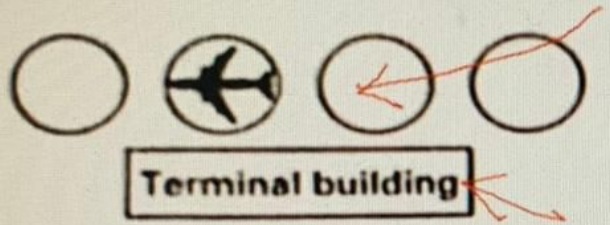
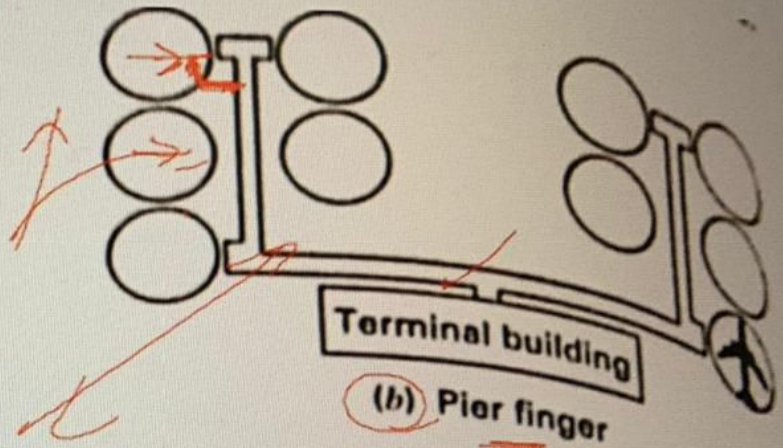
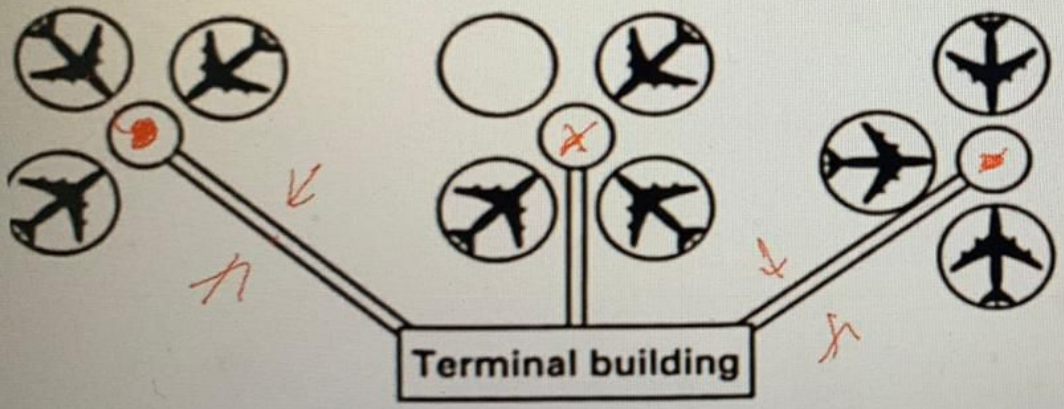
17-2 Terminal layout schemes.



