



Meteorological Summary

The timing of this injury event was based on report that event occurred during FA's 2nd rest break. This 2nd break occurs just prior to 2nd service which commences about 1.5 hrs prior to end of flight which was 2354Z. Based on that, I have looked at the time period from 2130z-2230z for notable EDR turbulence reports. Within that event window, there was a significant EDR report at 29/2230z, about 1.5hrs prior to end of flight at 29/2354z and most likely just prior to 2nd service. No pirep of turbulence from pilot was found to quantify turbulence, nor was there any mention of injury found in flight history.

EDR event occurred as flight was crossing the Aleutian Islands at 2230z. Avg/Peak EDR registered at 0.24/0.48 at FL350. There wasn't a TP forecast or active at the EDR location. EDR reports at +/- one minute at 2229z and 2231z registered peak of 0.16 and 0.14 so significant EDR event was short in duration.

Looking at the upper air situation, event was very close to Cold Bay, AK. CDB sounding 90 min later showed a prominent tropopause just above location at FL360-FL370. Atmosphere below the tropopause showed an

Meteorological Summary continued

increase in moisture below FL370. Upper air analysis, shows that flight was descending down through a trof line. Greatest directional shear with the trof line was just southwest of the event location. Typical lateral width of turbulence associated with a trof line is about 200nm. That would place this event within the possible turbulent area of the trof. I suspect that a combination of the trof line near the strong tropopause would have been a likely cause of the EDR report from the flight. Real time monitoring of the situation also showed the event to be a very isolated in nature with no other history of significant turbulence with the trof line feature in the vicinity; from this flight or others traversing the area.

Quick Reference of Event Location



Delta 8963

DAL8963 / DL8963
[Upgrade account to see tail number](#)

ARRIVED OVER 2 MONTHS AGO



UAM
YIGO, GUAM

left GATE TBA
[Andersen Afb - UAM](#)

WEDNESDAY 30-SEP-2020
12:51AM ChST (on time)

