Fit ID:       1005111         Fit No:       IO       034         ETD:       17002         ETE:       8+00         Sponsor Org:       CSD         AC:       NELSON         CP:       MARTIN         Nav:       BISHOP BRAK         FE:       DARBY         FD:       HENNING         Avionics:       1005111	From: KO From: KO Bik In: C Bik Out: D Bik Time: Program: CALNI	NT 017z 657z 7.3 EX (PAQ) Esseminel Sys Eng: HIL Data Sys: DEL Radar: GPS/BT: Cid Phys;	To: To: A.T.A.: ATD: Fit Time: Purpose: NC RICE Fite CASSO	KONT 0013z 1703z 7.2 SF CAL EMISS LDS + CHARGON	JONS JUEZ ST
Name (Last, First) RYERSON, Tom LACK, Dan MIDDLEBRUOK, Ann NEUMAN, Andy PEISCHL, Jeff	Activity o C3X Sta2 Sta3	n Aircrait		Affiliation	
pposed/Actual Mission Remarks (Reco t/o altim 30.01 land altim 29.96	o, Fixes, Storm, PENE 240/6 270/S KOAK CALM K SMF 360/3 KBFL 320,15 KBFL 320,15	T, NHOP #) 360/4 FEW  SOC 300 S SKC /22 340/3			

а,

## N43RF ERROR SUMMARY

## CALNEX 2010 Sacramento Valley Rice Fields, SF Bay, Emissions through Carquinez Straits into Central Valley return via Tejon Pass

## Flight ID: 1005111

Sensor or system	Number or Name				
INE (for wind derivation)	INE1				
Accelerometer	ACC1				
Temperature Probe	TT1				
Dew Point Probe	TDM2X (EDGETECH)				
Static Pressure	PSF				
Dynamic Pressure	PQF1				
Vert. Wind	ALTI1				
Constants File	n43_calnex10v1.adc				
Project Directory	/acdata/2010/CALNEX				

Notes:

All data is included from data system boot-up to shutdown. However, only data collected after takeoff and prior to landing were evaluated and corrected when necessary.

After takeoff and prior to landing, there were no instances of bad or missing inertial data being skipped in the creation of the netCDF file. Therefore, there were no resulting data gaps during the flight.

Both Dewpoint sensors #1 (TDM1, the Buck 1011C) and #2 (TDM2, EdgeTech Vigilant 137) generally performed well through most of the mission. However, while TDM1 usually responded more quickly to changes in humidity regime (associated with climbs and descents) than TDM2, it also tended to "chase" the humidity measurement (showing oscillation above and below TDM2). Also, again the Buck sensor (as in the previous CALNEX missions, especially 100507I and 100508I) tended to reach down to unrealistically dry values at higher altitudes in comparison with the Oakland, Reno and Vandenberg AFB 12z soundings). Therefore TDM2 was again selected in the creation of final meteorological parameters

The Maycomm TDL (TDM3) instrument, as was the case in the first three Ontario CALNEX missions, was far too erratic for most of the flight to provide usable data. While there were some short segments of the flight where it produced brief periods of valid data comparable to the Buck and EdgeTech systems, those periods were not as long as what was seen in Mission 100508I.

There were four instances during the transition from dry to moist environments (during descents) where TDM2 "ran past" reasonable values creating an anomalously moist spike. On two occasions during the mission, this overshooting would have resulted in supersaturation (relative humidity exceeding 100%) if the values for TDM2 were not corrected. Comparison with the LICOR H20 Absorption sensor data was also used to evaluate the validity of TDM2 data during periods of rapidly increasing humidity. Manual patching using statistical methods was employed to remove spikes during the following intervals:

19:08:19 – 19:08:43z (descent from 8500 MSL to 500 AGL enroute Pt 24 over the Pacific north of Point Arena)

19:43:44 – 19:44:29z (descent 17.5K MSL to 1000 AGL enroute Pt 23) 23:09:25 – 23:17:52z (climb from 17.5K to 22K then descent near Bakersfield)

Substitution of where TDM2=TDM1 was employed in one interval:

18:52:04z – 18:52:18z (spiral descent 8500 MSL to 1000 AGL at Clear Lake)

All other flight level instruments worked optimally during the flight.

There were no dropsondes or other expendables released during this flight.

