Figure ***A3.1*** CUMULATIVE ARRIVAL PATTERN AND ASSOCIATED STATE-TRANSITION DIAGRAM

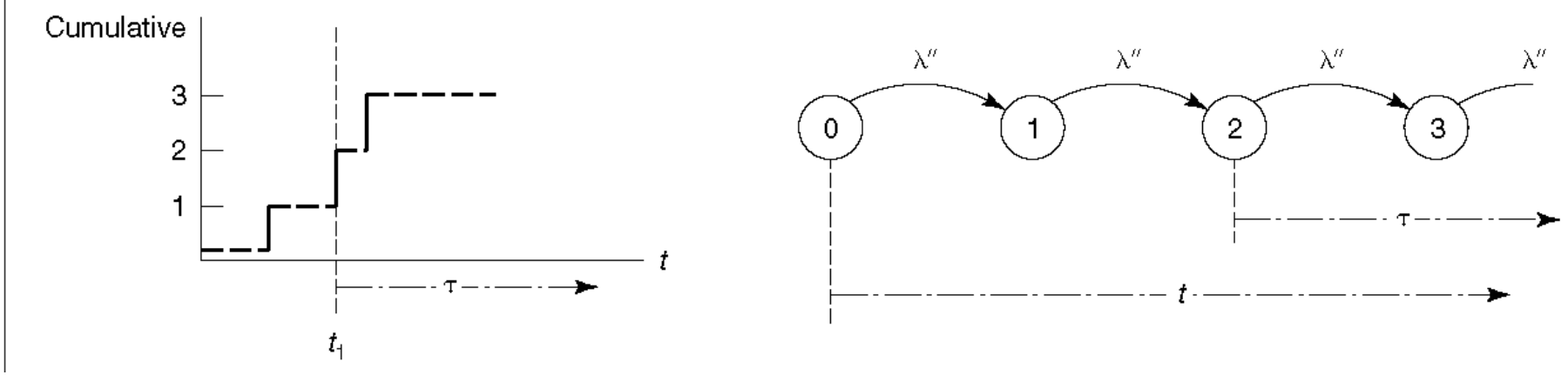

Figure A3.2 INTERARRIVAL TIME DISTRIBUTION FUNCTION

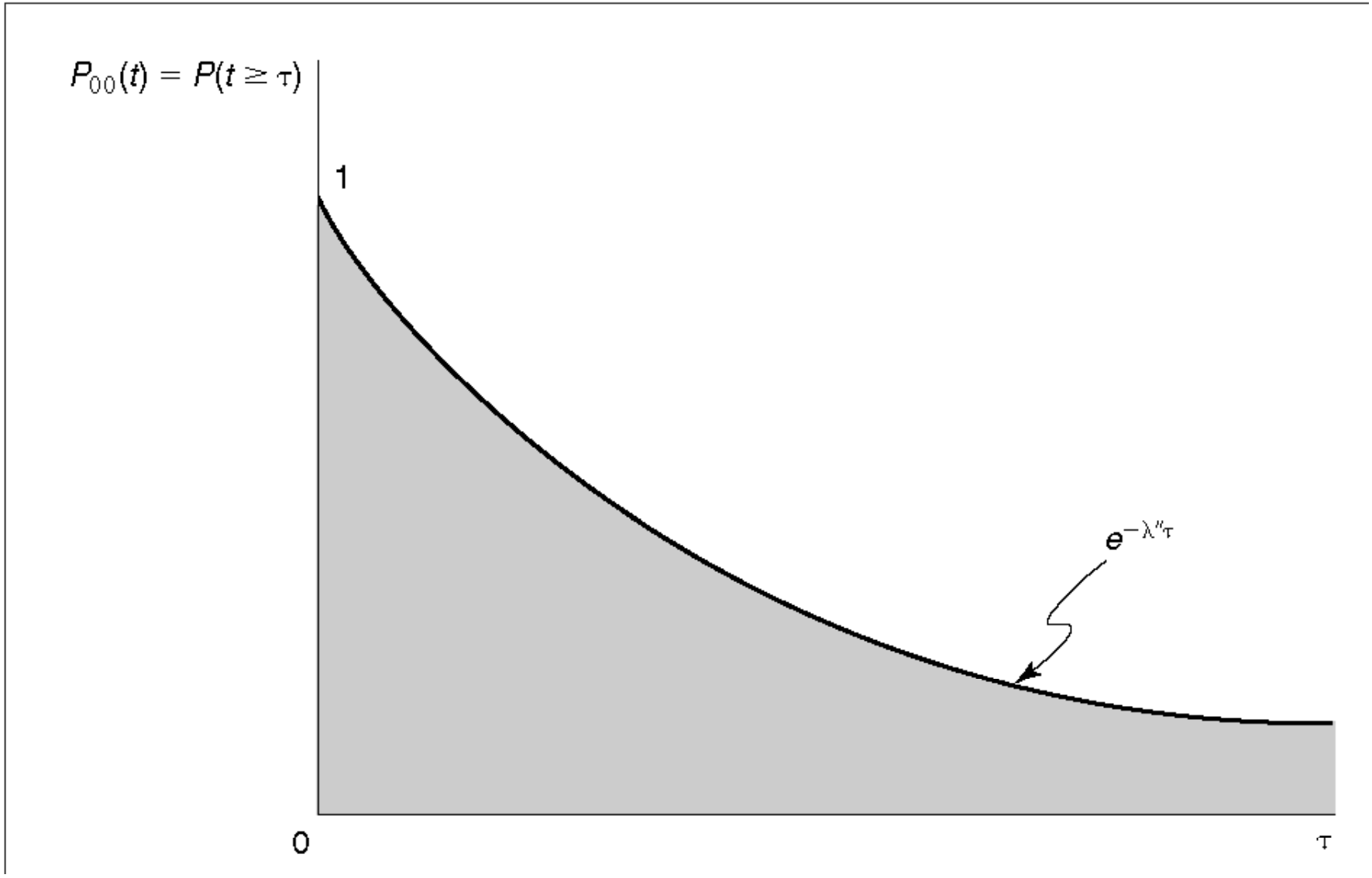

Figure A3.3 POISSON-ARRIVAL DISTRIBUTION FUNCTION

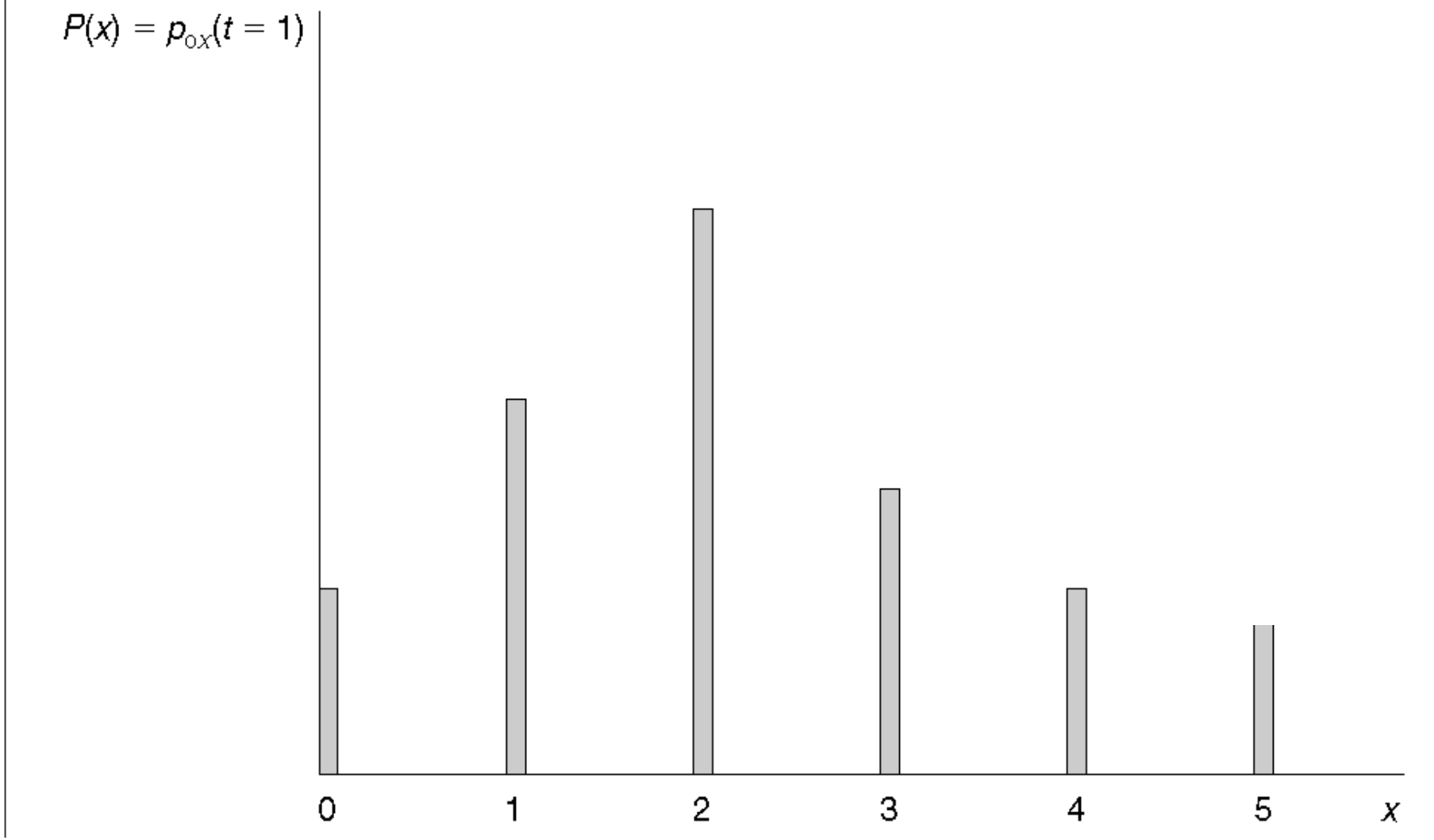

Table A3.1 AIRCRAFT ARRIVAL AND DEPARTURE FIELD DATA

Aircraft	Arrival time*	Depart time*	Wait time	Total time in system	Service time	Total in system	Interarrival time
#1	1	2	0	1	1	1	
2	2	3	0	1	1	1	1
3	3	4	0	1	1	1	1
4	5	6	0	1	1	1	2
5	8	9	0	1	1	1	3
6	8.1	10	0.9	1.9	1	2	0.1
7	9	11	1	2	1	2	0.9
8	9.5	12	1.5	2.5	1	3	0.5
9	11	13	1	2	1	2	1.5
10	12.5	14	0.5	1.5	1	2	1.5
11	14	15	0	1	1	1	1.5
12	16	17	0	1	1	1	2

*Data to be collected, rest can be derived.

