

Chapter 3

Noise level Analysis – Non Festival Season

3. NOISE LEVEL ANALYSIS – NON FESTIVAL SEASON.

Introduction:

Kolhapur, being a small and basically residential city, the general notion is that the menace of noise pollution may least venture in. But some of the rapid studies conducted in the town have shown that, the camel has already got its head inside the tent (kashid, 1999; Marale, 1999).

One of the major contributor towards the noise pollution in the town is found to be the vehicular traffic. The township, due to its narrow roads, which in many cases in bad shape, coupled with the increasing number of vehicles, has created traffic congestion and the unhealthy use of vehicular horns leading to more noise. The indiscriminate use of the public address and music systems and the practice of availing the services of the band groups for every simple occasions have further aggravated the menace.

The total vehicle population registered in Kolhapur till 1996, is around 60,000 as per the RTO records. While about 5000 of these are cars, nearly 34,000 are two wheelers such as motor-cycles, mopeds, scooters etc. There are about 4000 auto-richshaws and about 150 buses of the Kolhapur Municipal transport (Vishvanath, 1998). There has been significant addition in the number of vehicles from the neighboring villages and townships entering into the city for trade and commerce.

In order to study the status of noise in the city, twenty areas comprising of 135 sampling stations (table 4.1) were selected. These areas constituted the commercial areas, residential areas, industrial area and the silent area.

Table 3.1: The sample size of the data collected for Non-festival season

Area code	Area category	No.of stations	No. of readings
A	Industrial	5	360
B	Commercial	55	3960
C	Residential	69	4968
D	Silent	6	432
	TOTAL	135	9720

Average of raw data:

The total numbers of readings taken are distributed among twelve different time intervals. The average of the total number of readings taken at each time slot is given in the table 3.2. This will give an overview of the average readings recorded during different time periods throughout the day, at each sampling station.

Table 3.2: Average Noise Levels at different sampling stations in Kolhapur city during non festival season

Area	Site No.	Sampling sites	7 a.m.	9 a.m.	11 a.m.	1 p.m.	3 p.m.	5 p.m.	7 p.m.	9 p.m.	11 p.m.	1 a.m.	3 a.m.	5 a.m.
New Shahupuri [C]	1	Lakshadweep (Sb))	51	52	55	56	56	56	56	53	53	45	45	45
	2	Mandody Corner (Jn)	72	77	78	73	73	75	76	69	57	45	45	45
	3	Wikler Memorial Church (Sb)	62	71	69	67	64	70	69	68	51	40	40	40
	4	Mera Hotel (Sb)	67	65	70	68	67	66	65	69	65	47	47	47
	5	Anugraha Hotel (Mr)	75	75	75	73	72	77	75	69	57	46	46	46
	6	Central Bus Stand (Mr)	68	74	75	72	71	78	72	71	65	47	47	47
	7	Konica Square (Jn)	72	72	73	72	67	71	72	70	65	40	40	40
	8	Dabholkar Corner (Jn)	71	72	73	68	71	75	73	68	60	44	44	44
	9	Gokul Hotel (Mr)	80	78	80	78	75	78	78	73	57	47	47	47
	10	Venus Corner (Jn)	73	78	78	72	75	78	75	70	65	40	40	40
Tribhai Park [R]	11	Tribhai Garden (Mr)	59	62	63	62	62	68	68	54	54	43	43	43
	12	Telephone Bhavan (Sb)	49	60	63	62	58	55	55	54	54	41	41	41
	13	Kripalani Hospital (Hlp)	49	57	61	66	55	57	57	51	53	48	48	48
	14	Vishadi Hotel (Mr)	65	70	69	67	68	68	68	63	57	40	40	40
	15	Eagle Tiles (Sb)	57	61	65	66	56	59	61	59	51	45	45	45
	16	Himmat Bahadur Colony (Mr)	55	64	64	65	60	60	61	59	65	48	48	48
	17	Aditya Corner (Jn)	59	69	69	68	64	68	68	66	65	41	41	41
	18	S.S.Rhosale Path (Sb)	53	61	62	55	61	61	65	62	60	47	47	47
	19	Kairali (Sb)	47	52	56	57	56	52	52	49	49	46	46	46
	20	B.F. College (Ed)	60	71	72	76	71	71	71	71	50	46	46	46
Shahupuri [C]	21	Bagal Chowk (Jn)	68	73	75	74	73	72	78	73	67	42	42	42
	22	Shahupuri Market (Mr)	60	71	75	71	70	72	72	70	64	43	43	43
	23	Shahi Plaza (Sb)	62	72	69	68	67	66	66	66	55	44	44	44
	24	Subhash Colour Lab (Mr)	55	68	70	69	70	67	69	68	59	42	42	42
	25	Radhakrishna Temple (Sb)	61	69	70	66	74	72	71	71	66	47	47	47
	26	Allurkar Transport (Sb)	62	63	67	62	61	66	65	65	59	45	45	45
	27	Karmalkar & Company (Sb)	59	66	68	69	74	71	71	70	59	45	45	45
	28	Nidan (Sb)	52	62	66	62	62	62	63	63	50	47	47	47
	29	Vyapar Peth (Sb)	62	64	62	62	60	65	67	67	54	45	45	45
	30	Railway Phatak Market (Jn)	67	69	70	67	68	70	72	70	52	44	44	44
Rajarampuri [R]	31	Janata Bazar (Jn)	69	71	72	75	73	71	70	69	69	47	47	47
	32	Castle (Sb)	64	67	65	65	63	68	68	58	54	46	46	46
	33	Titus (Mr)	71	71	68	67	70	71	68	67	64	46	46	46
	34	Channel 9 (Mr)	63	74	72	78	69	74	72	70	59	47	47	47
	35	Way In Corner (Mr)	64	72	69	67	70	72	68	67	59	45	45	45
	36	Petrol Pump (Mr)	70	72	71	71	68	72	72	72	54	47	47	47
	37	Paine High School (Ed)	63	64	61	60	60	64	61	61	57	44	44	44
	38	Canara Banl (Sb)	64	68	70	66	71	68	71	70	53	44	44	44
	39	Kamala College (Ed))	70	77	73	71	69	77	78	76	52	46	46	47
	40	Takala Junction (Jn)	76	74	77	70	64	74	77	75	54	46	46	46

Table 3.2 (contd): Average Noise Levels at different sampling stations in Kolhapur city during non festival season

Area	Site No.	Sampling sites	7 a.m.	9 a.m.	11 a.m.	1 p.m.	3 p.m.	5 p.m.	7 p.m.	9 p.m.	11 p.m.	1 a.m.	3 a.m.	5 a.m.
	41	Bharat Sahakari Hag. Soc. Hall. (Sb)	64	68	62	61	57	68	66	65	57	47	47	46
	42	Oriental High School (Ed)	63	65	62	68	61	65	65	63	53	45	45	47
	43	Hall (Sb)	62	62	71	64	84	62	63	57	50	47	47	45
Shivaji road [C]	44	Padma Theatre (Jn)	67	76	77	75	72	76	76	70	71	45	45	47
	45	Bindu Chowk (Jn)	67	73	76	77	73	72	72	64	64	45	45	48
	46	Regal Electronics (Mr)	58	70	72	73	78	69	69	61	55	40	40	45
Bhausaingi Road [C]	47	Shivaji Chowk (Jn)	70	72	77	73	75	77	77	71	63	47	47	64
	48	Junia Rajwada (Jn)	69	76	74	73	69	76	76	67	68	46	46	50
	49	Mahanagar Palika (Jn)	70	71	75	73	75	76	76	62	59	47	47	59
	50	C.P.R. Hospital (Hp)	66	72	75	68	67	75	73	60	59	40	40	54
Mahadwar Road [C]	51	Khari Corner (Jn)	69	73	75	69	71	75	75	57	50	44	44	54
	52	Phadke Book Centre (Jn)	73	71	75	71	67	72	72	57	54	47	47	49
	53	Gwalior Suitings (Mr)	68	70	71	69	70	73	73	60	52	40	40	53
	54	Dressland (Mr)	66	65	68	71	67	72	73	58	49	43	43	45
	55	Raymond Suitings (Mr)	62	67	65	67	75	68	68	59	54	41	41	43
Gangavesh [C]	56	Gangavesh Chowk (Jn)	74	78	75	71	61	74	74	59	60	48	48	56
	57	Shahir Shirdul School (Ed)	69	62	73	66	73	69	69	67	50	40	40	42
	58	Market (Mr)	73	74	74	73	70	75	75	64	63	45	45	57
	59	Gangavesh Bus Stop (Jn)	74	76	73	74	70	70	70	68	71	48	48	60
	60	Pethe Classes (Sb)	64	69	71	73	69	76	76	66	54	41	41	49
Laximpuri [C]	61	Shiv Shakti Corner (Jn)	66	70	71	74	72	77	77	64	61	47	47	51
	62	Mahalaxmi Bakery (Sb)	64	68	72	70	74	77	77	60	51	46	46	47
	63	Hotel Sema (Sb)	64	69	72	71	71	72	71	57	49	46	46	46
	64	Uma Theatre (Jn)	68	71	73	71	71	74	74	59	59	42	42	44
	65	Balappa Annappa Chougale & Company (Sb)	59	62	67	70	67	70	70	59	61	43	43	44
	66	The Ravi Co-operative Bank (Sb)	59	67	68	67	69	68	68	59	51	44	44	42
	67	Anandasharm Hotel (Mr)	65	73	71	70	70	75	76	67	62	42	42	43
	68	Maharana Pratap Bus Terminus (Jn)	73	74	74	70	70	72	72	63	57	47	47	47
	69	Zilla Koshgar Karyalay (Jn)	70	73	74	74	72	77	78	65	59	45	45	46
	70	Hotel Neelam (Mr)	71	72	71	72	70	73	73	67	63	45	45	47
Udyam Nagar [I]	71	Augustine Industries (Jn)	61	69	68	74	75	76	76	59	52	47	47	47
	72	Chame Engineering & Welding Works (Jn)	55	71	66	73	72	69	69	58	52	45	45	45
	73	Balaji Engineering (Jn)	64	70	63	69	68	70	70	59	53	44	44	45
	74	Ashok Iron Works (Jn)	64	72	73	72	70	76	76	63	55	47	47	48
	75	Shri Laxmi Spray Painting. (Jn)	64	66	70	68	72	75	75	63	58	46	46	45
Mangalwar Peth [C]	76	Azad Chowk (Jn)	70	74	74	73	74	75	75	62	55	46	46	47
	77	Alladiya Khansaheb Chowk (Jn)	71	76	74	71	75	76	76	63	60	47	47	48
	78	Hannuman Mandir (Sb)	63	72	72	71	73	75	75	64	57	45	45	48
	79	Mirajkar Ticti (Jn)	70	74	76	72	73	77	77	63	56	47	47	55
	80	Dattajirao Kashid Chowk (Jn)	69	71	71	73	74	75	75	64	58	44	44	50

Table 3.2 (contd): Average Noise Levels at different sampling stations in Kolhapur city during non festival season

Area	Site No.	Sampling sites	7 a.m.	9 a.m.	11 a.m.	1 p.m.	3 p.m.	5 p.m.	7 p.m.	9 p.m.	11 p.m.	1 a.m.	3 a.m.	5 a.m.
Shivaji Peth [R]	81	Kanchinsha Hotel (Sb)	66	68	72	69	68	75	74	60	55	44	44	44
	82	Suryalant Khandekar Chowk (Sb)	68	70	70	67	72	69	68	57	50	51	51	52
	83	Archica Gallery (Mn)	68	68	71	75	68	73	73	67	54	40	40	39
	84	Hutatma Nirvutii Aadurkar Chowk (Jn)	64	69	70	85	70	69	70	64	51	42	42	42
	85	Daulatrao Bhoonde School (Ed)	64	68	70	68	64	72	72	63	52	43	43	44
	86	New College (Ed)	68	64	72	67	65	63	62	54	50	45	44	45
	87	Buvamaster Chowk (Sb)	58	67	67	69	66	66	64	54	54	46	46	46
	88	Pisces Padmanje Park (Mr)	62	67	68	53	61	69	67	59	52	47	47	47
Kasaba Bawada [R]	89	Ranika Tower (Jn)	70	73	70	75	73	73	72	62	60	48	47	55
	90	Residency Club (Mr)	56	54	61	53	62	64	63	54	48	41	41	43
	91	Babasaheb Ambedkar Chowk (Jn)	57	67	71	71	69	66	66	67	54	43	43	47
	92	Police Adhikshak Karyalay (Jn)	68	66	65	74	67	67	66	66	51	41	43	43
	93	D.Y.Patil Engineering College (Ed)	52	63	63	62	61	70	58	63	47	41	40	41
	94	D.Y.Patil Medical College (Ed)	57	67	68	69	64	65	66	67	54	40	41	42
	95	Hotel Bawada Misal (Mr)	67	68	69	71	73	66	70	68	51	42	41	43
	96	Ranika Hotel (Mr)	65	67	69	69	74	70	69	67	53	44	43	44
	97	D.Y.Patil Balmandir (Ed)	66	71	71	68	65	72	73	71	52	42	42	46
	98	Yashwantrao Bhavnrao Path (Sb)	67	69	70	68	69	72	70	69	53	42	42	44
	99	Union Bank of India (Sb)	68	71	72	72	68	73	70	67	52	40	41	42
	100	V.R.Jadhav Chowk (Jn)	67	68	67	67	72	68	68	67	48	40	40	41
Linc Bazar [R]	101	Padma Pathak chowk (Jn)	53	62	64	54	49	57	57	58	49	42	42	43
	102	Sainik Colony (Sb)	57	65	67	76	63	64	65	65	51	44	43	46
	103	Sadar Bazar Circle (Jn)	68	69	68	70	68	69	68	69	57	47	47	49
	104	Lal Bahadur Shastri Garden (Sb)	59	65	64	67	60	61	66	65	51	46	46	48
	105	Mosque (Mr)	63	75	71	65	65	68	70	75	53	46	47	49
	106	Korgaonkar School (Ed)	57	63	64	57	56	65	61	63	50	44	42	48
	107	Vichare Mal Chowk (Sb)	66	68	68	64	66	62	63	68	50	47	46	48
	108	Shahu College (Ed)	65	67	67	63	63	66	72	67	55	42	42	43
Kadamwadi [R]	109	Zilla Parishad Nivas (Mr)	66	67	67	65	60	67	64	67	52	42	42	42
	110	Bharatiya Vidyapeeth (Ed)	64	70	69	56	61	68	63	70	49	43	43	44
	111	Ghatne Mutton Shop (Sb)	59	71	70	65	64	66	64	71	49	45	45	46
	112	Karmavir Bhavnrao Patil School (Ed)	64	60	61	55	54	64	63	60	49	40	40	43
Ruikar Colony [R]	113	Elegant Hotel (Mr)	65	67	68	64	66	69	67	67	49	42	43	42
	114	Tower (Jn)	55	61	60	59	51	63	64	61	49	41	40	40
	115	Shreyas Bungalow (Sb)	58	52	51	52	56	61	54	52	40	40	40	40
	116	Janata Bazar (Sb)	54	55	55	54	54	57	58	55	48	42	41	40
Shivaji Park [R]	117	Ruikar Colony Open Space Garden (Sb)	67	67	68	68	71	68	69	68	61	57	57	60
	118	NCC Head Quarters (Sb)	53	57	57	56	54	61	58	57	50	43	42	42
	119	Vidya Bhavan (Jn)	62	69	68	67	63	69	65	68	51	41	41	41

Table 3.2 (contd): Average Noise Levels at different sampling stations in Kolhapur city during non festival season

Area	Site No.	Sampling sites	7 a.m.	9 a.m.	11 a.m.	1 p.m.	3 p.m.	5 p.m.	7 p.m.	9 p.m.	11 p.m.	1 a.m.	3 a.m.	5 a.m.
	120	Kupse & Company (Sb)	53	58	58	54	52	54	54	58	44	40	42	40
	121	Scholar Computer Academy (Jn)	44	65	64	58	62	63	57	65	50	43	41	42
	122	Om Apartment (Sb)	50	61	61	62	49	55	56	61	44	40	40	42
	123	Seventh Day Adventist School (Ed)	65	67	67	72	75	71	68	67	58	54	56	58
	124	Friends Colony (Sb)	54	54	57	56	51	57	55	54	45	40	41	41
Vidyanagar [S]	125	S.I.B.E.R. (Ed)	68	60	63	61	60	64	69	60	51	48	47	52
	126	Rajaram College (Ed)	66	70	70	60	61	66	64	70	49	48	47	53
	127	Agricultural College (Ed)	48	53	53	48	48	64	69	53	49	39	40	40
	128	University Campus 1 (Ed)	54	54	55	58	55	51	51	54	48	40	40	40
	129	University Campus 2 (Ed)	45	51	53	52	53	52	53	51	44	40	40	41
	130	University Campus 3 (Ed)	49	51	51	53	52	53	54	51	45	41	40	41
Pratibha Nagar [R]	131	Navashaya Maruti Mandir (Sb)	56	69	69	69	66	69	67	69	56	41	41	41
	132	Pratibha Nagar Hall (Jn)	55	59	58	60	56	57	65	59	49	42	42	42
	133	V.S.Khandekar School (Ed)	55	69	58	60	61	66	61	69	50	40	40	42
	134	Arwind Hosing Hospital (Hp)	57	66	70	61	71	65	65	66	51	41	43	42
	135	Market (Jn)	64	69	66	67	69	69	68	67	58	47	49	48

Note: Jn = Junction
Sb = Sublane
Mr = Main road
Ed = Educational institution
Hp = Hospital
In = Industry
C = Commercial Area
R = Residential Area
S = Silent Zone
I = Industrial Area

Maximum and Minimum readings:

The maximum and the minimum readings recorded at each sampling station have been stated in the table 3.3. It is found that the maximum reading recorded during the day in the residential areas were as high as 94 dB, where the permissible limit is 55 dB and in the night 76 dB where the permissible limit is only 45 dB. The maximum reading recorded in the commercial areas during the day was 98 dB, where the permissible limit is 65 dB and in the night 77 dB, where the permissible limit is only 55 dB. In case of the industrial area, the maximum recorded level was 90 dB, where the permissible limit is 75 dB and during the night the maximum reading was 62 dB, which is well below the standard limit of 70 dB. The silent area recorded a maximum reading of 76 dB during the day and 69 dB during the night, in both the cases the readings being well above the standards of 50 dB and 40 dB respectively.

