

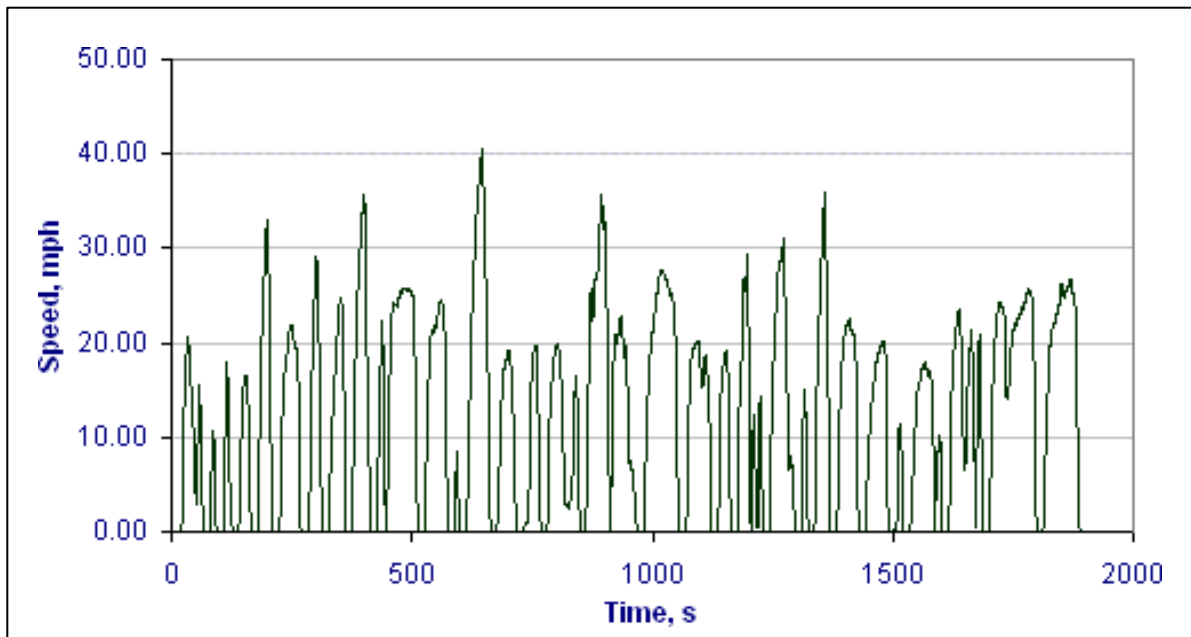
## **APPENDIX C**

### **ORANGE COUNTY BUS CYCLE**

The Orange County Bus Cycle is a chassis dynamometer test for heavy-duty vehicles. The driving cycle was developed by West Virginia University based on real bus operating data from the Orange County Transportation Authority. It is an intermediate speed test cycle consisting of accelerations, decelerations and cruise operations reflective of transit bus use.

Variable speed over the duration of the cycle is illustrated in Figure 1. A speed versus time sequence is also provided.

