HEADWAY DISTRIBUTION AND VEHICLE ORDER AT THE BEGINNING OF THE OPPOSITE LANE OF THE HIGHWAY SECTION

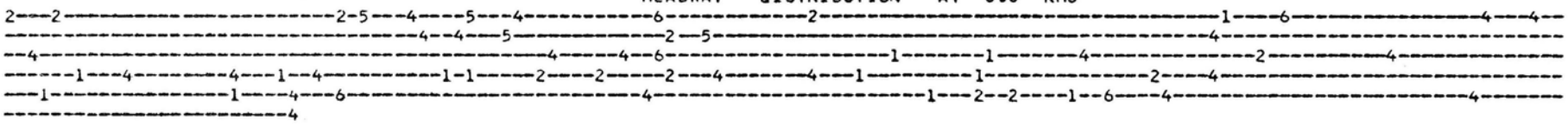
EMPRESA BRASILEIRA DE PLANEJAMENTO DE TRANSPORTES - GEIPOT
SIMULATION OF FLOW OF TRAFFIC

OPPOSING LANE

TRAFFIC VOLUME 245 VEHICLES PER HOUR
VEHICLE CLASS 1 2 3 4 5 6
VEHICLE COMPOSITION 36.% 18.% 1.% 36.% 3.% 6.%
EXCESS LENGTH(METRES) 0.0 0.5 2.5 4.5 6.0 12.0
MINIMUM HEADWAY 0.5 SEC PLUS VEHICLE LENGTH COMPONENT
AVERAGE HEADWAY RESTRAINED GROUP 2.0 SEC
AVERAGE HEADWAY UNRESTRAINED GROUP 21.0 SEC
PERCENTAGE OF VEHICLES IN RESTRAINED GROUP 28.
TIME INCREMENT 1.0 SEC
NO. IN SAMPLE 57 VEHICLES

SECTION LENGTH 1.8 KMS
CLIMBING LANE START 0.0 KMS END 0.0 KMS
RELATIVE SHIFT OF FREE SPEED TABLES 1.0 KMS
NO STOP SIGN IN LANE

HEADWAY DISTRIBUTION AT 0.0 KMS



VEHICLE ORDER ON GRID AT 0.0 KMS

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69			

OPPOSING LANE

SUMMARY OF HEADWAY DISTRIBUTION

HEADWAY (SECONDS)	NUMBER OF VEHICLES CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	CLASS 6	ALL VEHICLES
0	0	1	0	0	0	0	1
1	1	0	0	0	1	0	2
2	0	1	0	2	1	2	6
3	2	2	0	5	1	1	11
4	1	1	0	3	1	1	7
5	0	2	0	1	0	0	3
7	1	0	0	2	0	0	3
8	0	0	0	1	0	0	1
9	1	0	0	0	0	0	1
10	1	0	0	1	0	0	2
11	0	0	0	0	0	1	1
12	0	1	0	0	0	0	1
13	0	1	0	0	0	0	1
14	0	2	0	0	0	0	2
15	1	0	0	0	0	0	1
16	0	0	0	1	0	0	1
19	1	0	0	0	0	0	1
20	1	0	0	0	0	0	1
23	1	1	0	0	0	0	2
25	0	0	0	2	0	0	2
31	0	0	0	2	0	0	2
32	1	0	0	0	0	0	1
34	1	0	0	0	0	0	1
37	0	0	0	1	0	0	1
42	0	0	0	1	0	0	1
43	0	0	0	1	0	0	1
TOTALS 628	13	12	0	23	4	5	57

AVERAGE HEADWAY TIME 11.21
STANDARD DEVIATION 11.46

VEHICLES IN PASSING MODE AT 0.00 KMS

35

STATISTICAL ANALYSIS OF THE TRAVEL TIME AND FUEL CONSUMPTION FOR THE VEHICLE CLASSES, FROM THE BEGINNING OF THE SECTION TO THE SAMPLING STATION - km 0.5
F THE OPPOSITE LANE

EMPRESA BRASILEIRA DE PLANEJAMENTO DE TRANSPORTES – GEIPOT

STATISTICAL ANALYSIS

ANALYSIS FROM START OF SECTION TO 0.50 KMS
OPPOSING LANE

VEHICLE CLASS	-1-	-2-	-3-	-4-	-5-	-6-	ALL CLASSES
VEHICLES IN EACH CLASS	13	12	0	23	4	5	57
TRAVEL TIME (SECS)							
RANGE MIN.	23.55	26.80	0.0	26.06	28.84	25.03	0.0
MAX.	41.05	36.04	0.0	44.25	37.40	41.18	44.25
MEAN	28.03	30.71	0.0	36.31	33.56	33.34	32.79
STD DEVIATION	4.19	3.11	0.0	5.14	3.06	5.86	5.61
COEFF OF VARIATION	14.9	10.1	0.0	14.2	9.1	17.6	17.1
FUEL CONSUMPTION (LITRES)							
RANGE MIN.	0.025	0.031	0.0	0.132	0.078	0.328	0.0
MAX.	0.030	0.047	0.0	0.246	0.087	0.426	0.426
MEAN	0.027	0.042	0.0	0.159	0.082	0.372	0.117
STD DEVIATION	0.001	0.004	0.0	0.031	0.004	0.041	0.100
COEFF OF VARIATION	4.8	9.3	0.0	19.7	4.6	11.0	85.5