SOURCE: Morlok (1978). Reprinted with permission.

Table A3.2 THEORETICAL AND FIELD DATA ON INTERARRIVAL TIME DISTRIBUTION

	Experimental		Theoretical
Time intervals t	No. interarrival times that exceed the time interval $t > \tau$	Frequency distribution	$P(t > \tau) = e^{-0.75\tau}$
0	11	1.00	1.00
1	8	0.73	0.47
2	3	0.27	0.22
3	1	0.09	0.11
4	0	0	0.05
5	0	0	0.02
6	0	0	0.01
7	0	0	0.01
8	0	0	0

Figure ***A3.4*** INTERARRIVAL TIME DISTRIBUTIONS

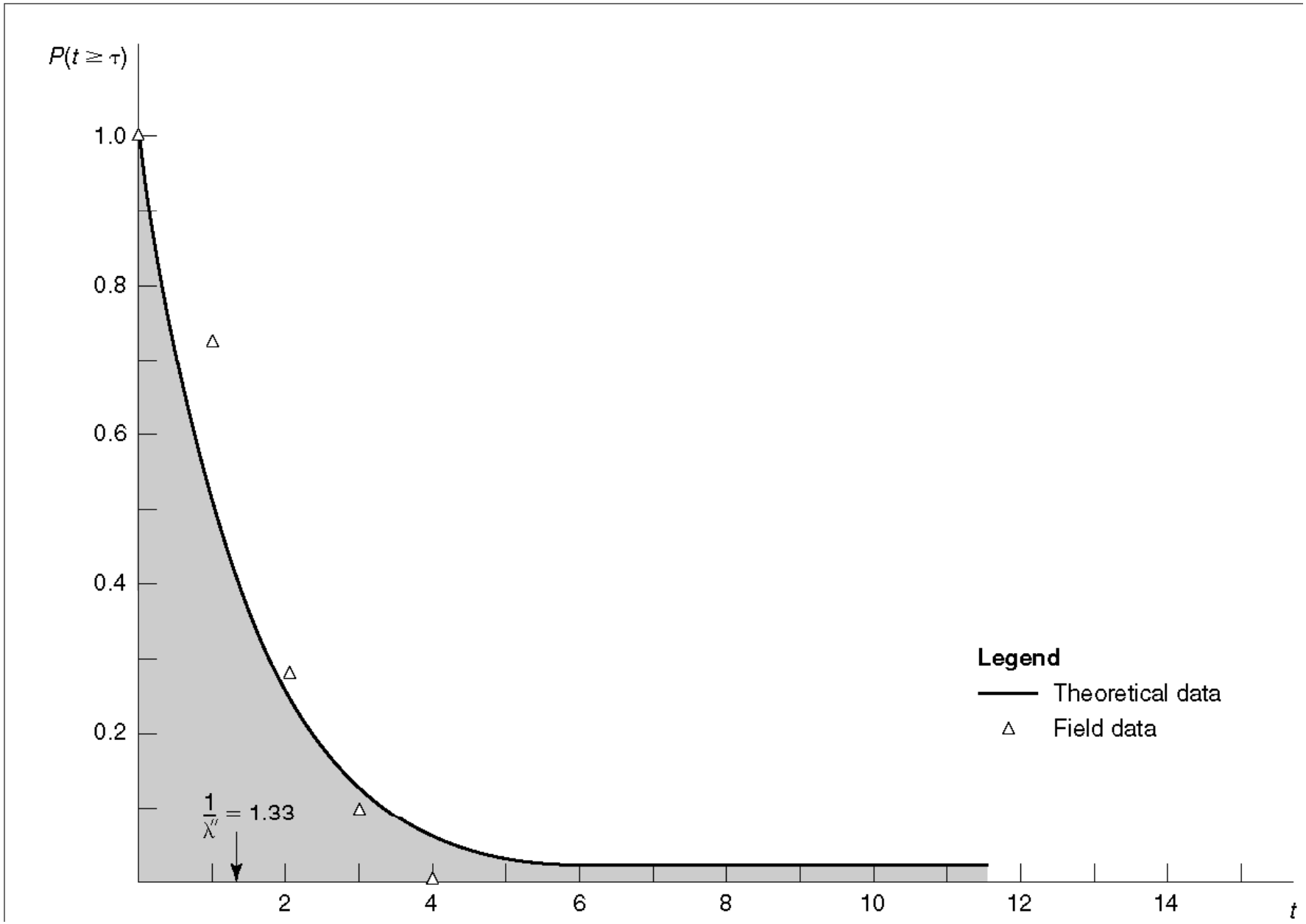

Table A3.3 THEORETICAL AND FIELD DATA ON POISSON DISTRIBUTION

Experimental			Theoretical
No. of arrivals per unit time x	No. of occurrences (time intervals)	Frequency distribution	$P(X = x) = \frac{e^{-0.75}[0.75]^x}{x!}$
0	6	0.375	0.47
1	8	0.500	0.35
2	2	0.125	0.13
3	0	0	0.03
4	0	0	0.01
5	0	0	0