**Figure 1. Orange County Bus Cycle**



Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
1	0.00	46	10.72	91	2.24	136	0.00
2	0.00	47	9.87	92	1.28	137	0.00
3	0.00	48	8.63	93	0.53	138	0.00
4	0.00	49	6.00	94	0.13	139	0.00
5	0.00	50	3.19	95	0.00	140	0.19
6	0.00	51	2.91	96	0.00	141	1.25
7	0.00	52	4.25	97	0.00	142	3.29
8	0.00	53	5.96	98	0.00	143	5.97
9	0.00	54	7.92	99	0.00	144	8.57
10	0.00	55	10.06	100	0.00	145	10.25
11	0.00	56	12.32	101	0.00	146	11.70
12	0.00	57	14.65	102	0.00	147	12.95
13	0.00	58	15.54	103	0.00	148	14.05
14	0.00	59	14.56	104	0.00	149	15.04
15	0.00	60	13.20	105	0.00	150	15.50
16	0.00	61	11.98	106	0.00	151	15.55
17	0.00	62	9.60	107	0.00	152	15.57
18	0.00	63	7.10	108	0.30	153	15.98
19	0.00	64	4.64	109	1.95	154	16.32
20	0.00	65	1.77	110	5.05	155	16.47
21	0.24	66	0.46	111	8.07	156	16.23
22	1.25	67	0.12	112	10.95	157	15.70
23	3.56	68	0.00	113	13.52	158	14.69
24	6.20	69	0.00	114	15.81	159	13.89
25	8.81	70	0.00	115	17.83	160	13.04
26	11.40	71	0.00	116	17.84	161	10.81
27	13.74	72	0.00	117	15.86	162	7.43
28	15.89	73	0.00	118	13.43	163	3.53
29	17.26	74	0.00	119	10.92	164	1.59
30	18.15	75	0.00	120	8.66	165	0.54
31	19.06	76	0.00	121	6.70	166	0.00
32	19.94	77	0.00	122	4.61	167	0.00
33	20.59	78	0.00	123	3.01	168	0.00
34	20.59	79	0.00	124	2.02	169	0.00
35	20.08	80	0.00	125	1.29	170	0.00
36	19.44	81	0.59	126	0.56	171	0.00
37	18.70	82	2.37	127	0.00	172	0.00
38	17.82	83	4.85	128	0.00	173	0.00
39	16.92	84	7.09	129	0.00	174	0.00
40	15.99	85	8.88	130	0.00	175	0.00
41	15.15	86	10.35	131	0.00	176	0.00
42	14.27	87	10.77	132	0.00	177	0.00
43	13.39	88	9.25	133	0.00	178	0.00
44	12.46	89	6.14	134	0.00	179	0.10
45	11.58	90	3.74	135	0.00	180	0.97

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
181	4.10	226	1.88	271	0.00	316	0.00
182	7.67	227	4.14	272	0.00	317	0.00
183	10.50	228	6.64	273	0.00	318	0.00
184	13.15	229	9.10	274	0.00	319	0.00
185	15.57	230	11.29	275	0.00	320	0.00
186	17.64	231	12.56	276	0.00	321	0.00
187	19.46	232	13.63	277	0.00	322	0.00
188	21.048	233	14.76	278	0.00	323	0.00
189	22.45	234	15.75	279	0.00	324	0.00
190	23.82	235	16.43	280	0.00	325	0.00
191	25.03	236	17.03	281	0.00	326	0.00
192	26.23	237	17.59	282	0.00	327	0.00
193	27.47	238	18.06	283	0.17	328	0.15
194	28.58	239	18.43	284	0.49	329	1.30
195	29.64	240	18.97	285	1.01	330	4.11
196	30.61	241	19.61	286	1.76	331	6.81
197	31.62	242	20.06	287	2.73	332	8.63
198	32.59	243	20.60	288	4.75	333	10.15
199	33.03	244	20.99	289	7.43	334	11.53
200	31.78	245	21.24	290	10.08	335	12.73
201	29.22	246	21.42	291	12.75	336	13.70
202	26.44	247	21.68	292	15.43	337	14.42
203	23.16	248	21.80	293	17.79	338	15.17
204	19.30	249	21.81	294	19.89	339	16.06
205	15.80	250	21.77	295	21.82	340	16.98
206	12.55	251	21.58	296	23.46	341	17.80
207	8.14	252	21.17	297	25.10	342	18.62
208	4.51	253	20.77	298	26.59	343	19.41
209	1.95	254	20.33	299	27.92	344	20.15
210	0.42	255	20.06	300	28.77	345	20.97
211	0.14	256	19.78	301	29.08	346	21.70
212	0.00	257	19.55	302	28.66	347	22.43
213	0.00	258	19.48	303	26.98	348	23.15
214	0.00	259	19.40	304	25.19	349	23.78
215	0.00	260	19.16	305	23.35	350	24.29
216	0.00	261	18.77	306	21.44	351	24.71
217	0.00	262	18.20	307	19.34	352	24.86
218	0.00	263	17.00	308	16.64	353	24.58
219	0.00	264	15.63	309	13.18	354	24.01
220	0.00	265	13.45	310	9.97	355	23.57
221	0.00	266	9.86	311	6.82	356	23.00
222	0.00	267	6.06	312	4.08	357	20.96
223	0.00	268	1.76	313	1.60	358	17.55
224	0.00	269	0.10	314	0.25	359	13.88
225	0.51	270	0.00	315	0.10	360	9.77

