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16. Abstract

A demonstration compressed natural gas (CNG) bus has been operating on The University of Texas at Austin shuttle system since 1992. This CNG vehicle, provided by the Blue Bird Company, was an opportunity for the University to evaluate the effectiveness of a CNG bus for shuttle operations. Three basic operating comparisons were made: 1) fuel consumption, 2) tire wear, and 3) vehicle performance. The bus was equipped with a data logger, which was downloaded regularly, for trip reports. Tire wear was monitored regularly, and performance tests were conducted at the Natural Gas Vehicle Technology Center. Overall, the data suggest that fuel costs for the CNG bus are comparable to those for University diesel buses. This is a result of the lower fuel price for natural gas. Actual natural gas fuel consumption was higher for the CNG buses than for the diesel buses. Due to weight differences, tire wear was much less on the CNG buses. Finally, after installation of a closed-loop system, the CNG bus out-performed the diesel bus on acceleration, grade climbing ability, and speed.

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ANALYSIS OF THE UNIVERSITY OF TEXAS AT AUSTIN COMPRESSED NATURAL GAS DEMONSTRATION BUS

by

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Research Report SWUTC/94/60059-1

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EXECUTIVE SUMMARY

The University of Texas at Austin has operated a Blue Bird Bus Company designed compressed natural gas (CNG) powered bus since 1992. The Center for Transportation Research has monitored and evaluated the operating performance of the vehicle. The objective of this study was to collect basic operating data that can be used to compare the operation of a CNG-powered bus with other traditional or alternative-fueled buses. A preliminary assessment of the data suggests the following:

1) The fuel cost per distance traveled for operating the natural gas bus is the same as that for operating University shuttle diesel-powered buses. Fuel consumption is greater for the CNG bus, but this increased consumption is offset by the lower price of the fuel.

2) Tire wear rates for the University's diesel buses are much higher than those for the natural gas bus.

3) It is expected, upon further testing, that the CNG bus will have better acceleration, better grade climbing ability, and a higher maximum speed than the diesel bus.

4) Use of closed-loop air/fuel ratio control system, rather than the open-loop system that was provided as part of the initial Blue Bird package for the CNG bus, results in greatly improved performance without a fuel economy penalty (or benefit).

ABSTRACT

A demonstration compressed natural gas (CNG) bus has been operating on The University of Texas at Austin shuttle system since 1992. This CNG vehicle, provided by the Blue Bird Company, was an opportunity for the University to evaluate the effectiveness of a CNG bus for shuttle operations. Three basic operating comparisons were made: 1) fuel consumption, 2) tire wear, 3) vehicle performance. The bus was equipped with a data logger, which was downloaded regularly, for trip reports. Tire wear was monitored regularly, as well as, performance tests conducted at the Natural Gas Vehicle Technology Center. Overall, the data suggests that fuel costs for the CNG bus are comparable to the University diesel buses. This is a result of the lower fuel price for natural gas. Actual natural gas fuel consumption was higher for the CNG buses than for the diesel buses. Due to weight differences, tire wear was much less on the CNG buses. Finally, after installation of a closed-loop system, the CNG bus out performed the diesel bus on acceleration, grade climbing ability, and speed.

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Analysis of The University of Texas Compressed Natural Gas Demonstration Bus

INTRODUCTION

A few years ago, The University of Texas contracted with Blue Bird Bus Company to provide a special bus for use as a shuttle between the Balcones Research Center and the main campus. This bus differs from normal buses in, primarily, two ways. First, it uses a construction technique (cab on chassis) that results in a bus that is lighter than a metro bus (unibody construction). This construction technique also results in a compressed natural gas (CNG) powered bus that is somewhat lighter than the typical diesel-powered school bus to which it is compared in the present study. Second, it uses a Tecogen 7000 natural gas engine. This engine is a General Motors 7.0-liter (427-cubic-inch) big block V8 that has been converted by Tecogen to operate on CNG. Here, it is important to note that Tecogen chose to use an open-loop Impco "mixer" (essentially the same as a carburetor) rather than one of the several closed-loop fueling systems that are available. The choice to use an open-loop system may have resulted from the original development of this engine for stationary power applications. For the stationary application, the engine operates primarily at a single speed/load operating condition, and thus it is relatively easy to tune the mixer to provide the required air/fuel ratio. However, in the motor vehicle application, the speed and load both vary, and the engine must also satisfactorily respond to transient operating conditions as well. In this case, the ability to properly control the air/fuel ratio using an open-loop system is doubtful. This is especially noticeable during acceleration, when open-loop systems typically lean out, resulting in the loss of torque. Because of early problems experienced with the acceleration of this vehicle, the open-loop Impco system was exchanged for a closed-loop gaseous fuel injection (GFI) system in May 1993. The GFI system closes the control loop by reading an exhaust oxygen sensor to ensure that the air/fuel ratio is maintained at the stoichiometric value during most operating conditions.

The goal of this project was to maintain records of the characteristics of this CNG bus. To afford a basis for comparison, data were acquired for the CNG bus with the closed-loop system, the CNG bus with the open-loop system, and a diesel-powered school bus that is also used for the Balcones-to-Campus shuttle route. Three types of comparisons were made:

1) Fuel consumption, in terms of both fuel economy (distance per gallon equivalent) and cost-effectiveness (fuel cost per distance of operation)
2) Tire wear rates
3) Vehicle performance, in terms of both acceleration and maximum vehicle speed

The CNG bus is a 1991 Blue Bird that weighs 24,800 pounds (11,249 kg) when completely filled with CNG but without any of the 40 passengers, whereas the diesel bus is a 1980 Ford that

weighs 27,200 (12,338 kg) pounds without any of the 48-50 passengers this bus can accommodate. It was also hoped that the emissions from the buses could be measured and compared with available data for other CNG buses. However, the only Texas facility that can perform such tests on buses is Southwest Research Institute, and they charge $15,000 per test. Funds for these emissions tests were not available.

The following section is a presentation and discussion of these comparisons. The final section of this report is a presentation of the conclusions drawn from this study. Fuel consumption data for the CNG bus are attached as Appendix A1, and fuel consumption data for the diesel bus are attached as Appendix A2. Tire wear data for the CNG bus and diesel bus are attached as Appendix B1 and Appendix B2, respectively. Maintenance logs for the diesel bus are provided as Appendix C. Maintenance records for the CNG bus were not obtained because maintenance was not performed solely by University of Texas personnel (most maintenance was done by Blue Bird, with some performed at the Natural Gas Vehicle Technology Center). Blue Bird may be contacted for these records. Trip reports for the CNG bus, as downloaded from the on-board data logger, are provided in Appendix D. Here, it should be noted that no data were downloaded by either the research team or Blue Bird after the GFI system was installed (May, 1993). Our attempt to download from the new data logger was not successful, apparently due to a problem with the bus itself. It is believed that the Natural Gas Vehicle Technology Center will attempt to download these data in the near future.

COMPARISONS

Comparisons between the CNG bus with open-loop control, the CNG bus with closed-loop control, and the diesel bus are presented and discussed in this section.

Figures 1 and 2 are comparisons of the fuel consumption for these buses. Figure 1 shows that the fuel economy of the CNG bus is not significantly different whether for the open- or the closed-loop control system. More importantly, when the diesel and CNG buses are compared (in miles per gallon equivalent), the fuel economy of the diesel bus is about 35 percent higher than that of the CNG bus. This is true partially because the diesel operates on a more efficient thermodynamic cycle, and in spite of the fact that Tecogen increased the compression ratio of the CNG engine to 10.5:1 (as allowed by the very high Octane Rating of CNG) to increase the thermal efficiency of the spark ignition engine. A portion of the fuel efficiency advantage of the diesel bus is due to its lighter weight. However, as shown in Figure 2, the fuel cost-effectiveness for these two buses is essentially the same. This is because diesel fuel costs The University of Texas $1.086 per gallon ($0.174 per liter), while CNG costs The University of Texas $0.659 per gallon equivalent ($0.174 per liter equivalent). Therefore, the cost of fuel to operate the CNG bus is the same as that for the diesel bus.

Figures 3, 4, and 5 compare the tire wear of the two buses. To obtain the data, the tread depth was measured about once per week in three locations per tire: in the same radius of the valve stem and on the outside tread, the center tread, and the inside tread. The three resulting readings were then averaged to obtain the average tread depth for that tire. The difference in average tread depth from one week to the next is then the tire tread wear during that week. Figure 3 is the tire wear history averaged for the two front tires of each bus. Figure 4 is the tire wear history averaged for the four rear tires of each bus. Both figures show faster tire wear for the diesel bus than for the CNG bus. Linear fits to the data, as shown in Figures 3 and 4, were used to determine the tire wear rate, in millimeters per 1,000 miles (1,609 km) driven. Figure 5 is a bar graph that illustrates the tire wear rates obtained using this technique. The front tires on the diesel bus wear about 23 percent faster than those for the CNG bus, while the rear tires of the diesel bus wear about 55 percent faster than those for the CNG bus. Here, it should be noted that the tire wear rate is a strong function of vehicle weight and is also affected by tire compound. Thus, comparisons of tire wear rates between the diesel and CNG buses are not straightforward, since the diesel bus was of a different design, and thus of a different weight (the diesel bus is 2,400 pounds (1,089 km) heavier if both buses are empty, ~3,900 pounds (1,769 kg) heavier if both are fully occupied), than the CNG bus. However, it was not possible to obtain an identical Blue Bird bus powered by a diesel engine. Nevertheless, because the new "hybrid" design CNG bus would replace the present old-design diesel buses, the present comparison of tire wear rates is relevant.

Figures 6 and 7 compare the performance of the CNG bus with open-loop control to that of this bus after it was converted to a closed-loop control system. This conversion was performed by the Natural Gas Vehicle Technology Center, who agreed to measure the performance before and after the conversion. They conducted tests to determine acceleration, grade climbing capability, and maximum vehicle speed. However, rather than measure the more usual time to accelerate from a standing stop to a quarter mile (0.4 km), they measured the vehicle speed at the end of the quarter mile (0.4 km). Although these are not equivalent measures, they both do provide an indication of how well the bus can accelerate from a standing stop. Figure 6 is a comparison of the vehicle speeds measured at the end of one quarter mile (0.4 km) while accelerating from a stop under wide open throttle conditions and on a level road. The open-loop CNG bus reached only about 37 miles per hour (mph) (60 km/hour), while the closed-loop bus reached ~52 mph (84 km/hour). This is a very significant difference in performance. Figure 7 shows similar data, except that the bus was accelerating up a 16 degree incline. In this case, the closed-loop bus reached ~37 mph (60 km/hour), while the open-loop bus reached only ~33 mph (53 km/hour). In this case, the difference does not appear to be significant; but this is a severe test of grade climbing ability for a bus, so that this difference in speeds is not negligible. Both

figures show that this bus performs much better with the closed-loop GFI system than with the open-loop Impco system, while, as shown earlier in Figure 1, there is no fuel economy penalty (or benefit).

SUMMARY AND CONCLUSIONS

Comparisons of fuel consumption, tire wear, and performance have been made for a Blue Bird CNG bus with a closed-loop system, this same bus with an open-loop control system, and a diesel-powered school bus that is also used for the Balcones-to-Campus shuttle route. The following conclusions may be drawn from this study:

1) The fuel cost per distance traveled for operating the natural gas bus is the same as that for operating the diesel bus.
2) The tire wear rates for the diesel bus are much higher than those for the natural gas bus.
3) Although substantiating data have not yet been acquired (but are expected upon further tests), the CNG bus has much better acceleration, better grade climbing ability, and a higher maximum speed than the diesel bus.
4) Use of a closed-loop air/fuel ratio control system, rather than the open-loop system that was provided as part of Blue Bird's package for the CNG bus, results in greatly improved performance without a fuel economy penalty (or benefit).

Although the testing cost prohibited emissions comparisons, it is known that the CNG bus would have significantly lower emissions of particulate matter and it is expected that the CNG bus would have lower emissions of reactive hydrocarbons and exhaust toxics. Figure 8 is a comparison of the estimated annual mobile source emissions of the CNG bus compared to those of a diesel bus (McInturff, 1992). This consulting firm estimated that the CNG bus should emit only ~2 percent of the carbon monoxide (CO), 62 percent of the nitrogenoxide (NOx), and 22 percent of the total hydrocarbons (THCs) emitted annually by the diesel bus. Here, it should be noted that reactive hydrocarbons typically constitute ~90 percent of the THCs from diesels but only ~10 percent of the THCs emitted by natural gas vehicles. Thus, based upon the above estimated THC advantage, the CNG bus should emit reactive hydrocarbons at about 3 percent of those emitted by a diesel bus. This dictates more than a factor of ten (estimated) decrease in the "ozone forming potential" of the exhaust hydrocarbons. When combined with the factor of ~2 decrease in NOx, the effect on the ozone formation rate (i.e., that portion induced by buses) would be extremely significant. This is because ozone is formed in the atmosphere due to reactions between NOx and the reactive hydrocarbons. Furthermore, because the ozone formation rate is a nonlinear function of the concentrations of both NOx and reactive hydrocarbons, the effect on ambient ozone would not be limited to the factor of ~2 resulting from the ~2 fold decrease in NOx, but could result in decreased ozone formation by a factor of 10 or more.

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McInturff, M. (1992), WHM Consulting, report to Lee Smith, Assistant Vice President for Business Affairs, The University of Texas at Austin.

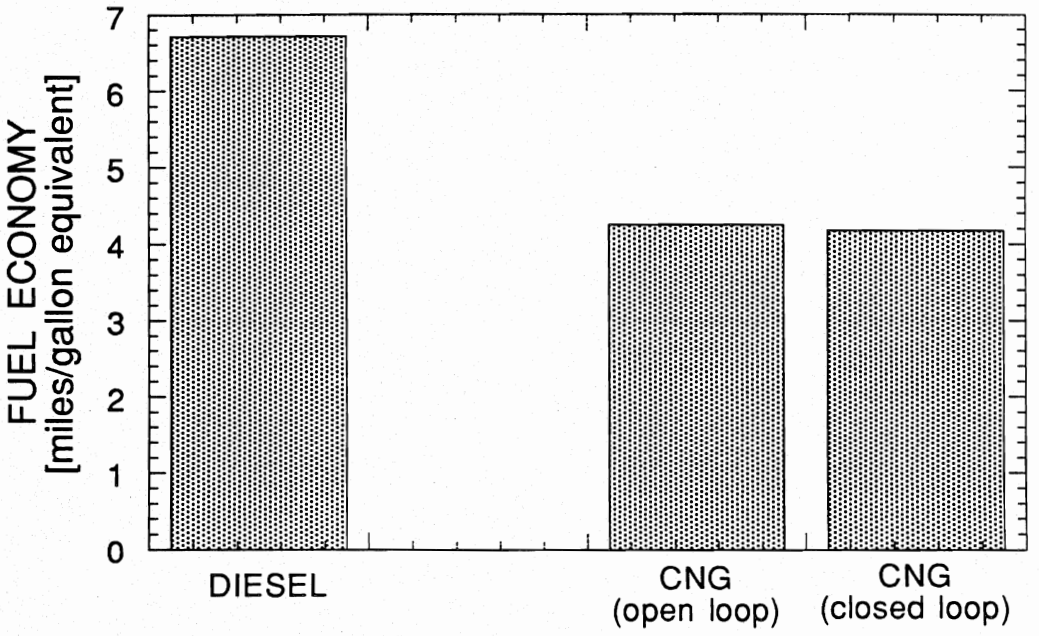

Figure 1. Fuel economy comparison.

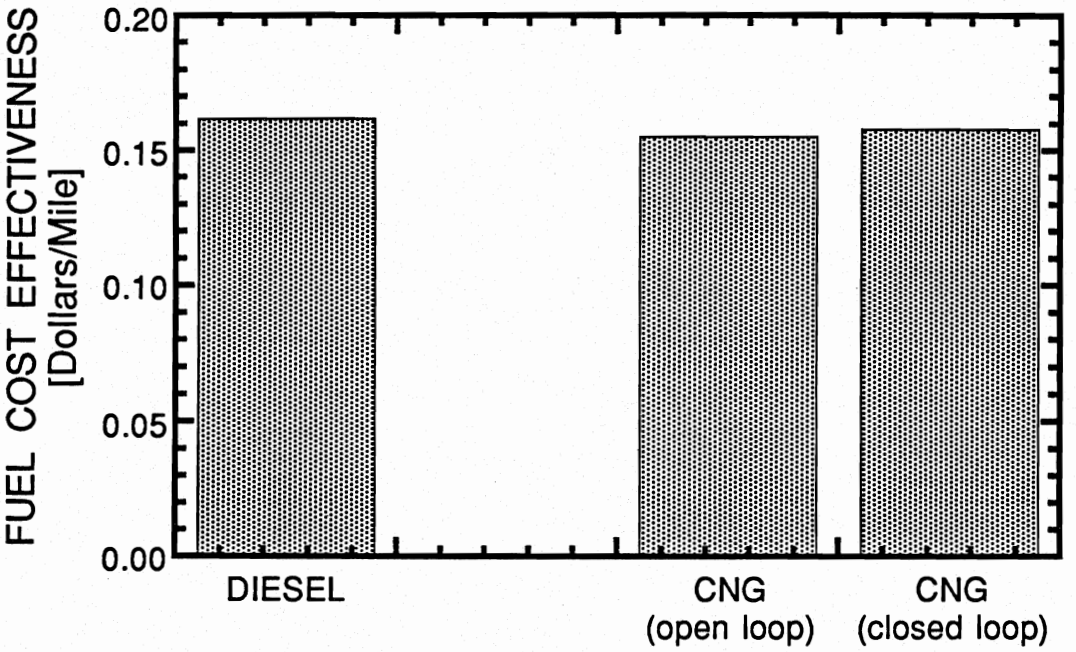

Figure 2. Fuel cost effectiveness comparison.

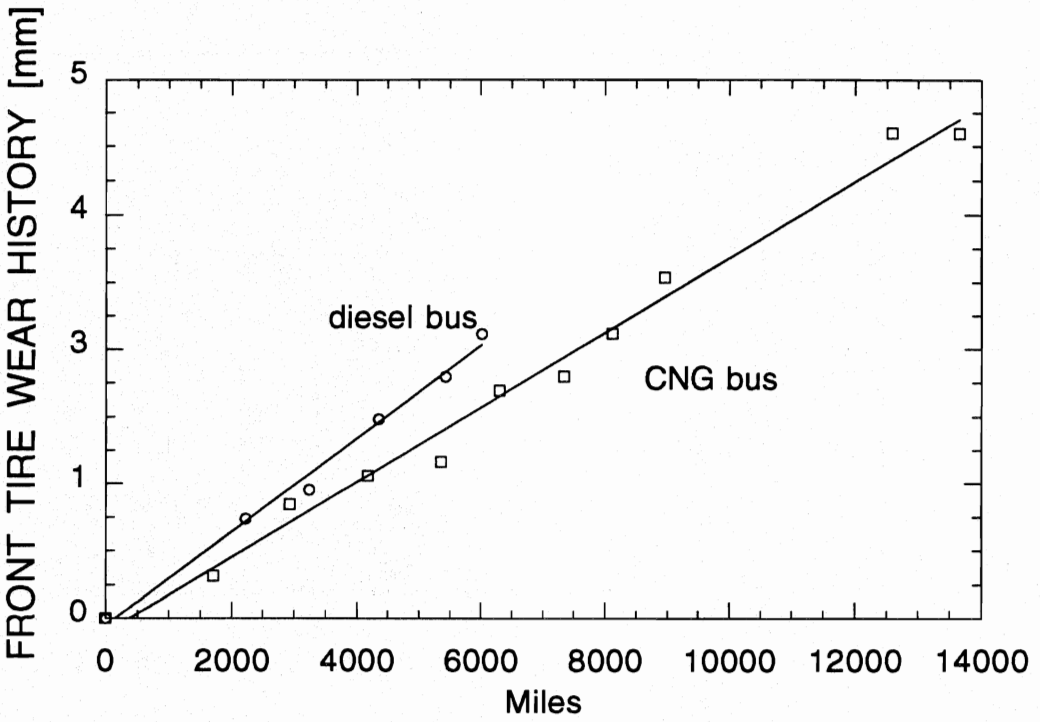

Figure 3. Front tire wear comparison.

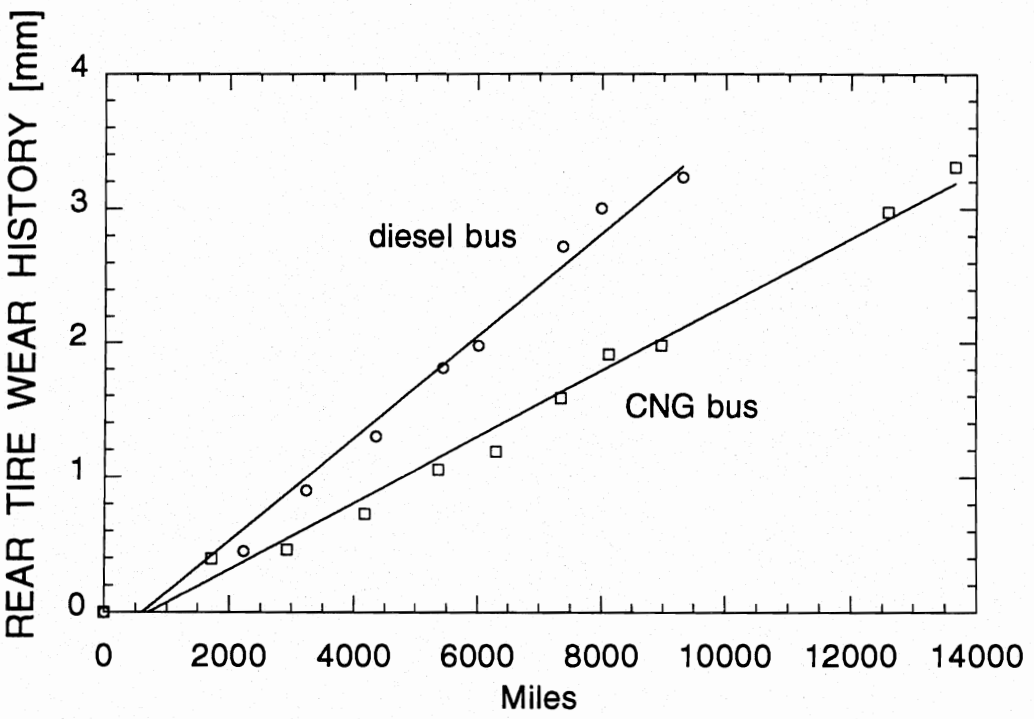

Figure 4. Average rear tire wear comparison.

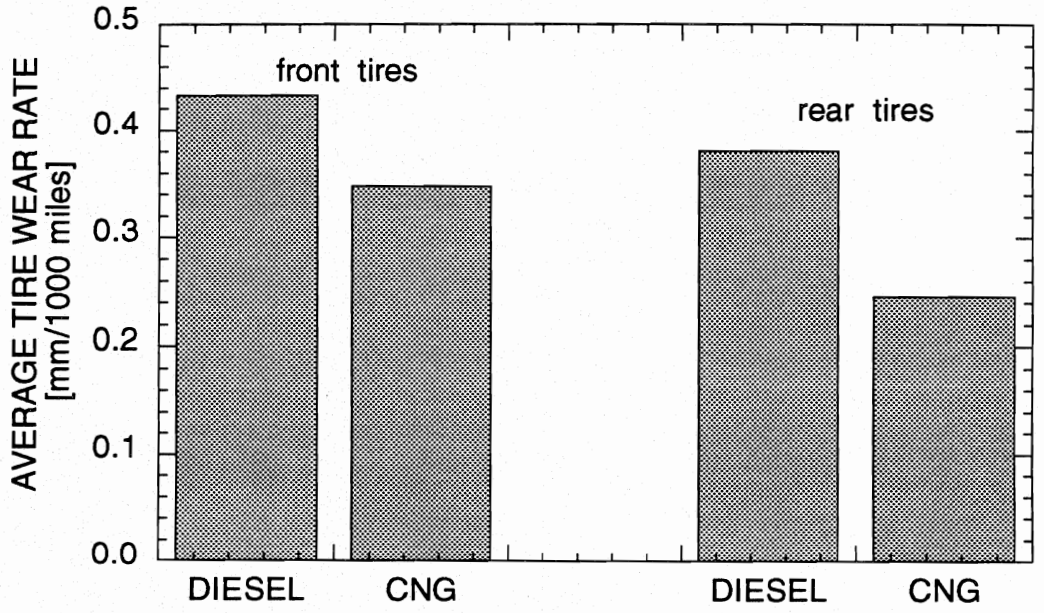

Figure 5. Comparison of average tire wear rates.

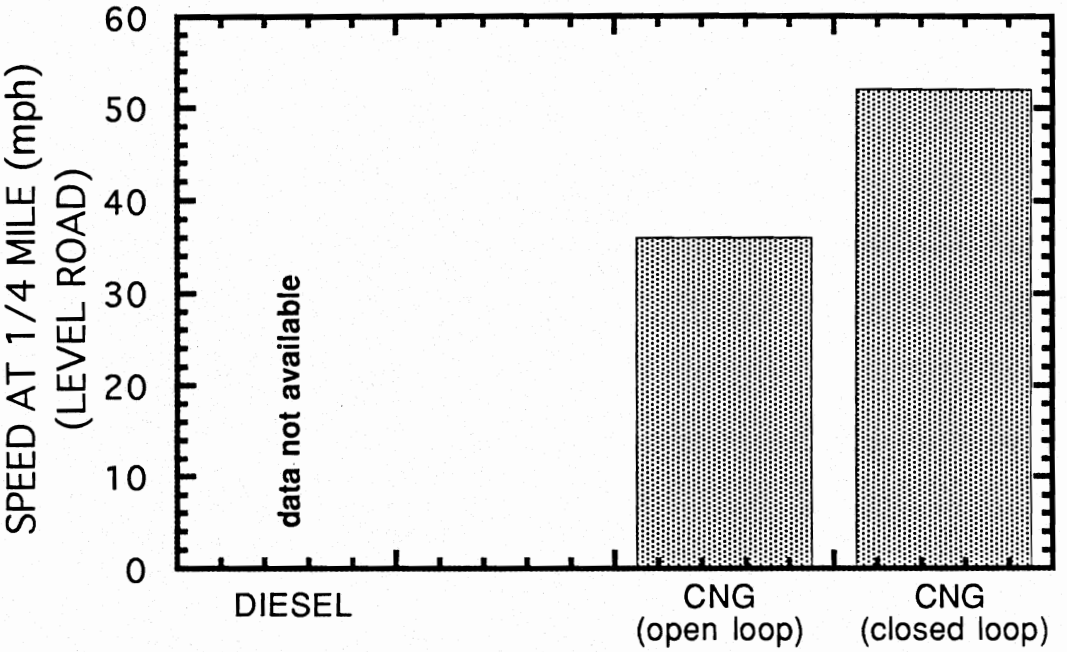

Figure 6. Comparison of vehicle speed attained after wide open throttle acceleration for 1/4 mile from a standing stop on a level road.