Figure ***A3.5*** POISSON DISTRIBUTIONS

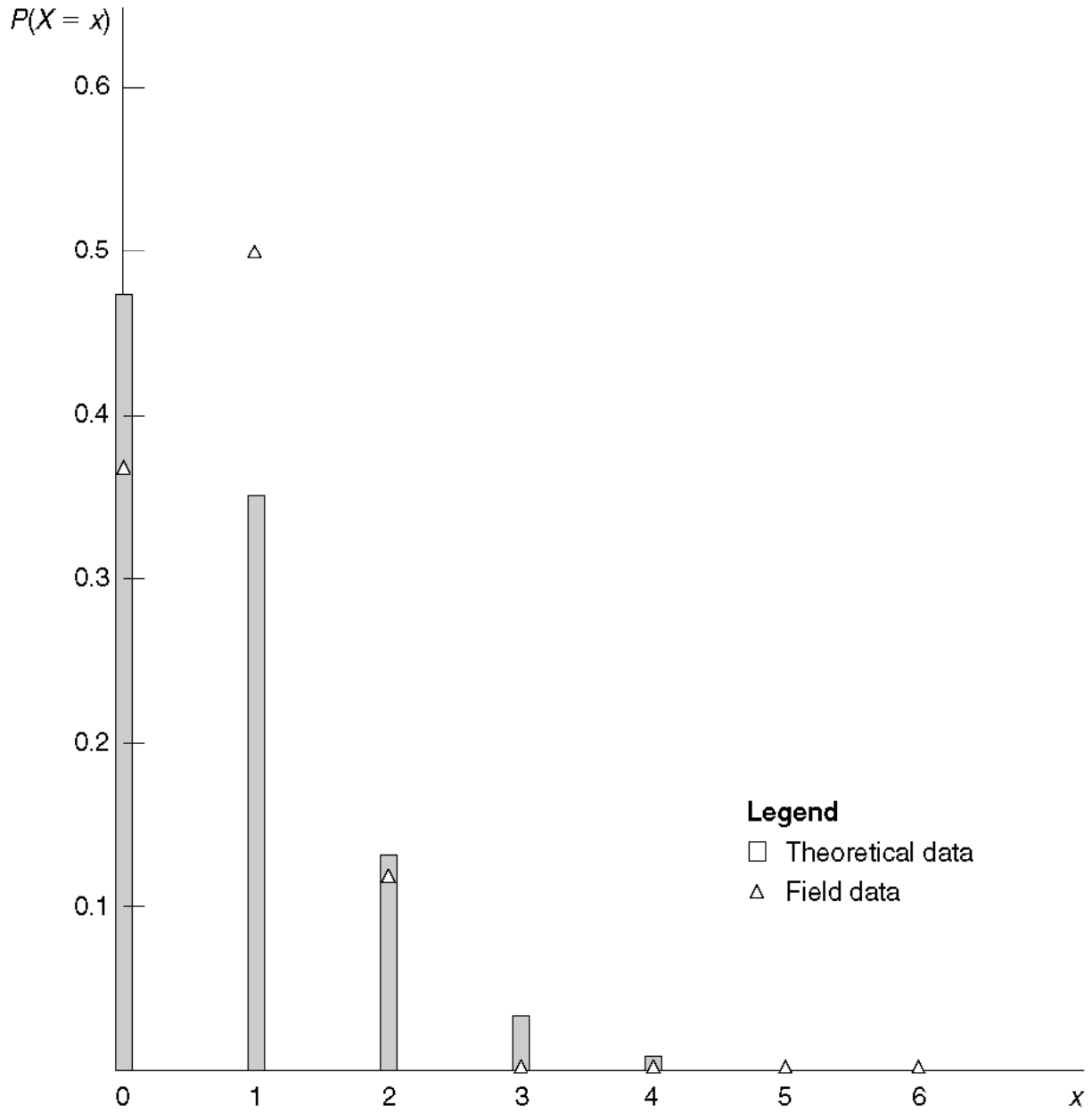

Figure A3.6 CUMULATIVE ARRIVAL AND DEPARTURE CURVES AND ASSOCIATED TRANSITION DIAGRAM

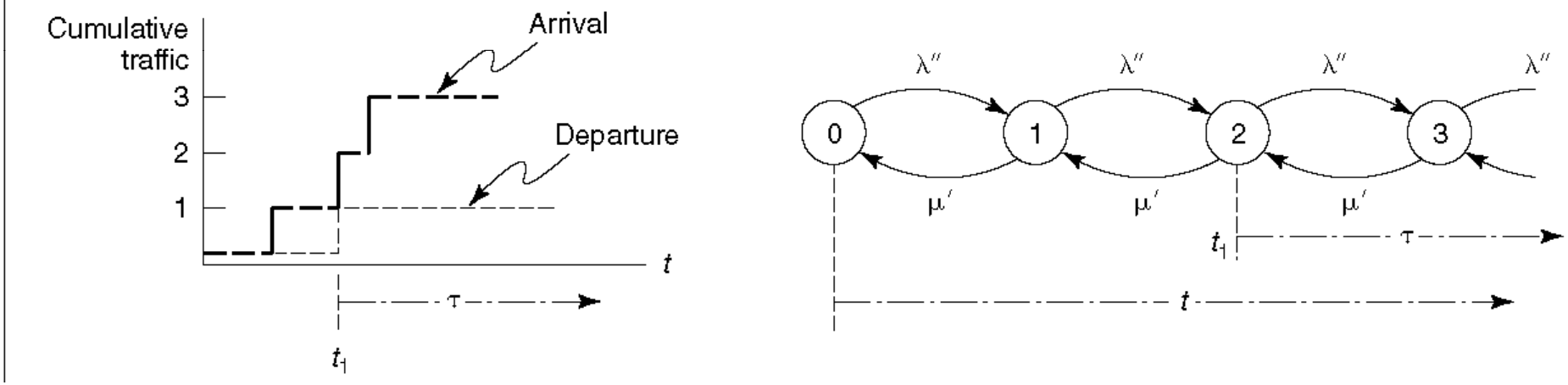

