

U.S. Dep't. of Commerce / NMAO / NOAA / Aircraft Operations Center

FLT ID: 100124n	From: RJTV	To: PHNL
FLT #: 10-27	Blk In: 1537 Z	Lnd Time(on): 1532 Z
ETD: 1700 Z	Blk Out: 0813 Z	T/O Time (off): 0822 Z
ETE: 7	Total Blk: 7.4 (7.4)	Total Flt: 7 hr 10 min (7.2)
Sponsoring Org: NCEP	Program: WSR10	Purpose: Recon

AOC Flight Crew

Aircraft Commander: Hagan	Data System: Rogers
Co-Pilot: Glover, Toth	Avaps:
Navigator: 1	System Engineer: J Roles
Flight Eng: Negron 1	AA: J. Greene
Flt Director: Almeida, Williams	AA:
Avionics:	Crew Chief:

Participating Scientists, Visitors, & Add'l Aircrew on back.

of people listed on back:

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	11004.7	1001mb 3007	1013.9	2993 - 1013mb PHNL

ATIS - Takeoff	0555z	17011618 745K 11/M07	3007
ATIS - Land	0000	9999 FcW021 21/18	2993

Data Source	Number	Data Disposition / Date / Quality / File Name(s)
Flight Level Tapes	1	F05a.ads
Radar Tapes		
Dropsondes	17	Good: 16 Bad: 1 Sent: 16
AXBT		

List other data sources on back in Remarks section.

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)	Recco Times:	Fix #	Fix Time
Storm Name: _____			
Mission ID: NOAA9 05WSW TRACK99			

not HD

N49RF AOC GPS Dropwindsonde Log

Flight ID: 100124N

Flight Director: Almeida/Williams

Mission ID: N04A9 054520

Storm/Track: TRAC 99

Pg 1 of 1

Ch. #	Drop #	Sonde ID	Drop Time (UTC)	Lat (°N)	Lon (°W)	Wx Cond.	L5/R5	SFC Pts (mb)	Ob #	R5 Lowest Winds (Ht, Ws, Wd)	L5 Lowest Winds (Ht, Ws, Wd)	Sent Time (UTC)
1	1	5089	094219	36.8	153.2	RAE-1C	R5	1018.5	1	SFC 021		102504
2	2	0183	100530	36.9	156.7		R5	1015	2	SFC 00C		102549
1	3	5157	102014	36.9	160.4		R5	1008.3	3	SFC 028	PTA	102106
2	4	5148	104007				R5	1001	4	SFC 050		110834
1	5	5161	104431	36.7	164.9		R5	995	5	SFC 055		112527
2	6	36178	110004	36.5	167.9		R5	991.2	6	SFC 071		114416
1	7	5058	112008	36.1	171.7		R5	1017	7	SFC 110		120628
2	8	5159	114007	36.6	175.5		R5	1004.5	8	SFC 090	WIND	122204
1	9	6249	120003	37.0	179.3		R5	10058	9	SFC 305		124254
2	10	5115	122003	37.3	176.9		R5	1004.9	10	SFC 263		131700
1	11	5046	124002	37.5	173		R5	10027	11	SFC 280		132441
2	12	5027	126025	37.5	169.2		R5	10048	12	SFC 286		134214
1	13	6292	132010	35.5	167.1		R5	10072	13	SFC 277	WIND/PTA	140527
2	14	5147	134008	33.1	165.5		R5	1010.3	14	SFC 265		142316
1	15	0182	140007	28.3	162.7		R5	1011.9	15	SFC 280		145226
2	16	13018	142007	26.1	161.4		R5	1011.9	16	SFC 266	LAST OBS	150522
1	17	15079	144004				R5					

LAST

FF

FF

NOAA G-IV N49RF
WSR-10
24 Jan 2010 NOAA9 05WSW



Flight ID: 100124n

<u>Sensor or system</u>	<u>Number or Name</u>
Accelerometer	ACINS
Altitude	PALT
Attack Angle	AKRD2
Dew Point Probe	DPR
Dynamic Pressure	QC2M
Geopotential Altitude	GPGALT
Inertial Selected	VEW, VNS
Static Pressure	PS1M
Slip Angle	SSRD1
Temperature Probe	AT3/TT3
True Air Speed	TAS1
Constants File	49cal092
Project Directory	/proj/1001