Table 3.3: Maximum and minimum recorded during non festival season

Sampling Stations	Site No.	Day		Night	
		Min	Max	Min	Max
Lakshadweep (Sb))	1	45	72	44	66
Mandody Corner (Jn)	2	66	85	39	62
Wilder Memorial Church (Sb)	3	57	90	38	56
Mera Hotel (Sb)	4	58	79	46	73
Anugraha Hotel (Mr)	5	66	84	44	62
Central Bus Stand (Mr)	6	62	85	46	73
Konica Square (Jn)	7	60	82	38	72
Dabholkar Corner (Jn)	8	64	80	42	65
Gokul Hotel (Mr)	9	70	92	44	62
Venus Corner (Jn)	10	66	89	39	73
Trabai Garden (Mr)	11	53	76	42	58
Telephone Bhavan (Sb)	12	46	81	39	59
Kriplani Hospital (Hp)	13	44	75	46	66
Vrishali Hotel (Mr)	14	52	84	39	62
Eagle Tiles (Sb)	15	50	80	44	56
Himmat Bahadur Colony (Mr)	16	50	74	46	73
Aditya Corner (Jn)	17	57	80	40	73
S.S.Bhosale Path (Sb)	18	46	74	46	65
Kairali (Sb))	19	43	70	45	49
B.T. College (Ed)	20	56	81	44	52
Bagal Chowk (Jn)	21	63	90	40	76
Shahupuri Market (Mr)	22	54	81	42	66
Shashi Plaza (Sb)	23	58	89	42	32
Subhash Colour Lab (Mr))	24	50	86	40	67
Radhakrishna Temple (Sb)	25	57	91	46	70
Allurkar Transport (Sb)	26	52	75	43	62
Karmalkar & Company.(Sb)	27	53	82	40	65
Nidan (Sb)	28	51	72	46	53
Vyapar Peth (Sb)	29	53	86	45	60
Railway Phatak Market (Jn)	30	58	78	43	54
Janata Bazar (Jn)	31	63	92	46	76
Castle (Sb)	32	50	79	42	57
Titus (Mr)	33	57	85	44	70
Channel 9 (Mr)	34	58	93	46	62
Way In Corner (Mr)	35	56	77	44	65
Petrol Pump (Mr)	36	63	78	46	56
Patne High School (Ed)	37	53	73	42	60
Canara Bank (Sb)	38	55	85	42	57
Kamala College (Ed))	39	61	89	42	54
Takala Junction (Jn)	40	57	87	42	56

Table 3.3 (contd): Maximum and minimum readings recorded during non festival season.

Sampling Stations	Site No.	Day		Night	
		Min	Max	Min	Max
Bharat Sahakari Hsg. Soc. Hall. (Sb)	41	52	73	44	60
Oriental High School(Ed)	42	52	79	44	57
Hall (Sb)	43	50	88	44	52
Padma Theatre (Jn)	44	61	89	44	76
Bindu Chowk (Jn)	45	57	82	39	66
Regal Electronics (Mr)	46	50	98	38	62
Shivaji Chowk (Jn)	47	65	87	46	83
Juna Rajwada (Jn)	48	64	84	44	75
Mahanagar Palika (Jn)	49	58	83	46	62
C.P.R. Hospital (Hp)	50	50	90	38	65
Khari Corner (Jn)	51	54	81	42	61
Phadke Book Centre (Jn)	52	53	85	44	60
Gwalior Suitings (Mr)	53	57	79	39	58
Dressland (Mr)	54	54	76	39	52
Raymond Suitings (Mr)	55	54	81	39	66
Gangavesh Chowk (Jn)	56	52	94	46	70
Shahir Shardul School (Ed)	57	60	85	39	54
Market (Mr)	58	60	85	44	70
Gangavesh Bus Stop (Jn)	59	62	81	46	77
Pethe Classes (Sb)	60	57	80	40	56
Shiv Shakti Corner (Jn)	61	57	82	46	68
Mahalaxmi Bakery (Sb)	62	57	81	44	55
Hotel Sema (Sb)	63	54	76	42	54
Uma Theatre (Jn)	64	57	81	40	70
Balappa Annappa Chougule & Company (Sb)	65	51	78	42	71
The Ravi Co-operative Bank (Sb)	66	57	79	40	59
Anandasharm Hotel (Mr)	67	58	81	40	72
Maharana Pratap Bus Terminus (Jn)	68	56	81	44	70
Zilla Koshgar Karyalay (Jn)	69	58	89	43	65
Hotel Neelam (Mr)	70	61	78	40	75
Augustine Industries (In)	71	54	81	46	56
Charane Engineering & Welding Works (In)	72	50	82	43	58
Balaji Engineering (In)	73	56	83	42	57
Ashok Iron Works (In)	74	50	90	46	62
Shri Laxmi Spray Painting. (In)	75	57	90	42	62
Azad Chowk (Jn)	76	54	81	44	58
Alladiya Khansaheb Chowk (Jn)	77	58	88	46	64
Hanuman Mandir (Sb)	78	54	83	44	60
Mirajkar Ticti (Jn)	79	58	87	46	62
Dattajirao Kashid Chowk (Jn)	80	60	78	42	66

Table 3.3 (contd): Maximum and minimum readings recorded during non festival season.

Sampling Stations	Site No.	Day		Night	
		Min	Max	Min	Max
Kanchrishha Hotel (Sb)	81	57	82	42	58
Suryakant Khandekar Chowk (Sb)	82	52	77	48	54
Archies Gallery (Mn)	83	53	86	37	67
Hutatma Nivruthi Aadurkar Chowk (Jn)	84	58	76	40	54
Daulatrao Bhosale School (Ed)	85	57	76	42	62
New College (Ed)	86	50	78	42	58
Buvamaster Chowk (Sb)	87	50	80	44	58
Pisses Padmaraje Park (Mr)	88	50	84	45	58
Rankala Tower (Jn)	89	58	79	46	68
Residency Club (Mr)	90	42	80	40	52
Babasaheb Ambedkar Chowk (Jn)	91	50	75	41	60
Police Adhikshak Karyalay (Jn)	92	55	84	39	56
D.Y.Patil Engineering College (Ed)	93	43	76	39	48
D.Y.Patil Medical College (Ed)	94	49	77	40	58
Hotel Bawada Misal (Mr)	95	63	81	39	56
Rasika Hotel (Mr)	96	57	80	42	57
D.Y.Patil Balmandir (Ed)	97	59	81	40	57
Yashvantrao Bhavrao Path (Sb)	98	61	76	40	58
Union Bank of India (Sb)	99	57	80	39	56
V.R.Jadhav Chowk (Jn)	100	54	79	39	50
Padma Pathak chowk (Jn)	101	44	74	40	52
Sainik Colony (Sb)	102	50	87	42	54
Sadar Bazar Circle (Jn)	103	62	77	45	62
Lal Bahadur Shastri Garden (Sb)	104	53	75	44	56
Mosque (Mr)	105	57	86	45	57
Korgaonkar School (Ed)	106	51	77	39	54
Vichare Mal Chowk (Sb)	107	53	76	44	53
Shahu College (Ed)	108	56	78	39	58
Zilla Parishad Nivas (Mr)	109	52	82	40	58
Bharatiya Vidyapeeth (Ed)	110	47	85	42	52
Ghame Mutton Shop (Sb)	111	52	78	42	52
Karmavir Bhavrao Patil School (Ed)	112	49	69	39	52
Elegant Hotel (Mr)	113	58	83	40	54
Tower (Jn)	114	47	70	39	58
Shreyas Bungalow (Sb)	115	46	75	38	42
Janata Bazar (Sb)	116	50	67	39	52
Ruikar Colony Open Space Garden (Sb)	117	60	78	50	68
NCC Head Quarters (Sb)	118	51	64	39	54
Vidya Bhavan (Jn)	119	59	73	39	58
Kapse & Company (Sb)	120	47	67	39	46
Scholar Computer Academy (Jn)	121	52	77	39	58



Table 3.3 (contd): Maximum and minimum readings recorded during non festival season.

Sampling Stations	Site No.	Day		Night	
		Min	Max	Min	Max
Om Appartment (Sb)	122	45	74	39	47
Seventh Day Adventist School (Ed)	123	58	94	46	70
Friends Colony (Sb)	124	46	81	39	47
S.I.B.E.R. (Ed)	125	56	76	42	69
Rajaram College (Ed)	126	49	75	44	68
Agricultural College (Ed)	127	42	76	38	58
University Campus 1 (Ed)	128	46	68	39	50
University Campus 2 (Ed)	129	40	62	39	46
University Campus 3 (Ed)	130	44	66	39	47
Navashaya Maruti Mandir (Sb)	131	48	78	39	60
Pratibha Nagar Hall (Jn)	132	51	71	39	56
V.S.Khandekar School (Ed)	133	52	76	39	56
Arwind Hosingh Hospital (Hp)	134	51	90	40	60
Market (Jn)	135	59	78	44	62

Note: Jn = Junction

Sb = Sublane

Mr = Main road

Ed = Educational institution

Hp = Hospital

In = Industry

Noise level at each time interval:

The noise levels for each time slot has been calculated for each area and is stated in the table 3.4. It is found that the ambient noise levels during the day ranges between 62dB to 79dB in the residential areas, where the standard limit is 55dB and during the night it ranges from 42dB to 63 dB, where the standard limit is 45dB. The ambient noise levels during the day in the commercial areas ranged between 65 dB to 86 dB, the standard limit being 65 dB and during the night the levels ranged between 44dB to 71 dB, the standard being 55 dB. In case of the silent area, the ambient noise levels during the day range from 62 dB to 69 dB, the standard being 50 dB and during the night the levels ranged from 45 dB to 58 dB where the standard level is 40 dB. In the industrial area, the noise levels throughout the various time intervals ranged from 63 dB to 77 dB in the day time intervals and 47 dB to 57 dB during the night hours. Most of the time, the noise levels were found to be within limits in the industrial area.

The trends of noise levels existing throughout the day in each of the areas, have been compared with the noise standards, and are shown in the fig 3.1(a) to fig 3.1(t). It is evident from the fig 3.1(a to t), that it in most of the commercial areas, the noise levels are above 70 dB throughout the day showing an 8% increase in sound level from the standard. During the night hours, except for 11:00 p.m. and in some

cases at 5:00 a.m. the noise levels are within the prescribed standards. In case of the residential areas, the noise levels are found to be above 65dB during the day hours in most of the cases showing an increase of 18% above standard level and above 50 dB up to 11:00 p.m. in the night at most places, which is an increase of 11% above the prescribed standard. The status of sound between 1:00 a.m. and 5:00 a.m. fluctuates between 42 dB and 58 dB in different localities.

The silent zone shows the noise levels of above 60 dB during the day hours, which is an increase of 20% above the standards and during the night hours, the noise levels being above 45 dB at different time intervals throughout the night, showing about 13% increase above noise standard. In the industrial area of Kolhapur city, i.e. Udyamnagar, the noise levels at different time intervals through the day are above 70 dB, with some exceptions of increase above 76 dB, but in most of the cases it was found to be ranging within the standards. During the nights however, the noise levels in industrial area was found to dip below 50 dB most of the time, where the standard limit is 70 dB.

Table 3.4: AMBIENT NOISE LEVELS IN DIFFERENT AREAS DURING NON FESTIVAL SEASON

AREA	7 A.M.	9 A.M.	11 A.M.	1 P.M.	3 P.M.	5 P.M.	7 P.M.	9 P.M.	11 P.M.	1 A.M.	3 A.M.	5 A.M.
New Shahupuri [C]	77	78	79	75	73	76	75	71	65	46	46	46
Tarabai Park [R]	67	69	68	69	65	67	69	64	63	46	46	46
Shahupuri [C]	66	77	74	73	73	73	76	72	64	46	46	46
Rajarampuri [R]	73	76	76	78	73	76	76	73	63	47	47	47
Shivaji road [C]	68	76	80	78	86	75	75	68	70	45	45	52
Bhausaingi Road [C]	72	75	78	73	76	79	78	71	71	46	46	62
Mahadwar Road [C]	74	72	76	71	72	74	74	60	55	44	44	53
Gangavesh [C]	75	82	76	73	74	77	76	68	67	46	46	62
Laxmipuri [C]	71	73	73	74	73	77	77	65	64	46	46	47
Udyam Nagar [I]	75	74	72	74	77	76	77	63	57	47	47	47
Mangalwar Peth [C]	70	74	76	73	77	77	77	65	69	48	48	52
Shivaji Peth [R]	69	71	73	75	71	73	72	65	68	46	45	52
Kacaba Bawada [R]	69	71	72	73	71	72	70	70	54	43	42	45
Line Bazar [R]	68	69	68	77	71	72	67	67	50	43	42	45
Sadar Bazar [R]	67	74	69	69	67	69	70	74	55	47	46	50
Kadamwadi [R]	67	74	72	66	65	69	69	74	53	43	43	45
Ruikar Colony [R]	65	67	66	65	68	71	69	66	57	54	55	56
Shivaji Park [R]	62	68	66	68	79	69	64	67	55	63	52	57
Vidyanagar [S]	66	65	65	62	63	65	69	65	51	46	45	58
Pratibha Nagar [R]	63	70	71	69	76	68	68	69	55	43	45	45

WHERE
C = COMMERCIAL AREA
R = RESIDENTIAL AREA
I = INDUSTRIAL AREA
S = SILENT AREA

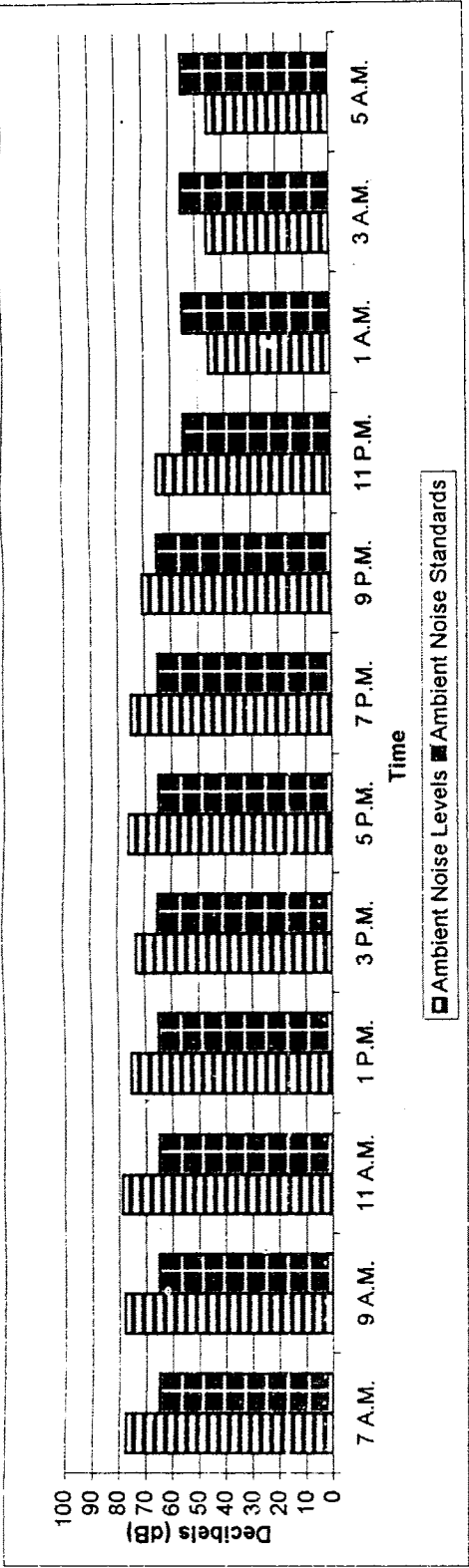


Fig 3.1(a): Comparison chart of ambient noise levels and ambient noise standards in New Shahupuri area during non festival season

