

# DISTRIBUTION CENTRE

Collection of Data - Booklet

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## Systems Modelling and Simulation

MN5543

**Simulation and Analysis of the  
Brunel Distribution Centre**

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**Brunel**  
University  
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# Simulation of Brunel Distribution Centre

*Collection of Data - Percentage - Parcels and Letters by Royal Mail*

*Box model - [Staff or Student or Mail Out Decide module (Mail and Sorting area)]*

*Last updated 1/11/2014*

Type	Monday 17th	Monday 24th	Monday 1st	Percentage
<b>Total</b>	<b>1197</b>	<b>1260</b>	<b>1218</b>	<b>-</b>
Student	693	861	735	57.89%
Staff	420	315	420	35.09%
Mail Out	84	84	63	7.02%
Type	Tuesday 18th	Tuesday 25th	Tuesday 2nd	Percentage
<b>Total</b>	<b>567</b>	<b>609</b>	<b>588</b>	<b>-</b>
Student	336	315	399	59.26%
Staff	210	231	147	37.04%
Mail Out	21	63	42	3.70%
Type	Wednesday 19th	Wednesday 26th	Wednesday 3rd	Percentage
<b>Total</b>	<b>777</b>	<b>672</b>	<b>756</b>	<b>-</b>
Student	546	357	504	70.27%
Staff	189	210	210	24.32%
Mail Out	42	105	42	5.41%
Type	Thursday 20th	Thursday 27th	Thursday 4th	Percentage
<b>Total</b>	<b>987</b>	<b>1008</b>	<b>945</b>	<b>-</b>
Student	651	588	693	65.96%
Staff	273	357	210	27.66%
Mail Out	63	63	42	6.38%
Type	Friday 21st	Friday 28th	Friday 5th	Percentage
<b>Total</b>	<b>609</b>	<b>525</b>	<b>504</b>	<b>-</b>
Student	399	420	315	65.52%
Staff	189	42	105	31.03%
Mail Out	21	63	84	3.45%

Type	Percentage (Avg)
	<b>-</b>
<b>Student</b>	<b>63.78%</b>
<b>Staff</b>	<b>31.03%</b>
<b>Mail Out</b>	<b>5.19%</b>

# Simulation of Brunel Distribution Centre

Collection of Data - Transporters- Porting and Van Delivery

Advanced Transfer - [Distance, Transporter (Velocity)]

Last updated 3/11/2014

Department: Engineering and Design / Monday 24th				
Building	Transfer time (minutes)	Distance (metres)	Velocity	Note
Start				Route 4
Accommodation	5	226	45.2	Route 4
Medical Centre	6	40	6.7	Route 4
Howell Building	3	156	52.0	Route 4
Tower A	3	142	47.3	Route 4
Micheal Stearling	4	196	49.0	Route 4
TPO	2	20	10.0	Route 4
Finish	9	294	32.7	Route 4
<b>Average</b>	<b>4.57</b>		<b>32.9</b>	<b>Route 4</b>
<b>Sum</b>	32			Route 4

Department: E.G.W., Residences, Van Delivery / Monday 24th				
Building	Transfer time (minutes)	Distance (metres)	Velocity	Note
Start				Route 1
Heinz Wolf	14	525.81	37.6	Route 1
Lancaster Hall	10	377.28	37.7	Route 1
St. Johns	9	307.74	34.2	Route 1
Mary Seacole	9	329.37	36.6	Route 1
Elliot Jaques	12	448.35	37.4	Route 1
Bishop Hall	10	318.47	31.8	Route 1
Sports Hall	3	89.82	29.9	Route 1
Russell Building	7	279.27	39.9	Route 1
Faraday Hall 4/5	6	230.59	38.4	Route 1
Wilfred Brown	18	602.55	33.5	Route 1
Finish	10	374.13	37.4	Route 1
<b>Average</b>	<b>9.82</b>		<b>35.9</b>	<b>Route 1</b>
<b>Sum</b>	108			

Department: Shops / Monday 24th				
Building	Transfer time (minutes)	Distance (metres)	Velocity	Note
Start				Route 2
Lecture Centre	6	292	48.7	Route 2
Arts Centre	3	64	21.3	Route 2
John Crank	6	103	17.2	Route 2
Halsbury Building	4	196	49.0	Route 2
Bragg Building	9	99	11.0	Route 2
Brunel Press	2	110	55.0	Route 2
Hamilton Centre	4	103	25.8	Route 2

Finish	9	376	41.8	<i>Route 2</i>
<b>Average</b>	<b>5.38</b>		<b>35.9</b>	<b><i>Route 2</i></b>
<b>Sum</b>	43			

Department: Halsbury, Social Science / Monday 24th				
Building	Transfer time (minutes)	Distance (metres)	Velocity	Note
Start				<i>Route 5</i>
Security	4	210	52.5	<i>Route 5</i>
Marie Jahoda	3	163	54.3	<i>Route 5</i>
Meeting House	15	62	4.1	<i>Route 5</i>
School of Arts	2	39	19.5	<i>Route 5</i>
Herg	7	21	3.0	<i>Route 5</i>
Chadwich	4	20	5.0	<i>Route 5</i>
Isambard	1	13	13.0	<i>Route 5</i>
Fleming	4	32	8.0	<i>Route 5</i>
Mill	5	26	5.2	<i>Route 5</i>
Finish	10	470	47.0	<i>Route 5</i>
<b>Average</b>	<b>6.00</b>		<b>21.2</b>	<b><i>Route 5</i></b>
<b>Sum</b>	55			



# Simulation of Brunel Distribution Centre

*Collection of Data - Entities per Arrivals - Parcels*

*Box model - [Create Parcels (Parcels' Area)]*

*Last updated 1/11/2014*

Time		Monday 17th	Monday 24th	Monday 1st	Average
08:00:00	08:59:59	23	26	40	30
09:00:00	09:59:59	47	50	45	47
10:00:00	10:59:59	64	66	58	63
11:00:00	11:59:59	45	50	47	47
12:00:00	12:59:59	16	18	20	18
13:00:00	13:59:59	34	37	35	35
14:00:00	14:59:59	42	41	44	42
15:00:00	16:00:00	1	3	5	3
Time		Tuesday 19th	Tuesday 25th	Tuesday 2nd	Average
08:00:00	08:59:59	19	22	23	21
09:00:00	09:59:59	45	48	44	46
10:00:00	10:59:59	41	44	46	44
11:00:00	11:59:59	21	26	29	25
12:00:00	12:59:59	9	10	13	11
13:00:00	13:59:59	6	2	7	5
14:00:00	14:59:59				
15:00:00	16:00:00	27	30	25	27
Time		Wednesday 20th	Wednesday 26th	Wednesday 3rd	Average
08:00:00	08:59:59	49	50	52	50
09:00:00	09:59:59	19	22	19	20
10:00:00	10:59:59	59	60	57	59
11:00:00	11:59:59	38	40	43	40
12:00:00	12:59:59	7	7	9	8
13:00:00	13:59:59	48	43	49	47
14:00:00	14:59:59	27	23	30	27
15:00:00	16:00:00	3	3	6	4
Time		Thursday 21th	Thursday 27th	Thursday 4th	Average
08:00:00	08:59:59	38	40	43	40
09:00:00	09:59:59	16	17	18	17
10:00:00	10:59:59	28	30	25	28
11:00:00	11:59:59	68	69	67	68
12:00:00	12:59:59	7	3	8	6
13:00:00	13:59:59	6	5	7	6
14:00:00	14:59:59	2	3	1	2
15:00:00	16:00:00				

Time		Friday 22th	Friday 28th	Friday 5th	Average
08:00:00	08:59:59	18	20	23	20
09:00:00	09:59:59	29	28	23	27
10:00:00	10:59:59	21	22	23	22
11:00:00	11:59:59	28	30	32	30
12:00:00	12:59:59	13	16	14	14
13:00:00	13:59:59	15	13	12	13
14:00:00	14:59:59	36	40	32	36
15:00:00	16:00:00	9	10	12	10

# Simulation of Brunel Distribution Centre

*Collection of Data - Entities per Arrival - Parcels by Royal Mail for DC*

*Box model - [Create Parcel Royal Mail DC (Mail and Sorting area)]*

*Last updated 2/11/2014*

	Monday 17th		Tuesday 18th		Wednesday 19th		Thursday 20th		Friday 21st	
Round of Delivery	1	2	1	2	1	2	1	2	1	2
Time of Delivery	08:05:00	10:20:00	08:25:00	10:20:00	08:30:00	10:40:00	08:25:00	10:20:00	08:35:00	10:35:00
Parcels RM for DC	57	7	27	14	37	10	47	4	29	6

	Monday 24th		Tuesday 25th		Wednesday 26th		Thursday 27th		Friday 28st	
Round of Delivery	1	2	1	2	1	2	1	2	1	2
Time of Delivery	08:15:00	10:30:00	08:10:00	10:20:00	08:35:00	10:20:00	08:35:00	10:25:00	08:20:00	10:15:00
Parcels RM for DC	42	10	4	12	28	2	22	0	18	3

	Monday 1st		Tuesday 2nd		Wednesday 3rd		Thursday 4th		Friday 5th	
Round of Delivery	1	2	1	2	1	2	1	2	1	2
Time of Delivery	08:05:00	10:20:00	08:25:00	10:20:00	08:30:00	10:40:00	08:25:00	10:20:00	08:35:00	10:35:00
Parcels RM for DC	33	4	18	10	51	7	39	1	20	7

# Simulation of Brunel Distribution Centre

*Collection of Data - Entities per Arrival - Mail and Parcels by Royal Mail*

*Box model - [Create Letters Royal Mail, Create Parcels Royal Mail (Mail and Sorting Area)]*

*Last updated 2/11/2014*

Assumptions done in order to calculate the maximum capacity of mail and parcels contained in a bag	
Assumption	AVG (gr)
Weight of Bags	4000
Weight of a Mail	15
Weight of A4 Parcel (Marketing information, Circulars, Newsletters, Catalogs, Small Packages)	453.6
Maximum Mail contained in a bag (4000gr/15gr)	267
Maximum Parcels contained in a bag (4000gr/453.6gr)	15

	Monday 17th		Tuesday 18th		Wednesday 19th		Thursday 20th		Friday 21st	
Time of Delivery	08:05:00	10:20:00	08:25:00	10:20:00	08:30:00	10:40:00	08:25:00	10:20:00	08:35:00	10:35:00
Number of Bags	10	1	3	2	5	4	7	2	7	1
Percentage of Letters	87.00%	95.00%	92.00%	90.00%	88.00%	96.00%	92.00%	100.00%	91.00%	89.00%
Percentage of Parcels	13.00%	5.00%	8.00%	10.00%	12.00%	4.00%	8.00%	0.00%	9.00%	11.00%
Total Letters and Parcels Inside a Bag	233	254	246	241	236	256	246	267	243	238
<b>Total Amount of Letters and Parcels per Delivery</b>	<b>2331</b>	<b>254</b>	<b>738</b>	<b>482</b>	<b>1179</b>	<b>1025</b>	<b>1722</b>	<b>533</b>	<b>1704</b>	<b>238</b>

	Monday 24th		Tuesday 25th		Wednesday 26th		Thursday 27th		Friday 28st	
Time of Delivery	08:15:00	10:30:00	08:10:00	10:20:00	08:35:00	10:20:00	08:35:00	10:25:00	08:20:00	10:15:00
Number of Bags	8	2	5	1	6	2	4	2	5	1
Percentage of Letters	93.00%	83.00%	77.00%	94.00%	97.00%	82.00%	92.00%	88.00%	84.00%	98.00%
Percentage of Parcels	7.00%	17.00%	23.00%	6.00%	3.00%	18.00%	8.00%	12.00%	16.00%	2.00%
Inside a Bag	249	223	207	251	259	220	246	236	225	262
<b>Total Amount of Letters and Parcels per Delivery</b>	<b>1989</b>	<b>446</b>	<b>1037</b>	<b>251</b>	<b>1554</b>	<b>441</b>	<b>984</b>	<b>471</b>	<b>1127</b>	<b>262</b>



	Monday 1st		Tuesday 2nd		Wednesday 3rd		Thursday 4th		Friday 5th	
Time of Delivery	08:05:00	10:20:00	08:25:00	10:20:00	08:30:00	10:40:00	08:25:00	10:20:00	08:35:00	10:35:00
Number of Bags	8	3	3	1	5	1	6	2	4	1
Percentage of Letters	60.00%	82.00%	83.00%	96.00%	83.00%	72.00%	80.00%	90.00%	70.00%	89.00%
Percentage of Parcels	40.00%	18.00%	17.00%	4.00%	17.00%	28.00%	20.00%	10.00%	30.00%	11.00%
Total Letters and Parcels Inside a Bag	286	385	390	449	390	340	376	422	331	417
<b>Total Amount of Letters and Parcels per Delivery</b>	2289	1156	1170	449	1950	340	2259	843	1325	417

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (seconds) - Splitting Mail Out*

*Box model - [Mail Out Sorting (Station Mail Out area)]*

*Last updated 2/11/2014*

	Monday 24th		Tuesday 25th		
Mail	Time	Dealy Time	Time	Delay time	Note
1	11:30:00	00:00:04	11:37:48	00:00:04	
2	11:30:04	00:00:03	11:37:52	00:00:04	
3	11:30:07	00:00:03	11:37:56	00:00:07	
4	11:30:10	00:00:03	11:38:03	00:00:04	
5	11:30:13	00:00:03	11:38:07		
6	11:30:16				

	Wednesday 26th		Thursday 27th		
Mail	Time	Dealy Time	Time	Delay time	Note
1	11:32:10	00:00:03	11:45:20	00:00:04	
2	11:32:14	00:00:02	11:45:22	00:00:03	
3	11:32:16	00:00:02	11:45:25	00:00:03	
4	11:32:18	00:00:02	11:45:28		
5	11:32:20	00:00:03			
6	11:32:23	00:00:01			
7	11:32:24				

	Friday 28th				
Mail	Time	Dealy Time			Note
1	11:40:05	00:00:05			
2	11:40:08	00:00:02			
3	11:40:10	00:00:03			
4	11:40:13	00:00:04			
5	11:40:17				

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (seconds) - Unloading Bags Royal Mail*