EDF
ANCHORAGE, AK

landed at
[Elmendorf Afb - EDF](#)
TUESDAY 29-SEP-2020
(on time) 03:54PM AKDT

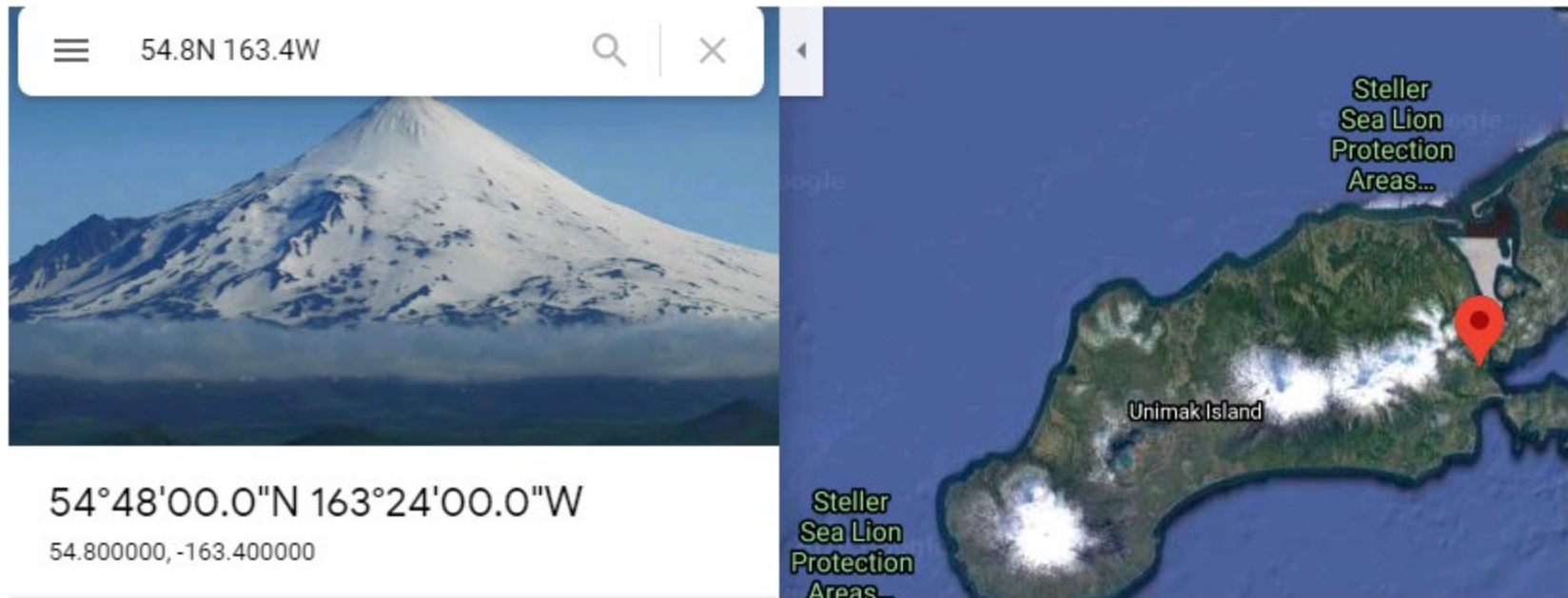


9h 3m total travel time

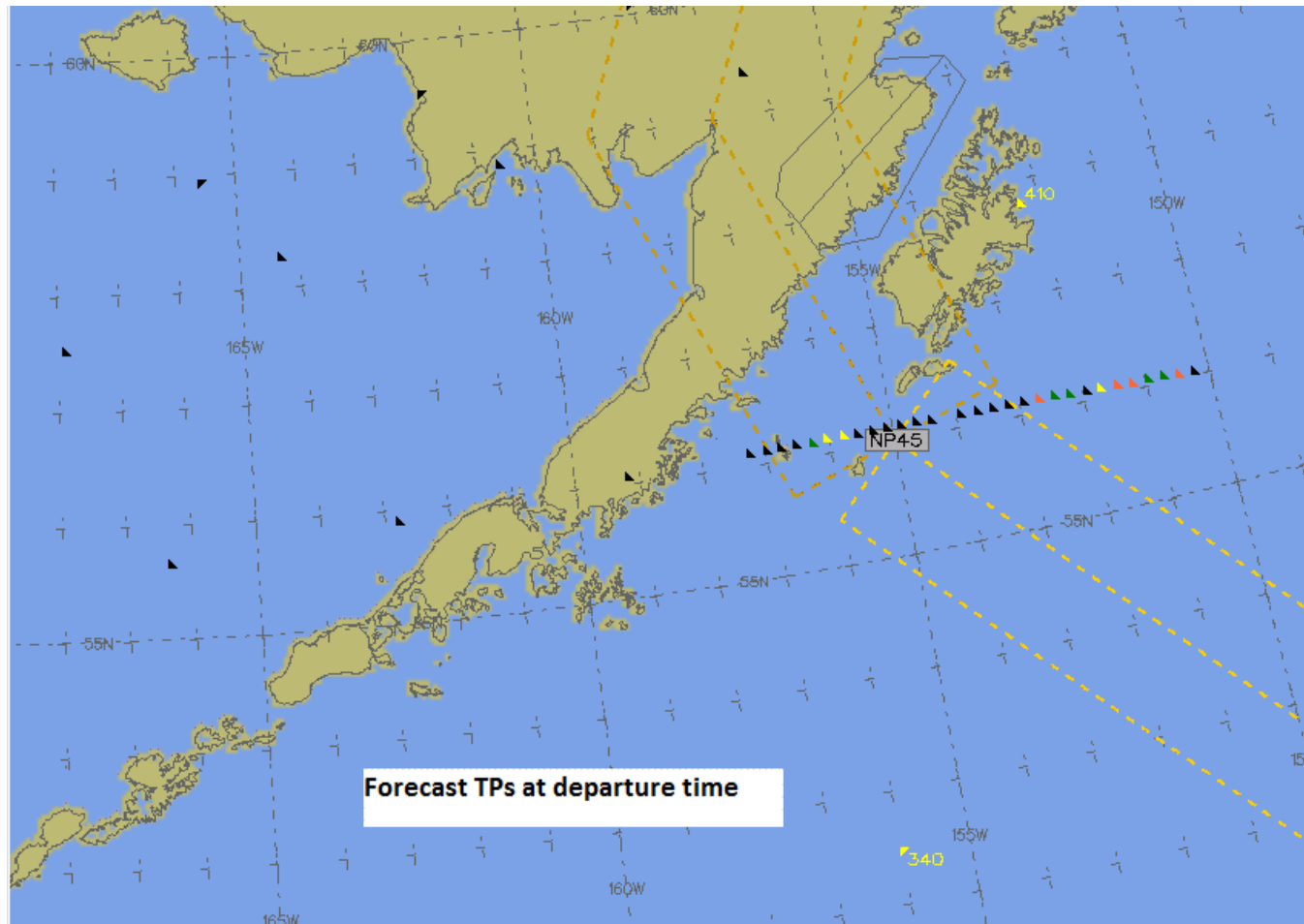
NOT YOUR FLIGHT? [DAL8963 flight schedule](#)