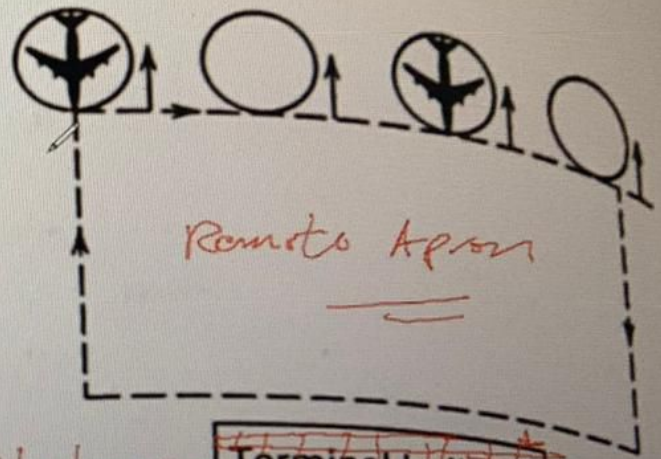
(a) Frontal



(b) Pier finger

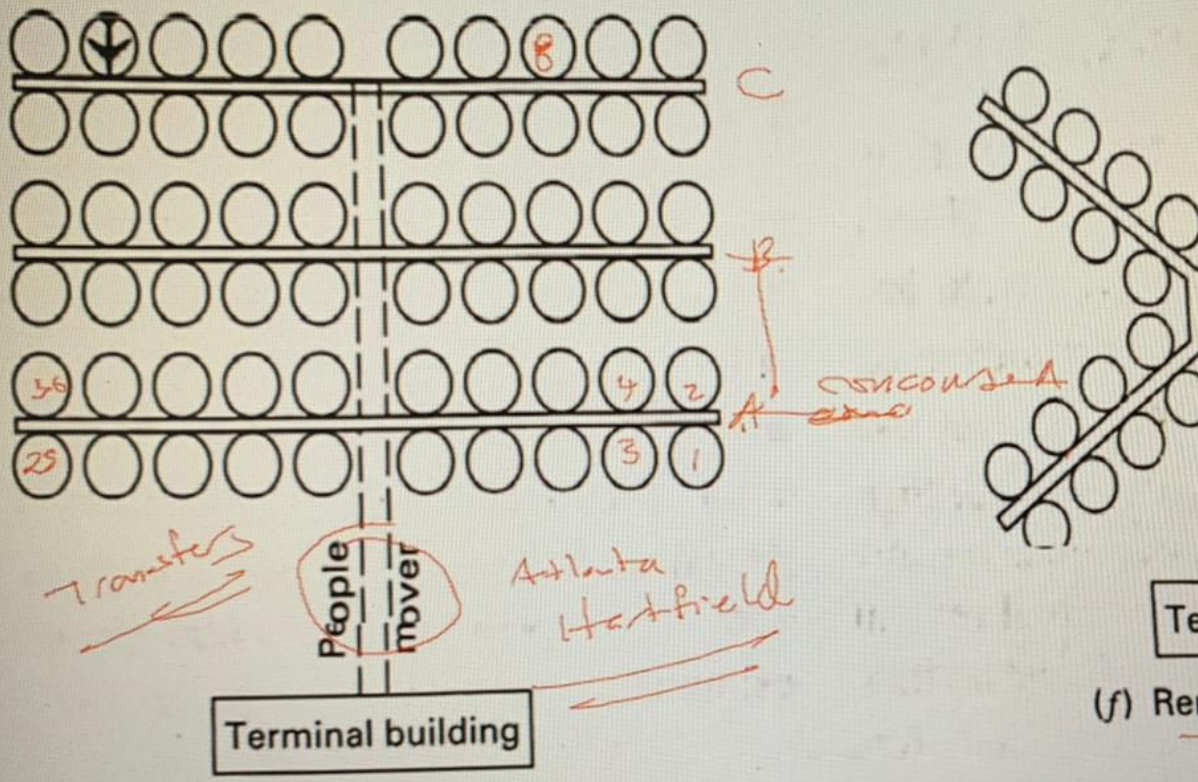


(c) Satellite

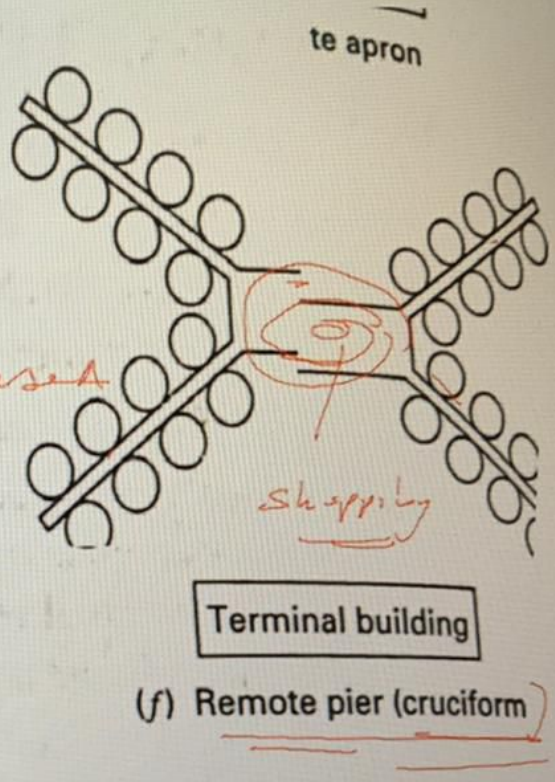


mobile lounge

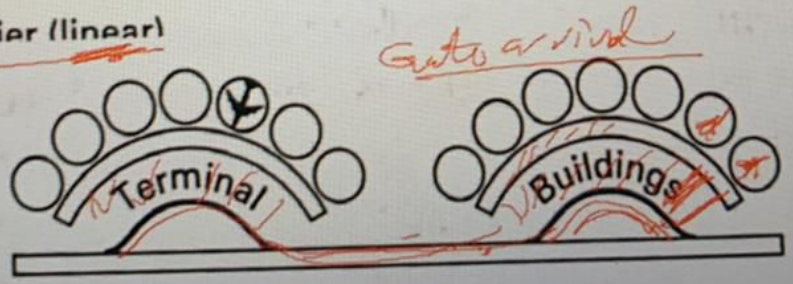
(d) Remote apron



(e) Remote pier (linear)



(f) Remote pier (cruciform



17-2 Terminal layout schemes.

Intra-terminal transport: within terminal. Average walking distance for transfers (US), ~ 1250 m, recommended ~ 300 m. Use of:

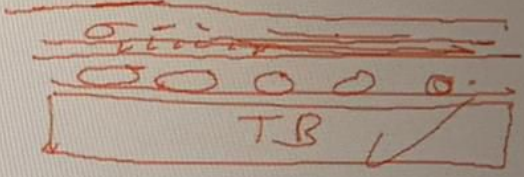
- Moving sidewalks
- Electric vehicles for handicaps

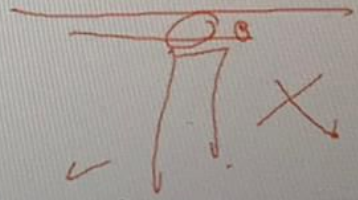
Inter-terminal transport: between terminals

- Automatic vehicle system (Atlanta, Dallas- Fort Worth, fig. 17.5, p. 532)
- Conventional buses (JKF)
- Mobile lounge (Dulles, Jeddah, Baltimore)

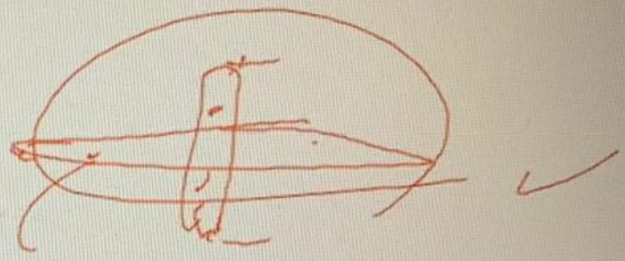
Automobile Parking

- Clockwise Circulation, one-way isles and less than 90 degree angle parking is preferred
- Curb space for loading and unloading (~ 100m curb length/ a million non-interlining passengers)
- Maximum walking distance to terminal ~ 120 m
- About 1000 parking spaces per a million annual passengers
- Thus large parking garages are needed some larger than 10 000 spaces
- Parking should be divided to categories:
  - Short-term/ long term
  - Passenger, visitors, employees, car rentals, taxis, etc.,





Terminal Apron Space Requirements:



This is a function of:

- Size of stand position
- Aircraft parking configuration: parallel, nose-in, nose-out (by tractor)
- Number of stand positions

