

Flt ID: 020218H	From: KPDX	To: KPDX
Flt No: 02-029	Blk In: 0453	ATA: 0448
ETD: 2100Z	Blk Out: 2050Z	ATD: 2059
ETE: 9+00	Blk Time: 8.1 8:03	Flt Time: 7.8
Sponsor Org: NOAA/ETL	Program: PACJET OCEAN WINDS	Purpose: IOP 6

AC: TEBEEST, R ✓	Sys Eng: SMITH, J ✓
CP: HALVERSON, H / TAGGART, B ✓	Data Sys: BARR, J ✓
Nav: ADLER, J ✓	Radar:
FE: FLOYD, D ✓	GPS/BT:
FD: SHEPHERD, T ✓	Cld Phys:
Avionics: ROGERS, M ✓	

Name (Last, First)	Activity on Aircraft	Affiliation
PERSSON, O ✓	PI	NOAA/ETL/CIRES
KNIEVEL, J ✓	Radar	NOAA/NSSL
WHITE, D ✓	Radar	NOAA/ETL
ZHANG, A. ✓	SFMR	UMASS
ESTEPAN, D ✓	SFMR	UMASS
✓ SALTENBERGER, J	SAT COMMS	NOAA/NWS
MARCIANO, ROB ✓	MEDIA	LOCAL ABC AFFILIATE
WILKINSON, CHRIS X	MEDIA	LOCAL ABC AFFILIATE

Proposed/Actual Mission Remarks (Recco, Fixes, Storm, PENET, NHOP #)

210715 BAL DPI
2157 DP2 ~4° ↓ from 1+3

27
03 108
20 59
7 49
7.8

Flt ID: 020218H	Time Off: 2059	Time On: 6448
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Pressure	1010.5	29.88	1006.2	29.76
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	Number	Data Disposition / Date / Quality	
Flt Lvl Tapes	2	TRS	
Radar Tapes	3	John D	
Cloud Physics Tapes	1 CD	John D	
Video Tapes	4	John D	
AXBT			
AXCP			
AXCTD			
Dropsondes	0		

	Forward	Left Side	Right Side	Down	Remarks
Time On					
Time Off					
Rate					

Remarks

Pacjet Ocean Winds 2002

Flight #6 020218H

<u>Sensor or system</u>	<u>Number or Name</u>
INE	2
Accelerometer	2
Temperature Probe	1
Dew Point Probe	1
Altitude (for vertical wind)	Radar Alt. (APN-159)
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO2021.CON

Notes:

Takeoff: 2059Z

Land: 0448Z

There were no data gaps during the flight.

The radar altimeter (APN-159) was replaced by the APN-232 due to spiking during takeoff (205601 - 210830) and landing (044830 - 045100).

Dew pointer #3 was substituted for dew pointer #1 to remove a balancing spike from 210708 - 210815. A 0.0 degree C offset was applied.

During times when the aircraft was flying through heavy precipitation, the dew point temperature exceeded the ambient temperature resulting in humidities greater than 100%. This could also be due in part to wet bulbing effect on the total temperature sensor. No adjustments were made.

The vertical winds are calculated using the selected altimeter (radar altimeter for this flight). Therefore, the vertical wind speeds are erroneous at the beginning and end of the flight as the aircraft transited over mountainous terrain between the coast and KPDX.

	<u>Takeoff</u>	<u>Landing</u>
Aircraft static pressure	1010.5	1006.2
Corrected tower pressure	1011.9	1007.8

The aircraft INE positions were renavigated with respect to GPS.

SPECIAL NOTE!!!

