

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



DCA21FA174

ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS)

Specialist's Factual Report

March 06, 2023

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A. ACCIDENT

Location: Honolulu, Hawaii
Date: July 2, 2021
Time: 0145 Hawaii standard time (HST)
1145 coordinated universal time (UTC)
Airplane: Boeing 737-200, N810TA, Rhoades Aviation Inc, dba TransAir Flight 810

B. ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS) SPECIALIST

Specialist John Flynn
National Transportation Safety Board
Washington, D.C.

C. EGPWS EXAMINATION

The EGPWS unit installed on the accident airplane was a Honeywell Mark VII EGPWS, PN 965-1076-020-216-216, SN 4002. The unit was sent to the NTSB and two circuit card assemblies (CCAs) were removed. The two circuit card assemblies (CCAs) were examined at the Honeywell Aerospace facility in Redmond, Washington, USA on December 14, 2021, and February 11, 2022.

Two CCAs were brought to Redmond by the NTSB. The 2 CCAs were:
Controller CCA - Part Number 722-4383-004 (Figure 1)
Flash Memory Card - Part Number 722-4368-002 (Figure 2)

The MK VII CCAs were first examined for damage assessment. Corrosion was noted on both boards. The flash memory card had a cracked chip and a crack in the board. (See Figure 2)