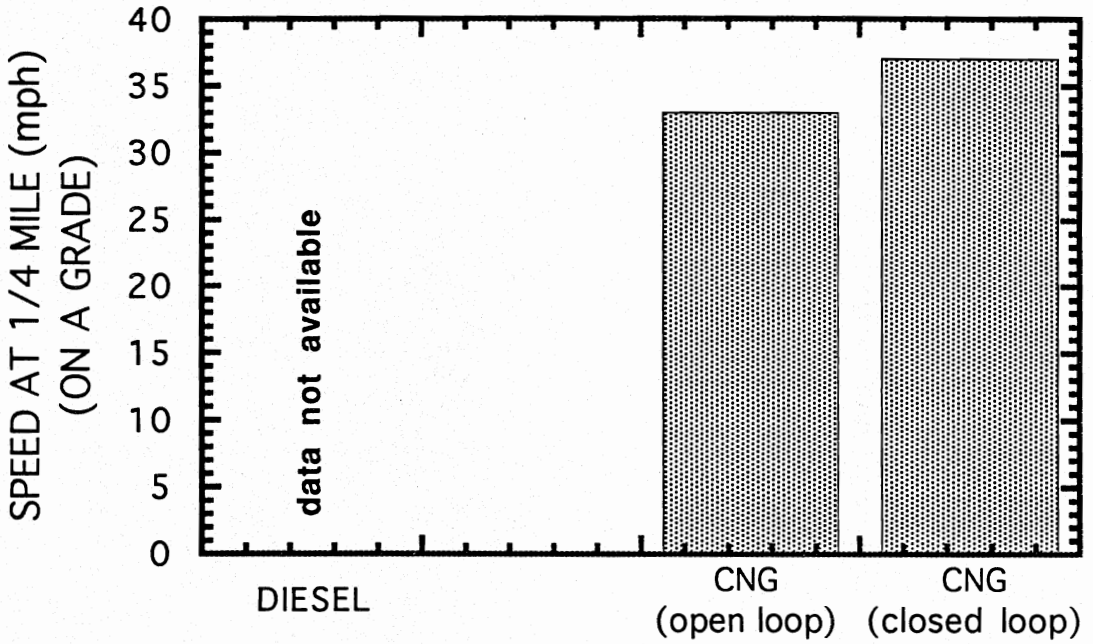

FIgure 7. Comparison of vehicle speed attained after wide open throttle acceleration for 1/4 mile from a standing stop on a grade.

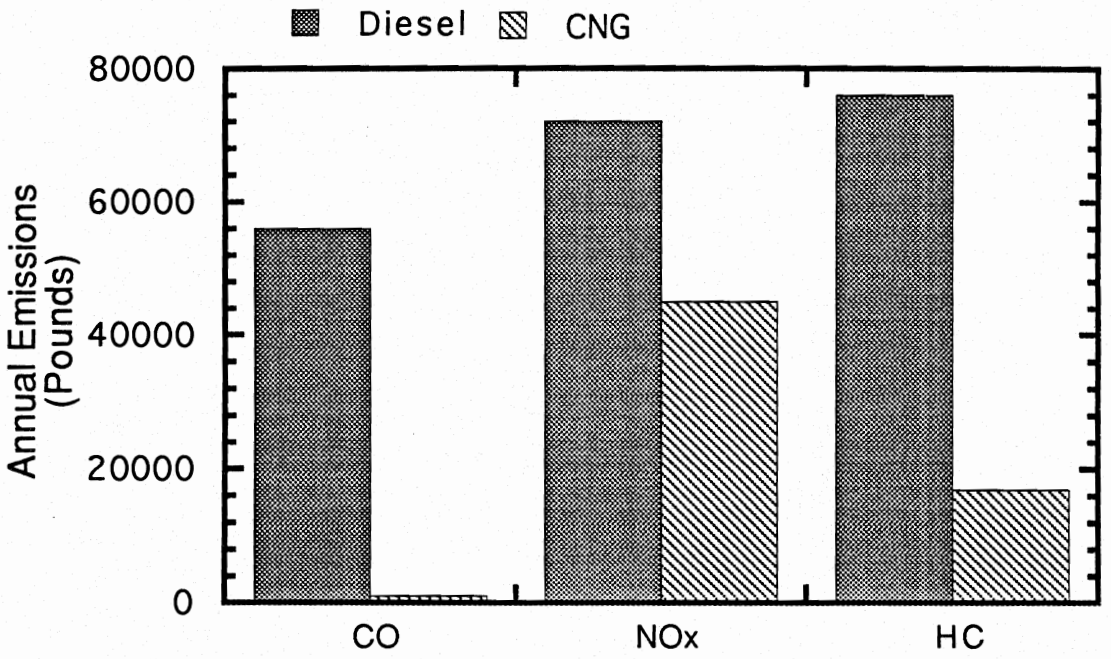

Figure 8. Estimated emissions benefits of UT's CNG bus compared to the Diesel bus (From MC/NTURFF, 1992)

Appendix A1

Fuel consumption data for the CNG bus

	Date	Odometer [miles]	Quantity [Gal]	Cost ($)	MPG
0	12/2/1992	3506.0	23.853	15.72	
1	12/7/1992	3603.5	21.766	14.34	4.4795
2	12/8/1992	3699.0	18.333	12.08	5.2092
3	12/9/1992	3797.0	30.322	19.98	3.2320
4	12/10/1992	3915.1	28.286	18.64	4.1752
5	12/11/1992	4052.8	31.821	20.97	4.3273
6	12/14/1992	4189.0	35.797	23.59	3.8048
7	12/15/1992	4306.2	32.680	21.54	3.5863
8	12/15/1992	4381.9	20.753	13.68	3.6477
9	12/16/1992	4519.7	29.489	19.43	4.6729
10	12/17/1992	4612.8	22.241	14.66	4.1860
11	12/17/1992	4738.3	13.709	9.03	9.1546
12	12/18/1992	4770.4	26.174	17.25	1.2264
13	12/18/1992	4831.9	16.298	10.74	3.7735
14	12/23/1992	4968.1			0.0000
15	1/4/1993	5042.8	23.237	15.31	3.2147
16	1/5/1993	5139.0	23.088	15.21	4.1667
17	1/6/1993	5258.3	24.569	16.19	4.8557
18	1/7/1993	5352.9	21.001	13.84	4.5045
19	1/15/1993	5436.2	20.809	13.71	4.0031
20	1/18/1993	5461.8	8.721	5.75	2.9354
21	1/18/1993	5559.6	24.274	16.00	4.0290
22	1/19/1993	5652.9	19.268	12.70	4.8422
23	1/20/1993	5765.2	26.515	17.47	4.2353
24	1/22/1993	5861.1	20.805	13.71	4.6095
25	1/25/1993	5954.0	22.315	14.71	4.1631
26	1/26/1993	6068.4	6.346	4.18	18.0271
27	1/28/1993	6165.5	25.158	16.58	3.8596
28	1/28/1993	6281.9	21.152	13.94	5.5030
29	2/1/1993	6376.9	22.796	15.02	4.1674
30	2/3/1993	6471.5	21.296	14.03	4.4421
31	2/4/1993	6567.5	23.048	15.19	4.1652
32	2/5/1993	6699.9	26.080	17.19	5.0767
33	2/9/1993	6796.2			0.0000
34	2/10/1993	6890.4	20.000	13.18	4.7100
35	2/10/1993	6984.4	19.053	12.56	4.9336
36	2/11/1993	7081.5	26.092	17.19	3.7214
37	2/15/1993	7098.8	10.895	7.18	1.5879
38	2/16/1993	7193.9	10.924	7.20	8.7056
39	2/18/1993	7291.2	20.890	13.77	4.6577
40	2/19/1993	7385.4	23.701	15.62	3.9745
41	2/22/1993	7480.1	20.764	13.68	4.5608
42	2/23/1993	7576.4	20.540	13.54	4.6884
43	2/24/1993	7688.3	25.143	16.57	4.4505
44	2/25/1993	7800.3	25.822	17.02	4.3374
45	3/1/1993	7888.1	24.487	16.14	3.5856
46	3/2/1993	7983.6	21.759	14.34	4.3890

	Date	Odometer [miles]	Quantity [Gal]	Cost ($)	MPG
47	3/3/1993	8060.6	16.411	10.81	4.6920
48	3/5/1993	8128.4	23.554	15.52	2.8785
49	3/8/1993	8184.2	22.921	15.10	2.4344
50	3/9/1993	8301.0	26.610	17.54	4.3893
51	3/10/1993	8416.6	29.702	19.57	3.8920
52	3/11/1993	8531.1	28.426	18.73	4.0280
53	3/12/1993	8648.2	24.917	16.42	4.6996
54	3/14/1993	8764.5			0.0000
55	3/16/1993	8839.6	21.943	14.46	3.4225
56	3/18/1993	8901.6	20.804	13.71	2.9802
57	3/23/1993	8996.2	22.268	14.67	4.2482
58	3/24/1993	9091.3	21.081	13.89	4.5112
59	3/25/1993	9188.1	20.673	13.62	4.6824
60	3/26/1993	9283.0	23.307	15.36	4.0717
61	3/30/1993	9395.1	26.824	17.68	4.1791
62	3/31/1993	9511.2	18.344	12.09	6.3290
63	4/1/1993	9626.2	16.296	10.74	7.0569
64	4/1/1993	9721.4	23.414	15.43	4.0659
65	4/2/1993	9769.0	15.177	10.00	3.1363
66	4/3/1993	9833.3	15.611	10.29	4.1189
67	4/5/1993	9874.4	11.655	7.68	3.5264
68	4/6/1993	9989.2	25.402	16.74	4.5193
69	4/13/1993	10047.4	25.748	16.97	2.2604
70	4/14/1993	10161.4	28.718	18.93	3.9696
71	4/15/1993	10274.6	27.279	17.98	4.1497
72	4/16/1993	10391.0	26.338	17.36	4.4195
73	4/19/1993	10505.4	28.496	18.78	4.0146
74	4/20/1993	10620.1	28.554	18.82	4.0170
75	4/21/1993	10713.4	22.244	14.66	4.1944
76	4/22/1993	10808.6	23.360	15.39	4.0753
77	4/23/1993	10909.4	21.967	14.48	4.5887
78	5/26/1993	11545.4	31.138	20.52	20.4252
79	5/28/1993	11682.8	30.300	19.97	4.5347
80	6/4/1993	11780.4	24.674	16.26	3.9556
81	6/17/1993	11971.5	24.356	16.05	7.8461
82	6/18/1993	12088.2	23.601	15.55	4.9447
83	6/21/1993	12204.5	29.865	19.68	3.8942
84	6/24/1993	12347.2	32.597	21.48	4.3777
85	6/30/1993	12502.2	36.606	24.12	4.2343
86	7/1/1993	12578.1	20.293	13.37	3.7402
87	7/2/1993	12651.7	18.201	11.99	4.0437
88	7/5/1993	12769.9	26.830	17.68	4.4055
89	7/6/1993	12845.8	18.810	12.40	4.0351
90	7/7/1993	12941.8	23.405	15.42	4.1017
91	7/8/1993	13039.6	15.391	10.14	6.3544
92	7/9/1993	13154.8	27.060	17.83	4.2572
93	7/12/1993	13228.8	18.550	12.22	3.9892

	Date	Odometer [miles]	Quantity [Gal]	Cost ($)	MPG
94	7/13/1993	13323.8	25.330	16.69	3.7505
95	7/15/1993	13440.3	27.707	18.26	4.2047
96	7/16/1993	13537.4	24.408	16.08	3.9782
97	7/19/1993	13611.2	22.533	14.85	3.2752
98	7/21/1993	13726.5	16.444	10.84	7.0116
99	7/22/1993	13824.0	31.137	20.52	3.1313
100	7/23/1993	13878.3	10.979	7.24	4.9458
101	7/26/1993	13934.1	11.531	7.60	4.8391
102	7/27/1993	14008.0	17.244	11.36	4.2855
103	8/25/1993	14053.4	15.973	10.53	2.8423
104	8/26/1993	14213.3	36.765	24.23	4.3492
105	8/27/1993	14351.0	32.797	21.61	4.1986
106	9/3/1993	14509.8	37.551	24.75	4.2289
107	9/7/1993	14612.8	24.988	16.47	4.1220
108	9/8/1993	14747.4	30.798	20.30	4.3704
109	9/9/1993	14903.3	36.670	24.17	4.2514
110	9/13/1993	15061.2	34.809	22.94	4.5362
111	9/23/1993	15241.0	41.209	27.16	4.3631
112	9/24/1993	15397.8	39.406	25.97	3.9791
113	9/28/1993	15553.8	42.425	27.96	3.6771
114	9/29/1993	15677.1	29.321	19.32	4.2052
115	9/30/1993	15813.2	33.642	22.17	4.0455
116	10/1/1993	15920.0	38.904	25.64	2.7452
117	10/1/1993	16095.9	33.090	21.81	5.3158
118	10/4/1993	16123.9	10.651	7.02	2.6289
119	10/5/1993	16304.7	39.848	26.26	4.5376
120	10/6/1993	16463.2	40.009	26.37	3.9616
121	10/7/1993	16602.7	34.919	23.01	3.9950
122	10/8/1993	16761.5	40.083	26.41	3.9618
123	10/11/1993	16921.1	38.627	25.46	4.1318
124	10/12/1993	17081.5	37.827	24.93	4.2404
125	10/14/1993	17261.6	46.010	30.32	3.9144
126	10/15/1993	17439.3	41.200	27.15	4.3131
127	10/19/1993	17636.8	47.500	31.30	4.1579
128	10/20/1993	17836.7	49.700	32.75	4.0221
129	10/21/1993	18017.6	40.800	26.89	4.4338
130	10/22/1993	18196.7	42.000	27.68	4.2643
131	10/25/1993	18250.6	17.100	11.27	3.1520
132	10/26/1993	18407.9	36.800	24.25	4.2745
133	10/27/1993	18586.8	44.400	29.26	4.0293
134	10/28/1993	18765.8	41.200	27.15	4.3447
135	10/29/1993	18904.0	33.900	22.34	4.0767
136	11/1/1993	19064.5	25.900	17.07	6.1969
137	11/2/1993	19204.4	34.500	22.74	4.0551
138	11/2/1993	19271.5	19.800	13.05	3.3889
139	11/3/1993	19367.3	21.800	14.37	4.3945
140	11/4/1993	19527.8	36.545	24.08	4.3918

	Date	Odometer [miles]	Quantity [Gal]	Cost ($)	MPG
141	11/8/1993	19687.0	40.200	26.49	3.9602
142	11/9/1993	19839.1	34.800	22.93	4.3707
143	11/10/1993	19999.1	37.500	24.71	4.2667
144	11/11/1993	20159.0	38.600	25.44	4.1425
145	11/12/1993	20339.9	41.200	27.15	4.3908
146	11/13/1993	20520.7	38.700	25.50	4.6718
147	11/13/1993	20550.5	19.400	12.78	1.5361
148	11/15/1993	20563.0	9.500	6.26	1.3158
149	11/17/1993	20763.1	34.700	22.87	5.7666
150	11/18/1993	20909.5	36.400	23.99	4.0220

Appendix A2

Fuel consumption data for the diesel bus

	Date	Odometer [miles]	Quantity [Gal]	Cost ($)	MPG
0	1/12/1993	153226	21.0	22.81	
1	1/15/1993	153356	22.0	23.89	5.9091
2	1/19/1993	153564	33.8	36.71	6.1538
3	1/20/1993	153771	30.7	33.34	6.7427
4	1/21/1993	153975	30.0	32.58	6.8000
5	1/22/1993	154152	23.8	25.85	7.4370
6	1/26/1993	154359	32.0	34.75	6.4687
7	1/26/1993	154468	16.0	17.38	6.8125
8	1/27/1993	154627	25.1	27.26	6.3347
9	1/28/1993	154811	27.0	29.32	6.8148
10	2/1/1993	155168	25.3	27.48	14.1107
11	2/2/1993	155409	34.3	37.25	7.0262
12	2/3/1993	155588	26.1	28.34	6.8582
13	2/5/1993	155766	26.8	29.10	6.6418
14	2/8/1993	155945	27.7	30.08	6.4621
15	2/9/1993	156124	25.0	27.15	7.1600
16	2/10/1993	156302	26.9	29.21	6.6171
17	2/11/1993	156481	23.9	25.96	7.4895
18	2/12/1993	156640	23.8	25.85	6.6807
19	2/15/1993	156816	27.0	29.32	6.5185
20	2/18/1993	157039	31.8	34.53	7.0126
21	2/18/1993	157175	24.0	26.06	5.6667
22	2/22/1993	157354	25.0	27.15	7.1600
23	2/22/1993	157533	29.4	31.93	6.0884
24	2/23/1993	157711	23.0	24.98	7.7391
25	2/24/1993	157889	28.7	31.17	6.2021
26	2/25/1993	157954	9.6	10.43	6.7708
27	2/26/1993	158194	35.6	38.66	6.7416
28	3/1/1993	158385	28.4	30.84	6.7254
29	3/22/1993	158482	15.2	16.51	6.3816
30	3/23/1993	158660	25.5	27.69	6.9804
31	3/24/1993	158840	26.8	29.10	6.7164
32	3/25/1993	159018	25.4	27.58	7.0079
33	3/26/1993	159221	28.8	31.28	7.0486
34	4/22/1993	159493	40.0	43.44	6.8000
35	4/26/1993	159625	18.4	19.98	7.1739
36	4/26/1993	159804	31.3	33.99	5.7188
37	4/27/1993	160045	36.5	39.64	6.6027
38	4/28/1993	160115	12.1	13.14	5.7851
39	4/29/1993	160273	23.6	25.63	6.6949
40	5/11/1993	160414	21.4	23.24	6.5888
41	5/13/1993	160527	16.6	18.03	6.8072
42	5/18/1993	160683	24.5	26.61	6.3673
43	5/21/1993	160859	24.9	27.04	7.0683
44	6/4/1993	161016	23.2	25.20	6.7672
45	6/11/1993	161240	32.0	34.75	7.0000
46	6/15/1993	161394	21.0	22.81	7.3333

	Date	Odometer [miles]	Quantity [Gal]	Cost ($)	MPG
47	6/28/1993	161559	29.0	31.49	5.6897
48	7/27/1993	161826	37.1	40.29	7.1968
49	7/30/1993	162031	32.0	34.75	6.4062
50	8/12/1993	162238	28.9	31.39	7.1626
51	8/18/1993	162421	26.5	28.78	6.9057
52	8/23/1993	162603	27.0	29.32	6.7407
53	8/27/1993	162746	22.5	24.43	6.3556
54	8/30/1993	163053	30.0	32.58	10.2333
55	8/30/1993	163076	17.8	19.33	1.2921
56	9/2/1993	163299	35.0	38.01	6.3714
57	9/7/1993	163432	20.0	21.72	6.6500
58	9/8/1993	163584	23.0	24.98	6.6087
59	9/10/1993	163807	34.5	37.47	6.4638
60	9/14/1993	164005	28.1	30.52	7.0463
61	9/16/1993	164271	39.4	42.79	6.7513
62	9/20/1993	164494	35.1	38.12	6.3533
63	9/22/1993	164695	25.8	28.02	7.7907
64	9/27/1993	164856	29.2	31.71	5.5137
65	9/29/1993	165054	26.8	29.10	7.3881
66	10/1/1993	165259	32.6	35.40	6.2883
67	10/4/1993	165417	9.8	10.64	16.1224
68	10/6/1993	165528	32.1	34.86	3.4579
69	10/8/1993	165750	20.0	21.72	11.1000
70	10/11/1993	165862	26.8	29.10	4.1791
71	10/29/1993	165982	20.0	21.72	6.0000

Appendix B1

Tire wear data for the CNG bus

	Date	Odometer Reading	Right Front - Outside	Right Front - Center	Right Front - Inside	Left Front - Outside	Left Front - Center
0	2/12/1993	7092.1	15	14	15	15	14
1	2/19/1993	7475.0	14	13	15	14	13
2	2/26/1993	7882.3	14	13	15	14	14
3	3/8/1993	8273.6	14	14	14	14	14
4	3/15/1993	8800.5	14	14	15	14	13
5	3/22/1993	8990.3	12	12	14	12	12
6	3/29/1993	9368.9	14	14	14	14	14
7	4/5/1993	9962.6	13	13	14	13	13
8	4/12/1993	10020.9	13	13	14	13	13
9	4/19/1993	10593.5	12	13	13	13	13
10	5/17/1993	11267.7	12	13	13	13	13
11	6/1/1993	11774.6	12	13	13	12	13
12	6/9/1993	11866.5	12	13	12	12	13
13	6/15/1993	11879.7	12	12	13	12	13
14	6/22/1993	12294.6	12	13	13	12	13
15	6/29/1993	12454.7	12	13	13	12	13
16	7/6/1993	12894.1	12	12	12	12	13
17	7/14/1993	13393.0	11	12	12	12	12
18	7/23/1993	13885.8	11	12	12	12	12
19	7/30/1993	14043.7	12	12	12	12	12
20	8/27/1993	14438.8	11	12	12	11	12
21	9/3/1993	14606.8	11	12	12	11	11
22	9/10/1993	15055.3	11	12	11	11	11
23	9/17/1993	15213.2	11	12	11	11	11
24	10/1/1993	16058.8	10	11	11	10	11
25	11/5/1993	19681.0	8	9	9	9	9
26	11/16/1993	20750.1	8	9	9	9	9

	Left Front - Inside	Right Rear Outside - Outside	Right Rear Outside - Center	Right Rear Outside - Inside	Right Rear Inside - Outside
0	14	15	12	15	15
1	14	15	12	16	16
2	15	15	12	16	16
3	14	15	11	15	15
4	14	14	12	16	15
5	13	14	12	15	14
6	14	15	13	15	15
7	14	15	13	16	16
8	13	14	12	15	15
9	13	14	12	15	15
10	13	14	12	15	14
11	13	14	11	14	14
12	13	14	12	14	14
13	13	13	12	14	13
14	13	14	12	14	13
15	13	13	12	14	14
16	12	13	12	14	14
17	12	13	12	14	14
18	12	13	11	13	14
19	12	12	11	13	13
20	12	13	12	14	13
21	12	13	11	13	13
22	11	12	11	13	13
23	11	12	11	13	13
24	10	12	11	13	13
25	9	11	9	12	12
26	9	11	9	12	11

	Right Rear Inside - Center	Right Rear Inside - Inside	Left Rear Outside - Outside	Left Rear Outside - Center	Left Rear Outside - Inside
0	12	15	16	13	16
1	12	15	16	13	16
2	12	15	16	12	15
3	12	15	15	12	15
4	12	14	14	14	15
5	12	14	15	12	15
6	12	15	15	14	15
7	13	15	15	12	15
8	14	14	15	13	15
9	11	14	14	13	15
10	12	14	14	13	14
11	11	13	14	12	14
12	12	13	14	12	14
13	11	13	14	12	14
14	12	13	14	12	14
15	12	14	14	12	14
16	13	13	14	13	14
17	12	13	14	12	14
18	12	13	13	12	13
19	11	13	13	12	14
20	11	12	13	12	13
21	11	13	13	12	13
22	11	12	13	11	13
23	11	12	13	11	13
24	11	12	13	11	13
25	9	10	12	10	12
26	9	10	12	9	11

	Left Rear Inside - Outside	Left Rear Inside - Center	Left Rear Inside - Inside
0	16	14	16
1	16	14	16
2	16	12	15
3	15	11	15
4	16	12	15
5	14	12	15
6	15	12	15
7	16	12	14
8	15	12	14
9	15	12	14
10	15	13	14
11	15	11	14
12	14	11	14
13	15	11	14
14	14	11	13
15	14	12	14
16	15	13	13
17	14	12	13
18	14	12	13
19	14	11	13
20	14	11	13
21	13	11	13
22	13	11	13
23	14	11	12
24	13	11	12
25	12	10	11
26	12	9	10

Appendix B2

Tire wear data for the diesel bus

	Date	Odometer Reading	Right Front - Outside	Right Front - Center	Right Front - Inside	Left Front - Outside	Left Front - Center
0	2/15/1993	56640.6	5	6	9	5	3
1	2/23/1993	57624.9	4	6	7	2	2
2	3/22/1993	58416.3	14	15	13	14	15
3	5/17/1993	60638.7	13	13	13	13	13
4	6/1/1993	60883.8	13	13	13	13	13
5	6/9/1993	61172.5	13	13	13	13	13
6	6/22/1993	61468.3	13	13	13	13	13
7	6/29/1993	61604.4	13	13	13	13	13
8	7/6/1993	61649.3	12	13	13	12	13
9	7/23/1993	61651.8	13	13	13	13	13
10	7/30/1993	62056.4	12	13	13	13	13
11	8/6/1993	62100.3	12	13	13	12	12
12	8/13/1993	62283.5	12	13	13	12	12
13	8/20/1993	62558.5	12	12	13	12	12
14	8/27/1993	62770.8	12	12	12	12	11
15	9/3/1993	63365.4	12	12	12	11	11
16	9/10/1993	63852.9	11	12	12	11	11
17	9/17/1993	64429.6	11	11	12	10	10
18	10/8/1993	65796.8	4	5	7	10	10
19	11/5/1993	66408.6	3	4	6	9	8
20	11/23/1993	67723.7	3	4	7	9	8

	Left Front - Inside	Right Rear Outside - Outside	Right Rear Outside - Center	Right Rear Outside - Inside	Right Rear Inside - Outside
0	6	7	2	9	8
1	4	7	1	9	9
2	14	12	10	13	13
3	13	13	8	13	13
4	13	13	8	13	13
5	13	13	8	13	13
6	13	12	8	12	13
7	13	7	5	8	10
8	13	12	8	13	12
9	13	13	8	13	12
10	13	12	7	12	13
11	12	12	7	12	12
12	12	12	6	12	12
13	12	12	7	12	12
14	12	12	7	12	12
15	12	11	6	11	12
16	11	11	6	12	12
17	11	11	5	11	12
18	10	10	5	11	12
19	10	9	4	10	10
20	9	9	4	9	11