Figure A3.7 AVERAGE PERFORMANCE OF VARIOUS QUEUING DISCIPLINES

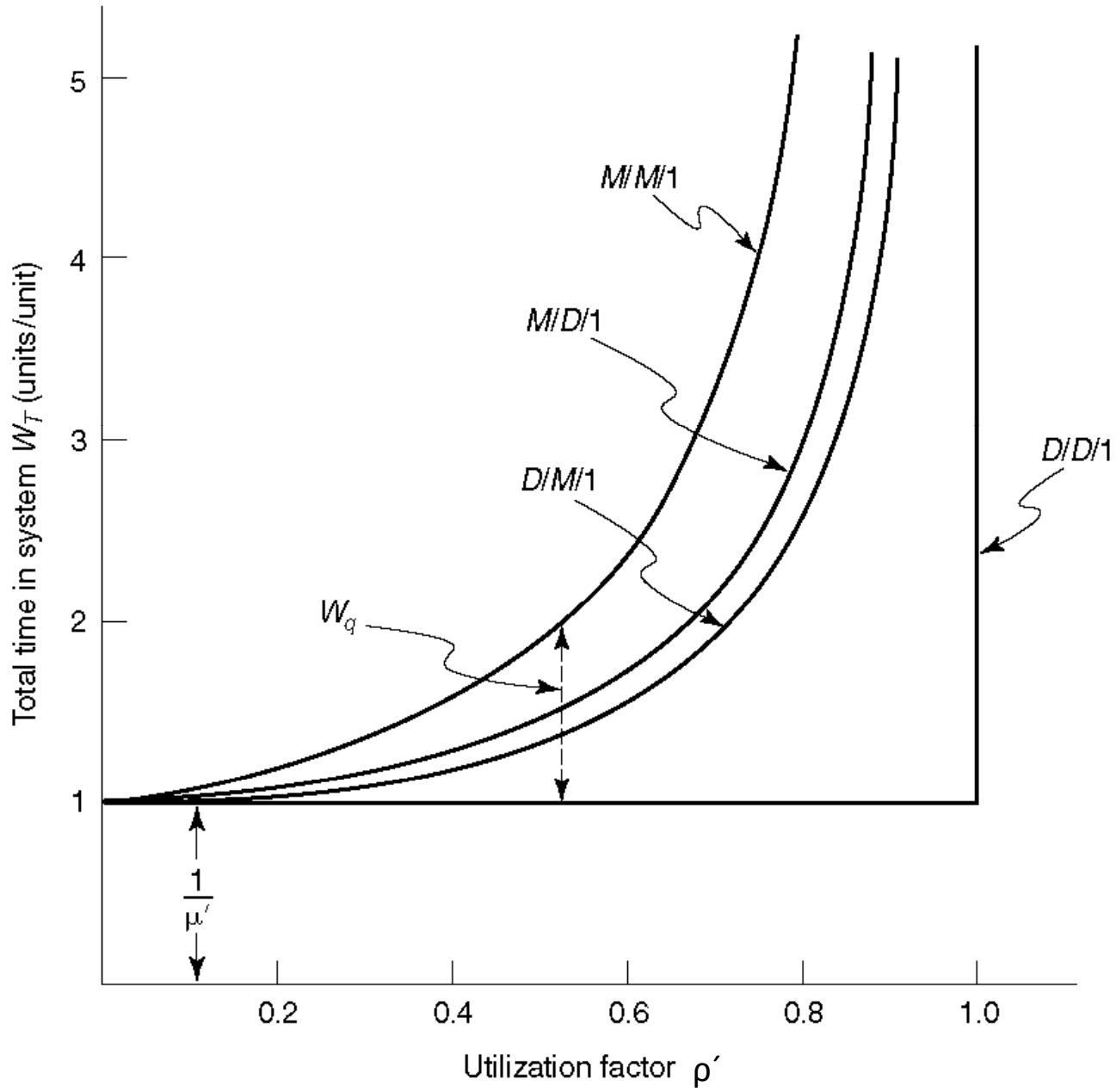

Figure **A3.8** PERFORMANCE OF MULTI-SERVER QUEUES

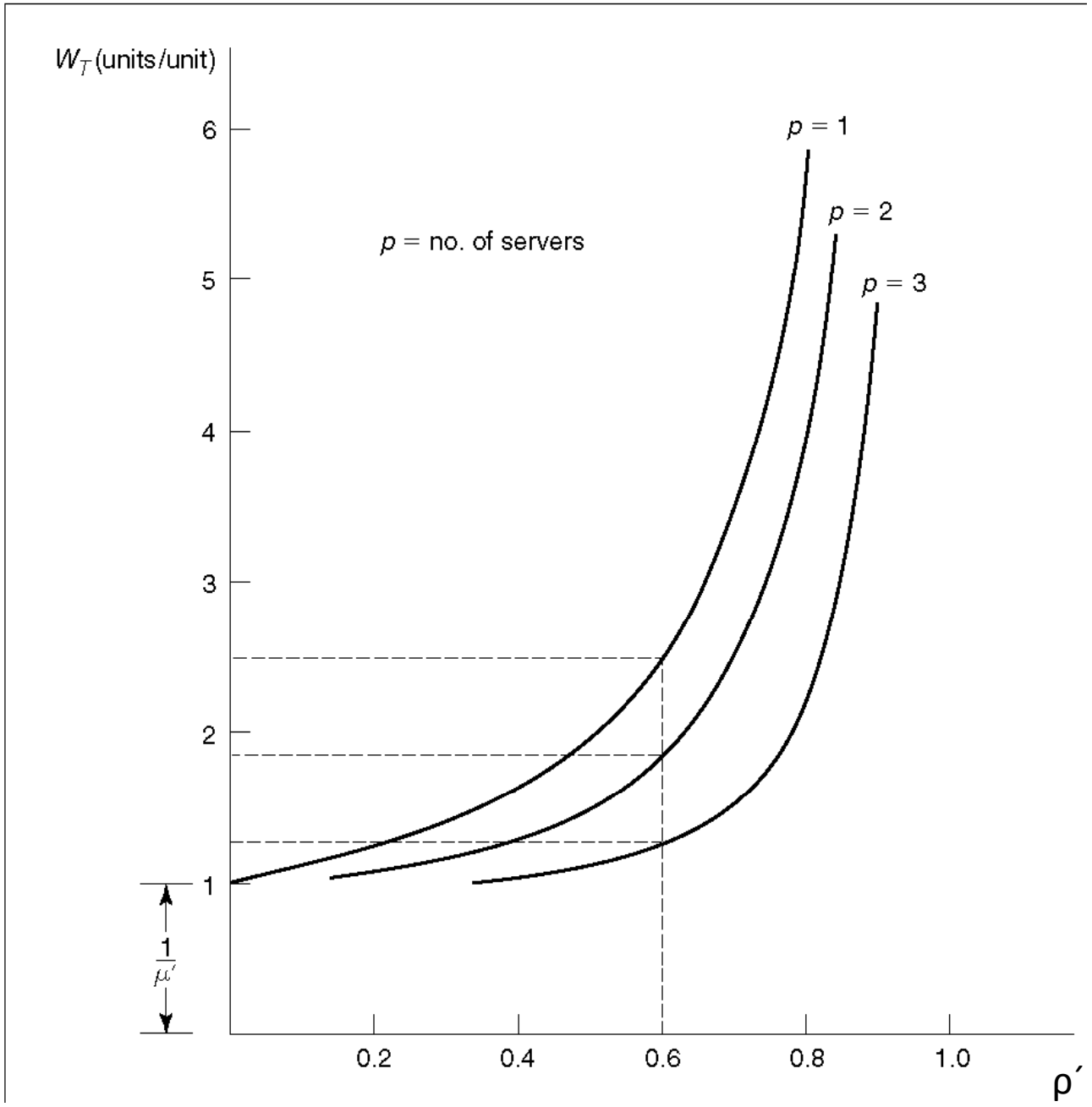

Figure A3.9 FIELD DATA ON $M/D/1$ CURVE

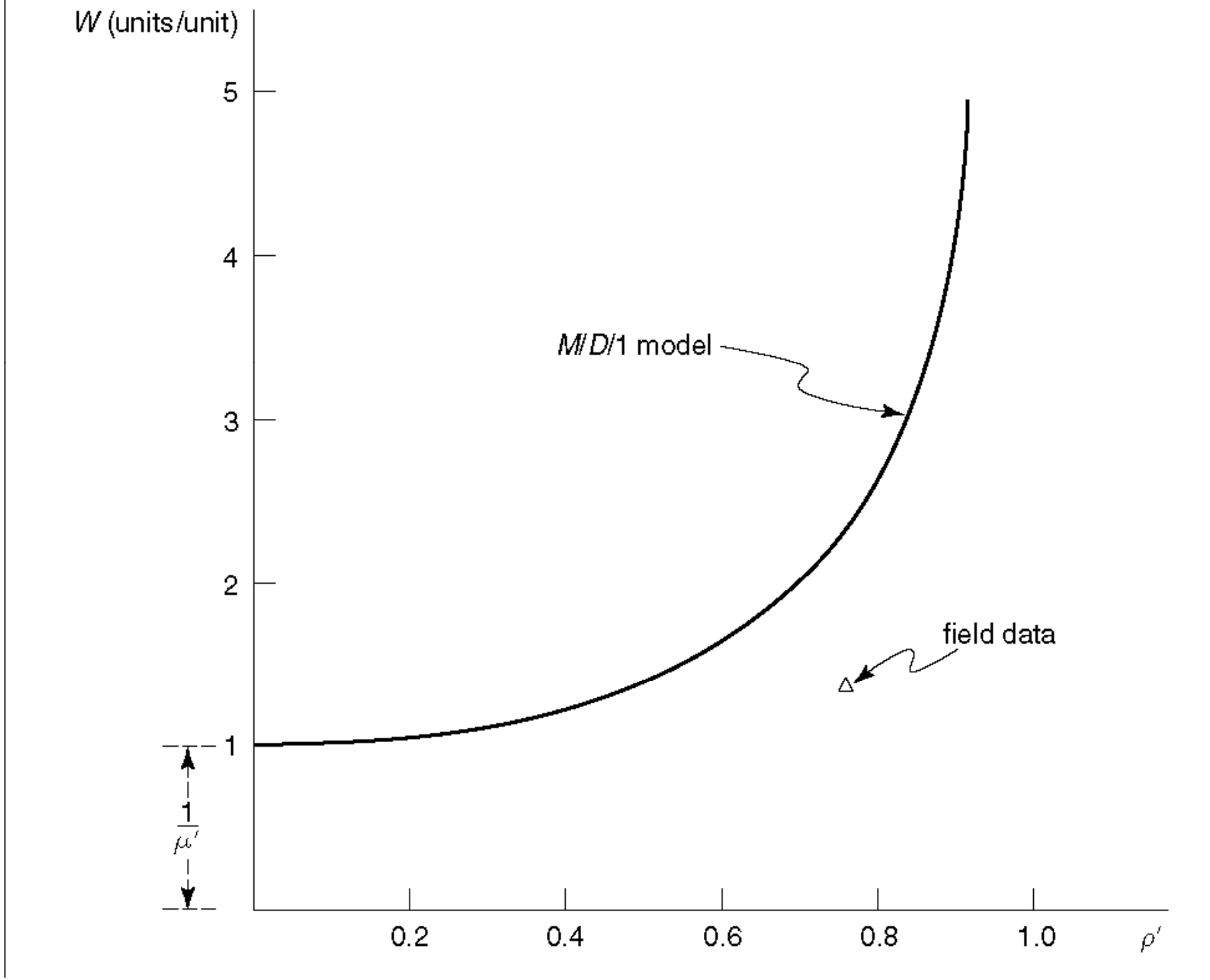

