NOAA G-IV N49RF
WSR-10
26 Jan 2010 NOAA9 07WSC

Flight ID: 100126n

Sensor or system	Number or Name
Accelerometer	ACINS
Altitude	PALT
Attack Angle	AKRD2
Dew Point Probe	DPR
Dynamic Pressure	QC2M
Geopotential Altitude	GPGALT
Inertial Selected	VEW, VNS
Static Pressure	PS2M
Slip Angle	SSRD1
Temperature Probe	AT3/TT3
True Air Speed	TAS2
Constants File	49cal092
Project Directory	/proj/1001

Local Met Data:	Takeoff (0814Z)	Landing (1458Z)
Aircraft Static Pressure	1011.9 mb	1003.2 mb
Tower Pressure (corrected)	1011.6 mb	1002.3 mb

Notes:

Small Data Gap in everything from 135722Z – 135724Z.

All IRS2 values (_PITR and _SG2 values) spike to zero @ 120000Z, 130000Z, and 140000Z. IRS1 is default.

DAP1 drops ~~-5~~ 25mb, becomes noisy and does not trend with DAP2 from 123442Z–134447Z. AKRD2 is default.

Collins GPS Altitude data (GPALT and GPGALT) spikes and +/- 15 meters above and below Honeywell GPS Altitude data starting at 084652Z and throughout flight. Honeywell Altitude data spikes during second half of flight, +/- 15-20mb. Radar Alt (HGALT, HGM232), spikes and very noisy throughout flight. Stuck with GPGALT for default Geopotential Alt because it was the better than HGALT.

DPL starts out 5C colder, still slow to respond and doesn't get colder than -35-40C. DPR is default. RH > 100% (110%) from 144004Z-144015Z during descent through cloud layer.

All other instruments worked optimally during the flight.

16 dropsondes launched: 15 good (one test sonde), 1 bad.
14 good drops successfully sent to NCEP and ingested into the 26/12Z model run.

Flight Director: *Jess Williams/Jackie Almeida*
Phone #: *(813) 828-3310 ext. 3140*

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

FLT ID: 100126n	From: PHNL	To: PANC
FLT #: 10-28	Blk In: 1501 Z	Lnd Time(on): 1458 Z
ETD: 08 Z	Blk Out: 0801 Z	T/O Time (off): 0814 Z
ETE: 7	Total Blk: 7hr 7.0	Total Flt: 6hr 44 6.7
Sponsoring Org: NCEP	Program: WSR10	Purpose: Recon

AOC Flight Crew

Aircraft Commander: Hagan	Data System: Rogers
Co-Pilot: Glover / Toth	Avaps: Roles
Navigator: /	System Engineer:
Flight Eng: /	AA: Greene
Flt Director: Almeida, Willians	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		2988		A 2974

ATIS - Takeoff	OZ53 6006 10 FEW029 24/18 A2989
ATIS - Land	0603 FEW003 SCT007 BKN100 M10/M13 A297

Data Source	Number	Data Disposition / Date / Quality / File Name(s)
Flight Level Tapes	1	
Radar Tapes		
Dropsondes	16	Good: 15 Bad: 1 Sent: 14 (one test sonde)
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 07WSe TRACK99

NO LS, used LS as backup for old AVAPS I sondes. Test sonde launched @ 0848Z

t/o: 0814
Ind: 1458

N49RF
Variable Checkoff List

Jess

Flight: 100126n

Inertial Altitude
- ✓ ALT (m) — IRS Baro-Inertial Altitude
- ✓ ALT_PITR (m) — IRS Baro-Inertial Altitude
- ✓ ADCBCALT (m) — DADC Baro Corrected Altitude

GPS Altitude — born a little off
- ✓ 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
- ✓ AOCDA (deg) — Computed Drift Angle
- ✓ AOCDA_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	2	TASX	TAS(1, 2)
GPG	DVALU	(HG, GPG)ALT	3	TTX	TT(1, 2, 3, 4)
2	PSX	PS(1, 2)M	1	WI	IRS 1 or 2
2	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.

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Variable Checkoff List

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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
- GHLON_SG1 (deg) Honeywell GPS Longitude
- GHLON_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

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

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.

