

Flt ID: 010209I	From: KMRY	To: KMRY
Flt No: 01-15	Blk In: 1656Z	ATA: 1649Z
ETD: 0700Z	Blk Out: 0723Z	ATD: 0737Z
ETE: 1600Z	Blk Time: 9.5 9:33	Flt Time: 9.2 9:12
Sponsor Org: NOAA/ETL	Program: PACJET	Purpose: IOP 1

AOC Personnel

AC: TAGGART, B	Sys Eng: McNAMARA, R ✓
CP: HALVERSON, H	Data Sys: LYNCH, T ✓
Nav: NEWMAN, C ✓	Radar: DELGADO, J ✓
FE: FLOYD, D / WADE, S ✓	GPS/BT:
FD: SHEPHERD, T ✓	Cld Phys:
Avionics: ROGERS, M ✓	YOUNG, D ✓

Participating Scientists / Visitors / AOC

Name (Last, First)	Activity on Aircraft	Affiliation
Kingsmill, D ✓	PI - CLO. up	DRI
Small, B ✓	RADAR	NOAA/USSL
MILLER, D ✓	DATA SYN.	NPS
Colle, B ✓	OBS	SUNY
✓ ERTL, ✓	OBS	NWS
✓ (4) CHAGoya, J ✓	MEDIA	NPS
✓ GARDNER, T ✓	MEDIA	AP
McWilliams, R ✓	MEDIA	NAT. GEOGRAPHIC

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

~1020 nose PQ frozen

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

AGCWF2

Fit ID: 010209I Time Off: 0737Z Time On: 1649Z

	A/C (Take Off)	Wx Station (Take Off)	A/C (Land)	Wx Station (Land)
Pressure	1010.7	30.08	1008.2	30.02

	Number	Data Disposition / Date / Quality
Fit Lvl Tapes	2	
Radar Tapes	1	
Cloud Physics Tapes	1	
Video Tapes		
AXBT		
AXCP		
AXCTD		
Dropsondes	1	1 good

Video

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

Remarks

Pacjet IOP 7

Flight #7 010209I

<u>Sensor or system</u>	<u>Number or Name</u>
INE	1
Accelerometer	1
Temperature Probe	1
Dew Point Probe	2
Altitude (for vertical wind)	Pressure Alt.
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO3012.CON

Notes:

Takeoff: 0737Z

Land: 1649Z

The dynamic attack pressure (DAP) was replaced by the dynamic fuselage pressure (PQF1) when the probe became contaminated with water/ice during an altitude excursion (150411-152444). An offset of 1.6 mb was applied to PQF1.

The radar altimeter (APN-159) was replaced by the APN-232 both during takeoff and landing due to spiking in the APN-159 (073401-073900 take off; 164230-165000 landing). No offset was applied.

There were 5 times when the dew point exceeded the ambient temperature by approximately 1° C as the aircraft flew through saturated conditions. No corrections were made at these times.

	<u>Takeoff</u>	<u>Landing</u>
Aircraft static pressure	1010.7 mb	1008.2 mb
Corrected tower pressure	1018.6 mb	1016.6 mb

The aircraft INE positions were re-navigated 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, respectively, 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

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

Form 413-50

Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T _a	T _d	Press. Alt.	Geo. Alt.	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
075700	3659	12312	329	328	268	9.4	3.1	0.0	885	907	1017.9	911.3	81.1	PT 3000'
081055	3742	12349	322	319	252	17.5	3.2	-1.9	880	891	1016.5	911.9	78.2	3000'
083120	3846	12446	349	345	226	26.4	3.2	3.0	880	868	1014.0	912.5	89.1	PT 3000'
084250	3928	12500	345	340	238	25.1	2.8	2.3	875	854	1012.8	912.4	82.4	
085720	4024	12519												PT 3
091600	4024	12433												PT 4 spiralling down to 500' then back to 3000
094430	3942	12401												PT 5 spiral up to 10000'
0951	3954	12342												PT 6
100340	4034	12418												PT 7
100450	4034	12422	232	232	225	32.2	-11.4	-12.6	3066	2971	1009.8	695.4	77.7	10000' hdg → P 8
100835	4025	12440												PT 8 spiral down to 3000
101840	4021	12430	146	151	180	26.5	5.3	4.3	326	293	1010.4	974.9	77.8	1000'
102100	4014	12427												PT 9 spiral up to 8000
103330	4010	12453												PT 10 hdg to PT 11 at 10000 then turn to P 6
1053	3953	12340												PT 6
105730	3946	12352	237	235	212	32.7	-11.6	-13.2	3074	2994	1011.6	694.5	80.9	10000'
105828	3943	12357												PT 5 spiral ↓ to 1000'
111755	4026	12438												PT 4 hdg to PT 3
113100	4020	12530												at new PT 3
113150	4019	12526												Descent to 500' then up to 5000' @ 1500 fpm
113530	4013	12511												5000' back to 500 continuous porpoise to PT 5
115310	3943	12355												PT 5 (New)
120505	4012	12434												PT 4 (New)
121745	3949	12520	234	235	239	14.7	6.4	3.2	364	321	1009.0	970.0	76.7	1000' hdg → P 3 (New)
122130	3941	12532												Turning to PT 5 (New) begin 500 → 5000 porpoise
124420	3931	12359	33	335	199	16.1	5.5	5.3	346	315	1010.2	972.0	74.3	1000' hdg PT 4"
130700	4040	12502												PT 4" Reversing track to PT 5'
130840	4040	12457												Begin 500 → 5000 porpoise from here to PT 5 1500 fpm
132635	3946	12411	147	151	216	16.2	0.1	-1.0	1145	1066	1010.1	894.2	80.9	Descending
133250	3927	12355	182	183	185	13.5	6.4	4.6	338	308	1010.1	973.0	79.4	PT 5 1000' hdg → P 13
134240	3855	12351	134	139	200	15.9	6.5	4.9	337	313	1011.0	973.4	74.4	1000' PT 13
135817	3813	12307												PT 14 at 6000'
140300	3827	12251												PT 15
141700	3907	12340												PT 16
142200	3855	12354												PT 17 spiral down to 1000'
142745	3850	12351	140	146	229	17.8	7.0	5.2	323	295	1010.3	975.0	81.6	1000' hdg → P 18