Local Met Data:	<u>Takeoff (0822Z)</u>	<u>Landing (1532Z)</u>
Aircraft Static Pressure	1001.7 mb	1013 mb
Tower Pressure (corrected)	1001 mb	1013 mb

Notes:

PS2 spikes down @ 093549Z and ranges ~ 4-10mb below PS1 from 093549Z – 095553Z. PS1 stair steps up and down 1mb from 085855Z – 090154Z and from 091410Z – 091427Z. PS1 chosen for default due to PS2 erroneous data for 20 minutes. PS1 1mb stair steps effect PALT, PALTF, TAS, MACH, XMACH2, DVALUE during the same time.

DAP1 drops ~ 25mb below normal @ 085512Z. A voltage increase was sent to probe to test it, causing erroneous spikes in DAP1 from 115038Z – 115207Z, after which DAP1 returns to it's norm of ~ 1-2mb below DAP2. Affects Attack Angle, AKRD2 was kept as default.

DPL starts out 5C colder, still slow to respond and doesn't get any colder than -30 to -35C. DPL also spikes during voltage increase for DAP1. DPR is default. RH > 100% on descent from 152659Z – 152921Z.

According to Collins and Honeywell GPS (GPLON, GHLOn) dateline was crossed @ 120332Z. IRS1 (LON) responds to dateline cross 7s before the GPS', and IRS2 (LON_PITR) responds 7s after the GPS'.

All other instruments worked optimally during the flight.

17 dropsondes launched: 16 good, 1 bad.

All 16 good drops successfully sent to NCEP and ingested into the 24/12Z model run.

Flight Director:
Phone #:

Jess Williams/Jackie Almeida
(813) 828-3310 ext. 3140

Flight: 100124n

Inertial Altitude

☒ ALT (m)
☐ IRS Baro-Inertial
Altitude
☐ ALT_PITR (m)
☐ IRS Baro-Inertial
Altitude
☐ ADCBCALT (m)
☐ DADC Baro Corrected
Altitude

GPS Altitude

☒ GHALT_SG1 (m)
☐ Honeywell GPS Altitude
(MSL)
☐ GHALT_SG2 (m)
☐ Honeywell GPS Altitude
(MSL)
☐ GPALT (m)
☐ Collins GPS Altitude
(MSL)

Pressure Altitude

☒ PALT (m)
☒ NACA Pressure Altitude
PALTF (feet)
☐ NACA Pressure Altitude
ADCPALT (m)
☐ DADC Pressure Altitude

Radar Altitude

☒ HGM232 (m)
☐ Geometric (Radar)
Altitude

D-Value

☐ DVALU (m)
☐ D-VALUE
Geopotential Alt Source - PALT)

Geopotential Altitude

☒ GPGALT (m)
☐ Collins GPS
Geopotential Altitude
☒ HGALT (m)
☐ APN-232 Radar
Geopotential Altitude

Pitch vs Alt

☒ PITCH (deg)
Aircraft Pitch Angle
☐ PITCH_PITR (deg)
Aircraft Pitch Angle

Roll vs Hdg

☒ ROLL (deg)
Aircraft Roll Angle
☐ ROLL_PITR (deg)
Aircraft Roll Angle

Heading vs Trk

☒ THDG (deg)
IRS1
☒ THDG_PITR (deg)
IRS2

Drift Angles

☒ AOCD (deg)
Computed Drift Angle
☐ AOCD_PITR (deg)
Computed Drift Angle
☐ DRFTA (deg)
IRS1 Drift Angle
☐ DRFTA_PITR (deg)
IRS2 Drift Angle

Track vs DA

☒ AOCTK (deg)
Computed Aircraft Track
Angle from IRS1
☐ AOCTK_PITR (deg)
Computed Aircraft Track
Angle from IRS2
☐ TKAT (deg)
IRS1 Track Angle
☐ TKAT_PITR (deg)
IRS2 Track Angle
☐ TKAR (deg/s)
IRS1 Aircraft Track
Angle Rate
☐ TKAR_PITR (deg/s)
IRS2 Aircraft Track
Angle Rate

Select the following variable references:

☒ 2 ATTACK AKRD(1, 2)	☒ 2 QCX QC(1, 2)M
☒ 3 ATX AT(1, 2, 3, 4)	☒ 2 QCXC QC(1, 2)C
☒ R DPX DP(L, R)	☒ 1 SSLIP SSRD(1, 2)
☒ R DPXC DP(L, R)C	☒ 1 TASX TAS(1, 2)
☒ 6 HZ DVALU (HG, GPG)ALT	☒ 3 TTX TT(1, 2, 3, 4)
☒ 1 PSX PS(1, 2)M	☒ 1 WI IRS 1 or 2
☒ 1 PSXC PS(1, 2)C	☒ 1 XLATC IRS 1 or 2

☒ Print Trackline

Note: IRS = Inertial Reference System.
Equivalent to INS on P-3's. _PITR denotes IRS#2.

Flight: 100124n

Latitudes

____ GHLATF_SG1 (deg)
Honeywell GPS
/ Latitude, Fine
____ GHLATF_SG2 (deg)
Honeywell GPS
Latitude, Fine
____ / GHLAT_SG1 (deg)
Honeywell GPS Latitude
____ / GHLAT_SG2 (deg)
Honeywell GPS Latitude

____ GPLAT (deg)
Collins GPS Latitude
____ / LAT (deg)
IRS1 Latitude
____ / LAT_PITR (deg)
IRS2 Latitude

____ XLATC (deg)
GPS-Corrected Inertial
Latitude

Longitudes

____ GHLONF_SG1 (deg)
Honeywell GPS
Longitude, Fine
____ GHLONF_SG2 (deg)
Honeywell GPS
Longitude, Fine
____ / GHLO_N_SG1 (deg)
Honeywell GPS
Longitude
____ / GHLO_N_SG2 (deg)
Honeywell GPS
Longitude

____ / GPLON (deg)
Collins GPS Longitude
____ / LON (deg)
IRS1 Longitude
____ / LON_PITR (deg)
IRS2 Longitude

____ XLONC (deg)
GPS-Corrected Inertial
Longitude

GPS Differences
____ GDIF1
Position Difference
(Collins - IRS1)
____ GDIF2
Position Difference
(Collins - IRS2)

Compare GPS lat/lon to
inertial lat/lon to see which
inertial did better during the
flight. Compare their
differences.

HDOP

____ GHHDOP_SG1 (none)
Honeywell GPS Horiz.
Dilution of Precision
____ GHHDOP_SG2 (none)
Honeywell GPS Horiz.
Dilution of Precision

VDOP

____ GHVDOP_SG1 (none)
Honeywell GPS Vertical
Dilution of Precision
____ GHVDOP_SG2 (none)
Honeywell GPS Vertical
Dilution of Precision

HFOM

____ GHHFOM_SG1 (m)
Honeywell GPS Horiz.
Figure of Merit
____ GHHFOM_SG2 (m)
Honeywell GPS Horiz.
Figure of Merit

VFOM

____ GHVFOM_SG1 (m)
Honeywell GPS Vertical
Figure of Merit
____ GHVFOM_SG2 (m)
Honeywell GPS Vertical
Figure of Merit

Flight: 100124n

Temperatures

Ambient Temperature

☒ AT1 (degC)
Ambient Temperature,
Top Left
☒ AT2 (degC)
Ambient Temperature,
Bottom Right
☒ AT3 (degC)
Ambient Temperature,
Top Right
☒ AT4 (degC)
Ambient Temperature,
Bottom Left
☒ ATX (degC)
Ambient Temperature,
Reference

Total Temperature

☒ TT1 (degC)
Total Temperature, Left
Top
☒ TT2 (degC)
Total Temperature,
Right Bottom
☒ TT3 (degC)
Total Temperature, Left
Bottom
☒ TT4 (degC)
Total Temperature,
Right Top
☒ TTX (degC)
Total Temperature
Reference

Dewpoint Temperature

☒ DPLC (degC)
Dew Point Temperature,
Left
☒ DPRC (degC)
Dew Point Temperature,
Right
☒ DPXC (degC)
Dew Point Temperature,
Reference
☒ DPL (degC)
Left Dew/Frost Point
Temperature
☒ DPR (degC)
Right Dew/Frost Point
Temperature
☒ DPX (degC)
Dew/Frost Point
Temperature, Reference