	Right Rear Inside - Center	Right Rear Inside - Inside	Left Rear Outside - Outside	Left Rear Outside - OutCenter	Left Rear Outside - InCenter
0	2	6	10	7	7
1	3	5	9	6	6
2	10	14	9	6	7
3	9	13	7	6	6
4	9	13	7	5	5
5	9	13	8	5	5
6	9	13	8	5	5
7	7	8	12	7	7
8	8	13	7	5	5
9	8	13	7	4	4
10	8	13	7	4	5
11	8	13	7	4	5
12	8	12	7	4	5
13	8	13	7	4	4
14	8	13	7	3	4
15	8	12	6	4	3
16	7	12	5	3	3
17	7	12	5	3	3
18	6	11	5	2	2
19	6	11	4	1	2
20	5	10	3	1	2

	Left Rear Outside - Inside	Left Rear Inside - Outside	Left Rear Inside - OutCenter	Left Rear Inside - InCenter	Left Rear Inside - Inside
0	9	11	11	11	10
1	10	12	9	9	10
2	10	9	9	8	9
3	8	10	8	8	9
4	8	10	8	8	8
5	8	10	8	8	8
6	9	10	7	7	8
7	12	13	9	9	13
8	8	11	8	8	5
9	7	10	9	7	8
10	8	10	8	7	8
11	8	10	8	7	8
12	8	9	8	7	8
13	7	10	8	6	8
14	7	10	8	6	7
15	7	9	7	6	7
16	7	9	7	6	7
17	6	9	7	6	7
18	6	5	5	5	6
19	5	8	5	5	6
20	5	7	5	5	6

Appendix C

Maintenance logs for the diesel bus

PPPR3010 — The University of Texas at Austin — Page 1

11/16/92 — Preventive Maintenance System — Due 12/04/92

Scheduled PM Instructions

Crew 2 — Equipment No. S-#RA-Z-TR-002 — Shop 57

W.O. 9-5-00792 — 90 FORD BUS (LTU:092,301 MI) (LSC:000000) — Frequency M

Acct. 20-0660-1256 — SHUTTLE (LOC:I02792; 150,442 MI) (LAC:100992) — Week Due 49

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

52,153 MILES

Feedback Data

Step	What Was Wrong	Material
	PM SERVICE	FRONT BRAKE SHOES + DRUMS
		REAR BRAKE SHOES + DRUMS
		FRONT WHEEL BEARINGS ✓
		REAR WHEEL BEARINGS
		FRONT + REAR GREASE SEALS

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
KUBIAK	2	20 HRS			

PPPR3010 | The University of Texas at Austin | Page 1

12/14/92 | Preventive Maintenance System | Due 01/03/92

Scheduled PM Instructions

Crew 2 | Equipment No. 5-#RA-Z-TR-002 | Shop 57
W.O. 9-5-00792 | 80 FORD BUS (LTU:082,301 MI) (LBC:000000) | Frequency Q
Acct. 20-0660-1256 | SHUTTLE (LOC:102792; 150,442 MI) (LAC:100992) | Week Due 1

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. CHECK TRANSMISSION,DIFFERENTIAL,AND AUXILIARY GEAR BOX OIL LEVEL. ADD OIL AS NEEDED.	✓		
9. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
10. ** EVERY 4,500 MILES OR EVERY 6 MONTHS ** CHANGE OIL,OIL FILTER AND LUBRICATE CHASIS.ENTER LAST PERFORMED DATE-2-4-93 MILES-155588.	✓		
11. ** 1980 AND OLDER VEHICLES **. TUNE UP ENGINE EVERY 10,000 MILES. ENTER LAST TUNE UP MILES.._____.	✓		
12. ** 1981 AND NEWER VEHICLES ** TUNE UP ENGINE EVERY 15,000 MILES. ENTER LAST TUNE UP MILES._____.	✓		

Feedback Data

Step	What Was Wrong	Material

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

Crew 2 Equipment No. 5-#RA-Z-TR-002 Shop 57
W.O. 9-5-00792 80 FORD BUS (LTU:082,301 MI) (LBC:000000) Frequency Q
Acct. 20-0660-1256 SHUTTLE (LOC:102792; 150,442 MI) (LAC:100992) Week Due 1

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
13. EVERY 15,000 MILES SERVICE AUTOMATIC TRANSMISSION AS APPLICABLE. ENTER ODOMETER READING.MILES	✓		
14. AS APPLICABLE CHANGE DIESEL FUEL FILTERS.	✓		
15. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material
	PM Service	change oil/AFilters 5"
		Fuel Filter 2" 1 AIR Filter
		12 qt 15-40 oil Replace Belts
		A/T, AIR pump, Powersteering pump

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
Richard Green	3	6			

PPPR3010

01/19/93

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due

Crew 2
W.O. 9-5-00792
Acct. 20-0660-1256

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:102792; 150,442 MI) (LAC:100992)

Shop 57
Frequency M
Week Due 5

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	____	____	____
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	____	____	____
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	____	____	____
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	____	____	____
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	____	____	____
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	____	____	____
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	____	____	____
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	____	____	____
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	____	____	____

Feedback Data

Step	What Was Wrong	Material

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

PPPR3010

02/08/93

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due

Crew 2
W.O. 9-5-00792
Acct. 20-0660-1256

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:102792; 150,442 MI) (LAC:100992)

Shop 57
Frequency M
Week Due 9

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material
	PM Service	Not Enough miles
		Add 2 qt 15-40 oil
		Replace Left Front
		Turn Lens

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
Richard Shaw	3	3			

PPPR3010 — The University of Texas at Austin — Page 1

03/15/93 — Preventive Maintenance System — Due

Scheduled PM Instructions

Crew 2 — Equipment No. 5-#RA-Z-TR-002 — Shop 57
W.O. 9-5-00792 — 80 FORD BUS (LTU:082,301 MI) (LBC:000000) — Frequency S
Acct. 20-0660-1256 — SHUTTLE (LOC:020493; 155,588 MI) (LAC:100992) — Week Due 14

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. CHECK TRANSMISSION,DIFFERENTIAL,AND AUXILIARY GEAR BOX OIL LEVEL. ADD OIL AS NEEDED.	✓		
9. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
10. ** EVERY 4,500 MILES OR EVERY 6 MONTHS ** CHANGE OIL,OIL FILTER AND LUBRICATE CHASIS.ENTER LAST PERFORMED DATE-_____, MILES-_____ .	✓		
11. ** 1980 AND OLDER VEHICLES **. TUNE UP ENGINE EVERY 10,000 MILES. ENTER LAST TUNE UP MILES..____.	✓		
12. ** 1981 AND NEWER VEHICLES ** TUNE UP ENGINE EVERY 15,000 MILES. ENTER LAST TUNE UP MILES._____.	✓		

Feedback Data

Step	What Was Wrong	Material

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

Due

Crew 2
W.O. 9-5-00792
Acct. 20-0660-1256

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:020493; 155,588 MI) (LAC:100992)

Shop 57
Frequency S
Week Due 14

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
13. EVERY 15,000 MILES SERVICE AUTOMATIC TRANSMISSION AS APPLICABLE. ENTER ODOMETER READING.MILES	✓		
14. AS APPLICABLE CHANGE DIESEL FUEL FILTERS.	✓		
15. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material
	PM Service	OFF Formotor work

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
[illegible]	3	2			

AUTOMOTIVE MAINTENANCE & SERVICE LOG

BALCONES RESEARCH CENTER

QUANTITY	REPLACEMENT PARTS DESCRIPTION
12	qt 15-40 oil
2	oil Filter
2	Head gasket
	Replaced

BRC 13-11-72

LABOR INSTRUCTIONS

LUB. ☑ OIL CHANGE ☑ FILTER ☑ WASH ☐

THE PERSON REQUESTING THESE PARTS HERE-BY CERTIFIES THAT SAID PARTS SHALL BE INSTALLED OR USED ONLY UPON THE EQUIPMENT DESIGNATED ABOVE.

REQUESTED BY [signature]

APPROVED BY _____

ISSUED BY _____

JOB NO. 5300067

LIC. NO. 5026 DATE 4-20-73

TYPE Ford MAKE F700 H.P. 8.2

SPEEDOMETER 59381

REIMBURSEMENT ACCOUNT _____

QUAN	CONTRACT ITEM	UNIT PRICE	TOTAL

OUTSIDE REPAIRS & PARTS	AMT.

PPPR3010

04/12/93

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due 04/30/93

Crew 2
W.O. 9-5-00792
Acct. 20-0660-1256

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:020493; 155,588 MI) (LAC:100992)

Shop 57
Frequency M
Week Due 18

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

4/28/93 60,158 miles

Feedback Data

Step	What Was Wrong	Material
	SET IDLE	

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
KHDF, LP		2			

PPPR3010

05/10/93

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due 05/28/93

Crew 2
W.O. 9-5-00792
Acct. 20-0660-1256

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:020493; 155,588 MI) (LAC:100992)

Shop 57
Frequency M
Week Due 22

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
[illegible]		—			

PPPR3010 — The University of Texas at Austin — Page 1

06/14/93 — Preventive Maintenance System — Due 07/02/93

Scheduled PM Instructions

Crew 2 — Equipment No. 5-#RA-Z-TR-002 — Shop 57
W.O. 9-5-00792 — 80 FORD BUS (LTU:082,301 MI) (LBC:000000) — Frequency Q
Acct. 20-0660-1256 — SHUTTLE (LOC:020493; 155,588 MI) (LAC:100992) — Week Due 27

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. CHECK TRANSMISSION,DIFFERENTIAL,AND AUXILIARY GEAR BOX OIL LEVEL. ADD OIL AS NEEDED.	✓		
9. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
10. ** EVERY 4,500 MILES OR EVERY 6 MONTHS ** CHANGE OIL,OIL FILTER AND LUBRICATE CHASIS.ENTER LAST PERFORMED DATE-8-10-93, MILES-62191 .	✓		
11. ** 1980 AND OLDER VEHICLES **. TUNE UP ENGINE EVERY 10,000 MILES. ENTER LAST TUNE UP MILES.._____.	✓		
12. ** 1981 AND NEWER VEHICLES ** TUNE UP ENGINE EVERY 15,000 MILES. ENTER LAST TUNE UP MILES._____.	✓		

Feedback Data

Step	What Was Wrong	Material
	PM SERVICE	2 OIL FILTERS
		2 FUEL FILTERS
		12 QTS 1540
		15 QTS DEXRON TRANS FLUID
		1 TRANS FILTER + GSKT.

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
KUBIAK	2	4HRS			

Crew 2 Equipment No. 5-#RA-Z-TR-002 Shop 57
W.O. 9-5-00792 80 FORD BUS (LTU:082,301 MI) (LBC:000000) Frequency Q
Acct. 20-0660-1256 SHUTTLE (LOC:020493; 155,588 MI) (LAC:100992) Week Due 27

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
13. EVERY 15,000 MILES SERVICE AUTOMATIC TRANSMISSION AS APPLICABLE. ENTER ODOMETER READING.MILES 62191	✓		
14. AS APPLICABLE CHANGE DIESEL FUEL FILTERS.	✓		
15. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material
		ENGINE OIL COOLER
		3 GALLONS ANTI-FREEZE

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

Crew 2 Equipment No. 5-#RA-Z-TR-002 Shop 57
W.O. 9-5-00792 80 FORD BUS (LTU:082,301 MI) (LBC:000000) Frequency M
Acct. 20-0660-1256 SHUTTLE (LOC:020493; 155,588 MI) (LAC:100992) Week Due 31

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	____	____	____
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	____	____	____
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	____	____	____
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	____	____	____
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	____	____	____
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	____	____	____
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	____	____	____
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	____	____	____
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	____	____	____

Feedback Data

Step	What Was Wrong	Material

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

PPPR3010

08/09/93

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due 08/27/93

Crew 2
W.O. 9-5-00792
Acct. 20-0660-1256

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:020493; 155,588 MI) (LAC:100992)

Shop 57
Frequency M
Week Due 35

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material
	PM SERVICE	

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
KURIAK	2	2HRS			

PPPR3C1C

09/13/93

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due 10/01/93

Crew 3
W.O. 9-5-00792
Acct. 20-0660-1256

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:081093; 162,191 MI) (LAC:091093)

Shop 57
Frequency A
Week Due 40

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. CHECK TRANSMISSION,DIFFERENTIAL,AND AUXILIARY GEAR BOX OIL LEVEL. ADD OIL AS NEEDED.	✓		
9. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
10. CHECK GENERAL CONDITION OF VEHICLE,ROAD TEST, PREPARE FOR AND HAVE STATE INSPECTION PERFORMED. ** BRC VEHICLES** TUNE-UP ENGINE AS REQUIRED.	✓		
11. ** EVERY 4,500 MILES OR EVERY 6 MONTHS ** CHANGE OIL,OIL FILTER AND LUBRICATE CHASIS.ENTER LAST PERFORMED DATE-10/23/93, MILES-165,981 .	✓		

Feedback Data

Step	What Was Wrong	Material
	BELTS & HOSES	

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

Crew 3 Equipment No. 5-#RA-Z-TR-002 Shop 57
W.O. 9-5-00792 80 FORD BUS (LTU:082,301 MI) (LBC:000000) Frequency A
Acct. 20-0660-1256 SHUTTLE (LOC:081093; 162,191 MI) (LAC:091093) Week Due 40

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
12. ** 1980 AND OLDER VEHICLES **. TUNE UP ENGINE EVERY 10,000 MILES. ENTER LAST TUNE UP MILES.._____.	—		
13. ** 1981 AND NEWER VEHICLES ** TUNE UP ENGINE EVERY 15,000 MILES. ENTER LAST TUNE UP MILES._____.	—		
14. EVERY 15,000 MILES SERVICE AUTOMATIC TRANSMISSION AS APPLICABLE. ENTER ODOMETER READING.MILES	—		
15. AS APPLICABLE CHANGE DIESEL FUEL FILTERS.	✓		
16. ***** MANDATORY FOR ALL BRC SHUTTLE BUSSES ****** REPLACE ALL RADIATOR HOSES,HEATER HOSES,AND BY-PASS HOSES. FOR OTHER BRC TRUCKS REPLACE EVERY 30,000 MILES.	—		
17. ***** MANDATORY FOR ALL BRC SHUTTLE BUSSES ***** REPLACE ALL V BELTS, FOR OTHER BRC TRUCKS REPLACE ALL V BELTS EVERY 30,000 MILES.	✓		
18. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material
	L.O.F.	12 qts 15W40
	FLUSH RAD. + ADD ANTI-FREEZE	3 gallon ANTI-FREEZE
		2 oil filters
		1 air filter
		2 fuel filters

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
KADENHEAD	1	5			

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10/11/93 — Preventive Maintenance System — Due 10/29/93

Scheduled PM Instructions

Crew 2 — Equipment No. 5-#RA-Z-TR-002 — Shop 57

W.O. 9-5-00792 — 80 FORD BUS (LTU:082,301 MI) (LBC:000000) — Frequency M

Acct. 20-0660-1256 — SHUTTLE (LOC:081093; 162,191 MI) (LAC:091093) — Week Due 44

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

10/28/93 - 65,982

Feedback Data

Step	What Was Wrong	Material
		NEW BELTS + HOSES
		ANTI FREEZE
		10/28/93

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
HADERLA	1	5			

PPPR3010

11/15/93

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due 12/03/93

Crew 2
W.O. 9-5-00792
Acct. 20-0660-1256

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:102393; 165,981 MI) (LAC:102893)

Shop 57
Frequency M
Week Due 49

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

12-14-93 MILEAGE 168,390

Feedback Data

Step	What Was Wrong	Material
	TIRE WORN	2 FT TIRES
	OIL IN COOLANT-	REPLACE AIR COMPRESSOR
		3 Coolant 2 cans flush
	LOOSE BELTS	TIGHTEN BELTS

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
S.W.	3				

PPPR3010 | The University of Texas at Austin | Page 1

12/13/93 | Preventive Maintenance System | Due 01/07/94

Scheduled PM Instructions

Crew 2 | Equipment No. 5-#RA-Z-TR-002 | Shop 57
W.O. 9-5-00792 | 80 FORD BUS (LTU:082,301 MI) (LBC:000000) | Frequency Q
Acct. 20-0660-1256 | SHUTTLE (LOC:102393; 165,981 MI) (LAC:102893) | Week Due 1

168434

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. CHECK TRANSMISSION,DIFFERENTIAL,AND AUXILIARY GEAR BOX OIL LEVEL. ADD OIL AS NEEDED.	✓		
9. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
10. ** EVERY 4,500 MILES OR EVERY 6 MONTHS ** CHANGE OIL,OIL FILTER AND LUBRICATE CHASIS.ENTER LAST PERFORMED DATE-1-12-94, MILES-168434.	✓		
11. ** 1980 AND OLDER VEHICLES **. TUNE UP ENGINE EVERY 10,000 MILES. ENTER LAST TUNE UP MILES.._____.	N/A		
12. ** 1981 AND NEWER VEHICLES ** TUNE UP ENGINE EVERY 15,000 MILES. ENTER LAST TUNE UP MILES._____.	N/A		

Feedback Data

Step	What Was Wrong	Material
	L.O.F.	12 15-40 oil
		2 PF-35 A/C

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
D. Ware	3				

Crew 2 Equipment No. 5-#RA-Z-TR-002 Shop 57
W.O. 9-5-00792 80 FORD BUS (LTU:082,301 MI) (LBC:000000) Frequency Q
Acct. 20-0660-1256 SHUTTLE (LOC:102393; 165,981 MI) (LAC:102893) Week Due 1

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
13. EVERY 15,000 MILES SERVICE AUTOMATIC TRANSMISSION AS APPLICABLE. ENTER ODOMETER READING.MILES	✓		
14. AS APPLICABLE CHANGE DIESEL FUEL FILTERS.	✓		
15. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

PPPR3010 | The University of Texas at Austin | Page 1
01/21/94 | Preventive Maintenance System | Due 02/04/94
Scheduled PM Instructions

Crew 2 | Equipment No. 5-#RA-Z-TR-002 | Shop 57
W.O. 9-5-00792 | 80 FORD BUS (LTU:082,301 MI) (LBC:000000) | Frequency M
Acct. 20-7405-0056 | SHUTTLE (LOC:011294; 168,434 MI) (LAC:121493) | Week Due 5

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material
	P.M.	

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
D. Ware	3				

PPPR3010

02/14/94

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due 03/04/94

Crew 2
W.O. 9-5-00792
Acct. 20-7405-0056

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:011294; 168,434 MI) (LAC:121493)

Shop 57
Frequency M
Week Due 9

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

NEW REBUILT ENGINE 3/23/94
170,297 MILES

Feedback Data

Step	What Was Wrong	Material
	P.M. - NEW ENGINE	NEW BELTS
		12 qts 15W40 MOTOR OIL
		4 GALLONS ANTI-FREEZE

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
KADERKA	1				

PPPR3010

03/21/94

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due 04/08/94

Crew 2
W.O. 9-5-00792
Acct. 20-7405-0056

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:011294; 168,434 MI) (LAC:121493)

Shop 57
Frequency S
Week Due 14

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. CHECK TRANSMISSION,DIFFERENTIAL,AND AUXILIARY GEAR BOX OIL LEVEL. ADD OIL AS NEEDED.	✓		
9. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
10. ** EVERY 4,500 MILES OR EVERY 6 MONTHS ** CHANGE OIL,OIL FILTER AND LUBRICATE CHASIS.ENTER LAST PERFORMED DATE-_____, MILES-_____ .	✓		
11. ** 1980 AND OLDER VEHICLES **. TUNE UP ENGINE EVERY 10,000 MILES. ENTER LAST TUNE UP MILES..._____.	✓		
12. ** 1981 AND NEWER VEHICLES ** TUNE UP ENGINE EVERY 15,000 MILES. ENTER LAST TUNE UP MILES._____.	✓		

171768

Feedback Data

Step	What Was Wrong	Material
	NOT ENOUGH MILES FOR OIL CHANGE P.M.	

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time
D. Ware					

Crew 2 Equipment No. 5-#RA-Z-TR-002 Shop 57
W.O. 9-5-00792 80 FORD BUS (LTU:082,301 MI) (LBC:000000) Frequency S
Acct. 20-7405-0056 SHUTTLE (LOC:011294; 168,434 MI) (LAC:121493) Week Due 14

Manufacturer FORD (UT #5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
13. EVERY 15,000 MILES SERVICE AUTOMATIC TRANSMISSION AS APPLICABLE. ENTER ODOMETER READING.MILES	✓		
14. AS APPLICABLE CHANGE DIESEL FUEL FILTERS.	✓		
15. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

PPPR3010

04/18/94

The University of Texas at Austin
Preventive Maintenance System
Scheduled PM Instructions

Due 05/06/94

Crew 2
W.O. 9-5-00792
Acct. 20-7405-0056

Equipment No. 5-#RA-Z-TR-002
80 FORD BUS (LTU:082,301 MI) (LBC:000000)
SHUTTLE (LOC:032394; 170,297 MI) (LAC:032394)

Shop 57
Frequency M
Week Due 18

Manufacturer FORD (UT 5026)

Serial Number TAG 379 141 .

TRUCK-PREVENTITIVE MAINTENANCE INSTRUCTIONS	OK	Inc.	Needs Maint.
1. SPECIAL INSTRUCTIONS: MAKE ARRANGEMENTS WITH VEHICLE OWNER FOR SERVICE TO THIS VEHICLE. NOTE:(*)ITEM ON LOCATION AND DESCRIPTION FOR COMPLETING ITEM 11,12,13	✓		
2. CHECK COOLANT IN RADIATOR AND INSPECT RADIATOR CAP AND HOSES;REPLACE DAMAGED HOSES AND CAP.FILL RADIATOR WITH COOLANT TO PROPER LEVEL.	✓		
3. CHECK ALL DRIVE BELTS FOR PROPER TENSION AND CONDITION, CHECK ACCESSORIES MOUNTING AND BRACKETS FOR TIGHTNESS AND ADJUST BELT TENSIONS AS NECESSARY.	✓		
4. CLEAN BATTERY POSTS AND CABLE TERMINALS AND CHECK BATTERY WATER LEVEL. ADD WATER IF NEEDED. CHECK SPECIFIC GRAVITY OF ELECTROLYTE AS APPLICABLE.	✓		
5. CHECK STEERING BOX AND/OR POWER STEERING OIL LEVEL. ADD OIL AS REQUIRED.	✓		
6. CHECK.CLEAN,OR REPLACE ENGINE INTAKE AIR FILTER.	✓		
7. CHECK BRAKE OPERATION,CHECK BRAKE FLUID LEVEL,ADD FLUID AS NEEDED. IF NECESSARY REMOVE WHEEL AND DRUM AND VISSUALLY CHECK BRAKE SHOES AND COMPONENTS.	✓		
8. REPORT ANY NEEDED REPAIRS SUCH AS TIRES,BATTERIES, LIGHTS,REAR-VIEW MIRRORS,MUFFLERS,ETC. ** CHECK ALL VEHICLES FOR EXCESSIVE EXHAUST SMOKE. **	✓		
9. COMPLETE MAINTENANCE RECORDS AND REPORTS AND REPORT ANY VISIBLE PROBLEM AREAS TO GROUNDS MAINTENANCE SUPERVISOR	✓		

Feedback Data

Step	What Was Wrong	Material
	PM. SERVICE	

Labor Data

Name	Worker No.	Time	Name	Worker No.	Time

Appendix D
Trip reports for the CNG bus
(data logger output)

Trip Summary Report

U.T. BLUEBIRD CNG

Date of Report: Jan. 19 1993
Download File : CNGJA14.KBB

Vehicle ID: CNG
Driver:

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07

Section 1 - Vehicle Operations

Number of overspeeds	44	Number of over RPM's (moving)	25
Highest overspeed (mph)	66	Highest recorded RPM (moving)	3323
Number of over Idles	59	Number of over RPM's (idling)	27
Number of hard accelerations	0	Highest recorded RPM (idling)	2908
Number of hard decelerations	0	% of moving time brakes applied	0%

Section 2 - Distance/Times

	Days	Hours	Minutes	Seconds
Total Trip Time	97	7	21	13
Total Road Time		192	29	57
Time Idling		111	5	3
Longest Idle Time		1	2	11
Average Idle Time		0	18	27
Longest Daily Time Driving		7	12	23
Average Daily Time Driving		1	51	15
Average Time of overspeeds		0	0	54
Average Time - over RPM's (moving)		0	0	9
Total Stop Time		2142	51	16
Time Parked		2031	46	13
Longest Stop Time		283	43	20
Average Stop Time		10	40	8

Total Trip Distance:	5628.00 mi	Number of stops recorded	101
Longest Daily Distance:	219.57 mi	Special Distance Kms	
Average Daily Distance:	55.52 mi	Equivalent Idle Distance:	8886.73 mi
Fuel Oil Rebate Time:	0.00 hrs		

Fuel Oil Rebate Time:

Section 3 - Administrative

Overspeed level set at:	58 mph	Over RPM level (moving) set at:	1965 RPM
Overspeed time set at:	10 sec	Over RPM time (moving) set at:	2 sec
Over RPM level (id) set at:	969 RPM	Idle time level set at:	600 sec
Hard Accel level set at:	8 ft/s/s	Hard Decel level set at:	-14 ft/s/s
Overspeeds Collected	821	Over RPM (moving) Collected	19843
Stops Collected	125	Over RPM (idling) Collected	5248
Idles Collected	125	Ignition On	334
Hard Accelerations Collected	0	Hard Decelerations Collected	0

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Jan. 19 1993

File Name: CNGJA14.KBB
GPIB Name: CNG.CAR
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