Figure A3.10 DEMAND ARRIVAL PATTERN

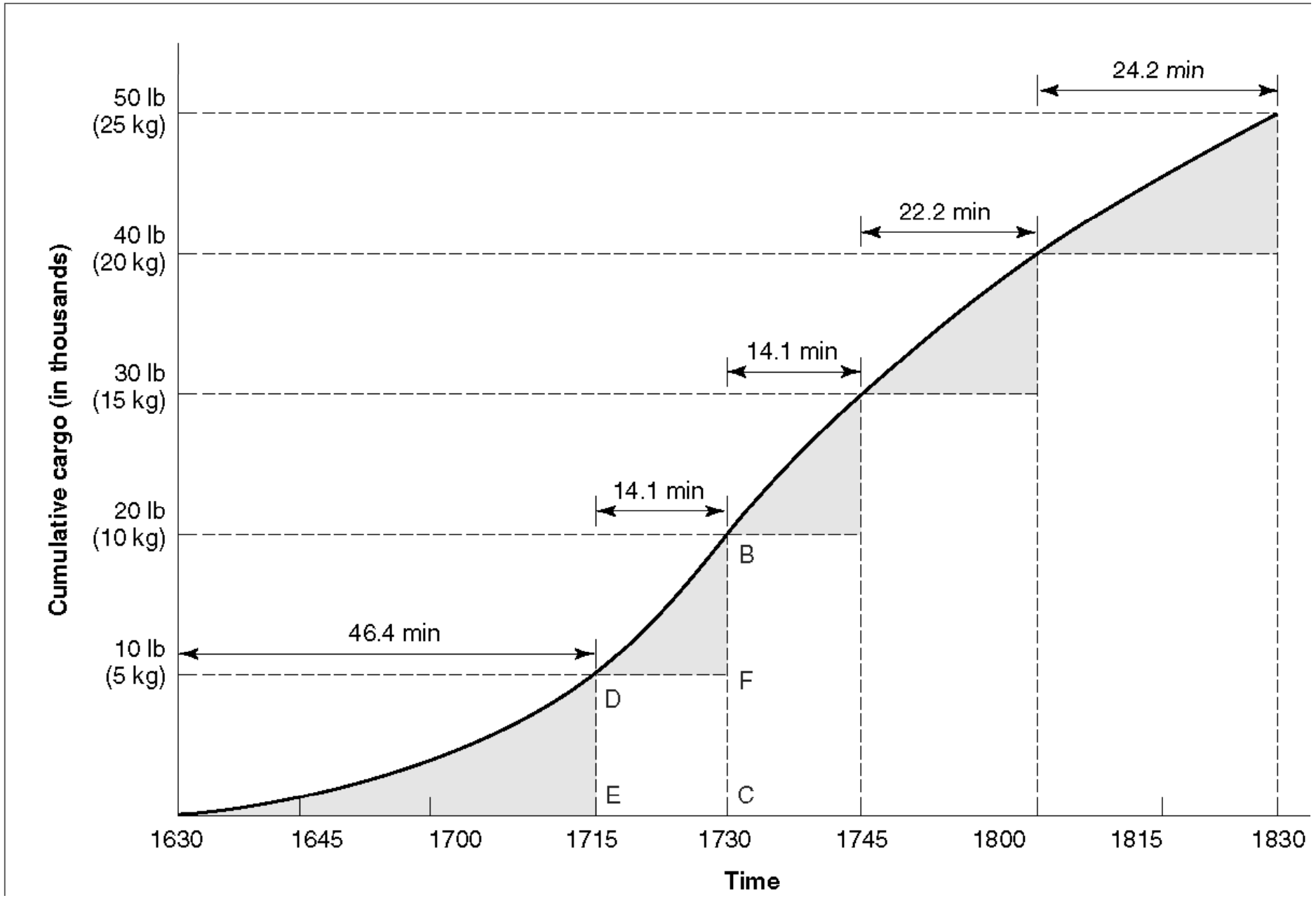

Table A3.4 OPERATING AND DELAY COSTS FOR DISPATCHING EXAMPLE

		Incremental cost ($) of operation $c(y_k)$ for decision point (stage) k					