IOP7 010209Z

AI 1

INE 1

TT 1

DP 2

ALT Press

DAP replaced by PQF1 w/ ~ 1.7 offset
150411 - 152444 ✓

~~Pitch 2 spikes~~
~~092550 ✓~~
~~152645 ✓~~

Used INE1

~~Roll 2 spikes~~
~~✓ 092550 ✓~~
~~152645 ✓~~

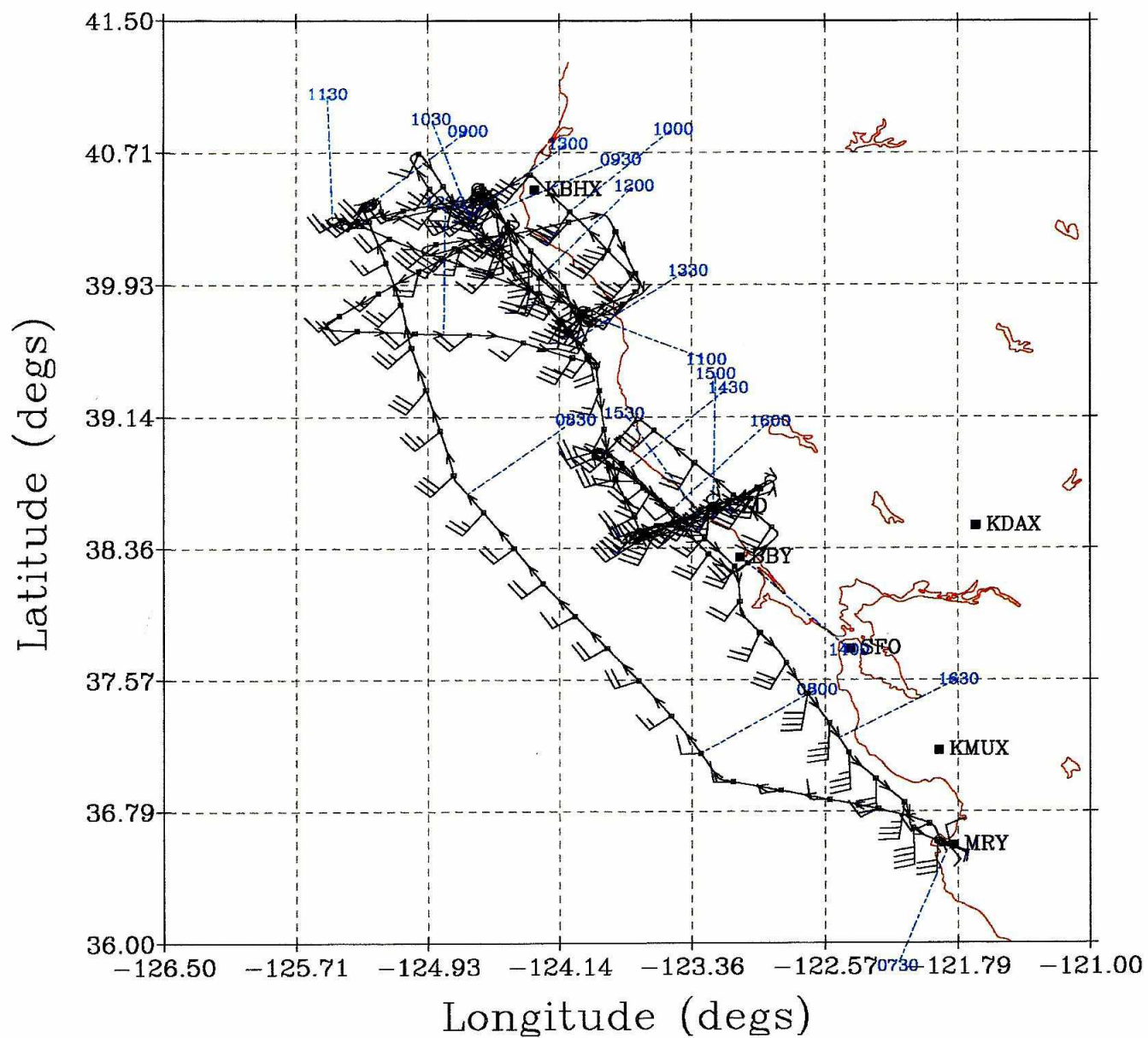
Substitute RA159 with RA232 with 0.0 offset
073401 - 073900 Takeoff ✓
164230 - 165000 Landing ✓

DP Ta7DP $\sim 1^\circ$ 5 planes - not corrected

RENAV (over)

1)	083000	0.1	0.1	38 40.8	-124 41.5 ✓
	091500	0.4	0.1	40 26.1	-124 36.4 ✓
	100000	0.2	-0.5	40 21.7	-124 4.8 ✓
	104500	0.5	-0.7	40 19.4	-123 59.3 ✓
5)	113000	0.2	-0.7	40 16.8	-125 29.7 ✓
	121500	0.5	-1.4	39 54.6	-125 9.9 ✓
	130000	0.0	-0.3	40 18.2	-124 43.6 ✓
	134500	-0.2	-2.0	38 49.2	-123 43.8 ✓
	143000	-0.1	-0.2	38 49.0	-123 44.9 ✓
10)	151500	-1.0	-2.2	38 31.5	-123 24.6 ✓
	160000	-0.5	-0.1	38 35.2	-123 28.4 ✓
12)	165000	-2.1	-2.0	36 35.2	-121 50.5 ✓

Flight= 010209I PACJET IOP 7
Time Interval=070000-170000 UTC



P-3 CHIEF SCIENTIST EVENT/RADAR LOG**Flight Number:** 010209I**PACJET IOP#7****Date:** Feb. 09, 2001**Aircraft ID:** N43RF**Chief Scientist:** Kingsmill*Doppler Scientist:* Smull (NSSL/UofW) *Radar Tech:**Cloud Physics Sci:* Colle*Data Tech:**Radar parameters:* PRF1/PRF2 3200/2133, 0.25 microsecond pulse

Setup file = PACJ2

Pulses/sample = 32

Threshold on REF

Alternate Setup = PACJ1: PRF 1600, 0.50 pulse

Event Log

<i>Time (Lat, Lon), Trk (deg), Prs (mb), Alt (m)</i>	<i>Event & Comments</i>
	Flight Deck Crew: AC Commander: Taggart; Co-Pilot: Halverson; Nav: Newman; Flt Engineer: Wade; Flt Director: Shepherd; Radar Tech: Lynch; Data Tech: Delgado. HF Operator: Rogers; Dropsonde: McNamara (No drops planned) Media: Gardner (AP), Chagoya (NPS); McWilliams (NOAA Videographer). Some delay in getting off due to tower closing at 07 UTC. For future reference, might be good to schedule a nominal 07UTC takeoff at 0645. This is the first flight on which we're carrying deskjet printer attached to INMARSAT laptop.
071631 Z (36.58887, -121.85686) 257.067°, 1012.4 mb, 1461.0 m	Engine Start
072325 Z (36.58895, -121.85690) 344.928°, 1012.4 mb, 1461.0 m	Block Out. Inmarsat message: Paul Neiman reports light precip at Cazadero last few hours. BBY sounding has WNW winds up to CZD's height, but SW'ly 2500 m & above.
073707 Z (36.58784, -121.84694) 292.782°, 1012.0 mb, 1521.0 m	Takeoff Rwy 28. Approved for 4kft on transit N. Requesting block 4-12kft, approved.
074813 Z (36.85582, -122.55803) 282.743°, 879.5 mb, 1193.0 m	LF radar up, but tail slow to come up--error messages. Had some problems booting on ground, worrisome.
075615 Z (36.96439, -123.12968) 282.790°, 911.3 mb, 909.0 m	Nice enhancement on 07 UTC IR image just off/N of Cape Mendocino. With cold air cu immediately to its rear, we're 99.9% certain this is NCFR.