Daily Distance Report

	Occurrence Time	Driving Time	Distance	
1:	Nov 12 1992 at 23:59:59	0:01:01:43	23.92 mi	
2:	Nov 13 1992 at 23:59:59	0:03:22:39	100.19 mi	
3:	Nov 14 1992 at 23:59:59	0:01:32:02	32.06 mi	
4:	Nov 15 1992 at 23:59:59	0:00:00:00	0.00 mi	
5:	Nov 16 1992 at 23:59:59	0:03:12:03	100.52 mi	
6:	Nov 17 1992 at 23:59:59	0:04:32:54	141.87 mi	
7:	Nov 18 1992 at 23:59:59	0:06:55:59	203.63 mi	
8:	Nov 19 1992 at 23:59:59	0:00:34:11	13.15 mi	LONGEST DAILY DIST <==
9:	Nov 20 1992 at 23:59:59	0:07:12:23	219.57 mi	
10:	Nov 21 1992 at 23:59:59	0:00:00:00	0.00 mi	
11:	Nov 22 1992 at 23:59:59	0:00:00:00	0.00 mi	
12:	Nov 23 1992 at 23:59:59	0:05:50:03	176.47 mi	
13:	Nov 24 1992 at 23:59:59	0:04:46:46	143.26 mi	
14:	Nov 25 1992 at 23:59:59	0:04:28:24	142.11 mi	
15:	Nov 26 1992 at 23:59:59	0:00:00:00	0.00 mi	
16:	Nov 27 1992 at 23:59:59	0:00:00:00	0.00 mi	
17:	Nov 28 1992 at 23:59:59	0:00:00:00	0.00 mi	
18:	Nov 29 1992 at 23:59:59	0:00:00:00	0.00 mi	
19:	Nov 30 1992 at 23:59:59	0:04:32:58	142.14 mi	
20:	Dec 1 1992 at 23:59:59	0:03:06:57	98.81 mi	
21:	Dec 2 1992 at 23:59:59	0:01:02:26	33.36 mi	
22:	Dec 3 1992 at 23:59:59	0:00:02:21	0.05 mi	
23:	Dec 4 1992 at 23:59:59	0:00:00:02	0.00 mi	
24:	Dec 5 1992 at 23:59:59	0:00:00:00	0.00 mi	
25:	Dec 6 1992 at 23:59:59	0:00:00:00	0.00 mi	
26:	Dec 7 1992 at 23:59:59	0:04:51:32	148.23 mi	
27:	Dec 8 1992 at 23:59:59	0:04:03:18	123.72 mi	
28:	Dec 9 1992 at 23:59:59	0:04:00:15	124.03 mi	
29:	Dec 10 1992 at 23:59:59	0:04:48:42	143.28 mi	
30:	Dec 11 1992 at 23:59:59	0:04:44:49	144.12 mi	
31:	Dec 12 1992 at 23:59:59	0:00:00:00	0.00 mi	
32:	Dec 13 1992 at 23:59:59	0:00:00:00	0.00 mi	
33:	Dec 14 1992 at 23:59:59	0:04:08:09	123.43 mi	
34:	Dec 15 1992 at 23:59:59	0:06:01:56	177.52 mi	
35:	Dec 16 1992 at 23:59:59	0:04:50:48	143.87 mi	
36:	Dec 17 1992 at 23:59:59	0:05:36:17	165.45 mi	
37:	Dec 18 1992 at 23:59:59	0:05:31:01	164.43 mi	
38:	Dec 19 1992 at 23:59:59	0:00:00:00	0.00 mi	
39:	Dec 20 1992 at 23:59:59	0:00:00:00	0.00 mi	
40:	Dec 21 1992 at 23:59:59	0:01:23:55	43.16 mi	
41:	Dec 22 1992 at 23:59:59	0:00:00:00	0.00 mi	
42:	Dec 23 1992 at 23:59:59	0:02:25:56	77.87 mi	
43:	Dec 24 1992 at 23:59:59	0:00:00:00	0.00 mi	
44:	Dec 25 1992 at 23:59:59	0:00:00:00	0.00 mi	
45:	Dec 26 1992 at 23:59:59	0:00:00:00	0.00 mi	
46:	Dec 27 1992 at 23:59:59	0:00:00:00	0.00 mi	
47:	Dec 28 1992 at 23:59:59	0:00:00:00	0.00 mi	
48:	Dec 29 1992 at 23:59:59	0:00:00:00	0.00 mi	
49:	Dec 30 1992 at 23:59:59	0:00:00:00	0.00 mi	
50:	Dec 31 1992 at 23:59:59	0:00:00:00	0.00 mi	
51:	Jan 1 1993 at 23:59:59	0:00:00:00	0.00 mi	
52:	Jan 2 1993 at 23:59:59	0:00:00:00	0.00 mi	

53:	Jan	3	1993	at	23:59:59	0:00:00:00	0.00 mi
54:	Jan	4	1993	at	23:59:59	0:03:23:01	101.06 mi
55:	Jan	5	1993	at	23:59:59	0:03:24:18	101.12 mi
56:	Jan	6	1993	at	23:59:59	0:04:07:37	121.82 mi
57:	Jan	7	1993	at	23:59:59	0:02:48:50	81.10 mi
58:	Jan	8	1993	at	23:59:59	0:00:09:18	1.70 mi
59:	Jan	9	1993	at	23:59:59	0:00:00:00	0.00 mi
60:	Jan	10	1993	at	23:59:59	0:00:00:00	0.00 mi
61:	Jan	11	1993	at	23:59:59	0:00:00:00	0.00 mi
62:	Jan	12	1993	at	23:59:59	0:00:00:00	0.00 mi
63:	Jan	13	1993	at	23:59:59	0:00:04:20	0.24 mi
64:	Jan	14	1993	at	16:51:07	0:00:01:45	0.13 mi

DAILY DISTANCE MEMORY WAS SET TO COLLECT 56 DAYS SINCE THERE ARE DAYS WITH 0-MILEAGE. 64 DAYS WERE RECORDED.

U.T. BLUEBIRD CNG

Date: Jan. 19 1993

File Name: CNGJA14.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

Min Stop Time: 0:00:05:00

Longest Stop:11:19:43:20

Stop Report

	Occurrence Time	Elapsed(DHMS)	Distance
1:	Nov 25 1992 at 19:12:37	4:12:03:42	3367.60 mi <==
2:	Nov 30 1992 at 07:34:35	0:00:22:58	3373.65 mi <==
3:	Nov 30 1992 at 12:05:49	0:04:28:34	3466.46 mi <==
4:	Nov 30 1992 at 16:44:56	0:00:17:46	3467.23 mi <==
5:	Nov 30 1992 at 19:17:28	0:11:59:05	3509.75 mi <==
6:	Dec 1 1992 at 07:31:05	0:00:23:24	3515.79 mi <==
7:	Dec 1 1992 at 12:09:10	0:19:03:53	3608.56 mi <==
8:	Dec 2 1992 at 07:34:12	0:00:14:56	3614.60 mi <==
9:	Dec 2 1992 at 08:58:14	0:00:36:09	3641.36 mi <==
10:	Dec 2 1992 at 09:40:17	1:02:18:06	3641.92 mi <==
11:	Dec 3 1992 at 12:04:46	3:20:47:42	3641.97 mi <==
12:	Dec 7 1992 at 08:55:37	0:01:02:44	3642.02 mi <==
13:	Dec 7 1992 at 12:34:33	0:00:49:53	3689.19 mi <==
14:	Dec 7 1992 at 14:51:17	0:00:16:03	3715.94 mi <==
15:	Dec 7 1992 at 16:37:34	0:00:17:48	3747.77 mi <==
16:	Dec 7 1992 at 19:08:33	0:13:09:47	3790.20 mi <==
17:	Dec 8 1992 at 10:14:40	0:00:26:09	3817.12 mi <==
18:	Dec 8 1992 at 12:32:55	0:02:48:02	3848.79 mi <==
19:	Dec 8 1992 at 16:33:33	0:00:31:13	3870.33 mi <==
20:	Dec 8 1992 at 19:13:03	0:12:54:26	3913.92 mi <==
21:	Dec 9 1992 at 08:28:07	0:00:22:42	3919.98 mi <==
22:	Dec 9 1992 at 10:37:33	0:00:57:27	3951.52 mi <==
23:	Dec 9 1992 at 12:32:17	0:02:44:12	3973.71 mi <==
24:	Dec 9 1992 at 16:34:34	0:00:12:30	3995.21 mi <==
25:	Dec 9 1992 at 19:22:48	0:12:10:07	4037.95 mi <==
26:	Dec 10 1992 at 07:53:59	0:00:21:58	4043.99 mi <==
27:	Dec 10 1992 at 09:31:13	0:02:06:38	4071.30 mi <==
28:	Dec 10 1992 at 12:58:29	0:00:24:58	4094.70 mi <==
29:	Dec 10 1992 at 14:35:11	0:01:00:19	4116.87 mi <==
30:	Dec 10 1992 at 16:35:23	0:00:27:10	4138.35 mi <==
31:	Dec 10 1992 at 19:13:57	0:13:10:31	4181.23 mi <==
32:	Dec 11 1992 at 08:48:22	0:00:24:05	4188.29 mi <==
33:	Dec 11 1992 at 10:49:06	0:00:47:34	4217.26 mi <==
34:	Dec 11 1992 at 12:35:08	0:00:49:42	4239.63 mi <==
35:	Dec 11 1992 at 14:32:49	0:00:56:59	4261.01 mi <==
36:	Dec 11 1992 at 16:40:16	0:00:28:02	4282.51 mi <==
37:	Dec 11 1992 at 19:13:19	2:12:31:47	4325.35 mi <==
38:	Dec 14 1992 at 08:01:33	0:00:26:44	4331.40 mi <==
39:	Dec 14 1992 at 12:32:51	0:00:44:59	4383.86 mi <==
40:	Dec 14 1992 at 14:34:37	0:00:51:46	4405.30 mi <==
41:	Dec 14 1992 at 15:34:00	0:00:51:23	4405.82 mi <==
42:	Dec 14 1992 at 16:40:49	0:00:25:52	4406.57 mi <==
43:	Dec 14 1992 at 19:18:11	0:12:11:59	4448.79 mi <==
44:	Dec 15 1992 at 07:50:56	0:00:25:44	4454.84 mi <==
45:	Dec 15 1992 at 09:38:12	0:00:54:43	4482.48 mi <==
46:	Dec 15 1992 at 12:53:51	0:00:18:43	4533.77 mi <==
47:	Dec 15 1992 at 14:34:39	0:01:06:54	4561.94 mi <==
48:	Dec 15 1992 at 16:36:07	0:00:20:11	4583.44 mi <==
49:	Dec 15 1992 at 19:20:52	0:14:20:32	4626.31 mi <==
50:	Dec 16 1992 at 09:49:37	0:00:50:16	4627.06 mi <==
51:	Dec 16 1992 at 12:50:13	0:00:21:50	4678.42 mi <==

52:	Dec	16	1992	at 14:34:55	0:00:44:15	4706.65 mi <==
53:	Dec	16	1992	at 16:36:22	0:00:31:42	4728.13 mi <==
54:	Dec	16	1992	at 19:18:33	0:12:12:54	4770.18 mi <==
55:	Dec	17	1992	at 07:48:19	0:00:16:36	4776.23 mi <==
56:	Dec	17	1992	at 09:31:22	0:00:57:31	4803.55 mi <==
57:	Dec	17	1992	at 13:09:46	0:00:22:16	4849.19 mi <==
58:	Dec	17	1992	at 14:45:33	0:00:34:32	4870.79 mi <==
59:	Dec	17	1992	at 16:44:49	0:00:27:16	4893.58 mi <==
60:	Dec	17	1992	at 17:47:51	0:00:09:44	4907.96 mi <==
61:	Dec	17	1992	at 19:15:02	0:12:35:33	4935.63 mi <==
62:	Dec	18	1992	at 08:08:31	0:00:17:50	4941.68 mi <==
63:	Dec	18	1992	at 12:24:55	0:00:14:09	5003.15 mi <==
64:	Dec	18	1992	at 12:48:38	0:00:15:22	5006.26 mi <==
65:	Dec	18	1992	at 14:37:28	0:00:40:25	5036.39 mi <==
66:	Dec	18	1992	at 16:34:59	0:00:28:47	5057.87 mi <==
67:	Dec	18	1992	at 19:10:45	2:21:51:30	5100.06 mi <==
68:	Dec	21	1992	at 19:07:28	1:12:59:49	5143.22 mi <==
69:	Dec	23	1992	at 08:27:28	0:00:21:25	5149.28 mi <==
70:	Dec	23	1992	at 11:36:15	0:01:33:17	5200.39 mi <==
71:	Dec	23	1992	at 14:06:49	11:19:43:20	5221.08 mi <==
72:	Jan	4	1993	at 09:57:33	0:02:09:22	5221.91 mi <==
73:	Jan	4	1993	at 12:22:24	0:00:18:17	5227.72 mi <==
74:	Jan	4	1993	at 13:02:42	0:00:38:55	5236.26 mi <==
75:	Jan	4	1993	at 14:38:43	0:00:40:37	5257.69 mi <==
76:	Jan	4	1993	at 16:34:23	0:00:30:38	5279.21 mi <==
77:	Jan	4	1993	at 19:12:20	0:14:20:48	5322.14 mi <==
78:	Jan	5	1993	at 09:42:55	0:02:07:28	5322.95 mi <==
79:	Jan	5	1993	at 12:07:11	0:00:17:36	5328.77 mi <==
80:	Jan	5	1993	at 12:49:01	0:00:43:41	5337.32 mi <==
81:	Jan	5	1993	at 14:33:31	0:00:54:49	5358.82 mi <==
82:	Jan	5	1993	at 16:36:12	0:00:29:15	5380.34 mi <==
83:	Jan	5	1993	at 19:10:45	0:14:32:02	5423.26 mi <==
84:	Jan	6	1993	at 09:53:28	0:00:42:36	5424.08 mi <==
85:	Jan	6	1993	at 12:09:42	0:00:18:49	5454.02 mi <==
86:	Jan	6	1993	at 12:46:08	0:00:52:21	5459.99 mi <==
87:	Jan	6	1993	at 14:37:04	0:01:01:37	5481.39 mi <==
88:	Jan	6	1993	at 16:33:12	0:00:27:24	5502.90 mi <==
89:	Jan	6	1993	at 19:16:12	0:14:21:52	5545.09 mi <==
90:	Jan	7	1993	at 09:45:48	0:02:25:01	5545.90 mi <==
91:	Jan	7	1993	at 12:33:26	0:00:17:11	5553.40 mi <==
92:	Jan	7	1993	at 13:12:59	0:00:26:18	5561.96 mi <==
93:	Jan	7	1993	at 14:34:29	0:01:00:04	5583.41 mi <==
94:	Jan	7	1993	at 16:35:17	0:00:29:57	5604.93 mi <==
95:	Jan	7	1993	at 19:07:06	0:14:34:22	5626.19 mi <==
96:	Jan	8	1993	at 09:51:03	0:03:44:33	5627.08 mi <==
97:	Jan	8	1993	at 13:42:30	4:22:32:17	5627.88 mi <==
98:	Jan	13	1993	at 12:20:39	0:00:18:37	5628.04 mi <==
99:	Jan	13	1993	at 12:41:25	0:00:06:17	5628.06 mi <==
100:	Jan	13	1993	at 12:49:43	1:03:23:51	5628.12 mi <==
101:	Jan	14	1993	at 16:20:51	0:00:30:10	5628.26 mi <==

RECORDED STOPS / IGNITION OFF OVER 5 MIN

U.T. BLUEBIRD CNG

Date: Jan. 19 1993

File Name: CNGJA14.KBB
GPIB Name: CNG.CAP
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

Min Idle Time: 0:00:10:00

Longest Idle: 0:01:02:11

Idle Time Report

	Occurrence Time	Elapsed(DHMS)	Distance
1:	Nov 25 1992 at 18:06:30	0:00:12:13	3346.61 mi <==
2:	Nov 30 1992 at 10:26:57	0:00:12:36	3433.40 mi <==
3:	Nov 30 1992 at 18:00:03	0:00:12:57	3488.73 mi <==
4:	Dec 1 1992 at 11:28:15	0:00:10:02	3596.93 mi <==
5:	Dec 7 1992 at 09:58:21	0:00:15:02	3642.02 mi <==
6:	Dec 7 1992 at 10:16:02	0:00:21:29	3642.78 mi <==
7:	Dec 7 1992 at 13:24:33	0:00:15:15	3689.19 mi <==
8:	Dec 7 1992 at 15:26:14	0:00:14:32	3726.29 mi <==
9:	Dec 7 1992 at 16:55:22	0:00:12:33	3747.77 mi <==
10:	Dec 7 1992 at 18:04:39	0:00:11:51	3769.21 mi <==
11:	Dec 8 1992 at 08:23:14	0:00:13:42	3790.95 mi <==
12:	Dec 8 1992 at 09:31:22	0:00:31:00	3811.50 mi <==
13:	Dec 8 1992 at 10:57:58	0:00:41:58	3826.53 mi <==
14:	Dec 8 1992 at 15:23:07	0:00:14:55	3848.83 mi <==
15:	Dec 8 1992 at 18:03:39	0:00:15:32	3892.23 mi <==
16:	Dec 9 1992 at 09:14:54	0:00:22:23	3929.35 mi <==
17:	Dec 9 1992 at 15:18:21	0:00:20:37	3973.73 mi <==
18:	Dec 9 1992 at 16:47:30	0:00:20:15	3995.22 mi <==
19:	Dec 9 1992 at 18:02:01	0:00:15:53	4016.65 mi <==
20:	Dec 10 1992 at 11:56:52	0:00:10:30	4081.58 mi <==
21:	Dec 10 1992 at 12:32:41	0:00:17:16	4093.48 mi <==
22:	Dec 10 1992 at 13:23:27	0:00:18:29	4094.70 mi <==
23:	Dec 10 1992 at 18:03:40	0:00:14:42	4160.22 mi <==
24:	Dec 11 1992 at 09:56:40	0:00:10:22	4205.32 mi <==
25:	Dec 11 1992 at 10:29:06	0:00:19:34	4217.26 mi <==
26:	Dec 11 1992 at 13:24:50	0:00:13:30	4239.63 mi <==
27:	Dec 11 1992 at 15:29:48	0:00:10:01	4261.01 mi <==
28:	Dec 11 1992 at 18:07:14	0:00:12:21	4304.38 mi <==
29:	Dec 14 1992 at 09:00:21	0:00:37:31	4339.39 mi <==
30:	Dec 14 1992 at 10:37:22	0:01:02:11	4361.62 mi <==
31:	Dec 14 1992 at 11:58:36	0:00:10:33	4371.91 mi <==
32:	Dec 14 1992 at 13:17:50	0:00:20:06	4383.86 mi <==
33:	Dec 14 1992 at 18:03:40	0:00:15:33	4427.45 mi <==
34:	Dec 15 1992 at 16:56:16	0:00:12:40	4583.44 mi <==
35:	Dec 15 1992 at 18:07:44	0:00:10:54	4605.33 mi <==
36:	Dec 16 1992 at 15:19:10	0:00:20:51	4706.65 mi <==
37:	Dec 16 1992 at 18:02:05	0:00:19:57	4749.33 mi <==
38:	Dec 17 1992 at 08:21:48	0:00:16:59	4783.00 mi <==
39:	Dec 17 1992 at 10:28:53	0:00:12:09	4803.55 mi <==
40:	Dec 17 1992 at 12:32:11	0:00:37:34	4849.19 mi <==
41:	Dec 17 1992 at 13:58:20	0:00:10:00	4859.47 mi <==
42:	Dec 17 1992 at 15:20:53	0:00:19:23	4870.79 mi <==
43:	Dec 18 1992 at 08:45:24	0:00:54:35	4948.45 mi <==
44:	Dec 18 1992 at 09:58:35	0:00:10:17	4958.72 mi <==
45:	Dec 18 1992 at 13:25:26	0:00:13:37	5014.82 mi <==
46:	Dec 18 1992 at 15:17:53	0:00:21:28	5036.39 mi <==
47:	Dec 18 1992 at 18:04:22	0:00:13:25	5079.09 mi <==
48:	Dec 21 1992 at 18:03:50	0:00:14:33	5122.24 mi <==
49:	Dec 23 1992 at 09:06:49	0:00:32:31	5156.05 mi <==
50:	Dec 23 1992 at 09:56:23	0:00:13:12	5166.31 mi <==
51:	Jan 4 1993 at 15:19:20	0:00:22:21	5257.69 mi <==

52:	Jan 4 1993 at 18:05:24	0:00:14:15	5301.10 mi <==
53:	Jan 5 1993 at 15:28:20	0:00:12:28	5358.82 mi ==
54:	Jan 5 1993 at 18:04:50	0:00:14:41	5402.23 mi <==
55:	Jan 6 1993 at 11:45:22	0:00:10:11	5448.41 mi <==
56:	Jan 6 1993 at 18:04:19	0:00:15:18	5524.15 mi <==
57:	Jan 7 1993 at 17:47:54	0:00:21:35	5618.08 mi <==
58:	Jan 7 1993 at 18:11:08	0:00:24:47	5618.14 mi <==
59:	Jan 7 1993 at 18:50:13	0:00:12:31	5625.66 mi <==

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Jan. 19 1993

File Name: CNGJA14.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

Over Speed Report

	Occurrence Time	Elapsed(DHMS) 2MIN 10SEC	Max Speed	Distance	Driver	
1:	Jan 4 1993 at 18:25:46	0:00:02:10	66 mph	5303.45 mi	1	<==
2:	Jan 4 1993 at 18:28:06	0:00:02:16	66 mph	5305.87 mi	1	
3:	Jan 4 1993 at 18:30:26	0:00:00:26	62 mph	5308.28 mi	1	
4:	Jan 5 1993 at 13:47:18	0:00:00:29	61 mph	5339.56 mi	1	
5:	Jan 5 1993 at 13:48:07	0:00:00:43	64 mph	5340.36 mi	1	
6:	Jan 5 1993 at 13:48:56	0:00:00:17	61 mph	5341.19 mi	1	
7:	Jan 5 1993 at 13:49:27	0:00:00:17	61 mph	5341.70 mi	1	
8:	Jan 5 1993 at 15:46:55	0:00:02:15	66 mph	5360.69 mi	1	
9:	Jan 5 1993 at 15:49:16	0:00:01:03	64 mph	5362.15 mi	1	
10:	Jan 5 1993 at 15:50:31	0:00:01:29	66 mph	5364.42 mi	1	
11:	Jan 5 1993 at 17:14:46	0:00:01:04	64 mph	5383.01 mi	1	
12:	Jan 5 1993 at 17:15:57	0:00:00:43	62 mph	5384.23 mi	1	
13:	Jan 5 1993 at 18:28:30	0:00:01:30	66 mph	5405.26 mi	1	
14:	Jan 5 1993 at 18:30:17	0:00:00:56	65 mph	5407.06 mi	1	
15:	Jan 5 1993 at 18:31:26	0:00:01:19	65 mph	5408.22 mi	1	
16:	Jan 6 1993 at 10:47:56	0:00:00:18	60 mph	5426.32 mi	1	
17:	Jan 6 1993 at 10:49:07	0:00:00:56	62 mph	5427.45 mi	1	
18:	Jan 6 1993 at 10:50:04	0:00:01:52	66 mph	5428.42 mi	1	
19:	Jan 6 1993 at 11:18:04	0:00:00:30	63 mph	5438.81 mi	1	
20:	Jan 6 1993 at 13:49:02	0:00:01:10	64 mph	5462.55 mi	1	
21:	Jan 6 1993 at 13:50:48	0:00:00:29	65 mph	5464.32 mi	1	
22:	Jan 6 1993 at 13:51:14	0:00:00:30	61 mph	5464.77 mi	1	
23:	Jan 6 1993 at 13:52:06	0:00:00:49	66 mph	5465.61 mi	1	
24:	Jan 6 1993 at 14:23:09	0:00:00:19	60 mph	5475.14 mi	1	
25:	Jan 6 1993 at 15:47:22	0:00:02:32	66 mph	5483.74 mi	1	
26:	Jan 6 1993 at 15:50:39	0:00:01:16	65 mph	5487.07 mi	1	
27:	Jan 6 1993 at 16:19:40	0:00:00:13	60 mph	5496.50 mi	1	
28:	Jan 6 1993 at 16:20:48	0:00:00:39	61 mph	5497.59 mi	1	
29:	Jan 6 1993 at 17:17:45	0:00:00:43	66 mph	5505.88 mi	1	
30:	Jan 6 1993 at 17:19:45	0:00:00:15	61 mph	5507.80 mi	1	
31:	Jan 6 1993 at 18:29:06	0:00:00:18	62 mph	5527.56 mi	1	
32:	Jan 6 1993 at 18:29:27	0:00:00:28	61 mph	5527.91 mi	1	
33:	Jan 6 1993 at 18:29:56	0:00:00:15	61 mph	5528.40 mi	1	
34:	Jan 7 1993 at 13:48:37	0:00:01:09	65 mph	5564.55 mi	1	
35:	Jan 7 1993 at 13:50:31	0:00:00:30	61 mph	5566.44 mi	1	
36:	Jan 7 1993 at 13:51:49	0:00:00:28	61 mph	5567.69 mi	1	
37:	Jan 7 1993 at 14:21:57	0:00:00:19	60 mph	5577.20 mi	1	
38:	Jan 7 1993 at 15:48:41	0:00:02:32	65 mph	5586.01 mi	1	
39:	Jan 7 1993 at 15:51:38	0:00:01:10	63 mph	5589.04 mi	1	
40:	Jan 7 1993 at 16:21:56	0:00:00:14	60 mph	5598.55 mi	1	
41:	Jan 7 1993 at 17:23:32	0:00:00:35	61 mph	5607.29 mi	1	
42:	Jan 7 1993 at 17:24:13	0:00:01:11	66 mph	5607.96 mi	1	
43:	Jan 7 1993 at 17:26:05	0:00:00:53	64 mph	5609.84 mi	1	