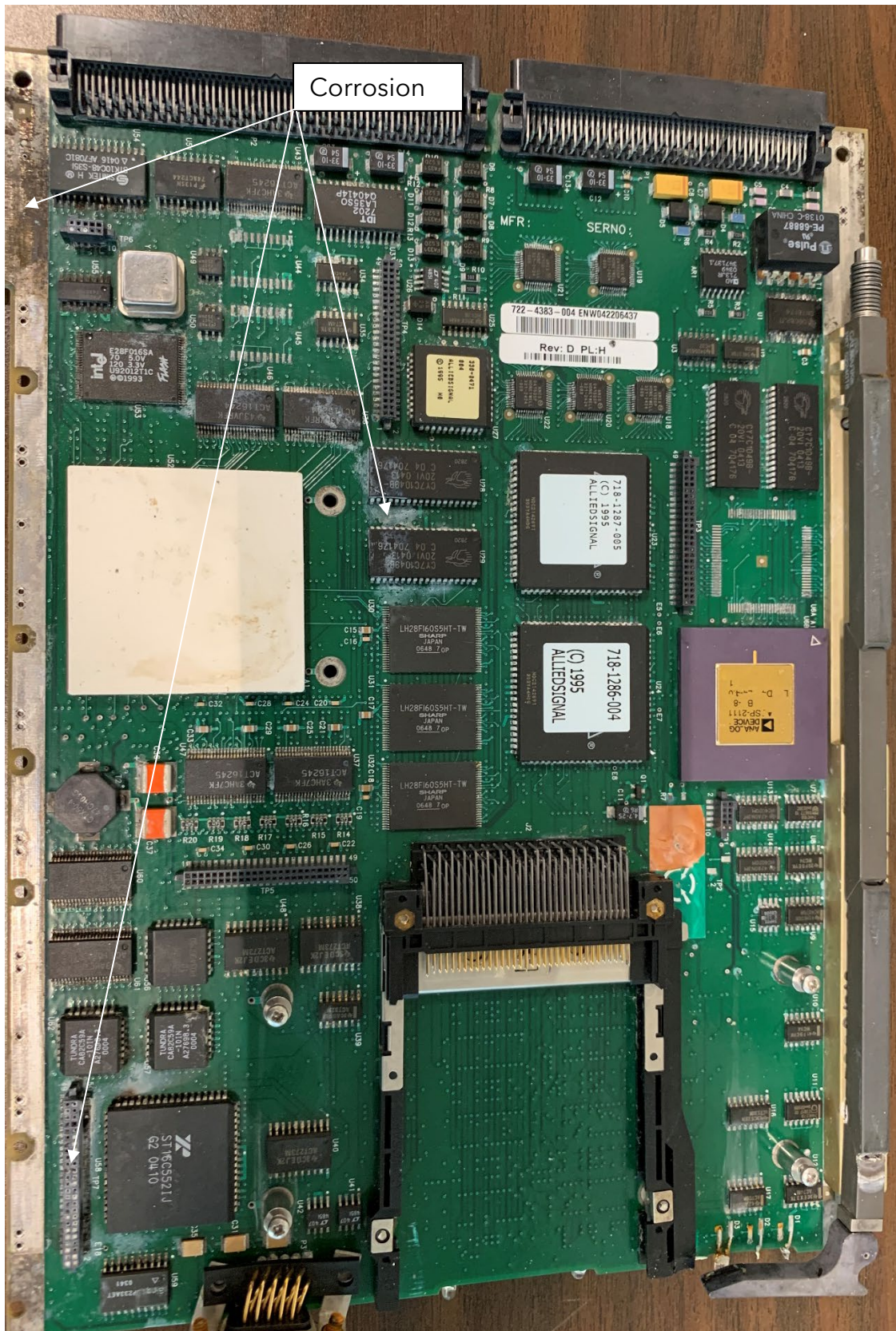


Figure 1. Controller CCA - Part Number 722-4383-004.

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Figure 2. Flash Memory Card - Part Number 722-4368-002.

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The U53 chip of the Controller CCA is the flash memory device that contains the flight history data. The U53 chip from the Controller CCA was removed. The U53 chip was observed to have some corrosion. Prior to extracting the U53 chip from the CCA, it was carefully cleaned using Methyl Ethyl Ketone and Isopropyl Alcohol. After removing it from the CCA, the pins were cleaned again. The U53 chip was read with a Chip Reader but no data was extracted. Further examination of the U53 chip revealed that one of the pins had a tarnished appearance.

The U53 data chip was installed in a donor MK VII EGPWS unit that had an equivalent Controller Card (just a different dash number). The donor MK VII EGPWS was PN 965-1076-060-216-216; SN 05087. The flight history was successfully downloaded and copied into a laptop where it was decoded using a Honeywell EGPWS Flight History decoder.

The tabular data is contained in Appendix A.

D. ACCIDENT FLIGHT DATA

The following takeoff marker was recorded in the data:

```
FLIGHT LEG 527:      ( 21512:40:54)
  Lat/Long: 21.30676 / -157.93143
  Geometric Alt: 96.00  True Hdg: 87.19
  GPS Alt: 92.00  VFOM: 36.00
  Pos. Uncert: 0.0034  Pos. Source: GPS1
  Airport:      PHNL
```

Using the EGPWS Operating Time from the takeoff marker (21512:40:54) as a reference, the aircraft appeared to have changed course and started flying back to the airport after approximately 8 minutes into the flight.

The EGPWS data for this flight begins with the aircraft at coordinates 21.19616 Latitude, -158.13107 Longitude at 575 feet Radar Altitude (RA). (Reference Appendix A)

Several EGPWS alerts occurred during the last 3 minutes of the flight. The available EGPWS alerts and their descriptions are listed in Table 1. Appendix B contains an extract of the Radar Altitude and EGPWS alerts from Appendix A with elapsed time added. This data is further presented in Figure 3.

The last recorded EGPWS data is right after the Mode 6 Bank Angle alert with the aircraft about 2 miles from the shore.

Table 1. EGPWS alerts and descriptions

ALERT	DESCRIPTION
M4GEAR	This aural alert is Mode 4A. It is active during cruise and approach with gear not in landing configuration. Mode 4A has an upper boundary of 500 feet RA. If the aircraft penetrates this boundary with gear still up, the voice aural will be "Too Low Gear" which is what M4GEAR translates into.
TCF	This is a Terrain Clearance Floor (TCF) related alert. TCF is active during takeoff, cruise and final approach. When the aircraft penetrates the TCF alert envelope the voice aural "Too Low Terrain" will be given. It creates an increasing clearance envelope around the intended airport runway directly related to the distance from the runway.
TAPU	This is a terrain look ahead aural alert which is "Terrain Ahead, Pull Up". This particular aural means that the warning envelope has been penetrated.
M2TER	This is a Mode 2A aural alert. Mode 2A is active during climbout, cruise and initial approach (flaps not in landing configuration and the aircraft not on glideslope centerline. If the aircraft penetrates the Mode 2A caution envelope, the aural message "Terrain, Terrain" is generated.
M2PU	This is a Mode2A aural alert. If the aircraft continues to penetrate the envelope as mentioned in the M2TER scenario above, it will issue "Pull Up" and will repeat continuously until the warning envelope is exited.
M6BA	This is the aural alert given when the aircraft exceeds the bank angle algorithm. The bank angle alert is based on the aircraft's roll angle versus altitude (AGL). The envelope for 30 feet AGL is 10 degrees. In this case, the aircraft was at about 26.5 feet with a roll of -14.1 degrees.