*Box model - [Unloading Bag (Mail and Sorting area)]*

*Last updated 2/11/2014*

	Monday 3rd	Tuesday 4th	Wedn. 5th	Thursday 6th	Friday 7th
Mail	Delay Time	Dealy Time	Delay Time	Delay Time	Delay Time
1	1	2	6	7	3
2	2	8	9	8	1
3	5	9	2	9	4
4	4	7	5	6	5
5	6	4	4	3	2
6	7	5	8	4	6
7	3	2	5	5	9
8	2	6	1	8	8
9	5	3	2	9	4
10	9	1	5	4	5
11	8	4	4	6	6
12	7	5	6	4	3
13	6	2	7	4	2
14	1	6	3	7	5
15	2	9	2	2	5
16	3	8	5	3	4
17	4	4	9	6	7
18	5	5	8	9	8
19	8	6	7	8	3
20	9	3	6	5	6
21	3	2	1	1	9
22	6	5	2	2	2
23	4	5	3	5	5
24	5	4	4	4	4
25	1	7	5	6	8
26	2	8	2	7	5
27	9	3	6	3	1
28	8	6	3	2	2
29	1	9	1	5	5
30	7	2	4	9	4
31	6	5	5	8	6
32	5	4	2	7	7
33	4	8	6	6	3
34	9	7	9	1	2
35	8	9	8	2	5
36	7	5	4	7	9
37	9	2	5	8	8
38	6	5	6	9	7
39	2	4	3	6	6
40	4	7	2	4	1

41	5	8	5	2	2
42	3	9	5	5	3
43	6	6	4	5	3
44	7	3	7	6	6
45	8	2	8	9	4
46	9	5	3	7	5
47	6	4	6	3	1
48	4	6	9	6	2
49	2	9	2	4	9
50	5	2	5	8	8
51	5	3	4	9	1
52	6	7	8	5	7
53	9	8	7	4	6
54	7	9	9	3	5
55	3	6	5	2	4
56	6	3	2	8	9
57	4	7	5	9	8
58	8	2	4	6	7
59	9	5	7	5	9
60	5	6	8	7	6
61	4	3	9	4	2
62	3	9	6	2	4
63	2	8	3	5	5
64	8	7	2	8	3
65	9	1	5	9	6
66	6	5	4	6	7
67	5	2	6	3	8
68	7	9	9	2	9
69	4	3	2	5	6
70	2	8	3	4	4
71	5	7	7	7	2
72	8	6	8	8	5
73	9	2	9	9	5
74	6	5	6	6	6
75	3	6	3	3	9
76	2	4	7	2	7
77	5	7	2	5	3
78	4	8	5	4	6
79	7	9	6	7	4
80	8	6	3	8	8
81	9	3	9	9	9
82	6	4	8	9	5
83	3	5	7	9	4
84	2	8	1	5	3
85	5	9	5	4	2
86	4	4	2	6	8
87	7	6	9	3	9
88	8	4	3	2	6
89	9	4	8	8	5
90	9	7	7	9	7

91	9	2	6	7	4
92	5	3	2	4	2
93	4	6	5	5	5
94	6	9	6	2	8
95	3	8	4	6	9

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (seconds) - Stamping National and International Mail*

*Box model - [National Mail Stamping, International Mail Stamping (Station Mail Out area)]*

*Last updated 2/11/2014*

	Monday 3rd	Tuesday 4th	Wedn. 5th	Thursday 6th	Friday 7th	
Stamping Mail	Delay Time	Dealy Time	Delay Time	Delay Time	Delay Time	Note
1	60	58	67	77	59	
2	72	72	62	67	52	
3	90	86	91	62	48	
4	108	77	106	91	70	
5	96	67	67	106	81	
6	84	62	86	67	52	
7	78	91	53	86	66	
8	114	106	48	53	41	
9	132	67	82	48	37	
10	84	86	77	82	63	
11	108	53	91	77	59	
12	66	48	62	91	70	
13	60	82	53	62	48	
14	102	77	77	53	41	
15	96	91	58	77	59	
16	114	62	48	58	44	
17	78	53	125	48	37	
18	66	77	115	125	96	
19	96	58	120	115	89	
20	72	48	106	120	92	
21	60	125	91	106	81	
22	156	115	62	91	70	
23	144	120	82	62	48	
24	150	106	86	82	63	
25	132	91	72	86	66	
26	114	62	77	72	55	
27	78	82	62	77	59	
28	102	86	82	62	48	
29	108	72	115	82	63	
30	90	77	96	115	89	
31	96	62	106	96	74	
32	78	82	130	106	81	
33	102	115	77	130	100	
34	144	96	72	77	59	
35	120	106	48	72	55	
36	132	130	67	48	37	
37	162	77	91	67	52	
38	96	72	77	91	70	
39	90	48	82	77	59	
40	60	67	120	82	63	



41	84	91	130	120	92	
42	114	77	101	130	100	
43	96	82	125	101	78	
44	102	120	168	125	96	
45	150	130	72	168	129	
46	162	101	53	72	55	
47	126	125	62	53	41	
48	156	168	77	62		
49	210	72	53	77		
50	90	53	91	53		
51	66	62	130	91		
52	78	77	101			
53	96	53	134			
54	66	91	115			
55	114	130	125			
56	162	101				
57	126	134				
58	168	115				
59	144	125				
60	156	96				
61	120	91				
62	114	67				
63	84	62				
64	78					
65	114					
66	66					
67	102					
68	120					
69	150					
70	144					
71	66					
72	96					
73	114					
74	102					
75	132					
76	156					
77	162					
78	174					
79	144					
80	180					
81	144					
82	174					
83	102					
84	96					
85	72					
86	114					
87	60					
88	102					
89	96					
90	84					

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (seconds) - Loading Van Delivery*

*Box model - [Loading Van Delivery (Station Mail and Parcels for Staff area)]*

*Last updated 2/11/2014*

	Monday 3rd	Tuesday 4th	Wedn. 5th	Thursday 6th	
Pigeonhole (stored mails)	Delay Time	Dealy Time	Delay Time	Delay Time	Note
1	10	10	11	13	*
2	12	12	10	11	*
3	15	14	15	10	*
4	18	13	18	15	*
5	16	11	11	18	*
6	14	10	14	11	*
7	13	15	9	14	*
8	19	18	8	9	*
9	22	11	14	8	*
10	14	14	13	14	*
11	18	9	15	13	*
12	11	8	10	15	*
13	10	14	9	10	*
14	17	13	13	9	*
15	16	15	10	13	*
16	19	10	8	10	*
17	13	9	21	8	*
18	11	13	19	21	*
19	16	10	20	19	*
20	12	8	18	20	*
21	10	21	15	18	*
22	26	19	10	15	*
23	24	20	14	10	*
24	25	18	14	14	*
25	22	15	12	14	*
26	19	10	13	12	*
27	13	14	10	13	*
28	17	14	14	10	*
29	18	12	19	14	*
30	15	13	16	19	*
31	16	10	18	16	*
32	13	14	22	18	*
33	17	19	13	22	*
34	24	16	12	13	*
35	20	18	8	12	*
36	22	22	11	8	*
37	27	13	15	11	*
38	16	12	13	15	*
39	15	8	14	13	*
40	10	11	20	14	*

41	14	15	22	20	*
42	19	13	17	22	*
43	16	14	21	17	*
44	17	20	28	21	*
45	25	22	12	28	*
46	27	17	9	12	*
47	21	21	10	9	*
48	26	28	13	10	*
49	35	12	9	13	*
50	15	9	15	9	*
51	11	10	22	15	*
52	13	13	17	22	*
53	16	9	22	17	*
54	11	15	19	22	*
55	19	22	21	19	*
56	27	17	16	21	*
57	21	22	15	16	*
58	28	19	11	15	*
59	24	21	10	11	*
60	26	16	15	10	*
61	20	15	9	15	*
62	19	11	14	9	*
63	14	10	16	14	*
64	13	15	20	16	*
65	19	9	19	20	*
66	11	14	9	19	*
67	17	16	13	9	*
68	20	20	15	13	*
69	25	19	14	15	*
70	24	9	18	14	*
71	11	13	21	18	*
72	16	15	22	21	*
73	19	14	23	22	*
74	17	18	19	23	*
75	22	21	24	19	*
76	26	22	19	24	*
77	27	23	23	19	*
78	29	19	14	23	*
79	24	24	13	14	*
80	30	19	10	13	*
81	24	23	15	10	*
82	29	14	8	15	*
83	17	13	14	8	*
84	16	10	13	14	*
85	12	15	11	13	*
86	19	8	11	11	*
87	10	14	11	11	*
88	17	13	11	11	*
89	16	11	10	11	*
90	14	11	10	10	*

91	14	11	6	10	*
92	14	11	8	9	*
93	13	10	7	13	*
94	13	10	9	11	*
95	12	12	11	4	*

*\*The Delay Time has been collected considering the act of taking the mails and parcels from the pigeonholes and loading them into the van.*

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (seconds) - Loading Barrows*

*Box model - [Loading barrow 1,2,3 (Station Mail and Parcels for Staff area)]*

*Last updated 2/11/2014*

	Monday 3rd	Tuesday 4th	Wedn. 5th	Thursday 6th	
Pigeonhole (stored mails)	Delay Time	Dealy Time	Delay Time	Dealy Time	Note
1	5	2	5	2	*
2	3	3	6	5	*
3	4	6	3	6	*
4	7	2	4	3	*
5	2	5	2	4	*
6	6	6	1	2	*
7	7	3	2	1	*
8	4	4	5	2	*
9	5	2	4	5	*
10	2	1	3	4	*
11	1	2	6	3	*
12	3	5	8	6	*
13	6	4	3	8	*
14	5	3	4	3	*
15	4	6	2	4	*
16	7	8	6	2	*
17	10	3	6	6	*
18	4	4	9	6	*
19	5	2	16	9	*
20	3	6	3	16	*
21	7	6	5	3	*
22	8	9	6	5	*
23	11	16	5	6	*
24	20	3	6	5	*
25	4	5	7	6	*
26	6	6	9	7	*
27	7	5	4	9	*
28	6	6	6	4	*
29	8	7	12	6	*
30	9	9	3	12	*
31	11	4	5	3	*
32	5	6	6	5	*
33	7	12	6	6	*
34	15	3	3	6	*
35	4	5	2	3	*
36	6	6	10	2	*
37	8	6	6	10	*
38	7	3	3	6	*
39	4	2	5	3	*
40	2	10	2	5	*

41	12	6	4	2	*
42	7	3	7	4	*
43	4	5	6	7	*
44	6	2	8	6	*
45	3	4	3	8	*
46	5	7	2	3	*
47	9	6	2	2	*
48	8	8	4	2	*
49	10	3	6	4	*
50	4	2	5	6	*
51	2	2	3	5	*
52	3	4	2	3	*
53	5	6	6	2	*
54	7	5	5	6	*
55	6	3	12	5	*
56	4	2	7	12	*
57	3	6	6	7	*
58	7	5	2	6	*
59	6	12	5	2	*
60	15	7	4	5	*
61	9	6	3	4	*
62	7	2	6	3	*
63	3	5	14	6	*
64	6	4	4	14	*
65	5	3	6	4	*
66	4	6	5	6	*
67	7	14	8	5	*
68	18	4	11	8	*
69	5	6	14	11	*
70	7	5	6	14	*
71	6	8	4	6	*
72	10	11	5	4	*
73	14	14	7	5	*
74	17	6	6	7	*
75	7	4	3	6	*
76	5	5	4	3	*
77	6	7	5	4	*
78	9	6	2	5	*
79	8	3	6	2	*
80	4	4	4	6	*
81	5	5	2	4	*
82	6	2	2	2	*
83	3	6	5	2	*
84	7	4	6	5	*
85	5	2	6	6	*
86	2	2	9	6	*
87	3	5	8	9	*
88	6	6	6	8	*
89	8	6	7	6	*
90	7	9	5	7	*



91	11	8	6	5	*
92	10	6	8	9	*
93	8	7	7	13	*
94	9	5	9	11	*
95	6	12	11	4	*

*\*The Delay Time has been collected considering the act of taking the mails and parcels from the pigeonholes and loading them into the barrows.*

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (seconds) - First sorting mail*

*Box model - [First Sorting (Mail and sorting area)]*

*Last updated 2/11/2014*

	Monday 24th		Tuesday 25th		
Mail	Time	Dealy Time	Time	Delay time	Note
1	08:15:00	00:00:05	08:30:00	00:00:04	
2	08:15:05	00:00:02	08:30:34	00:00:03	
3	08:15:07	00:00:04	08:30:37	00:00:02	
4	08:15:11	00:00:09	08:30:39	00:00:03	
5	08:15:20	00:00:06	08:30:42	00:00:03	
6	08:15:26	00:00:03	08:30:45	00:00:05	
7	08:15:29	00:00:04	08:30:50	00:00:04	
8	08:15:33	00:00:02	08:30:54	00:00:03	
9	08:15:35	00:00:02	08:30:57	00:00:03	
10	08:15:37	00:00:03	08:31:00	00:00:04	
11	08:15:40	00:00:02	08:31:04	00:00:04	
12	08:15:42	00:00:02	08:31:08	00:00:02	
13	08:15:44	00:00:03	08:31:10	00:00:03	
14	08:15:47	00:00:03	08:31:13	00:00:03	
15	08:15:50	00:00:03	08:31:16	00:00:02	
16	08:15:53	00:00:03	08:31:18	00:00:04	
17	08:15:56	00:00:03	08:31:22	00:00:03	
18	08:15:59	00:00:09	08:31:25	00:00:02	
19	08:16:08	00:00:04	08:31:27	00:00:02	
20	08:16:12	00:00:03	08:31:29	00:00:04	
21	08:16:15	00:00:09	08:31:33	00:00:03	
22	08:16:24	00:00:03	08:31:36	00:00:03	
23	08:16:27	00:00:03	08:31:39	00:00:02	
24	08:16:30	00:00:02	08:31:41	00:00:03	
25	08:16:32	00:00:03	08:31:44	00:00:03	
26	08:16:35	00:00:03	08:31:47	00:00:03	
27	08:16:38	00:00:14	08:31:50	00:00:02	
28	08:16:52	00:00:30	08:31:52	00:00:03	
29	08:17:22	00:00:27	08:31:55	00:00:03	
30	08:17:49	00:00:08	08:31:58	00:00:02	
31	08:17:57	00:00:18	08:32:00	00:00:04	
32	08:18:15	00:00:16	08:32:04	00:00:04	
33	08:18:31	00:00:16	08:32:08	00:00:03	
34	08:18:47	00:00:11	08:32:11	00:00:06	
35	08:18:58	00:00:26	08:32:17	00:00:03	
36	08:19:24	00:00:18	08:32:20	00:00:04	
37	08:19:42	00:00:17	08:32:24	00:00:03	
38	08:19:59	00:00:12	08:32:27	00:00:03	
39	08:20:11	00:00:23	08:32:30	00:00:03	
40	08:20:34	00:00:11	08:32:33	00:00:02	
41	08:20:45	00:00:11	08:32:35	00:00:03	

