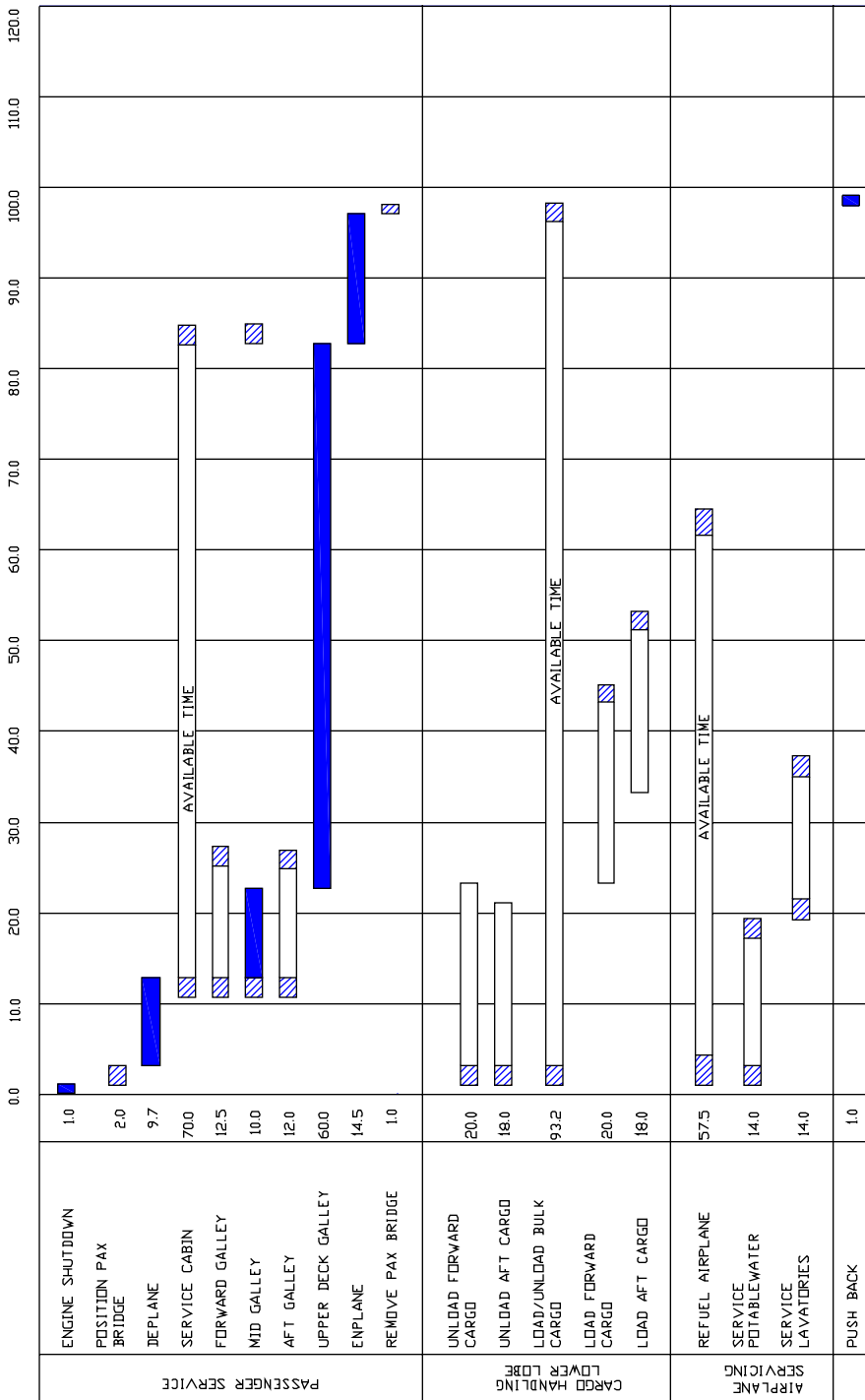


- PARAMETERS:
- 100% PASSENGER AND CARGO EXCHANGE
 - 467 PASSENGERS, 3 CLASSES, 2 DOORS
 - 1 LAVATORY SERVICE TRUCK
 - 3 GALLEY SERVICE TRUCKS (84 CARTS)
 - 60,574 GALLONS OF FUEL UNLOADED AT 981 GALLONS PER MINUTE, 4,200 GALLONS RESERVE
 - BASED ON CONFIG-B-Q150-C003-009 REV. H
 - PASSENGER DEPLANE RATE IS 60 PER MINUTE
 - PASSENGER ENPLANE RATE IS 40 PER MINUTE
 - 2 LOWER LOBE CARGO LOADERS
 - 20 CONTAINERS FORWARD
 - 18 CONTAINERS AFT