U.T. BLUEBIRD CNG

Date: Jan. 19 1993

File Name: CNGJA14.FBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

Over RPM Report

	Occurrence Time	Elapsed(DHMS)	Max RPM		Speed	
1:	Jan 7 1993 at 18:54:11	0:00:00:22	1108		0 mph	
2:	Jan 7 1993 at 18:54:34	0:00:00:57	1154	IDLING	0 mph	
3:	Jan 7 1993 at 18:55:32	0:00:00:04	1108	O-MPH	0 mph	
4:	Jan 7 1993 at 18:55:37	0:00:00:57	1108		0 mph	
5:	Jan 7 1993 at 18:56:35	0:00:00:17	1108		0 mph	
6:	Jan 7 1993 at 18:56:53	0:00:00:32	1108		0 mph	
7:	Jan 7 1993 at 18:57:26	0:00:00:15	1108		0 mph	
8:	Jan 7 1993 at 18:57:42	0:00:00:35	1108		0 mph	
9:	Jan 7 1993 at 18:58:20	0:00:00:26	1154		0 mph	
10:	Jan 7 1993 at 18:58:46	0:00:00:05	1062		0 mph	
11:	Jan 7 1993 at 18:58:52	0:00:00:20	1062		0 mph	
12:	Jan 7 1993 at 18:59:13	0:00:00:03	1062		0 mph	
13:	Jan 7 1993 at 18:59:17	0:00:00:43	1154		0 mph	
14:	Jan 7 1993 at 19:00:02	0:00:00:33	1108		0 mph	
15:	Jan 7 1993 at 19:00:36	0:00:00:14	1108		0 mph	
16:	Jan 7 1993 at 19:00:53	0:00:00:26	1108		0 mph	
17:	Jan 7 1993 at 19:01:20	0:00:01:15	1154		0 mph	
18:	Jan 7 1993 at 19:02:50	0:00:00:02	2169		11 mph	
19:	Jan 7 1993 at 19:03:09	0:00:00:07	3092		15 mph	
20:	Jan 7 1993 at 19:03:27	0:00:00:04	2123		18 mph	
21:	Jan 7 1993 at 19:03:43	0:00:00:15	3092		15 mph	
22:	Jan 7 1993 at 19:04:17	0:00:00:13	3092		16 mph	
23:	Jan 7 1993 at 19:05:59	0:00:00:04	1062		0 mph	
24:	Jan 7 1993 at 19:06:06	0:00:00:03	1015		0 mph	
25:	Jan 7 1993 at 19:06:10	0:00:00:04	1062		0 mph	
26:	Jan 7 1993 at 19:06:23	0:00:00:06	1108		0 mph	
27:	Jan 7 1993 at 19:06:30	0:00:00:03	1062		0 mph	
28:	Jan 7 1993 at 19:06:34	0:00:00:09	1062		0 mph	
29:	Jan 7 1993 at 19:06:45	0:00:00:03	1062		0 mph	
30:	Jan 7 1993 at 19:06:52	0:00:00:05	1062		0 mph	
31:	Jan 8 1993 at 09:43:20	0:00:00:09	3323		15 mph	<==
32:	Jan 8 1993 at 09:45:33	0:00:00:08	2538		20 mph	
33:	Jan 8 1993 at 09:47:36	0:00:00:03	2538		12 mph	
34:	Jan 8 1993 at 09:47:42	0:00:00:13	3185		15 mph	
35:	Jan 8 1993 at 09:48:25	0:00:00:17	3185		16 mph	
36:	Jan 8 1993 at 09:48:51	0:00:00:37	3185		15 mph	
37:	Jan 8 1993 at 09:49:10	0:00:00:05	3092		14 mph	
38:	Jan 8 1993 at 09:49:20	0:00:00:14	3000		24 mph	
39:	Jan 8 1993 at 09:49:44	0:00:00:09	2769		22 mph	
40:	Jan 8 1993 at 09:50:06	0:00:00:03	2262		17 mph	
41:	Jan 8 1993 at 13:36:41	0:00:00:04	2908		0 mph	
42:	Jan 8 1993 at 13:37:05	0:00:00:16	3323		16 mph	
43:	Jan 8 1993 at 13:37:31	0:00:00:15	3231		15 mph	
44:	Jan 8 1993 at 13:37:56	0:00:00:15	3231		16 mph	
45:	Jan 8 1993 at 13:38:24	0:00:00:09	2862		14 mph	
46:	Jan 8 1993 at 13:38:49	0:00:00:08	2908		15 mph	
47:	Jan 8 1993 at 13:39:06	0:00:00:13	3046		24 mph	
48:	Jan 8 1993 at 13:39:31	0:00:00:20	3046		15 mph	
49:	Jan 8 1993 at 13:40:00	0:00:00:03	2169		17 mph	
50:	Jan 13 1993 at 12:48:00	0:00:00:03	1615		0 mph	
51:	Jan 14 1993 at 16:18:52	0:00:00:05	2400		12 mph	
52:	Jan 14 1993 at 16:19:11	0:00:00:03	2262		10 mph	

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Jan. 19 1993

File Name: CNGJA14.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

---------- Hard Acceleration/Deceleration Report ----------

Occurrence Time	Elapsed(DHMS)	Max Accel/Decel

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Jan. 19 1993

File Name: CNGJA14.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

---------- Gpip Tables ----------

GPIP Line	Elapsed(DHMS)	Count	Distance	% Dist.
IGNITION	12:15:34:28	334	5628.18 mi	100.0
N/A	0:00:00:00	0	0.00 mi	0.0
N/A	0:00:00:00	0	0.00 mi	0.0
N/A	0:00:00:00	0	0.00 mi	0.0
N/A	0:00:00:00	0	0.00 mi	0.0
N/A	0:00:00:00	0	0.00 mi	0.0
N/A	0:00:00:00	0	0.00 mi	0.0
N/A	0:00:00:00	0	0.00 mi	0.0
N/A	0:00:00:00	0	0.00 mi	0.0
N/A	0:00:00:00	0	0.00 mi	0.0

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

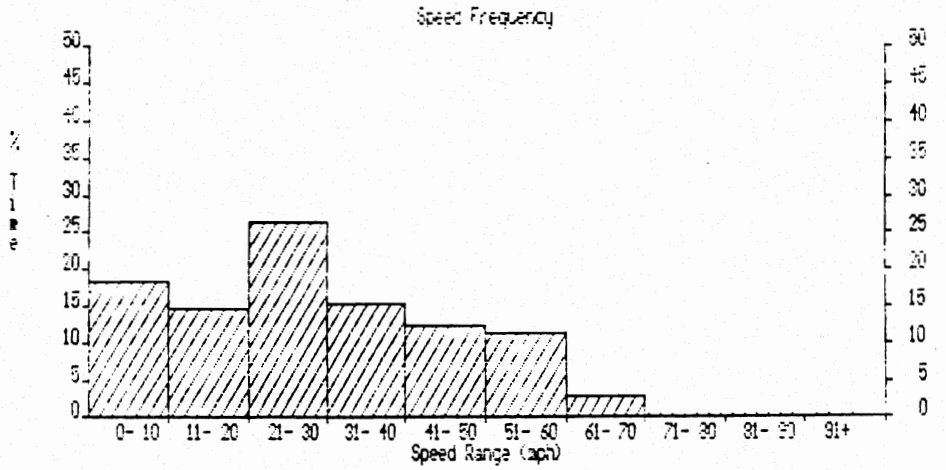
Date: Jan. 19 1993

File Name: CNGJA14.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

---------- Speed Tables ----------

Speed Range	Elapsed(DHMS)	Count	% Time
0- 10	1:11:04:52	7381	18.2
11- 20	1:03:48:21	9172	14.4
21- 30	2:02:34:36	9917	26.3
31- 40	1:05:16:35	5151	15.2
41- 50	0:23:24:37	2533	12.2
51- 60	0:21:15:23	2412	11.1
61- 70	0:04:55:33	1917	2.6
71- 80	0:00:00:00	0	0.0
81- 90	0:00:00:00	0	0.0
91+	0:00:00:00	0	0.0



Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

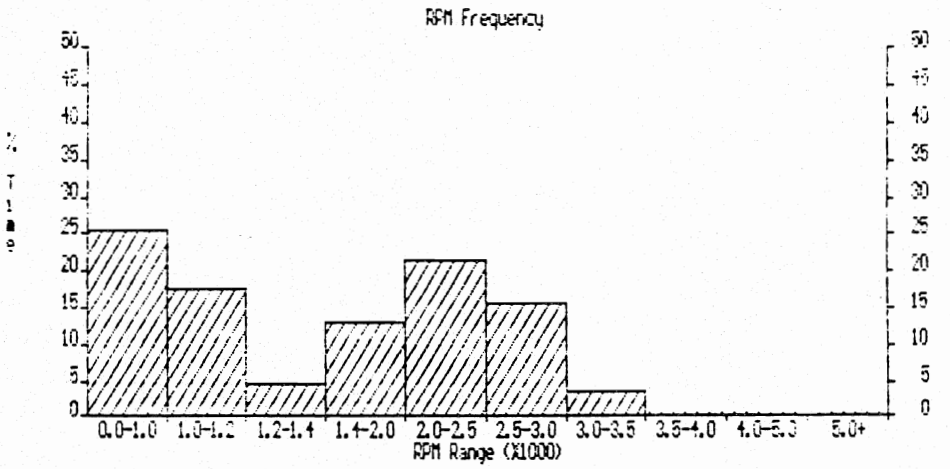
Date: Jan. 19 1993

File Name: CNGJA14.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Oct 9 1992 at 09:29:44
To: Jan 14 1993 at 16:51:07
Driver:

---------- RPM Tables ----------

RPM Range	Elapsed(DHMS)	Count	% Time
0 - 959	3:04:21:54	294	25.3
960 - 1199	2:05:06:50	18290	17.3
1200 - 1439	0:12:47:21	13435	4.2
1440 - 2039	1:14:40:35	14412	12.5
2040 - 2519	2:16:04:18	22145	21.1
2520 - 2999	1:22:34:42	21301	15.4
3000 - 3479	0:10:00:30	4253	3.3
3480 - 3959	0:00:03:05	54	0.2
3960 - 5039	0:00:00:17	1	0.0
5040+	0:00:00:00	0	0.3



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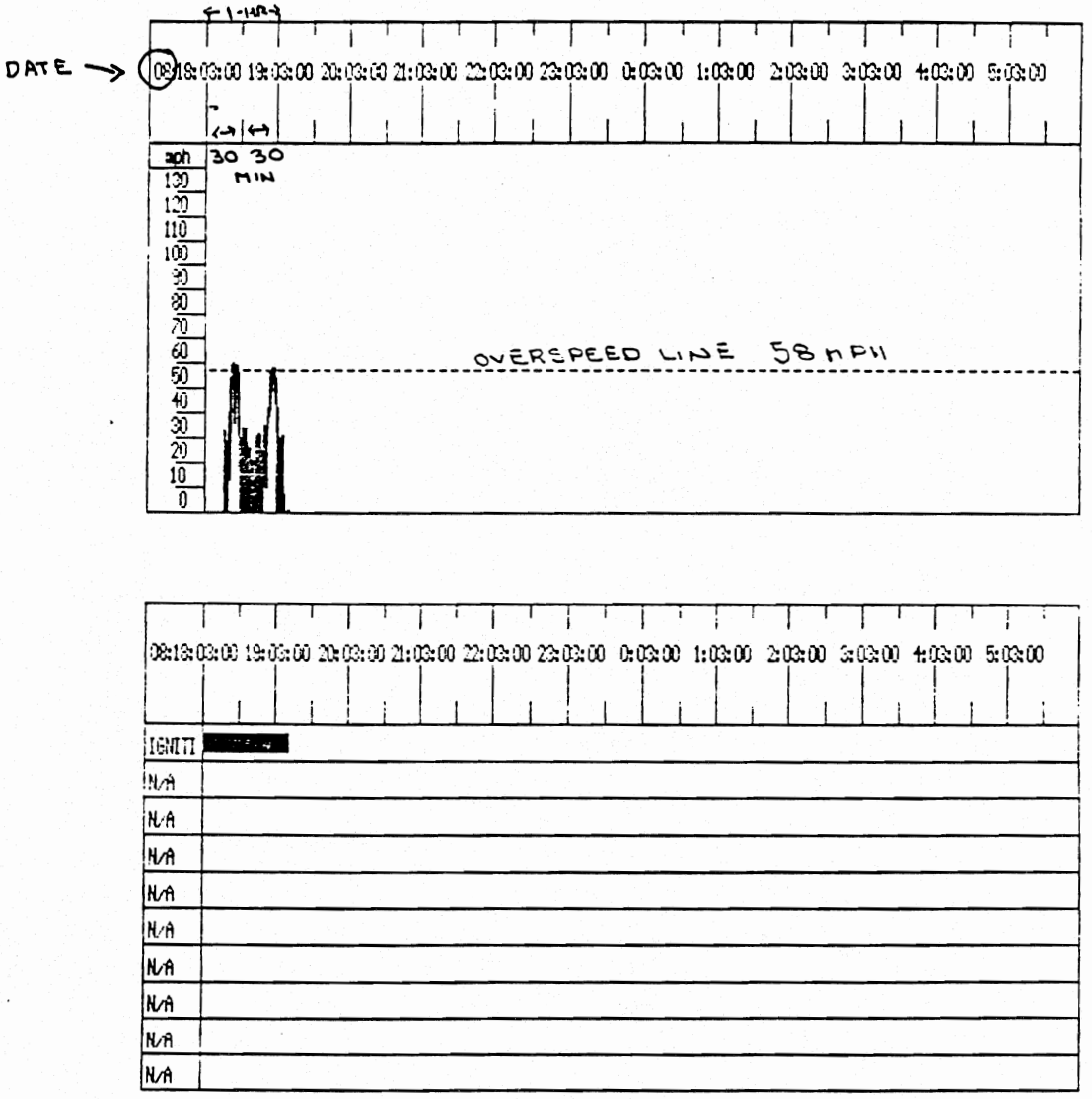
U.T. BLUEBIRD CNG

Date Printed: Jan 19 1993 at 11:28:32

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes



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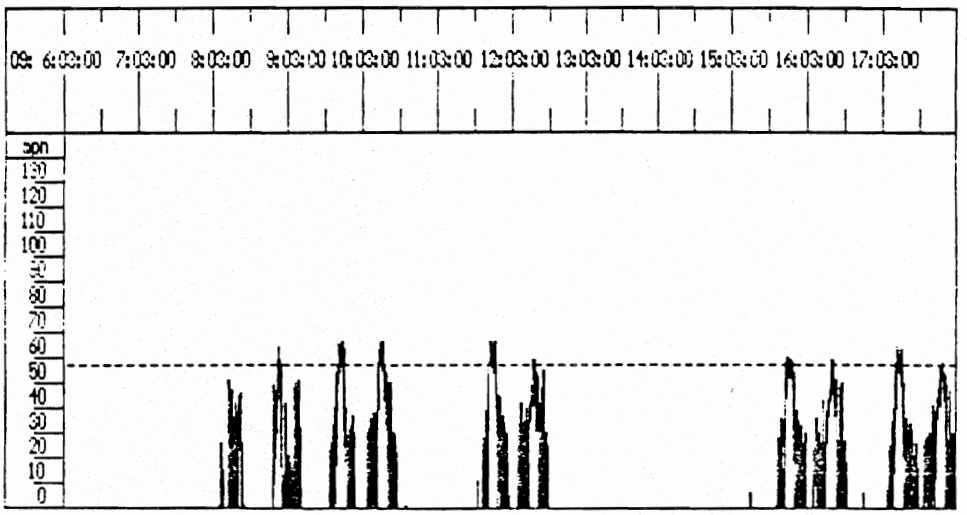
U.T. BLUEBIRD CNG