Air Temperature

☒ ADCSAT (degC)
DADC Static Air
Temperature
☒ ADCTAT (degC)
DADC Total Air
Temperature

Potential Temperature

☒ THETA (K)
Potential Temperature
☒ THETA E (K)
Equivalent Potential
Temperature
☒ THETA V (K)
Virtual Potential Temperature

Hygrometers

☒ BCRYO (volts)
CR-2 Hygrometer
Balance
☒ CRYO (degC)
CR-2 Hygrometer
☒ CRYOC (degC)
CR-2 Hygrometer,
corrected
☒ PCRYO (mb)
CR-2 Hygrometer
Pressure

Humidity

☒ RHODL (g/m3)
Absolute Humidity,
T-Electric Left
☒ RHODR (g/m3)
Absolute Humidity,
T-Electric Right
☒ RHUM (%)
Relative Humidity

Mixing Ratio

☒ MR (g/kg)
Mixing Ratio, T-Electric

Ambient Water Vapor Pressure

☒ EDPC (mb)
Ambient Water Vapor
Pressure, Reference

Flight: 100124n

Pressures

Dynamic Pressure

☒ QC1C (mb)
Corrected Dynamic
Pressure, Left
☒ QC1M (mb)
Left Raw Dynamic
Pressure
☒ QC2C (mb)
Corrected Dynamic
Pressure, Right
☒ QC2M (mb)
Right Raw Dynamic
Pressure
☒ QCX (mb)
Raw Dynamic Pressure,
Reference
☒ QCXC (mb)
Corrected Dynamic
Pressure, Reference

Attack (compare to pitch)

☒ AP1 (mb)
Left Vertical Differential
Pressure
☒ AP2 (mb)
Right Vertical
Differential Pressure
DAP1 (mb)
Left Raw Dynamic
Attack Pressure
DAP2 (mb)
Right Raw Dynamic
Attack Pressure
ADCAOA (deg)
Air Data Computer
Attack Angle
AKRD1 (deg)
Attack Angle,
Left Side
AKRD2 (deg)
Attack Angle,
Right Side
☒ ATTACK (deg)
Attack Angle,
Reference

Static Pressures

☒ PS1C (mb) ^{5.5}
Corrected Static
Pressure, Top Fuselage
☒ PS1M (mb)
Raw Static Pressure,
Top Fuselage
☒ PS2C (mb)
Correct'd Static Pressure,
Bottom Fuselage
☒ PS2M (mb)
Raw Static Pressure,
Bottom Fuselage
☒ PSX (mb)
Raw Static Pressure,
Reference
☒ PSXC (mb)
Corrected Static
Pressure, Reference

Sideslip (compare to roll)

☒ BP1 (mb)
Top Horizontal
Differential Pressure
☒ BP2 (mb)
Bottom Horizontal
Differential Pressure
DBP1 (mb)
Top Raw Dynamic Slip
Pressure
DBP2 (mb)
Bottom Raw Dynamic
Slip Pressure
SSDF1 (deg)
Sideslip Angle, Diff.
Pressure, Top
SSDF2 (deg)
Sideslip Angle, Diff.
Pressure, Bottom
SSRD1 (deg)
Sideslip Angle,
Top
SSRD2 (deg)
Sideslip Angle,
Bottom
☒ SSLIP (deg)
Sideslip Angle,
Reference

Surface Pressure

☒ PSURF (mb)
Calculated Surface
Pressure

Cabin Pressure

☒ PCAB (mb)
Cabin Pressure

Horizontal Wind Direction

☒ IWD (deg)
Horizontal Wind
Direction (IRS)
☒ IWD_PITR (deg)
Horizontal Wind
Direction (IRS)
☒ WD (deg)
Horizontal Wind
Direction

Horizontal Wind Speed

☒ IWS (m/s)
Horizontal Wind Speed
(IRS)
☒ IWS_PITR (m/s)
Horizontal Wind Speed
(IRS)
☒ WS (m/s)
Horizontal Wind Speed

North/South Component

☒ VI (m/s)
Wind Vector, North
Component

East/West Component

☒ UI (m/s)
Wind Vector, East
Component

Vertical Winds

☒ WI (m/s)
Wind Vector, Vertical
Gust Component

UTAN/URAD Winds

☒ UX (m/s)
Wind Vector, UTAN
Longitudinal Component
☒ VY (m/s)
Wind Vector, Lateral
Component URAD