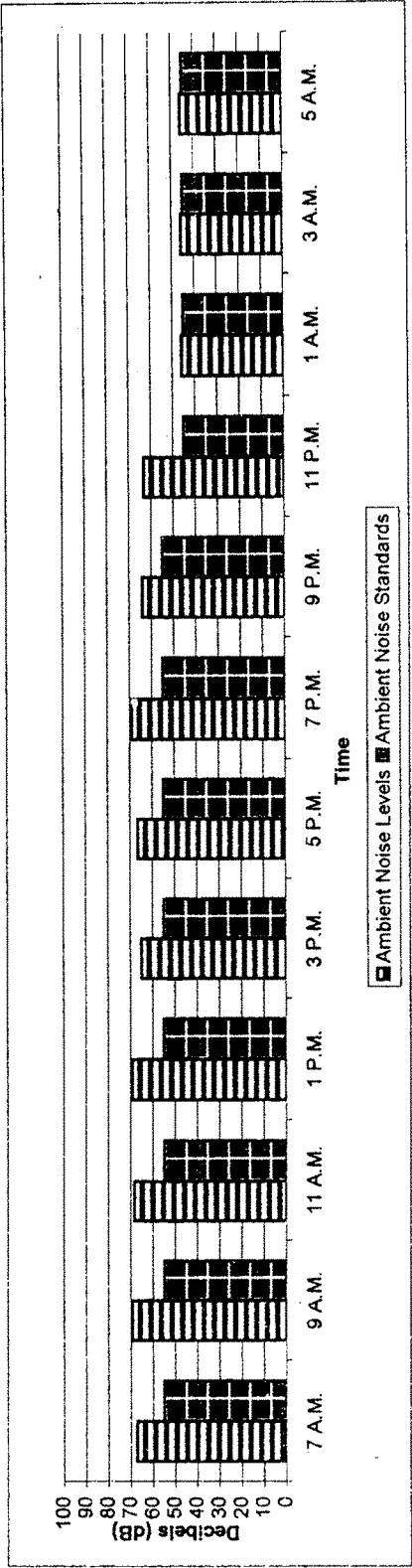


Fig 3.1(b): Comparison chart of ambient noise levels and ambient noise standards in Tarabai Park area during non festival season

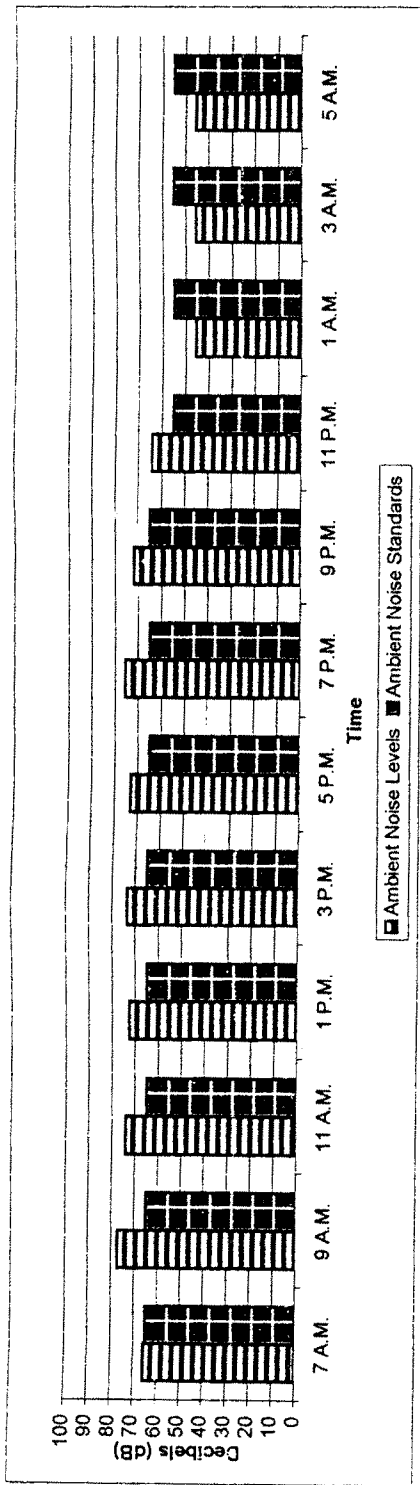


Fig 3.1(c): Comparison chart of ambient noise levels and ambient noise standards in Shahupuri area during non festival season

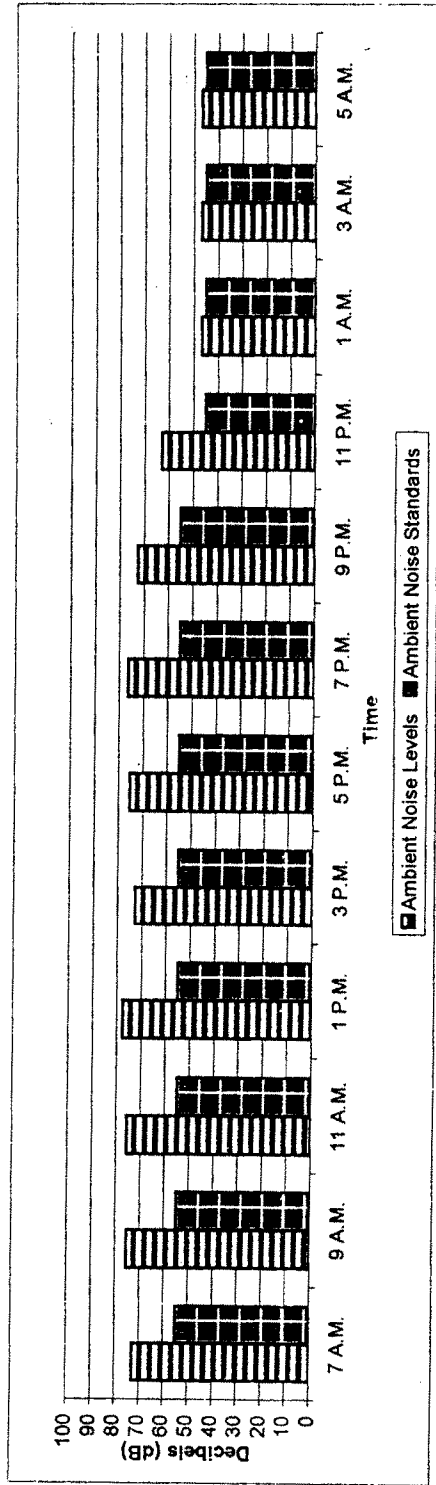


Fig 3.1(d): Comparison chart of ambient noise levels and ambient noise standards in Rajarampuri area during non festival season

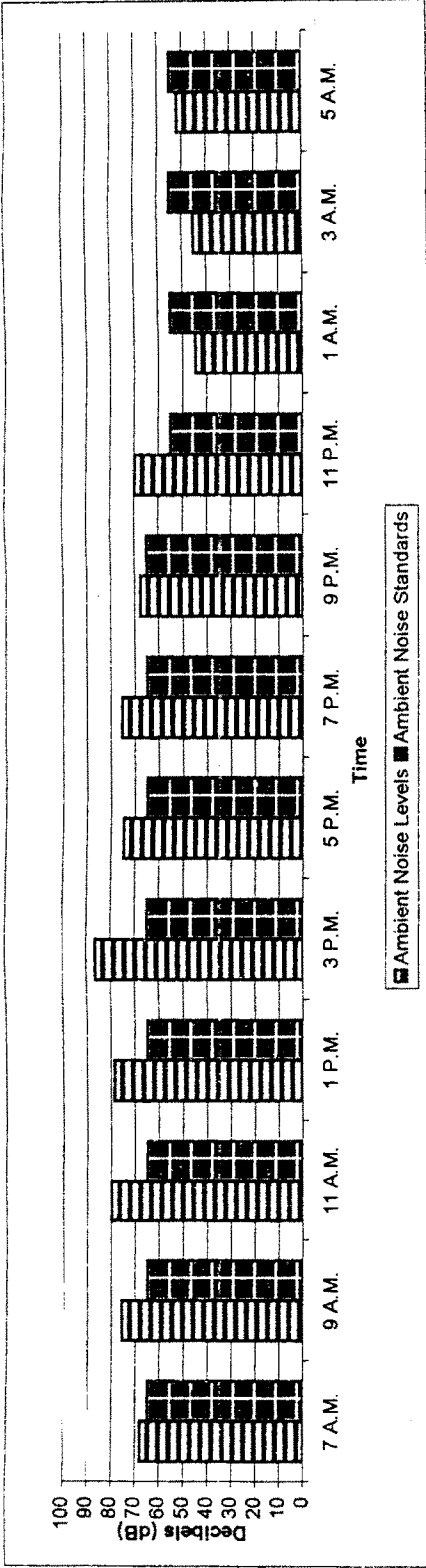


Fig 3.1(e): Comparison chart of ambient noise levels and ambient noise standards in Shivaji road area during non festival season

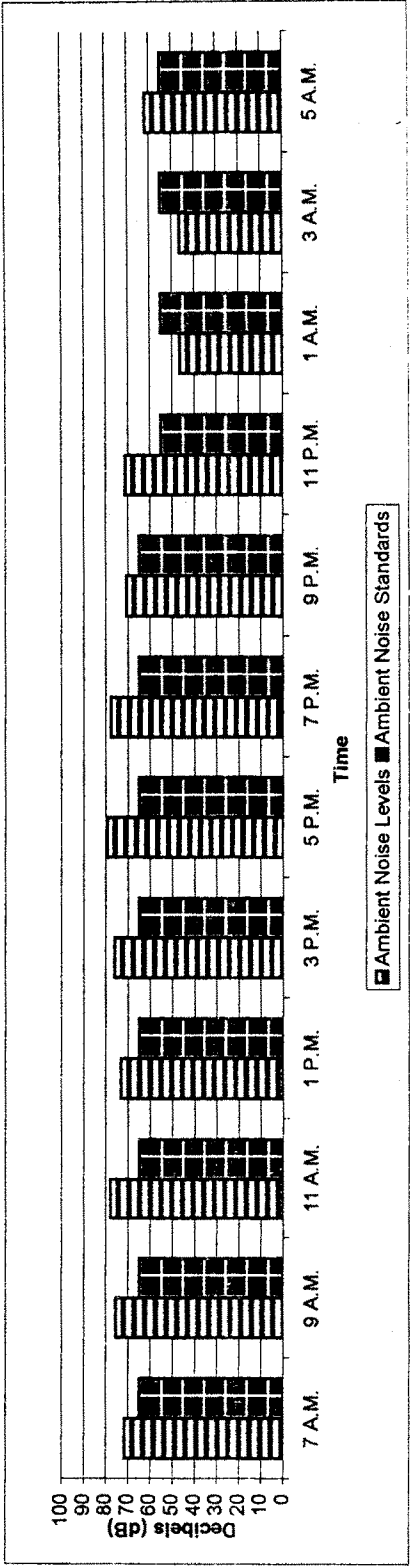


Fig 3.1(f): Comparison chart of ambient noise levels and ambient noise standards in Bhausinji road area during non festival season

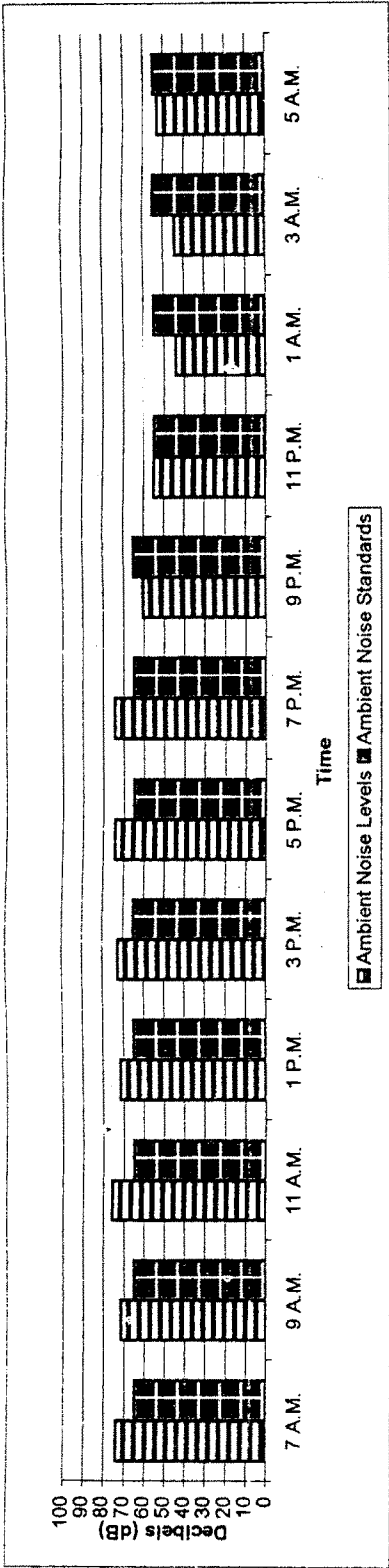


Fig 3.1(g): Comparison chart of ambient noise levels and ambient noise standards in Mahadwar road area during non festival season

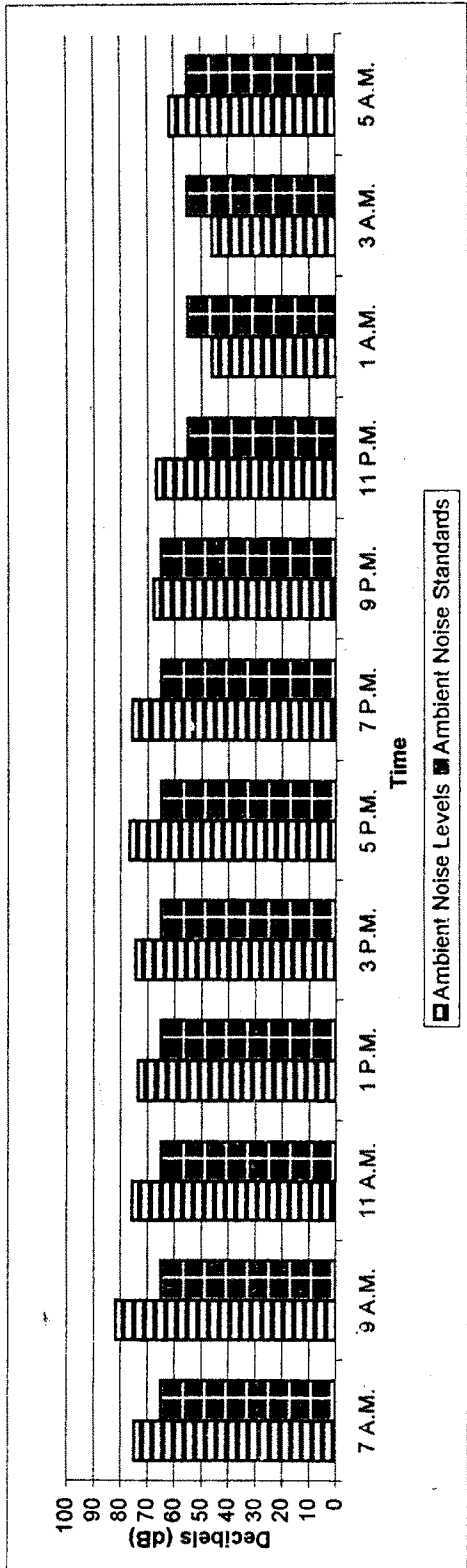


Fig 3.1(h): Comparison chart of ambient noise levels and ambient noise standards in Gangavesh area during non festival season