SIMULATION TIME FROM 112.0 SECS TO 1202.0 SECS

HEADWAY DISTRIBUTION AND VEHICLE ORDER IN THE OPPOSITE LANE AT THE SAMPLING STATION - km 0.5 OF THE HIGHWAY SECTION

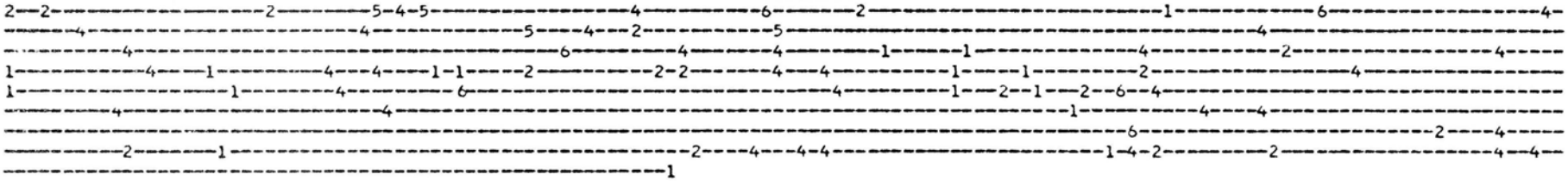
EMPRESA BRASILEIRA DE PLANEJAMENTO DE TRANSPORTES - GEIPOT
SIMULATION OF FLOW OF TRAFFIC

OPPOSING LANE

TRAFFIC VOLUME 245 VEHICLES PER HOUR
VEHICLE CLASS 1 2 3 4 5 6
VEHICLE COMPOSITION 36.% 18.% 1.% 36.% 3.% 6.%
EXCESS LENGTH(METRES) 0.0 0.5 2.5 4.5 6.0 12.0
MINIMUM HEADWAY 0.5 SEC PLUS VEHICLE LENGTH COMPONENT
AVERAGE HEADWAY RESTRAINED GROUP 2.0 SEC
AVERAGE HEADWAY UNRESTRAINED GROUP 21.0 SEC
PERCENTAGE OF VEHICLES IN RESTRAINED GROUP 28.
TIME INCREMENT 1.0 SEC
NO. IN SAMPLE 76 VEHICLES

SECTION LENGTH 1.8 KMS
CLIMBING LANE START 0.0 KMS END 0.0 KMS
RELATIVE SHIFT OF FREE SPEED TABLES 1.0 KMS
NO STOP SIGN IN LANE

HEADWAY DISTRIBUTION AT 0.50 KMS



VEHICLE ORDER ON GRID AT 0.50 KMS

13	14	15	16	17	18	19	20	21	22	23	24	25	26	28	27	29	30	31	32
35	33	34	36	37	38	39	40	41	42	44	43	45	46	47	48	49	50	51	52
54	53	55	56	57	58	59	60	61	62	64	65	63	66	67	68	69	71	70	72
73	74	75	77	76	78	79	80	81	82	83	84	85	86	87	88				

SUMMARY OF HEADWAY DISTRIBUTION

OPPOSING LANE

HEADWAY (SECONDS)	NUMBER OF VEHICLES CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	CLASS 6	ALL VEHICLES
0	0	1	0	0	0	0	1
1	1	2	0	3	1	0	7
2	1	1	0	2	0	1	5
3	0	3	0	3	0	0	6
4	2	0	0	4	0	0	6
5	2	1	0	0	0	0	3
6	1	0	0	0	0	0	1
7	1	1	0	3	0	0	5
8	1	0	0	1	1	0	3
9	1	2	0	2	0	1	6
10	1	1	0	1	0	1	4
11	0	1	0	1	1	0	3
12	0	0	0	0	0	1	1
13	0	0	0	0	1	0	1
14	0	0	0	1	0	0	1
15	0	1	0	0	0	0	1
17	1	0	0	3	0	0	4
18	1	1	0	2	0	0	4
22	0	0	0	1	0	0	1
23	1	0	0	1	0	0	2
25	1	1	0	0	0	0	2
31	0	0	0	1	0	0	1
35	0	0	0	1	0	0	1
36	0	0	0	0	0	1	1
39	0	1	0	0	0	0	1
40	0	0	0	1	0	0	1
43	0	0	0	1	0	0	1
57	1	0	0	0	0	0	1
58	1	0	0	0	0	0	1
120	0	0	0	0	0	1	1
TOTALS 1037	17	17	0	32	4	6	76

AVERAGE HEADWAY TIME 13.83
STANDARD DEVIATION 17.66

VEHICLES IN PASSING MODE AT 0.50 KMS

0

NUMBER OF SINGLE AND MULTIPLE PASSES

-1-	-2-	-3-	-4-	-5-	-6-
10	0	0	0	0	0

SUMMARY DESCRIPTION OF THE SAFETY MARGINS IN OVERTAKING IN THE OPPOSITE LANE OF THE HIGHWAY SECTION

OPPOSING LANE

SUMMARY OF SAFETY MARGIN IN OVERTAKING

SAFETY MARGIN (SECONDS)	NUMBER OF VEHICLES CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	CLASS 6	ALL VEHICLES
-21	0	0	0	0	0	1	1
0	0	1	0	0	0	0	1
3	1	0	0	0	0	0	1
5	0	0	0	0	0	1	1
10	1	1	0	0	0	0	2
11	0	0	0	0	1	0	1
17	1	0	0	0	0	0	1
22	1	0	0	0	0	0	1
TOTALS 57	4	2	0	0	1	2	9

AVERAGE SAFETY MARGIN 6.33
STANDARD DEVIATION 12.29