42	08:20:56	00:00:13	08:32:38	00:00:03	
43	08:21:09	00:00:08	08:32:41	00:00:03	
44	08:21:17	00:00:23	08:32:44	00:00:03	
45	08:21:40	00:00:13	08:32:47	00:00:30	
46	08:21:53	00:00:06	08:32:55	00:00:03	
47	08:21:59	00:00:15	08:32:58	00:00:03	
48	08:22:14	00:00:15	08:33:01	00:00:04	
49	08:22:35	00:00:16	08:33:05	00:00:05	
50	08:22:51	00:00:17	08:33:10	00:00:04	
51	08:23:08	00:05:10	08:33:14	00:00:45	
52	08:28:18	00:00:19	08:33:17	00:00:43	
53	08:28:37	00:00:17	08:33:21	00:00:04	
54	08:28:54	00:00:11	08:33:25	00:00:04	
55	08:29:00	00:00:17	08:33:29	00:00:04	
56	08:29:14	00:00:30	08:33:33	00:00:03	
57	08:29:44	00:00:09	08:33:36	00:00:03	
58	08:29:53	00:00:20	08:33:39	00:00:02	
59	08:30:13	00:00:21	08:33:41	00:00:02	
60	08:30:34	00:00:20	08:33:43	00:00:02	
61	08:30:54	00:00:05	08:33:45	00:00:02	
62	08:30:59	00:00:12	08:33:47	00:00:04	
63	08:31:11	00:00:17	08:33:51	00:00:04	
64	08:31:28	00:00:17	08:33:55	00:00:02	
65	08:31:45	00:00:10	08:33:57	00:00:03	
66	08:31:55	00:00:19	08:34:00	00:00:02	
67	08:32:14	00:00:23	08:34:02	00:00:08	
68	08:32:37	00:00:12	08:34:10	00:00:03	
69	08:32:49	00:00:09	08:34:13	00:00:05	
70	08:32:58	00:00:17	08:34:18	00:00:04	
71	08:33:15	00:00:23	08:34:22	00:00:05	
72	08:33:38	00:00:08	08:34:27	00:00:04	
73	08:33:46	00:00:13	08:34:31	00:00:07	
74	08:33:59	00:00:13	08:34:38	00:00:02	
75	08:34:12	00:00:16	08:34:40	00:00:08	
76	08:34:28	00:00:16	08:34:48	00:00:04	
77	08:34:44	00:00:12	08:34:52	00:00:03	
78	08:34:56	00:00:12	08:34:55	00:00:04	
79	08:35:08	00:00:08	08:34:59	00:00:04	
80	08:35:16	00:00:07	08:35:03	00:00:06	
81	08:35:23	00:00:08	08:35:09	00:00:04	
82	08:35:31	00:00:08	08:35:13	00:00:05	
83	08:35:39	00:00:04	08:35:18	00:00:06	
84	08:35:43	00:00:06	08:35:24	00:00:06	
85	08:35:49	00:00:06	08:35:30	00:00:03	
86	08:35:55	00:00:04	08:35:33	00:00:04	
87	08:35:59	00:00:18	08:35:37	00:00:04	
88	08:36:17	00:00:21	08:35:41	00:00:04	
89	08:36:38	00:00:08	08:35:45	00:00:03	
90	08:36:46	00:00:11	08:35:48	00:00:04	
91	08:36:57	00:00:21	08:35:52	00:00:04	

92	08:37:18	00:00:09	08:35:56	00:00:03	
93	08:37:27	00:00:09	08:35:59	00:00:03	
94	08:37:36	00:00:06	08:36:02	00:00:04	
95	08:37:42	00:00:06	08:36:06	00:00:05	
96	08:37:48	00:00:05	08:36:11	00:00:03	
97	08:37:53	00:00:06	08:36:14	00:00:02	
98	08:37:59	00:00:17	08:36:16	00:00:03	
99	08:38:16	00:00:03	08:36:19	00:00:03	
100	08:38:19	00:00:05	08:36:22	00:00:03	
101	08:38:24	00:00:13	08:36:25		
102	08:38:37	00:00:04			
103	08:38:41	00:00:09			

	Wednesday 26th		Thursday 27th		
Mail	Time	Dealy Time	Time	Delay time	Note
1	08:35:00	00:00:03	08:30:30	00:00:04	
2	08:35:03	00:00:02	08:30:34	00:00:04	
3	08:35:05	00:00:03	08:30:38	00:00:03	
4	08:35:08	00:00:03	08:30:41	00:00:03	
5	08:35:11	00:00:03	08:30:44	00:00:02	
6	08:35:14	00:00:03	08:30:46	00:00:02	
7	08:35:17	00:00:04	08:30:48	00:00:04	
8	08:35:21	00:00:03	08:30:52	00:00:04	
9	08:35:24	00:00:02	08:30:56	00:00:03	
10	08:35:26	00:00:03	08:30:59	00:00:04	
11	08:35:29	00:00:02	08:31:03	00:00:02	
12	08:35:31	00:00:02	08:31:05	00:00:03	
13	08:35:33	00:00:03	08:31:08	00:00:03	
14	08:35:36	00:00:02	08:31:11	00:00:03	
15	08:35:38	00:00:03	08:31:14	00:00:02	
16	08:35:41	00:00:06	08:31:16	00:00:03	
17	08:35:47	00:00:05	08:31:19	00:00:03	
18	08:35:52	00:00:03	08:31:22	00:00:05	
19	08:35:55	00:00:02	08:31:27	00:00:07	
20	08:35:57	00:00:02	08:31:34	00:00:02	
21	08:35:59	00:00:09	08:31:36	00:00:03	
22	08:36:08	00:00:04	08:31:39	00:00:05	
23	08:36:12	00:00:03	08:31:44	00:00:04	
24	08:36:15	00:00:03	08:31:48	00:00:03	
25	08:36:18	00:00:03	08:31:51	00:00:04	
26	08:36:21	00:00:03	08:31:55	00:00:04	
27	08:36:24	00:00:04	08:31:59	00:00:03	
28	08:36:28	00:00:02	08:32:02	00:00:03	
29	08:36:30	00:00:03	08:32:05	00:00:06	
30	08:36:33	00:00:03	08:32:11	00:00:03	
31	08:36:36	00:00:04	08:32:14	00:00:03	
32	08:36:40	00:00:04	08:32:17	00:00:04	
33	08:36:44	00:00:03	08:32:21	00:00:03	
34	08:36:47	00:00:04	08:32:24	00:00:03	
35	08:36:51	00:00:03	08:32:27	00:00:04	

36	08:36:54	00:00:04	08:32:31	00:00:04	
37	08:36:58	00:00:03	08:32:35	00:00:04	
38	08:37:01	00:00:03	08:32:39	00:00:02	
39	08:37:04	00:00:03	08:32:41	00:00:04	
40	08:37:07	00:00:05	08:32:45	00:00:02	
41	08:37:12	00:00:08	08:32:47	00:00:02	
42	08:37:20	00:00:02	08:32:49	00:00:01	
43	08:37:22	00:00:03	08:32:50	00:00:01	
44	08:37:25	00:00:03	08:32:51	00:00:01	
45	08:37:28	00:00:03	08:32:52	00:00:04	
46	08:37:31	00:00:04	08:32:56	00:00:02	
47	08:37:35	00:00:04	08:32:58	00:00:18	
48	08:37:39	00:00:30	08:33:01	00:00:03	
49	08:37:44	00:00:05	08:33:04	00:00:04	
50	08:37:49	00:00:06	08:33:08	00:00:04	
51	08:37:55	00:00:03	08:33:12	00:00:04	
52	08:37:58	00:01:02	08:33:16	00:00:02	
53	08:39:00	00:00:03	08:33:18	00:00:33	
54	08:39:03	00:00:45	08:33:21	00:00:18	
55	08:39:05	00:00:43	08:33:25	01:00:18	
56	08:39:08	00:00:03	08:33:27	00:00:04	
57	08:39:11	00:00:03	08:33:31	00:00:04	
58	08:39:14	00:00:04	08:33:35	00:00:05	
59	08:39:18	00:00:05	08:33:40	00:00:02	
60	08:39:23	00:00:04	08:33:42	00:00:03	
61	08:39:27	00:00:04	08:33:45	00:00:03	
62	08:39:31	00:00:03	08:33:48	00:00:04	
63	08:39:34	00:00:06	08:33:52	00:00:04	
64	08:39:40	00:00:03	08:33:56	00:00:03	
65	08:39:43	00:00:03	08:33:59	00:00:04	
66	08:39:46	00:00:04	08:34:03	00:00:04	
67	08:39:50	00:00:04	08:34:07	00:00:05	
68	08:39:54	00:00:04	08:34:12	00:00:04	
69	08:39:58	00:00:04	08:34:16	00:00:03	
70	08:40:02	00:00:03	08:34:19	00:00:03	
71	08:40:05	00:00:04	08:34:22	00:00:04	
72	08:40:09	00:00:04	08:34:26	00:00:04	
73	08:40:13	00:00:05	08:34:30	00:00:03	
74	08:40:18	00:00:05	08:34:33	00:00:04	
75	08:40:23	00:00:03	08:34:37	00:00:04	
76	08:40:26	00:00:02	08:34:41	00:00:04	
77	08:40:28	00:00:03	08:34:45	00:00:04	
78	08:40:31	00:00:02	08:34:49	00:00:03	
79	08:40:33	00:00:02	08:34:52	00:00:04	
80	08:40:35	00:00:03	08:34:56	00:00:04	
81	08:40:38	00:00:03	08:35:00	00:00:04	
82	08:40:41	00:00:03	08:35:04	00:00:03	
83	08:40:44	00:00:04	08:35:07	00:00:04	
84	08:40:48	00:00:04	08:35:11	00:00:05	
85	08:40:52	00:00:04	08:35:16	00:00:05	

86	08:40:56	00:00:03	08:35:21	00:00:04	
87	08:40:59	00:00:05	08:35:25	00:00:02	
88	08:41:04	00:00:06	08:35:27	00:00:05	
89	08:41:10	00:00:02	08:35:32	00:00:04	
90	08:41:12	00:00:03	08:35:36	00:00:05	
91	08:41:15	00:00:03	08:35:41	00:00:06	
92	08:41:18	00:00:04	08:35:47	00:00:03	
93	08:41:22	00:00:03	08:35:50	00:00:03	
94	08:41:25	00:00:04	08:35:53	00:00:02	
95	08:41:29	00:00:03	08:35:55	00:00:04	
96	08:41:32	00:00:04	08:35:59	00:00:03	
97	08:41:36	00:00:03	08:36:02	00:00:03	
98	08:41:39	00:00:03	08:36:05	00:00:06	
99	08:41:42	00:00:03	08:36:11	00:00:03	
100	08:41:45	00:00:05	08:36:14	00:00:03	
101	08:41:50		08:36:17		
Friday 28th					
Mail	Time	Dealy Time			Note
1	08:40:05	00:00:05			
2	08:40:10	00:00:02			
3	08:40:12	00:00:02			
4	08:40:14	00:00:03			
5	08:40:17	00:00:02			
6	08:40:19	00:00:03			
7	08:40:22	00:00:05			
8	08:40:27	00:00:03			
9	08:40:30	00:00:03			
10	08:40:33	00:00:02			
11	08:40:35	00:00:03			
12	08:40:38	00:00:03			
13	08:40:41	00:00:03			
14	08:40:44	00:00:04			
15	08:40:48	00:00:03			
16	08:40:51	00:00:02			
17	08:40:53	00:00:02			
18	08:40:55	00:00:03			
19	08:40:58	00:00:04			
20	08:41:02	00:00:03			
21	08:41:05	00:00:04			
22	08:41:09	00:00:04			
23	08:41:13	00:00:02			
24	08:41:15	00:00:02			
25	08:41:17	00:00:03			
26	08:41:20	00:00:04			
27	08:41:24	00:00:03			
28	08:41:27	00:00:03			
29	08:41:30	00:00:03			
30	08:41:33	00:00:03			
31	08:41:36	00:00:04			



32	08:41:40	00:00:04			
33	08:41:44	00:00:03			
34	08:41:47	00:00:04			
35	08:41:51	00:00:02			
36	08:41:53	00:00:03			
37	08:41:56	00:00:03			
38	08:41:59	00:00:03			
39	08:42:02	00:00:04			
40	08:42:06	00:00:04			
41	08:42:10	00:00:05			
42	08:42:15	00:00:03			
43	08:42:18	00:00:02			
44	08:42:20	00:00:03			
45	08:42:23	00:00:02			
46	08:42:25	00:00:04			
47	08:42:29	00:00:22			
48	08:42:33	00:00:03			
49	08:42:36	00:00:03			
50	08:42:39	00:00:02			
51	08:42:41	00:00:03			
52	08:42:44	00:00:03			
53	08:42:47	00:00:41			
54	08:42:50	00:00:25			
55	08:42:54	01:00:25			
56	08:42:57	00:00:03			
57	08:43:00	00:00:02			
58	08:43:02	00:00:03			
59	08:43:05	00:00:03			
60	08:43:08	00:00:03			
61	08:43:11	00:00:03			
62	08:43:14	00:00:03			
63	08:43:17	00:00:03			
64	08:43:20	00:00:04			
65	08:43:24	00:00:02			
66	08:43:26	00:00:03			
67	08:43:29	00:00:02			
68	08:43:31	00:00:02			
69	08:43:33	00:00:03			
70	08:43:36	00:00:02			
71	08:43:38	00:00:02			
72	08:43:40	00:00:03			
73	08:43:43	00:00:03			
74	08:43:46	00:00:04			
75	08:43:50	00:00:03			
76	08:43:53	00:00:04			
77	08:43:57	00:00:03			
78	08:44:00	00:00:03			
79	08:44:03	00:00:03			
80	08:44:06	00:00:04			
81	08:44:10	00:00:04			

82	08:44:14	00:00:03			
83	08:44:17	00:00:02			
84	08:44:19	00:00:03			
85	08:44:22	00:00:03			
86	08:44:25	00:00:03			
87	08:44:28	00:00:03			
88	08:44:31	00:00:03			
89	08:44:34	00:00:04			
90	08:44:38	00:00:03			
91	08:44:41	00:00:03			
92	08:44:44	00:00:06			
93	08:44:50	00:00:03			
94	08:44:53	00:00:06			
95	08:44:59	00:00:04			
96	08:45:03	00:00:03			
97	08:45:06	00:00:04			
98	08:45:10	00:00:04			
99	08:45:14	00:00:04			
100	08:45:18	00:00:02			
101	08:45:20				

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (seconds) - Second sorting mail*  
*Box model - [Second sorting (Station Mail and Parcels for Staff area)]*