080123 Z (37.20934, -123.35951) 328.129°, 911.2 mb, 907.0 m	Tail & LF up and recording on DR1. NNE-SSW band close in; beyond that intersection of NE-SW band and E-W band near 125deg23' of triple point (?) 38deg51' 125deg23' -- just W of our Pt 2 on initial NNW-bound survey leg. At 3kft.
081154 Z (37.75543, -123.85512) 322.373°, 912.1 mb, 889.0 m	Starting to pick up shallow echos on tail to RHS
081649 Z (37.99152, -124.08772) 322.209°, 912.0 mb, 888.0 m	LF echo extending E toward shore up near 39deg37', i.e. just S of our Cape Mendocino box
081810 Z (38.05748, -124.15285) 322.089°, 912.1 mb, 886.0 m	Passing through some shallow convection, tops only to 3 km, but intensities 35 dBZ or so.. Still no sign of linear echo NW beyond previously noted line w/ vertex near our Pt 2.
082246 Z (38.29299, -124.35931) 327.673°, 912.0 mb, 882.0 m	Nice linear band on LF from 240deg/300 km to 270deg/140 km to 330deg/150 km. (36Deg58'/127deg21' to 38deg19'/126 deg to 39deg30'/125deg14'
082943 Z (38.66492, -124.67867) 325.631°, 911.9 mb, 872.0 m	LF showing 50dBZ in cell just to our N/NE.
083135 Z (38.76707, -124.76886) 339.481°, 911.6 mb, 872.0 m	At Pt 2, turning to track 350 deg, still at 3kft. Tail echobecoming more widespread
083343 Z (38.91137, -124.80717) 347.532°, 912.4 mb, 863.0 m	Tail intensities up to 45 dBZ, tops to 8km. Planning profile at Pt 3 (NW corner of box) down to 1.5kft & up to 10 kft, then transit to Pt 4 at 10kft, and at Pt 4 spiral down to lowest possible.
083845 Z (39.22492, -124.91171) 345.105°, 912.8 mb, 856.0 m	In a brief lull on the tail. Have disconnected printer, willreboot ASAP in hopes of being able to enable screen grabs
084114 Z (39.37860, -124.96669) 345.262°, 912.4 mb, 857.0 m	Tail full of echoes again. This track is going to take us across probable NCFR
084408 Z (39.56168, -125.03053) 344.942°, 911.9 mb, 857.0 m	Adjusting track to 350. Some mod bump.
084648 Z (39.73494, -125.06805) 351.037°, 912.2 mb, 851.0 m	No significant wind shift yet, still holding 220.
085012 Z (39.94815, -125.13838) 343.553°, 912.0 mb, 850.0 m	Have been in a small lull, echoes more stratiform and mainly off RHS. Preparing to cross another NE-SW echo band, less defined on LF *but* looks tough on nose radar
085211 Z (40.07157, -125.18532) 342.909°, 912.1 mb, 845.0 m	Entering intense band. Wind coming around to 250 deg in bursts. Not the world's sharpest front. But dir change won't "stick", now back to 240.
085723 Z (40.38316, -125.31883) 341.925°, 912.4 mb, 835.0 m	At Pt 3, doing spiral down to 0.5 kft, then up to 10 kft, intense echo just to our E. Winds are around to 265 deg, we're post-frontal (but just barely)
090002 Z (40.37792, -125.32289) 327.979°, 990.3 mb, 162.0 m	At 500 ft (actually 501, no LPU's ;) Wind has *backed* around to 200- got us solidly into the blocked flow. Seems like Rossby-radius rule is of questionable applicability tonite.
090953 Z (40.32915, -125.09349) 72.315°, 693.4 mb, 2999.0 m	At 10 kft, continuous shield of precipitation between here & shore/Cape M. Tracking 074 toward Pt 4. Picking up just a little ice on this leg at 0914
091513 Z (40.43752, -124.58675) 77.839°, 694.3 mb, 2987.0 m	At Pt 4, descending to 0.5 kft. Have seen 50+dBZ on tail in small but intense cells last minute or two
091956 Z (40.41811, -124.60318) 303.026°, 864.7 mb, 1264.0 m	Wind profile variations are more complex on here than seen farther offshore. Just passed through graupel shower at 0920
	Probably cutting off this profile at 1.0kft due to airspeed fluctuations & chop
092302 Z (40.47942, -124.65224) 347.948°, 983.1 mb, 230.0 m	Wind has backed all the way around to 170 briefly, shallow

092349 Z (40.51719, -124.62093) 80.051°, 982.9 mb, 229.0 m	At 500', climbing. Through locally intense echo, ocnl light-mod chop.
092559 Z (40.50244, -124.66255) 355.634°, 905.7 mb, 898.0 m	Climbing thru freezing level. Got what we needed on this last spiral, so no need to descend to 500' at Pt 5.
092652 Z (40.52832, -124.60973) 124.251°, 906.3 mb, 893.0 m	Graupel shower. To 3-4 mm. Still no serious icing.
092808 Z (40.46996, -124.55550) 145.877°, 904.9 mb, 903.0 m	Tracking 158, still at 3kft. MVA for 3 sides of box will be 10 kft, we're still operating in block up to 12 kft.
093602 Z (40.05782, -124.32202) 148.158°, 903.5 mb, 928.0 m	BIG electrical discharge on the nose. Nice bowing segment on LF, apex near 39deg33' 124deg 30'
094316 Z (39.72738, -123.96761) 139.002°, 904.3 mb, 925.0 m	At Pt 5, climbing to MVA. Plan for microphysical stack: At Pt 9 climb to 8kft, outbound to Pt 10, climb to 10kft for return to coast. Then up to 12 kft to Pt 11, and reverse track back to Pt 10. Then spiral down to 6kft and return to Pt 9. Also extending Pt 10 about 10 nm farther offshore.
095317 Z (39.97005, -123.69873) 323.620°, 695.1 mb, 2487.0 m	At Pt 6 at 10 kft, LF pretty useless up here Tracking 325. Seeing some 2nd trip at 0955, but not too bad. Still, Colle recommends shifting to single PRF for higher microphysical legs, and I agree-- velocities are not so high tonight to require large Nyquist.
100231 Z (40.50356, -124.22827) 323.613°, 695.4 mb, 2536.0 m	Some echo bleeding over to E of coastal range crest, tops to 5 km, but very stratiform; was stronger earlier on this leg to S. Reports from PACJET ops indicate precip
100340 Z (40.56805, -124.29234) 320.295°, 695.3 mb, 2715.0 m	At Pt 7, turning to track. FSSP is down, bad laser? Failed early in flight (08Z). Cloud probes have been working very well. At 1006 UTC, echo getting more continuous now that we're out over water.
100816 Z (40.42829, -124.58601) 232.036°, 695.8 mb, 2971.0 m	At Pt 8, picking up some ice, descending to 3kft
101520 Z (40.49651, -124.63858) 64.279°, 968.4 mb, 347.0 m	At pt 8, at 1000 ft. Winds 210/16kts. Heading towards pt. 9. Winds increasing to 170/27 kts.
102034 Z (40.26238, -124.42841) 145.730°, 973.2 mb, 311.0 m	At pt. 9, heading up 8000 ft. Switching to single PRF.
102532 Z (40.31096, -124.42455) 84.064°, 751.9 mb, 2375.0 m	at pt. 9, at 8000 ft. Echoes on radar west of CM seem to be weakening, very shallow.
103350 Z (40.11020, -124.90527) 252.938°, 750.9 mb, 2382.0 m	At pt 10, ascending up to 10000 ft. Echoes appear to be shifting inl and south.
104711 Z (40.29211, -123.83167) 155.821°, 694.5 mb, 2732.0 m	At pt. 11, heading towards pt 6 at 10000 ft. Over some weak (24-28 dBZ) stratiform preccip (15 km wide). Will pass over NE-SW orientated band (10 km wide).
105337 Z (39.90284, -123.64294) 158.404°, 694.6 mb, 1870.0 m	At pt. 6, heading to pt. 5 at 10000 ft. NE-SW band extends SW of Swern CM.
105919 Z (39.71628, -123.99191) 301.607°, 714.6 mb, 2773.0 m	At pt, 5, spiraling down to 1000 ft.
110339 Z (39.79625, -123.98842) 110.119°, 875.0 mb, 1177.0 m	Switched back to dual PRF on tail radar.
110650 Z (39.83908, -124.08414) 347.721°, 974.0 mb, 303.0 m	At pt. 5, heading towards pt. 4 t 1000 ft winds 170/22 kts.
111749 Z (40.43114, -124.61543) 317.881°, 974.7 mb, 289.0 m	At pt. 4, heading toward pt 3 at 1000 ft., winds slowly coming around from 180 to 200 deg.
112508 Z (40.34991, -125.15450) 252.044°, 974.2 mb, 286.0 m	At pt. 3, heading west 10 mi additional distance to get to back side of nearby rainband to see if we can see windshift. Winds went briefly to 250, but back to 225 shortly after pt. 3.
113233 Z (40.30228, -125.39938) 113.266°, 990.5 mb, 148.0 m	At 500', climbing to 5kft @ 1500fpm

