



CHART 2004 Evaluation and Comparison

- Yearly Performance Comparison -

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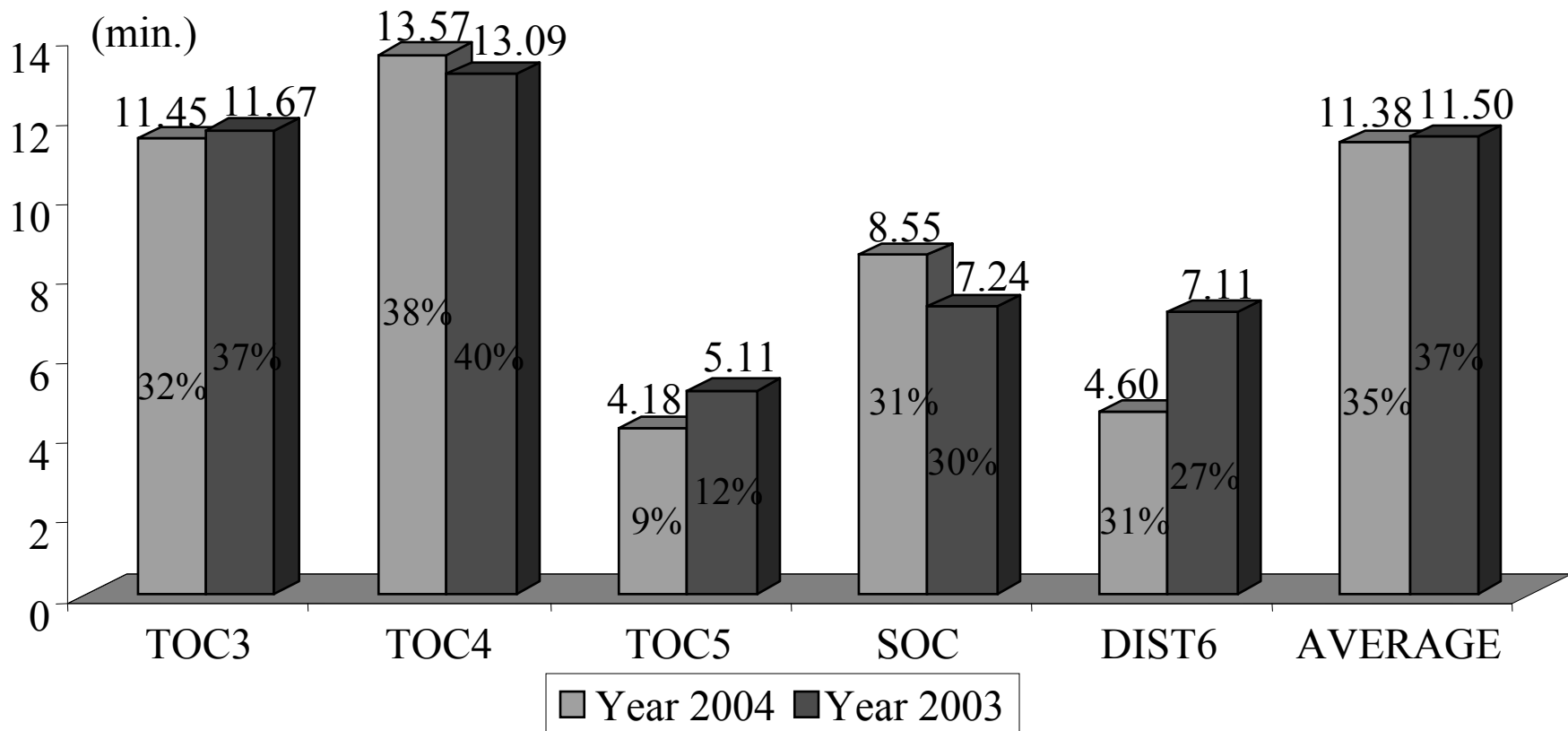
Response Time by Operations Center

Year 2004 v.s. Year 2003

Response Time = Arrival Time – Received Time

Response Time

(min.)