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Variable Checkoff List

Flight: 100126n

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
- ___ THETAE (K) Equivalent Potential Temperature
- ___ THETAV (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

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Variable Checkoff List

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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) — Corrected Static Pressure, Top Fuselage
- ___ PS1M (mb) — Raw Static Pressure, Top Fuselage
- ___ PS2C (mb) — Crrct'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

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Variable Checkoff List

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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-Corrct'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-Corrct'd Inertial Ground Spd Vector, North Component
- 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

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

RH >100 144004 -144015 on descent thru cloud layer
110%

All IRS vals goto 0 12, 13, 14Z → affects PCAB

115959 - 120004Z
125959 - 130005
135955 - 140003

MINOR DATA GAP - 135722Z - 135742-

OAPT drops 2nd & becomes noisy not trending with OAP2
1234422 - 134447Z (back to norm)

HGM spikes 0836502 -

Collins (GPALT, GPGALT) Starts to trend climb ↑ than other ALT sources 0846522
then to normal
084703 - Spikes down 15 meters → DVALUE ≤15m
~~does not fall~~ steps ↕ ↓ 10-15m above & blw
Honeywell GPS unit 1022562

make ps of GPS alt's

AOC GPS Dropwindsonde Log

C.P. ~ 43.4 -150.2

Flight ID: 100126n

Flight Director: Almeida/Williams

Mission ID: NOAA9 07WSC

Storm/Track: TRACK99

Pg ___ of ___

2125 1:25
2:05 1:05
1:45 :45
:25
:5

Ch. #	Drop #	Sonde ID	Drop Time (UTC)	Lat (°N)	Lon (°W)	Wx Cond.	SFC Prs (mb)	Ob #	L5/R5	Last Winds R5 (ht, ws, wd)	Last Winds L5 (ht, ws, wd)	Sent Time/KWBC (UTC)
—	Test	19108	084816						L5	TEST	SONDE	0
1	1	15009	091167	27	-157.2	DARK	1008.3	1	R5	SFC 194		093750
2	2	15054	093018	29.2	-157.8		1003.6	2	R5	SFC 187		095444 103501
1	3	15140	095002	31.5	-158.6		1000.7	3	R5	SFC 264		101307 103542
2	4	15043	101003	33.8	-159.4		994.1	4	R5	SFC 210		103449
1	5	15049	103014	36.2	-160.2		987.4	5	R5	SFC 239		105928
2	6	15004	105014	38.7	-161.1		977.2	6	R5	SFC 206		111455
1	7	15166	111006	40.7	-160.9		971.1	7	R5	SFC 205	PTH	114115
2	8	15117	113003	41.2	-157		979.6	8	R5	SFC 200		115153
1	9	15075	1150	41.8	-153		986.2	9	R5	SFC 188		121534
2	10	15096	1210	43.5	-150.2		989.3	10	R5	SFC 152		123315
1	11	15067	123006	44.9	-152.0		985.1	11	R5	SFC 152		124948
2	12	15051	125006	46.2	-154.9		978.4	12	R5	SFC 108		134105 134846
1	13	35516	1310			NO LAUNCH DETECT					Needle	
3	14	15061	131406	49.1	-154.9		991.4	13	R5	SFC 098		134846
L5	15	29074	133024	51.3	-154.4		995.9	14	R5	SFC 091		135134
	16											

NOAA G-IV flight request for Monday 01/26/2010

Radio Call Sign: NOAA49

Planned take off: 01/26/2010 0830Z
Planned landing time: 01/26/2010 1530Z

Route of flight:

21 19N 157 56W PHNL

24 03N 156 20W APACK

3 40 35N 161 54W

4 41 30N 152 35W

5 43 50N 149 45W

6 46 30N 155 35W

7 59 42N 151 28W HOMER

8 61 10N 150 00W PANC

Planned Altitudes: FL390-450

TAF
160UTC GSM FEW025 SCT080

Winds HAL Mod 370

Lgt 340 - 370

INFLT Wind Trb Lgt OCN Mod Cld Tops FL400

Incr as SGN

W 70kt
130 - 150kt
WSW - WNW

Cond
VRB03KT GSM VCFG FEW002 BKN120
Tempo SCT002

Start 27 Stop 51
ANCI Patchy Fog Tue partly-cloudy Wed
Lows 0-10 15-25 M.C.