

CHAPTER 5

TEMPORAL TRENDS

Human movement is influenced by the time, day and month of the year. It affects the vehicular movement and the number of accidents occurring at different times of the day, days of the week and months of the year.

Temporal trends of different types of accidents, hour wise, day wise and month wise comparative analysis reveals the following important /significant conclusions:

- Table 5.1 depicts the comparative figures of different severity of accidents by the day of the week. In case of fatal accidents, it has been observed that total fatal accidents in 2016 have decreased in comparison to year 2015.
- Accidents on Thursdays decreased by 37 but there is an increase of fatal accidents on Sundays (38).**

TABLE - 5.1
ACCIDENT TREND ON WEEKDAYS

TYPE OF ACCIDENT	SUNDAY 2015	SUNDAY 2016	MONDAY 2015	MONDAY 2016	TUESDAY 2015	TUESDAY 2016	WEDNESDAY 2015	WEDNESDAY 2016	THURSDAY 2015	THURSDAY 2016	FRIDAY 2015	FRIDAY 2016	SATURDAY 2015	SATURDAY 2016	TOTAL 2015	TOTAL 2016
FATAL	197	235	243	228	223	230	210	186	263	226	213	210	233	233	1582	1548
NON-FATAL	913	881	990	920	957	804	834	763	953	829	953	806	903	824	6503	5827
TOTAL	1110	1116	1233	1148	1180	1034	1044	949	1216	1055	1166	1016	1136	1057	8085	7375

Time wise analysis of fatal accidents, in figure 5.1(a) reveals accidents increasing gradually from 1800 hrs. (50) onwards to peak by 2300

hrs. (114), the highest figure of fatal accidents.

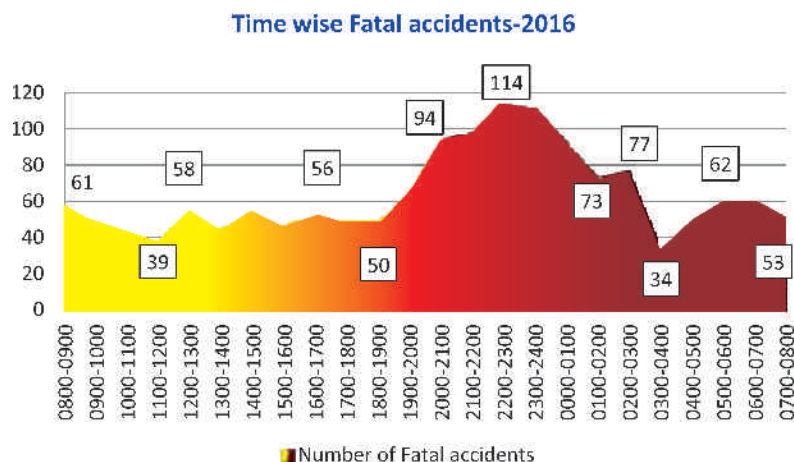


Figure 5.1

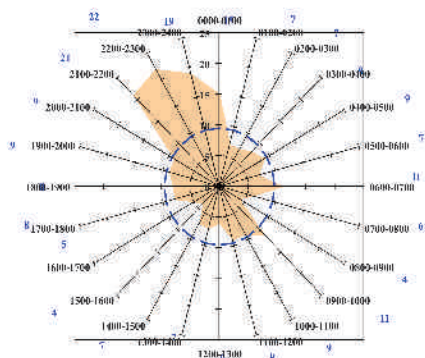
- Thereafter, accidents start decreasing gradually till 0200 hrs. (73). The trend continues to remain low till 0800 hrs. (53). From 0800 hrs. to 1900 hrs., it remains low with some variations and again starts rising after 1900 hrs. The same trend persisted in the year 2015 also with marginal variations. (Table 5.4)
- **The reasons for maximum number of fatal accidents between 1900 hrs and 0200 hrs is that during this period, the no-entry time restrictions on commercial vehicles are lifted.**
 - **It also overlaps with the evening peak hours of traffic.** There is a

sudden surge in different categories of vehicles on the roads which creates the conditions for collisions, knock downs etc.