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
361	4.83	406	21.06	451	10.43	496	25.53
362	1.11	407	17.75	452	12.87	497	25.51
363	0.10	408	14.31	453	15.18	498	25.41
364	0.00	409	11.47	454	17.25	499	25.31
365	0.00	410	8.69	455	19.24	500	25.21
366	0.00	411	6.05	456	20.95	501	25.07
367	0.00	412	3.25	457	22.18	502	24.89
368	0.00	413	1.05	458	22.78	503	24.44
369	0.00	414	0.10	459	23.18	504	23.27
370	0.00	415	0.00	460	23.45	505	20.81
371	0.00	416	0.00	461	23.78	506	17.79
372	0.00	417	0.00	462	24.06	507	14.56
373	0.00	418	0.00	463	24.23	508	11.63
374	0.00	419	0.00	464	24.14	509	8.63
375	0.00	420	0.00	465	24.01	510	5.17
376	0.98	421	0.00	466	23.97	511	2.32
377	4.21	422	0.00	467	23.94	512	0.88
378	7.76	423	0.00	468	23.91	513	0.18
379	10.46	424	0.00	469	23.86	514	0.00
380	12.82	425	0.00	470	24.00	515	0.00
381	14.99	426	0.00	471	24.31	516	0.00
382	16.95	427	0.22	472	24.46	517	0.00
383	18.83	428	1.54	473	24.75	518	0.00
384	20.66	429	5.20	474	24.97	519	0.00
385	22.18	430	8.85	475	25.21	520	0.00
386	23.58	431	11.89	476	25.30	521	0.00
387	24.76	432	14.23	477	25.37	522	0.00
388	25.93	433	15.64	478	25.38	523	0.00
389	27.11	434	16.72	479	25.35	524	0.00
390	28.19	435	18.02	480	25.22	525	0.00
391	29.30	436	19.39	481	25.25	526	0.13
392	30.35	437	21.08	482	25.42	527	0.98
393	31.25	438	22.44	483	25.63	528	3.09
394	32.14	439	21.47	484	25.82	529	5.66
395	32.97	440	19.17	485	25.68	530	8.35
396	33.54	441	15.77	486	25.65	531	10.93
397	33.73	442	11.90	487	25.59	532	13.38
398	34.12	443	7.88	488	25.54	533	15.09
399	34.77	444	4.77	489	25.67	534	15.82
400	35.52	445	1.84	490	25.70	535	16.56
401	35.67	446	0.28	491	25.66	536	17.45
402	34.38	447	0.67	492	25.62	537	18.41
403	31.49	448	2.68	493	25.58	538	19.32
404	28.21	449	5.26	494	25.58	539	20.20
405	24.55	450	7.85	495	25.58	540	20.85

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
541	21.10	586	0.00	631	30.21	676	0.23
542	21.27	587	0.00	632	31.26	677	1.15
543	21.18	588	0.10	633	32.15	678	2.40
544	21.05	589	0.69	634	33.05	679	3.70
545	21.09	590	3.05	635	33.82	680	4.77
546	21.39	591	4.99	636	34.61	681	5.87
547	21.69	592	7.09	637	35.42	682	7.47
548	21.79	593	8.45	638	36.09	683	9.14
549	21.65	594	7.24	639	36.80	684	10.76
550	21.65	595	5.60	640	37.38	685	12.15
551	21.90	596	4.43	641	38.05	686	13.41
552	22.23	597	3.20	642	38.68	687	14.41
553	22.59	598	1.72	643	39.34	688	15.42
554	22.94	599	0.49	644	39.86	689	16.09
555	23.42	600	0.15	645	40.41	690	16.48
556	23.75	601	0.00	646	40.63	691	16.89
557	24.02	602	0.00	647	39.81	692	17.21
558	24.17	603	0.00	648	37.98	693	17.51
559	24.36	604	0.00	649	35.89	694	17.79
560	24.42	605	0.00	650	33.71	695	18.00
561	24.39	606	0.00	651	31.62	696	18.26
562	24.27	607	0.00	652	29.47	697	18.47
563	23.93	608	0.00	653	28.02	698	18.66
564	23.50	609	0.00	654	26.56	699	18.86
565	22.84	610	0.00	655	24.67	700	19.03
566	22.15	611	0.00	656	22.02	701	19.16
567	21.59	612	0.00	657	19.47	702	19.29
568	20.98	613	0.23	658	16.04	703	18.98
569	19.71	614	0.54	659	12.49	704	18.40
570	16.83	615	1.76	660	8.90	705	17.91
571	12.46	616	4.18	661	5.63	706	17.48
572	8.45	617	7.07	662	2.86	707	17.14
573	4.85	618	9.64	663	0.73	708	16.77
574	1.82	619	12.10	664	0.00	709	16.13
575	0.51	620	14.59	665	0.00	710	14.16
576	0.00	621	16.80	666	0.00	711	11.96
577	0.00	622	18.71	667	0.00	712	9.78
578	0.00	623	20.45	668	0.00	713	7.44
579	0.00	624	22.03	669	0.00	714	4.90
580	0.00	625	23.45	670	0.00	715	2.52
581	0.00	626	24.75	671	0.00	716	0.89
582	0.00	627	25.97	672	0.00	717	0.13
583	0.00	628	27.01	673	0.00	718	0.10
584	0.00	629	28.09	674	0.00	719	0.00
585	0.00	630	29.16	675	0.00	720	0.00