*Last updated 2/11/2014*

	Monday 24th		Tuesday 25th		
Mail	Time	Dealy Time	Time	Delay time	Note
1	10:22:20	00:00:04	10:25:00	00:00:03	
2	10:22:24	00:00:03	10:25:03	00:00:03	
3	10:22:27	00:00:03	10:25:06	00:00:04	
4	10:22:30	00:00:03	10:25:10	00:00:04	
5	10:22:33	00:00:02	10:25:14	00:00:03	
6	10:22:35	00:00:01	10:25:17	00:00:02	
7	10:22:36	00:00:03	10:25:19	00:00:02	
8	10:22:39	00:00:03	10:25:21	00:00:01	
9	10:22:42	00:00:03	10:25:22	00:00:03	
10	10:22:45	00:00:03	10:25:25	00:00:03	
11	10:22:48	00:00:03	10:25:28	00:00:03	
12	10:22:51	00:00:02	10:25:31	00:00:02	
13	10:22:53	00:00:04	10:25:33	00:00:03	
14	10:22:57	00:00:02	10:25:36	00:00:04	
15	10:22:59	00:00:04	10:25:40	00:00:03	
16	10:23:03	00:00:06	10:25:43	00:00:04	
17	10:23:09	00:00:04	10:25:47	00:00:03	
18	10:23:13	00:00:03	10:25:50	00:00:03	
19	10:23:16	00:00:04	10:25:53	00:00:03	
20	10:23:20	00:00:04	10:25:56	00:00:04	
21	10:23:24	00:00:03	10:26:00	00:00:03	
22	10:23:27	00:00:05	10:26:03	00:00:02	
23	10:23:32	00:00:06	10:26:05	00:00:03	
24	10:23:38	00:00:02	10:26:08	00:00:03	
25	10:23:40	00:00:03	10:26:11	00:00:04	
26	10:23:43	00:00:03	10:26:15	00:00:03	
27	10:23:46	00:00:04	10:26:18	00:00:03	
28	10:23:50	00:00:05	10:26:21	00:00:04	
29	10:23:55	00:00:02	10:26:25	00:00:05	
30	10:23:57	00:00:01	10:26:30	00:00:08	
31	10:23:58	00:00:04	10:26:38	00:00:03	
32	10:24:02	00:00:02	10:26:41	00:00:04	
33	10:24:04	00:00:03	10:26:45	00:00:04	
34	10:24:07	00:00:03	10:26:49	00:00:06	
35	10:24:10	00:00:03	10:26:55	00:00:02	
36	10:24:13	00:00:03	10:26:57	00:00:02	
37	10:24:16	00:00:03	10:26:59	00:00:04	
38	10:24:19	00:00:03	10:27:03	00:00:02	
39	10:24:22	00:00:02	10:27:05	00:00:03	
40	10:24:24	00:00:03	10:27:08	00:00:04	
41	10:24:27	00:00:04	10:27:12	00:00:09	

42	10:24:31	00:00:02	10:27:21	00:00:04	
43	10:24:33	00:00:05	10:27:25	00:00:05	
44	10:24:38	00:00:06	10:27:30	00:00:03	
45	10:24:44	00:00:02	10:27:33	00:00:03	
46	10:24:46	00:00:02	10:27:36	00:00:05	
47	10:24:48	00:00:03	10:27:41	00:00:03	
48	10:24:51	00:00:03	10:27:44	00:00:04	
49	10:24:54	00:00:03	10:27:48	00:00:02	
50	10:24:57	00:00:03	10:27:50	00:00:03	
51	10:25:00	00:00:03	10:27:53	00:00:03	
52	10:25:03	00:00:03	10:27:56	00:00:03	
53	10:25:06	00:00:04	10:27:59	00:00:03	
54	10:25:10	00:00:03	10:28:02	00:00:08	
55	10:25:13	00:00:04	10:28:10	00:00:04	
56	10:25:17	00:00:09	10:28:14	00:00:03	
57	10:25:26	00:00:02	10:28:17	00:00:04	
58	10:25:28	00:00:05	10:28:21	00:00:03	
59	10:25:33	00:00:02	10:28:24	00:00:03	
60	10:25:35	00:00:02	10:28:27	00:00:04	
61	10:25:37	00:00:04	10:28:31	00:00:04	
62	10:25:41	00:00:03	10:28:35	00:00:02	
63	10:25:44	00:00:04	10:28:37	00:00:03	
64	10:25:48	00:00:03	10:28:40	00:00:04	
65	10:25:51	00:00:04	10:28:44	00:00:03	
66	10:25:55	00:00:04	10:28:47	00:00:05	
67	10:25:59	00:00:08	10:28:52	00:00:05	
68	10:26:07	00:00:04	10:28:57	00:00:03	
69	10:26:11	00:00:03	10:29:00	00:00:04	
70	10:26:14	00:00:02	10:29:04	00:00:06	
71	10:26:16	00:00:02	10:29:10	00:00:02	
72	10:26:18	00:00:03	10:29:12	00:00:02	
73	10:26:21	00:00:08	10:29:14	00:00:03	
74	10:26:29	00:00:05	10:29:17	00:00:04	
75	10:26:34	00:00:06	10:29:21	00:00:02	
76	10:26:40	00:00:03	10:29:23	00:00:05	
77	10:26:43	00:00:02	10:29:28	00:00:05	
78	10:26:45	00:00:03	10:29:33	00:00:02	
79	10:26:48	00:00:04	10:29:35	00:00:03	
80	10:26:52	00:00:03	10:29:38	00:00:03	
81	10:26:55	00:00:03	10:29:41	00:00:03	
82	10:26:58	00:00:03	10:29:44	00:00:03	
83	10:27:01	00:00:02	10:29:47	00:00:04	
84	10:27:03	00:00:02	10:29:51	00:00:05	
85	10:27:05	00:00:03	10:29:56	00:00:02	
86	10:27:08	00:00:04	10:29:58	00:00:04	
87	10:27:12	00:00:04	10:30:02	00:00:03	
88	10:27:16	00:00:03	10:30:05	00:00:04	
89	10:27:19	00:00:05	10:30:09	00:00:04	
90	10:27:24	00:00:04	10:30:13	00:00:03	
91	10:27:28	00:00:06	10:30:16	00:00:03	

92	10:27:34	00:00:06	10:30:19	00:00:05	
93	10:27:40	00:00:04	10:30:24	00:00:03	
94	10:27:44	00:00:06	10:30:27	00:00:04	
95	10:27:50	00:00:02	10:30:31	00:00:02	
96	10:27:52	00:00:03	10:30:33	00:00:04	
97	10:27:55	00:00:04	10:30:37	00:00:04	
98	10:27:59	00:00:07	10:30:41	00:00:04	
99	10:28:06	00:00:06	10:30:45	00:00:04	
100	10:28:12	00:00:02	10:30:49	00:00:01	
101	10:28:14		10:30:50		

	Wednesday 26th		Thursday 27th		
Mail	Time	Dealy Time	Time	Delay time	Note
1	10:45:50	00:00:04	10:30:00	00:00:04	
2	10:45:54	00:00:03	10:30:06	00:00:03	
3	10:45:57	00:00:02	10:30:09	00:00:02	
4	10:45:59	00:00:04	10:30:11	00:00:04	
5	10:46:03	00:00:04	10:30:15	00:00:04	
6	10:46:07	00:00:03	10:30:19	00:00:04	
7	10:46:10	00:00:02	10:30:23	00:00:05	
8	10:46:12	00:00:03	10:30:28	00:00:05	
9	10:46:15	00:00:03	10:30:33	00:00:07	
10	10:46:18	00:00:03	10:30:40	00:00:04	
11	10:46:21	00:00:04	10:30:44	00:00:04	
12	10:46:25	00:00:03	10:30:48	00:00:06	
13	10:46:28	00:00:04	10:30:54	00:00:05	
14	10:46:32	00:00:04	10:30:59	00:00:04	
15	10:46:36	00:00:04	10:31:03	00:00:03	
16	10:46:40	00:00:03	10:31:06	00:00:04	
17	10:46:43	00:00:03	10:31:10	00:00:02	
18	10:46:46	00:00:02	10:31:12	00:00:04	
19	10:46:48	00:00:04	10:31:16	00:00:06	
20	10:46:52	00:00:03	10:31:22	00:00:04	
21	10:46:55	00:00:03	10:31:26	00:00:05	
22	10:46:58	00:00:04	10:31:31	00:00:04	
23	10:47:02	00:00:02	10:31:35	00:00:05	
24	10:47:04	00:00:02	10:31:40	00:00:05	
25	10:47:06	00:00:04	10:31:45	00:00:03	
26	10:47:10	00:00:04	10:31:48	00:00:05	
27	10:47:14	00:00:02	10:31:53	00:00:01	
28	10:47:16	00:00:03	10:31:54	00:00:04	
29	10:47:19	00:00:03	10:31:58	00:00:06	
30	10:47:22	00:00:12	10:32:04	00:00:06	
31	10:47:34	00:00:02	10:32:10	00:00:04	
32	10:47:36	00:00:03	10:32:14	00:00:06	
33	10:47:39	00:00:03	10:32:20	00:00:04	
34	10:47:42	00:00:03	10:32:24	00:00:04	
35	10:47:45	00:00:04	10:32:28	00:00:05	
36	10:47:49	00:00:06	10:32:33	00:00:04	
37	10:47:55	00:00:04	10:32:37	00:00:07	

38	10:47:59	00:00:15	10:32:44	00:00:04	
39	10:48:14	00:00:02	10:32:48	00:00:04	
40	10:48:16	00:00:07	10:32:52	00:00:05	
41	10:48:23	00:00:02	10:32:57	00:00:06	
42	10:48:25	00:00:03	10:33:03	00:00:08	
43	10:48:28	00:00:05	10:33:11	00:00:03	
44	10:48:33	00:00:04	10:33:14	00:00:02	
45	10:48:37	00:00:05	10:33:16	00:00:03	
46	10:48:42	00:00:04	10:33:19	00:00:03	
47	10:48:46	00:00:06	10:33:22	00:00:03	
48	10:48:52	00:00:03	10:33:25	00:00:03	
49	10:48:55	00:00:04	10:33:28	00:00:03	
50	10:48:59	00:00:04	10:33:31	00:00:03	
51	10:49:03	00:00:03	10:33:34	00:00:03	
52	10:49:06	00:00:05	10:33:37	00:00:04	
53	10:49:11	00:00:05	10:33:41	00:00:03	
54	10:49:16	00:00:05	10:33:44	00:00:02	
55	10:49:21	00:00:05	10:33:46	00:00:04	
56	10:49:26	00:00:07	10:33:50	00:00:03	
57	10:49:33	00:00:04	10:33:53	00:00:03	
58	10:49:37	00:00:04	10:33:56	00:00:02	
59	10:49:41	00:00:04	10:33:58	00:00:05	
60	10:49:45	00:00:08	10:34:03	00:00:04	
61	10:49:53	00:00:03	10:34:07	00:00:04	
62	10:49:56	00:00:03	10:34:11	00:00:04	
63	10:49:59	00:00:03	10:34:15	00:00:02	
64	10:50:02	00:00:04	10:34:17	00:00:04	
65	10:50:06	00:00:05	10:34:21	00:00:04	
66	10:50:11	00:00:03	10:34:25	00:00:05	
67	10:50:14	00:00:03	10:34:30	00:00:03	
68	10:50:17	00:00:04	10:34:33	00:00:03	
69	10:50:21	00:00:04	10:34:36	00:00:04	
70	10:50:25	00:00:03	10:34:40	00:00:02	
71	10:50:28	00:00:03	10:34:42	00:00:03	
72	10:50:31	00:00:03	10:34:45	00:00:02	
73	10:50:34	00:00:03	10:34:47	00:00:03	
74	10:50:37	00:00:04	10:34:50	00:00:02	
75	10:50:41	00:00:03	10:34:52	00:00:03	
76	10:50:44	00:00:04	10:34:55	00:00:03	
77	10:50:48	00:00:06	10:34:58	00:00:02	
78	10:50:54	00:00:05	10:35:00	00:00:03	
79	10:50:59	00:00:03	10:35:03	00:00:03	
80	10:51:02	00:00:11	10:35:06	00:00:04	
81	10:51:13	00:00:02	10:35:10	00:00:03	
82	10:51:15	00:00:01	10:35:13	00:00:03	
83	10:51:16	00:00:04	10:35:16	00:00:04	
84	10:51:20	00:00:03	10:35:20	00:00:02	
85	10:51:23	00:00:02	10:35:22	00:00:03	
86	10:51:25	00:00:03	10:35:25	00:00:03	
87	10:51:28	00:00:04	10:35:28	00:00:05	



88	10:51:32	00:00:04	10:35:33	00:00:05	
89	10:51:36	00:00:02	10:35:38	00:00:04	
90	10:51:38	00:00:04	10:35:42	00:00:04	
91	10:51:42	00:00:03	10:35:46	00:00:02	
92	10:51:45	00:00:05	10:35:48	00:00:02	
93	10:51:50	00:00:05	10:35:50	00:00:03	
94	10:51:55	00:00:04	10:35:53	00:00:02	
95	10:51:59	00:00:04	10:35:55	00:00:03	
96	10:52:03	00:00:03	10:35:58	00:00:03	
97	10:52:06	00:00:04	10:36:01	00:00:03	
98	10:52:10	00:00:04	10:36:04	00:00:06	
99	10:52:14	00:00:04	10:36:10	00:00:03	
100	10:52:18	00:00:04	10:36:13	00:00:03	
101	10:52:22		10:36:16		
Friday 28th					
Mail	Time	Dealy Time			Note
1	10:38:00	00:00:05			
2	10:38:05	00:00:04			
3	10:38:09	00:00:03			
4	10:38:12	00:00:03			
5	10:38:15	00:00:05			
6	10:38:20	00:00:03			
7	10:38:23	00:00:03			
8	10:38:26	00:00:04			
9	10:38:30	00:00:03			
10	10:38:33	00:00:03			
11	10:38:36	00:01:04			
12	10:39:40	00:00:05			
13	10:39:45	00:00:07			
14	10:39:52	00:00:03			
15	10:39:55	00:00:03			
16	10:39:58	00:00:04			
17	10:40:02	00:00:04			
18	10:40:06	00:00:05			
19	10:40:11	00:00:03			
20	10:40:14	00:00:06			
21	10:40:20	00:00:03			
22	10:40:23	00:00:04			
23	10:40:27	00:00:05			
24	10:40:32	00:00:02			
25	10:40:34	00:00:02			
26	10:40:36	00:00:02			
27	10:40:38	00:00:03			
28	10:40:41	00:00:03			
29	10:40:44	00:00:03			
30	10:40:47	00:00:04			
31	10:40:51	00:00:02			
32	10:40:53	00:00:06			
33	10:40:59	00:00:04			

