

# HARRIER™ ADLS Report for NextEra - Crowned Ridge I, Oct 01 - Nov 09, 2020

This report presents information from the HARRIER ADLS system used to monitor and determine whether warning lights were turned on or off at NextEra - Crowned Ridge I during Oct 01, 2020 - Nov 09, 2020 for each night (Table 1). The distribution of time that lights were on and off is shown in timelines for each night (Table 2). Targets detected by radar as aircraft are identified as an "aircraft-like target" if they meet specific criteria that encompass the variety of aircrafts. Other ADLS system states will also turn on the warning lights; these are listed and defined in Table 3, with color-codes matching headers in Table 1 and timeline events in Table 2.

**Table 1. Warning light information from the ADLS system used to monitor NextEra - Crowned Ridge I during Oct 01, 2020 - Nov 09, 2020. Nights highlighted red if lights were on >40% of the time (last column), or if lights were on >40% due to aircraft-like targets alone (column 4).**

Sunset	Sunrise	Total night hours	Lights on due to Aircraft-like targets detected in polygon (hours)	Lights on due to Weather detected in polygon (hours)	Lights on due to system Issue (hours)	Total lights on during night (hours)	Total lights on during night (percent)	Affect of non-aircraft on time with lights on
2020-10-01 18:06:10	2020-10-02 06:27:36	12.36	1.6	0	0.11	1.71	13.82	-
2020-10-02 18:04:15	2020-10-03 06:28:51	12.41	0.97	0	0	0.98	7.88	-
2020-10-03 18:02:24	2020-10-04 06:30:00	12.46	0.28	0	0.03	0.38	3.03	-
2020-10-04 18:00:28	2020-10-05 06:31:19	12.51	1.01	0	0.02	1.12	8.96	-
2020-10-05 17:58:48	2020-10-06 06:32:38	12.56	1.36	0	0.03	1.48	11.75	Minor migration
2020-10-06 17:56:52	2020-10-07 06:33:39	12.61	1.39	0	0.03	1.52	12.06	Minor migration
2020-10-07 17:55:01	2020-10-08 06:35:02	12.67	2.16	0	0.1	2.3	18.16	-
2020-10-08 17:53:20	2020-10-09 06:36:07	12.71	1.88	0	0	1.99	15.64	-
2020-10-09 17:51:25	2020-10-10 06:37:26	12.77	2.05	0	0	2.05	16.08	-
2020-10-10 17:49:33	2020-10-11 06:39:07	12.83	1.82	0	0.08	1.93	15.01	-
2020-10-11 17:47:42	2020-10-12 06:40:12	12.88	6.73	2.5	0.04	9.36	72.69	Significant migration + weather
2020-10-12 17:46:04	2020-10-13 06:41:20	12.92	7.19	0	0.12	7.31	56.58	Significant migration
2020-10-13 17:44:13	2020-10-14 06:42:43	12.97	2.92	2.68	0.21	5.81	44.76	Minor migration + weather
2020-10-14 17:42:39	2020-10-15 06:43:55	13.02	7.03	0	0.12	7.15	54.9	Minor migration + interference
2020-10-15 17:41:02	2020-10-16 06:45:32	13.07	8.26	0.66	0.01	8.93	68.29	Significant migration + weather
2020-10-16 17:38:56	2020-10-17 06:46:44	13.13	3.11	0	0.16	3.27	24.93	-
2020-10-17 17:37:22	2020-10-18 06:47:56	13.18	5.4	0	0.04	5.47	41.49	Moderate migration
2020-10-18 17:35:52	2020-10-19 06:49:12	13.22	3.77	0.3	0	4.07	30.8	Minor migration
2020-10-19 17:34:01	2020-10-20 06:50:38	13.28	1.27	1.84	0.08	3.22	24.23	Weather
2020-10-20 17:32:27	2020-10-21 06:51:50	13.32	6.21	0.01	0.15	6.37	47.83	Moderate migration
2020-10-21 17:30:43	2020-10-22 06:53:20	13.38	2.08	3.07	0.13	5.28	39.46	Weather
2020-10-22 17:29:09	2020-10-23 06:54:39	13.43	2.93	0.07	0.14	3.16	23.51	-
2020-10-23 17:27:39	2020-10-24 06:55:51	13.47	8.54	0	0.17	8.71	64.65	Significant migration
2020-10-24 17:26:02	2020-10-25 06:57:10	13.52	2.97	0	0.09	3.06	22.64	-
2020-10-25 17:24:21	2020-10-26 06:58:44	13.57	10.26	0	0.07	10.34	76.14	Significant migration
2020-10-26 17:22:55	2020-10-27 07:00:03	13.62	5.67	0	0	5.67	41.66	Moderate migration