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
721	0.00	766	3.80	811	13.80	856	0.00
722	0.00	767	2.48	812	12.31	857	0.00
723	0.00	768	0.75	813	10.67	858	0.00
724	0.00	769	0.00	814	9.42	859	0.00
725	0.00	770	0.00	815	8.09	860	0.00
726	0.00	771	0.00	816	6.60	861	0.00
727	0.00	772	0.00	817	4.86	862	0.54
728	0.00	773	0.00	818	3.61	863	3.28
729	0.00	774	0.00	819	3.14	864	7.30
730	0.00	775	0.00	820	2.88	865	10.56
731	0.12	776	0.00	821	2.68	866	13.49
732	0.25	777	0.00	822	2.69	867	16.27
733	0.35	778	0.00	823	2.63	868	18.74
734	0.64	779	0.00	824	2.60	869	20.88
735	0.84	780	0.00	825	2.53	870	22.68
736	0.90	781	0.20	826	2.50	871	24.44
737	0.90	782	1.17	827	2.50	872	25.78
738	0.97	783	3.18	828	2.68	873	25.65
739	1.00	784	5.67	829	3.56	874	23.71
740	1.00	785	8.18	830	4.35	875	22.31
741	0.90	786	10.53	831	4.18	876	22.38
742	1.25	787	12.74	832	3.90	877	22.83
743	2.75	788	13.65	833	4.78	878	23.59
744	4.99	789	14.22	834	6.24	879	24.69
745	7.46	790	15.16	835	8.05	880	26.00
746	9.89	791	16.25	836	10.04	881	26.52
747	12.32	792	17.30	837	12.05	882	26.83
748	14.63	793	17.78	838	13.79	883	26.76
749	16.26	794	18.13	839	15.31	884	26.94
750	17.26	795	18.28	840	16.28	885	27.28
751	18.12	796	18.60	841	16.43	886	27.91
752	18.65	797	18.76	842	15.75	887	28.83
753	19.08	798	18.97	843	14.64	888	29.94
754	19.41	799	19.18	844	13.99	889	30.98
755	19.40	800	19.41	845	12.32	890	31.95
756	19.45	801	19.59	846	9.35	891	32.94
757	19.72	802	19.82	847	5.15	892	33.94
758	19.58	803	19.90	848	1.08	893	34.88
759	19.16	804	19.78	849	0.15	894	35.68
760	17.98	805	19.55	850	0.00	895	35.46
761	16.57	806	19.16	851	0.00	896	34.15
762	15.00	807	18.69	852	0.00	897	32.48
763	11.56	808	18.43	853	0.00	898	31.94
764	8.14	809	17.38	854	0.00	899	32.13
765	5.22	810	15.50	855	0.00	900	32.51