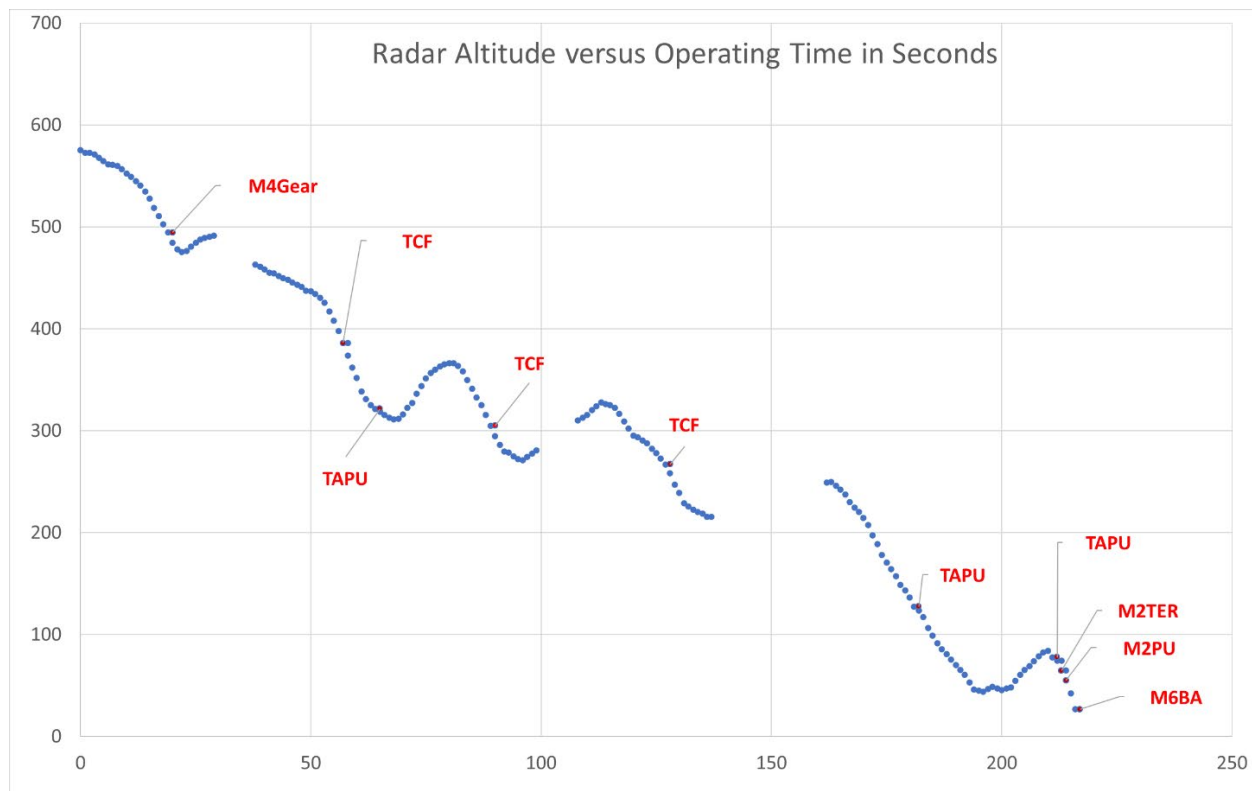


Figure 3. Radar altitude versus time including EGPWS alerts.

Figure 4 is a Google Earth snap shot showing the aircraft track back to the airport.



Figure 4. Google Earth image of aircraft track back to the airport with EGPWS alerts plotted.

