



N49RF ERROR SUMMARY QUASI-WINDCAL



Flight ID: 20160105N1

Sensor or system	Number or Name
INE (for wind derivation)	INE1
Accelerometer	ACCZI.1X
Temperature Probe	TTM.4
Dew Point Probe	TDM.1X (EdgeTech)
Altitude (for vertical wind)	AltPA.d
Static Pressure	PSM.2
Dynamic Pressure	PQM.2
Attack Angle	AA.1
Slip Angle	SA.1
Project Directory	/acdata/2016/MET/20160105N1

Notes:

For this flight we ran out of Sonia's branch.

There was no A-->AD output since all of the A-->AD boxes were removed from the jet.

Shortly after takeoff, the real-time aircraft scientific wind direction was 200 degrees out of phase with respect to aircraft ADDU/FMS wind direction, observed satellite-derived wind vectors, and observed sounding data from NWS Ruskin. After support from AOC ground via Xchatting and several stops/starts of the AAMPS data system, the erroneous scientific wind direction issue was resolved after a software glitch was corrected. Post-flight processing did not have the erroneous wind direction output that was observed in real-time during the first part of the mission.

Due to restarting the AAMPS data system several times to resolve the aircraft scientific wind direction issue, there were three (3) data gaps: 164133Z – 164240Z, 165839Z – 165946Z, and 171911Z – 172021Z. Due to these data gaps, derived horizontal wind direction and speed, and vertical wind values may be erroneous at the beginning and/or end of these data gaps.

The three data gaps resulted in erroneous Novatel GPS MSL altimeter values, so pressure altitude (AltPA.d) was used for deriving vertical wind. Also as a result of the erroneous Novatel GPS MSL altimeter values, inertial GPS MSL #1 (AltGPS.1) was selected to derive geopotential altitude.

There was no output for the RS232 radar altimeter (AltRa.1) for the entire flight.

Inertial accelerometer #1 (ACCZI.1) had erroneous data during the following time frame: 181941Z – 181958Z. The erroneous values were statistically auto-removed with a SD of 2.0 and replaced with inertial accelerometer #2 (ACCZI.2) output with a patch value of 0.20.

Dewpoint sensor #1 (TDM.1) had erroneous data from 192847Z – 193520Z. The erroneous values were removed and replaced with dewpoint sensor #2 (TDM.2) output via direct substitution

$$\text{TDM.1} = \text{TDM.2}$$

All other sensors worked optimally.

One (1) dropsonde was deployed. The data from the dropsonde was good and one WMO tempdrop message was sent to and successfully received at NHC.

SPECIAL NOTE!!! The variable names DPJ_GSZ, DPJ_ASZ and DPJ_WSZ in the netCDF file represent vertical ground speed, vertical air speed and vertical wind speed, respectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

	Takeoff (1522Z)	Landing (1956Z)
	KMCF	KMCF
Aircraft Static Pressure	1024.3mb	1018.3mb
Corrected Tower Pressure	1023.8mb	1021.0mb

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