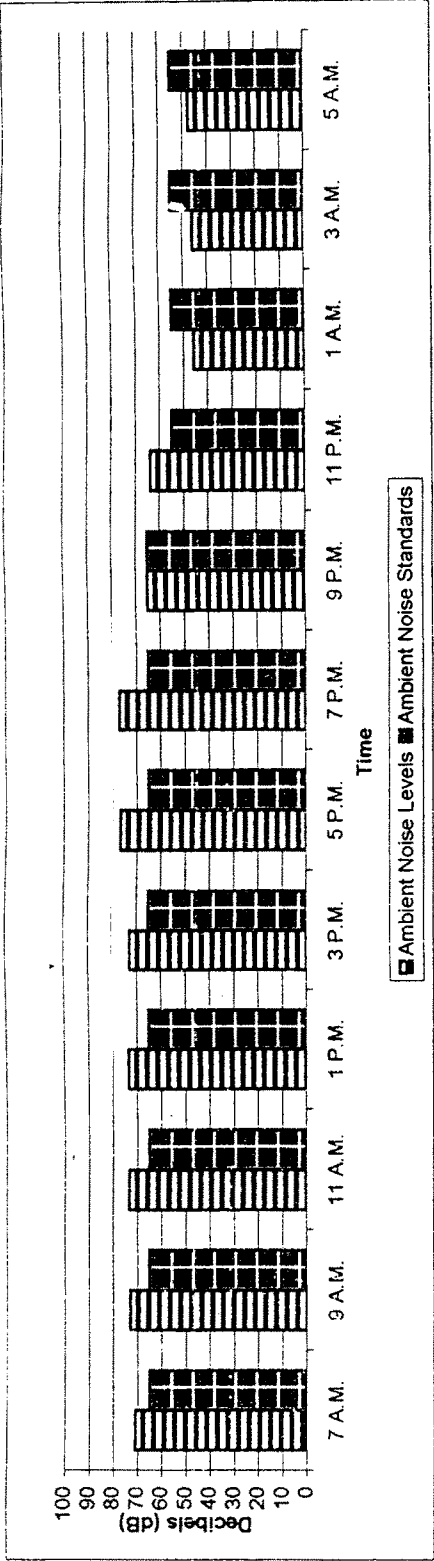


Fig 3.1(i): Comparison chart of ambient noise levels and ambient noise standards in Laxmipuri area during non festival season

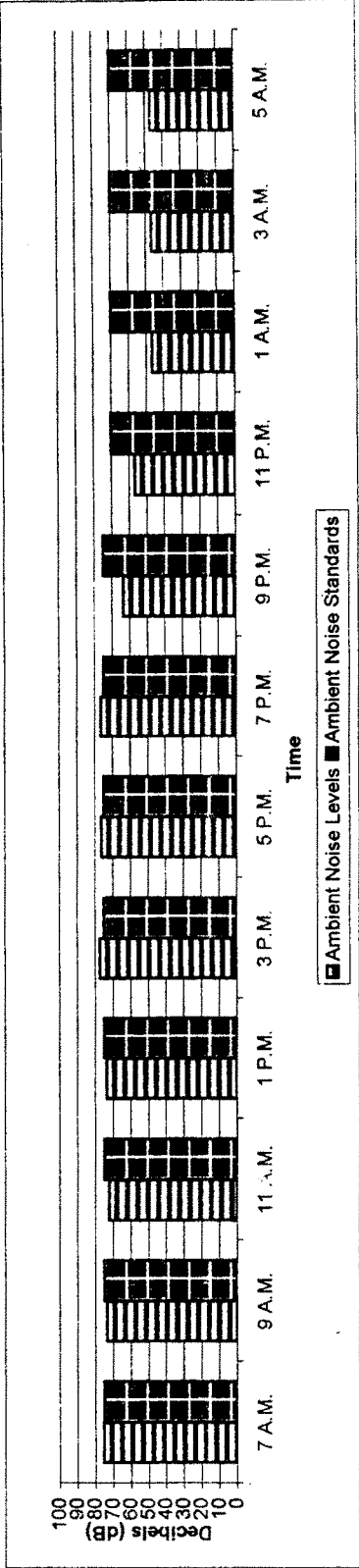


Fig 3.1(j): Comparison chart of ambient noise levels and ambient noise standards in Udyam Nagar area during non festival season

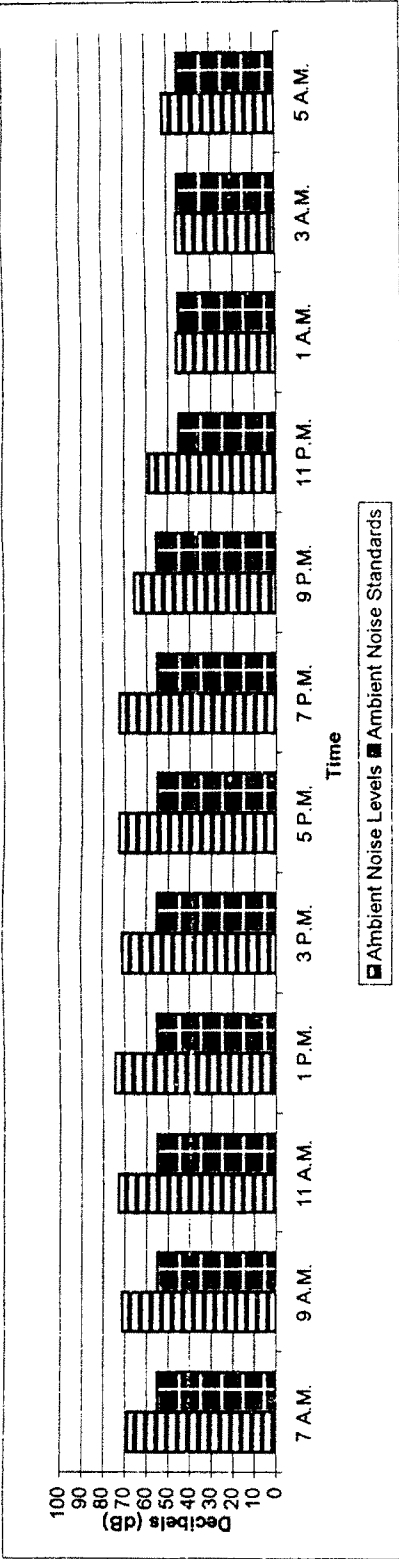


Fig 3.1(k): Comparison chart of ambient noise levels and ambient noise standards in Shivaji Peth area during non festival season

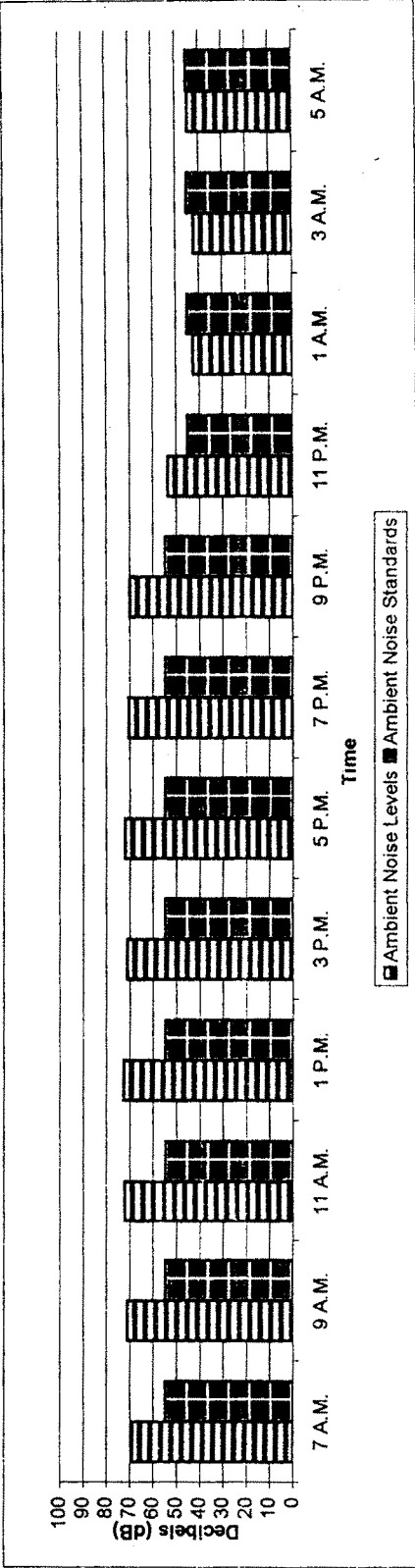


Fig 3.1(l): Comparison chart of ambient noise levels and ambient noise standards in Kasaba Bawada area during non festival season

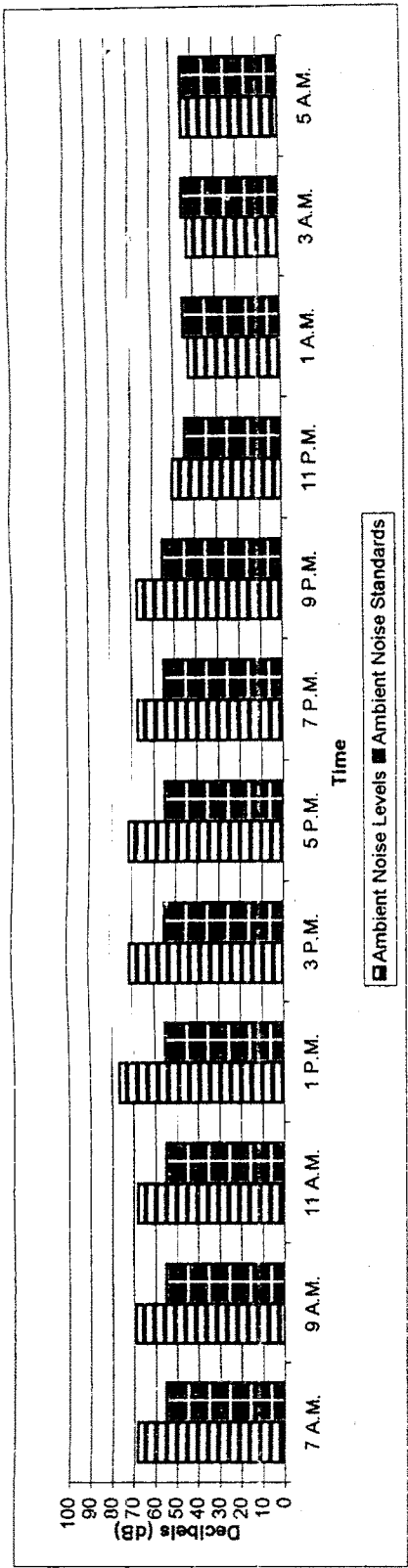


Fig 3.1(m): Comparison chart of ambient noise levels and ambient noise standards in Line Bazar area during non festival season

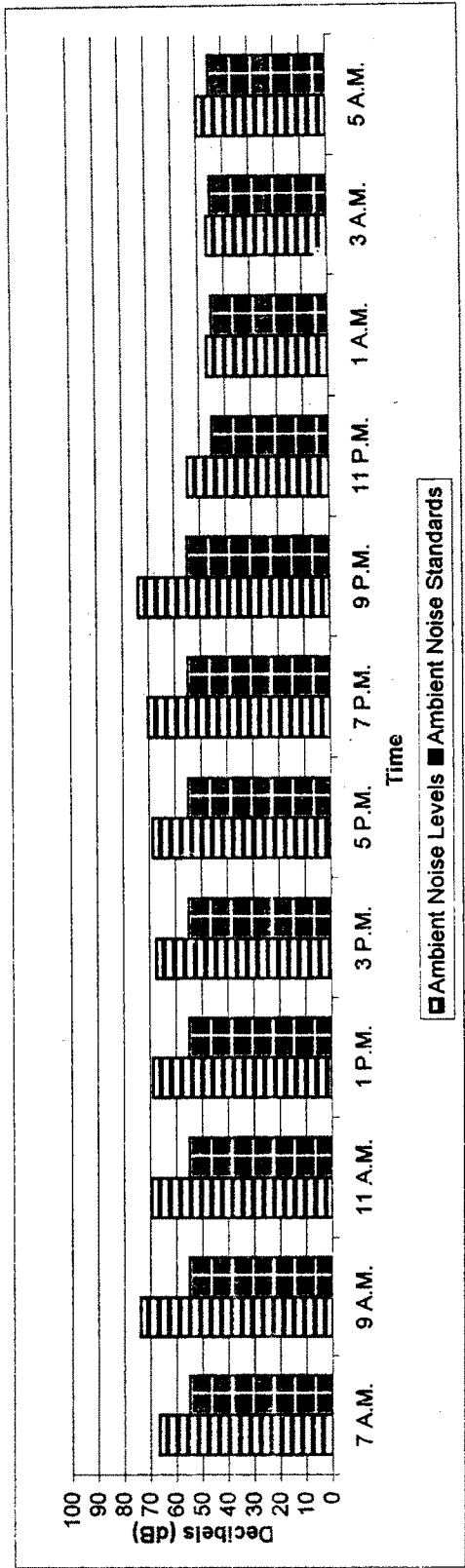


Fig 3.1(n): Comparison chart of ambient noise levels and ambient noise standards in Sadar Bazar area during non festival season

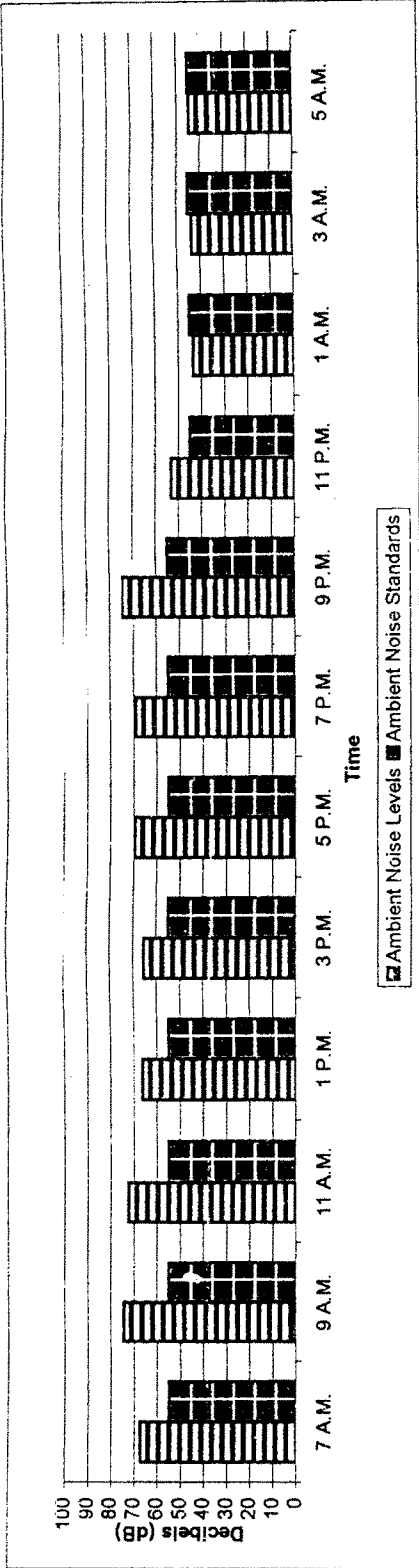


Fig 3.1(o): Comparison chart of ambient noise levels and ambient noise standards in Kadam Wadi area during non festival season