5.2.1 TERMINAL OPERATIONS - TURNAROUND STATION – ALL PASSENGER MODEL 747-8

PRELIMINARY

747-8 TURNAROUND ANALYSIS
581 PASSENGERS, 2 DOORS
98.2 MINUTES



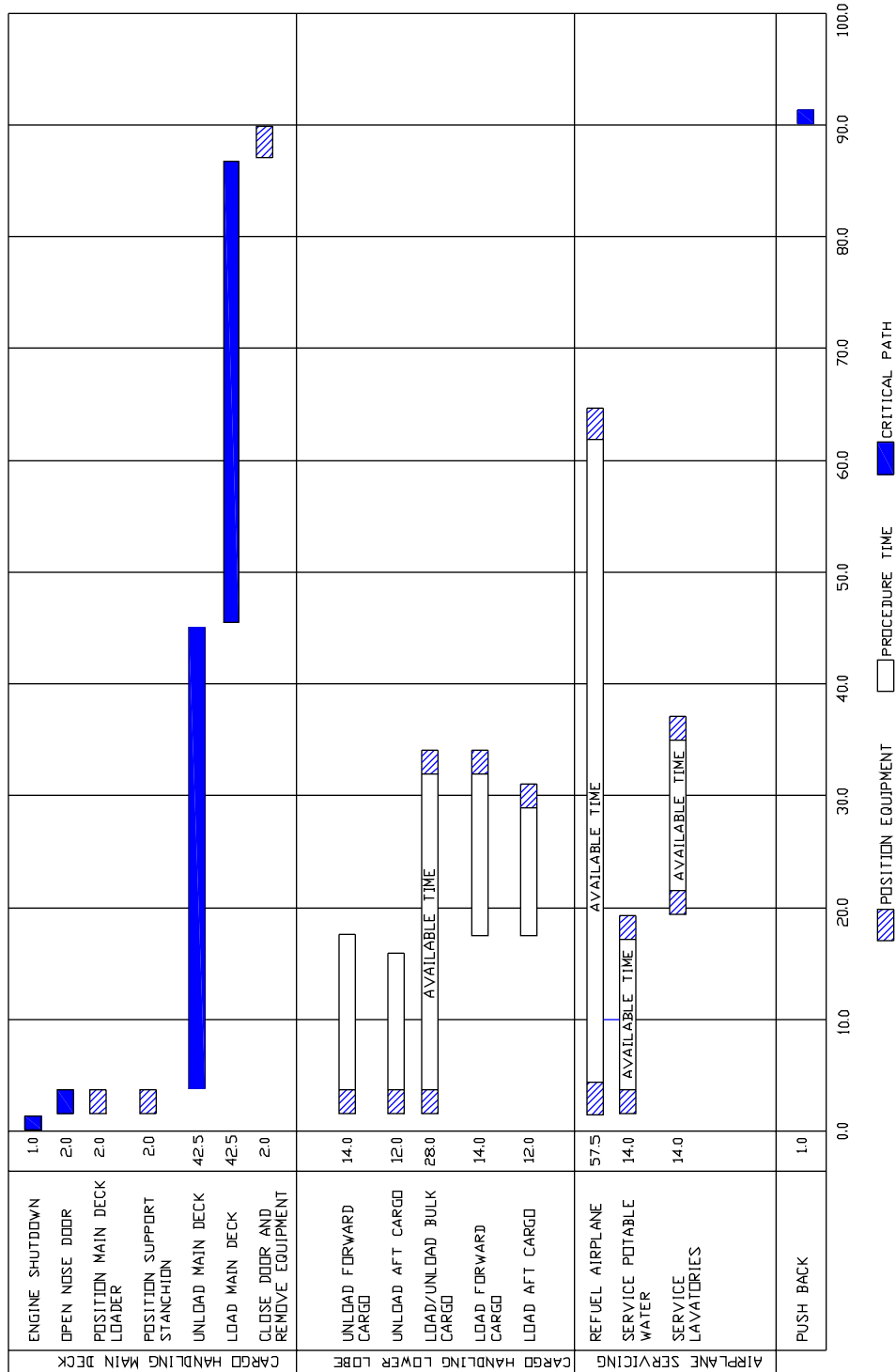
- PARAMETERS:
- 100% PASSENGER AND CARGO EXCHANGE
 - 581 PASSENGERS, 2 CLASSES, 2 DOORS
 - 1 LAVATORY SERVICE TRUCK
 - 3 GALLEY SERVICE TRUCKS (56.5 CARTS)
 - 60,574 GALLONS OF FUEL UNLOADED AT 981 GALLONS PER MINUTE, 4,200 GALLONS RESERVE
 - PASSENGER DEPLANE RATE IS 60 PER MINUTE
 - PASSENGER ENPLANE RATE IS 40 PER MINUTE
 - 2 LOWER LOBE CARGO LOADERS
 - 20 CONTAINERS FORWARD
 - 18 CONTAINERS AFT