Table 1 continued.

Sunset	Sunrise	Total night hours	Lights on due to Aircraft-like targets detected in polygon (hours)	Lights on due to Weather detected in polygon (hours)	Lights on due to system Issue (hours)	Total lights on during night (hours)	Total lights on during night (percent)	Affect of non-aircraft on time with lights on
2020-10-27 17:21:07	2020-10-28 07:01:19	13.67	4.34	0	0	4.35	31.79	-
2020-10-28 17:19:58	2020-10-29 07:02:45	13.71	5.53	0	0.08	5.62	40.96	Minor migration
2020-10-29 17:18:25	2020-10-30 07:04:19	13.77	3.01	1.09	0	4.13	29.98	Weather
2020-10-30 17:16:58	2020-10-31 07:05:27	13.81	2.91	0	0	2.91	21.1	-
2020-10-31 17:15:18	2020-11-01 07:06:54	13.86	11.87	0	0	11.88	85.74	Significant Migration
2020-11-01 17:14:09	2020-11-02 07:08:16	13.9	2.81	0	0.01	2.89	20.8	-
2020-11-02 17:12:43	2020-11-03 07:09:43	13.95	5.14	0	0.05	5.22	37.45	Roads, mask updated 11/5
2020-11-03 17:11:16	2020-11-04 07:11:13	14	7.78	0	0.01	7.79	55.67	Moderate migration + roads, mask updated 11/5
2020-11-04 17:09:54	2020-11-05 07:12:21	14.04	13.01	0	0.05	13.09	93.22	Frequency interference, fixed 11/5
2020-11-05 17:08:45	2020-11-06 07:13:51	14.09	1.67	0	0.08	1.75	12.46	-
2020-11-06 17:07:22	2020-11-07 07:15:03	14.13	1.5	0	0	1.5	10.61	-
2020-11-07 17:06:18	2020-11-08 07:16:37	14.17	0.73	0	0.06	0.81	5.72	-
2020-11-08 17:05:09	2020-11-09 07:18:07	14.22	1	12.25	0	13.29	93.48	Weather

Table 2. Timelines showing when different ADLS system states occurred during nights at NextEra - Crowned Ridge I during Oct 01, 2020 - Nov 09, 2020. Timeline colors are defined in Table 5 (gray= lights off, blue=aircraft-like target, green=weather, yellow=test, and red=system issues). Yellow line indicates FAA light test at 9 pm local standard time.

Sunset	Sunrise	Affect of non-aircraft on time with lights on	Timeline
2020-10-01 18:06:10	2020-10-02 06:27:36	-	
2020-10-02 18:04:15	2020-10-03 06:28:51	-	
2020-10-03 18:02:24	2020-10-04 06:30:00	-	
2020-10-04 18:00:28	2020-10-05 06:31:19	-	
2020-10-05 17:58:48	2020-10-06 06:32:38	Minor migration	
2020-10-06 17:56:52	2020-10-07 06:33:39	Minor migration	
2020-10-07 17:55:01	2020-10-08 06:35:02	-	
2020-10-08 17:53:20	2020-10-09 06:36:07	-	
2020-10-09 17:51:25	2020-10-10 06:37:26	-	
2020-10-10 17:49:33	2020-10-11 06:39:07	-	
2020-10-11 17:47:42	2020-10-12 06:40:12	Significant migration + weather	
2020-10-12 17:46:04	2020-10-13 06:41:20	Significant migration	
2020-10-13 17:44:13	2020-10-14 06:42:43	Minor migration + weather	