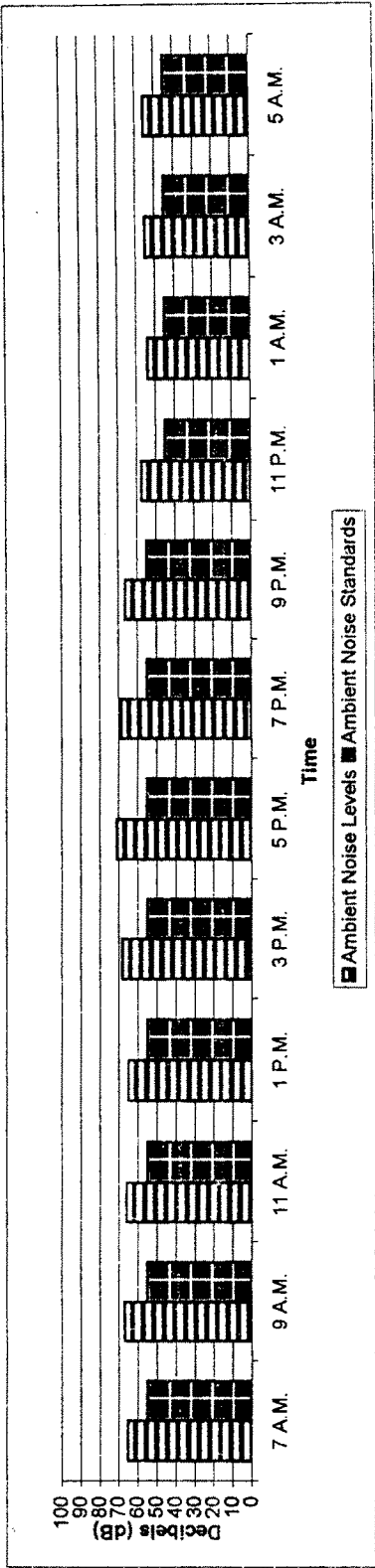


Fig 3.1(p): Comparison chart of ambient noise levels and ambient noise standards in Ruikar Colony area during non festival season

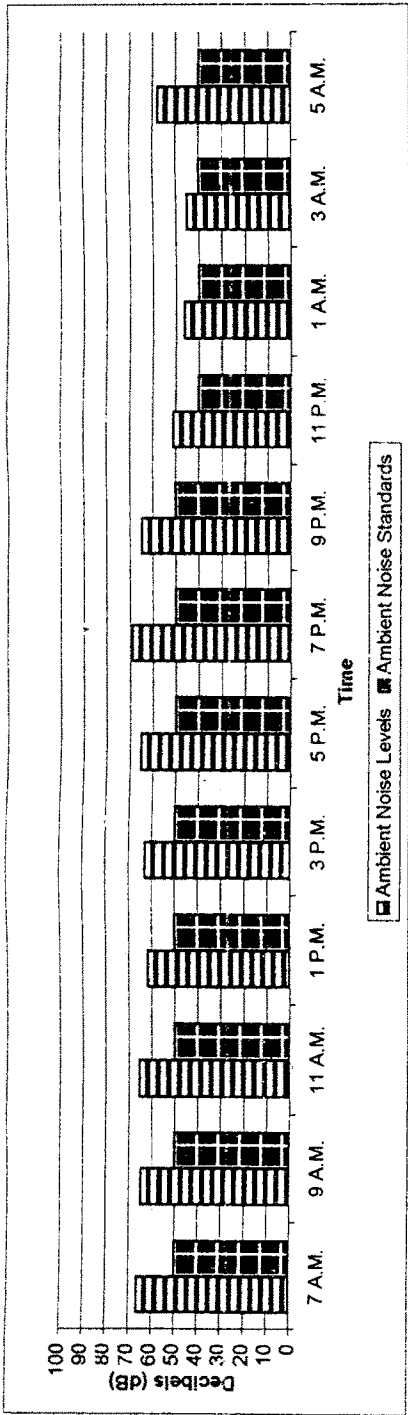


Fig 3.1(q): Comparison chart of ambient noise levels and ambient noise standards in Vidyannagar area during non festival season

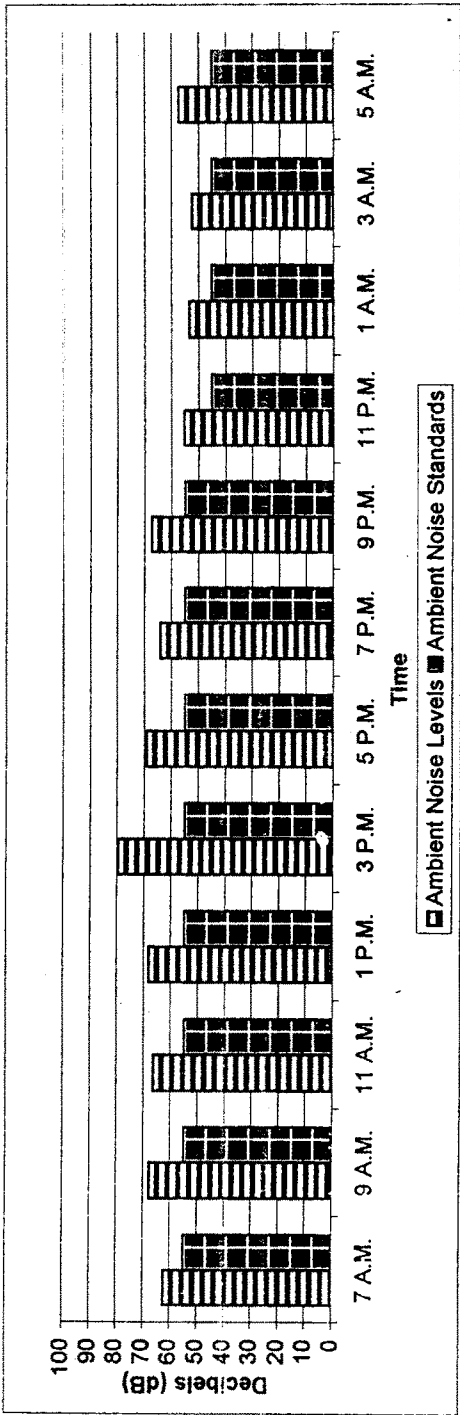


Fig 3.1(r): Comparison chart of ambient noise levels and ambient noise standards in Shivaji Park area during non festival season

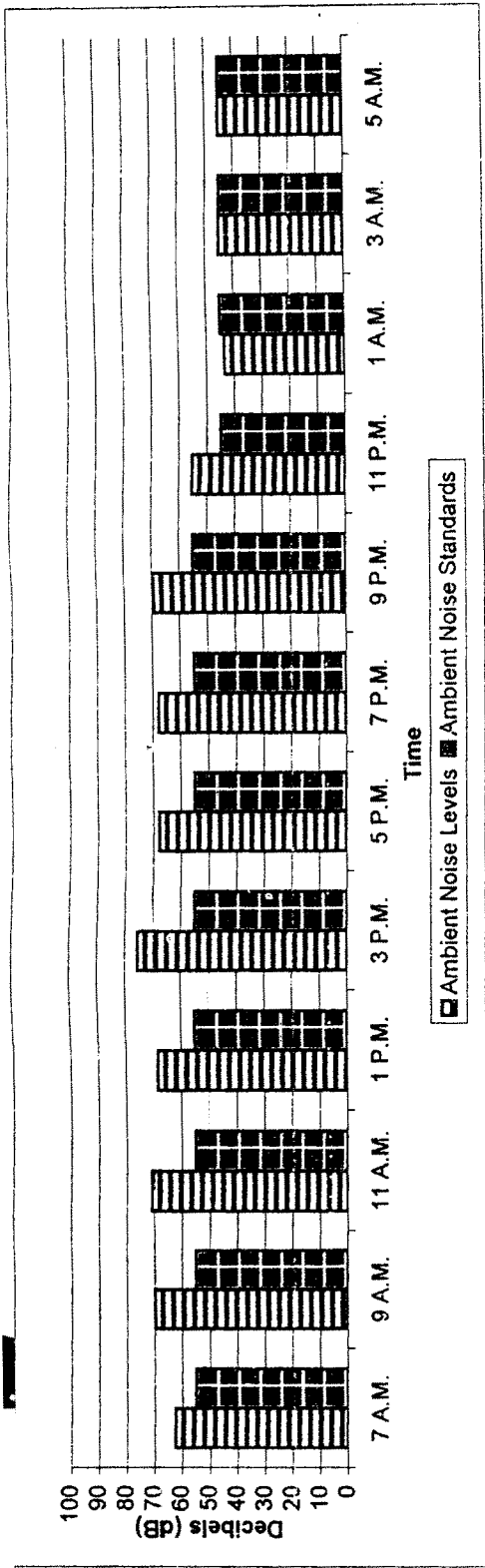


Fig 4.5(s): Comparison chart of ambient noise levels & ambient noise standards in Pratibha Nagar area during non festival season

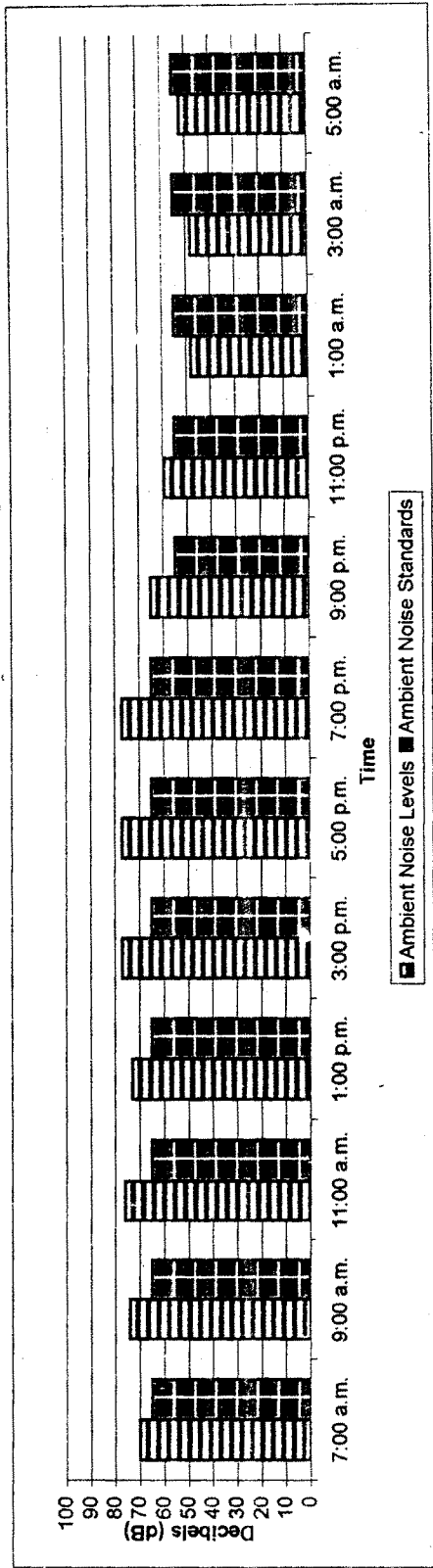


Fig 4.5(t): Comparison chart of ambient noise levels & ambient noise standards in Mangalwai Peth area during non festival season

Noise levels for Days and Nights:

The ambient equivalent energy noise levels for the days and nights have been estimated and it is stated in table 3.5. The commercial areas show noise levels during the day hours in the range of 73 dB to 79 dB in different localities and the night hour levels ranged from 52 dB to 66 dB, where 75% of the areas recorded noise levels above 55 dB. Similarly the residential areas studied, showed noise levels during the day in the range of 68 dB to 75 dB, showing an increase of 24% to 40%, while in the night hours it ranged between 46 dB to 57 dB, showing an increase of 2% to 27% from the prescribed standards.

In case of the industrial area, the noise level for the day was found to be 75 dB and during the night it was only 52 dB, where the standard limit is 70 dB, indicating that the noise levels in the industrial area are within the standard limits. The silent zone showed noise level of 64 dB during the day, which is an increase of 28% and 52dB during the night, indicating an increase of 30%, from the standard limits.

The status of noise in each area has been compared with the noise standards and is shown in fig 3.2 (a to t). As each area is unique in its own way, these comparative graphs will help comprehend the noise status in each of the studied areas.

Table 3.5: Ambient noise levels for day and night during non festival season

AREAS	DAY	NIGHT
New Shahupuri	76	59
Trabai Park	68	57
Shahupuri	74	58
Rajarampuri	75	57
Shivaji road	79	64
Bhausinji Road	76	66
Mahadwar Road	73	52
Gangavesh	76	62
Laxmipuri	74	58
Udyam Nagar	75	52
Mangalwar Peth	75	54
Shivaji Peth	72	54
Kasaba Bawada	71	49
Line Bazar	71	46
Sadar Bazar	71	51
Kadamwadi	71	48
Ruikar Colony	68	56
Shivaji Park	73	55
Vidyanagar	64	52
Pratibha Nagar	70	50

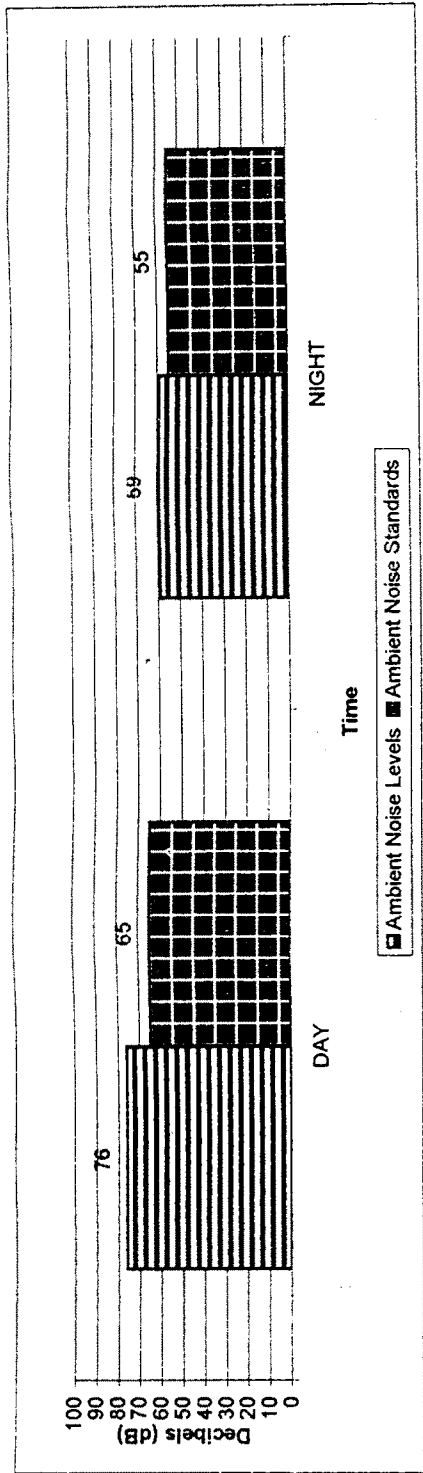


Fig 3.2(a): Comparison Chart of ambient noise levels an ambient noise standards in New Shahupuri area during non festival season

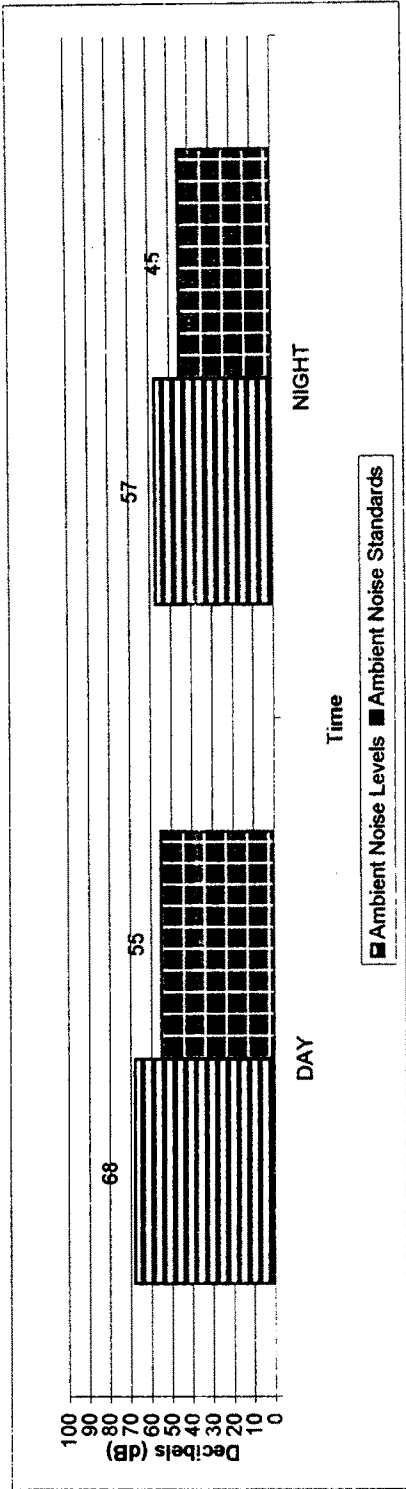


Fig 3.2(b): Comparison Chart of ambient noise levels an ambient noise standards in Tarabai Park area during non festival season