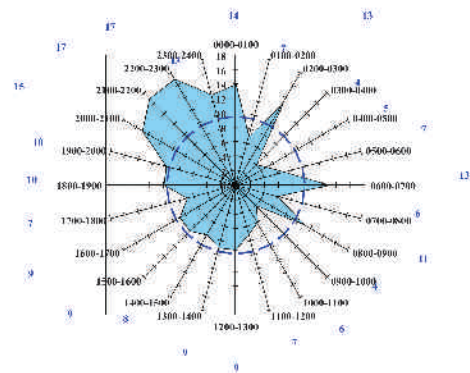
- **Poor light conditions on various roads** and streets also contribute in causing more accidents.
- **Drunken driving is obviously another big factor** of causing more accidents.
- After 0100 hrs fall in volume of pedestrians, slow moving vehicles and non-commercial traffic on road and lesser movements of commercial traffic leads to minimum number of accidents after 0200 hrs.

Chart - 5.1(a)

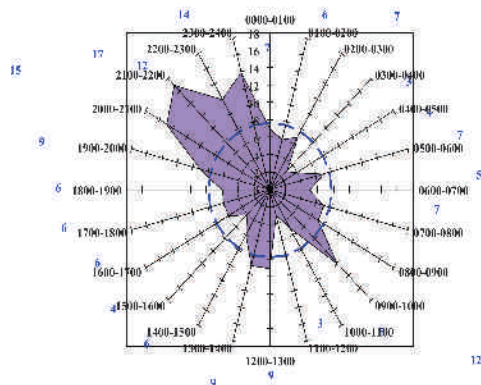
TIME WISE FATALITIES – 2016 (MONDAY-228)



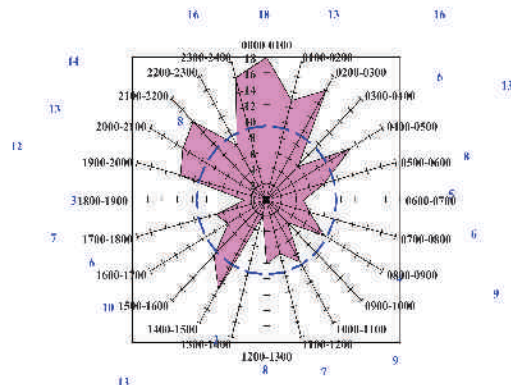
TIME WISE FATALITIES – 2016 (TUESDAY-230)



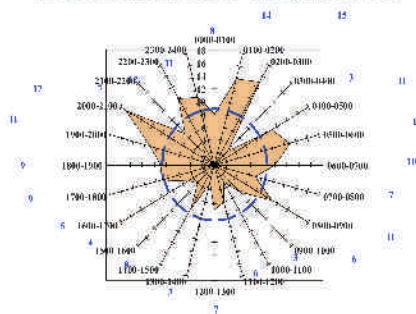
TIME WISE FATALITIES – 2016 (WEDNESDAY-186)



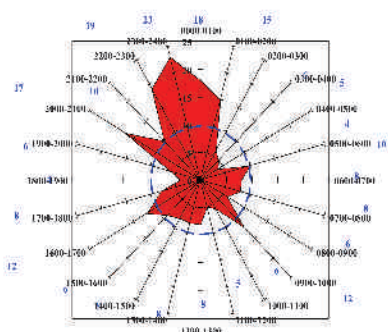
TIME WISE FATALITIES – 2016 (THURSDAY-226)



TIME WISE FATALITIES – 2016 (FRIDAY-210)



TIME WISE FATALITIES – 2016 (SUNDAY-235)



TIME WISE FATALITIES – 2016 (SATURDAY-233)