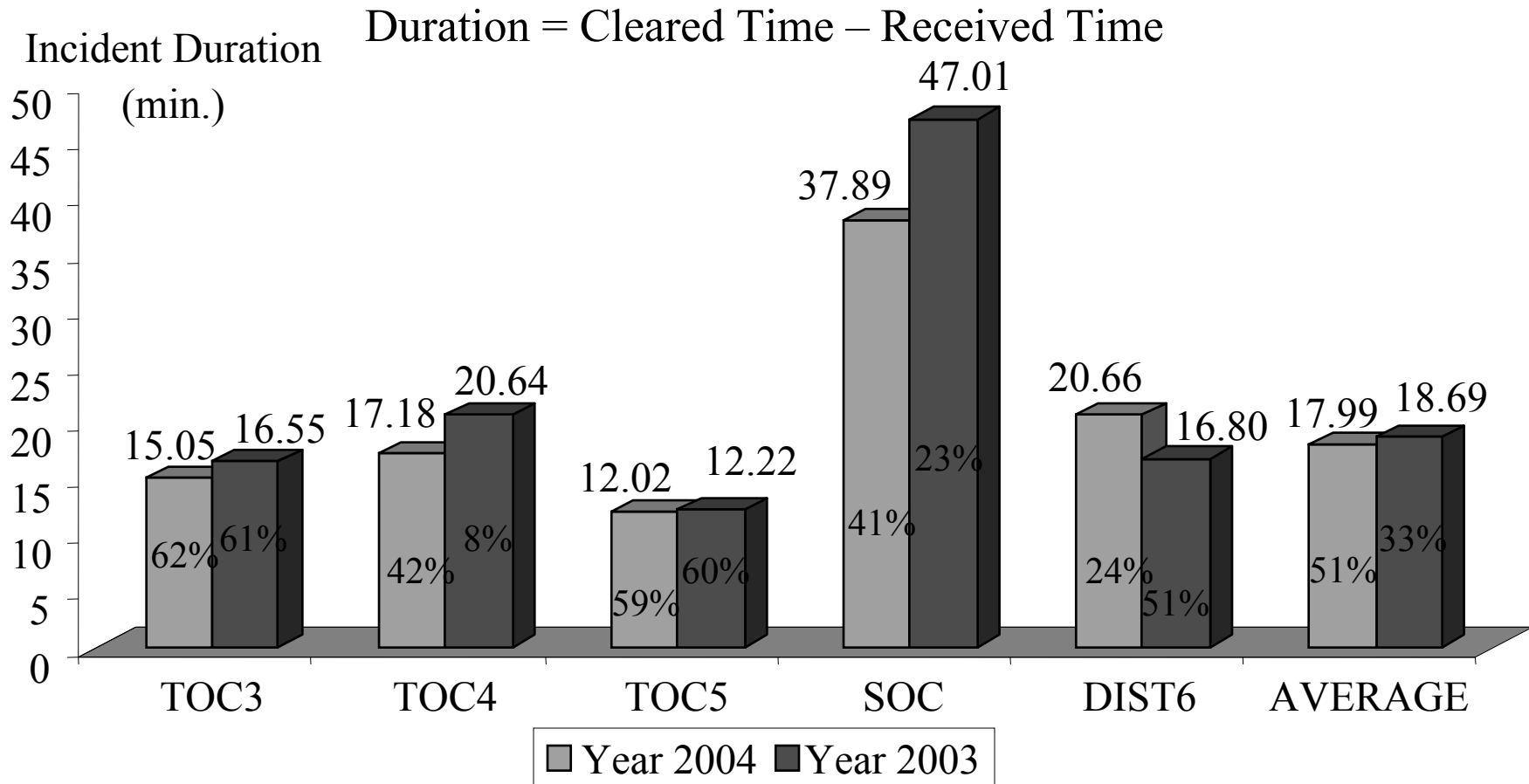


Note: 1. Only use data with Response time \geq 60 seconds and \leq 1 hours.

2. The percentage shows the amount of data available for computing the Response Time.

Duration by Operations Center

Year 2004 v.s. Year 2003



Note: 1. Only use data with Response time \geq 60 seconds and \leq 1 hours.