114116 Z (40.05786, -124.76152) 114.751°, 917.7 mb, 785.0 m	Planning to shift this triangle-shaped flight pattern 15 nm S to follow slow drift of front.
114219 Z (40.03101, -124.68536) 114.660°, 861.8 mb, 1288.0 m	Rainband from 165/140 km to 178deg/200 km to 190deg/300 km (38deg47'/124deg11' to 38deg12'/124deg32' to 37deg20' 125deg13' New pt 3 39 42' 125 38'
115053 Z (39.80584, -124.06746) 117.641°, 860.2 mb, 1310.0 m	Radarlocked up at 1148. Re-started 1151.
115310 Z (39.72217, -123.93050) 131.615°, 946.1 mb, 545.0 m	At Pt 5, descending to 500 ft Triangle began at 1106, thus took aprox 45 min to finish. Planning to repeat.
115436 Z (39.70049, -123.98572) 321.300°, 981.0 mb, 247.0 m	LF echo quite widespread. Tracking 324. Nav estimates on-station for science through 1530 UTC
120209 Z (40.06625, -124.37930) 315.982°, 969.9 mb, 333.0 m	Tail radar quieting down here. NNE-SSW line that we previously extended W of Pt 3 to get behind is more intense. Endpoints 360/100 to 240deg/150km(41.0/124deg27' to 39deg26'/126deg, this band is back in the cold air.
120513 Z (40.20313, -124.55830) 300.805°, 969.9 mb, 326.0 m	At Pt 3', turning to track238.
121438 Z (39.92223, -125.14366) 235.723°, 970.4 mb, 321.0 m	Nice cellto RHS, tops to 5km, ocnl 7 km. LF showing nice series of narrow NNE-SSW oriented bands in cold air
121852 Z (39.78291, -125.39030) 232.966°, 970.2 mb, 322.0 m	Tail now echo-free in slot between narrow rainbands.
122111 Z (39.70390, -125.52483) 231.784°, 970.2 mb, 322.0 m	At SW corner point of triangle, descending to 500ft
122657 Z (39.64522, -125.10104) 92.896°, 867.2 mb, 1234.0 m	CZD trace shows that rain started between 8-9 Z, 0.10" so far. KMUX image is VERY dead, looks like a bust for 00Z Eta which was forecasting 15 microbars/sec of upward motion over N. SFO bay at 12Z.
123031 Z (39.63351, -124.79570) 89.420°, 988.8 mb, 169.0 m	At 500'. Planning a N-bound run along coast, extend to just N of Cape Mendocino to survey structure of rainband butting up against CM. May porpoise on reciprocal S-bound track and only then consider surveying at CZD. N-most point (Pt 4') will be 40deg42' and 125deg 03'
124156 Z (39.45781, -123.91310) 124.573°, 904.1 mb, 911.0 m	Turning to track N. Dropping down to 1kft. ETA back here 1330. Considering shift to Cazadero thereafter. Tail echoes shallow but fairly extensive, esp. Onshore
125636 Z (40.13766, -124.56035) 321.939°, 971.9 mb, 307.0 m	Very few echoes on tail now. Some
130201 Z (40.40115, -124.82356) 321.348°, 972.1 mb, 299.0 m	Echoes have picked up considerably last few min, seems like we're now N of best of it again though.
130814 Z (40.69913, -124.96832) 140.306°, 972.1 mb, 294.0 m	At our far-north point, turning around to head south, will porpoise on S-bound leg between 500' & 5kft.
131517 Z (40.34010, -124.70787) 144.102°, 967.6 mb, 342.0 m	LF shows "knot" of echo just offshore of CZD. Planning to enter pre-programmed CZD box and execute in CCW@ direction at
131739 Z (40.22599, -124.59525) 144.104°, 896.9 mb, 964.0 m	Almost 90 deg of directional shear during this climb (from 270 to 185), fair bit of chop as well.
132328 Z (39.93805, -124.33739) 146.642°, 965.3 mb, 370.0 m	LF showing a pair of tightly spaced bands paralleling coastline near CZD. 1230 UTC IR image from PACJET Oops shows cooling tops immed offshore CZD.
133258 Z (39.46638, -123.92276) 157.162°, 973.0 mb, 307.0 m	At pt 5, heading toward pt 13 at 1000 ft. Winds veered bak to 170 shortly before this turn. Winds went back to 190-200 shortly after this pt.
134159 Z (38.95492, -123.86046) 173.868°, 973.5 mb, 311.0 m	Shallow (<4 km ASL) orographic precip over barrier to the east of aircraft