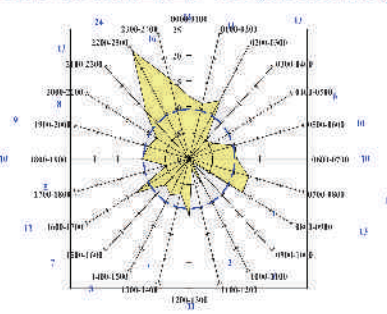
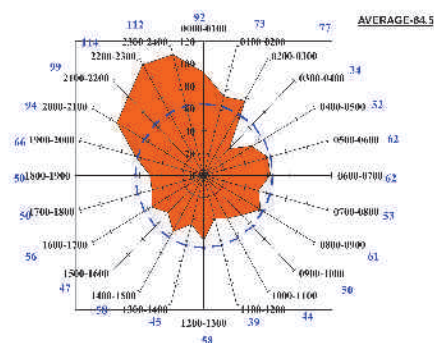


FIGURE 5.1(b) TIME -WISE FATAL ACCIDENTS 2016



In 2016, maximum fatal accidents occurred in March (146), January (143) and September (140) while least occurred in April (106), November (116) and December (116).

- In 2015, February, May and June months showed least number of fatal accidents. Though, there is no apparent link of

factors for January and December months except extreme cold and fog days. Fatal accidents have been fewer during each month in 2016, in comparison to 2015 and higher in February, March, May, June, August and September. Similar trend is observed in non-fatal accidents.

TABLE- 5.2
MONTH WISE TRENDS FATAL OF ACCIDENTS IN- 2015 and 2016

MONTH	FATAL		INJURY		NON-INJURY		TOTAL	
	2015	2016	2015	2016	2015	2016	2015	2016
JANUARY	143	143	504	456	19	9	666	608
FEBRUARY	106	132	481	480	9	15	596	627
MARCH	142	146	577	537	16	10	735	693
APRIL	161	106	477	454	15	13	653	573
MAY	119	121	500	477	16	9	635	607
JUNE	111	130	493	454	11	5	615	589
JULY	133	133	550	503	18	8	701	644
AUGUST	123	127	540	505	11	10	674	642
SEPTEMBER	134	140	540	439	13	10	687	589
OCTOBER	138	138	565	524	8	13	711	675
NOVEMBER	148	116	532	416	11	19	691	551
DECEMBER	124	116	584	453	13	8	721	577
TOTAL	1582	1548	6343	5698	160	129	8085	7375

Accident classifications according to day and night shows that in 2016, 718 fatal accidents occurred during day time whereas 830 occurred during night time (Table 5.3).

- During 2015 there were 784 fatal accidents during day time and 798 during night time. Fatal accidents in day time were uniformly higher than those in night time in all the years from 1992 to 2011. Since 2012, the number of fatal accidents recorded during day, were lesser than

during night. This shows direct co-relation between visible and effective police presence during the day. In case of simple accidents, however, the day time figures are higher than night time figures.

Analysis of Time vis-a-vis Victim of fatal accidents indicates, most pedestrians were involved in fatal accidents from 1900 – 2400 hrs.

- Time between 1900-2400 is most

TABLE – 5.3
ACCIDENTS CLASSIFIED ACCORDING TO DAY AND NIGHT

YEAR	FATAL ACCIDENTS		INJURY ACCIDENTS		NON-INJURY ACCIDENTS		TOTAL ACCIDENTS	
	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT
1997	1025	618	4590	2720	324	179	5939	3517
1998	951	727	3861	2633	303	212	5115	3572
1999	967	740	3652	2862	289	223	4908	3825
2000	894	705	4076	2759	355	256	5325	3720
2001	876	601	3761	2516	290	216	4927	3333
2002	853	563	3996	1891	265	165	5114	2619
2003	924	605	3937	1958	251	173	5112	2736
2004	1026	657	4042	1831	299	219	5367	2707
2005	1042	646	4342	1891	280	166	5664	2703
2006	1100	818	4151	2105	195	139	5446	3062
2007	1045	858	3604	2175	260	263	4909	3296
2008	882	825	3559	1945	151	201	4592	2971
2009	1143	1042	3207	1713	75	51	4425	2806
2010	1044	1041	3098	1811	31	31	4173	2883
2011	1040	1005	3271	1865	33	34	4344	2904
2012	886	906	2973	1814	54	60	3913	2780
2013	841	937	3600	2015	76	97	4517	3049
2014	804	825	4266	2519	102	107	5172	3451
2015	784	798	3895	2448	66	94	4745	3340
2016	718	830	3512	2186	61	68	4291	3084

DAY HOURS: 8AM TO 9PM.
NIGHT HOURS: 9 PM TO 8AM.

vulnerable for occurrence of accidents involving for scooterists / motor cyclists.