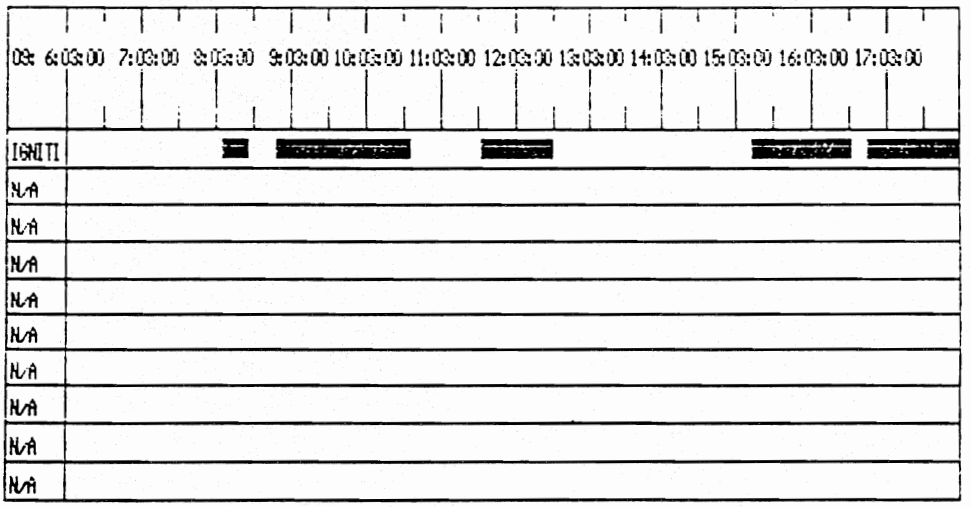
Date Printed: Jan 19 1993 at 11:29:51

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

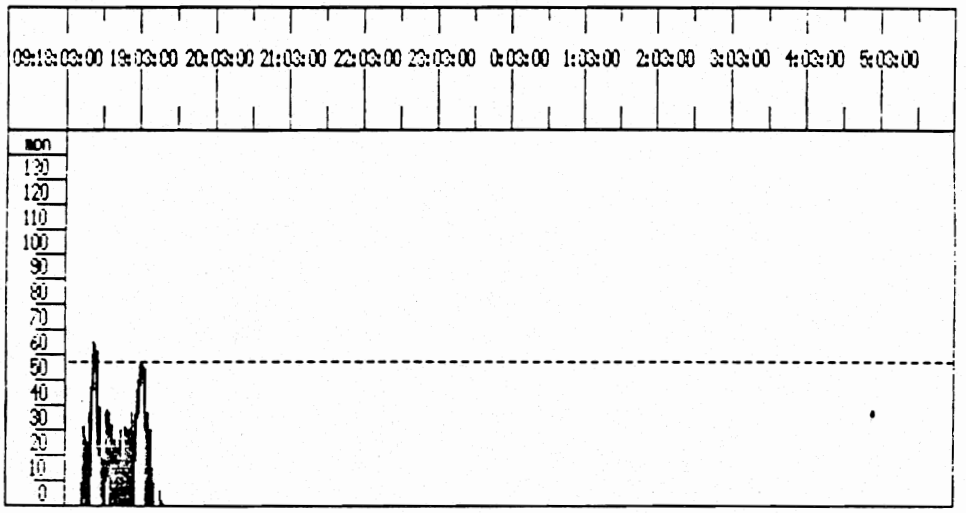
U.T. BLUEBIRD CNG

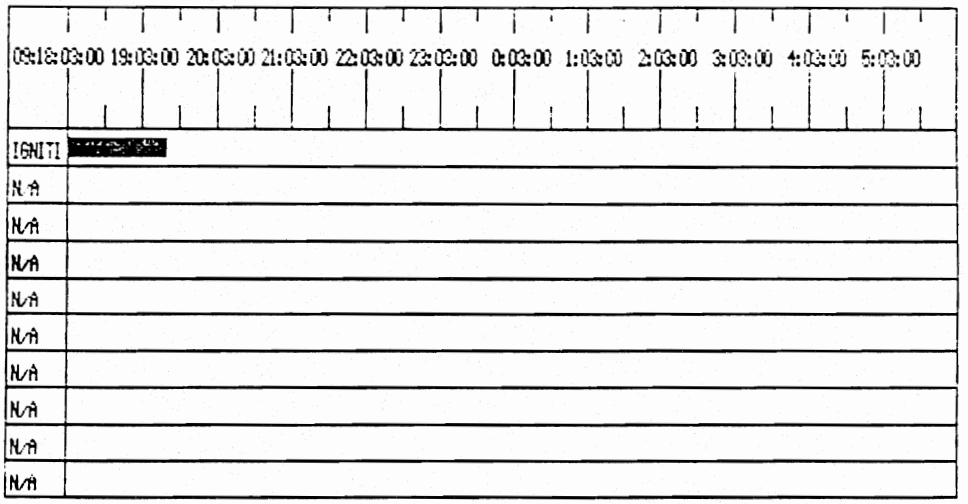
Date Printed: Jan 19 1993 at 11:31:13

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

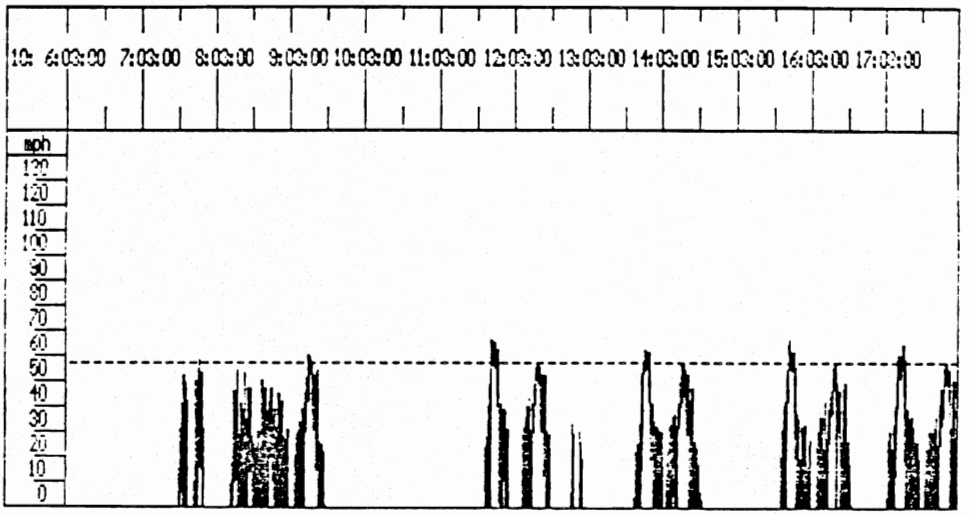
U.T. BLUEBIRD CNG

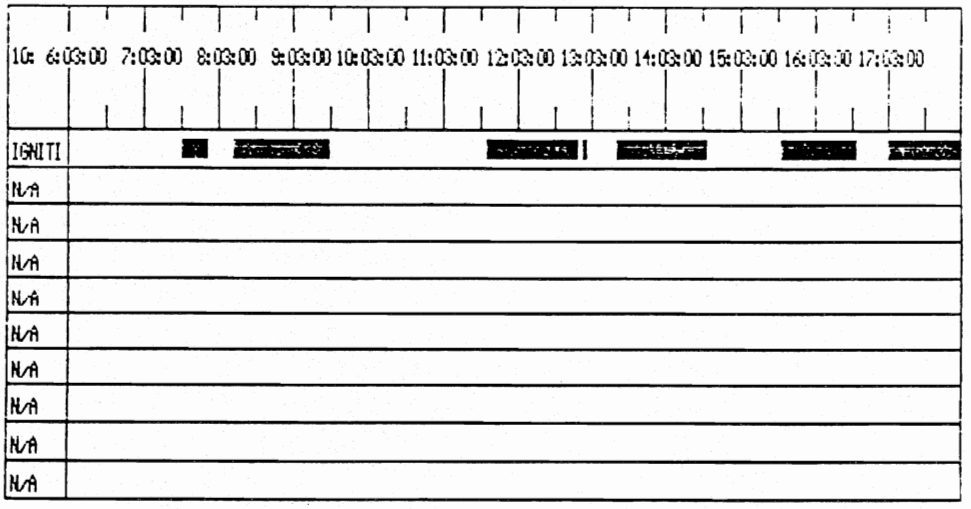
Date Printed: Jan 19 1993 at 11:32:36

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

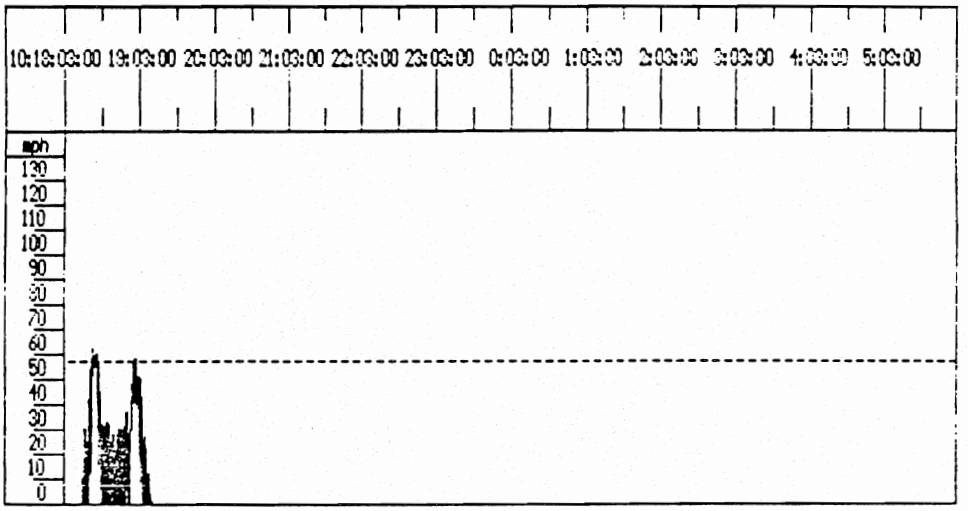
U.T. BLUEBIRD CNG

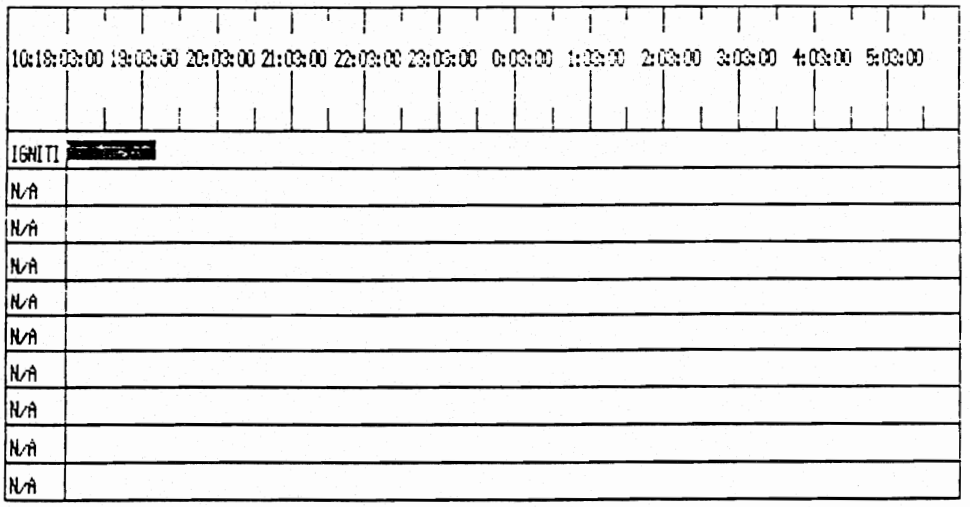
Date Printed: Jan 19 1993 at 11:33:58

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

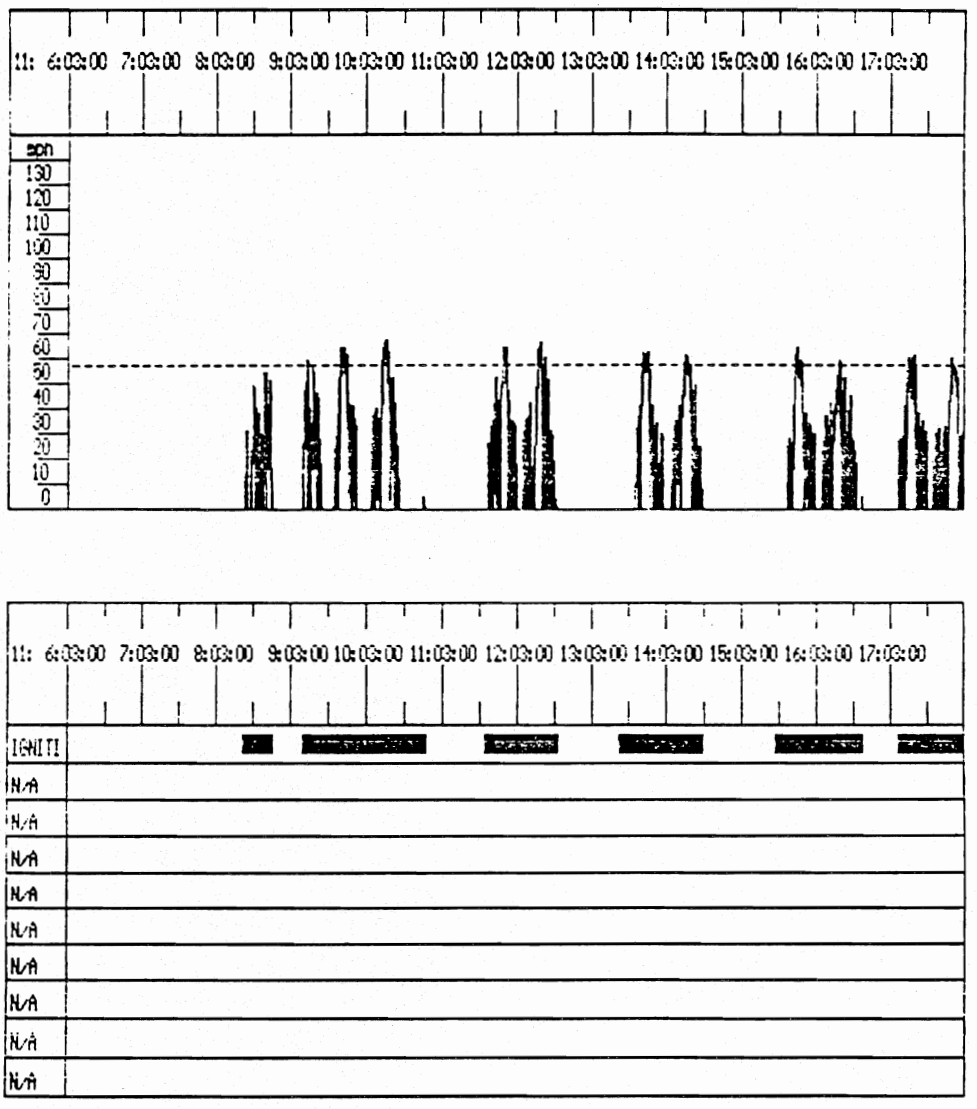
U.T. BLUEBIRD CNG

Date Printed: Jan 19 1993 at 11:35:21

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes



Silent Witness Enterprises

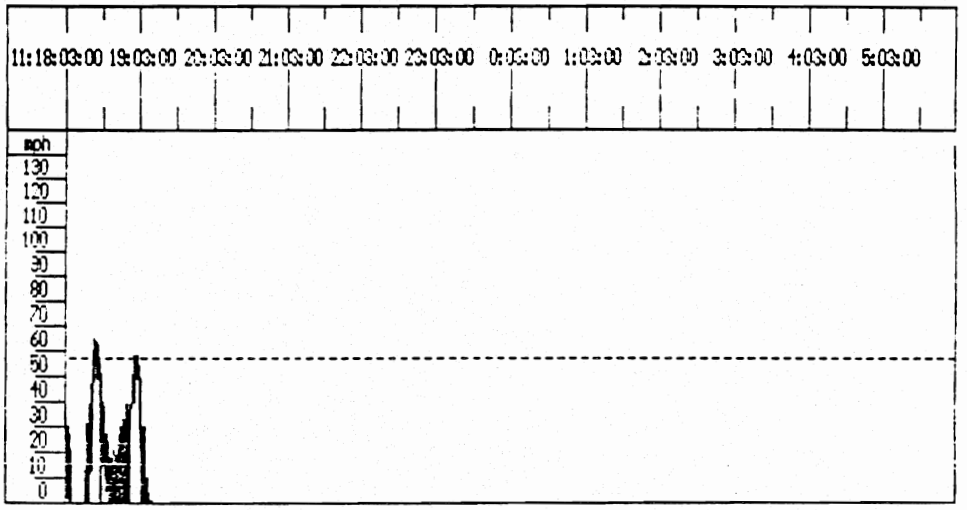
U.T. BLUEBIRD CNG

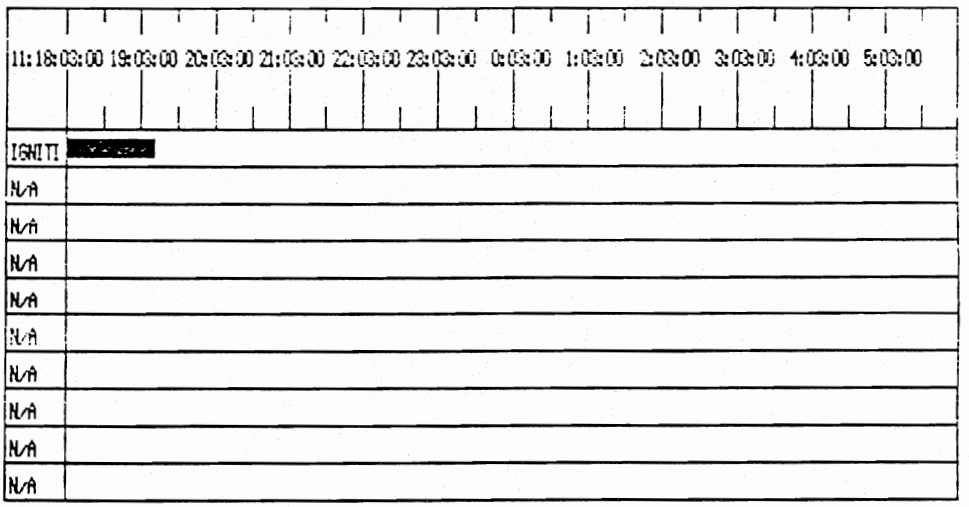
Date Printed: Jan 19 1993 at 11:36:43

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

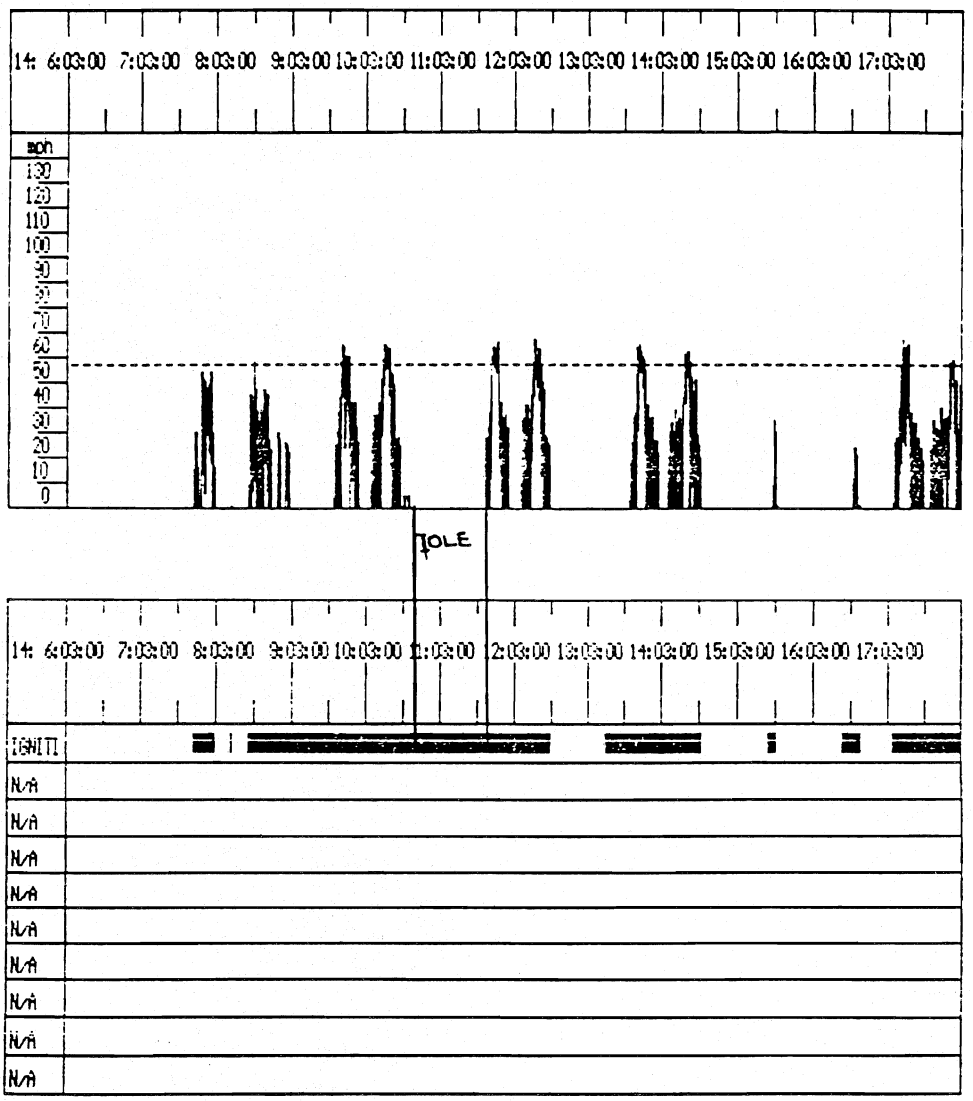
U.T. BLUEBIRD CNG

Date Printed: Jan 19 1993 at 11:43:37

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes



Silent Witness Enterprises

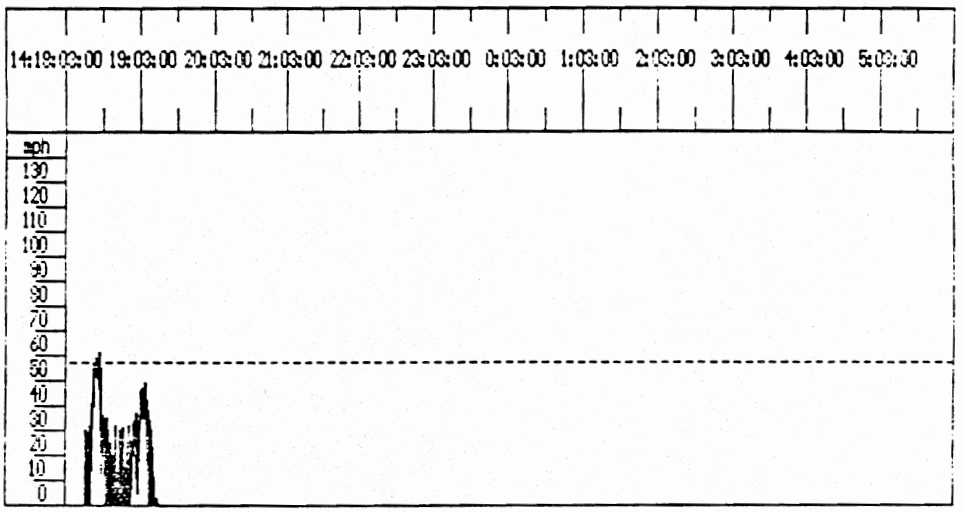
U.T. BLUEBIRD CNG

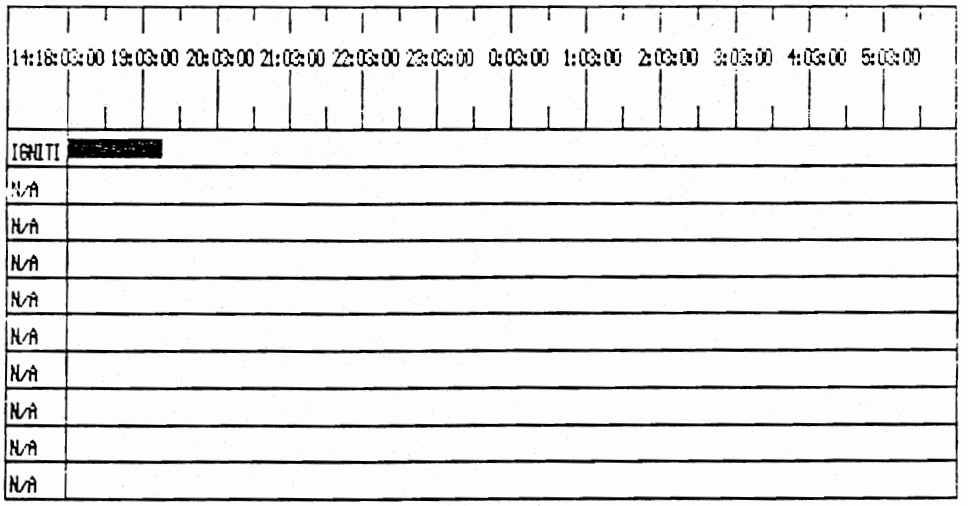
Date Printed: Jan 19 1993 at 11:44:59

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

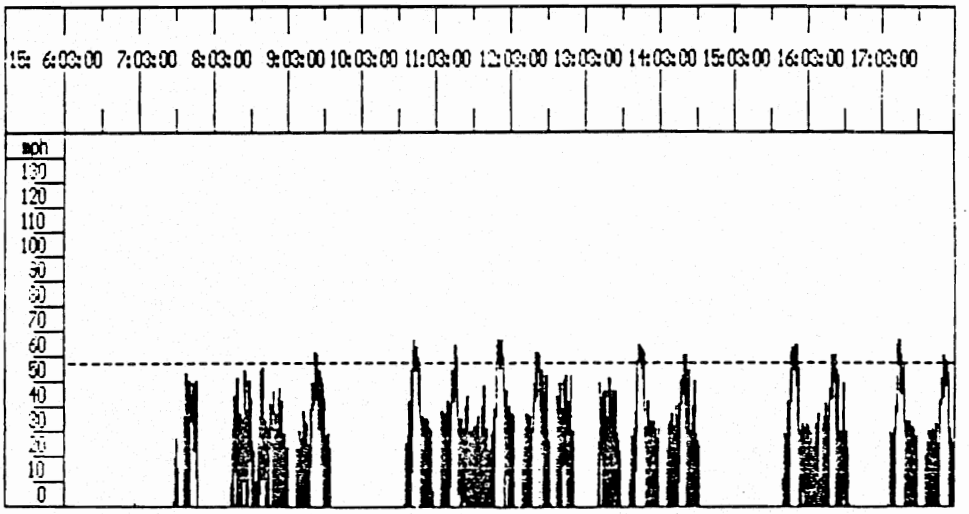
U.T. BLUEBIRD CNG

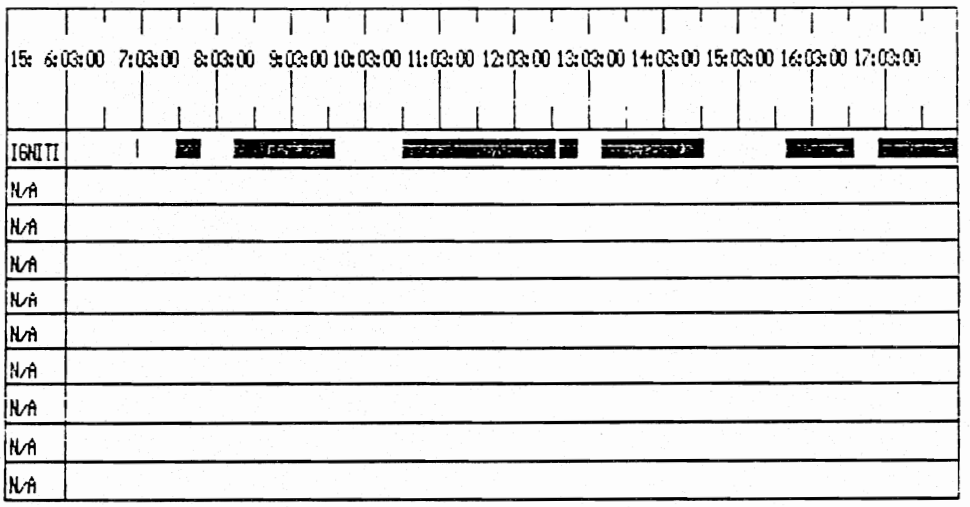
Date Printed: Jan 19 1993 at 11:46:23

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

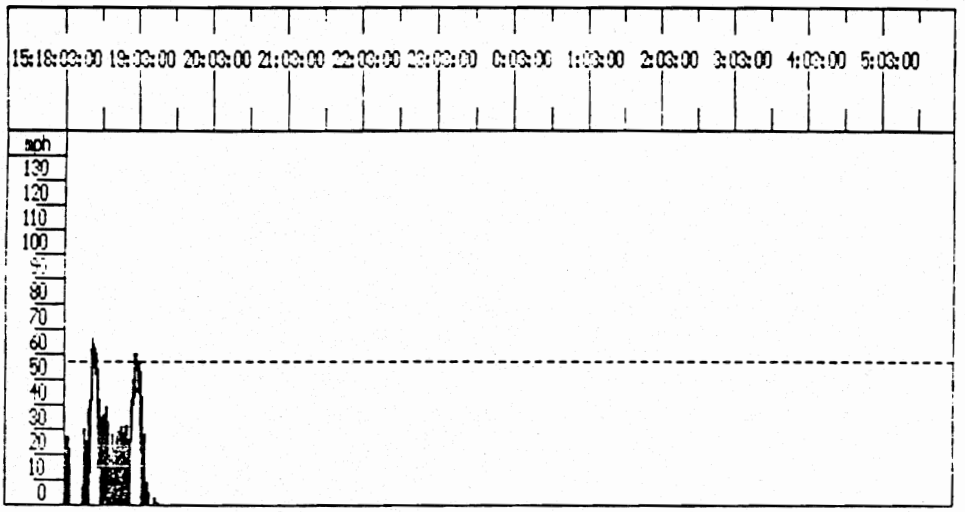
U.T. BLUEBIRD CNG

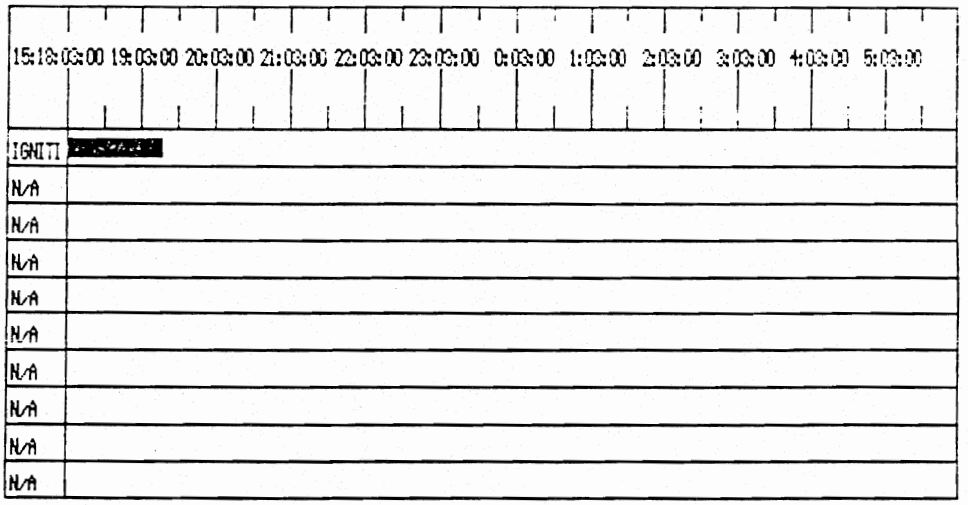
Date Printed: Jan 19 1993 at 11:47:44

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

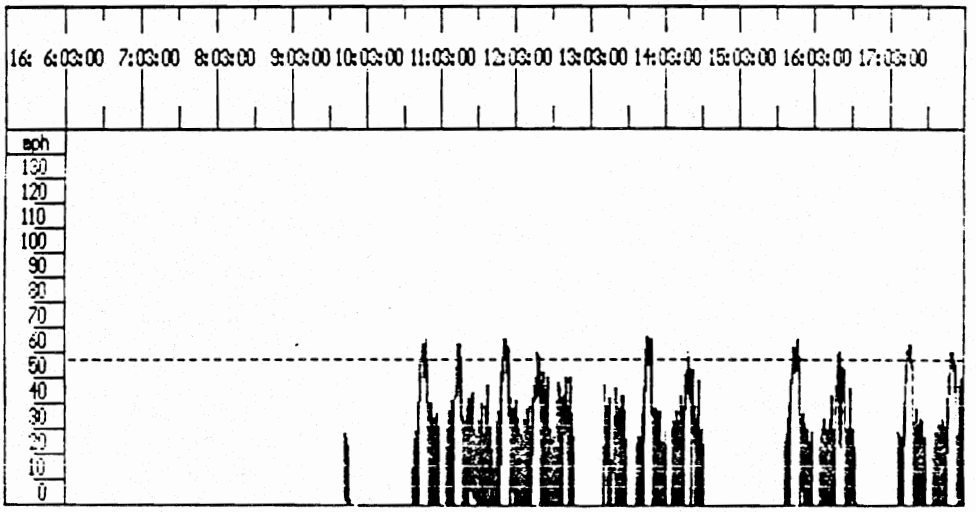
U.T. BLUEBIRD CNG

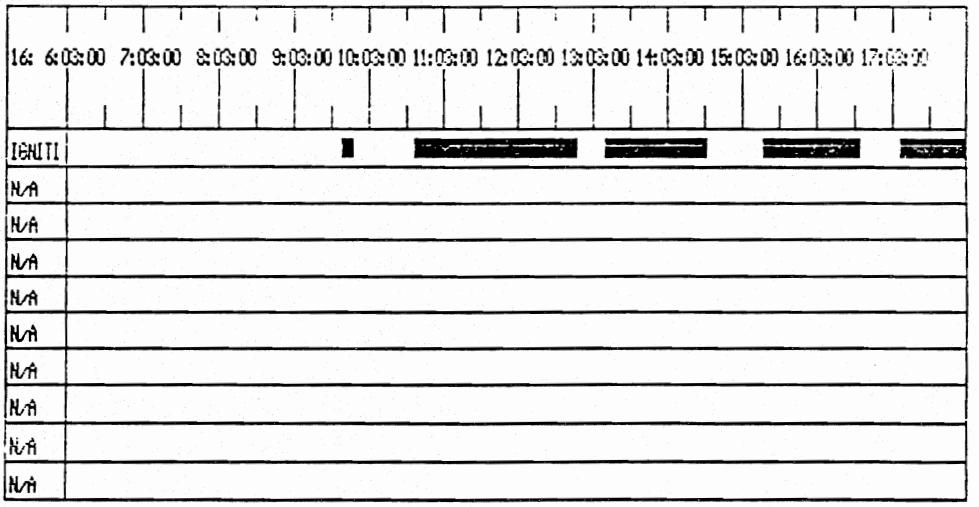
Date Printed: Jan 19 1993 at 11:49:08

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

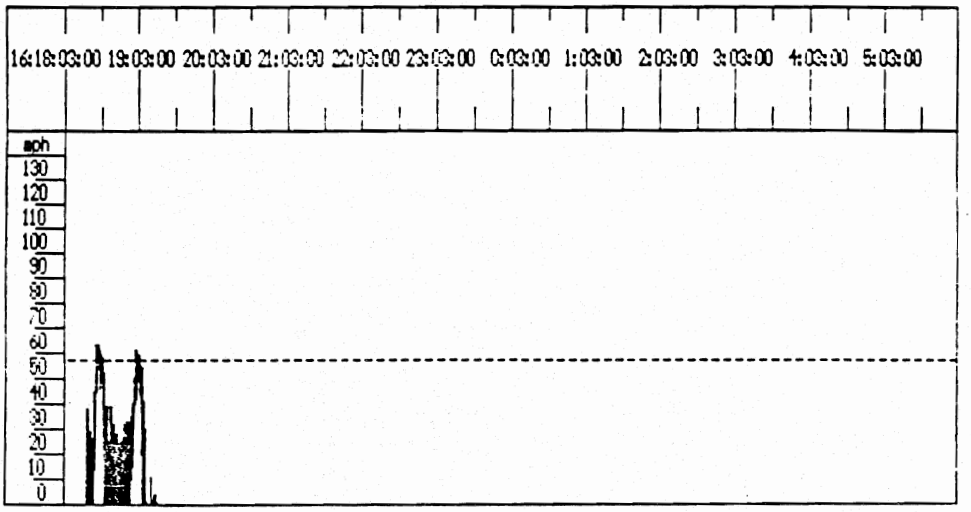
U.T. BLUEBIRD CNG

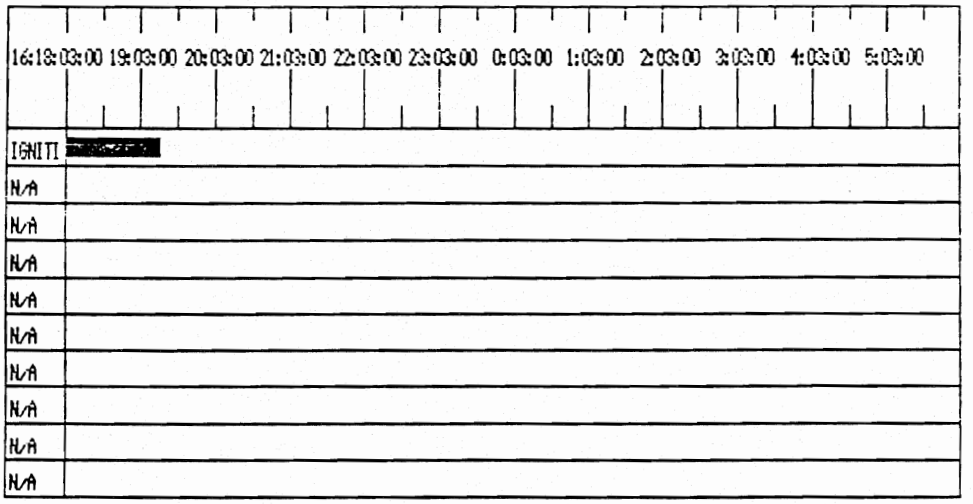
Date Printed: Jan 19 1993 at 11:50:30

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

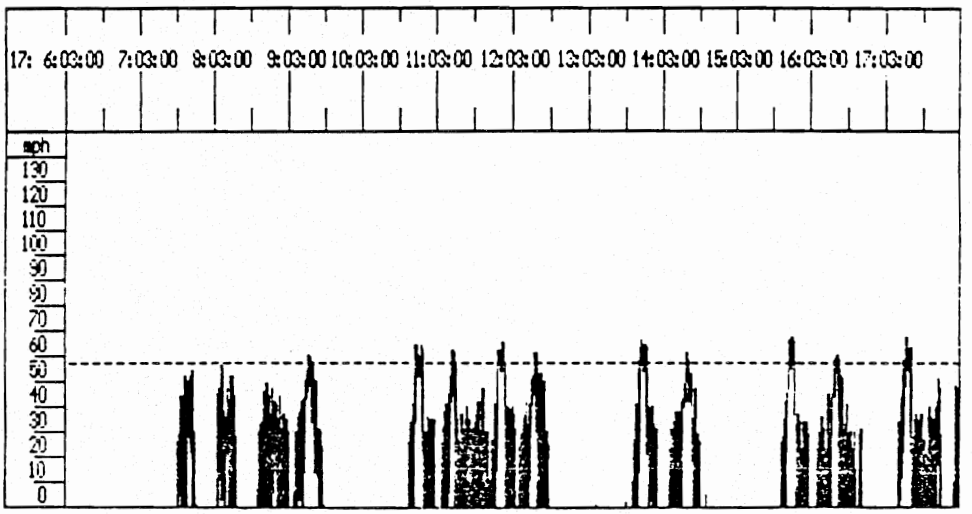
U.T. BLUEBIRD CNG

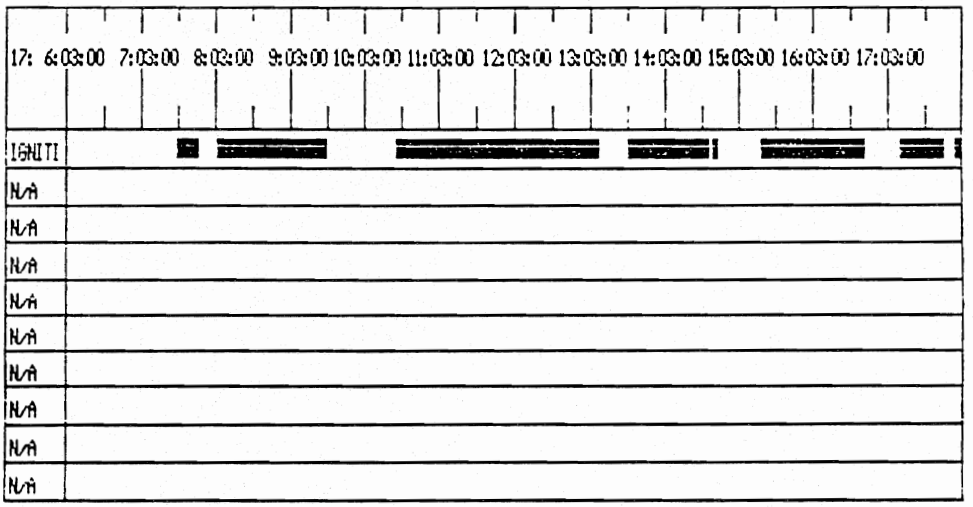
Date Printed: Jan 19 1993 at 11:51:53

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

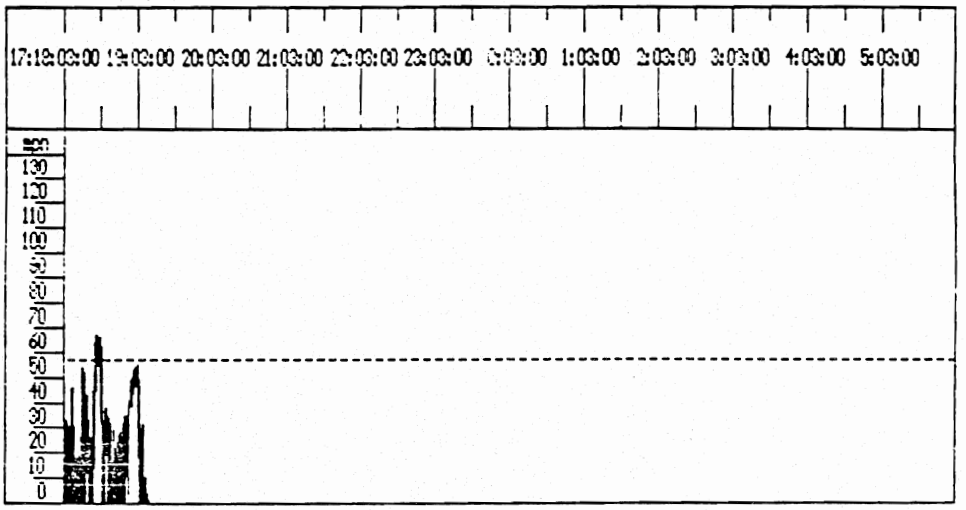
U.T. BLUEBIRD CNG

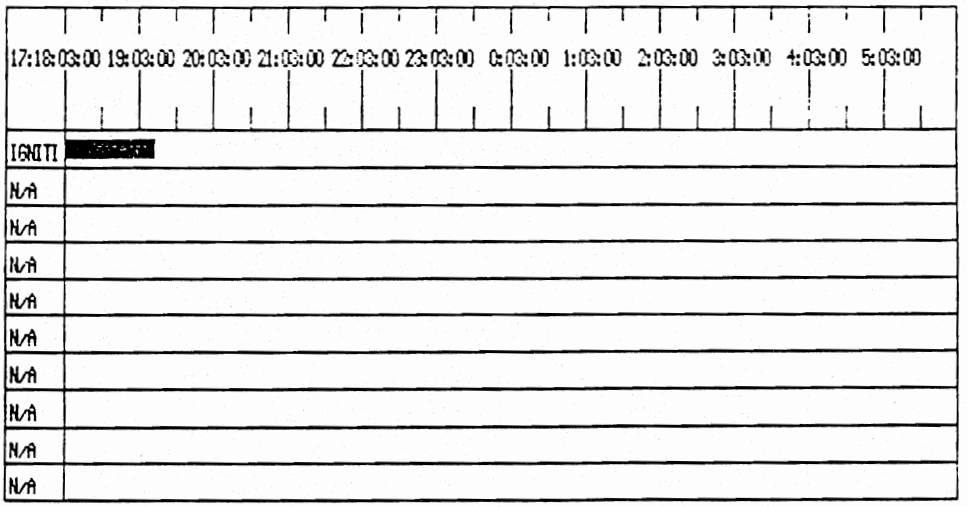
Date Printed: Jan 19 1993 at 11:53:15

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

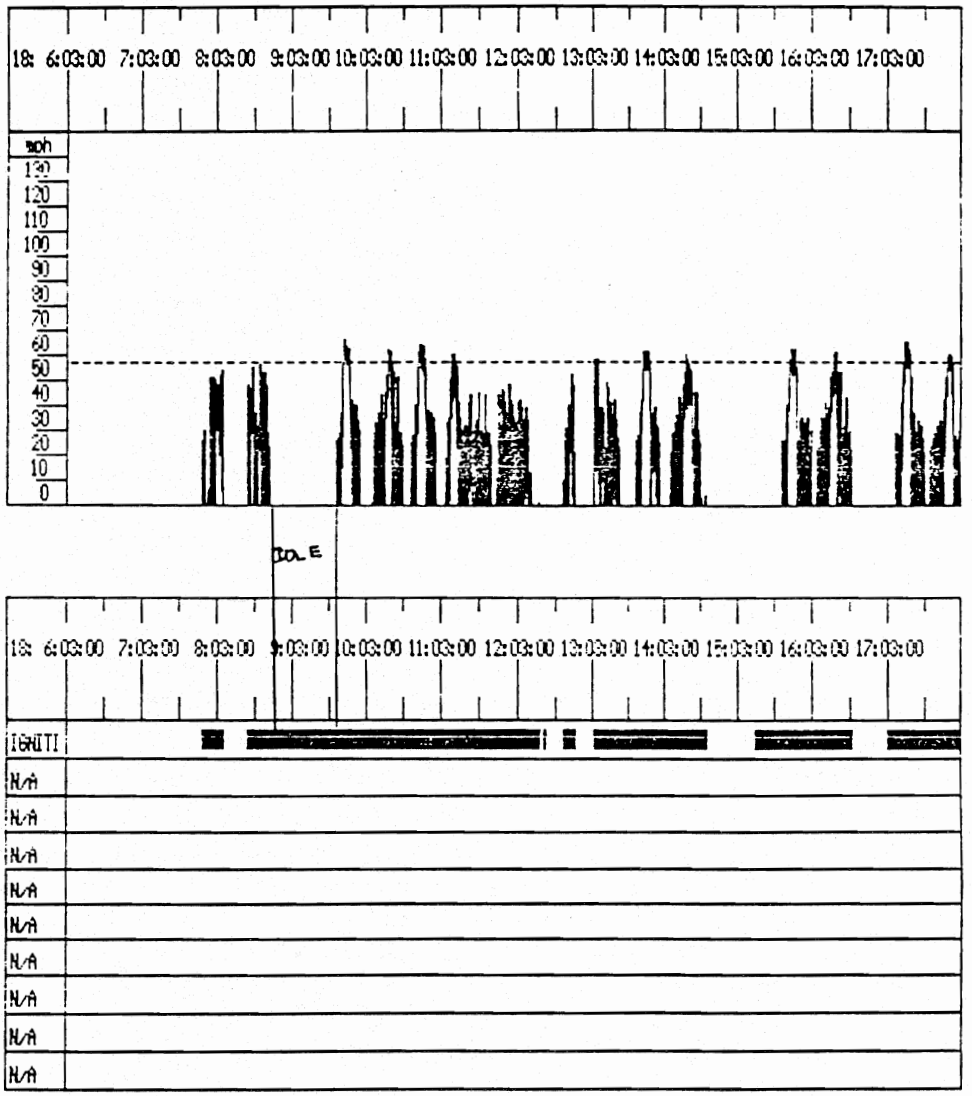
U.T. BLUEBIRD CNG

Date Printed: Jan 19 1993 at 11:54:39

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes



Silent Witness Enterprises

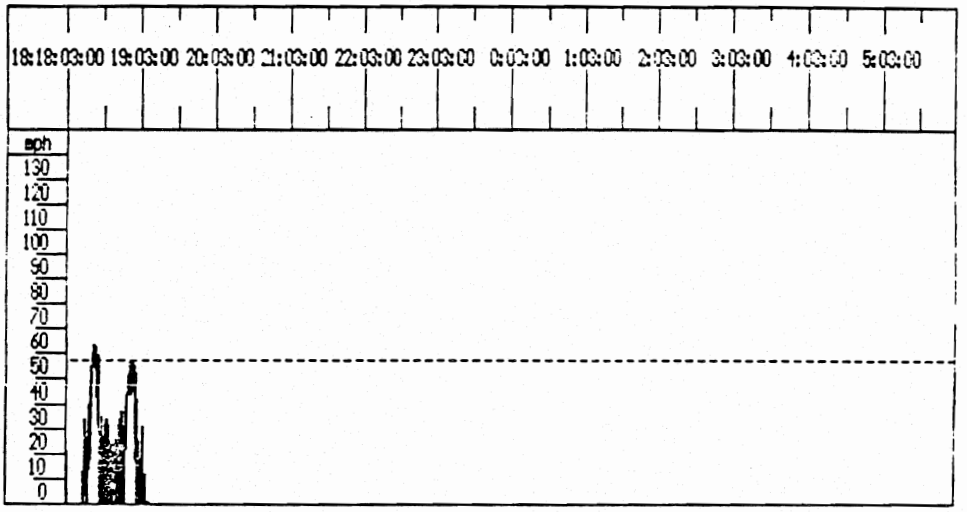
U.T. BLUEBIRD CNG

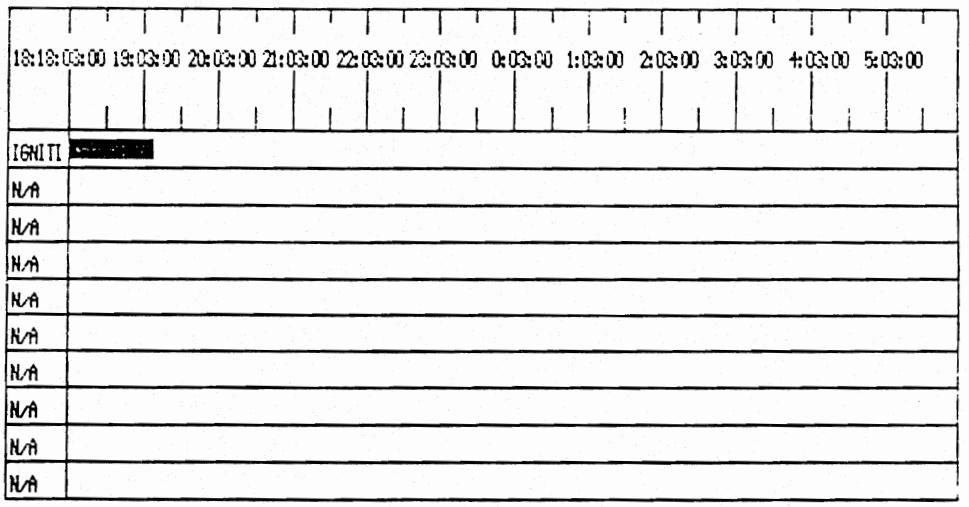