SPECIAL NOTE: The variable names dpj\_wgs, dpj\_was and dpj\_wz in the netCDF file represent vertical ground, vertical air and vertical wind speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

	Takeoff	Landing
	17:03:20z	00:12:48z
Aircraft Static Pressure	984.1 mb	981.4 mb
Corrected Tower Pressure	983.0 mb	981.0 mb

Flight Director: Richard Henning (813) 828-3310 ext. 3086



EMERGENCY MESSAGE	TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES. ULHFNOICE VHF/VOICE MF/VOICE HF/CW MF/CW 243.0 121.5 2182 KHZ 8364 KHZ 500 KHZ 243.0 121.5 2182 KHZ 8364 KHZ 500 KHZ MAY DAY, MAYDAY MAYDAY, MAYDAY MAYDAY, MAYDAY MAYDAY, MAYDAY MAYDAY, MAYDAY MAYDAY, MAYDAY HIS IS NOAANOAA	NEXT DIST TIME ETA REMARKS								
POSITIONEPORT	1. POSITION 2. TIME 2. TIME 3. ALTITUDE 4. NEXT POSITION 5. ETA 6. NEXT POSITION	WS ALT TAS								
E 		TRK GS WD	Line (1997)	02+05 7.3 9:39 33.8	28+57 101.3 8:26 204.6	26+43 93.5 4.16 429.1	15+21 53.7 4:18 534.3	6:00 610.2	9:47 658.5	8:34 8.2 3:34 706.7 11-52 6.5 6.55 753.4
ON LOG PAG		VAR TH DR	VILLE 11 100 1000	2000M 257 270 00+ 257 270 00+ 257 270 00:0	7000M 330 343 00+	7000M 259 273 00+ 259 273 01:5	300M 256 270 00+	2000M 054 069 001+	1500M 136 151 00+1 136 151 03:1	1500M 136 150 00+ 136 150 03:3 1500M 224 239 00+ 224 239 00+
MISSI		OSITION KERR MH		34.08.43 453FT 210T 118.16.20 12.7E	36 49.96 984FT 210T 119 24.26 13.6E	39.04.10 33FT 210F 121 45.00 14.5E	39.04.10 0FT 210T 124.00.00 14.9E	39 30.30 1066F 210T 122 28,20 14.7E	39 43.50 1332F 210T 121 38/20 14.7E	39 16.20 256FT 210T 122 17.80 14.7E 39 33.10 135FT 210T 121 40.20 13.6E
ANCES	отнек NG Start - 1652 Тахі 1657 110 / 703 АММ 00/3	INS 1 POSITION K ERR INS 2 P	DALOUS OVER 1 CONTRACTOR OF CO	3 LAX/R018015 N	5 FRAVR134019 N	7 MVVIE242008 N	9 DL ENIR256034 N	10 MXW/P296016 N W 20	CIC/E096010 N	14 MXW/R213005 N M 16 Mone N 16 None N
CLEAR		POSITION					<del>56077</del>	1076		RA R
	FREQ	TIME TYPE							All a	

	REMARKS											
	ETA											
	TIME											
	DIST											
	NEXT PT											
	TAS			3								
ا چي چې	ALT											
	SM											
	19         MXVVIP213005         N 39 16.20         256FT         210T         1500M         226         240         00+09+37         33.7           10	11         21         CIC/E119025         N 39 29:50         850FT         210T         1000M         045         060         00+11+31         40.3           15         11         045         060         00+11+31         40.3	C         23         DL         MYVIE242008         N 39.04.10         33FT         210T         1000M         224         238         000+06+56         24.3	Z4         ILAVIR172008         IN 122         D3.50         IA 15         D10         D14         D11         D11	26         BAB/T105009         N 39 03.40         335FT         210T         2500M         045         060         00+10+46         37.7           7.7         26         045         060         00+10+46         37.7           7.7         27         26         14.4E         045         060         00+10+46         37.7	28         HNW/E250006         N 38 43.20         1522F         210T         2500M         133         147         00+07+40         26.8           74         100         1133         147         00+07+40         26.8           74         103         147         00+07+40         26.8           75         143         147         05:03:33         986.7	30 DL SAC/R148011 N 38 15.90 39FT 210T 1500M 130 145 00+04+55 17.2 56 1115 00+04+55 17.2 1130 145 05:20:14 1045.2	31         ECAIR262017         N 37 52.80         -20FT         210T         1500M         171         185         00+06+37         23.2           77         mm         W12131.90         14.2E         171         185         00+06+37         23.2           75         33         CoRreston         W12131.90         14.2E         2000M         166         180         00+06+34         30.0           75         33         CoRreston         N 25.80         709HT         210T         2000M         166         190         00+08+34         30.0           75         m 3         X122.00.00         14.3E         701T         2000M         166         190         00+08+34         30.0	35         35         CCR/E268017         N 38 04.20         0FT         210T         1500M         189         204         00+03+22         11.8           35         M122 24.00         14.4E         14.4E         189         204         06-63.58         1173.7	59 37 LLAX/R036020 N 34 08.40 764FT 210T 1500M 137 150 00+28+50 83.4 *M 2 N1118 07.40 12.7E 137 150 07/37/14 1489.6	39         KONTIA         N 34 03.36         944FT         2101         1500A         088         101         00+07+64         26.5           tM         0         IONTARIO INTL         W117 36.07         12.5E         1         088         101         00+07+64         26.5	