2020-10-14 17:42:39	2020-10-15 06:43:55	Minor migration + interference	
------------------------	------------------------	-----------------------------------	--

**Table 2 continued.**

Sunset	Sunrise	Affect of non-aircraft on time with lights on	Timeline
2020-10-15 17:41:02	2020-10-16 06:45:32	Significant migration + weather	
2020-10-16 17:38:56	2020-10-17 06:46:44	-	
2020-10-17 17:37:22	2020-10-18 06:47:56	Moderate migration	
2020-10-18 17:35:52	2020-10-19 06:49:12	Minor migration	
2020-10-19 17:34:01	2020-10-20 06:50:38	Weather	
2020-10-20 17:32:27	2020-10-21 06:51:50	Moderate migration	
2020-10-21 17:30:43	2020-10-22 06:53:20	Weather	
2020-10-22 17:29:09	2020-10-23 06:54:39	-	
2020-10-23 17:27:39	2020-10-24 06:55:51	Significant migration	
2020-10-24 17:26:02	2020-10-25 06:57:10	-	
2020-10-25 17:24:21	2020-10-26 06:58:44	Significant migration	
2020-10-26 17:22:55	2020-10-27 07:00:03	Moderate migration	
2020-10-27 17:21:07	2020-10-28 07:01:19	-	
2020-10-28 17:19:58	2020-10-29 07:02:45	Minor migration	
2020-10-29 17:18:25	2020-10-30 07:04:19	Weather	
2020-10-30 17:16:58	2020-10-31 07:05:27	-	
2020-10-31 17:15:18	2020-11-01 07:06:54	Significant Migration	
2020-11-01 17:14:09	2020-11-02 07:08:16	-	
2020-11-02 17:12:43	2020-11-03 07:09:43	Roads, mask updated 11/5	
2020-11-03 17:11:16	2020-11-04 07:11:13	Moderate migration + roads, mask updated 11/5	
2020-11-04 17:09:54	2020-11-05 07:12:21	Frequency interference, fixed 11/5	
2020-11-05 17:08:45	2020-11-06 07:13:51	-	
2020-11-06 17:07:22	2020-11-07 07:15:03	-	
2020-11-07 17:06:18	2020-11-08 07:16:37	-	
2020-11-08 17:05:09	2020-11-09 07:18:07	Weather	

**Table 3. ADLS system states that turn warning lights on or off, their definitions, and colors used to indicate the state in the previous tables (red color-coded states are grouped under “System Issues”).**

State	Color	Definition
Lights Off	Gray	ADLS working properly, and no aircraft-like targets or weather detected in the FAA buffer zone.
Weather	Green	Warning lights on due to weather detected within the FAA buffer zone, sufficient to obscure target detection or affect pilot observation.
Aircraft-like Target	Blue	Warning lights on due to aircraft-like target detected, and kept on until target leaves the FAA buffer zone.
Test	Yellow	Warning lights on for nightly light communication test requested by FAA
SQL	Red	Warning lights on due to SQL error (database issue), lights kept on until resolved.
MERLIN	Red	Warning lights on due to MERLIN software error (data processing issue), lights kept on until resolved.
Failsafe	Red	Warning lights on due to any failsafe event not included under MERLIN, SQL or ADLS Offline states.
ADLS Offline	Red	Warning lights on due to communication issue between ADLS system and the lights, lights kept on until resolved.
Maintenance	Red	Warning lights on so maintenance people can confirm lights are working.