Submitted by:

John Flynn
Aerospace Engineer

APPENDIX A. EGPWS DOWNLOADED DATA

No	Rec ID	Flt Leg	Oper Time	Lat	Long	Poc Unscr CAS	TAS	Gspd	VFOM	GPS Alt	Uncorr Alt TACAR	Rad Alt	Terr Elev	Alt Ref		MagTrk	Tru Trk	Tru Hdg	Pitch	Roll		B.AOQ6	L.Acd	N.Acd	I.V.Acd	Gldes	Loc	Poc Src	SAT	Rng1	Rng2	TotShsr Gr Dn	Fip Sel	InAir	Apprch	WSAApprch	TADInH	Disp1 En	Disp2 En	Tact Sel	AudiolnH	EnvMod	NISF1	NISF2	Sel Mode										
9050	DATA	527	21512-48:46	21.19616	-158.13107	0.0039	159.8	163.3	146.5	42	632	480	608	575.3	0	50	40.1	49.6	50.7	9.8	2.1	9.14063	0.16919	0.96008	*0.00000	-2.969	-3.828	GP51	24	40	40	-0.00134	0	0	1	1	0	0	0	0	0	0	0	0	0	0									
9051	DATA	527	21512-48:47	21.19659	-158.13054	0.0039	159.4	163	146.5	42	630	480	608	572.8	0	21	40.2	49.7	50.7	9.8	2.1	9.14063	0.16675	0.95129	*0.00000	-2.969	-3.828	GP51	24	40	40	-0.00159	0	0	1	1	0	0	0	0	0	0	0	0	0	0									
9052	DATA	527	21512-48:48	21.19702	-158.12999	0.0039	159.1	163.5	146.2	42	630	478	608	572.3	0	-5	40.2	49.7	50.7	9.8	2.8	9.84375	0.17273	0.96887	*0.00000	-2.969	-3.906	GP51	24	40	40	-0.00232	0	0	1	1	0	0	0	0	0	0	0	0	0	0									
9053	DATA	527	21512-48:49	21.19746	-158.12944	0.0039	159.2	163.2	145.9	42	626	478	606	571	0	-8	40.2	49.7	50.7	9.8	2.1	9.84375	0.17371	0.96631	*0.00000	-2.969	-3.906	GP51	24	40	40	0.00244	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0								
9054	DATA	527	21512-48:50	21.1979	-158.12889	0.0039	159.5	164.3	145.7	42	622	476	604	567.8	0	-14	40.2	49.7	50.7	9.1	0.7	9.84375	0.172	0.96826	*0.00000	-2.969	-3.906	GP51	24	40	40	0.00757	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0								
9055	DATA	527	21512-48:51	21.19833	-158.12834	0.0039	160.2	164.6	145.4	42	620	474	602	564.3	0	-24	40.2	49.7	50.7	9.1	0	9.14063	0.17615	0.99927	*0.00000	-2.969	-3.906	GP51	24	40	40	0.01575	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0								
9056	DATA	527	21512-48:52	21.19876	-158.12779	0.0039	160	163.6	145.3	42	624	472	598	561.5	0	21	40.2	49.6	50.7	9.8	1.4	9.84375	0.18494	0.10121	*0.00000	-2.969	-3.984	GP51	24	40	40	0.01575	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0								
9057	DATA	527	21512-48:53	21.19963	-158.12669	0.0039	159.7	163.2	145	42	624	470	598	561	0	57	40	49.5	50.7	9.8	0	9.84375	0.16882	0.9613	*0.00000	-2.891	-3.984	GP51	24	40	40	0.0144	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0							
9058	DATA	527	21512-48:54	21.20007	-158.12616	0.0039	159.2	162.4	144.8	42	620	470	596	559.5	0	9	39.8	49.3	50.7	9.1	0	9.14063	0.16711	0.95032	*0.00000	-2.969	-3.906	GP51	24	40	40	0.0105	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0							
9059	DATA	527	21512-48:55	21.20007	-158.12616	0.0039	158.8	162.6	144.8	42	616	466	594	556.5	0	-32	39.8	49.3	50.7	9.1	0	9.14063	0.17017	0.96509	*0.00000	-2.969	-3.906	GP51	24	40	40	0.00757	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0							
9060	DATA	527	21512-48:56	21.20052	-158.12563	0.0039	158.7	162.4	144.7	42	610	464	590	552.5	0	-51	39.6	49.1	50.7	9.1	0	9.84375	0.1709	0.97095	*0.00000	-3.047	-3.906	GP51	23	40	40	0.00696	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0						
9061	DATA	527	21512-48:57	21.20096	-158.12511	0.0039	158.6	162.3	144.7	42	602	460	588	549	0	-49	39.4	48.9	50.7	9.8	0	9.84375	0.17834	0.99426	*0.00000	-2.969	-3.906	GP51	23	40	40	0.0061	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0						
9062	DATA	527	21512-48:58	21.20141	-158.12457	0.0037	158.2	161.6	144.4	42	600	458	586	545	0	-52	39.1	48.6	50.7	9.8	-0.7	9.84375	0.1759	0.9585	*0.00000	-2.969	-3.906	GP51	23	40	40	0.0033	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0						