		0	**1**	**2**	**3**	**4**	**5**
$y_k =$	1 dispatch	—	6000	6000	6000	6000	6000
	0 hold	4640	1410	1410	2220	2420	—

Figure A3.11 STATE STAGE DIAGRAM

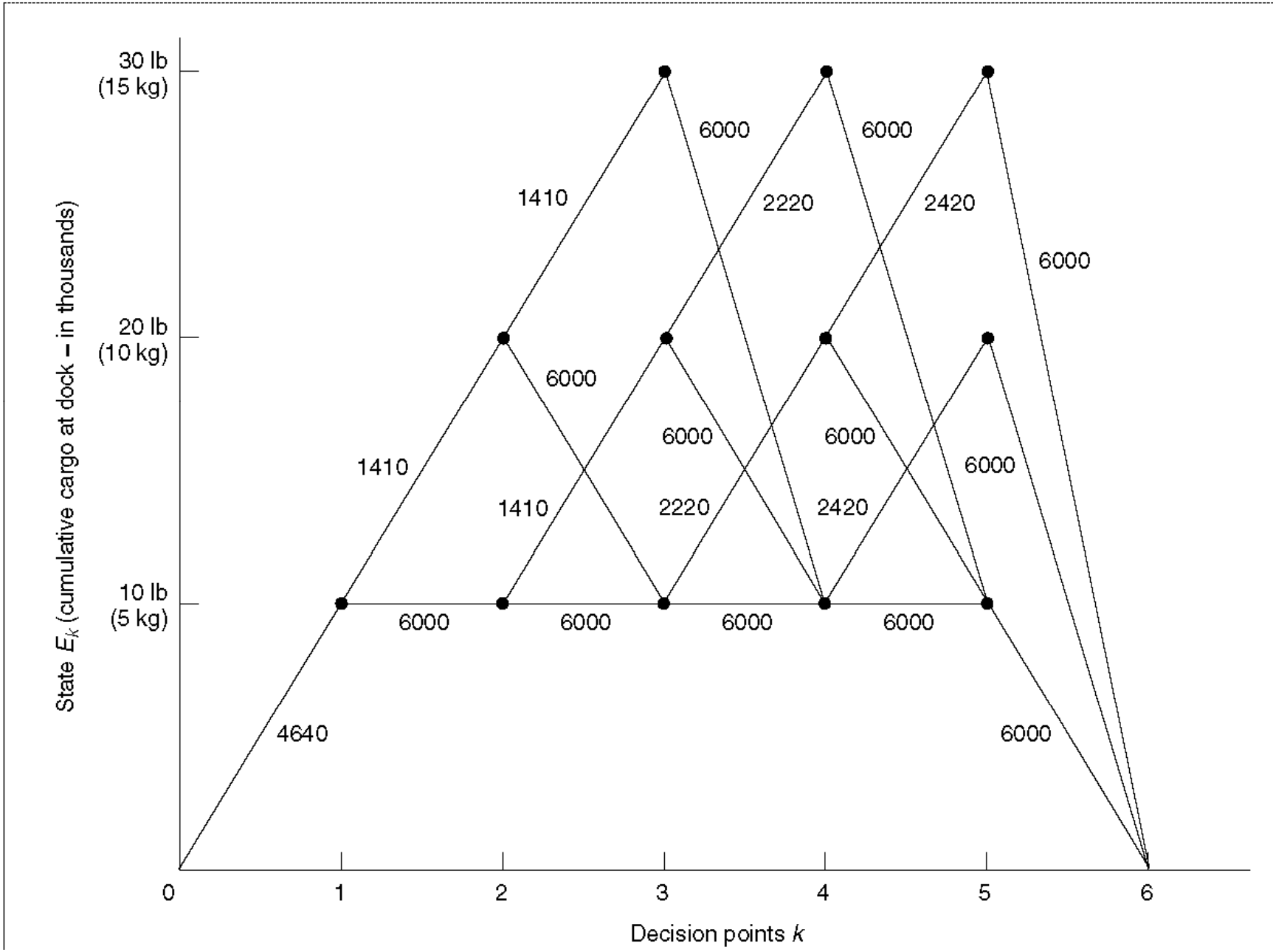

Table A3.5 TRANSITION MATRIX OF SITE-RELOCATION EXAMPLE

Present state of site	Probability that site begins next year as			
	Excellent (E)	Good (G)	Average (A)	Bad (B)
Excellent (E)	0.7	0.3		
Good (G)		0.7	0.3	
Average (A)			0.6	0.4
Bad (B)				1.0[a]

[a]A "bad" site remains "bad" until relocation takes place.