134704 Z (38.73058, -123.63687) 144.213°, 973.6 mb, 314.0 m	Just past pt 13, 11 minutes from pt. 14. Will be penetrating a narrow NNE-SSW band during the next few minutes. This band still appears to be post-frontal.
135400 Z (38.40635, -123.34259) 144.164°, 973.1 mb, 323.0 m	had a brief windshift back to 170/24 kts. Wider (frontal?) band still 50 km SE of the aircraft. Begin ascent to 6000 ft
135821 Z (38.22803, -123.13451) 131.459°, 809.7 mb, 1814.0 m	At pt. 14, heading inland toward pt. 15 at 6000 ft. Winds 234/26 kts. Tail radar indicates widespread stratiform over the terrain.
140254 Z (38.42098, -122.85648) 35.068°, 812.9 mb, 1715.0 m	at pt.15 now heading toward pt. 16 at 6000 ft. 211/32 kts.
140912 Z (38.73292, -123.17670) 318.305°, 812.9 mb, 1138.0 m	Entering widespread stratiform +/- 20 km around the aircraft. Band has a somewhat N-S orientation 50 km to the south.
141816 Z (39.09045, -123.71519) 214.104°, 812.8 mb, 1766.0 m	At pt. 16, left to pt 17 at 6000 ft
142213 Z (38.90437, -123.88945) 214.869°, 812.8 mb, 1764.0 m	At Pt 17, descending to 1kft, to track 140.
143633 Z (38.52577, -123.42957) 176.619°, 964.7 mb, 393.0 m	At Pt 18, climbing to 3kft . ATC has approved microphysical stack.
144125 Z (38.41443, -123.71355) 308.658°, 883.1 mb, 1111.0 m	At Pt 20, climbing to 6kft. S-shaped band with mid portion standing off Cazadero coast roughly 10 nm. Cloud probe continuing to work well as it has all night.
144800 Z (38.58981, -123.25504) 63.030°, 811.3 mb, 1562.0 m	Just came through fairly heavy graupel shower! Ocnl mod turbulence. Happened just as we hit the coastline. JW liquid water hit 0.5-0.75 g.
145428 Z (38.76018, -122.86525) 229.016°, 811.0 mb, 1220.0 m	Level at 6kft at Pt 21, tracking
145934 Z (38.62275, -123.19861) 248.850°, 812.2 mb, 1488.0 m	At Pt 22 (directly above CZD) , climbing. Shifted radar to setup PACJ1 at 1501. Planning dropsonde at Pt. 20.
150322 Z (38.60813, -123.26134) 239.955°, 644.5 mb, 3302.0 m	Tracking 236 at 12 kft. Cell that we penetrated near coast will be N of our track, consistent with cell motion out of ~190 deg as reported by PACJET Ops.
150527 Z (38.53889, -123.39153) 235.940°, 642.0 mb, 3605.0 m	Rainband from 120/90 to 150/150 to 175/200 (38deg07'122deg30' to 37deg44'122deg34' to 37deg07'123deg14'
150856 Z (38.42070, -123.63503) 240.734°, 642.1 mb, 3598.0 m	Sonde #1 away. Winds good. Splashed at 1513:35. First & final drop of this mission.
151027 Z (38.39800, -123.74203) 316.205°, 665.8 mb, 3318.0 m	Turning toward Pt 21. Tracking 070 at 10 kft. Beautiful video of orographic cloud mass rising over terrain. ETA at MRY is 1630 UTC.
151900 Z (38.62537, -123.09151) 66.709°, 693.6 mb, 2638.0 m	Absolutely CLASSICAL view of generating cells on tail radar. Picking up some wing ice.
152113 Z (38.68545, -122.90866) 67.048°, 693.7 mb, 2791.0 m	At Pt 21, descending to 8kft, returning radar setup to PACJ2.
152639 Z (38.63445, -123.11417) 233.068°, 751.1 mb, 1881.0 m	Nice V-shaped convective signatures on LF to our NW (N of our planned track) inside 50 km.
153541 Z (38.39899, -123.66028) 248.078°, 751.0 mb, 2392.0 m	At Pt 20, will track 350 to Pt 13 to set up final south-bound Doppler leg along Cazadero/Bodega Bay coastline.
155435 Z (38.81238, -123.77213) 123.473°, 974.9 mb, 298.0 m	On track 120-135; handling media questions last few min. Reached Pt 17 at 155115 38 56 123 25. Seeing good plumes of echo over Cazadero range and points south.
160447 Z (38.38559, -123.24594) 141.111°, 974.8 mb, 304.0 m	Echoes on LHS tail dwindling, but visual on clouds still strongly suggestive of ascent. Pt visible off LHS, Colle took frame 33.
160757 Z (38.25012, -123.10361) 141.187°, 974.8 mb, 306.0 m	Adjusted track to 172 to avoid marine sanctuary/Pt Reyes. Frame 34 of Pt Reyes at 1612. Tail echoes on LHS are on the upswing.
162104 Z (37.62411, -122.76788) 153.883°, 975.1 mb, 316.0 m	NNE-SSW frontal band on LF appears to be just west of mouth of MRY Bay

162520 Z (37.42867, -122.62923) 150.206°, 975.2 mb, 320.0 m	Winds 180/35-40 kt are probably amongst the strongest we've seen all day.
163149 Z (37.14543, -122.43698) 155.337°, 975.2 mb, 325.0 m	Picking up some chop, MRY Bay coming up on LHS. Looks to be WSW-ENE line of echoes cutting across heart of bay.
163715 Z (36.93684, -122.21967) 136.991°, 979.9 mb, 288.0 m	Climbing to 2 kft, retracting radome. Requesting visual to 10 R, leaving FL10 for 20.
164211 Z (36.74936, -122.07555) 169.922°, 949.1 mb, 554.0 m	Turning to join final. Securing radar. Great dataset, on balance among of the best I've ever seen for orographic precip w/ frontal interactions
164803 Z (36.60780, -121.90669) 111.715°, 981.6 mb, 191.0 m	Nasty crosswind, dropping off tho.
164922 Z (36.59022, -121.85396) 111.765°, 1011.0 mb, 3.0 m	Landed
165600Z	Blocked-in

Point P 1 37.003-123.194
 Point P 2 38.750-124.776
 Point P 3 40.327-125.273 4033 12514 240
 Point P 4 40.416-124.594 4025 1243542
 Point P 5 39.723-123.935 3943 12356
 Point P 6 39.892-123.674 3954 1234252
 Point P 7 40.580-124.352
 Point P 8 40.416-124.594
 Point P 9 40.229-124.418
 Point P10 40.159-124.727 4007 12455
 Point P11 40.346-123.909 4021 12354
 Point P12 40.229-124.418
 Point P13 38.951-123.912 3857 12355
 Point P14 38.263-123.137 3816 12308
 Point P15 38.455-122.897 3828 12254
 Point P16 39.124-123.702 3907 12342 10-11
 Point P17 38.951-123.912 3857 12355
 Point P18 38.529-123.435 3832 12326 11-10
 Point P19 38.567-123.333 3834 12320
 Point P20 38.431-123.680 3820 12341
 Point P21 38.707-122.948 3842 12257
 Point P22 38.609-123.213 3837 12313