9063	DATA	527	21512-48:59	21.20185	-158.12404	0.0037	158.2	161.6	144.4	42	594	454	582	540.5	0	-56	38.7	48.2	50.7	9.1	-1.4	9.84375	0.17246	0.95227	*0.00000	-2.813	-3.906	GP51	23	40	40	0.00098	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0						
9064	DATA	527	21512-49:01	21.20231	-158.1225	0.0037	158.1	161.1	144.3	40	598	454	578	534.5	0	-163	38.4	47.6	50.2	8.4	-0.7	9.14063	0.16331	0.92088	*0.00000	-2.984	-3.984	GP51	23	40	40	0.00037	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0						
9065	DATA	527	21512-49:01	21.20277	-158.1223	0.0037	156.8	160.3	144.3	40	594	444	572	527.5	0	-284	38	47.4	50.2	7.7	0.7	9.14063	0.16541	0.92786	*0.00000	-3.047	-3.984	GP51	24	40	40	-0.00562	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0						
9066	DATA	527	21512-49:02	21.20324	-158.12248	0.0037	156.7	160.6	144.3	40	594	436	564	518.5	0	-389	37.5	47	49.5	7.7	2.1	9.84375	0.16943	0.94385	*0.00000	-3.047	-3.984	GP51	23	40	40	-0.00818	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9067	DATA	527	21512-49:03	21.20371	-158.12196	0.0037	157.1	162.1	144.3	40	586	428	556	510.5	0	-446	37	46.5	48.5	7.7	1.4	9.84375	0.16968	0.95667	*0.00000	-2.969	-3.984	GP51	23	40	40	-0.00586	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9068	DATA	527	21512-49:04	21.20419	-158.12146	0.0037	158.5	162.8	144.5	40	576	418	548	502.5	0	-452	36.7	46.1	47.6	8.4	0	9.84375	0.17651	1.00049	*0.00000	-2.813	-3.906	GP51	23	40	40	0.00708	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9069	DATA	527	21512-49:05	21.20467	-158.12097	0.0037	158.6	163.4	144.8	40	562	408	538	494.5	0	-401	36.3	45.8	47.5	8.4	0.7	9.84375	0.18201	1.06165	*0.00000	-2.734	-3.906	GP51	24	40	40	0.00781	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9070	MAGEAR	527	21512-49:06																																																				
9071	DATA	527	21512-49:06	21.20514	-158.12047	0.0037	158.9	162.8	145.2	40	550	400	532	484.3	0	-224	36	45.5	47.5	9.1	3.5	9.84375	0.18323	1.08203	*0.00000	-2.734	-3.984	GP51	24	40	40	0.01013	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9072	DATA	527	21512-49:07	21.20562	-158.11996	0.0037	158.8	162.2	145.5	40	540	396	522	478	0	-52	35.7	45.2	47.5	9.8	2.8	9.84375	0.17444	1.06299	*0.00000	-2.578	-3.984	GP51	24	40	40	0.01038	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9073	DATA	527	21512-49:08	21.20611	-158.11945	0.0037	158.7	162.6	145.8	40	534	394	520	475.3	0	97	35.5	45	47.2	9.8	1.4	9.14063	0.17163	1.03735	*0.00000	-2.422	-3.984	GP51	24	40	40	0.0116	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9074	DATA	527	21512-49:09	21.2066	-158.11894	0.0037	158.6	162.1	146	40	530	392	516	476.3	0	197	35.4	44.8	47.1	9.8	2.1	9.14063	0.16699	1.03345	*0.00000	-2.500	-3.984	GP51	24	40	40	0.01538	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9075	DATA	527	21512-49:10	21.20709	-158.11842	0.0037	158.1	161.3	146.1	40	530	394	518	480.5	0	283	35.2	44.7	47.1	9.8	2.8	9.14063	0.16907	1.02588	*0.00000	-2.422	-3.984	GP51	24	40	40	0.0144	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9076	DATA	527	21512-49:11	21.20806	-158.11742	0.0037	157.4	159.9	145.7	40	534	396	520	484.3	0	346	35.1	44.5	47.1	9.1	2.8	8.4375	0.15454	0.95813	*0.00000	-2.500	-3.984	GP51	24	40	40	0.01367	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9077	DATA	527	21512-49:12	21.20854	-158.11693	0.0037	154.6	159.6	145.3	40	540	398	522	487.3	0	256	35	44.5	47.1	8.4	49	7.73438	0.13977	0.90491	*0.00000	-2.813	-3.984	GP51	24	40	40	-0.00684	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9078	DATA	527	21512-49:13	21.20854	-158.11693	0.0037	154	157.1	145.3	40	546	398	524	489.3	0	140	35	44.5	47.1	8.4	49	8.4375	0.15845	0.95227	*0.00000	-2.969	-3.984	GP51	24	40	40	-0.0105	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9079	DATA	527	21512-49:1																																																				