Locations 80, 81, and 82 of record five on the standard tape contain vertical ground, vertical air, and vertical speeds resectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

Flight Director: Tom Shepherd, (813) 828-3310 ext. 3053

020218H

TT#1

Takeoff: 2059

DP#1

Land: 0448

INE# 2

AZI# 2

Sub 232 for 159

205601 - 210830 Takeoff ✓

044830 - 045100 Landing ✓

~~Sub~~ DP3 for DP1 to remove balance spike

210708 - 210815 0.0 offset ✓

RENAV (OVER)

1)	211200	-0.1	0.0	45	8.6	123	4.0	✓
	214500	-0.3	-0.4	43	57.4	124	19.4	✓
	223200	-0.1	+0.2	41	44.6	124	22.4	✓
	231600	-0.4	0.3	41	5.0	125	37.2	✓
	235000	-0.2	0.8	40	59.9	127	4.7	✓
5)	003700	-0.3	0.4	38	56.4	127	49.5	✓
	011400	-0.2	1.4	37	3.0	126	17.1	✓
	021600	-0.7	1.3	37	25.3	125	37.8	✓
	025200	-0.2	1.1	39	43.4	125	15.7	✓
10)	033600	-1.0	1.5	41	26.1	124	19.7	✓
	041800	-0.5	1.3	44	29.1	124	13.3	✓
12)	045100	-0.9	2.2	45	35.3	122	35.0	✓

U.S. Dept. of Commerce / NOAA / National Operations Center

Form 10-5

Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T _a	T _s	Press. Alt.	Geo. Alt.	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
211000	4510	12255	252	248	192	22.8	-3.2	-18.6	2472	2365	1002.6	748.4	83.7	BKN B ^{LO} • VR LAND
2124	4454	12411												P1
213130	4406	12413												Spiral R to 6000' ATC Problems co-ld go to 1000' hvr
214230	4356	12422												Spiral down to 1000' TO TRK 195
215050	4350	12420	195	194	186	47.8	8.4	2.8	334	297	1008.8	973.5	82.2	1000 RA
220515	4308	12436												Climb to 6000 WFRADAR in sect. mode
222120	4218	12432	165	170	185	39.4	7.6	5.5	315	295	1011.7	975.8	87.1	1000 RA
225815	4030	12443	272	262	152	40.8	7.3	6.0	315	312	1013.7	976.2	75.1	1000 RA Hdg to P7
230750	4630	12530												P8
231240	4051	12535	350	351	166	45.1	6.6	7.1	317	296	1011.4	976.0	77.9	1000 RA → P8
233550	4125	12619	278	225	220	44.9	7.6	8.4	650	606	1008.4	937.7	77.1	2000 RA → P11
000650	4027	12802	234	236	248	24.5	8.7	8.9	651	612	1008.8	937.5	77.9	2000 RA WTS
001510	4010	12830												Turning to P12 and ↓ to 1000' RA
001755	4001	12824	159	164	260	17.2	10.5	10.2	349	317	1009.7	972.1	73.0	1000 RA Hdg → P12
004400	3833	12738	159	168	265	35.3	11.5	11.8	309	306	1012.9	976.7	72.9	
010800	3717	12642	124	128	280	32.9	11.3	11.3	288	307	1015.5	979.1	76.9	1000 RA JUST @ CLD DE
013050	3741	12604												END 200' hvr spiral up to 6000'
013600	3746	12554												Touch 6000 now spiral ↓ to 2500'
014645	3720	12549	158	162	243	11.3	9.2	8.9	726	752	1016.4	929.0	60.5	2500' RA
015400	3654	12536												Spiral up to 6000' then 500' then up to 1200'
020440	3649	12532												Touch 500 now up to 1200
020850	3700	12537	358	352	279	23.1	11.0	11.0	330	353	1016.1	974.3	75.4	1200 RA
025300	3948	12514												Spiral to 6000' for comms
030150	3946	12505												Still loitering
031050	4024	12435	012	022	156	57.1	6.5	6.1	358	353	1018.5	970.9	75.9	1200 RA → P5
033510	4123	12419	347	346	170	30.1	7.6	4.6	359	348	1012.8	970.9	76.9	1200 RA → P4
042455														
042345	4455	12412	-	-	183	72.1	4.1	5.4	872	793	1005.5	894.0	82.5	PL Spiral climb 6000
042710	4455	12411	066	073	213	52.0	0.3	0.8	1881	1799	1004.2	805.6	87.4	END Sci - RTB