34	10:41:03	00:00:03			
35	10:41:06	00:00:05			
36	10:41:11	00:00:03			
37	10:41:14	00:00:03			
38	10:41:17	00:00:04			
39	10:41:21	00:00:03			
40	10:41:24	00:00:01			
41	10:41:25	00:00:02			
42	10:41:27	00:00:03			
43	10:41:30	00:00:03			
44	10:41:33	00:00:03			
45	10:41:36	00:00:04			
46	10:41:40	00:00:04			
47	10:41:44	00:00:02			
48	10:41:46	00:00:03			
49	10:41:49	00:00:05			
50	10:41:54	00:00:04			
51	10:41:58	00:00:04			
52	10:42:02	00:00:08			
53	10:42:10	00:00:03			
54	10:42:13	00:00:03			
55	10:42:16	00:00:04			
56	10:42:20	00:00:04			
57	10:42:24	00:00:06			
58	10:42:30	00:00:03			
59	10:42:33	00:00:04			
60	10:42:37	00:00:03			
61	10:42:40	00:00:01			
62	10:42:41	00:00:04			
63	10:42:45	00:00:09			
64	10:42:54	00:00:02			
65	10:42:56	00:00:03			
66	10:42:59	00:00:05			
67	10:43:04	00:00:06			
68	10:43:10	00:00:04			
69	10:43:14	00:00:04			
70	10:43:18	00:00:05			
71	10:43:23	00:00:03			
72	10:43:26	00:00:07			
73	10:43:33	00:00:12			
74	10:43:45	00:00:02			
75	10:43:47	00:00:02			
76	10:43:49	00:00:03			
77	10:43:52	00:00:03			
78	10:43:55	00:00:02			
79	10:43:57	00:00:02			
80	10:43:59	00:00:03			
81	10:44:02	00:00:03			
82	10:44:05	00:00:03			
83	10:44:08	00:00:03			

84	10:44:11	00:00:03			
85	10:44:14	00:00:03			
86	10:44:17	00:00:02			
87	10:44:19	00:00:03			
88	10:44:22	00:00:03			
89	10:44:25	00:00:03			
90	10:44:28	00:00:05			
91	10:44:33	00:00:03			
92	10:44:36	00:00:03			
93	10:44:39	00:00:02			
94	10:44:41	00:00:03			
95	10:44:44	00:00:03			
96	10:44:47	00:00:03			
97	10:44:50	00:00:03			
98	10:44:53	00:00:04			
99	10:44:57	00:00:12			
100	10:45:09	00:00:03			
101	10:45:12				

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (seconds) - Parcel Scan*

*Box model - [Scanning parcels (Parcels' Area)]*

*Last updated 2/11/2014*

	Friday 17th		Tuesday 20th		
Parcel	Time	Dealy Time	Time	Delay time	Note
1	08:31:27	00:00:00	10:17:07	00:00:00	*NOTAPP
2	08:32:02	00:00:35	10:17:19	00:00:12	
3	08:32:32	00:00:30	10:17:33	00:00:14	
4	08:32:58	00:00:26	10:17:44	00:00:11	
5	08:33:16	00:00:18	10:17:51	00:00:07	
6	08:33:38	00:00:22	10:18:02	00:00:11	
7	08:33:49	00:00:11	10:18:17	00:00:15	
8	08:34:03	00:00:14	10:18:30	00:00:13	
9	08:34:23	00:00:20	10:18:46	00:00:16	
10	08:34:41	00:00:18	10:19:00	00:00:14	
11	08:35:01	00:00:20	10:31:25	00:12:25	*NOTAPP
12	08:35:19	00:00:18	10:31:50	00:00:25	
13	08:35:41	00:00:22	10:32:06	00:00:16	
14	08:36:01	00:00:20	10:32:19	00:00:13	
15	08:36:35	00:00:34	10:32:33	00:00:14	
16	08:37:00	00:00:25	10:32:49	00:00:16	
17	08:37:17	00:00:17	10:32:58	00:00:09	
18	08:37:31	00:00:14	10:33:11	00:00:13	
19	08:46:22	00:08:51	10:51:22	00:18:11	*NOTAPP
20	08:46:47	00:00:25	10:51:33	00:00:11	
21	08:47:11	00:00:24	10:51:47	00:00:14	
22	08:47:29	00:00:18	10:52:02	00:00:15	
23	08:47:40	00:00:11	10:52:15	00:00:13	
24	14:07:11	05:19:31	10:52:30	00:00:15	*NOTAPP
25	14:07:29	00:00:18	10:52:46	00:00:16	
26	14:07:34	00:00:05	10:52:59	00:00:13	
27	14:08:01	00:00:27	10:53:13	00:00:14	
28	14:08:15	00:00:14	10:53:28	00:00:15	
29	14:08:44	00:00:29	11:10:17	00:16:49	
30	14:09:03	00:00:19	11:10:34	00:00:17	
31	14:10:21	00:01:18	11:10:45	00:00:11	
32	14:10:31	00:00:10	11:18:08	00:07:23	*NOTAPP
33	14:10:44	00:00:13	11:18:18	00:00:10	
34	14:10:59	00:00:15	11:18:27	00:00:09	
35	14:11:17	00:00:18	11:18:38	00:00:11	
36	14:11:32	00:00:15	11:18:50	00:00:12	
37	14:11:49	00:00:17	11:19:04	00:00:14	
38	14:23:23	00:11:34	11:19:17	00:00:13	*NOTAPP
39	14:23:40	00:00:17	11:19:31	00:00:14	
40	14:23:57	00:00:17	11:19:48	00:00:17	
41	14:24:11	00:00:14	11:20:02	00:00:14	

42	14:24:21	00:00:10	11:20:19	00:00:17	
43	14:24:30	00:00:09	11:20:34	00:00:15	
44	14:24:49	00:00:19	11:20:46	00:00:12	
45	14:25:02	00:00:13	11:21:00	00:00:14	
46	14:25:16	00:00:14	11:21:10	00:00:10	
47	14:25:28	00:00:12	11:21:22	00:00:12	
48	14:41:10	00:15:42	11:21:36	00:00:14	*NOTAPP
49	14:41:17	00:00:07	11:21:47	00:00:11	
50	14:41:31	00:00:14	11:22:01	00:00:14	
51	14:41:44	00:00:13	11:31:29	00:09:28	*NOTAPP
52	14:41:58	00:00:14	11:31:43	00:00:14	
53	14:42:13	00:00:15	11:31:56	00:00:13	
54	14:49:05	00:06:52	11:32:11	00:00:15	*NOTAPP
55	14:49:16	00:00:11	11:32:25	00:00:14	
56	14:49:31	00:00:15	11:32:37	00:00:12	
57	14:49:44	00:00:13	11:32:44	00:00:07	
58	14:49:56	00:00:12	11:32:50	00:00:06	
59	14:50:09	00:00:13	11:33:01	00:00:11	
60	14:50:25	00:00:16	11:40:29	00:07:28	*NOTAPP
61	14:50:38	00:00:13	11:40:41	00:00:12	
62	14:50:50	00:00:12	11:40:50	00:00:09	
63	14:51:01	00:00:11	11:40:59	00:00:09	
64	14:57:18	00:06:17	11:41:09	00:00:10	*NOTAPP
65	14:57:32	00:00:14	11:41:18	00:00:09	
66	14:57:47	00:00:15	11:41:26	00:00:08	
67			11:41:38	00:00:12	
68			11:41:52	00:00:14	
69			11:42:00	00:00:08	
70			11:42:08	00:00:08	
71			11:42:20	00:00:12	
72			11:42:34	00:00:14	
73			11:42:43	00:00:09	
74			11:42:55	00:00:12	
75			11:43:06	00:00:11	
76			11:43:15	00:00:09	
77			11:43:28	00:00:13	
78			11:43:39	00:00:11	
79			11:43:53	00:00:14	
80			11:44:03	00:00:10	
81			11:44:12	00:00:09	
82			11:44:22	00:00:10	
83			11:55:06	00:10:44	*NOTAPP
84			11:55:12	00:00:06	
85			11:55:21	00:00:09	
86			11:55:29	00:00:08	
87			11:55:38	00:00:09	
88			11:55:52	00:00:14	
89			11:56:01	00:00:09	
90			11:56:11	00:00:10	
91			11:56:24	00:00:13	

92			11:56:37	00:00:13	
93			11:57:02	00:00:25	
94			11:57:21	00:00:19	

# Simulation of Brunel Distribution Centre

*Collection of Data - Delay time (minutes) - Serving Customers*

*Box model - [Customer service (Customers' Area)]*

*Last updated 4/11/2014*

Customer	Monday 10th		Tuesday 11th		Note
	Arrival Time	Delay time	Arrival Time	Delay time	
1	09:20:00	00:02:00	09:11:00	00:01:00	
2	09:22:00	00:03:36	09:20:00	00:03:36	
3	09:29:00	00:03:00	09:41:00	00:02:12	
4	09:41:00	00:02:12	10:00:30	00:00:50	
5	10:04:00	00:03:20	10:07:30	00:02:00	
6	10:07:30	00:02:00	10:07:00	00:02:40	
7	10:10:00	00:01:40	10:42:00	00:01:00	
8	10:33:00	00:02:00	10:51:00	00:06:00	
9	10:42:00	00:01:00	11:03:50	00:01:40	
10	10:51:00	00:07:00	11:18:30	00:02:00	
11	10:59:00	00:01:00	11:38:59	00:01:01	
12	11:03:50	00:01:40	12:41:00	00:02:30	
13	11:07:30	00:03:00	13:04:00	00:02:50	
14	11:38:59	00:01:01	13:07:30	00:02:10	
15	11:41:20	00:00:40	13:10:00	00:02:30	
16	12:41:00	00:00:30	13:12:40	00:03:20	
17	13:04:00	00:02:50	13:19:00	00:02:30	
18	13:07:30	00:02:10	13:19:50	00:01:10	
19	13:10:00	00:00:30	13:21:30	00:02:30	
20	13:11:00	00:01:30	13:25:50	00:01:10	
21	13:12:40	00:03:20	13:27:30	00:01:20	
22	13:17:15	00:00:45	13:29:00	00:01:50	
23	13:19:00	00:00:30	13:31:00	00:02:00	
24	13:19:50	00:01:10	13:33:50	00:01:40	
25	13:21:30	00:02:30	13:35:30	00:02:30	
26	13:25:50	00:01:10	13:39:00	00:02:00	
27	13:27:30	00:01:20	13:42:10	00:05:50	
28	13:29:00	00:00:50	13:49:15	00:00:45	
29	13:30:00	00:02:00	13:51:30	00:00:30	
30	13:32:50	00:00:40	13:52:20	00:01:40	
31	13:34:00	00:01:00	13:54:20	00:01:40	
32	13:35:30	00:02:00	13:56:10	00:01:50	
33	13:38:00	00:01:00	14:13:10	00:03:50	
34	13:39:20	00:00:40	14:47:00	00:01:00	
35	13:40:10	00:09:50	14:57:00	00:02:00	
36	13:50:15	00:00:45	15:48:50	00:02:10	
37	13:51:30	00:00:30	15:59:00	00:03:00	
38	13:52:20	00:00:40			
39	13:53:00	00:02:00			
40	13:55:10	00:00:50			
41	14:15:10	00:01:50			

42	14:47:00	00:01:00			
43	14:57:00	00:02:00			
44	15:42:00	00:02:00			
45	15:48:50	00:02:10			
46	15:51:20	00:00:40			
	Wednesday 12th		Thursday 13th		
Customer	Arrival Time	Delay time	Arrival Time	Delay time	Note
1	08:21:00	00:02:00	08:36:00	00:03:00	
2	08:46:00	00:01:36	09:02:30	00:02:30	
3	09:48:30	00:02:42	09:29:00	00:03:00	
4	10:05:30	00:01:50	09:41:00	00:02:12	
5	10:13:30	00:03:00	10:04:00	00:03:20	
6	10:23:00	00:03:40	10:07:30	00:02:00	
7	10:48:00	00:02:00	10:42:00	00:01:00	
8	10:58:30	00:02:30	10:51:00	00:04:00	
9	11:02:15	00:03:15	11:17:30	00:03:00	
10	11:18:30	00:02:00	11:38:59	00:01:01	
11	11:38:59	00:01:01	12:41:00	00:00:30	
12	12:41:00	00:02:30	13:04:00	00:02:50	
13	13:04:00	00:02:50	13:07:30	00:02:10	
14	13:07:30	00:02:10	13:11:00	00:01:30	
15	13:10:00	00:02:30	13:12:40	00:02:20	
16	13:12:40	00:03:20	13:15:15	00:02:45	
17	13:19:00	00:02:30	13:19:00	00:00:30	
18	13:19:50	00:01:10	13:19:50	00:01:10	
19	13:21:30	00:02:30	13:21:30	00:02:30	
20	13:25:50	00:01:10	13:25:50	00:01:10	
21	13:29:00	00:01:50	13:27:30	00:01:20	
22	13:31:00	00:02:00	13:29:00	00:00:50	
23	13:33:50	00:01:40	13:30:00	00:02:00	
24	13:35:30	00:02:30	13:32:50	00:01:40	
25	13:39:00	00:02:00	13:34:50	00:01:10	
26	13:42:10	00:05:50	13:36:30	00:01:00	
27	13:49:15	00:00:45	13:38:00	00:01:00	
28	13:51:30	00:00:30	13:39:20	00:00:40	
29	13:52:20	00:01:40	13:40:10	00:03:40	
30	13:54:20	00:01:40	13:50:15	00:00:45	
31	13:56:10	00:01:50	13:52:20	00:00:40	
32	14:23:10	00:02:50	13:53:00	00:02:00	
33	14:47:00	00:01:00	13:55:10	00:00:50	
34	14:57:00	00:02:00	14:15:10	00:01:50	
35	15:48:50	00:02:10	14:40:00	00:05:00	
36			14:57:00	00:02:00	
37			15:42:00	00:02:00	
38			15:49:50	00:01:10	



	Friday 14th				
Customer	Arrival Time	Delay time			Note
1	09:21:00	00:03:00			
2	09:25:00	00:02:30			
3	09:52:00	00:03:12			
4	10:02:30	00:02:00			
5	10:07:30	00:02:00			
6	10:07:00	00:02:40			
7	10:42:00	00:01:00			
8	10:51:00	00:04:00			
9	11:03:50	00:01:40			
10	11:19:30	00:01:00			
11	11:38:59	00:01:01			
12	12:41:00	00:02:30			
13	13:04:00	00:02:50			
14	13:07:30	00:02:10			
15	13:10:00	00:02:30			
16	13:12:40	00:03:20			
17	13:17:00	00:03:30			
18	13:20:50	00:02:10			
19	13:23:30	00:01:30			
20	13:25:50	00:01:10			
21	13:27:30	00:01:20			
22	13:29:00	00:01:50			
23	13:31:00	00:02:00			
24	13:33:50	00:01:40			
25	13:35:30	00:02:30			
26	13:39:00	00:02:00			
27	13:42:10	00:05:50			
28	13:49:15	00:00:45			
29	13:51:30	00:00:30			
30	13:52:20	00:01:40			
31	13:54:10	00:01:50			
32	13:56:10	00:01:50			
33	14:13:10	00:03:50			
34	14:38:00	00:04:00			
35	14:57:00	00:02:00			
36	15:48:50	00:02:10			
37	15:51:00	00:03:00			