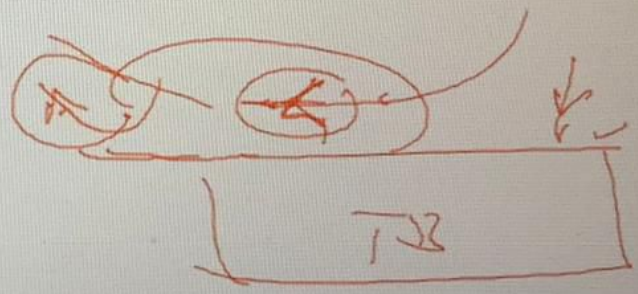
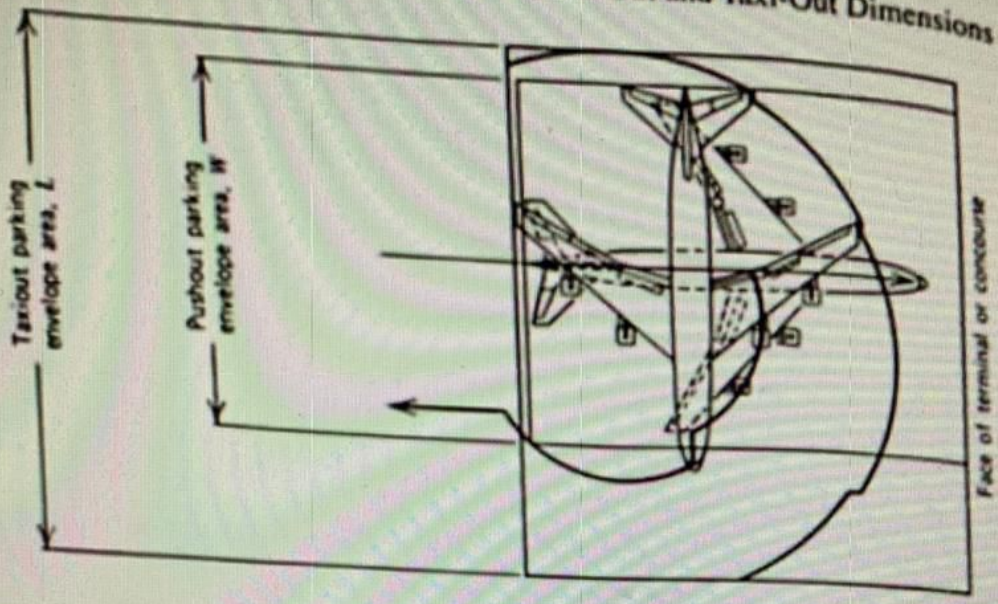


Table 17-1 Diagram and Summary of Push-Out and Taxi-Out Dimensions

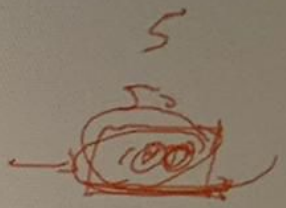


Group A/C	Push-Out[a]			Taxi-Out[b]		
	L	*W*	Area (yd^2)	*L*	*W*	Area (yd^2)
A. FH-227	103 ft 1 in.	115 ft 2 in.	1319	148 ft 10 in.	140 ft 2 in.	2318
YS-11B	106 ft 3 in.	124 ft 11 in.	1474	171 ft 0 in.	149 ft 11 in.	2850
BAC-111	123 ft 6 in.	113 ft 6 in.	1557	130 ft 0 in.	138 ft 6 in.	2001
DC9-10	134 ft 5 in.	109 ft 5 in.	1634	149 ft 2 in.	134 ft 5 in.	2228
B. DC9-21, 30	149 ft 4 in.	113 ft 4 in.	1880	149 ft 0 in.	138 ft 4 in.	2290
727 (all)	173 ft 2 in.	128 ft 0 in.	2463◆	194 ft 0 in.	153 ft 0 in.	3298
737 (all)	120 ft 0 in.	113 ft 0 in.	1507	145 ft 4 in.	138 ft 0 in.	2228
C. B-707 (all)	172 ft 11 in.	165 ft 9 in.	3188	258 ft 0 in.	190 ft 9 in.	5468
B-720	156 ft 9 in.	150 ft 10 in.	2627	228 ft 0 in.	175 ft 10 in.	4454
D. DC-8-43, 51	170 ft 9 in.	162 ft 5 in.	3081	211 ft 10 in.	187 ft 5 in.	4411
DC 8-61, 63	207 ft 5 in.	168 ft 5 in.	3882	252 ft 4 in.	193 ft 5 in.	547
E. L-1011	188 ft 8 in.	175 ft 4 in.	3676	263 ft 6 in.	200 ft 4 in.	58
DC10	192 ft 3 in.	185 ft 4 in.	3959	291 ft 0 in.	210 ft 4 in.	68
F. B-747	241 ft 10 in.	215 ft 8 in.	5795	328 ft 0 in.	240 ft 8 in.	8

[a]Including clearances of 20-ft wing-tip, nose to building; 30-ft group A and B, 20-ft group C and D, 10-ft group E and F.