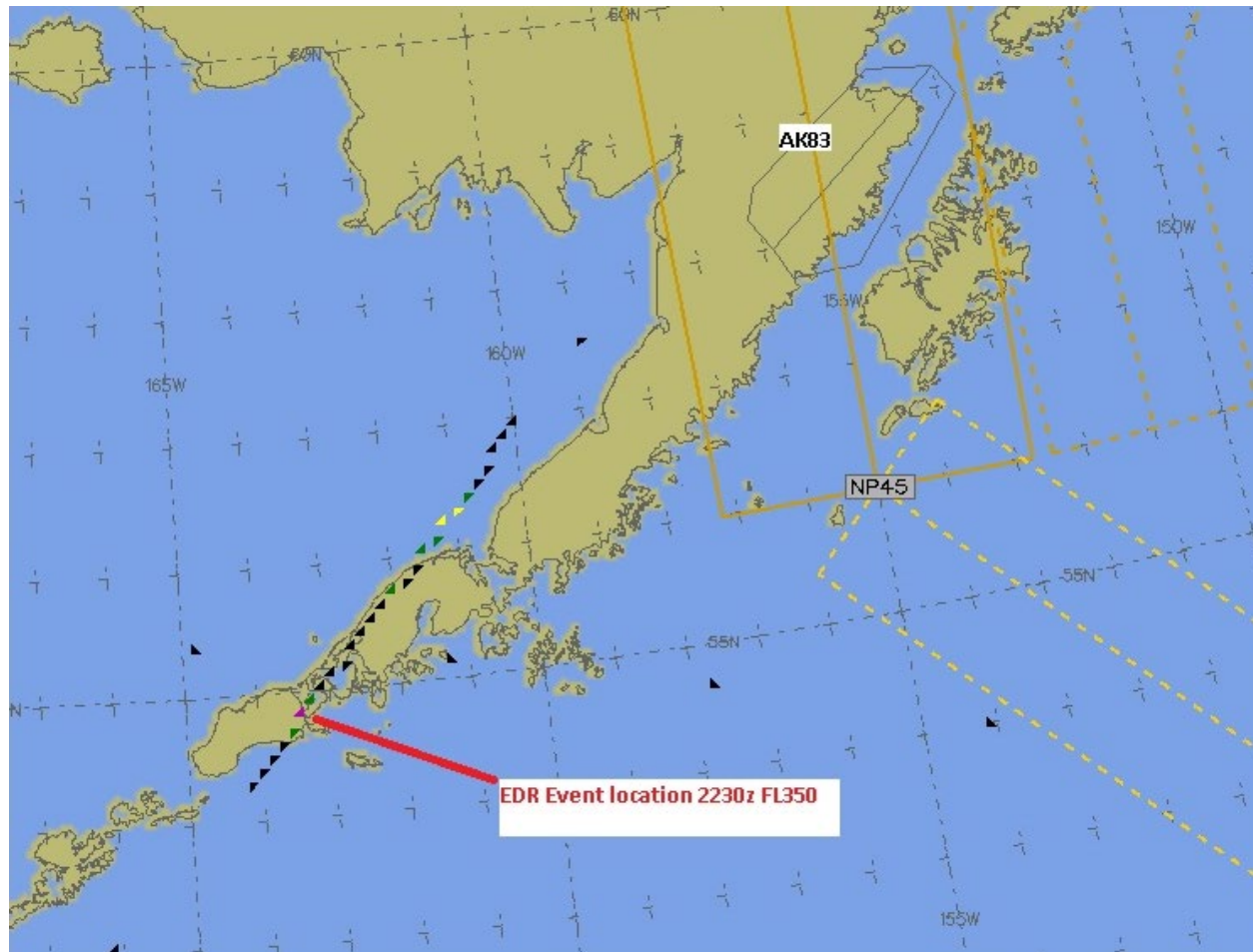
General image of terrain at EDR location showing mountains nearby