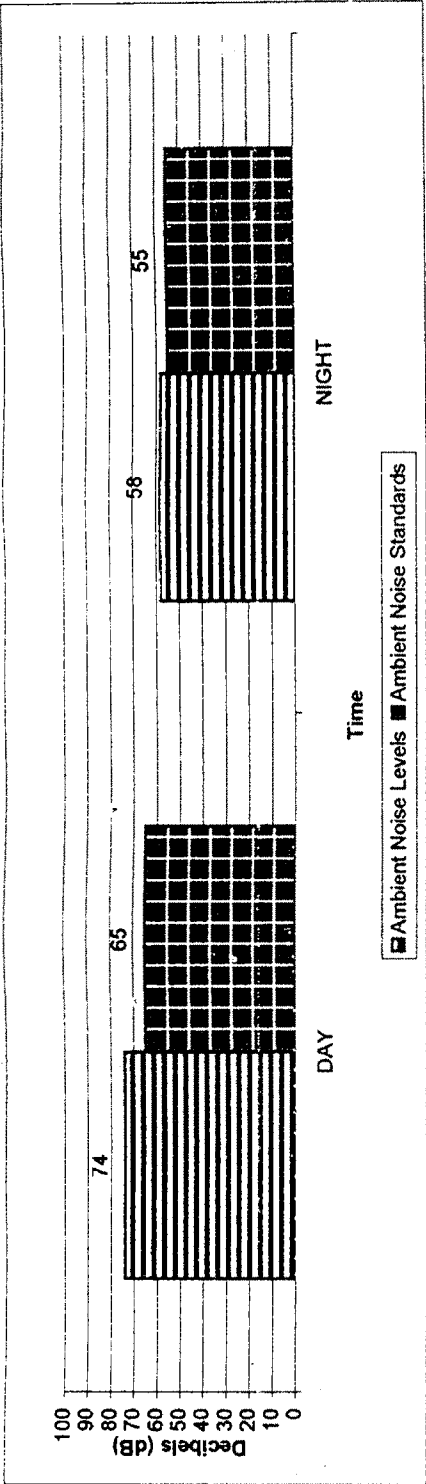


Fig 3.2(c): Comparison Chart of ambient noise levels an ambient noise standards in Shahupuri area during non festival season

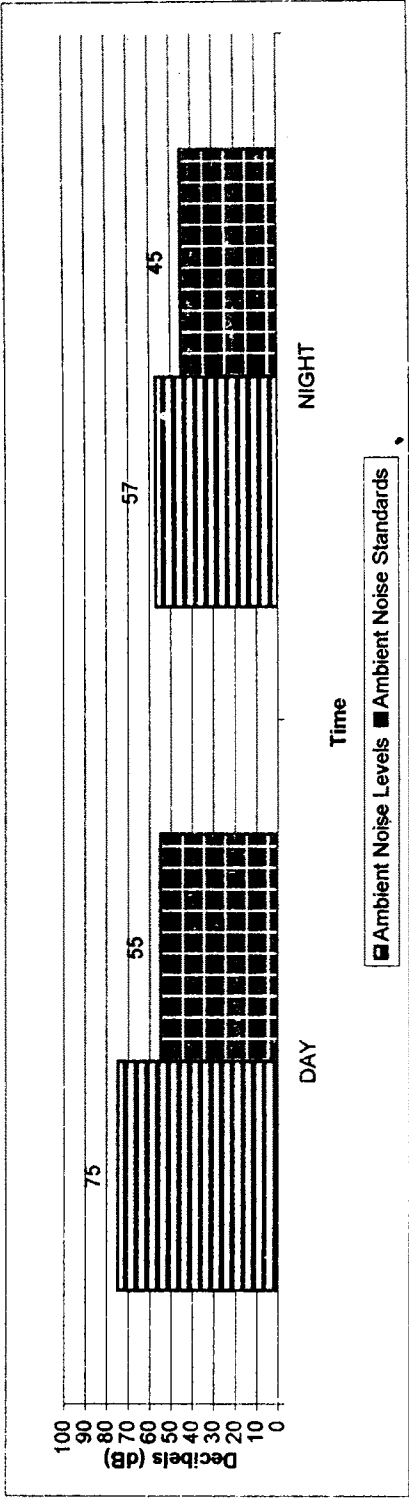


Fig 3.2(d): Comparison Chart of ambient noise levels an ambient noise standards in Rajarampuri area during non festival season

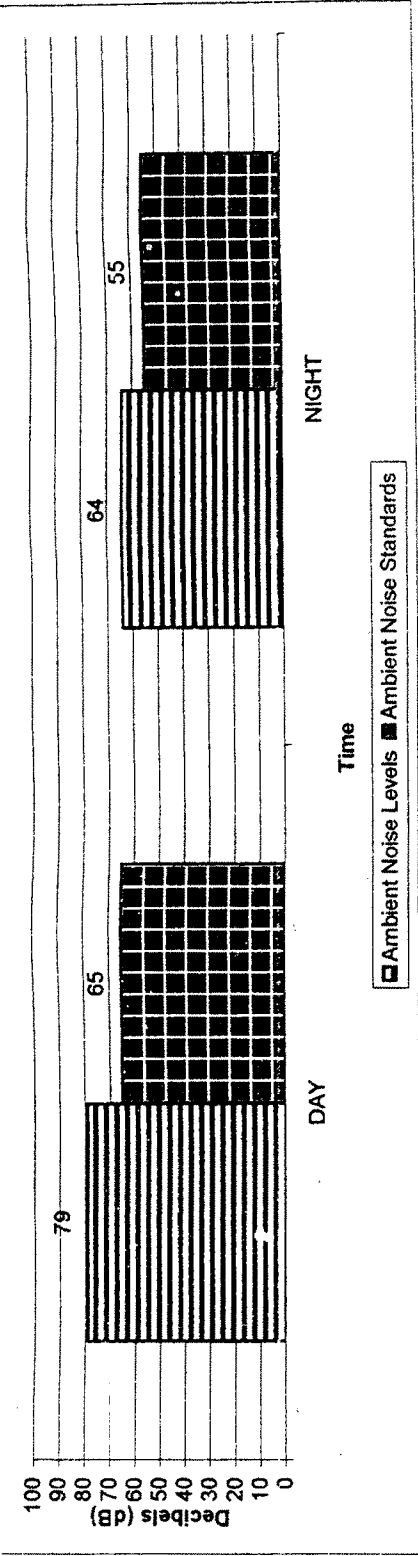


Fig 3.2(e): Comparison Chart of ambient noise levels an ambient noise standards in Shivaji Road area during non festival season

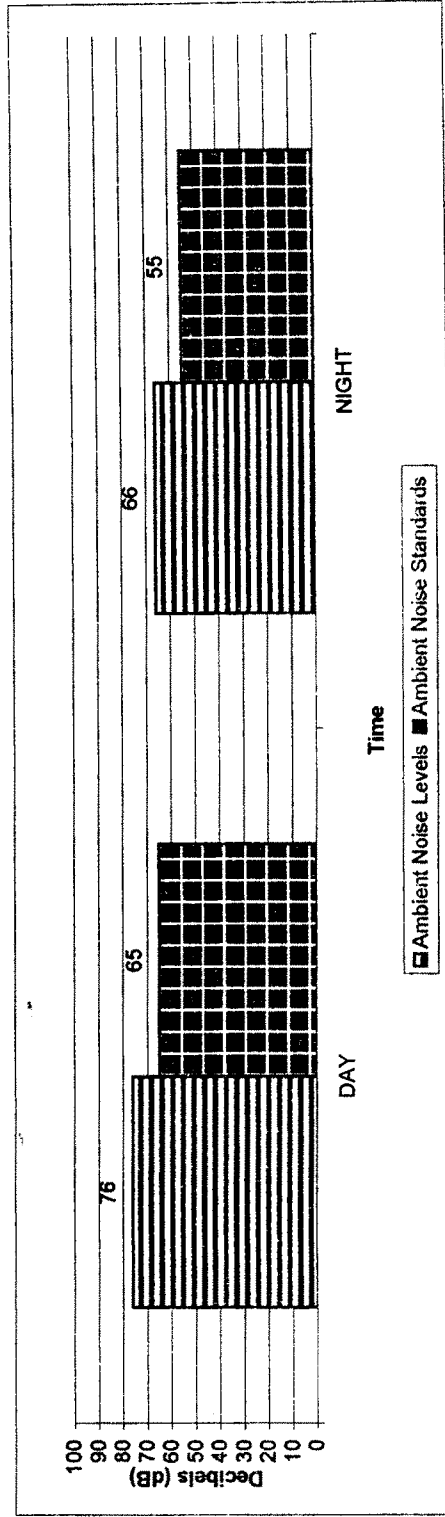


Fig 3.2(f): Comparison Chart of ambient noise levels an ambient noise standards in Bhausinji Road area during non festival season

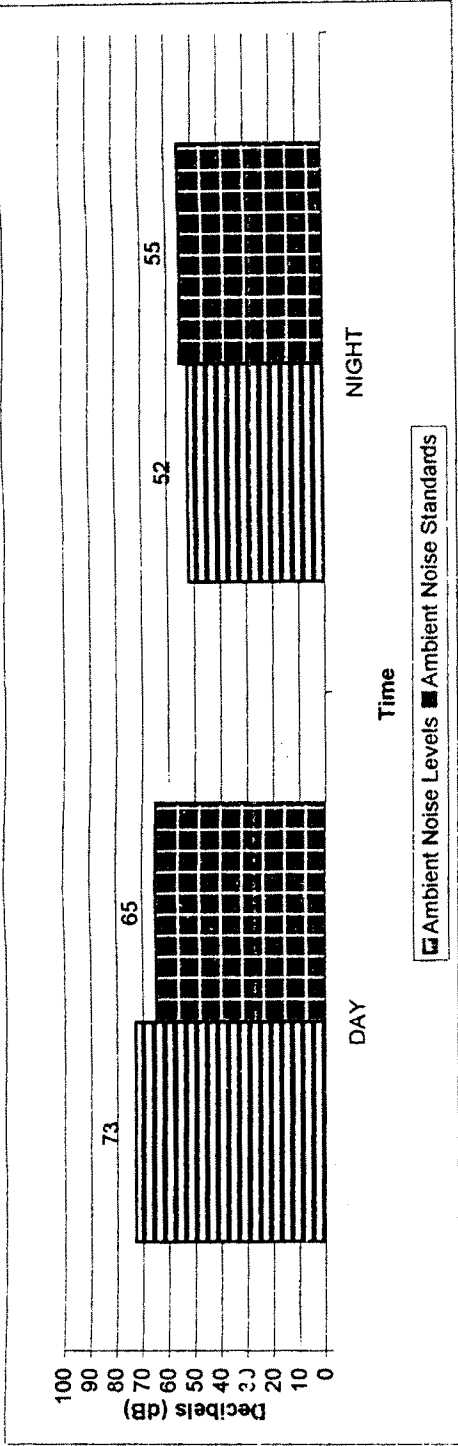


Fig 3.2(g): Comparison Chart of ambient noise levels an ambient noise standards in Mahadwar Road area during non festival season

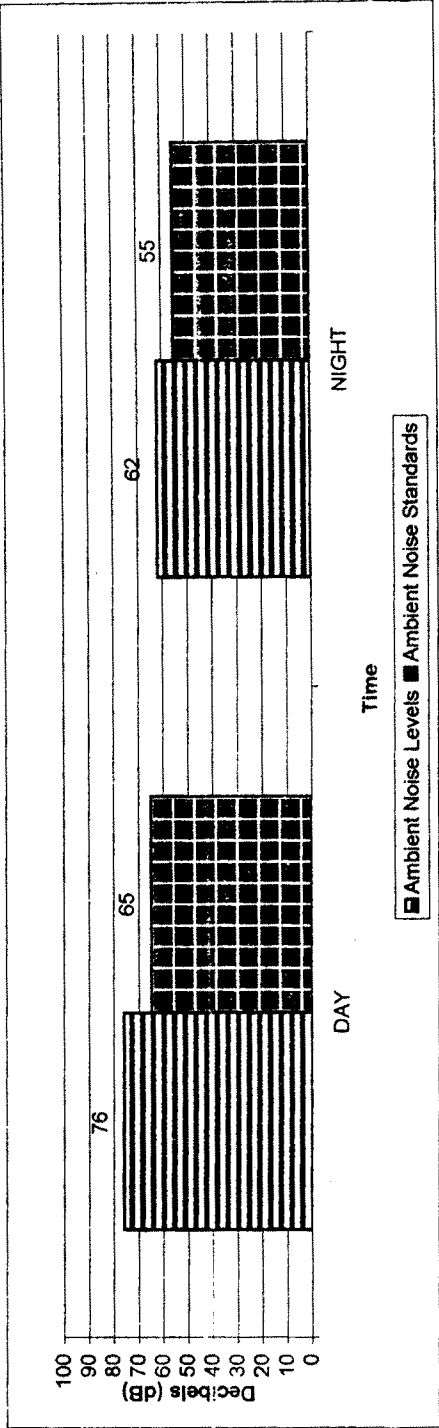


Fig 3.2(h): Comparison Chart of ambient noise levels an ambient noise standards in Gangavesh area during non festival season

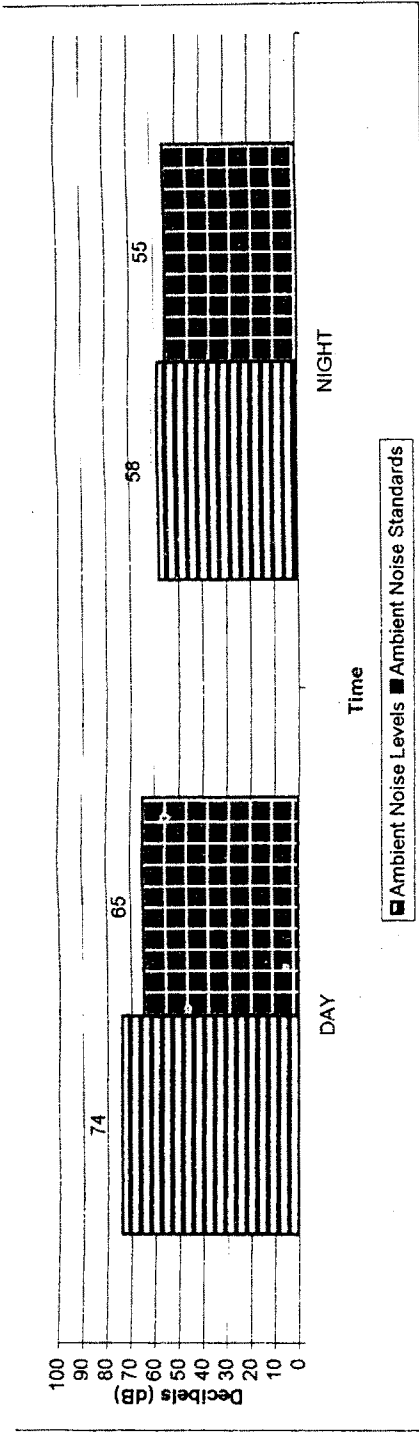


Fig 3.2(i): Comparison Chart of ambient noise levels in an ambient noise standards in Laxmipuri area during non festival season

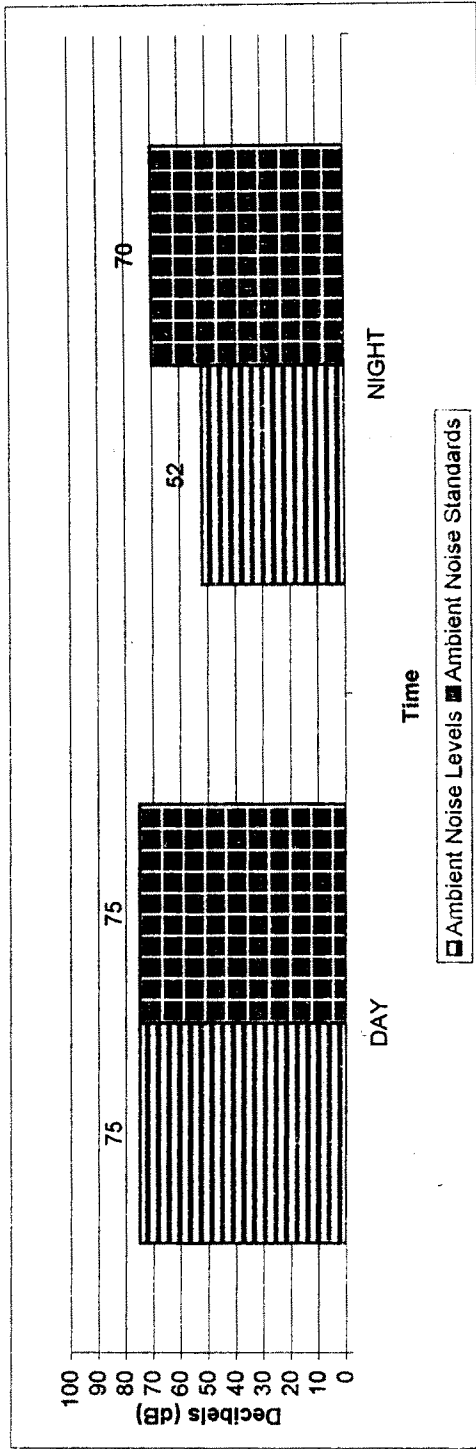


Fig 3.2(j): Comparison Chart of ambient noise levels in an ambient noise standards in Udyamnagar area during non festival season