Date Printed: Jan 19 1993 at 11:56:00

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





Silent Witness Enterprises

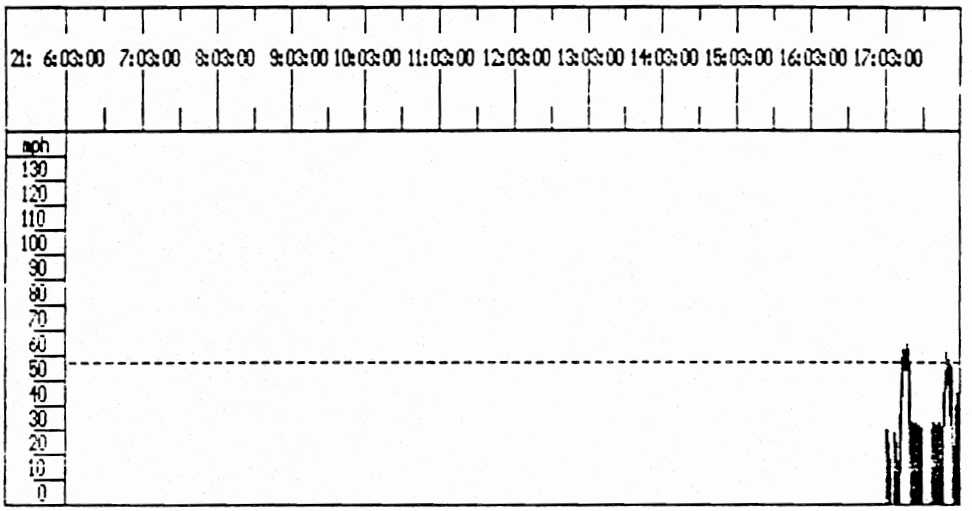
U.T. BLUEBIRD CNG

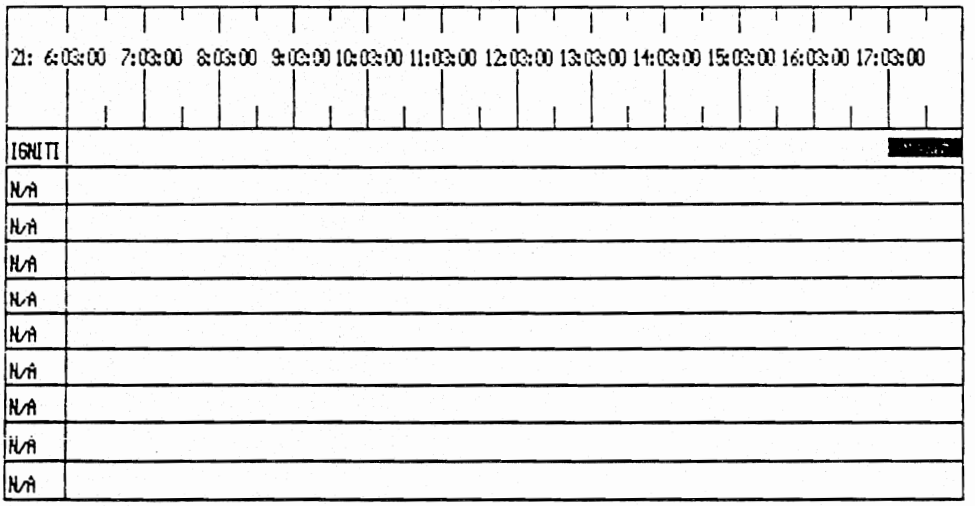
Date Printed: Jan 19 1993 at 12:02:53

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





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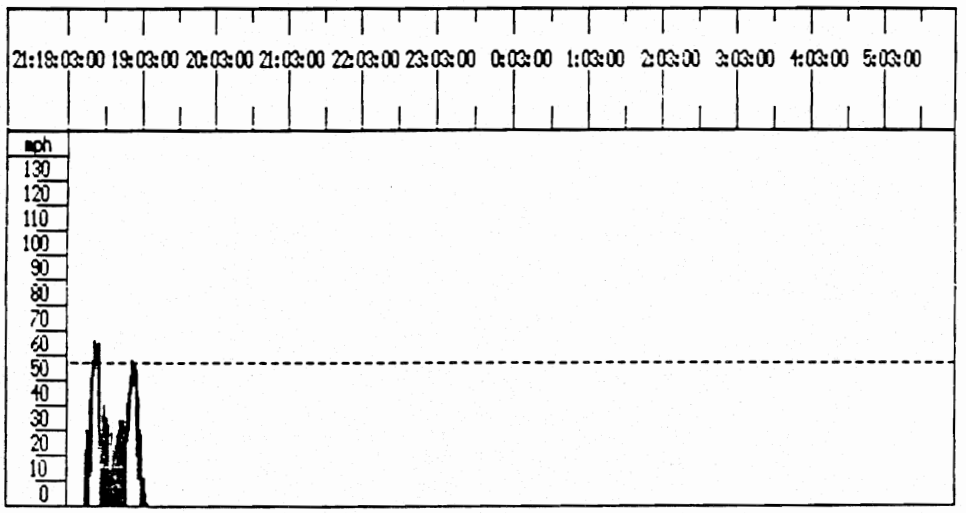
U.T. BLUEBIRD CNG

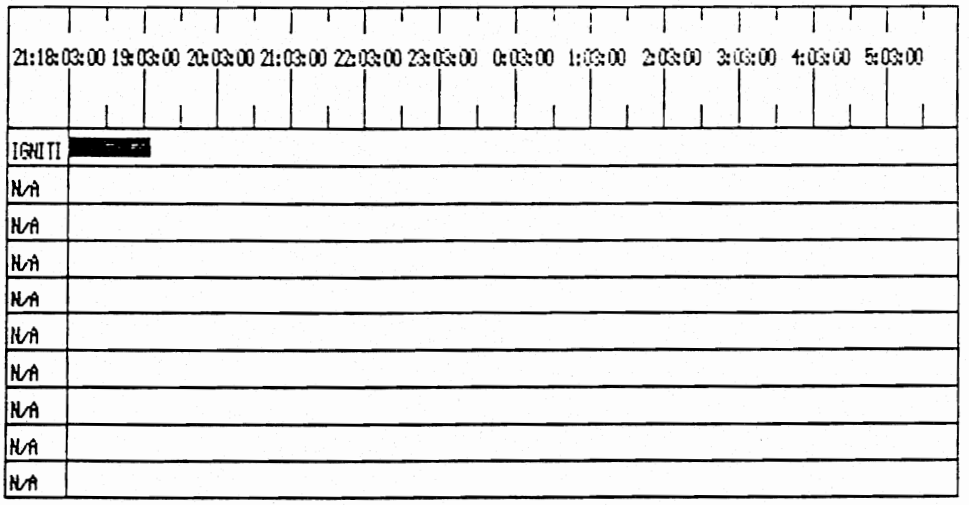
Date Printed: Jan 19 1993 at 12:04:16

Data File: CNGJA14.KBB
GPIP File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





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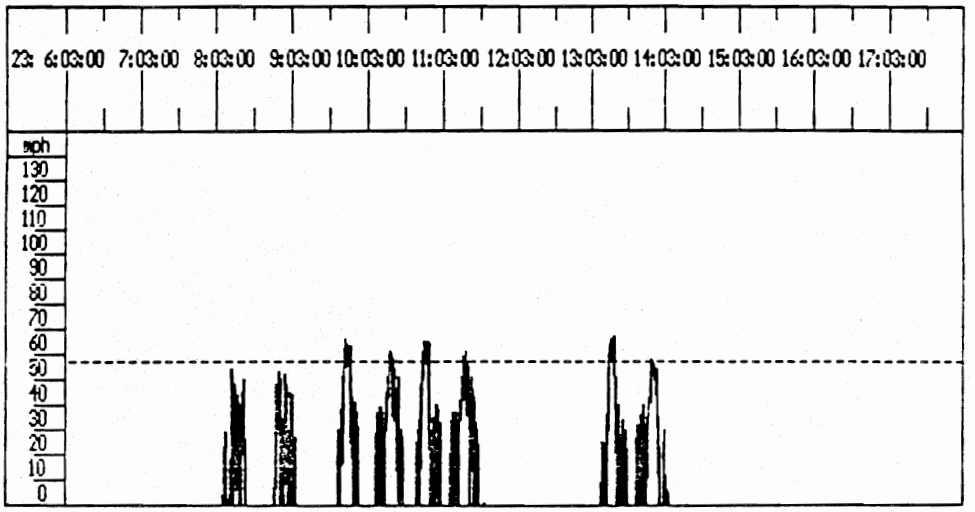
U.T. BLUEBIRD CNG

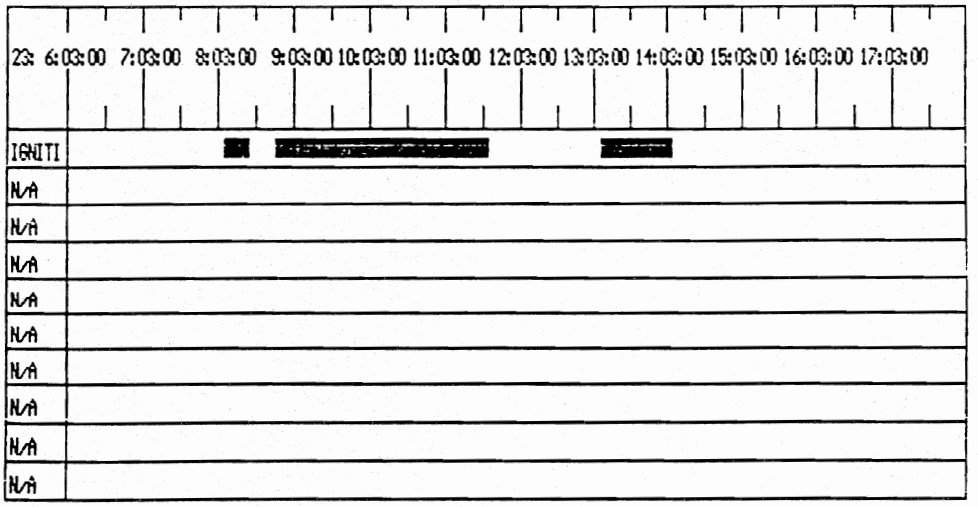
Date Printed: Jan 19 1993 at 12:08:24

Data File: CNGJA14.KBB
GPIF File: CNG.CAR
Vehicle : CNG

StartTime: Dec 8 1992 at 18:03:07
EndTime: Jan 14 1993 at 16:51:07

12 Hour Minute By Minute Graph - 53208 minutes





cc Joe Ward
[redacted]
Ron Matthews
Mark Ernst
cm file

Trip Summary Report
U.T. BLUEBIRD CNG

Date of Report: Mar. 8 1993
Download File : CNGMR04.KBB

Vehicle ID: CNG
Driver:

From: Jan 14 1993 at 15:52:33
To: Mar 4 1993 at 10:26:29

Section 1 - Vehicle Operations

Number of overspeeds	44	Number of over RPM's (moving)	51
Highest overspeed (mph)	66	Highest recorded RPM (moving)	3462
Number of over Idles	134	Number of over RPM's (idling)	1
Number of hard accelerations	0	Highest recorded RPM (idling)	1062
Number of hard decelerations	0	% of moving time brakes applied	0%

Section 2 - Distance/Times

	Days	Hours	Minutes	Seconds
Total Trip Time	48	18	33	47
Total Road Time		92	24	28
Time Idling		55	53	39
Longest Idle Time		2	7	35
Average Idle Time		0	10	19
Longest Daily Time Driving		6	37	10
Average Daily Time Driving		1	50	53
Average Time of overspeeds		0	0	37
Average Time - over RPM's (moving)		0	0	27
Total Stop Time		1078	9	19
Time Parked		1022	15	40
Longest Stop Time		83	49	14
Average Stop Time		9	13	45

Total Trip Distance:	2798.00 mi	Number of stops recorded	52
Longest Daily Distance:	196.98 mi	Special Distance Kms	
Average Daily Distance:	55.97 mi	Equivalent Idle Distance:	4471.53 mi
Fuel Oil Rebate Time:	0.00 hrs		

Fuel Oil Rebate Time:

Section 3 - Administrative

overspeed level set at:	58 mph	Over RPM level (moving) set at:	1985 RPM
overspeed time set at:	10 sec	Over RPM time (moving) set at:	2 sec
over RPM level (id) set at:	969 RPM	Idle time level set at:	180 sec
Hard Accel level set at:	8 ft/s/s	Hard Decel level set at:	-14 ft/s/s
Overspeeds Collected	330	Over RPM (moving) Collected	10986
Stops Collected	265	Over RPM (idling) Collected	3853
Idles Collected	265	Ignition On	186
Hard Accelerations Collected	0	Hard Decelerations Collected	0

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Mar. 8 1993

File Name: CNGMR04.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Jan 14 1993 at 15:52:33
To: Mar 4 1993 at 10:26:29
Driver:

---------- Daily Distance Report ----------

	Occurrence Time	Driving Time	Distance	
1:	Jan 14 1993 at 23:59:59	0:00:00:00	0.00 mi	
2:	Jan 15 1993 at 23:59:59	0:01:36:34	36.52 mi	
3:	Jan 16 1993 at 23:59:59	0:00:00:00	0.00 mi	
4:	Jan 17 1993 at 23:59:59	0:00:00:00	0.00 mi	
5:	Jan 18 1993 at 23:59:59	0:00:00:00	0.00 mi	
6:	Jan 19 1993 at 23:59:59	0:06:37:10	196.98 mi	<==
7:	Jan 20 1993 at 23:59:59	0:04:03:20	118.49 mi	
8:	Jan 21 1993 at 23:59:59	0:03:14:17	100.75 mi	
9:	Jan 22 1993 at 23:59:59	0:03:09:39	98.62 mi	
10:	Jan 23 1993 at 23:59:59	0:00:00:00	0.00 mi	
11:	Jan 24 1993 at 23:59:59	0:00:00:00	0.00 mi	
12:	Jan 25 1993 at 23:59:59	0:03:49:36	116.96 mi	
13:	Jan 26 1993 at 23:59:59	0:03:08:52	102.95 mi	
14:	Jan 27 1993 at 23:59:59	0:00:03:00	0.18 mi	
15:	Jan 28 1993 at 23:59:59	0:03:52:44	122.09 mi	
16:	Jan 29 1993 at 23:59:59	0:03:20:22	99.23 mi	
17:	Jan 30 1993 at 23:59:59	0:00:00:00	0.00 mi	
18:	Jan 31 1993 at 23:59:59	0:00:00:00	0.00 mi	
19:	Feb 1 1993 at 23:59:59	0:03:10:28	99.52 mi	
20:	Feb 2 1993 at 23:59:59	0:00:01:46	0.05 mi	
21:	Feb 3 1993 at 23:59:59	0:03:15:18	100.34 mi	
22:	Feb 4 1993 at 23:59:59	0:04:31:19	139.32 mi	
23:	Feb 5 1993 at 23:59:59	0:03:17:39	100.86 mi	
24:	Feb 6 1993 at 23:59:59	0:00:00:00	0.00 mi	
25:	Feb 7 1993 at 23:59:59	0:00:00:00	0.00 mi	
26:	Feb 8 1993 at 23:59:59	0:00:00:11	0.00 mi	
27:	Feb 9 1993 at 23:59:59	0:03:10:07	98.86 mi	
28:	Feb 10 1993 at 23:59:59	0:03:48:47	112.62 mi	
29:	Feb 11 1993 at 23:59:59	0:03:35:23	101.70 mi	
30:	Feb 12 1993 at 23:59:59	0:00:19:47	3.35 mi	
31:	Feb 13 1993 at 23:59:59	0:00:00:00	0.00 mi	
32:	Feb 14 1993 at 23:59:59	0:00:00:00	0.00 mi	
33:	Feb 15 1993 at 23:59:59	0:03:13:42	100.51 mi	
34:	Feb 16 1993 at 23:59:59	0:03:07:46	101.06 mi	
35:	Feb 17 1993 at 23:59:59	0:00:04:27	1.27 mi	
36:	Feb 18 1993 at 23:59:59	0:03:07:05	98.78 mi	
37:	Feb 19 1993 at 23:59:59	0:03:10:29	99.97 mi	
38:	Feb 20 1993 at 23:59:59	0:00:00:00	0.00 mi	
39:	Feb 21 1993 at 23:59:59	0:00:00:00	0.00 mi	
40:	Feb 22 1993 at 23:59:59	0:03:09:02	100.50 mi	
41:	Feb 23 1993 at 23:59:59	0:03:54:35	117.32 mi	
42:	Feb 24 1993 at 23:59:59	0:03:50:16	117.61 mi	
43:	Feb 25 1993 at 23:59:59	0:03:11:39	92.05 mi	
44:	Feb 26 1993 at 23:59:59	0:00:00:01	0.00 mi	
45:	Feb 27 1993 at 23:59:59	0:00:00:00	0.00 mi	
46:	Feb 28 1993 at 23:59:59	0:00:00:00	0.00 mi	
47:	Mar 1 1993 at 23:59:59	0:03:15:30	100.07 mi	
48:	Mar 2 1993 at 23:59:59	0:02:43:43	80.77 mi	
49:	Mar 3 1993 at 23:59:59	0:01:27:32	38.51 mi	
50:	Mar 4 1993 at 10:26:29	0:00:02:22	0.50 mi	

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Mar. 8 1993

File Name: CNGMR04.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Jan 14 1993 at 15:52:33
To: Mar 4 1993 at 10:26:29
Driver:

Min Stop Time: 0:00:05:00

Longest Stop: 3:11:49:14

---------- Stop Report ----------

	Occurrence Time	Elapsed(DHMS)	Distance
1:	Feb 9 1993 at 11:10:37	0:19:08:50	1531.71 mi <==
2:	Feb 10 1993 at 06:34:42	0:00:19:07	1537.77 mi <==
3:	Feb 10 1993 at 11:18:15	0:00:25:22	1636.44 mi <==
4:	Feb 10 1993 at 11:45:04	0:00:12:02	1636.48 mi <==
5:	Feb 10 1993 at 12:29:47	0:17:49:15	1644.32 mi <==
6:	Feb 11 1993 at 11:05:51	0:01:55:13	1732.00 mi <==
7:	Feb 11 1993 at 13:21:56	0:00:13:06	1738.26 mi <==
8:	Feb 11 1993 at 13:38:33	0:00:05:08	1738.34 mi <==
9:	Feb 11 1993 at 13:51:22	0:00:07:29	1738.39 mi <==
10:	Feb 11 1993 at 14:35:02	0:15:44:14	1746.03 mi <==
11:	Feb 12 1993 at 07:24:04	0:07:07:47	1747.29 mi <==
12:	Feb 12 1993 at 14:50:10	2:15:03:53	1749.38 mi <==
13:	Feb 15 1993 at 06:35:09	0:00:09:24	1755.43 mi <==
14:	Feb 15 1993 at 11:06:50	0:19:03:09	1849.89 mi <==
15:	Feb 16 1993 at 06:30:20	0:00:14:57	1855.95 mi <==
16:	Feb 16 1993 at 11:07:35	0:18:53:18	1950.95 mi <==
17:	Feb 17 1993 at 06:46:42	0:23:21:58	1952.22 mi <==
18:	Feb 18 1993 at 06:08:49	0:00:07:02	1952.22 mi <==
19:	Feb 18 1993 at 06:35:17	0:00:17:18	1958.28 mi <==
20:	Feb 18 1993 at 11:09:08	0:18:49:40	2051.00 mi <==
21:	Feb 19 1993 at 06:31:45	0:00:15:33	2057.05 mi <==
22:	Feb 19 1993 at 11:17:54	0:00:26:18	2150.76 mi <==
23:	Feb 19 1993 at 11:45:55	0:00:15:41	2150.91 mi <==
24:	Feb 19 1993 at 12:02:59	2:17:56:00	2150.97 mi <==
25:	Feb 22 1993 at 06:25:57	0:00:12:11	2157.02 mi <==
26:	Feb 22 1993 at 11:06:55	0:18:58:22	2251.46 mi <==
27:	Feb 23 1993 at 06:38:25	0:00:13:05	2257.51 mi <==
28:	Feb 23 1993 at 11:08:15	0:04:40:10	2351.15 mi <==
29:	Feb 23 1993 at 16:45:29	0:00:22:39	2360.43 mi <==
30:	Feb 23 1993 at 17:30:30	0:00:28:41	2360.43 mi <==
31:	Feb 23 1993 at 18:29:38	0:11:31:24	2368.78 mi <==
32:	Feb 24 1993 at 06:34:00	0:00:16:04	2374.83 mi <==
33:	Feb 24 1993 at 11:05:38	0:04:56:58	2468.17 mi <==
34:	Feb 24 1993 at 16:30:41	0:00:43:11	2476.51 mi <==
35:	Feb 24 1993 at 18:26:40	0:11:53:21	2486.39 mi <==
36:	Feb 25 1993 at 06:38:32	0:00:14:00	2492.43 mi <==
37:	Feb 25 1993 at 09:10:37	0:05:32:00	2541.91 mi <==
38:	Feb 25 1993 at 16:34:23	0:00:46:25	2560.10 mi <==
39:	Feb 25 1993 at 18:20:12	3:11:49:14	2578.43 mi <==
40:	Mar 1 1993 at 06:37:05	0:00:12:38	2584.49 mi <==
41:	Mar 1 1993 at 11:08:28	0:18:52:29	2678.51 mi <==
42:	Mar 2 1993 at 06:38:56	0:00:10:58	2684.56 mi <==
43:	Mar 2 1993 at 10:46:23	0:00:20:59	2757.54 mi <==
44:	Mar 2 1993 at 11:57:26	0:00:49:46	2758.68 mi <==
45:	Mar 2 1993 at 15:10:49	0:15:10:50	2759.27 mi <==
46:	Mar 3 1993 at 06:42:41	0:00:10:40	2765.32 mi <==
47:	Mar 3 1993 at 07:08:47	0:01:01:25	2771.93 mi <==
48:	Mar 3 1993 at 08:21:05	0:00:12:05	2773.23 mi <==
49:	Mar 3 1993 at 08:38:43	0:00:09:53	2774.14 mi <==
50:	Mar 3 1993 at 08:56:04	0:00:57:43	2774.75 mi <==

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Mar. 8 1993

File Name: CNGMR04.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Jan 14 1993 at 15:52:33
To: Mar 4 1993 at 10:26:29
Driver:

Min Stop Time: 0:00:05:00

Longest Stop: 3:11:49:14

---------- Stop Report ----------

	Occurrence Time	Elapsed(DHMS)	Distance
51:	Mar 3 1993 at 09:58:53	0:07:03:59	2775.69 mi <==
52:	Mar 3 1993 at 18:16:57	0:16:02:13	2797.78 mi <==

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Mar. 8 1993

File Name: CNGMR04.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Jan 14 1993 at 15:52:33
To: Mar 4 1993 at 10:26:29
Driver:

Min Idle Time: 0:00:03:00

Longest Idle: 0:02:07:35

Idle Time Report

	Occurrence Time	Elapsed(DHMS)	Distance
1:	Feb 9 1993 at 08:27:25	0:00:07:53	1474.87 mi <==
2:	Feb 9 1993 at 09:00:26	0:00:05:20	1486.79 mi <==
3:	Feb 9 1993 at 09:25:52	0:00:09:59	1497.06 mi <==
4:	Feb 9 1993 at 10:00:24	0:00:07:15	1508.21 mi <==
5:	Feb 9 1993 at 10:27:05	0:00:10:39	1518.47 mi <==
6:	Feb 10 1993 at 06:19:29	0:00:03:12	1531.71 mi <==
7:	Feb 10 1993 at 07:30:59	0:00:05:48	1554.55 mi <==
8:	Feb 10 1993 at 07:59:38	0:00:07:44	1566.49 mi <==
9:	Feb 10 1993 at 09:02:57	0:00:05:32	1587.05 mi <==
10:	Feb 10 1993 at 09:26:33	0:00:09:38	1597.32 mi <==
11:	Feb 10 1993 at 10:01:27	0:00:06:03	1608.63 mi <==
12:	Feb 10 1993 at 10:27:09	0:00:09:09	1618.90 mi <==
13:	Feb 10 1993 at 11:57:11	0:00:03:12	1636.48 mi <==
14:	Feb 11 1993 at 06:19:16	0:00:19:42	1644.33 mi <==
15:	Feb 11 1993 at 06:42:07	0:00:23:22	1645.08 mi <==
16:	Feb 11 1993 at 07:25:59	0:00:10:29	1655.36 mi <==
17:	Feb 11 1993 at 08:03:07	0:00:06:27	1667.29 mi <==
18:	Feb 11 1993 at 08:32:17	0:00:04:59	1675.93 mi <==
19:	Feb 11 1993 at 09:01:37	0:00:05:22	1687.86 mi <==
20:	Feb 11 1993 at 09:29:23	0:00:09:10	1698.13 mi <==
21:	Feb 11 1993 at 10:02:57	0:00:06:38	1709.27 mi <==
22:	Feb 11 1993 at 10:30:56	0:00:04:24	1719.54 mi <==
23:	Feb 11 1993 at 13:43:41	0:00:04:10	1738.34 mi <==
24:	Feb 11 1993 at 13:58:51	0:00:10:12	1738.39 mi <==
25:	Feb 12 1993 at 06:19:19	0:00:23:01	1746.03 mi <==
26:	Feb 12 1993 at 06:46:02	0:00:21:39	1746.78 mi <==
27:	Feb 12 1993 at 07:09:55	0:00:03:25	1746.87 mi <==
28:	Feb 12 1993 at 07:18:35	0:00:04:10	1747.25 mi <==
29:	Feb 15 1993 at 05:54:06	0:00:23:13	1749.38 mi <==
30:	Feb 15 1993 at 06:19:27	0:00:05:18	1749.83 mi <==
31:	Feb 15 1993 at 07:01:46	0:00:04:26	1762.20 mi <==
32:	Feb 15 1993 at 07:26:29	0:00:10:35	1772.48 mi <==
33:	Feb 15 1993 at 08:00:31	0:00:06:45	1784.42 mi <==
34:	Feb 15 1993 at 08:31:26	0:00:08:10	1793.07 mi <==
35:	Feb 15 1993 at 09:27:13	0:00:09:08	1815.27 mi <==
36:	Feb 15 1993 at 10:01:52	0:00:04:54	1827.19 mi <==
37:	Feb 15 1993 at 10:25:43	0:00:11:00	1837.47 mi <==
38:	Feb 16 1993 at 06:10:02	0:00:04:29	1849.89 mi <==
39:	Feb 16 1993 at 06:16:36	0:00:03:34	1850.34 mi <==
40:	Feb 16 1993 at 07:01:23	0:00:06:22	1862.72 mi <==
41:	Feb 16 1993 at 07:27:42	0:00:10:46	1873.00 mi <==
42:	Feb 16 1993 at 08:02:05	0:00:06:20	1884.94 mi <==
43:	Feb 16 1993 at 08:31:33	0:00:04:58	1894.86 mi <==
44:	Feb 16 1993 at 09:00:59	0:00:06:40	1906.79 mi <==
45:	Feb 16 1993 at 09:29:41	0:00:06:26	1917.07 mi <==
46:	Feb 16 1993 at 10:00:21	0:00:07:47	1928.23 mi <==
47:	Feb 16 1993 at 10:27:33	0:00:09:12	1938.51 mi <==
48:	Feb 16 1993 at 11:00:29	0:00:04:50	1950.44 mi <==
49:	Feb 17 1993 at 06:00:56	0:00:32:22	1950.95 mi <==
50:	Feb 17 1993 at 06:36:00	0:00:07:54	1951.41 mi <==

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Mar. 8 1993

File Name: CNGMR04.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Jan 14 1993 at 15:52:33
To: Mar 4 1993 at 10:26:29
Driver:

Min Idle Time: 0:00:03:00

Longest Idle: 0:02:07:35

Idle Time Report

	Occurrence Time	Elapsed(DHMS)	Distance
51:	Feb 18 1993 at 07:26:36	0:00:09:54	1975.07 mi <==
52:	Feb 18 1993 at 08:00:36	0:00:06:51	1987.01 mi <==
53:	Feb 18 1993 at 08:30:21	0:00:07:35	1995.66 mi <==
54:	Feb 18 1993 at 09:02:13	0:00:04:35	2007.60 mi <==
55:	Feb 18 1993 at 09:27:10	0:00:08:52	2017.88 mi <==
56:	Feb 18 1993 at 10:00:57	0:00:05:53	2029.03 mi <==
57:	Feb 18 1993 at 10:26:26	0:00:11:19	2039.32 mi <==
58:	Feb 18 1993 at 11:02:17	0:00:03:41	2050.47 mi <==
59:	Feb 19 1993 at 05:58:50	0:00:14:42	2051.00 mi <==
60:	Feb 19 1993 at 06:15:58	0:00:04:06	2051.44 mi <==
61:	Feb 19 1993 at 07:03:42	0:00:04:16	2063.82 mi <==
62:	Feb 19 1993 at 07:26:42	0:00:10:40	2074.10 mi <==
63:	Feb 19 1993 at 08:00:45	0:00:07:30	2086.03 mi <==
64:	Feb 19 1993 at 08:28:12	0:00:07:31	2094.67 mi <==
65:	Feb 19 1993 at 08:59:50	0:00:06:38	2106.60 mi <==
66:	Feb 19 1993 at 09:27:14	0:00:11:21	2116.87 mi <==
67:	Feb 19 1993 at 10:02:23	0:00:07:24	2128.02 mi <==
68:	Feb 19 1993 at 10:27:56	0:00:08:00	2138.29 mi <==
69:	Feb 19 1993 at 10:59:33	0:00:14:51	2150.21 mi <==
70:	Feb 22 1993 at 05:59:01	0:00:05:51	2150.97 mi <==
71:	Feb 22 1993 at 06:07:33	0:00:06:21	2151.41 mi <==
72:	Feb 22 1993 at 06:54:08	0:00:11:48	2163.79 mi <==
73:	Feb 22 1993 at 07:26:31	0:00:09:49	2174.06 mi <==
74:	Feb 22 1993 at 07:59:38	0:00:07:48	2186.00 mi <==
75:	Feb 22 1993 at 08:28:09	0:00:08:40	2194.63 mi <==
76:	Feb 22 1993 at 09:00:10	0:00:07:28	2206.56 mi <==
77:	Feb 22 1993 at 09:26:15	0:00:10:52	2216.84 mi <==
78:	Feb 22 1993 at 10:01:03	0:00:06:45	2228.75 mi <==
79:	Feb 22 1993 at 10:27:34	0:00:08:49	2239.03 mi <==
80:	Feb 22 1993 at 10:59:47	0:00:03:47	2250.94 mi <==
81:	Feb 23 1993 at 06:05:17	0:00:17:06	2251.46 mi <==
82:	Feb 23 1993 at 07:24:30	0:00:13:09	2274.54 mi <==
83:	Feb 23 1993 at 08:00:53	0:00:07:14	2286.48 mi <==
84:	Feb 23 1993 at 08:29:32	0:00:10:45	2295.11 mi <==
85:	Feb 23 1993 at 09:04:03	0:00:04:06	2307.04 mi <==
86:	Feb 23 1993 at 09:27:42	0:00:10:26	2317.31 mi <==
87:	Feb 23 1993 at 10:02:15	0:00:07:13	2328.47 mi <==
88:	Feb 23 1993 at 10:28:18	0:00:08:28	2338.72 mi <==
89:	Feb 23 1993 at 15:51:51	0:00:05:21	2351.26 mi <==
90:	Feb 23 1993 at 16:29:09	0:00:14:14	2360.43 mi <==
91:	Feb 23 1993 at 17:08:08	0:00:22:22	2360.43 mi <==
92:	Feb 23 1993 at 17:59:11	0:00:04:08	2360.43 mi <==
93:	Feb 24 1993 at 06:01:02	0:00:13:22	2368.78 mi <==
94:	Feb 24 1993 at 06:16:33	0:00:05:22	2369.22 mi <==
95:	Feb 24 1993 at 07:28:21	0:00:09:07	2391.59 mi <==
96:	Feb 24 1993 at 08:00:53	0:00:07:49	2403.52 mi <==
97:	Feb 24 1993 at 08:29:44	0:00:09:30	2412.16 mi <==
98:	Feb 24 1993 at 09:04:04	0:00:03:21	2424.08 mi <==
99:	Feb 24 1993 at 09:27:07	0:00:09:27	2434.34 mi <==
100:	Feb 24 1993 at 09:59:57	0:00:08:12	2445.47 mi <==

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Mar. 8 1993

File Name: CNGMR04.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Jan 14 1993 at 15:52:33
To: Mar 4 1993 at 10:26:29
Driver:

Min Idle Time: 0:00:03:00

Longest Idle: 0:02:07:35

Idle Time Report

	Occurrence Time	Elapsed(DHMS)	Distance
101:	Feb 24 1993 at 10:26:27	0:00:10:08	2455.74 mi <==
102:	Feb 24 1993 at 17:13:52	0:00:47:08	2476.51 mi <==
103:	Feb 25 1993 at 07:28:32	0:00:11:11	2509.20 mi <==
104:	Feb 25 1993 at 08:26:05	0:00:10:30	2529.76 mi <==
105:	Feb 25 1993 at 09:02:28	0:00:05:26	2541.38 mi <==
106:	Feb 25 1993 at 14:50:42	0:00:15:30	2541.98 mi <==
107:	Feb 25 1993 at 15:14:35	0:00:11:52	2542.82 mi <==
108:	Feb 25 1993 at 15:47:37	0:00:20:50	2554.87 mi <==
109:	Feb 25 1993 at 16:19:09	0:00:15:13	2560.10 mi <==
110:	Mar 1 1993 at 06:10:45	0:00:04:58	2578.43 mi <==
111:	Mar 1 1993 at 06:18:01	0:00:07:09	2578.88 mi <==
112:	Mar 1 1993 at 07:30:00	0:00:06:37	2601.28 mi <==
113:	Mar 1 1993 at 07:59:59	0:00:07:28	2613.24 mi <==
114:	Mar 1 1993 at 08:32:31	0:00:08:43	2621.89 mi <==
115:	Mar 1 1993 at 09:28:43	0:00:08:40	2644.12 mi <==
116:	Mar 1 1993 at 10:03:18	0:00:04:24	2655.77 mi <==
117:	Mar 1 1993 at 10:28:05	0:00:09:51	2666.05 mi <==
118:	Mar 1 1993 at 11:01:37	0:00:04:19	2677.99 mi <==
119:	Mar 2 1993 at 06:00:57	0:00:22:27	2678.51 mi <==
120:	Mar 2 1993 at 07:27:49	0:00:10:41	2701.32 mi <==
121:	Mar 2 1993 at 08:01:43	0:00:06:27	2713.25 mi <==
122:	Mar 2 1993 at 08:32:39	0:00:06:16	2723.18 mi <==
123:	Mar 2 1993 at 09:03:09	0:00:04:58	2735.10 mi <==
124:	Mar 2 1993 at 09:28:17	0:00:09:26	2745.37 mi <==
125:	Mar 2 1993 at 10:03:06	0:00:38:05	2757.00 mi <==
126:	Mar 2 1993 at 11:07:22	0:00:22:37	2757.54 mi <==
127:	Mar 2 1993 at 11:41:10	0:00:16:15	2758.68 mi <==
128:	Mar 2 1993 at 12:48:18	0:02:07:35	2758.68 mi <==
129:	Mar 2 1993 at 15:01:17	0:00:06:57	2759.23 mi <==
130:	Mar 3 1993 at 06:23:11	0:00:03:14	2759.27 mi <==
131:	Mar 3 1993 at 06:28:20	0:00:03:16	2759.72 mi <==
132:	Mar 3 1993 at 08:50:10	0:00:03:28	2774.28 mi <==
133:	Mar 3 1993 at 17:07:56	0:00:11:59	2776.45 mi <==
134:	Mar 4 1993 at 10:23:29	0:00:02:57	2798.28 mi

Silent Witness Enterprises Ltd.

U.T. BLUEBIRD CNG

Date: Mar. 8 1993

File Name: CNGMR04.KBB
GPIP Name: CNG.CAR
Vehicle : CNG

From: Jan 14 1993 at 15:52:33
To: Mar 4 1993 at 10:26:29
Driver:

Over Speed Report

	Occurrence Time	Elapsed(DHMS)	Max Speed	Distance	Driver	
1:	Feb 23 1993 at 10:18:54	0:00:00:28	62 mph	2334.54 mi	1	
2:	Feb 23 1993 at 10:50:19	0:00:00:35	60 mph	2343.73 mi	1	
3:	Feb 23 1993 at 10:51:43	0:00:00:19	61 mph	2345.10 mi	1	
4:	Feb 24 1993 at 07:16:00	0:00:01:08	63 mph	2384.39 mi	1	
5:	Feb 24 1993 at 07:19:39	0:00:00:57	63 mph	2387.41 mi	1	
6:	Feb 24 1993 at 08:51:26	0:00:00:11	60 mph	2417.12 mi	1	
7:	Feb 24 1993 at 08:52:59	0:00:00:20	61 mph	2418.57 mi	1	
8:	Feb 24 1993 at 09:13:28	0:00:00:35	62 mph	2426.07 mi	1	
9:	Feb 24 1993 at 09:14:32	0:00:00:42	62 mph	2427.12 mi	1	
10:	Feb 24 1993 at 09:16:36	0:00:00:13	60 mph	2429.13 mi	1	
11:	Feb 24 1993 at 09:17:30	0:00:00:11	60 mph	2430.01 mi	1	
12:	Feb 24 1993 at 09:47:58	0:00:00:24	60 mph	2439.33 mi	1	
13:	Feb 24 1993 at 10:13:33	0:00:00:41	61 mph	2447.56 mi	1	
14:	Feb 24 1993 at 10:14:28	0:00:00:45	64 mph	2448.47 mi	1	
15:	Feb 24 1993 at 10:15:57	0:00:00:50	60 mph	2449.92 mi	1	
16:	Feb 24 1993 at 10:17:11	0:00:01:13	61 mph	2451.12 mi	1	
17:	Feb 25 1993 at 15:32:34	0:00:00:23	64 mph	2545.82 mi	1	
18:	Feb 25 1993 at 15:35:50	0:00:02:58	65 mph	2548.89 mi	1	
19:	Mar 1 1993 at 09:15:53	0:00:01:07	63 mph	2636.48 mi	1	
20:	Mar 1 1993 at 09:17:41	0:00:00:51	62 mph	2638.26 mi	1	
21:	Mar 1 1993 at 09:18:55	0:00:00:55	63 mph	2639.48 mi	1	
22:	Mar 1 1993 at 10:13:51	0:00:00:50	61 mph	2657.76 mi	1	
23:	Mar 1 1993 at 10:14:53	0:00:01:07	64 mph	2658.78 mi	1	
24:	Mar 1 1993 at 10:16:16	0:00:00:21	60 mph	2660.18 mi	1	
25:	Mar 1 1993 at 10:16:53	0:00:00:20	61 mph	2660.78 mi	1	
26:	Mar 1 1993 at 10:17:38	0:00:00:14	60 mph	2661.51 mi	1	
27:	Mar 1 1993 at 10:17:55	0:00:00:29	61 mph	2661.79 mi	1	
28:	Mar 1 1993 at 10:18:39	0:00:00:27	62 mph	2662.51 mi	1	
29:	Mar 2 1993 at 07:14:22	0:00:00:32	61 mph	2693.48 mi	1	
30:	Mar 2 1993 at 07:14:58	0:00:00:46	64 mph	2694.07 mi	1	
31:	Mar 2 1993 at 07:15:49	0:00:00:16	60 mph	2694.93 mi	1	
32:	Mar 2 1993 at 07:17:05	0:00:00:13	60 mph	2696.15 mi	1	
33:	Mar 2 1993 at 07:49:51	0:00:00:37	60 mph	2706.31 mi	1	
34:	Mar 2 1993 at 07:51:21	0:00:00:38	61 mph	2707.76 mi	1	
35:	Mar 2 1993 at 09:14:39	0:00:00:14	60 mph	2737.74 mi	1	
36:	Mar 2 1993 at 09:15:00	0:00:00:49	66 mph	2738.09 mi	1	<==
37:	Mar 2 1993 at 09:15:52	0:00:00:14	60 mph	2738.98 mi	1	
38:	Mar 2 1993 at 09:16:27	0:00:00:23	61 mph	2739.54 mi	1	
39:	Mar 2 1993 at 09:16:53	0:00:00:31	61 mph	2739.98 mi	1	
40:	Mar 2 1993 at 09:17:35	0:00:00:38	62 mph	2740.67 mi	1	
41:	Mar 2 1993 at 09:51:12	0:00:00:13	60 mph	2751.78 mi	1	
42:	Mar 3 1993 at 17:28:42	0:00:01:23	66 mph	2778.98 mi	1	
43:	Mar 3 1993 at 17:32:55	0:00:00:24	62 mph	2783.01 mi	1	
44:	Mar 3 1993 at 17:33:40	0:00:00:11	60 mph	2783.74 mi	1	