# Simulation of Brunel Distribution Centre

*Collection of Data - Time between arrivals (minutes) - Customers*

*Box model - [Create Customers (Customers' Area)]*

*Last updated 2/11/2014*

Customer	Monday 10th		Tuesday 11th		Note
	Arrival Time	Time between arrivals	Arrival Time	Time between arrivals	
1	08:17:00	00:01:00	08:15:00	00:08:00	
2	08:18:00	00:13:00	08:23:00	00:12:00	
3	08:31:00	00:29:00	08:35:00	00:35:00	
4	09:00:00	00:33:00	09:10:00	00:14:00	
5	09:33:00	00:04:00	09:24:00	00:12:00	
6	09:37:00	00:09:00	09:36:00	00:03:00	
7	09:46:00	00:04:00	09:39:00	00:03:00	
8	09:50:00	00:03:00	09:42:00	00:04:00	
9	09:53:00	00:03:00	09:46:00	00:05:00	
10	09:56:00	00:03:00	09:51:00	00:03:00	
11	09:59:00	00:14:00	09:54:00	00:04:00	
12	10:13:00	00:03:00	09:58:00	00:13:00	
13	10:16:00	00:06:00	10:11:00	00:07:00	
14	10:22:00	00:07:00	10:18:00	00:07:00	
15	10:29:00	00:05:00	10:25:00	00:04:00	
16	10:34:00	00:05:00	10:29:00	00:06:00	
17	10:39:00	00:03:00	10:35:00	00:03:00	
18	10:42:00	00:05:00	10:38:00	00:04:00	
19	10:47:00	00:02:00	10:42:00	00:03:00	
20	10:49:00	00:02:00	10:45:00	00:03:00	
21	10:51:00	00:02:00	10:48:00	00:03:00	
22	10:53:00	00:01:00	10:51:00	00:02:00	
23	10:54:00	00:01:00	10:53:00	00:01:00	
24	10:55:00	00:01:00	10:54:00	00:01:00	
25	10:56:00	00:01:00	10:55:00	00:01:00	
26	10:57:00	00:01:00	10:56:00	00:01:00	
27	10:58:00	00:01:00	10:57:00	00:01:00	
28	10:59:00	00:17:00	10:58:00	00:01:00	
29	11:16:00	00:10:00	10:59:00	00:09:00	
30	11:26:00	00:07:00	11:08:00	00:10:00	
31	11:33:00	00:05:00	11:18:00	00:06:00	
32	11:38:00	00:06:00	11:24:00	00:08:00	
33	11:44:00	00:05:00	11:32:00	00:07:00	
34	11:49:00	00:03:00	11:39:00	00:04:00	
35	11:52:00	00:03:00	11:43:00	00:04:00	
36	11:55:00	00:03:00	11:47:00	00:06:00	
37	11:58:00	00:01:00	11:53:00	00:02:00	
38	11:59:00	00:11:00	11:55:00	00:03:00	
39	12:10:00	00:20:00	11:58:00	00:26:00	
40	12:30:00	00:14:00	12:24:00	00:12:00	

41	12:44:00	00:14:00	12:36:00	00:12:00	
42	12:58:00	00:04:00	12:48:00	00:13:00	
43	13:02:00	00:01:00	13:01:00	00:01:00	
44	13:03:00	00:01:00	13:02:00	00:02:00	
45	13:04:00	00:02:00	13:04:00	00:01:00	
46	13:06:00	00:01:00	13:05:00	00:01:00	
47	13:07:00	00:02:00	13:06:00	00:02:00	
48	13:09:00	00:01:00	13:08:00	00:01:00	
49	13:10:00	00:01:00	13:09:00	00:01:00	
50	13:11:00	00:01:00	13:10:00	00:03:00	
51	13:12:00	00:01:00	13:13:00	00:02:00	
52	13:13:00	00:01:30	13:15:00	00:01:00	
53	13:14:30	00:00:30	13:16:00	00:01:00	
54	13:15:00	00:01:00	13:17:00	00:01:00	
55	13:16:00	00:01:00	13:18:00	00:01:00	
56	13:17:00	00:01:00	13:19:00	00:02:00	
57	13:18:00	00:01:00	13:21:00	00:02:00	
58	13:19:00	00:01:00	13:23:00	00:02:00	
59	13:20:00	00:02:00	13:25:00	00:02:00	
60	13:22:00	00:01:00	13:27:00	00:01:00	
61	13:23:00	00:01:00	13:28:00	00:02:00	
62	13:24:00	00:01:00	13:30:00	00:00:00	
63	13:25:00	00:01:00	13:30:00	00:00:00	
64	13:26:00	00:01:00	13:30:00	00:00:00	
65	13:27:00	00:01:00	13:30:00	00:01:00	
66	13:28:00	00:02:00	13:31:00	00:02:00	
67	13:30:00	00:01:00	13:33:00	00:01:00	
68	13:31:00	00:01:00	13:34:00	00:02:00	
69	13:32:00	00:01:00	13:36:00	00:01:00	
70	13:33:00	00:01:00	13:37:00	00:02:00	
71	13:34:00	00:01:00	13:39:00	00:02:00	
72	13:35:00	00:01:00	13:41:00	00:01:00	
73	13:36:00	00:01:00	13:42:00	00:01:00	
74	13:37:00	00:02:00	13:43:00	00:02:00	
75	13:39:00	00:01:00	13:45:00	00:01:00	
76	13:40:00	00:01:00	13:46:00	00:01:00	
77	13:41:00	00:01:00	13:47:00	00:01:00	
78	13:42:00	00:01:00	13:48:00	00:01:00	
79	13:43:00	00:01:00	13:49:00	00:01:00	
80	13:44:00	00:01:00	13:50:00	00:01:00	
81	13:45:00	00:01:00	13:51:00	00:01:00	
82	13:46:00	00:01:00	13:52:00	00:01:00	
83	13:47:00	00:01:00	13:53:00	00:01:00	
84	13:48:00	00:01:00	13:54:00	00:02:00	
85	13:49:00	00:01:00	13:56:00	00:01:00	
86	13:50:00	00:01:00	13:57:00	00:01:00	
87	13:51:00	00:01:00	13:58:00	00:01:00	
88	13:52:00	00:01:00	13:59:00	00:09:00	
89	13:53:00	00:02:00	14:08:00	00:15:00	
90	13:55:00	00:01:00	14:23:00	00:08:00	

91	13:56:00	00:02:00	14:31:00	00:14:00	
92	13:58:00	00:40:00	14:45:00	00:03:00	
93	13:38:00	00:02:00	14:48:00	00:04:00	
94	13:40:00	00:01:00	14:52:00	00:03:00	
95	13:41:00	00:01:00	14:55:00	00:01:00	
96	13:42:00	00:04:00	14:56:00	00:01:00	
97	13:46:00	00:06:00	14:57:00	00:02:00	
98	13:52:00	00:04:00	14:59:00	00:20:00	
99	13:56:00	00:02:00	15:19:00	00:07:00	
100	13:58:00	00:40:00	15:26:00	00:05:00	
101	13:38:00	00:02:00	15:31:00	00:06:00	
102	13:40:00	00:01:00	15:37:00	00:03:00	
103	13:41:00	00:01:00	15:40:00	00:02:00	
104	13:42:00	00:04:00	15:42:00	00:05:00	
105	13:46:00	00:06:00	15:47:00	00:03:00	
106	13:52:00	00:18:00	15:50:00		
107	14:10:00	00:12:00			
108	14:22:00	00:09:00			
109	14:31:00	00:07:00			
110	14:38:00	00:06:00			
111	14:44:00	00:05:00			
112	14:49:00	00:03:00			
113	14:52:00	00:02:00			
114	14:54:00	00:04:00			
115	14:58:00	00:07:00			
116	15:05:00	00:11:00			
117	15:16:00	00:08:00			
118	15:24:00	00:06:00			
119	15:30:00	00:10:00			
120	15:40:00	00:05:00			
121	15:45:00	00:06:00			
122	15:51:00	00:03:00			
123	15:54:00	00:03:00			
124	15:57:00				

	Wednesday 13th		Thursday 14th		
Customer	Arrival Time	Time between arrivals	Arrival Time	Time between arrivals	Note
1	08:22:00	00:07:00	08:23:00	00:04:00	
2	08:29:00	00:02:00	08:27:00	00:08:00	
3	08:31:00	00:29:00	08:35:00	00:35:00	
4	09:00:00	00:33:00	09:10:00	00:14:00	
5	09:33:00	00:04:00	09:24:00	00:12:00	
6	09:37:00	00:09:00	09:36:00	00:03:00	
7	09:46:00	00:02:00	09:39:00	00:03:00	
8	09:48:00	00:05:00	09:42:00	00:04:00	
9	09:53:00	00:03:00	09:46:00	00:05:00	
10	09:56:00	00:03:00	09:51:00	00:03:00	
11	09:59:00	00:14:00	09:54:00	00:04:00	
12	10:13:00	00:03:00	09:58:00	00:13:00	
13	10:16:00	00:06:00	10:11:00	00:07:00	
14	10:22:00	00:07:00	10:18:00	00:07:00	
15	10:29:00	00:05:00	10:25:00	00:04:00	
16	10:34:00	00:05:00	10:29:00	00:06:00	
17	10:39:00	00:03:00	10:34:00	00:05:00	
18	10:42:00	00:05:00	10:39:00	00:03:00	
19	10:47:00	00:02:00	10:42:00	00:05:00	
20	10:49:00	00:02:00	10:47:00	00:02:00	
21	10:51:00	00:02:00	10:49:00	00:02:00	
22	10:53:00	00:01:00	10:51:00	00:02:00	
23	10:54:00	00:01:00	10:53:00	00:01:00	
24	10:55:00	00:01:00	10:54:00	00:01:00	
25	10:56:00	00:01:00	10:55:00	00:01:00	
26	10:57:00	00:01:00	10:56:00	00:01:00	
27	10:58:00	00:01:00	10:57:00	00:01:00	
28	10:59:00	00:17:00	10:58:00	00:01:00	
29	11:16:00	00:10:00	10:59:00	00:09:00	
30	11:26:00	00:07:00	11:08:00	00:10:00	
31	11:33:00	00:05:00	11:18:00	00:06:00	
32	11:38:00	00:06:00	11:24:00	00:02:00	
33	11:44:00	00:05:00	11:26:00	00:07:00	
34	11:49:00	00:03:00	11:33:00	00:05:00	
35	11:52:00	00:03:00	11:38:00	00:06:00	
36	11:55:00	00:03:00	11:44:00	00:05:00	
37	11:58:00	00:01:00	11:49:00	00:03:00	
38	11:59:00	00:11:00	11:52:00	00:03:00	
39	12:10:00	00:20:00	11:55:00	00:03:00	
40	12:30:00	00:14:00	11:58:00	00:01:00	
41	12:44:00	00:14:00	11:59:00	00:11:00	
42	12:58:00	00:04:00	12:10:00	00:20:00	
43	13:02:00	00:01:00	12:30:00	00:14:00	
44	13:03:00	00:01:00	12:44:00	00:20:00	
45	13:04:00	00:02:00	13:04:00	00:01:00	
46	13:06:00	00:01:00	13:05:00	00:01:00	

47	13:07:00	00:02:00	13:06:00	00:02:00	
48	13:09:00	00:01:00	13:08:00	00:01:00	
49	13:10:00	00:01:00	13:09:00	00:01:00	
50	13:11:00	00:01:00	13:10:00	00:03:00	
51	13:12:00	00:01:00	13:13:00	00:02:00	
52	13:13:00	00:01:30	13:15:00	00:01:00	
53	13:14:30	00:00:30	13:16:00	00:01:00	
54	13:15:00	00:01:00	13:17:00	00:01:00	
55	13:16:00	00:01:00	13:18:00	00:01:00	
56	13:17:00	00:01:00	13:19:00	00:02:00	
57	13:18:00	00:01:00	13:21:00	00:02:00	
58	13:19:00	00:01:00	13:23:00	00:02:00	
59	13:20:00	00:02:00	13:25:00	00:02:00	
60	13:22:00	00:01:00	13:27:00	00:01:00	
61	13:23:00	00:01:00	13:28:00	00:02:00	
62	13:24:00	00:01:00	13:30:00	00:00:00	
63	13:25:00	00:01:00	13:30:00	00:00:00	
64	13:26:00	00:01:00	13:30:00	00:00:00	
65	13:27:00	00:01:00	13:30:00	00:01:00	
66	13:28:00	00:02:00	13:31:00	00:02:00	
67	13:30:00	00:01:00	13:33:00	00:01:00	
68	13:31:00	00:01:00	13:34:00	00:02:00	
69	13:32:00	00:01:00	13:36:00	00:01:00	
70	13:33:00	00:01:00	13:37:00	00:02:00	
71	13:34:00	00:01:00	13:39:00	00:02:00	
72	13:35:00	00:01:00	13:41:00	00:01:00	
73	13:36:00	00:01:00	13:42:00	00:01:00	
74	13:37:00	00:02:00	13:43:00	00:02:00	
75	13:39:00	00:01:00	13:45:00	00:01:00	
76	13:40:00	00:01:00	13:46:00	00:01:00	
77	13:41:00	00:01:00	13:47:00	00:01:00	
78	13:42:00	00:01:00	13:48:00	00:01:00	
79	13:43:00	00:01:00	13:49:00	00:01:00	
80	13:44:00	00:01:00	13:50:00	00:01:00	
81	13:45:00	00:01:00	13:51:00	00:01:00	
82	13:46:00	00:01:00	13:52:00	00:01:00	
83	13:47:00	00:01:00	13:53:00	00:01:00	
84	13:48:00	00:01:00	13:54:00	00:02:00	
85	13:49:00	00:01:00	13:56:00	00:01:00	
86	13:50:00	00:01:00	13:57:00	00:01:00	
87	13:51:00	00:01:00	13:58:00	00:01:00	
88	13:52:00	00:01:00	13:59:00	00:09:00	
89	13:53:00	00:02:00	14:08:00	00:15:00	
90	13:55:00	00:01:00	14:23:00	00:08:00	
91	13:56:00	00:02:00	14:31:00	00:14:00	
92	13:58:00	00:40:00	14:45:00	00:03:00	
93	13:38:00	00:02:00	14:48:00	00:04:00	
94	13:40:00	00:01:00	14:52:00	00:03:00	
95	13:41:00	00:01:00	14:55:00	00:01:00	
96	13:42:00	00:04:00	14:56:00	00:01:00	