Forecast TPs active at departure are east of event location



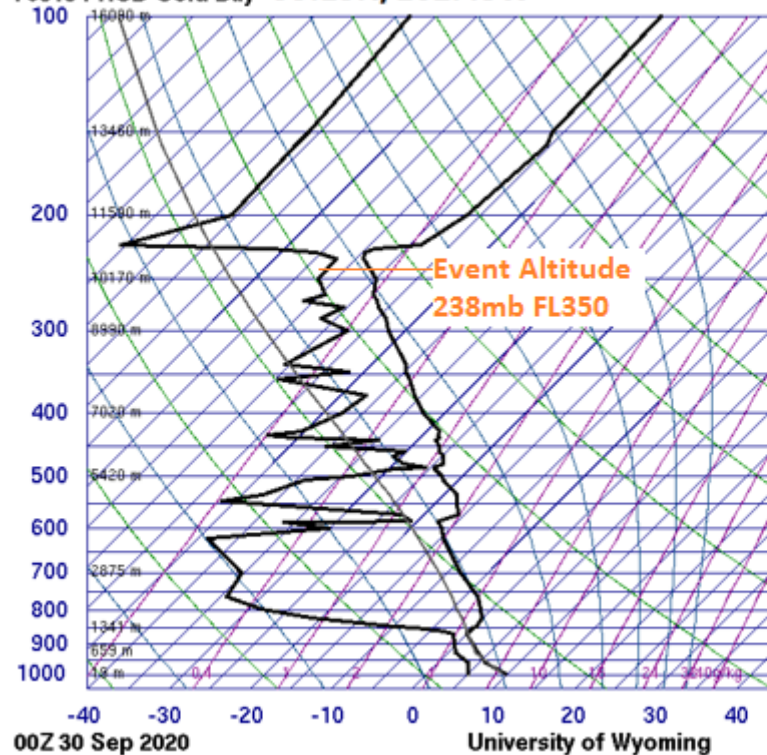
Event location with TPs active at EDR event time



Cold Bay, AK Sounding

00z 30Sep20

70316 PACD Cold Bay 55.13N/162.43W



SLAT 55.20
SLON -162.71
SELV 31.00
SHOW 10.72
LIFT 8.23
LFTV 8.21
SWET 54.99
KINX -11.5
CTOT 15.50
VTOT 22.50
TOTL 38.00
CAPE 0.11
CAPV 1.00
CINS -2.87
CINV -0.98
EGLV 863.8
EGTV 860.0
LFCT 860.8
LFCV 899.1
BRCH 0.00
BRCV 0.04
LCLT 276.4
LCLP 925.5
LCLV 297.5
MLTH 282.6
MLMR 5.28
THCK 5401.
PWAT 9.24