14008 105m SCT055 OVC110 12/5 29.74

FM 0500 19015/25 68m -RA SCT020 OVC040

900 local

S6

1706

10

SM

SCT

R -

040

OVC

055

29.76

P-3 Chief Scientist Event/Radar Log

Flight: 020218H

Project: PACJET-2002

Aircraft: N42RF

Primary Mission: Validation of airborne scatterometer; examination of coastal winds, low level jet, and NCFR. Three modules: 1) Coastal winds 2) Scatterometer 3) Flux Stack

Alternative Mission: none

Scientists/Visitors

- *Chief Scientist:* **Ola Persson**
- *Doppler Scientist:* **Jason Knievel**
- *Cloud Physics Scientist:* **N/A**
- *Observer 1:* **Saltenberger (NWS)**
- *Observer 2:* **White (ETL)**
- *Observer 3:* **Esteban (UMASS)**
- *Observer 4:* **Zhang (UMASS)**
- *Other Scientists/Visitors:* **Marciano/Wilkenson**

AOC Crew

- *A/C Commander:* **Tebeest**
- *Pilot:* **Taggart**
- *Flight Engineer:* **Floyd**
- *Flight Director:* **Thomas Shepherd**
- *Navigator:* **Adler**
- *Sys Tech:* **Rogers**
- *Data Tech:* **Smith**
- *Radar Tech:* **Barr**
- *Other AOC:* **Halverson**

Time (Latitude, Longitude), Track (deg), Static Pressure (mb), Radar Alt (m)	Event & Comments
204510Z (45.58607, - 122.58080) 91.599 deg, 1010.7 mb, -7.0 m	Engine 2 start
204607Z (45.58605, - 122.58076) 92.011 deg, 1010.6 mb, -7.0 m	Bus power switch over

204903Z (45.58610, - 122.58080) 93.707 deg, 1010.5 mb, -7.0 m	start engine 1,3,4	
204930Z (45.58607, - 122.58080) 93.016 deg, 1010.6 mb, -7.0 m	block out	
205729Z (45.59385, - 122.59607) 95.126 deg, 1010.2 mb, -9.0 m	awaiting clearance for takeoff	
205854Z (45.58936, - 122.58171) 118.858 deg, 1011.1 mb, -10.0 m	rolling...we are go fly	
210603Z (45.29046, - 122.57162) 211.544 deg, 750.6 mb, 2252.0 m	cruising at 8000'	
210918Z (45.20040, - 122.82756) 251.613 deg, 750.8 mb, 2353.0 m	LF running	
210938Z (45.19348, - 122.85684) 251.564 deg, 750.8 mb, 2352.0 m	TR running	
211338Z (45.10863, - 123.21425) 251.396 deg, 749.4 mb, 2371.0 m	LF range gates switch to NM from KM	
212538Z (44.84524, - 124.22662) 172.000 deg, 750.0 mb, 2404.0 m	End of Leg 1. left turn to 180* at WP 1	
212755Z (44.70808, - 124.19612) 176.669 deg, 749.8 mb, 2407.0 m	Start of Leg 2	
213610Z (44.19688, - 124.18106) 182.807 deg, 749.9 mb, 2410.0 m	End of leg 2. Going directly to WP 4 descending to 6000' at 197*.	
214103Z (43.92960, - 124.27837) 194.399 deg, 809.1 mb, 1805.0 m	begin spiral to 1000'	
214812Z (43.96245, - 124.28050) 195.332 deg, 973.1 mb, 302.0 m	At 1000' track 195*.	
220107Z (43.35812, - 124.54103) 197.384 deg, 973.2 mb, 300.0 m	left turn to 191	
220518Z (43.15025, - 124.60234) 191.055 deg,	begin climb to 6000'	