Most 'Self' induced accidents occur during the time slot of 0000-0300 hrs. In case of cyclists, the most vulnerable time is 2000-2200 hrs. (Table 5.5).

Table 5.6 shows the distribution of impacting vehicles (at fault) with the time slots.

- From the view point of **vehicles at fault**,

647 (41.79%) vehicles were unknown which implies they were hit and run cases, as against 39.4 % in 2015. The accidents by 'unknown vehicles' have been recorded at all hours though the number is higher from 2000 – 0100 hrs. The high rate of hit and run accident indicates non-reporting of accused vehicle and the apathy of general public/eye witnesses to report the accidents.

TABLE 5.4
ACCIDENTS CLASSIFIED ACCORDING TO THE TIME OF OCCURRENCE

S.NO.	TIME SLOT	SIMPLE ACCIDENTS					FATAL ACCIDENTS				
		2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
1	0000-0100	163	187	237	292	235	98	114	78	111	92
2	0100-0200	158	122	176	174	177	70	71	68	73	73
3	0200-0300	91	106	123	127	118	51	60	46	42	77
4	0300-0400	62	88	105	88	77	51	48	53	43	34
5	0400-0500	74	79	102	95	82	42	52	46	50	52
6	0500-0600	96	83	135	141	116	67	64	54	55	62
7	0600-0700	116	149	180	156	159	60	69	71	69	62
8	0700-0800	165	207	239	241	200	66	60	65	60	53
9	0800-0900	183	200	258	241	238	56	59	65	68	61
10	0900-1000	217	291	318	300	235	61	62	63	51	50
11	1000-1100	221	232	277	273	246	70	57	57	62	44
12	1100-1200	204	248	304	279	236	65	70	53	44	39
13	1200-1300	208	251	300	274	261	52	62	63	58	58
14	1300-1400	220	267	316	269	272	74	56	56	52	45
15	1400-1500	206	297	363	293	287	64	65	53	70	58
16	1500-1600	235	279	327	328	283	63	54	61	51	47
17	1600-1700	245	328	363	322	280	56	66	59	40	56
18	1700-1800	248	293	335	293	266	75	59	58	62	50
19	1800-1900	292	315	375	330	299	70	68	59	64	50
20	1900-2000	259	289	412	349	298	80	64	84	81	66
21	2000-2100	289	386	420	410	372	100	99	73	81	94
22	2100-2200	348	377	459	442	412	132	116	107	95	99
23	2200-2300	344	407	497	419	359	158	147	120	120	114
24	2300-2400	257	307	373	367	319	111	136	117	80	112
25	UNK. TIME	214	0	0	0	0	30	0	0	0	0
TOTAL		5115	5788	6994	6503	5827	1822	1778	1629	1582	1548