Sounding Data Continued

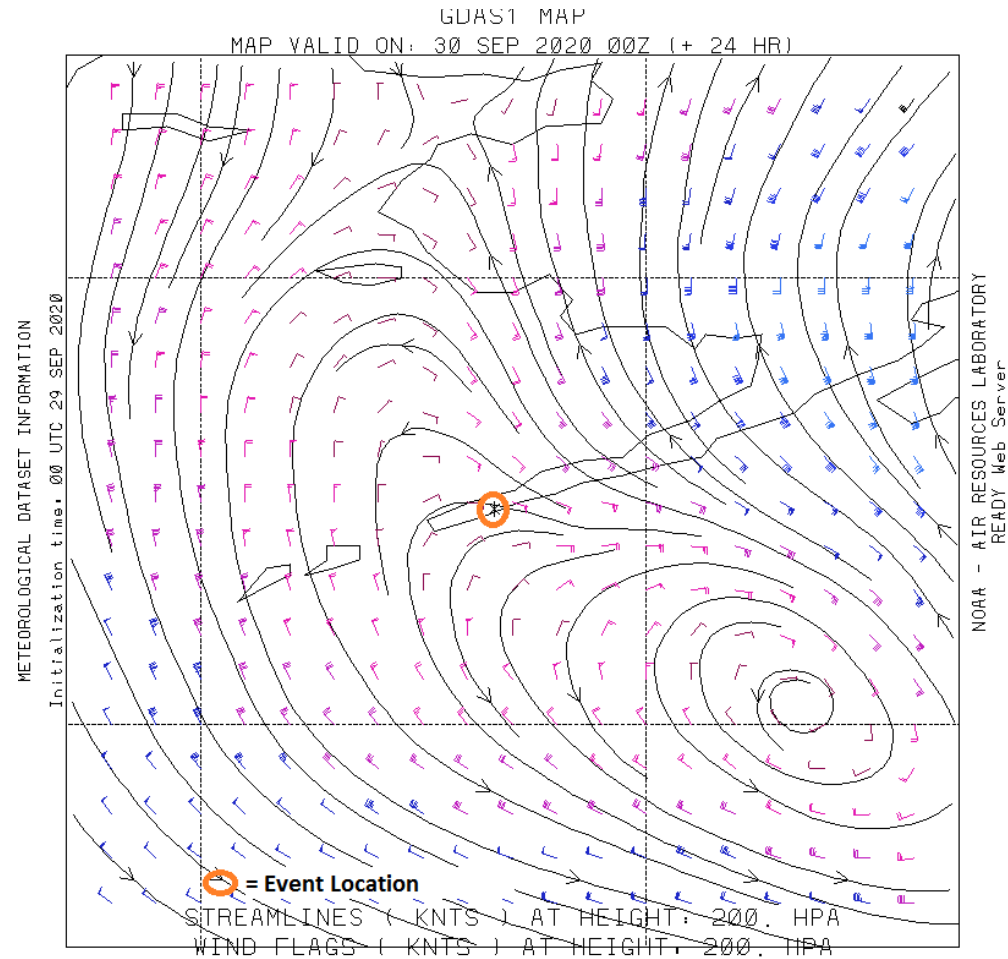
70316 PACD Cold Bay Observations at 00Z 30 Sep 2020

PRES hPa	HGHT m	TEMP C	DWPT C	RELH %	MIXR g/kg	DRCT deg	SKNT knot	THTA K	THTE K	THTV K
300.0	8990	-47.1	-52.1	56	0.10	140	36	318.9	319.3	318.9
293.1	9144	-48.1	-54.9	46	0.08	140	36	319.5	319.9	319.6
288.0	9258	-48.9	-56.9	39	0.06	139	37	320.0	320.3	320.0
276.0	9535	-51.3	-55.6	60	0.07	138	41	320.5	320.8	320.5
271.0	9654	-52.1	-61.1	33	0.04	137	43	321.0	321.2	321.0
265.0	9798	-53.3	-59.3	48	0.05	136	45	321.3	321.5	321.3
254.4	10058	-54.6	-61.3	43	0.04	135	48	323.2	323.4	323.2
250.0	10170	-55.1	-62.1	41	0.04	140	34	324.0	324.2	324.0
233.0	10615	-59.1	-62.4	65	0.04	149	32	324.5	324.7	324.6
231.0	10668	-59.3	-63.7	57	0.03	150	32	325.0	325.1	325.0
228.0	10750	-59.7	-65.7	45	0.02	140	30	325.6	325.8	325.6
225.0	10833	-58.9	-71.9	17	0.01	136	30	328.1	328.1	328.1
222.0	10918	-53.7	-90.7	0	0.00	132	30	337.4	337.4	337.4
220.1	10973	-53.5	-89.9	0	0.00	130	30	338.4	338.4	338.4
209.9	11278	-52.6	-85.3	1	0.00	140	16	344.5	344.5	344.5
200.0	11590	-51.7	-80.7	2	0.00	110	9	350.7	350.8	350.7