97	13:46:00	00:06:00	14:57:00	00:02:00	
98	13:52:00	00:04:00	14:59:00		
99	13:56:00	00:02:00			
100	13:58:00	00:40:00			
101	13:38:00	00:02:00			
102	13:40:00	00:01:00			
103	13:41:00	00:01:00			
104	13:42:00	00:04:00			
105	13:46:00	00:06:00			
106	13:52:00	00:18:00			
107	14:10:00	00:12:00			
108	14:22:00	00:09:00			
109	14:31:00	00:07:00			
110	14:38:00	00:06:00			
111	14:44:00	00:05:00			
112	14:49:00	00:03:00			
113	14:52:00	00:02:00			
114	14:54:00	00:04:00			
115	14:58:00	00:07:00			
116	15:05:00				

# Simulation of Brunel Distribution Centre

*Collection of Data - Time between arrivals - Storage*

*Box model - [Storage of parcels (Parcels area)]*

*Last updated 2/11/2014*

Item	Time	Monday 17th	Time	Tuesday 18th	Note
1	08:35:00	00:00:10	08:40:00	00:00:10	
2	08:35:10	00:00:05	08:40:10	00:00:26	
3	08:35:15	00:00:04	08:40:36	00:00:43	
4	08:35:19	00:00:05	08:41:19	00:00:25	
5	08:35:24	00:00:08	08:41:44	00:01:28	
6	08:35:32	00:00:13	08:43:12	00:00:43	
7	08:35:45	00:02:20	08:43:55	00:00:10	
8	08:38:05	00:00:10	08:44:05	00:00:26	
9	08:38:15	00:00:10	08:44:31	00:00:18	
10	08:38:25	00:00:35	08:44:49	00:00:14	
11	08:39:00	00:00:30	08:45:03	00:00:53	
12	08:39:30	00:00:31	08:45:56	00:00:15	
13	08:40:01	00:02:11	08:46:11	00:00:27	
14	08:42:12	00:00:18	08:46:38	00:00:19	
15	08:42:30	00:00:24	08:46:57	00:00:13	
16	08:42:54	00:00:21	08:47:10	00:00:36	
17	08:43:15	00:00:45	08:47:46	00:00:16	
18	08:44:00	00:00:12	08:48:02		*NOTAPP
19	08:44:12	00:00:15	09:32:05	00:00:11	
20	08:44:27	00:00:35	09:32:16	00:00:22	
21	08:45:02		09:32:38	00:00:16	*NOTAPP
22	09:35:00	00:00:10	09:32:54	00:00:13	
23	09:35:10	00:00:08	09:33:07	00:00:32	
24	09:35:18	00:00:07	09:33:39	00:00:15	
25	09:35:25	00:00:40	09:33:54	00:00:51	
26	09:36:05	00:00:33	09:34:45	00:00:21	
27	09:36:38	00:00:12	09:35:06	00:00:22	
28	09:36:50	00:00:10	09:35:28	00:00:35	
29	09:37:00	00:00:11	09:36:03	00:00:38	
30	09:37:11	00:00:15	09:36:41	00:00:34	
31	09:37:26	00:00:38	09:37:15	00:01:34	
32	09:38:04	00:00:03	09:38:49	00:00:27	
33	09:38:07	00:00:37	09:39:16	00:00:39	
34	09:38:44	00:00:24	09:39:55	00:00:28	
35	09:39:08	00:01:01	09:40:23	00:00:33	
36	09:40:09	00:00:07	09:40:56	00:00:11	
37	09:40:16	00:00:07	09:41:07	00:01:25	
38	09:40:23	00:00:36	09:42:32	00:00:28	
39	09:40:59	00:00:08	09:43:00	00:00:51	
40	09:41:07	00:00:35	09:43:51	00:00:29	
41	09:41:42	00:00:13	09:44:20	00:00:26	
42	09:41:55	00:00:08	09:44:46	00:00:38	



43	09:42:03	00:00:17	09:45:24	00:00:29	
44	09:42:20	00:00:14	09:45:53	00:00:25	
45	09:42:34	00:00:18	09:46:18	00:00:30	
46	09:42:52	00:00:07	09:47:48	00:00:16	
47	09:42:59	00:00:08	09:48:04	00:00:33	
48	09:43:07	00:00:08	09:48:37	00:00:33	
49	09:43:48	00:00:16	09:49:10	00:00:43	
50	09:44:04	00:00:24	09:49:53	00:00:48	
51	09:44:28	00:00:38	09:50:41	00:00:45	
52	09:45:06	00:00:14	09:51:36	00:00:43	
53	09:45:20	00:00:31	09:52:19	00:00:43	
54	09:45:51	00:00:11	09:53:02	00:01:15	
55	09:46:02	00:00:17	09:54:17	00:01:08	
56	09:46:19	00:00:07	09:55:25	00:00:43	
57	09:46:26	00:08:53	09:56:08	00:00:36	
58	09:55:19		09:56:44	00:00:29	*NOTAPP
59	10:35:00	00:00:18	09:57:13		*NOTAPP
60	10:35:18	00:00:15	10:38:12	00:00:24	
61	10:35:33	00:00:24	10:38:36	00:00:25	
62	10:35:57	00:00:15	10:39:01	00:00:44	
63	10:36:12	00:00:14	10:39:45	00:00:43	
64	10:36:26	00:00:13	10:40:28	00:00:25	
65	10:36:39	00:00:36	10:40:53	00:00:23	
66	10:37:15	00:00:23	10:41:16	00:00:31	
67	10:37:38	00:00:25	10:41:47	00:00:19	
68	10:38:03	00:00:13	10:42:06	00:00:52	
69	10:38:16	00:00:13	10:42:58	00:00:14	
70	10:38:29	00:00:25	10:43:12	00:00:45	
71	10:38:54	00:00:15	10:43:57	00:00:26	
72	10:39:09	00:00:38	10:44:23	00:00:32	
73	10:39:47	00:00:19	10:44:55	00:00:22	
74	10:40:06	00:00:17	10:45:17	00:00:36	
75	10:40:23	00:00:55	10:45:53	00:00:23	
76	10:41:18	00:00:11	10:46:16	00:00:33	
77	10:41:29	00:00:35	10:46:49	00:00:22	
78	10:42:04	00:00:12	10:47:11	00:01:17	
79	10:42:16	00:00:33	10:48:28	00:00:18	
80	10:42:49	00:00:22	10:48:46	00:00:09	
81	10:43:11	00:00:17	10:48:55	00:00:14	
82	10:43:28	00:00:18	10:49:09	00:00:23	
83	10:43:46	00:01:09	10:49:32	00:00:19	
84	10:44:55	00:00:14	10:49:51	00:00:15	
85	10:45:09	00:00:23	10:50:06	00:00:38	
86	10:45:32	00:00:19	10:50:44	00:00:25	
87	10:45:51	00:00:15	10:51:09	00:00:27	
88	10:46:06	00:00:38	10:51:36	00:00:53	
89	10:46:44	00:00:25	10:52:29	00:00:33	
90	10:47:09	00:00:27	10:53:02	00:00:24	
91	10:47:36	00:00:53	10:53:26	00:00:31	
92	10:48:29	00:00:33	10:53:57	00:00:11	

93	10:49:02	00:00:24	10:54:08	00:00:16	
94	10:49:26	00:00:31	10:54:24	00:00:25	
95	10:49:57	00:00:11	10:54:49	00:00:14	
96	10:50:08	00:00:16	10:55:03	00:00:21	
97	10:50:24	00:00:25	10:55:24	00:00:23	
98	10:50:49	00:00:14	10:55:47	00:00:29	
99	10:51:03	00:00:21	10:56:16	00:00:37	
100	10:51:24	00:00:23	10:56:53	00:00:08	
101	10:51:47	00:00:29	10:57:01	00:00:45	
102	10:52:16	00:00:37	10:57:46	00:00:53	
103	10:52:53	00:00:08	10:58:39	00:00:38	
104	10:53:01		10:59:17	00:00:41	*NOTAPP
105	11:34:29	00:01:10	10:59:58		*NOTAPP
106	11:35:39	00:00:38	11:36:48	00:00:17	
107	11:36:17	00:00:19	11:37:05	00:00:20	
108	11:36:36	00:00:12	11:37:25	00:00:21	
109	11:36:48	00:00:17	11:37:46	00:00:25	
110	11:37:05	00:00:19	11:38:11	00:00:30	
111	11:37:24	00:00:32	11:38:41	00:00:28	
112	11:37:56	00:00:21	11:39:09	00:00:35	
113	11:38:17	00:00:34	11:39:44	00:00:12	
114	11:38:51	00:00:12	11:39:56	00:00:14	
115	11:39:03	00:00:21	11:40:10	00:00:45	
116	11:39:24	00:00:32	11:40:55	00:00:18	
117	11:39:56	00:00:14	11:41:13	00:00:30	
118	11:40:10	00:00:35	11:41:43	00:00:38	
119	11:40:45	00:00:24	11:42:21	00:00:35	
120	11:41:09	00:00:24	11:42:56	00:00:58	
121	11:41:33	00:00:35	11:43:54	00:00:58	
122	11:42:08	00:00:18	11:43:27	00:00:27	
123	11:42:26	00:00:28	11:43:54	00:00:50	
124	11:42:54	00:00:17	11:44:44	00:00:18	
125	11:43:11	00:00:11	11:44:02	00:00:35	
126	11:43:22	00:00:22	11:44:37	00:00:26	
127	11:43:44	00:00:18	11:45:03	00:00:18	
128	11:44:02	00:00:35	11:45:21	00:00:31	
129	11:44:37	00:00:26	11:45:52	00:00:16	
130	11:45:03	00:00:18	11:46:08	00:00:24	
131	11:45:21	00:00:31	11:46:32	00:00:27	
132	11:45:52	00:00:16	11:46:59	00:00:07	
133	11:46:08	00:00:14	11:47:06	00:00:33	
134	11:46:22	00:00:26	11:47:39	00:00:19	
135	11:46:48	00:00:15	11:47:58	00:00:36	
136	11:47:03	00:00:16	11:48:34	00:01:23	
137	11:47:19	00:00:23	11:49:57	00:00:29	
138	11:47:42	00:00:32	11:50:29	00:00:38	
139	11:48:14	00:00:33	11:50:58	00:00:31	
140	11:48:47	00:00:17	11:51:36	00:00:53	
141	11:49:04	00:00:14	11:52:07	00:01:38	
142	11:49:18	00:00:18	11:53:00	00:00:21	

143	11:49:36	00:00:31	11:54:38	00:00:18	
144	11:50:07	00:00:53	11:54:59	00:01:30	
145	11:51:00	00:00:38	11:55:17	00:00:51	
146	11:51:38	00:00:14	11:56:47	00:00:51	
147	11:51:52	00:00:12	11:57:38	00:00:32	
148	11:52:04	00:00:23	11:58:10		*NOTAPP
149	11:52:27	00:00:21	12:00:00	LUNCH BREAK	*NOTAPP
150	11:52:48	00:00:22			*NOTAPP
151	11:53:10	00:00:21	13:34:42	00:01:17	
152	11:53:31	00:00:36	13:35:59	00:00:32	
153	11:54:07	00:00:44	13:36:31	00:01:06	
154	11:54:51	00:01:09	13:37:37	00:00:45	
155	11:56:00		13:38:22	00:01:35	*NOTAPP
156	12:00:00	LUNCH BREAK	13:39:57	00:00:12	*NOTAPP
157			13:40:09	00:01:16	*NOTAPP
158	13:36:17	00:00:25	13:41:25	00:01:20	
159	13:36:42	00:00:17	13:42:45	00:00:23	
160	13:36:59	00:00:12	13:43:08	00:01:16	
161	13:37:11	00:00:26	13:44:24	00:01:25	
162	13:37:37	00:00:45	13:45:49	00:00:18	
163	13:38:22	00:00:22	13:46:07	00:01:49	
164	13:38:44	00:00:19	13:47:56	00:00:04	
165	13:39:03	00:00:22	13:48:00	00:00:26	
166	13:39:25	00:00:30	13:48:26	00:01:08	
167	13:39:55	00:00:13	13:49:34	00:00:44	
168	13:40:08	00:00:16	13:50:18	00:00:31	
169	13:40:24	00:00:25	13:50:49	00:00:22	
170	13:40:49	00:00:18	13:51:11	00:01:13	
171	13:41:07	00:00:39	13:52:24	00:01:32	
172	13:41:46		13:53:56		*NOTAPP
173	14:30:00	00:00:27	14:33:48	00:00:26	
174	14:30:27	00:00:36	14:34:14	00:00:33	
175	14:31:03	00:00:35	14:34:47	00:00:42	
176	14:31:38	00:00:26	14:35:29	00:01:17	
177	14:32:04	00:00:43	14:36:46	00:00:16	
178	14:32:47	00:00:22	14:37:02	00:01:17	
179	14:33:09	00:00:27	14:38:19	00:00:39	
180	14:33:36	00:00:22	14:38:58	00:00:43	
181	14:33:58	00:00:06	14:39:41	00:00:32	
182	14:34:04	00:00:54	14:40:13	00:01:43	
183	14:34:58	00:00:11	14:41:56	00:00:27	
184	14:35:09	00:00:37	14:42:23	00:01:07	
185	14:35:46	00:00:16	14:43:30	00:00:47	
186	14:36:02	00:00:17	14:44:17	00:01:34	
187	14:36:19	00:00:19	14:45:51	00:00:23	
188	14:36:38	00:01:03	14:46:14	00:01:19	
189	14:37:41	00:00:31	14:47:33	00:00:29	
190	14:38:12	00:00:44	14:48:02		*NOTAPP
191	14:38:56	00:00:27	15:24:45	00:00:16	
192	14:39:23	00:00:37	15:25:01	00:01:16	

193	14:40:00		15:26:17	00:00:45	*NOTAPP
194	15:20:17	00:00:34	15:27:02	00:01:07	
195	15:20:51	00:00:13	15:28:09	00:00:47	
196	15:21:04	00:00:35	15:28:56	00:00:38	
197	15:21:39	00:00:23	15:29:34	00:00:29	
198	15:22:02	00:00:43	15:30:03	00:01:26	
199	15:22:45	00:00:16	15:31:29	00:00:14	
200	15:23:01	00:01:16	15:31:43	00:00:17	
201	15:24:17	00:00:41	15:32:00	00:01:26	
202	15:24:58	00:00:11	15:33:26	00:01:19	
203	15:25:09	00:00:27	15:34:45	00:00:21	
204	15:25:36	00:00:28	15:35:06	00:00:28	
205	15:26:04	00:00:59	15:35:34	00:00:23	
206	15:27:03	00:00:26	15:35:57	00:00:23	
207	15:27:29	00:00:14	15:36:21		
208	15:27:43	00:00:17			
209	15:28:00	00:00:26			
210	15:28:26	00:00:19			
211	15:28:45	00:00:21			
212	15:29:06	00:00:28			
213	15:29:34	00:00:33			
214	15:30:07				