972.9 mb, 306.0 m	
220625Z (43.09380, - 124.61844) 190.003 deg, 930.2 mb, 684.0 m	LF radar switched to sector mode
221102Z (42.85500, - 124.68726) 193.935 deg, 808.4 mb, 1818.0 m	Reached 6000', puched through first rainband, reached WP4, changing direction to 166*
221417Z (42.67912, - 124.64798) 167.589 deg, 808.6 mb, 1820.0 m	begin descent to 1000'
221929Z (42.39242, - 124.56558) 166.502 deg, 937.1 mb, 626.0 m	LF radar back in continuous mode.
222822Z (41.92529, - 124.43109) 164.815 deg, 976.3 mb, 300.0 m	both radars down at 2223.
222857Z (41.89609, - 124.42155) 165.175 deg, 976.1 mb, 303.0 m	Tail Radar back up.
223101Z (41.79354, - 124.38889) 166.303 deg, 976.0 mb, 303.0 m	LF back up.
224012Z (41.32443, - 124.24469) 182.880 deg, 976.0 mb, 310.0 m	at WP 5, right turn to 200*...onward to WP6
225525Z (40.50954, - 124.49231) 213.438 deg, 975.5 mb, 322.0 m	arrive WP6. Roll right to 273*.
230727Z (40.50251, - 125.45911) 268.887 deg, 976.0 mb, 302.0 m	Arrive WP7 Right turn to 352. maintain 1000' until we see better precip.
231437Z (40.98351, - 125.60654) 352.727 deg, 975.9 mb, 291.0 m	a lot of speckling in tail radar. May need to reset soon.
231542Z (41.06197, - 125.61700) 355.202 deg, 976.1 mb, 287.0 m	resetting tail radar. TR off. LF off.
231750Z (41.21754, - 125.63400) 355.076 deg, 975.7 mb, 289.0 m	LF back on. TR back on.
232008Z (41.38519, - 125.65671) 354.509 deg, 976.2 mb, 281.0 m	skipping WP 9 and 10 noted. Not much on LF at this point. Minor echos on TR.

232438Z (41.71023, - 125.71382) 347.046 deg, 976.0 mb, 278.0 m	Arrive WP 8. Left turn to 235*. Climbing to 2000'
001539Z (40.14926, - 128.48508) 156.997 deg, 963.4 mb, 385.0 m	Arrive WP 11 skipped 9 and 10. Left turn to 160* and drop to 1000' almost no echos on either radar.
010158Z (37.50410, - 127.11304) 152.240 deg, 978.9 mb, 303.0 m	Arrive WP 13. left turn to 125* When we got to WP 12 we just kept going...no change in altitude or direction. Added WP 13a...heading onward to WP 13a.
011752Z (36.90500, - 126.02036) 98.017 deg, 978.9 mb, 314.0 m	arrive WP 13a. Left turn to 360.
011916Z (36.96799, - 125.97458) 359.938 deg, 981.4 mb, 290.0 m	Start descent to 200'
012049Z (37.05872, - 125.97638) 358.651 deg, 1008.9 mb, 58.0 m	200'
013053Z (37.67596, - 126.00537) 355.929 deg, 1009.0 mb, 51.0 m	begin climb to 1000'. Arrive WP 14
013141Z (37.72923, - 126.00742) 5.799 deg, 973.6 mb, 350.0 m	begin right turn spiral to 6000'
013547Z (37.76913, - 125.94258) 78.682 deg, 815.8 mb, 1822.0 m	Arrive 6000'. Begin descent to 2500'
013952Z (37.72720, - 125.86121) 194.470 deg, 927.7 mb, 758.0 m	Arrive 2500'. Rollout to 205*
014157Z (37.61224, - 125.91765) 194.848 deg, 928.5 mb, 754.0 m	left turn heading 180*
014318Z (37.53040, - 125.90977) 173.317 deg, 928.8 mb, 752.0 m	slow left turn to 158*
015406Z (36.88906, - 125.59576) 169.151 deg, 928.4 mb, 769.0 m	Arrive WP 15. Begin spiral to 6000'
015727Z (36.86616, - 125.57658) 208.472 deg, 812.3 mb, 1870.0 m	End spiral to 6000'. Begin spiral descent to 500'.
020434Z (36.83332, - 125.52811) 203.125 deg,	Arrive 500'. Begin spiral to 1200'.