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
901	32.83	946	18.80	991	14.91	1036	25.22
902	31.85	947	16.84	992	16.04	1037	25.07
903	29.25	948	14.77	993	17.05	1038	25.13
904	26.18	949	12.63	994	17.84	1039	25.14
905	22.75	950	10.51	995	18.37	1040	24.94
906	19.47	951	8.47	996	18.98	1041	24.73
907	16.14	952	7.22	997	19.61	1042	24.49
908	12.37	953	7.35	998	20.25	1043	24.23
909	8.44	954	7.57	999	20.82	1044	23.82
910	5.04	955	7.59	1000	21.13	1045	23.19
911	2.12	956	7.25	1001	21.40	1046	22.60
912	0.33	957	6.50	1002	21.78	1047	21.78
913	0.36	958	6.48	1003	22.31	1048	20.49
914	2.46	959	6.12	1004	22.87	1049	17.80
915	6.28	960	5.26	1005	23.38	1050	15.09
916	9.40	961	4.55	1006	23.79	1051	12.18
917	12.00	962	4.04	1007	24.25	1052	8.33
918	14.52	963	3.53	1008	24.71	1053	4.87
919	16.68	964	3.12	1009	25.00	1054	2.48
920	18.36	965	2.11	1010	25.17	1055	1.28
921	19.35	966	1.35	1011	25.37	1056	0.42
922	20.32	967	0.73	1012	25.84	1057	0.10
923	20.96	968	0.23	1013	26.35	1058	0.00
924	20.58	969	0.00	1014	26.79	1059	0.00
925	19.93	970	0.00	1015	27.14	1060	0.00
926	19.97	971	0.00	1016	27.40	1061	0.00
927	20.29	972	0.00	1017	27.51	1062	0.00
928	20.68	973	0.00	1018	27.61	1063	0.00
929	20.95	974	0.00	1019	27.69	1064	0.00
930	21.15	975	0.00	1020	27.64	1065	0.00
931	21.39	976	0.00	1021	27.50	1066	0.00
932	21.81	977	0.00	1022	27.35	1067	0.00
933	22.26	978	0.00	1023	27.32	1068	0.00
934	22.64	979	0.00	1024	27.23	1069	0.00
935	22.71	980	0.00	1025	27.15	1070	0.10
936	22.58	981	0.22	1026	27.10	1071	0.46
937	22.28	982	0.96	1027	27.10	1072	1.91
938	21.41	983	2.24	1028	26.95	1073	4.21
939	20.20	984	3.98	1029	26.81	1074	6.78
940	19.06	985	5.95	1030	26.66	1075	9.43
941	18.39	986	7.71	1031	26.41	1076	11.96
942	18.43	987	9.27	1032	26.25	1077	14.04
943	18.78	988	10.78	1033	25.86	1078	15.82
944	19.36	989	12.22	1034	25.61	1079	17.07
945	19.65	990	13.60	1035	25.45	1080	17.90



Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
1081	18.36	1126	0.00	1171	0.00	1216	3.22
1082	18.67	1127	0.00	1172	0.00	1217	1.52
1083	18.92	1128	0.00	1173	0.00	1218	0.37
1084	19.07	1129	0.00	1174	0.00	1219	0.45
1085	19.25	1130	0.00	1175	0.00	1220	2.79
1086	19.33	1131	0.00	1176	0.18	1221	6.47
1087	19.46	1132	0.00	1177	1.65	1222	9.47
1088	19.57	1133	0.00	1178	5.71	1223	12.09
1089	19.63	1134	0.00	1179	9.38	1224	14.41
1090	19.68	1135	0.00	1180	12.42	1225	13.91
1091	19.79	1136	0.26	1181	13.56	1226	11.78
1092	19.96	1137	1.18	1182	13.74	1227	8.82
1093	19.98	1138	3.06	1183	14.51	1228	6.23
1094	19.99	1139	5.60	1184	15.32	1229	3.54
1095	20.04	1140	8.23	1185	16.76	1230	1.04
1096	20.05	1141	10.87	1186	18.72	1231	0.10
1097	19.64	1142	13.34	1187	20.78	1232	0.00
1098	18.85	1143	15.30	1188	22.74	1233	0.00
1099	17.94	1144	15.99	1189	24.52	1234	0.00
1100	17.17	1145	16.36	1190	26.30	1235	0.00
1101	16.68	1146	16.85	1191	26.81	1236	0.00
1102	16.23	1147	17.34	1192	25.48	1237	0.00
1103	15.70	1148	17.70	1193	25.46	1238	0.00
1104	15.33	1149	18.01	1194	26.24	1239	0.00
1105	15.64	1150	18.29	1195	27.37	1240	0.00
1106	16.35	1151	18.52	1196	28.73	1241	0.00
1107	17.14	1152	18.70	1197	29.36	1242	0.00
1108	17.68	1153	18.89	1198	27.82	1243	0.00
1109	18.22	1154	19.06	1199	24.38	1244	0.22
1110	18.51	1155	18.77	1200	20.99	1245	1.63
1111	18.58	1156	17.65	1201	16.35	1246	5.13
1112	18.54	1157	16.59	1202	11.31	1247	8.45
1113	18.31	1158	14.68	1203	6.18	1248	10.86
1114	17.29	1159	11.97	1204	2.52	1249	13.01
1115	16.24	1160	9.04	1205	0.55	1250	14.99
1116	15.67	1161	5.88	1206	0.34	1251	16.85
1117	14.99	1162	2.76	1207	2.28	1252	18.42
1118	13.38	1163	0.60	1208	5.91	1253	19.17
1119	10.91	1164	0.00	1209	8.97	1254	20.07
1120	7.84	1165	0.00	1210	11.59	1255	21.18
1121	3.86	1166	0.00	1211	12.43	1256	22.52
1122	0.75	1167	0.00	1212	10.60	1257	23.54
1123	0.10	1168	0.00	1213	8.23	1258	24.70
1124	0.00	1169	0.00	1214	5.91	1259	25.50
1125	0.00	1170	0.00	1215	4.74	1260	26.21