72 59 42
 6 6 6 27
 432 354 6 832 6
 33 558 6762
 198 6
 BHX Box 402

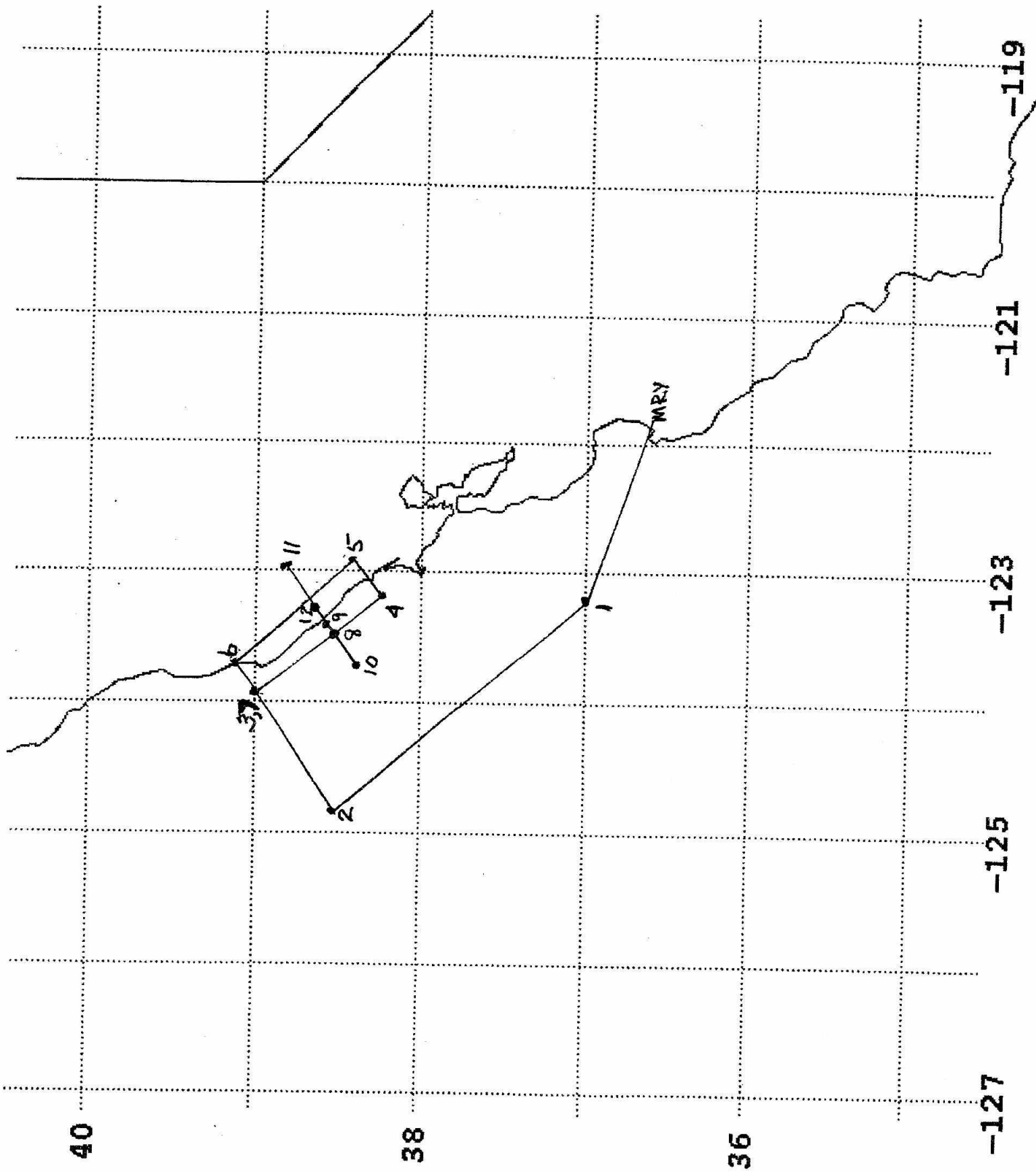
NEW { 5 3927 12356
 4 4010 12436 4042 12503
 3 3942 12538

3000'
 8-7-6-5 MVA 95 91
 3000' 570 546
 MVA 26 14
 10000' 156 38
 935
 42 5610 46
 6 12 6
 252 72
 435 53
 2610 318
 SF 3005 57
 342

BBY/CZD 1518 BK 15 GN 25
 Temp SET 15 -RAPL

MRY-1-2-13-14 3000'
 14-15-16-17 6000'
 17-18 3000'
 18-19 1000'
 19-20 3000'
 20-21-22 6000'
 22-20 12000'
 20-21 10000'
 21-20 8000'
 20-18 3000'

#3 spiral 1500
 ↑ 10000 to 4 68
 ↓ 1500 ↑ 3000 408
 → pt 5 68 43
 258
 335
 3' 4012 180
 12548 145 61
 21 366
 13 95
 2.5 570
 15.5



IOP 7 Proposed P-3 flight plan for 9 Feb. 2001

T.O. MRY 0700Z ETE 9 hrs.

Pts.	P1	37.0N	123.2W
	P2	38.6N	124.8W
	P3	39.0N	123.9W
	P4	38.3N	123.2W
	P5	38.5N	122.9W
	P6	39.1N	123.7W
	P7	39.0N	123.9W
	P8	38.5N	123.4W
	P9	38.6N	123.3W
	P10	38.4N	123.7W
	P11	38.7N	122.9W
	P12	38.6N	123.2W

MRY - P1 - P2 - P3 - P4	3000 ft.
P4	Spiral up to 6000 ft.
P4 - P5 - P6 - P7	6000 ft.
P7	Spiral down to 3000 ft.
P7 - P8	3000 ft.
P8	Spiral down to 1000 ft (see attached x-sect.)
P8 - P9	1000 ft.
P9	Spiral up to 3000 ft.
P9 - P10	3000 ft.
P10	Spiral up to 6000 ft. or MVA
P10 - P11 - P12	6000 ft. or MVA
P12	Spiral up to FL120
P12 - P10	FL120
P10	Spiral down to FL100
P10 - P11	FL100
P11	Spiral down to 8000 ft.
P11 - P10	8000 ft.
P10	Spiral down to 3000 ft.
P10 - P8	3000 ft.

Repeat stack and box if time permits.