[illegible]

APPENDIX B. EXTRACTED EGPWS ALERTS AND RADAR ALTITUDE DATA

Oper Time	Rec ID	Elapsed	Rad Alt
21512:48:46	DATA	0	575.3
21512:48:47	DATA	1	572.8
21512:48:48	DATA	2	572.3
21512:48:49	DATA	3	571
21512:48:50	DATA	4	567.8
21512:48:51	DATA	5	564.3
21512:48:52	DATA	6	561.5
21512:48:53	DATA	7	561
21512:48:54	DATA	8	559.5
21512:48:55	DATA	9	556.5
21512:48:56	DATA	10	552.5
21512:48:57	DATA	11	549
21512:48:58	DATA	12	545
21512:48:59	DATA	13	540.5
21512:49:00	DATA	14	534.5
21512:49:01	DATA	15	527.8
21512:49:02	DATA	16	518.3
21512:49:03	DATA	17	510.5
21512:49:04	DATA	18	502.5
21512:49:05	DATA	19	494.5
21512:49:06	M4GEAR	20	494.5
21512:49:06	DATA	20	484.3
21512:49:07	DATA	21	478
21512:49:08	DATA	22	475.3
21512:49:09	DATA	23	476.3
21512:49:10	DATA	24	480.5
21512:49:11	DATA	25	484.3
21512:49:12	DATA	26	487.3
21512:49:13	DATA	27	489.3
21512:49:14	DATA	28	490.5
21512:49:15	DATA	29	491.5
21512:49:24	DATA	38	463
21512:49:25	DATA	39	460.8
21512:49:26	DATA	40	458.3
21512:49:27	DATA	41	455
21512:49:28	DATA	42	454.3
21512:49:29	DATA	43	451.8
21512:49:30	DATA	44	449.5
21512:49:31	DATA	45	447.8
21512:49:32	DATA	46	445.3
21512:49:33	DATA	47	443.3
21512:49:34	DATA	48	441
21512:49:35	DATA	49	437.5
21512:49:36	DATA	50	437
21512:49:37	DATA	51	434.3
21512:49:38	DATA	52	430.5
21512:49:39	DATA	53	425.5
21512:49:40	DATA	54	416.8
21512:49:41	DATA	55	407.8
21512:49:42	DATA	56	397.5
21512:49:43	DATA	57	385.8
21512:49:44	TCF	58	385.8
21512:49:44	DATA	58	373.5
21512:49:45	DATA	59	362
21512:49:46	DATA	60	352
21512:49:47	DATA	61	338.3
21512:49:48	DATA	62	331
21512:49:49	DATA	63	324.8
21512:49:50	DATA	64	321.5
21512:49:51	TAPU	65	321.5
21512:49:51	DATA	65	318.5
21512:49:52	DATA	66	315.5
21512:49:53	DATA	67	312.8
21512:49:54	DATA	68	311
21512:49:55	DATA	69	311.5
21512:49:56	DATA	70	315.8
21512:49:57	DATA	71	322.3
21512:49:58	DATA	72	327
21512:49:59	DATA	73	336.3
21512:50:00	DATA	74	343.5
21512:50:01	DATA	75	351
21512:50:02	DATA	76	356.5
21512:50:03	DATA	77	359.8
21512:50:04	DATA	78	363
21512:50:05	DATA	79	365.3
21512:50:06	DATA	80	366
21512:50:07	DATA	81	366.3
21512:50:08	DATA	82	363.8
21512:50:09	DATA	83	358
21512:50:10	DATA	84	349.8
21512:50:11	DATA	85	341
21512:50:12	DATA	86	332.3
21512:50:13	DATA	87	324.8
21512:50:14	DATA	88	315.3
21512:50:15	DATA	89	304.8
21512:50:16	TCF	90	304.8
21512:50:16	DATA	90	294.8
21512:50:17	DATA	91	286
21512:50:18	DATA	92	279.8
21512:50:19	DATA	93	278.3
21512:50:20	DATA	94	275
21512:50:21	DATA	95	272
21512:50:22	DATA	96	271.3
21512:50:23	DATA	97	274.3
21512:50:24	DATA	98	277.3
21512:50:25	DATA	99	280.5
21512:50:34	DATA	108	310
21512:50:35	DATA	109	312.5