998.8 mb, 148.0 m	
020541Z (36.81615, - 125.58890) 309.443 deg, 976.0 mb, 343.0 m	Arrive 1200'. Roll right to 360*
020756Z (36.94613, - 125.60626) 358.504 deg, 974.2 mb, 356.0 m	LF down 02:04:53. TR down 02:09:54. LF locked up. Restarting.
021922Z (37.62637, - 125.62766) 8.986 deg, 974.2 mb, 349.0 m	Arrive WP 16. Roll right heading 8*
024422Z (39.18686, - 125.35501) 8.962 deg, 970.6 mb, 363.0 m	LF and TR back up
025020Z (39.60436, - 125.28285) 6.190 deg, 970.5 mb, 360.0 m	LF down again at 02:48:21. Restarting.
025104Z (39.65693, - 125.27478) 6.797 deg, 970.6 mb, 360.0 m	TR down again at 2:51:00. restarting.
025225Z (39.75344, - 125.25591) 8.472 deg, 970.4 mb, 363.0 m	Skip Doppler box at WP 17-20. Begin spiral to 5500 while awaiting clearance to continue to WP 21. Just came through pretty strong blocking front with 50 Kt winds. Went through the top of it while climbing to 5500'
025818Z (39.76421, - 125.09793) 217.970 deg, 828.3 mb, 1677.0 m	level off at 5500'. Rolling around to ??? We're flying in circles at 5500'. Awaiting clearance for 1200' run up coast.
030608Z (39.77045, - 125.09111) 312.997 deg, 835.3 mb, 1606.0 m	Begin descent to 1200'. Descended through the top of blocking front at ~3500'.
031052Z (39.86813, - 125.01823) 60.552 deg, 970.3 mb, 365.0 m	Arrive at 1200' heading 58*
031330Z (39.95235, - 124.82472) 57.053 deg, 971.2 mb, 361.0 m	LF and TR back up at 03:12:00
031400Z (39.96825, - 124.78920) 57.125 deg, 970.9 mb, 363.0 m	WP 21 is the same as WP 5. Heading to WP 5
031437Z (39.98838, - 124.74574) 52.634 deg, 970.9 mb, 363.0 m	Left turn track at 13*. Some moderate turbulence
032006Z (40.34923, - 124.60442) 13.278 deg, 971.2 mb, 355.0 m	More light to moderate turbulence. Winds at 55Kts.

032224Z (40.50819, - 124.55179) 13.646 deg, 971.0 mb, 354.0 m	Passing cape Mendecino (sp?). Winds at 57.3Kts. Light turbulence.
033054Z (41.08930, - 124.35225) 13.873 deg, 970.8 mb, 347.0 m	LF and TR down again at about 03:24:00
033237Z (41.20567, - 124.31464) 13.897 deg, 970.9 mb, 349.0 m	LF and TR back up.
033359Z (41.29823, - 124.28441) 9.555 deg, 970.8 mb, 350.0 m	Arrive WP 21. Rolling left to 347*. Heading to WP 22 which is the same as WP 4. Then to WP 2, then to WP 1.
034329Z (41.95729, - 124.47585) 348.811 deg, 968.7 mb, 357.0 m	light turbulence again. Winds from 178* at 40 Kts.
035308Z (42.66032, - 124.68005) 348.993 deg, 966.6 mb, 353.0 m	Continued light turbulence. Winds from 187 at 45 Kts.
035550Z (42.85678, - 124.73857) 348.250 deg, 966.9 mb, 350.0 m	turn right at WP 23 (same as WP 4), heading 15*
035720Z (42.96734, - 124.72218) 15.598 deg, 966.8 mb, 343.0 m	Light turbulence. Winds 190* at 50 Kts at Cape Blanco
040016Z (43.18520, - 124.64175) 17.066 deg, 965.2 mb, 351.0 m	60 Kts.
040958Z (43.89886, - 124.35326) 17.793 deg, 965.6 mb, 344.0 m	Both radars are down again at 04:09:17
041119Z (43.99576, - 124.31232) 17.353 deg, 965.4 mb, 348.0 m	Moderate turbulence...winds 192* at 57 Kts.
041403Z (44.19305, - 124.23325) 14.369 deg, 963.5 mb, 360.0 m	Arrrive WP 24 (same as WP 2) Turning to 1*.
041623Z (44.36555, - 124.22552) 1.092 deg, 963.9 mb, 353.0 m	Moderate to heavy turbulence. Winds 188* 62 Kts.
042017Z (44.65448, - 124.20525) 3.186 deg, 964.6 mb, 339.0 m	Winds 68 Kts.
042330Z (44.89042, - 124.19316) 358.125 deg,	Arrive WP 25Begin left turn spiral to 5000'