[b]Including clearance of 20-ft to other A/C and GSE: 45 ft.

Number of stand position: depends on:

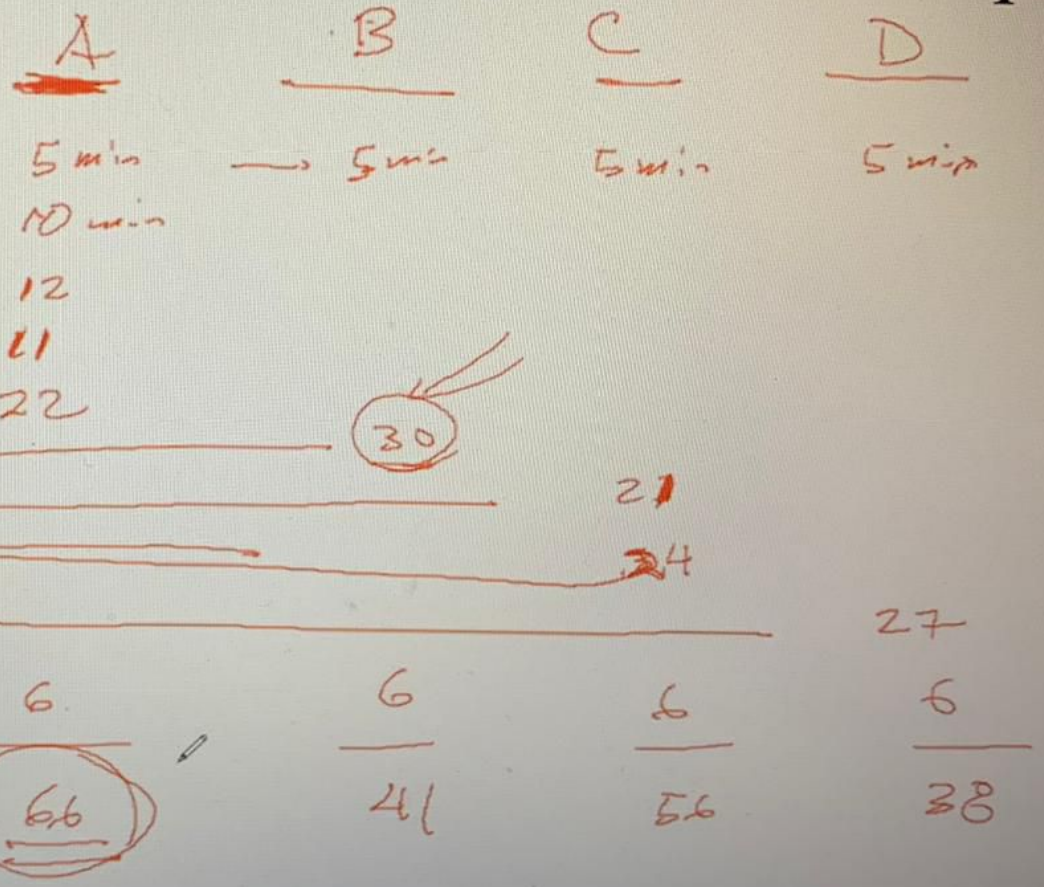


- Aircraft type
- No. deplaning and enplaning passengers
- Amount of baggage
- Other service/ fuel, catering service, cleaning etc.
- Efficiency of personnel

Equations for planning purposes p. 535 + Example (CPM)

Critical Path Method:

- Taxiing in
- Passengers deplaning
- Cleaning
- Food catering
- Passengers enplaning
- Fuel
- Baggage out
- Baggage in
- Inspection/Maintenance
- Taxiing out