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21512:50:36	DATA	110	315.5
21512:50:37	DATA	111	320.3
21512:50:38	DATA	112	323.8
21512:50:39	DATA	113	327.5
21512:50:40	DATA	114	326
21512:50:41	DATA	115	325.3
21512:50:42	DATA	116	322.3
21512:50:43	DATA	117	316.3
21512:50:44	DATA	118	309
21512:50:45	DATA	119	301.8
21512:50:46	DATA	120	295.3
21512:50:47	DATA	121	293.3
21512:50:48	DATA	122	290.3
21512:50:49	DATA	123	287.8
21512:50:50	DATA	124	282.3
21512:50:51	DATA	125	278
21512:50:52	DATA	126	272.5
21512:50:53	DATA	127	266.8
21512:50:54	TCF	128	266.8
21512:50:54	DATA	128	258
21512:50:55	DATA	129	246.8
21512:50:56	DATA	130	239
21512:50:57	DATA	131	228.8
21512:50:58	DATA	132	225.8
21512:50:59	DATA	133	222.5
21512:51:00	DATA	134	220.3
21512:51:01	DATA	135	218.5
21512:51:02	DATA	136	215.3
21512:51:03	DATA	137	215.3
21512:51:28	DATA	162	249.3
21512:51:29	DATA	163	249.5
21512:51:30	DATA	164	245.8
21512:51:31	DATA	165	242
21512:51:32	DATA	166	237.5
21512:51:33	DATA	167	229.8
21512:51:34	DATA	168	224.3
21512:51:35	DATA	169	220.3
21512:51:36	DATA	170	214.5
21512:51:37	DATA	171	207.3
21512:51:38	DATA	172	197.5
21512:51:39	DATA	173	188.5
21512:51:40	DATA	174	178.3
21512:51:41	DATA	175	170.8
21512:51:42	DATA	176	164.3
21512:51:43	DATA	177	157.3
21512:51:44	DATA	178	148.5
21512:51:45	DATA	179	143.5
21512:51:46	DATA	180	136.5
21512:51:47	DATA	181	127.3
21512:51:48	TAPU	182	127.3
21512:51:48	DATA	182	123.3
21512:51:49	DATA	183	117.3
21512:51:50	DATA	184	106.5
21512:51:51	DATA	185	99
21512:51:52	DATA	186	91.3
21512:51:53	DATA	187	85.8
21512:51:54	DATA	188	81
21512:51:55	DATA	189	75.3
21512:51:56	DATA	190	69.8
21512:51:57	DATA	191	65.5
21512:51:58	DATA	192	60.5
21512:51:59	DATA	193	52.8
21512:52:00	DATA	194	46
21512:52:01	DATA	195	44.8
21512:52:02	DATA	196	43.8
21512:52:03	DATA	197	46.3
21512:52:04	DATA	198	48.8
21512:52:05	DATA	199	47
21512:52:06	DATA	200	45.3
21512:52:07	DATA	201	47
21512:52:08	DATA	202	48
21512:52:09	DATA	203	54.3
21512:52:10	DATA	204	60.5
21512:52:11	DATA	205	65.3
21512:52:12	DATA	206	69
21512:52:13	DATA	207	74
21512:52:14	DATA	208	78.8
21512:52:15	DATA	209	82.3
21512:52:16	DATA	210	83.8
21512:52:17	DATA	211	77.8
21512:52:18	TAPU	212	77.8
21512:52:18	DATA	212	74.3
21512:52:19	M2TER	213	74.3
21512:52:19	DATA	213	64.5
21512:52:20	M2PU	214	64.5
21512:52:20	DATA	214	55
21512:52:21	DATA	215	42.5
21512:52:22	DATA	216	26.5
21512:52:23	M6BA	217	26.5