Ferry to MRY

17 { 1000

14-15-16-17 MVA

13-14 1K

PT5' → P13 1K

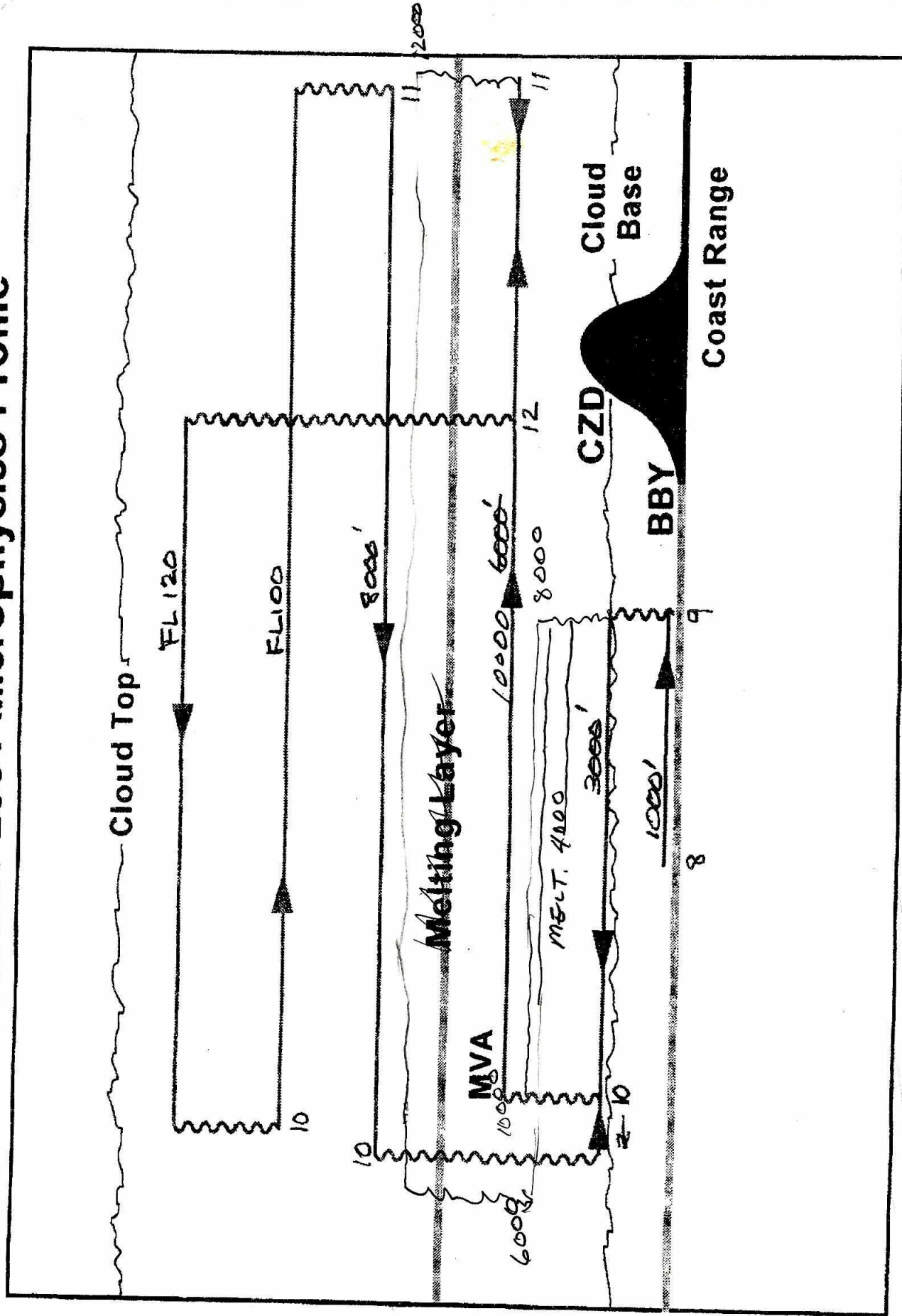
500 → 5000

#411 4042 Jan @ 1000'
Answer Lk to new PT5
13d.15 OAK CR

3 → 5 ~~~~~

4 → 3 1000'
3 → 501 → 5000'

190/3
3015
9/8
3002
10115
36000



NOAA AIRCRAFT OPERATIONS CENTER

P.O. BOX 6829

MACDILL AFB, FL 33608-0829

PHONE: 813/828-3310

FAX: 813/828-6881



FAX

Date: 02/08/01

Pgs. incl. cvr. 4

TO: Wayne Winningham

PHONE NUMBER: 510-745-3334

FAX NUMBER: 510-745-3351

FROM: Jim McFadden

PHONE NUMBER: (813) 833-1734

Attached is the proposed plan for tomorrow, 9 Feb. 2001. Takeoff planned for 0700Z. ETE 9.0 hrs.

Should weather system slow, takeoff time will be delayed or pattern will be shifted northward. Final points will be filed prior to flight.

NOAA • AOC • SED
N43RF DATA STATION LOG

Project : PacJet '01

Mission : PacJet #7

Flight ID 010209I

Operators : Lynch, Delgado

Take Off : 07:37

Landing : 16:49

RAMS DAT 1 On <u>07:20</u>	RAMS DAT 1 Off : <u>16:56</u>	Data : <u>Slow</u> <u>Fast</u> <u>AVAPS</u>
RAMS DAT 2 On [8 / 9] :	RAMS DAT 2 Off :	Data : Slow Fast AVAPS
RAMS DAT 3 On [8 / 9] :	RAMS DAT 3 Off :	Data : Slow Fast AVAPS
Printer On : <u>7:20</u>	Printer Off :	Disk Recording <u>Enabled</u> / Disabled
MARS DAT 1 On <u>08:02</u>	MARS DAT 1 Off : <u>16:42</u>	CPU Selected : A <u>B</u>
MARS DAT 2 On [8 / 9] :	MARS DAT 2 Off :	VCR's Used : N L R D
MARS DAT 3 On [8 / 9] :	MARS DAT 3 Off :	VCR Mode : VHS / S-VHS 2 / 12
PMS DAT 1 On : <u>07:39</u>	PMS DAT 1 Off : <u>16:27</u>	
PMS DAT 2 On :	PMS DAT 2 Off :	Tapes Given To
PMS DAT 3 On :	PMS DAT 3 Off :	RAMS : <u>JD</u>
VCR Tape 1 On :	VCR Tape 1 Off :	MARS : <u>JD</u>
VCR Tape 2 On :	VCR Tape 2 Off :	PMS : <u>JD</u>
VCR Tape 3 On :	VCR Tape 3 Off :	VCR : <u>—</u>

CARCAH Tasking

Mission Number : WXWJE

Storm Name : Train

ASDL Setup

Flight Level (Minobs) Sample Frequency : 30s

Flight Level (Minobs) Block Time : 10m

Data Station Operator Notes

Aircraft : N43RF

Project : PacJet '01

Mission : PacJet #7SED Crew: Lynch, MacNamara, Delgado, RogersFlight ID : 010209IPre-Flight: 05:10Take-Off: 07:37Landing: 16:49