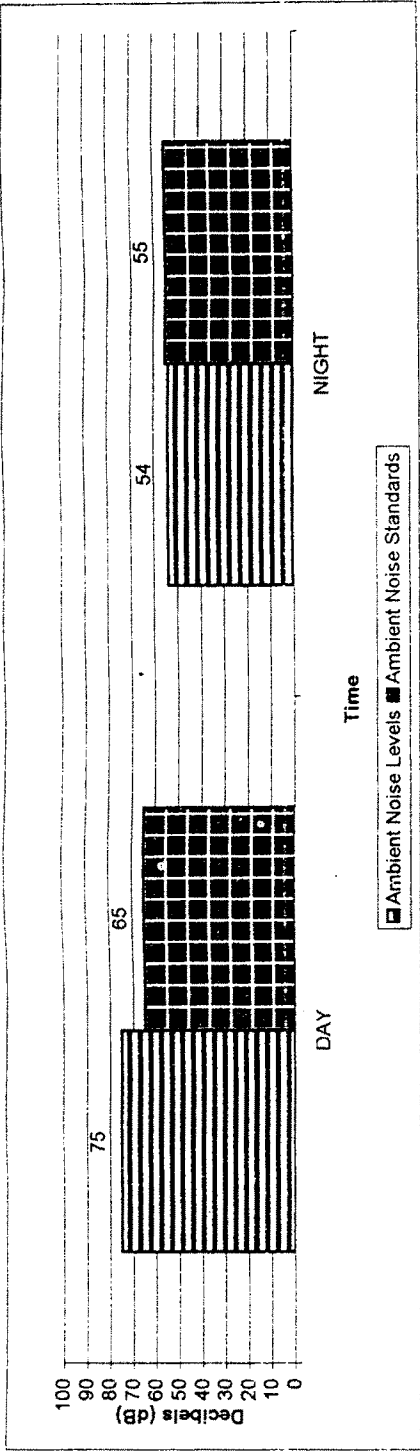


Fig 3.2(k): Comparison Chart of ambient noise levels an ambient noise standards in Mangalwar Peth area during non festival season

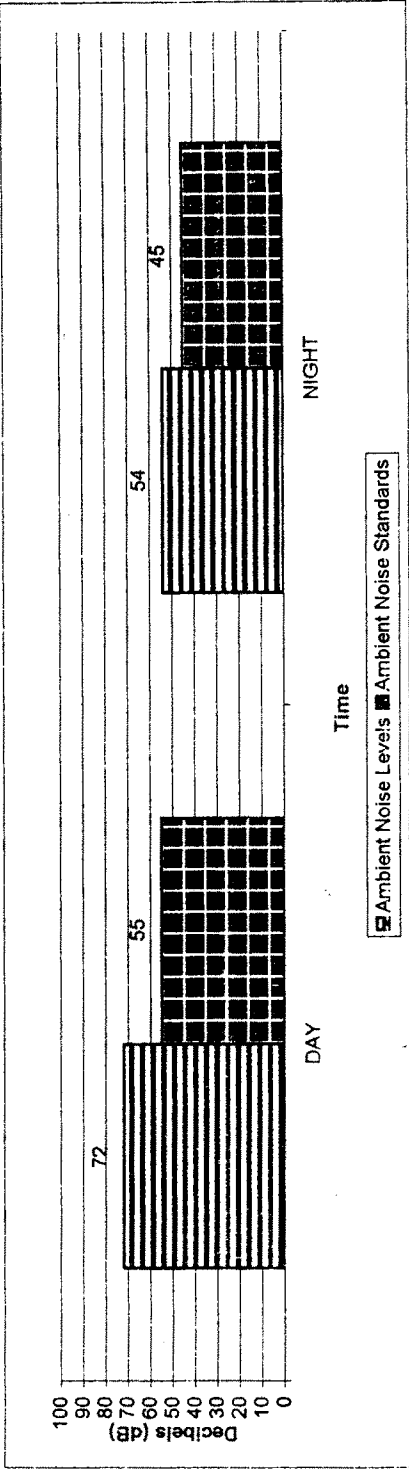


Fig 3.2(l): Comparison Chart of ambient noise levels an ambient noise standards in Shivaji Peth area during non festival season



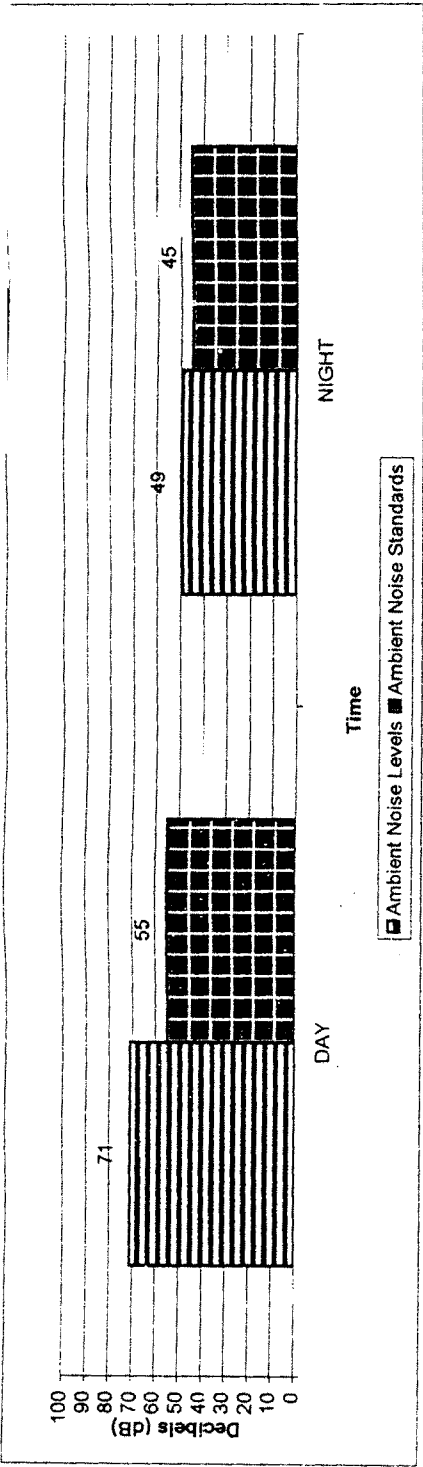


Fig 3.2(m): Comparison Chart of ambient noise levels an ambient noise standards in Kasaba Bawada area during non festival season

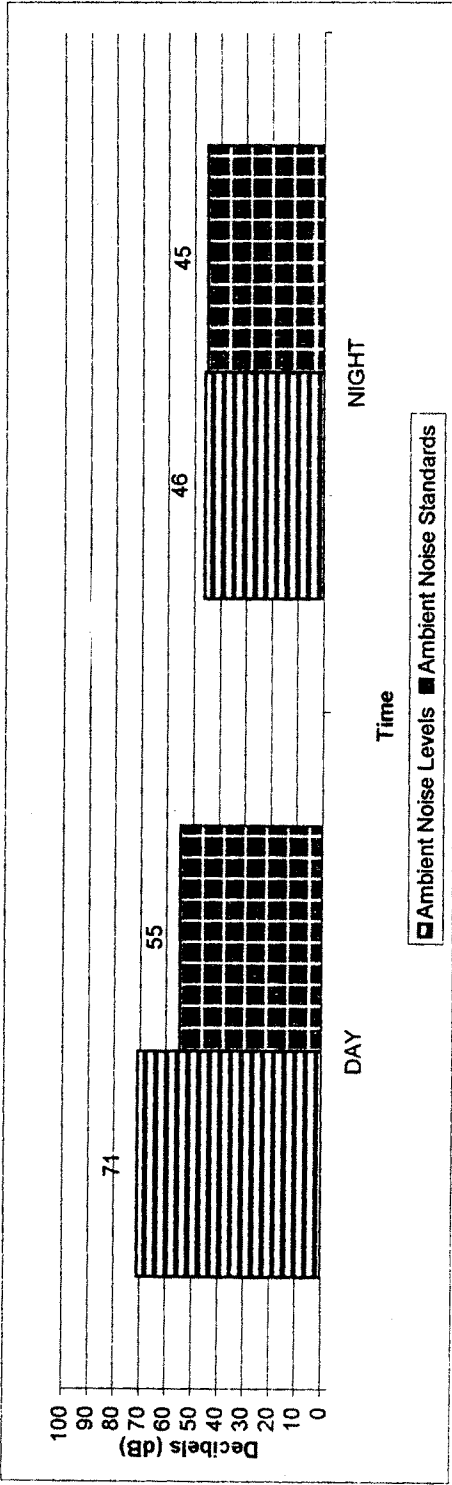


Fig 3.2(n): Comparison Chart of ambient noise levels an ambient noise standards in Line Bazar area during non festival season

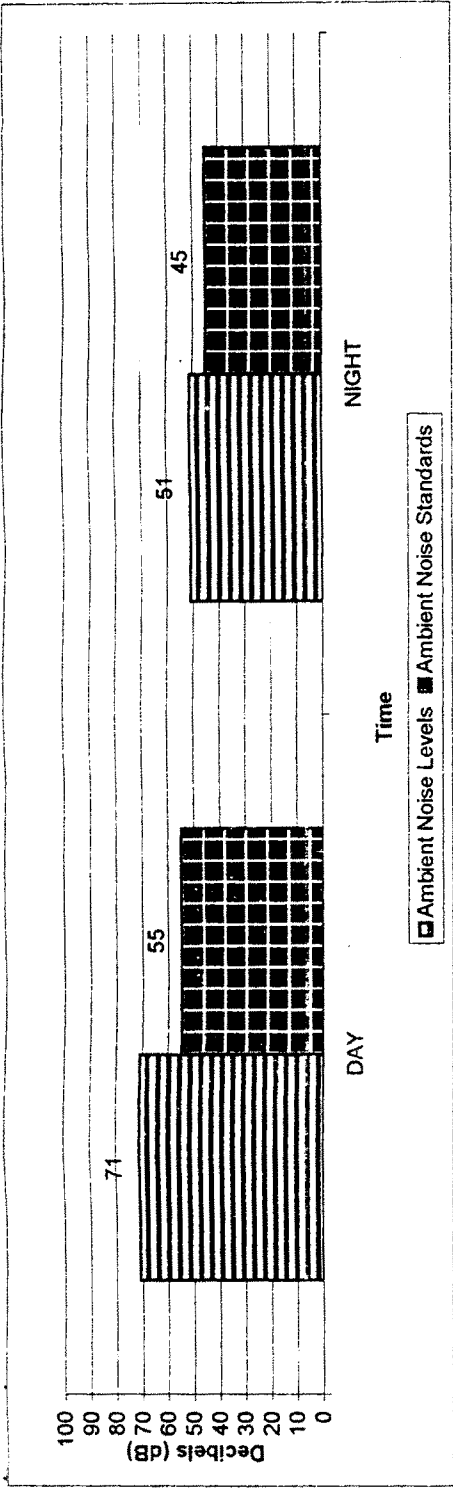


Fig 3.2(o): Comparison Chart of ambient noise levels an ambient noise standards in Sadar Bazar area during non festival season

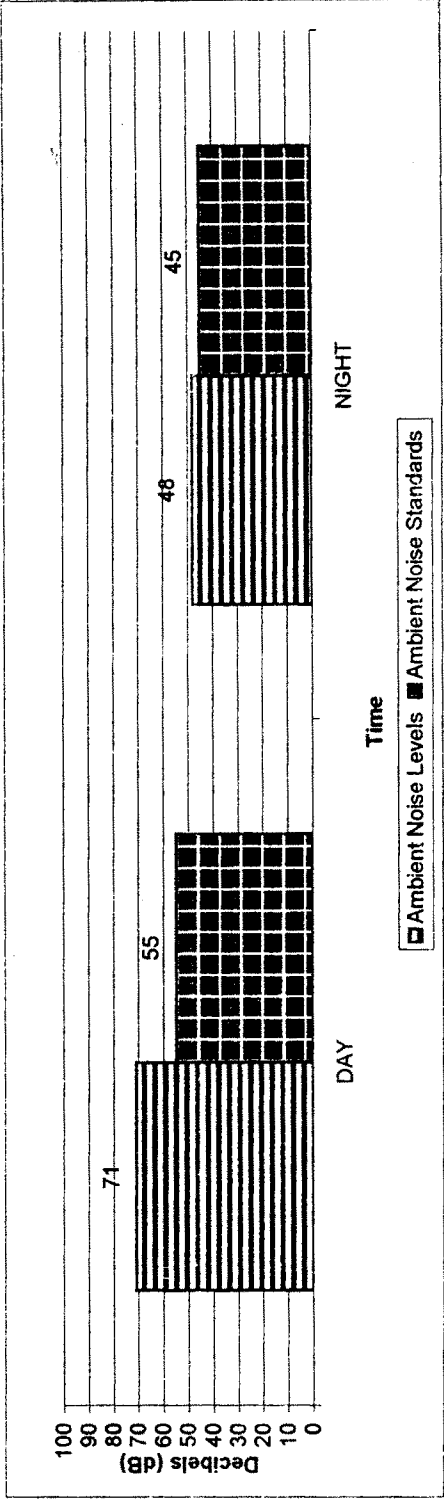


Fig 3.2(p): Comparison Chart of ambient noise levels an ambient noise standards in Kadamwadi area during non festival season

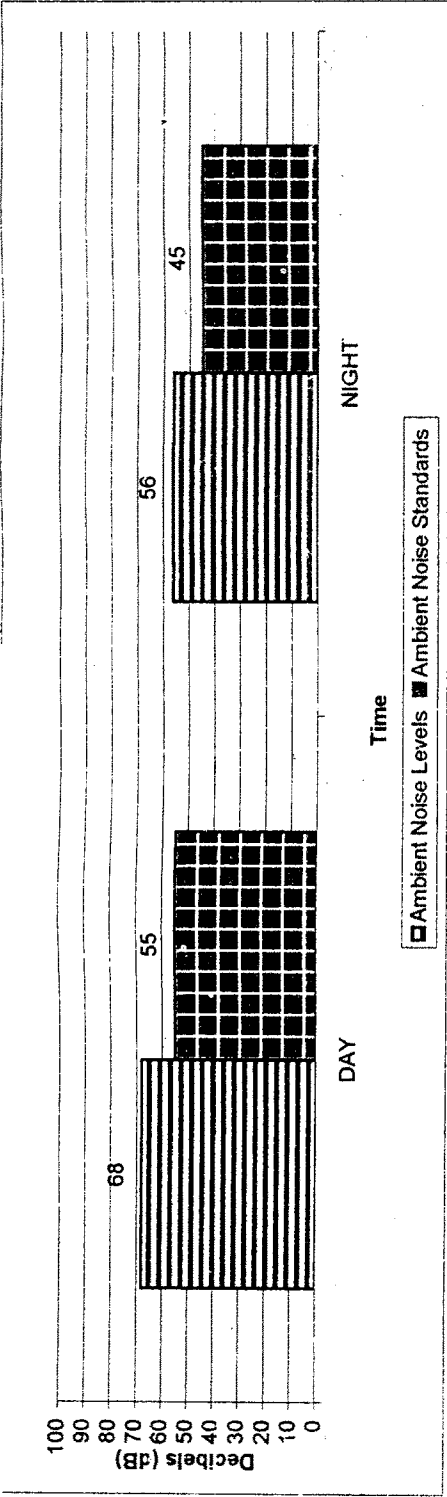


Fig 3.2(q): Comparison Chart of ambient noise levels and ambient noise standards in Ruikar Colony area during non festival season