Flight: 100124n

Groundspeeds

☒ GHGSF_SG1 (m/s)
Honeywell GPS Ground
Speed
☒ GHGSF_SG2 (m/s)
Honeywell GPS Ground
Speed
☒ GPGSPD (m/s)
Collins GPS Ground
Speed
☒ GSF (m/s)
Inertial Ground Speed
☒ GSF_PITR (m/s)
Inertial Ground Speed

East/West Component

☒ GHVEW_SG1 (m/s)
HoneyWell GPS Ground
Speed Vector E/W
☒ GHVEW_SG2 (m/s)
HoneyWell GPS Ground
Speed Vector E/W
☒ GPVEW (m/s)
Collins GPS Ground
Speed Vector E/W
VEW (m/s)
Inertial Ground Speed
Vector E/W
☒ VEW_PITR (m/s)
Inertial Ground Speed
Vector E/W
☒ XVEWC (m/s)
GPS-Correc't'd Inertial
Ground Spd Vector E/W

North/South Component

☒ GHVNS_SG1 (m/s)
HnyWll GPS Grnd Spd
Vector, Nrth/Sth Component
☒ GHVNS_SG2 (m/s)
Hnywll GPS Grnd Spd
Vector, Nrth/Sth Component
☒ XVNSC (m/s)
GPS-Correc't'd Inertial Ground
Spd Vector, North Component

Vertical Acceleration

☒ ACINS (m/s²)
☒ Aircraft Vertical
Acceleration
☒ ACINS_PITR (m/s²)
Aircraft Vertical
Acceleration

Vertical Velocity

☒ GHVZI_SG1 (m/s)
Hnywll GPS Comp'd
aircraft Vert. Velocity
☒ GHVZI_SG2 (m/s)
Hnywll GPS Comp'd
aircraft Vert. Velocity

☒ GPVSPD (m/s)
Cllns GPS Comp'd
Aircraft Vertical Velocity
VSPD (m/s)
IRS-Computed Aircraft
Vertical Velocity
☒ VSPD_PITR (m/s)
IRS-Computed Aircraft
Vertical Velocity

☒ WP3 (m/s)
Damped Aircraft Vertical
Velocity
☒ WP3_PITR (m/s)
Damped Aircraft Vertical
Velocity

Airspeeds

☒ ADCCAS (m/s)
DADC Computed
Airspeed
☒ IAS (Kts)
Aircraft Indicated
Airspeed
☒ ADCTAS (m/s)
DADC True Airspeed

☒ TAS1 (m/s)
Aircraft True Airspeed
#1
☒ TAS2 (m/s)
Aircraft True Airspeed
#2

☒ TASHC (m/s)
Aircraft True Airspeed,
Humidity Corrected
☒ TASX (m/s)
Aircraft True Airspeed,
Reference

Mach

☒ ADCMACH (none)
DADC Mach Number
☒ MACH (none)
Aircraft Mach Number
☒ XMACH2 (none)
Aircraft Mach Number
Squared

☒ GPVNS (m/s)
Cllns GPS Grnd Spd Vector,
Nrth/Sth Component
☒ VNS (m/s)
Inertial Ground Speed Vector,
North/South Component
☒ VNS_PITR (m/s)
Inertial Ground Speed Vector,
North/South Component

RH > 100 on desc 152654 - 1529212

PSI stair steps 0858552 - 0901542 and 091410 - 0914272 $\approx$ 1mb.

~~0926002~~

PS2 spikes down 4mb $\sim$ 8mb @ 0935492 and back up @ 0944292, to PSI
due to ~~change of~~ ~~PSI~~ PAUT values $\uparrow \approx$ 400-700ft, but not
any other alt source.

PS2 jumps up $>$ 1mb @ 0955532 to where it normally is

$\rightarrow$ PAUT, PAUT, TAS, MACH, XMACH, DUA $\uparrow$ VALUE

DAP1 drops $\downarrow$ 25mb @ 0855122

$\hookrightarrow$ spikes due to voltage increase 115038 - 1152072, brings DAP1
back to normal $\sim$ 1.5-2mb $\downarrow$ then DAP2.