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
1261	27.02	1306	0.00	1351	28.34	1396	18.82
1262	27.93	1307	0.00	1352	29.44	1397	19.35
1263	28.50	1308	0.00	1353	30.59	1398	19.85
1264	28.54	1309	0.00	1354	31.66	1399	20.32
1265	28.75	1310	0.75	1355	32.66	1400	20.83
1266	28.72	1311	3.89	1356	33.62	1401	21.28
1267	28.72	1312	7.33	1357	34.57	1402	21.58
1268	28.78	1313	10.04	1358	35.45	1403	21.72
1269	29.10	1314	12.59	1359	36.03	1404	21.78
1270	29.65	1315	14.88	1360	34.66	1405	21.74
1271	30.51	1316	15.07	1361	31.01	1406	21.76
1272	31.12	1317	14.56	1362	27.98	1407	21.98
1273	30.33	1318	14.20	1363	24.96	1408	22.22
1274	28.31	1319	12.13	1364	21.03	1409	22.40
1275	26.37	1320	9.67	1365	17.20	1410	22.51
1276	24.39	1321	7.38	1366	13.00	1411	22.33
1277	22.38	1322	5.20	1367	8.36	1412	21.97
1278	20.40	1323	2.79	1368	4.44	1413	21.56
1279	18.30	1324	0.74	1369	1.73	1414	21.31
1280	16.19	1325	0.00	1370	0.33	1415	21.21
1281	14.01	1326	0.00	1371	0.00	1416	21.17
1282	11.80	1327	0.00	1372	0.00	1417	21.08
1283	9.63	1328	0.00	1373	0.00	1418	20.89
1284	7.58	1329	0.00	1374	0.00	1419	20.81
1285	6.53	1330	0.00	1375	0.00	1420	20.37
1286	6.79	1331	0.00	1376	0.00	1421	19.77
1287	7.19	1332	0.00	1377	0.00	1422	19.38
1288	7.70	1333	0.00	1378	0.00	1423	17.39
1289	7.95	1334	0.00	1379	0.00	1424	14.27
1290	6.80	1335	0.00	1380	0.00	1425	10.34
1291	5.56	1336	0.00	1381	0.00	1426	6.46
1292	4.67	1337	0.15	1382	0.00	1427	3.56
1293	3.98	1338	1.13	1383	0.10	1428	1.75
1294	3.22	1339	4.47	1384	0.83	1429	0.45
1295	2.03	1340	8.03	1385	3.01	1430	0.00
1296	0.72	1341	10.88	1386	5.61	1431	0.00
1297	0.13	1342	13.51	1387	8.25	1432	0.00
1298	0.00	1343	15.98	1388	10.47	1433	0.00
1299	0.00	1344	18.10	1389	12.04	1434	0.00
1300	0.00	1345	19.96	1390	13.39	1435	0.00
1301	0.00	1346	21.69	1391	14.60	1436	0.00
1302	0.00	1347	23.21	1392	15.70	1437	0.00
1303	0.00	1348	24.66	1393	16.67	1438	0.00
1304	0.00	1349	25.97	1394	17.56	1439	0.00
1305	0.00	1350	27.20	1395	18.21	1440	0.00