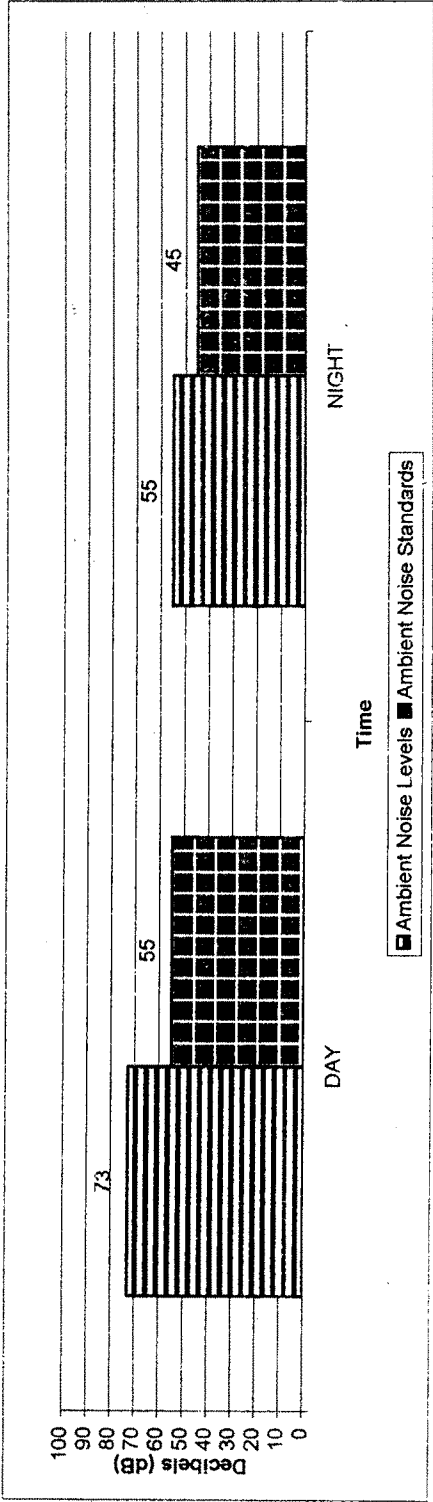


Fig 3.2(r): Comparison Chart of ambient noise levels and ambient noise standards in Shivaji Park area during non festival season

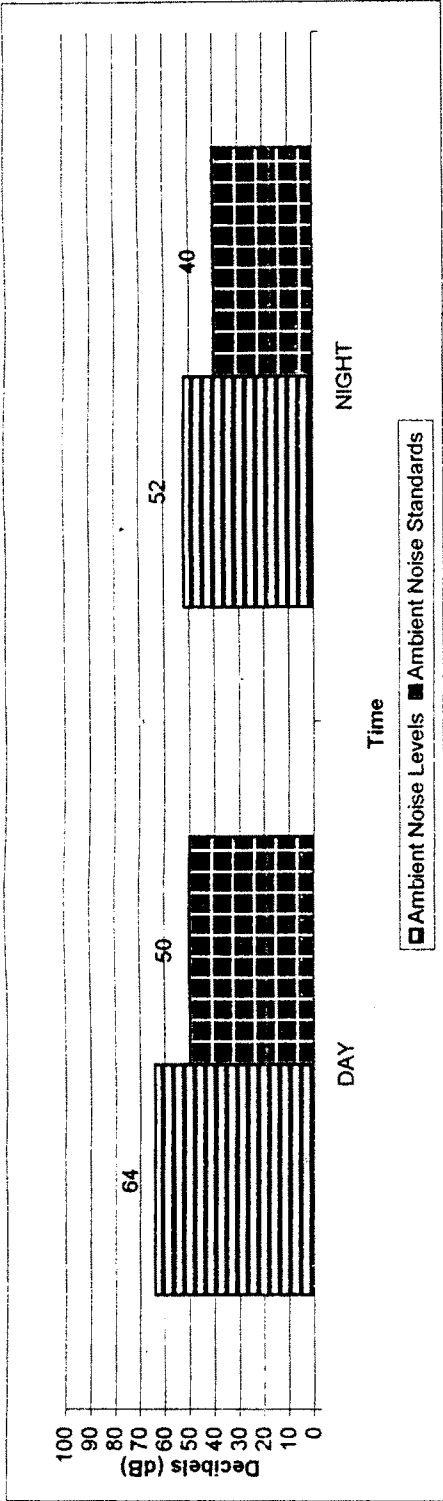


Fig 3.2(s): Comparison Chart of ambient noise levels and ambient noise standards in Vidyanagar area during non festival season

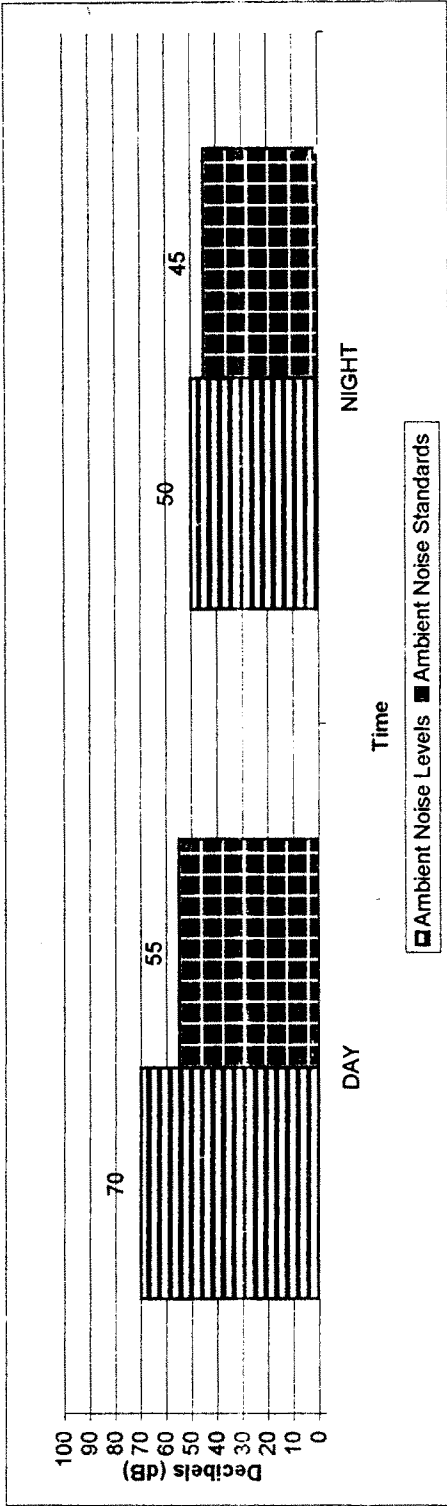


Fig 3.2(t): Comparison Chart of ambient noise levels and ambient noise standards in Pratibha Nagar area during non festival season

Noise level for each zone:

Based on the different localities studied, the noise levels prevailing in the four zones viz. commercial areas, residential areas, industrial area and the silent zone in Kolhapur city is represented in table 3.6. The status of the zones have been compared with the noise standards in the fig 3.3 (a to d). It is observed that the noise levels in the commercial areas are about 75 dB during the day and 59 dB during the night. Similarly, the noise level in the residential areas is about 71 dB during the day and 52 dB during the night. The silent zone showed a noise level of 64 dB during the day and 52 dB during the night. In all the above areas, the noise levels are found to be above the noise standards. Contrary to this, the industrial area showed sound levels within the noise standards during the day and the night.

Table 3.6: The noise levels prevailing in the different zones

AREA	DAY	NIGHT
Commercial	75 dB	59 dB
Residential	71 dB	52 dB
Industrial	75 dB	52 dB
Silent	64 dB	52 dB

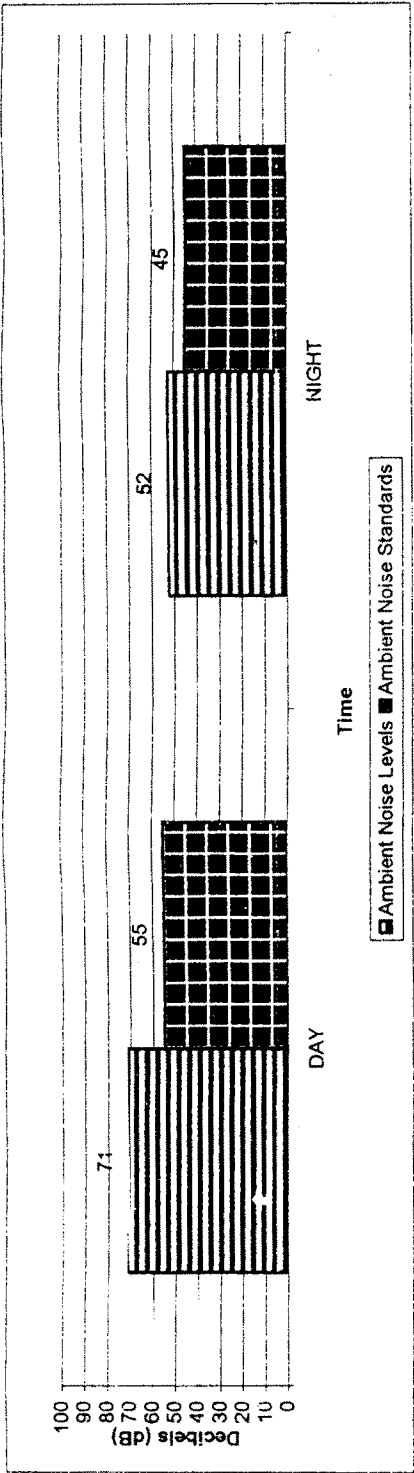


Fig 3.3(a): Comparison chart of ambient noise levels and the noise standards in the residential area during non festival season.

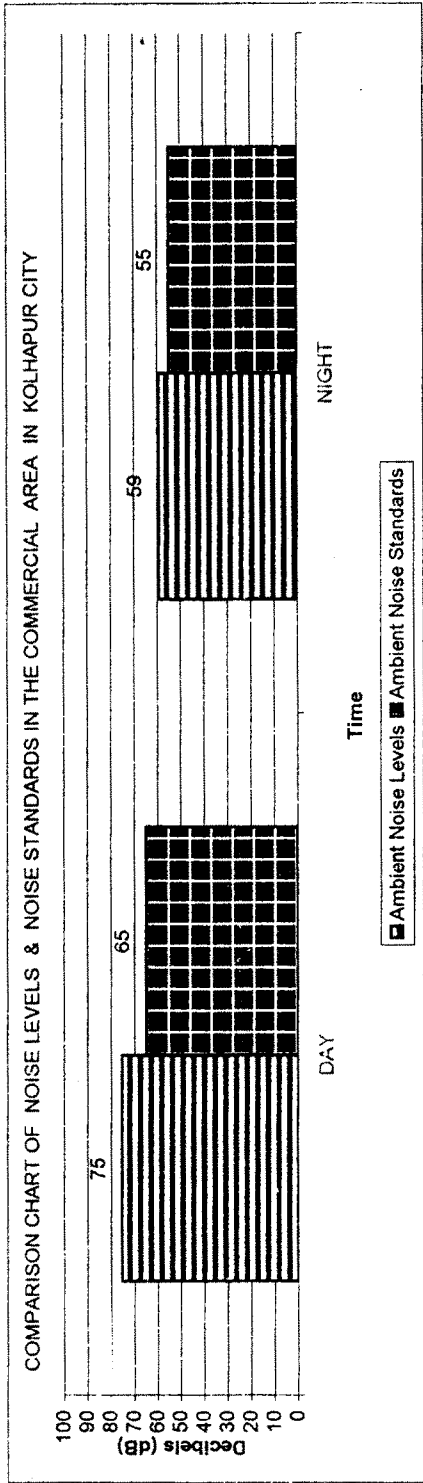


Fig 3.3(b): Comparison chart of ambient noise levels and the noise standards in the commercial area during non festival season.

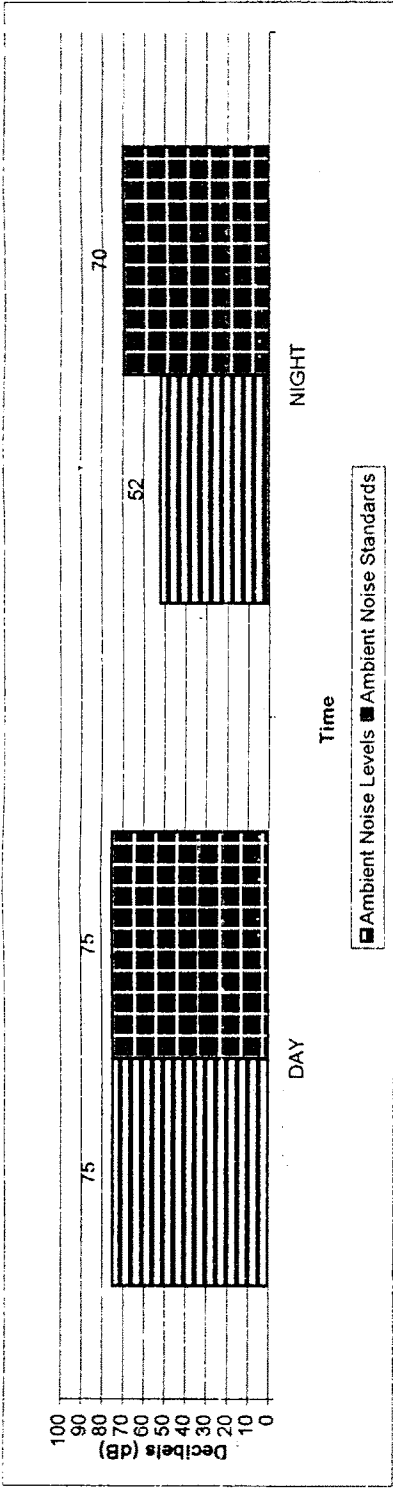


Fig 3.3(c): Comparison chart of ambient noise levels and the noise standards in the industrial area during non festival season.

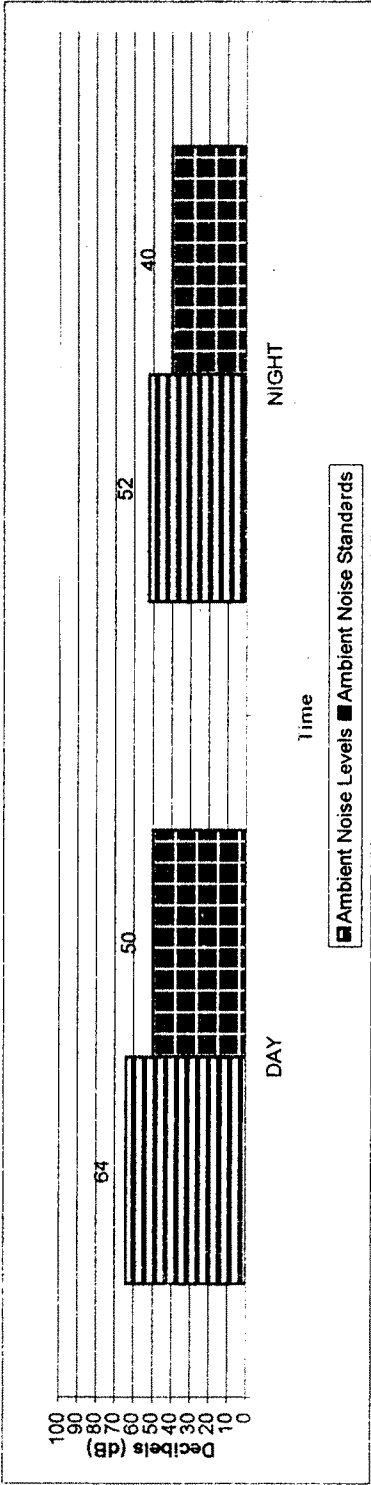


Fig 3.3(d): Comparison chart of ambient noise levels and the noise standards in the silent area during non festival season.

Noise level increase:

The increase in noise levels during day and night hours in Kolhapur city, from the noise standards laid down by the pollution control board are stated in table 3.7. It was observed that the increase in noise levels in residential and commercial areas during the day was 16 dB and 10 dB respectively, while in the night hours there was an increase of 7 dB and 4 dB respectively. In case of the silent zone the increase was found to be 14 dB during the day and 12 dB during the night. However the sound levels in the industrial area were found to be within the standard limits.

Table 3.7: Increase in noise level from the standard level

Area	DAY (dB)	NIGHT (dB)
Residential	16	7
Commercial	10	4
Industrial	0	-18
Silent	14	12

It is observed that the increase in noise level in the residential area is about 20% from the standard during the day and about 16% during the night. In case of the commercial area, the increase is about 15% during the day and 7% during the night. The silent zone showed an increase of 28% during the day and 30% during night.