DAP1 spike 150246 - 150256

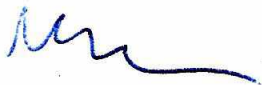
HGALT spikes 083749 - 084104

CON-PIR ^{responds to} crosses dateline 7s before Collins + Honeywell GPS
CON responds 7s after GPS

Crossed dateline @ 1203322

- Voltage $\uparrow$ on OPL 115412 - 115443, 121340 - 121359

- vel opg of DAP1 vs DPL spikes from voltage



NOAA G-IV flight request for Sunday 01/24/2010

Radio Call Sign: NOAA49

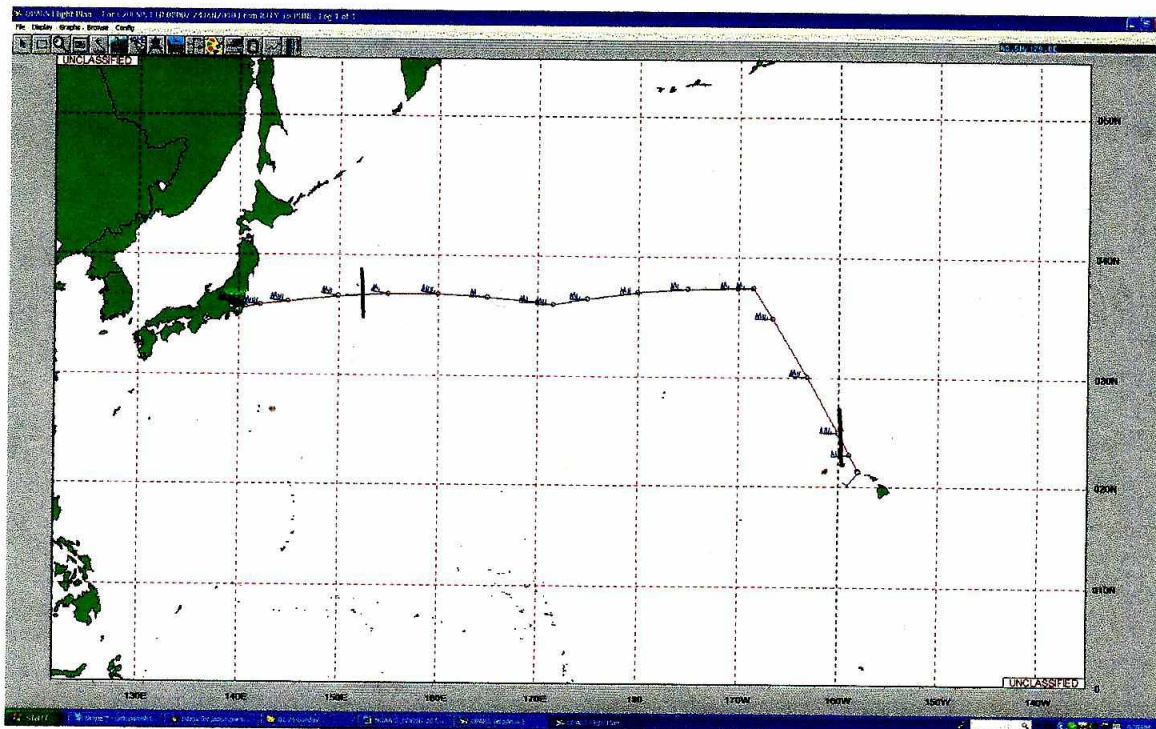
Planned take off: 01/24/2010 0830Z

Planned landing time: 01/24/2010 1530Z

Route of flight:

RJTY	35.75	139.35
KOGAR	36.12	139.69
TLE	36.02	140.21
CVC	35.73	140.8
36 05N 171 35E	36.08	171.58
37 30N 168 25W	37.5	- 168.42
PHNL	21.32	-157.92

Planned Altitudes: FL390-450



drops every 20 b/w 153E and 160W

T/O

17009

UNL ~~500~~ SKL A 3002

In Flt

Cloud Tops

NO VA

150-170kt w

30k_↓ 35-40k @170E

poss Lgt turb

mid 100-120kt w

~~decr~~ S bound to H

NO Ice

decr to 5070kt

LAND

VRB 05kt

SCT030 BKN 045