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
1441	0.00	1486	17.09	1531	0.00	1576	16.99
1442	0.23	1487	13.42	1532	0.00	1577	16.79
1443	0.88	1488	9.12	1533	0.00	1578	16.62
1444	1.82	1489	4.98	1534	0.00	1579	16.35
1445	2.83	1490	1.22	1535	0.17	1580	16.01
1446	4.25	1491	0.10	1536	0.40	1581	15.31
1447	5.76	1492	0.00	1537	1.01	1582	15.05
1448	6.99	1493	0.00	1538	1.89	1583	13.83
1449	7.92	1494	0.00	1539	2.87	1584	10.88
1450	8.86	1495	0.00	1540	3.95	1585	8.28
1451	9.77	1496	0.00	1541	5.15	1586	5.36
1452	10.57	1497	0.00	1542	6.31	1587	1.65
1453	11.28	1498	0.00	1543	7.41	1588	0.25
1454	12.01	1499	0.00	1544	8.53	1589	1.47
1455	12.61	1500	0.00	1545	9.51	1590	4.11
1456	13.15	1501	0.00	1546	10.42	1591	6.94
1457	13.76	1502	0.00	1547	11.22	1592	8.51
1458	14.40	1503	0.00	1548	11.92	1593	8.57
1459	15.05	1504	0.13	1549	12.65	1594	8.54
1460	15.60	1505	0.20	1550	13.50	1595	9.21
1461	16.06	1506	0.31	1551	14.29	1596	9.94
1462	16.53	1507	0.43	1552	14.98	1597	10.31
1463	16.94	1508	0.55	1553	15.50	1598	10.02
1464	17.38	1509	1.54	1554	15.68	1599	9.11
1465	17.66	1510	3.46	1555	15.80	1600	7.69
1466	17.92	1511	5.77	1556	16.06	1601	5.98
1467	18.19	1512	7.98	1557	16.43	1602	2.97
1468	18.39	1513	10.12	1558	16.74	1603	0.60
1469	18.55	1514	11.35	1559	16.90	1604	0.00
1470	18.65	1515	11.05	1560	17.11	1605	0.00
1471	18.82	1516	10.19	1561	17.26	1606	0.00
1472	19.00	1517	9.59	1562	17.23	1607	0.00
1473	19.18	1518	8.26	1563	17.30	1608	0.00
1474	19.36	1519	5.97	1564	17.29	1609	0.00
1475	19.58	1520	4.03	1565	17.57	1610	0.00
1476	19.70	1521	1.31	1566	17.85	1611	0.00
1477	19.88	1522	0.13	1567	18.04	1612	0.00
1478	20.01	1523	0.00	1568	18.01	1613	0.00
1479	20.22	1524	0.00	1569	17.86	1614	0.00
1480	20.24	1525	0.00	1570	17.48	1615	0.00
1481	20.07	1526	0.00	1571	17.17	1616	0.16
1482	19.63	1527	0.00	1572	16.90	1617	1.25
1483	19.38	1528	0.00	1573	16.58	1618	3.46
1484	18.98	1529	0.00	1574	16.65	1619	6.08
1485	18.59	1530	0.00	1575	16.97	1620	8.79