2. The percentage shows the amount of data available for computing the Duration.



Comparison of Clearance Time

$$\text{Clearance Time} = \text{Cleared Time} - \text{Arrival Time}$$

	With CHART			Without CHART		
	Incident	Disabled Vehicle	Total	Incident	Disabled Vehicle	Total
All Cases with Clearance Time \leq 2h	16.78 (7,949)	6.78 (11,928)	10.78 (19,877)	21.47 (1,522)	8.39 (871)	16.71 (2,393)
Cases with Clearance Time \geq 30s and \leq 2h	20.93 (6,356)	8.07 (9,969)	13.08 (16,325)	23.49 (1,390)	10.23 (710)	19.01 (2,100)
Cases with Clearance Time \geq 60s and \leq 2h	22.94 (5,783)	9.51 (8,335)	15.01 (14,118)	24.25 (1,345)	12.35 (581)	20.66 (1,926)
Cases with Clearance Time \geq 90s and \leq 2h	24.19 (5,468)	10.43 (7,500)	16.23 (12,968)	24.77 (1,315)	13.60 (522)	21.60 (1,837)

- Note: 1. Excluding outlier data with clearance time $>$ 2 hour.
 2. The number in each parenthesis shows the number of data available for computing the Clearance Time.



Comparison of Duration

Duration = Cleared Time – Received Time

	With CHART			Without CHART		
	Incident	Disabled Vehicle	Total	Incident	Disabled Vehicle	Total
All Cases with Duration <= 2h	22.98 (8,302)	10.38 (12,105)	15.50 (20,407)	24.81 (1,744)	11.81 (931)	20.29 (2,675)
Cases with Duration >= 30s and <= 2h	23.24 (8,205)	10.69 (11,741)	15.86 (19,946)	24.93 (1,736)	12.34 (890)	20.66 (2,626)
Cases with Duration >= 60s and <= 2h	24.20 (7,870)	12.23 (10,171)	17.45 (18,041)	25.35 (1,706)	14.23 (765)	21.91 (2,471)
Cases with Duration >= 90s and <= 2h	25.14 (7,561)	13.59 (9,053)	18.84 (16,614)	25.70 (1,682)	15.60 (692)	22.75 (2,374)

- Note: 1. Excluding outlier data with clearance time > 2 hour.
 2. The number in each parenthesis shows the number of data available for computing the Duration.

Incident Response Time by Lane Blockage

Response Time = Arrival Time – Received Time

Blockage	With SHA Patrol		Without SHA Patrol	
	Response Time (min)	Frequency	Response Time (min)	Frequency
shoulder	3.96	2,798	2.21	307
1 lane	5.63	1,648	2.51	1,462
2 lanes	4.22	2,159	2.53	732
3 lanes	5.03	653	1.93	217
>=4 lanes	5.14	847	1.83	208
Unknown	9.30	6,777	4.55	1,319
Total	6.73 (7.27)	14,882 (14,591)	3.06 (3.03)	4,245 (3,477)

Note: 1. “Response Time” is computed by the qualified samples with their durations within mean \pm 2*deviation and less than 2 hours.

2. The number in each parenthesis shows the result of Year 2003.

Incident Clearance Time by Lane Blockage

Clearance Time = Cleared Time – Arrival Time

Blockage	With SHA Patrol		Without SHA Patrol	
	Clearance Time (min)	Frequency	Clearance Time (min)	Frequency
shoulder	10.16	2,798	21.71	307
1 lane	19.03	1,648	15.78	1,462
2 lanes	23.20	2,159	28.86	732
3 lanes	31.72	653	40.12	217
>=4 lanes	49.59	847	41.44	208
Unknown	10.11	6,777	16.23	1,319
Total	16.20 (17.00)	14882 (14,591)	21.10 (23.74)	4245 (3,477)

Note: 1. “Clearance Time” is computed by the qualified samples with their durations within mean \pm 2*deviation and less than 2 hours.

2. The number in each parenthesis shows the result of Year 2003.

Incident Duration by Lane Blockage

Incident Duration = Cleared Time - Received Time

Blockage	With SHA Patrol		Without SHA Patrol	
	Duration (min)	Frequency	Duration (min)	Frequency
shoulder	14.93	2,798	24.64	307
1 lane	43.99	1,648	22.86	1,462
2 lanes	49.86	2,159	54.41	732
3 lanes	52.47	653	76.69	217
>=4 lanes	106.61	847	77.04	208
Unknown	41.84	6,777	62.77	1,319
Weighted Average	42.34	14,882	46.24	4,245
Weighted Average (w/o >= 4-Lane Blockage)*	38.46 (39.5)	14,035	44.65 (49.1)	4,037

* The frequency for the 4-lane incidents seems to be biased by operator input errors.

Note: 1. "Duration" is computed by the qualified samples with durations within mean ± 2 *deviation.

2. The number in each parenthesis shows the result of Year 2003.