Critical path:

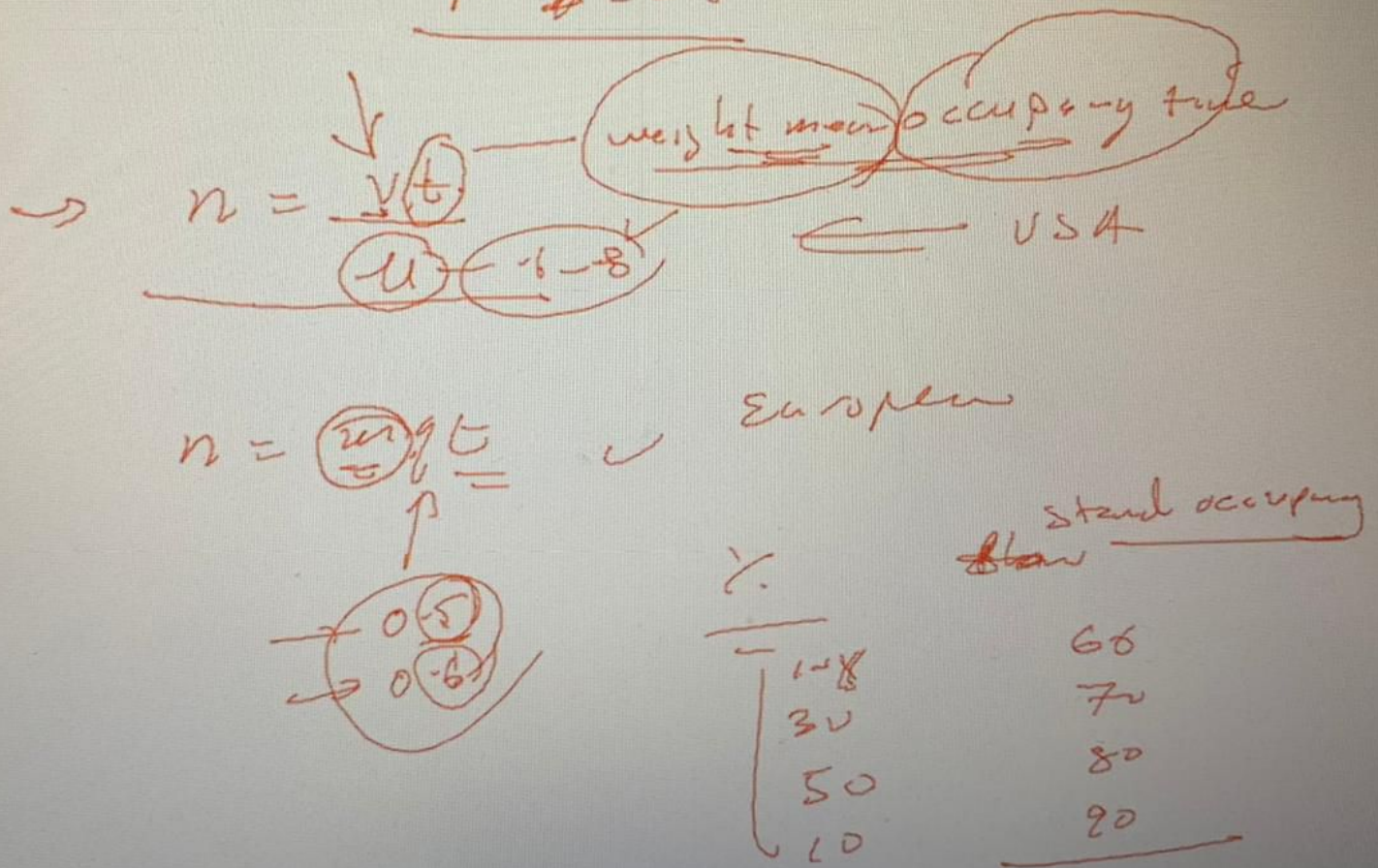
A:

B:

C:

D:

Weighted average for various design aircrafts (CPM)


P. 535
weight
occupancy type
VSA
European
stand occupancy
66
70
80
90