TABLE-5.5
TIME Vs VICTIM (FATAL ACCIDENTS) – 2016

TIMESLOT	VICTIMS													
	HTV'S	LGV'S	BUSES	CAR/TAXI	TSR	SC/MC	E_RICKSHAW	CYCLE RICKSHAW	CYCLIST	PEDESTRIAN	SELF	PASSENGERS	OTHERS	TOTAL
0000-0100	0	3	1	5	4	35	1	0	2	30	10	1	0	92
0100-0200	0	1	0	5	3	34	0	0	1	18	11	0	0	73
0200-0300	1	3	0	7	1	31	0	0	0	22	12	0	0	77
0300-0400	0	0	0	2	1	10	0	1	0	13	6	0	1	34
0400-0500	1	3	0	6	1	8	0	0	1	28	3	0	1	52
0500-0600	0	1	0	4	0	9	0	1	2	39	5	0	1	62
0600-0700	0	0	1	1	1	21	0	1	4	28	2	0	3	62
0700-0800	0	0	0	3	1	13	0	0	3	31	2	0	0	53
0800-0900	0	0	0	3	1	19	0	2	2	27	6	0	1	61
0900-1000	0	0	0	1	0	15	0	0	5	27	1	0	1	50
1000-1100	0	0	0	1	0	12	0	1	2	27	1	0	0	44
1100-1200	0	1	0	0	0	14	0	1	1	17	5	0	0	39
1200-1300	0	0	0	1	1	18	1	1	3	32	1	0	0	58
1300-1400	0	0	1	1	0	17	1	0	4	18	3	0	0	45
1400-1500	0	0	0	4	2	17	0	0	1	30	3	0	1	58
1500-1600	0	0	0	0	1	19	1	1	0	22	2	1	0	47
1600-1700	0	0	0	1	0	22	0	3	2	21	7	0	0	56
1700-1800	0	1	0	0	2	17	0	1	3	24	2	0	0	50
1800-1900	0	1	0	3	0	16	0	1	1	22	3	3	0	50
1900-2000	0	0	0	0	0	24	1	3	2	33	3	0	0	66
2000-2100	0	1	0	4	1	39	0	0	4	45	0	0	0	94
2100-2200	0	0	0	2	1	36	1	0	5	43	11	0	0	99
2200-2300	0	1	1	0	1	57	0	2	1	41	8	0	2	114
2300-2400	1	1	0	1	4	52	0	3	3	40	7	0	0	112
TOTAL	3	17	4	55	26	555	6	22	52	678	114	5	11	1548

TABLE-5.6
TIME Vs VEHICLE AT FAULT (FATAL ACCIDENTS) – 2016

TIMESLOT	VEHICLE AT FAULT								OTHERS VEHICLE	TOTAL
	HTV'S	LGV'S	BUSES	CAR/TAXI	GRAMIN SEWA	TSR	SC/MC	UNKNOWN		
0000-0100	18	3	3	11	0	0	14	42	1	92
0100-0200	8	8	3	17	0	0	8	27	2	73
0200-0300	9	8	0	15	0	2	7	35	1	77
0300-0400	0	3	0	6	0	0	5	19	1	34
0400-0500	16	2	0	6	0	1	2	25	0	52
0500-0600	12	6	2	6	0	2	5	29	0	62
0600-0700	9	9	0	13	0	2	1	28	0	62
0700-0800	8	3	6	10	0	1	1	21	3	53
0800-0900	2	4	8	12	0	2	6	25	2	61
0900-1000	2	3	5	8	0	0	5	24	3	50
1000-1100	6	1	4	9	1	0	4	15	4	44
1100-1200	6	2	3	4	0	1	6	16	1	39
1200-1300	3	4	4	16	1	0	7	19	4	58
1300-1400	6	7	6	8	1	1	2	13	1	45
1400-1500	3	4	9	10	0	1	7	22	2	58
1500-1600	9	4	7	8	1	1	3	13	1	47
1600-1700	6	3	5	11	1	2	11	15	2	56
1700-1800	5	2	4	16	1	0	7	13	2	50
1800-1900	4	4	7	9	0	0	6	20	0	50
1900-2000	3	1	7	11	0	2	11	27	4	66
2000-2100	5	4	8	18	0	3	4	52	0	94
2100-2200	13	3	8	12	4	1	12	43	3	99
2200-2300	9	3	5	25	1	2	11	55	3	114
2300-2400	19	7	5	19	0	2	10	49	1	112
TOTAL	181	98	109	280	11	26	155	647	41	1548

- HTVs committed fatal accidents at all hours and large with peak accidents reported between 2100 and 0100 hrs.
- Cars were involved in fatal accidents at all hours of the day and night with higher numbers during night hours. Cars caused most accidents in time period between 2200-0100hrs.
- Buses caused most fatal accidents from 1800 – 2200hrs. Two wheeler riders caused most accidents from 2100- 0100 hrs. (Table 5.6).