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
1621	11.36	1666	18.68	1711	19.34	1756	21.99
1622	13.70	1667	16.35	1712	20.04	1757	21.92
1623	15.25	1668	13.31	1713	20.64	1758	22.04
1624	16.23	1669	10.06	1714	21.23	1759	22.24
1625	17.14	1670	6.34	1715	21.79	1760	22.40
1626	17.99	1671	1.74	1716	22.34	1761	22.52
1627	18.77	1672	0.45	1717	22.75	1762	22.63
1628	19.43	1673	2.93	1718	23.26	1763	22.77
1629	20.06	1674	6.63	1719	23.65	1764	22.90
1630	20.65	1675	9.72	1720	24.07	1765	22.99
1631	21.22	1676	12.47	1721	24.37	1766	23.17
1632	21.79	1677	15.07	1722	24.37	1767	23.43
1633	22.18	1678	17.29	1723	24.20	1768	23.69
1634	22.54	1679	19.06	1724	24.05	1769	23.68
1635	22.85	1680	20.59	1725	23.91	1770	23.65
1636	23.15	1681	20.80	1726	23.88	1771	23.62
1637	23.40	1682	18.46	1727	23.81	1772	23.73
1638	23.59	1683	15.56	1728	23.74	1773	23.92
1639	23.29	1684	12.47	1729	23.59	1774	24.08
1640	22.34	1685	8.84	1730	23.41	1775	24.20
1641	21.37	1686	5.57	1731	23.32	1776	24.39
1642	20.65	1687	2.71	1732	22.78	1777	24.57
1643	19.82	1688	0.60	1733	21.64	1778	24.72
1644	17.07	1689	0.00	1734	20.73	1779	24.90
1645	13.53	1690	0.00	1735	18.14	1780	25.17
1646	11.36	1691	0.00	1736	14.96	1781	25.43
1647	9.65	1692	0.00	1737	13.98	1782	25.61
1648	7.88	1693	0.00	1738	14.01	1783	25.60
1649	6.46	1694	0.00	1739	14.57	1784	25.55
1650	6.55	1695	0.00	1740	15.00	1785	25.44
1651	7.56	1696	0.00	1741	15.06	1786	25.38
1652	9.01	1697	0.00	1742	15.86	1787	25.27
1653	10.80	1698	0.00	1743	16.96	1788	25.18
1654	12.63	1699	0.00	1744	18.20	1789	24.67
1655	14.25	1700	0.00	1745	19.17	1790	24.29
1656	15.80	1701	0.24	1746	19.65	1791	23.94
1657	16.99	1702	1.60	1747	19.86	1792	22.08
1658	17.77	1703	3.96	1748	20.40	1793	20.04
1659	18.67	1704	6.67	1749	21.08	1794	17.26
1660	19.26	1705	9.33	1750	21.28	1795	13.73
1661	19.97	1706	12.01	1751	21.25	1796	9.70
1662	20.79	1707	14.38	1752	21.52	1797	6.77
1663	21.40	1708	16.13	1753	21.75	1798	3.46
1664	20.87	1709	17.43	1754	21.80	1799	0.66
1665	19.66	1710	18.54	1755	21.86	1800	0.10

Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)	Time (s)	Speed (mph)
1801	0.00	1846	24.09	1891	0.00		
1802	0.00	1847	24.37	1892	0.00		
1803	0.00	1848	24.62	1893	0.00		
1804	0.00	1849	25.22	1894	0.00		
1805	0.00	1850	26.08	1895	0.00		
1806	0.00	1851	26.30	1896	0.00		
1807	0.00	1852	25.89	1897	0.00		
1808	0.00	1853	25.56	1898	0.00		
1809	0.00	1854	25.16	1899	0.00		
1810	0.00	1855	24.92	1900	0.00		
1811	0.00	1856	24.97	1901	0.00		
1812	0.00	1857	24.85	1902	0.00		
1813	0.42	1858	24.99	1903	0.00		
1814	1.70	1859	25.25	1904	0.00		
1815	3.20	1860	25.47	1905	0.00		
1816	4.84	1861	25.43	1906	0.00		
1817	6.78	1862	25.46	1907	0.00		
1818	8.67	1863	25.59	1908	0.00		
1819	10.52	1864	25.85	1909	0.00		
1820	12.18	1865	26.04				
1821	13.62	1866	26.21				
1822	15.04	1867	26.40				
1823	16.42	1868	26.52				
1824	17.57	1869	26.63				
1825	18.59	1870	26.58				
1826	19.44	1871	26.38				
1827	19.78	1872	26.17				
1828	20.05	1873	25.91				
1829	20.49	1874	25.59				
1830	20.86	1875	25.31				
1831	21.05	1876	25.04				
1832	21.51	1877	24.61				
1833	21.92	1878	24.25				
1834	22.03	1879	23.84				
1835	22.16	1880	22.15				
1836	22.16	1881	19.70				
1837	22.16	1882	17.01				
1838	22.24	1883	13.69				
1839	22.44	1884	10.22				
1840	22.81	1885	6.80				
1841	23.03	1886	4.38				
1842	23.42	1887	2.90				
1843	23.81	1888	1.07				
1844	24.10	1889	0.13				
1845	24.03	1890	0.00				