System			Pre-Flight	In-Flight	Post-Flight		
NAV	INE #1	Aligned to: <u>D</u>	<u>✓ TL</u>	<u>(3)</u>	<u>-2</u>	<u>-2</u>	<u>B</u>
	INE #2	Aligned to: <u>D</u>	<u>✓ TL</u>	<u>(5)</u>	<u>-15</u>	<u>+14</u>	<u>3</u>
	GPS		<u>✓ TL</u>		Lat	Long	GS
	Diff GPS		<u>✓ TL</u>				
RADAR	Nose		<u>✓ TL</u>				
	L/F	R/T SN: <u>103</u>	<u>✓ TL</u>		Mod Switch Off? <u>✓ TL</u>		
	Tail	R&T SN <u>102/202</u>	<u>✓ TL</u>		Mod Switch Off? <u>✓ TL</u>		
	MARS Data System		Clean DAT? <u>OK</u>		# DATs: <u>1</u>		
PMS	2DG-C	Ch 1/64: <u>1</u>	<u>✓ TL</u>				
	2D-P Mono	Ch 1/32: <u>6.7/1.6</u>	<u>✓ TL</u>				
	FSSP	Ref VDC: <u>7.89</u>	<u>✓ TL</u>	<u>4</u>			
	SEA Data System		Clean DAT? <u>OK</u>	<u>6</u>	# DATs: <u>1</u>		
TEMP		Cal High	Cal Low			Cal High	Cal Low
	Temp #1	<u>30.0</u>	<u>-30.6</u>	<u>✓ TL</u>			
	Temp #2			<u>✓ TL</u>			
	Temp #3	(Starboard)		<u>NI</u>			
	Dewpoint #1	(General Eastern)		<u>✓ TL</u>			
	Dewpoint #2	(Edge Tech 137)		<u>✓ TL</u>			
	Dewpoint #3	(Buck 1011C)		<u>✓ RDM</u>			
PRES	Attack Angle	(AP/DAP)		<u>RDM</u>			
	Slip Angle	(BP/DBP)		<u>RDM</u>			
	Differential	(PQ1/PQ2/PQ3/PQ4)	<u>①</u>	<u>RDM</u>			
	Absolute	(PS1/PS2)		<u>✓ TL</u>			
	Radome Transducers		Plugs? <u>OK</u>				
	Cabin Transducer	(Station 5)	<u>②</u>	<u>✓ TL</u>			
FLTLVL	Apr-159	SN: <u>71-02</u>	<u>✓ TL</u>		Off?: <u>✓ TL</u>		
	Apr-232	SN: <u>1761</u>	<u>✓ TL</u>		Off?: <u>✓ TL</u>		
	King Liquid Water		<u>✓ TL</u>				
	J&W Liquid Water		<u>✓ PED</u>				
	Lyman Alpha Hygrometer		Plugs? <u>OK</u>		Plugs?:		
	Down PRT-5	(SST)	<u>✓ TL</u>				
	Side PRT-5	(CO ²)	<u>✓ TL</u>				
	Up PRT-5		Open? <u>✓ TL</u>		Closed? <u>✓</u>		
	RAMS Data System		Clean DAT? <u>OK</u>		# DATs: <u>2</u>		
	F/D Laptop		<u>RDM</u>		Off?		
MISC	C.I. Printer		<u>✓ TL</u>				
	ASDL		<u>✓ TL</u>		Off?: <u>✓ TL</u>		
	Exterior Walk Around		<u>OK</u>				
	Video	N L R D	<u>NU</u>		Lens Covers?: <u>✓ TL</u>		
	AXBT Receivers		<u>N/A</u>				
	AXBT Sonobouys		#On Board: <u>0</u>	#Dropped: <u>0</u>	#Good: <u>0</u>		
	AVAPS		<u>RDM</u>				
	GPS Dropsondes		#On Board: <u>41</u>	#Dropped: <u>1</u>	#Good: <u>1</u>		
USER	FCU	<u>A B C</u>	<u>✓ TL</u>		UPS-Off?:		
	SatComm				Accelerometers		
	NASA GORE		<u>✓ TL</u>		#1 (2 G): <u>8194</u>		
	Cleomed Radiometers		<u>OK</u>		#2 (2.5 G): <u>10686</u>		
					#3 (3 G): <u>5967</u>		
				#4 (3.5 G): <u>2092</u>			

Cindy

Please Note any Discrepancies

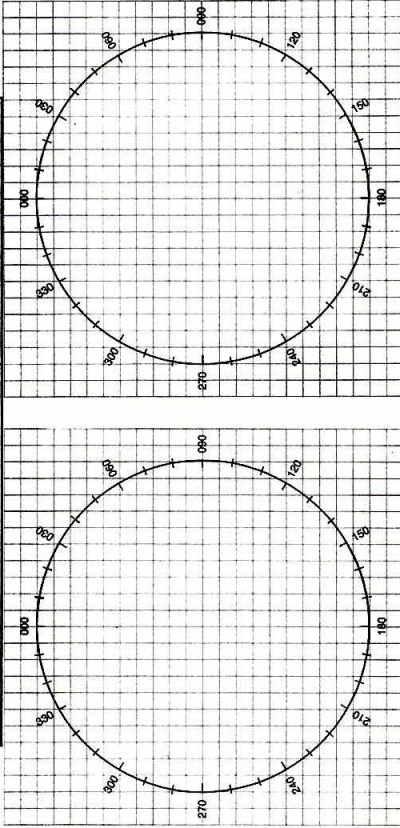
[illegible]

CLEARANCES

FREQ	ALT	HDG	OTHER
			90/5 30.08
			MAY 6000 (3350)
			0745
			CLR 5K-12 4P
			132.2 1903
			6 RAN

MISSION LOG

PAGE 1 OF 1



POSITION REPORT

1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

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:

UHF/VOICE VHF/VOICE MF/VOICE HF/CW MF/CW
243.0 121.5 2182 KHZ 8364 KHZ 500 KHZ

MAYDAY, MAYDAY, MAYDAY

THIS IS NOAA, NOAA, NOAA

- POSITION N/S E/W AT Z

- HEADING TRUE/MAG

- AT KTS TRUE/INDICATED

- FLIGHT LEVEL OR ALTITUDE

- WE ARE A P-3 AIRCRAFT WITH SOULS ON BOARD

- NATURE OF EMERGENCY

- ASSISTANCE DESIRED

- PILOT INTENTIONS

- WE HAVE ENDURANCE REMAINING

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	VAR +E=>	TH	DR +R=>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
0717																				EN6 START
0723																				58.2K 28
0737																				76
0747	Δ	3650.7 12529.7	3650.6 12229.9	+1.1 -1.2	3650.9 12229.9	-1.2 -1.3	16E	284	φ	284	217	222	7	3K	219					
0757																				MOT PT 1
0819	Δ	3807.1 12412.8	3806.9 12413.0	+1.2 -1.2	3807.7 12412.9	-1.6 -1.1						224	25	3K						INS # UNREL
0831																				MOT P2
0850	Δ	3957.3 12508.4	3957.4 12507.9	-1.1 +1.5	3958.8 12508	-1.5 +1.4	35E	340	4R	344	233	225	22	3K	224					
0856	Δ																			MOT A3
0943	Δ	3942.9 12329.3	3943.8 12328	+1.4 -1.7	3945.1 12327	-2.2 +1.3						200	27	7						MOT PT 3
1021																				MOT PT 9
1034	Δ	4011.6 12435.9	4011.2 12436.1	+1.4 -1.2	4015.3 12434.7	-4.7 +1.0	23E	248	3R	251	217	218	26	8K	244					9-10
1033																				1033 MOT 10
1203	Δ	4006.8 12426.3	4006.4 12427	+1.4 -1.7	4013.5 12423.4	-6.8 +1.9														
1307	Δ	4041.1 12501.7	4041.1 12502	-1.6 -1.6	4050.4 12501.2	-8.7 +1.6	14E					206	14	1K	220					MOT New Point
1401	Δ	3819.6 12257.5	3820.2 12259.5	-1.6 -2.0	3830.9 12251.2	-11.0 +6				070		229	31	6K						

PAGE ____ OF ____

FIX TYPES
(G) - GPS (I) - INS (R) - RADIO (V) - VISUAL (C) - CELESTIAL (D) - DR

(G) - GPS (I) - INS (R) - RADIO (V) - VISUAL (C) - CELESTIAL (D) - DR

[illegible]