Item	Time	Wednesday 19th	Time	Thursday 20th	Note
1	08:37:00	00:00:20	08:28:08	00:00:22	
2	08:37:20	00:00:36	08:28:30	00:00:41	
3	08:37:56	00:00:23	08:29:11	00:00:38	
4	08:38:19	00:00:25	08:29:49	00:00:12	
5	08:38:44	00:00:38	08:30:01	00:00:31	
6	08:39:22	00:00:37	08:30:32	00:00:27	
7	08:39:59	00:00:08	08:30:59	00:00:18	
8	08:40:07	00:01:24	08:31:17	00:00:24	
9	08:41:31	00:01:27	08:31:41	00:00:27	
10	08:42:58	00:00:05	08:32:08	00:00:55	
11	08:43:03	00:01:23	08:33:03	00:00:43	
12	08:44:26	00:00:47	08:33:46	00:00:15	
13	08:45:13	00:00:35	08:34:01	00:00:46	
14	08:45:48	00:00:19	08:34:47	00:00:17	
15	08:46:07	00:01:23	08:35:04	00:00:35	
16	08:47:30	00:00:26	08:35:39	00:00:28	
17	08:47:56	00:00:08	08:36:07	00:00:53	
18	08:48:04	00:00:32	08:37:00	00:00:35	
19	08:48:36	00:00:32	08:37:35	00:00:23	
20	08:49:08	00:00:55	08:37:58		*NOTAPP
21	08:50:03		09:31:05	00:00:23	*NOTAPP
22	09:26:05	00:01:11	09:31:28	00:00:20	
23	09:27:16	00:00:22	09:31:48	00:00:16	
24	09:27:38	00:00:21	09:32:04	00:00:53	
25	09:27:59	00:00:18	09:32:57	00:00:07	

26	09:28:17	00:00:24	09:33:04	00:00:42	
27	09:28:41	00:01:13	09:33:46	00:00:19	
28	09:29:54	00:00:12	09:34:05	00:00:22	
29	09:30:06	00:01:20	09:34:27	00:00:22	
30	09:31:26	00:00:22	09:34:49	00:00:13	
31	09:31:48	00:00:15	09:35:02	00:00:37	
32	09:32:03	00:01:38	09:35:39	00:00:16	
33	09:33:41	00:00:44	09:35:55	00:00:24	
34	09:34:25	00:00:44	09:36:19	00:00:43	
35	09:35:09	00:01:19	09:37:02	00:00:43	
36	09:36:28	00:00:37	09:37:45	00:00:26	
37	09:37:05	00:00:34	09:38:11	00:00:25	
38	09:37:39	00:00:47	09:38:36	00:00:21	
39	09:38:26	00:00:31	09:38:57	00:00:15	
40	09:38:57	00:00:35	09:39:12	00:00:48	
41	09:39:32	00:00:28	09:40:00	00:00:36	
42	09:40:00	00:00:41	09:40:36	00:00:43	
43	09:40:41	00:00:38	09:41:19	00:00:27	
44	09:41:19	00:01:17	09:41:46	00:00:28	
45	09:42:36	00:00:38	09:42:14	00:00:49	
46	09:43:14	00:01:39	09:43:03	00:00:46	
47	09:44:53	00:00:13	09:43:49	00:00:18	
48	09:45:06	00:00:30	09:44:07	00:00:29	
49	09:45:38	00:00:25	09:44:36	00:00:27	
50	09:46:03	00:01:34	09:45:03	00:00:57	
51	09:47:37	00:00:33	09:46:00	00:00:23	
52	09:48:10	00:01:43	09:46:23	00:00:45	
53	09:49:53	00:00:48	09:47:08	00:00:33	
54	09:50:41	00:00:45	09:47:41	00:00:18	
55	09:51:11	00:00:43	09:47:59		*NOTAPP
56	09:52:09	00:01:04	10:38:13	00:00:42	
57	09:53:13	00:00:44	10:38:55	00:00:07	
58	09:53:57	00:00:28	10:39:02	00:00:36	
59	09:54:25	00:01:33	10:39:38	00:00:16	
60	09:55:58	00:00:16	10:39:54	00:00:11	
61	09:56:14	00:00:29	10:40:05	00:00:24	
62	09:56:43	00:00:29	10:40:29	00:00:27	
63	09:57:12	00:00:34	10:40:56	00:00:17	
64	09:57:46	00:00:23	10:41:13		*NOTAPP
65	09:58:09		10:41:49	00:00:21	*NOTAPP
66	10:29:45	00:00:33	10:42:10	00:00:25	
67	10:30:18	00:00:37	10:42:35	00:00:22	
68	10:30:55	00:00:22	10:42:57	00:00:14	
69	10:31:17	00:00:32	10:43:11	00:00:25	
70	10:31:49	00:00:19	10:43:36	00:00:23	
71	10:32:08	00:00:46	10:43:59	00:00:38	
72	10:32:54	00:00:13	10:44:37	00:00:39	
73	10:33:07	00:00:49	10:45:16	00:00:27	
74	10:33:56	00:00:27	10:45:43	00:00:43	
75	10:34:23	00:00:32	10:46:26	00:00:30	

76	10:34:55	00:00:28	10:46:56	00:00:37	
77	10:35:23	00:00:35	10:47:33	00:00:37	
78	10:35:58	00:00:18	10:48:10	00:00:34	
79	10:36:16	00:00:28	10:48:44	00:00:26	
80	10:36:44	00:00:26	10:49:10	00:00:41	
81	10:37:10	00:00:36	10:49:51	00:00:41	
82	10:37:46	00:00:46	10:50:32	00:00:27	
83	10:38:32	00:00:21	10:50:59	00:00:35	
84	10:38:53	00:00:11	10:51:34	00:00:44	
85	10:39:04	00:00:34	10:52:18	00:00:29	
86	10:39:38	00:00:23	10:52:47	00:00:16	
87	10:40:01	00:00:35	10:53:03	00:00:46	
88	10:40:36	00:00:37	10:53:49	00:00:18	
89	10:41:13	00:00:46	10:54:07	00:00:37	
90	10:41:59	00:00:17	10:54:44	00:01:05	
91	10:42:16	00:00:37	10:55:49	00:00:18	
92	10:42:53	00:00:34	10:56:07	00:00:29	
93	10:43:27	00:00:39	10:56:36	00:00:32	
94	10:44:06	00:01:01	10:57:08	00:00:50	
95	10:45:07	00:00:51	10:57:58	00:00:03	
96	10:45:58	00:00:26	10:58:01	00:00:48	
97	10:46:24	00:00:25	10:58:49	00:00:16	
98	10:46:49	00:00:20	10:59:05		*NOTAPP
99	10:47:09	00:00:35	11:36:44	00:00:27	
100	10:47:44	00:00:28	11:37:11	00:00:37	
101	10:48:12	00:00:36	11:37:48	00:00:15	
102	10:48:48	00:00:15	11:38:03	00:00:43	
103	10:49:03	00:00:44	10:38:46	00:00:44	
104	10:49:47	00:00:43	10:39:30	00:00:24	
105	10:50:30	00:00:29	10:39:54	00:00:22	
106	10:50:59	00:00:18	10:40:16	01:00:43	
107	10:51:17		11:40:59	00:00:09	*NOTAPP
108	11:29:58		11:41:08	00:00:27	*NOTAPP
109	11:30:48	00:00:17	11:41:35	00:00:50	
110	11:31:05	00:00:20	11:42:25	00:00:21	
111	11:31:25	00:01:21	11:42:46	00:00:25	
112	11:32:46	00:00:25	11:43:11	00:00:30	
113	11:33:11	00:00:30	11:43:41	00:00:28	
114	11:33:41	00:00:28	11:44:09	00:00:35	
115	11:34:09	00:01:35	11:44:44	00:00:15	
116	11:35:44	00:00:15	11:44:59	00:00:11	
117	11:35:59	00:00:11	11:45:10	00:00:26	
118	11:36:10	00:00:37	11:45:36	00:00:31	
119	11:36:47	00:00:16	11:46:07	00:00:37	
120	11:37:03	00:00:41	11:46:44	00:00:38	
121	11:37:44	00:00:38	11:47:22	00:00:37	
122	11:38:22	00:00:37	11:47:59	00:00:28	
123	11:38:59	00:00:28	11:48:27	00:00:32	
124	11:39:27	00:00:32	11:48:59	00:00:12	
125	11:39:59	00:00:12	11:49:11	00:00:23	

126	11:40:11	00:00:23	11:49:34	00:00:21	
127	11:40:34	00:00:21	11:49:55	00:00:42	
128	11:40:55	00:00:42	11:50:37	00:00:26	
129	11:41:37	00:00:26	11:51:03	00:00:26	
130	11:42:03	00:00:26	11:51:29	00:00:27	
131	11:42:29	00:00:27	11:51:56	00:00:12	
132	11:42:56	00:00:12	11:52:08	00:00:34	
133	11:43:08	00:00:34	11:52:42	00:00:27	
134	11:43:42	00:00:27	11:53:09	00:00:37	
135	11:44:09	00:00:57	11:53:46	00:00:27	
136	11:45:06	00:01:33	11:54:13	00:00:44	
137	11:46:39	00:00:18	11:54:57	00:00:37	
138	11:46:57	00:00:37	11:55:34	00:00:21	
139	11:47:34	00:00:30	11:55:55	00:00:24	
140	11:48:04	00:01:15	11:56:19	00:00:38	
141	11:49:19	00:00:38	11:56:57	00:00:19	
142	11:49:57	00:00:19	11:57:16	00:00:31	
143	11:50:16	00:01:31	11:57:47	00:00:13	
144	11:51:47	00:00:13	11:58:00		*NOTAPP
145	11:52:00	00:00:38	12:00:00	LUNCH BREAK	*NOTAPP
146	11:52:38	00:00:41			*NOTAPP
147	11:53:19	00:00:48	13:28:07	13:28:44	
148	11:54:07	00:00:40	13:28:44	13:29:09	
149	11:54:47	00:00:51	13:29:09	13:29:53	
150	11:55:38	00:00:21	13:29:53	13:30:20	
151	11:55:59	00:00:21	13:30:20	13:30:58	
152	11:56:20		13:30:58	13:31:04	*NOTAPP
153	12:00:00	LUNCH BREAK	13:31:04	13:31:42	*NOTAPP
154			13:31:42	13:31:59	*NOTAPP
155	13:39:42	00:00:17	13:31:59	13:32:31	
156	13:39:59	00:00:32	13:32:31	13:32:57	
157	13:40:31	00:00:26	13:32:57	13:33:12	
158	13:40:57	00:00:15	13:33:12	13:33:58	
159	13:41:12	00:00:11	13:33:58	13:34:09	
160	13:41:58	00:01:16	13:34:09	13:34:25	
161	13:42:09	00:00:24	13:34:25	13:34:59	
162	13:43:25	00:00:19	13:34:59	13:35:08	
163	13:43:49	00:00:36	13:35:08	13:35:44	
164	13:44:08	00:00:25	13:35:44	13:36:09	
165	13:44:44	00:00:28	13:36:09	13:36:37	
166	13:45:09	00:00:24	13:36:37	13:37:01	
167	13:45:37	00:00:39	13:37:01	13:37:40	
168	13:46:01	00:00:46	13:37:40	13:38:26	
169	13:46:40	00:00:18	13:38:26	13:38:44	
170	13:47:26	00:00:34	13:38:44	13:39:18	
171	13:47:44	00:00:31	13:39:18	13:40:49	
172	13:48:18	00:00:17	13:40:49	13:41:06	
173	13:48:49	00:01:18	13:41:06		*NOTAPP
174	13:49:06	00:00:32	14:39:24	00:00:32	
175	13:50:24	00:40:27	14:39:56	00:00:27	

176	13:50:56	00:00:51	14:40:23	00:00:31	
177	14:31:23	00:00:51	14:40:54	00:00:15	
178	14:32:14	00:00:35	14:41:09	00:00:38	
179	14:32:49	00:00:18	14:41:47	00:00:57	
180	14:33:07	00:00:37	14:42:44	00:00:19	
181	14:33:44	00:00:19	14:43:03	00:00:46	
182	14:34:03	00:00:46	14:43:49	00:00:11	
183	14:34:49	00:00:11	14:44:00	00:00:21	
184	14:35:00	00:00:21	14:44:21	00:00:32	
185	14:35:21	00:00:32	14:44:53	00:00:13	
186	14:35:53	00:00:13	14:45:06	00:00:17	
187	14:36:06	00:00:17	14:45:23	00:01:07	
188	14:36:23	00:01:07	14:46:30	00:00:49	
189	14:37:30	00:00:47	14:47:19	00:00:32	
190	14:38:17	00:00:34	14:47:51	00:02:23	
191	14:38:51	00:00:23	14:50:14	00:00:39	
192	14:39:14	00:00:19	14:50:53	00:00:09	
193	14:39:33	00:00:29	14:51:02		*NOTAPP
194	14:40:02		15:21:45	00:00:16	*NOTAPP
195	15:37:45	00:00:16	15:22:01	00:00:16	
196	15:38:01	00:00:16	15:22:17	00:00:35	
197	15:38:17	00:00:35	15:22:52	00:00:16	
198	15:38:52	00:00:16	15:23:08	00:00:38	
199	15:39:08	00:00:38	15:23:46	00:00:28	
200	15:39:46	00:00:28	15:24:14	00:00:31	
201	15:40:14	00:00:31	15:24:45	00:00:34	
202	15:40:45	00:00:34	15:25:19	00:00:28	
203	15:41:19	00:00:28	15:25:47	00:00:13	
204	15:41:47	00:00:13	15:26:00	00:00:28	
205	15:42:00	00:00:28	15:26:28	00:01:27	
206	15:42:28	00:00:27	15:27:55	00:00:16	
207	15:42:55	00:00:16	15:28:11	00:00:28	
208	15:43:11	00:00:28	15:28:39	00:01:19	
209	15:43:39	00:00:19	15:29:58	00:00:19	
210	15:43:58	00:00:23	15:30:21	00:00:38	
211	15:44:21	00:00:38	15:30:59		
212	15:44:59				

Item	Time	Friday 21st			Note
1	08:25:56	00:00:28			
2	08:26:24	00:00:47			
3	08:27:11	00:00:47			
4	08:27:58	00:00:18			
5	08:28:16	00:01:16			
6	08:29:32	00:01:09			
7	08:30:41	00:00:36			
8	08:31:17	00:00:38			
9	08:31:55	00:00:14			
10	08:32:09	00:00:48			



11	08:32:57	00:00:29			
12	08:33:26	00:00:33			
13	08:33:59	00:00:11			
14	08:34:10	00:00:50			
15	08:35:00	00:00:29			
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36	09:45:49	00:00:42			
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38	09:47:02	00:00:54			
39	09:47:56	00:00:23			
40	09:48:19	00:00:41			
41	09:49:00	00:00:54			
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