5.2.2 TERMINAL OPERATIONS - TURNAROUND STATION – PASSENGER MODEL 747-8

D6-58326-3

PRELIMINARY

747-8F LOADED USING NOSE CARGO DOOR 90 MINUTES



- PARAMETERS:
- MAIN DECK CARGO: 34 PALLETS
 - FORWARD LOWER LOBE CARGO: 7 PALLETS
 - AFT LOWER LOBE CARGO: 2 CONTAINERS AND 5 PALLETS
 - 100% CARGO EXCHANGE
 - 60,574 GALLONS OF FUEL UNLOADED, 4,200 GALLONS RESERVE, (4) NOZZLE HYDRANT FUELING AT 35 PSI
 - MAIN DECK LOADED USING NOSE CARGO DOOR
 - 2 LOWER LOBE CARGO LOADERS
 - 1 LAVATORY SERVICE TRUCK
 - 1 POTABLE WATER SERVICE TRUCK

5.2.3 TERMINAL OPERATIONS - TURNAROUND STATION – ALL CARGO, NOSE DOOR LOADING MODEL 747-8F

PRELIMINARY

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5.3.1 TERMINAL OPERATIONS - EN ROUTE STATION - ALL PASSENGER
MODEL 747-8

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PRELIMINARY

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5.3.2 TERMINAL OPERATIONS - EN ROUTE STATION - ALL PASSENGER
MODEL 747-8F

PRELIMINARY

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5.4.1 GROUND SERVICE CONNECTIONS

MODEL 747-8

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PRELIMINARY

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5.4.2 GROUND SERVICE CONNECTIONS *MODEL 747-8F*

PRELIMINARY

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5.4.3 GROUND SERVICING CONNECTIONS AND CAPACITIES

MODEL 747-8, 747-8F

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PRELIMINARY

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5.4.4 GROUND SERVICING CONNECTIONS AND CAPACITIES *MODEL 747-8, 747-8F*

PRELIMINARY

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5.5.1 ENGINE START PNEUMATIC REQUIREMENTS - SEA LEVEL

MODEL 747-8, 747-8F

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PRELIMINARY

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5.6.1 GROUND PNEUMATIC POWER REQUIREMENTS - HEATING/COOLING
MODEL 747-8, 747-8F

PRELIMINARY

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5.7.1 CONDITIONED AIR FLOW REQUIREMENTS

MODEL 747-8, 747-8F

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PRELIMINARY

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5.8.1 GROUND TOWING REQUIREMENTS - ENGLISH UNITS

MODEL 747-8, 747-8F

PRELIMINARY

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5.8.2 GROUND TOWING REQUIREMENTS - METRIC UNITS

MODEL 747-8, 747-8F

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