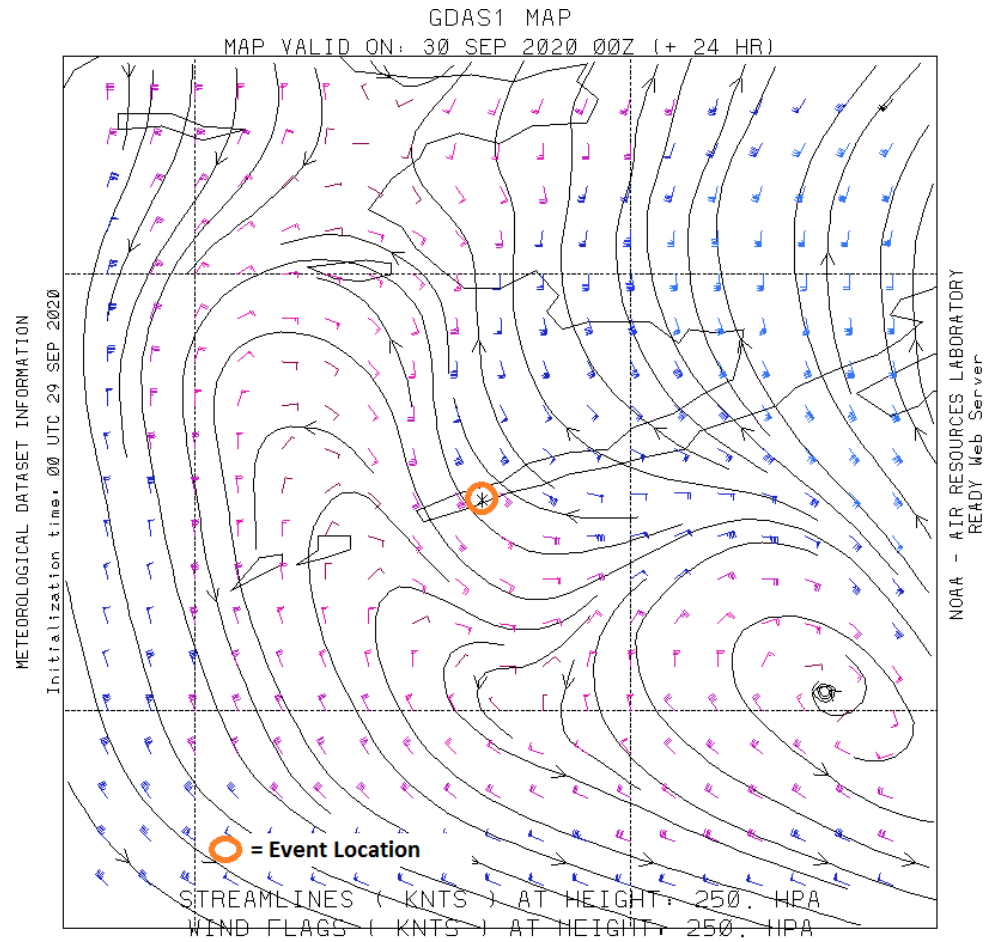
EDR data point location and timing used in analysis

48.3N172.0W	29/2127Z	DL8963	B777	L	FL369	0.02/0.02	-46.2C	32051KT	29/2128Z
49.9N170.1W	29/2142Z	DL8963	B777	L	FL370	0.02/0.02	-46.7C	30035KT	29/2142Z
51.5N168.1W	29/2157Z	DL8963	B777	L	FL370	0.02/0.02	-45.6C	34028KT	29/2158Z
53.0N166.1W	29/2212Z	DL8963	B777	L	FL370	0.02/0.02	-47.7C	36023KT	29/2212Z
54.3N164.2W	29/2225Z	DL8963	B777	L	FL349	0.02/0.02	-51.0C	12011KT	29/2231Z
54.4N164.0W	29/2226Z	DL8963	B777	L	FL349	0.02/0.02	-51.0C	13011KT	29/2231Z
54.5N163.9W	29/2227Z	DL8963	B777	L	FL349	0.02/0.04	-52.5C	15018KT	29/2228Z
54.5N163.9W	29/2227Z	DL8963	B777	L	FL349	0.02/0.04	-52.0C	15017KT	29/2231Z
54.6N163.7W	29/2228Z	DL8963	B777	L	FL349	0.02/0.04	-52.0C	15024KT	29/2231Z
54.7N163.6W	29/2229Z	DL8963	B777	L	FL349	0.10/0.16	-52.0C	14031KT	29/2231Z
54.8N163.4W	29/2230Z	DL8963	B777	L	FL350	0.24/0.48	-55.0C	14045KT	29/2231Z
54.9N163.2W	29/2231Z	DL8963	B777	L	FL350	0.04/0.14	-56.0C	14043KT	29/2237Z
55.0N163.1W	29/2232Z	DL8963	B777	L	FL350	0.02/0.02	-57.0C	15039KT	29/2237Z
55.1N162.9W	29/2233Z	DL8963	B777	L	FL350	0.02/0.04	-57.0C	15038KT	29/2237Z

200mb 30Sep20



250mb 30Sep20



Zone of greatest directional shear just southwest of event location