964.3 mb, 337.0 m	
042649Z (44.91360, - 124.20906) 61.060 deg, 808.6 mb, 1777.0 m	Heading 63* for trip back to PDX.
043005Z (45.02007, - 123.86621) 64.070 deg, 805.9 mb, 1727.0 m	Both radars back up with new tape.
043533Z (45.22167, - 123.31909) 60.239 deg, 806.2 mb, 1650.0 m	End of Science.
044218Z (45.59235, - 122.86284) 26.946 deg, 868.3 mb, 1112.0 m	Start descent into PDX
044353Z (45.66224, - 122.76830) 81.796 deg, 916.9 mb, 760.0 m	Turn into final leg for approach.
044453Z (45.64651, - 122.71857) 123.466 deg, 936.2 mb, 572.0 m	Radars off.
044742Z (45.59366, - 122.59273) 117.290 deg, 1007.7 mb, 1207.0 m	touchdown. We win!

P3 Flight Track Plan

(51.0, -120.0)

45

13A	3654	12600	
14	37 ⁴⁰ 30	12642	T157
15	3654	12536	
16	3736	12554	

40

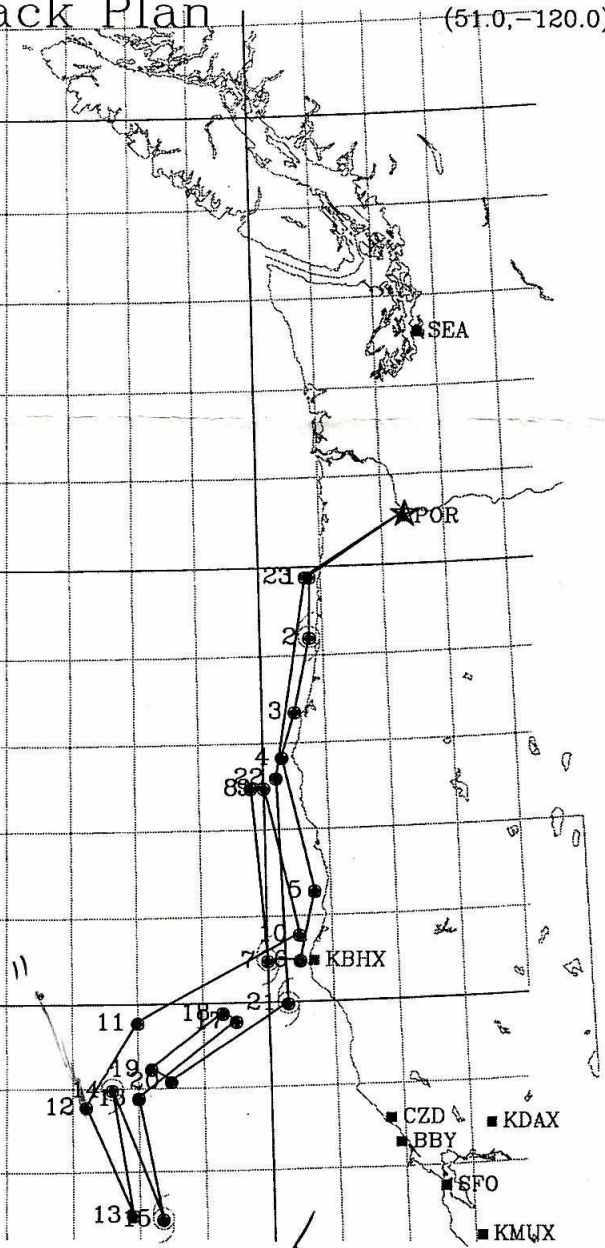
(37.0, -139.0)

P7-8 T352

13A 12600
3654

357

21-5-4-2-1
29.76



NOAA/NSSL Lambert Conformal (44.0, -130.0)

0° 4200'

T3

128.30
4012

12536

