BOREAS 96 - Twin Otter

Quality Control Report:

A more formal QC report is also available.

Ran QCPAK (MAR-1997) on all Boreas96 data.
Window size 1600, at a flight speed of approxementl y 50 m/s this corresponds to a window of 2.5 km.
All tests performed on: U, V, W, PT, TA, O3, CO2, QS.
Spikes and AbsLim performed on all variables.
Res/Drop was performed on RA along with U, V, W, PT, TA, O3, CO2, QS.
All data was despiked.

Total number of records 461
Number hard flagged 68
Number of clean records 393

There were 43 changes made to the original data. For a detailed accounting of these changes see the final qc.hardfile (Table 4 below).
A listing of verified instrument problems and the criteria that was responsible for flaging it.

Variable	Criteria	Number
O3	resolution	22
O3	kurtosis	2
LAT	abs. limit	8
LON	abs. limit	8
RA	res/drop	2
CO2	spike	1

NOTES:

The variable LASALT is suspect and should be investigated further before used in any computation. Signal is vary noisy and instantces where the value drops to approx. -40 is common. All of the flags raised on flight 67 where ignored. Flight 67 was a dawn flight. On this flight it should be noted that TG would often go below the lower threshold of the insturmnet. 20 legs raised Res/Drop hard flags. These flags are not included in this analysis. The variable SA does not record for part of this study. The data is recorded as zeros, no attempt was made to correct for this drop out. For more information see Instrument_notes

U	0	0	0	0	0	0	1	0	0	0	0
V	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	2	0	0	0	0
PT	0	0	0	0	1	0	0	0	0	0	0
TA	0	0	0	0	1	0	0	0	0	0	0
TG	0	0	0	0	0	0	0	1	0	0	0
O3	22	0	0	0	1	0	0	0	0	0	0
CO2	0	0	0	1	2	0	0	0	0	0	0
PS	0	2	0	0	0	0	0	0	0	0	0
SWD	0	0	5	0	0	0	0	0	0	0	0
SWR	0	0	1	0	0	0	0	0	0	0	0
RADNET	0	0	11	0	0	0	0	0	0	0	0
LASALT	0	0	0	0	0	0	0	2	0	0	0
LON	0	0	8	0	0	0	0	0	0	0	0
LAT	0	0	8	0	0	0	0	0	0	0	0
RA	1	21	0	0	0	0	0	0	0	0	0

Table 2. Number of records soft flagged by each criteria:

	resolu	drops	abslm	skew	kurt	Hmean	Hvar	Spike	Lag	Alt	Press
U	0	0	0	0	0	1	0	0	0	15	22
V	0	0	0	0	0	1	0	0	0	16	23
W	0	0	0	0	1	0	3	0	0	1	0
PT	0	0	0	3	4	0	0	2	0	0	26
TA	0	0	0	1	2	0	0	0	0	126	127
TG	0	0	0	0	0	0	0	0	0	0	0
O3	0	0	0	0	1	0	1	0	0	15	55
CO2	0	0	0	0	1	0	0	0	0	15	81
QS	0	0	0	0	2	2	3	0	0	27	75
PS	0	0	0	1	0	0	1	0	0	86	461

flt59/b59.r03.bin	RA	1	5396	5396	dropouts
flt61/b61.r16.bin	SB	1	5839	5839	Spike
flt61/b61.r16.bin	SC	1	5839	5839	Spike
flt61/b61.r18.bin	SA	1	2069	2069	Spike
flt61/b61.r18.bin	SB	1	2069	2069	Spike
flt61/b61.r18.bin	SD	1	2069	2069	Spike
flt62/b62.r10.bin	RA	1	16335	16335	dropouts
flt62/b62.r13.bin	LASALT	1	3361	3361	Spike
flt63/b63.r03.bin	LASALT	1	16370	16370	Spike
flt63/b63.r09.bin	U	1	10281	10281	Haar var
flt67/b67.r02.bin	TG	1	7410	7410	Spike
flt67/b67.r02.bin	SW0D	1	7410	7410	abs limit
flt67/b67.r02.bin	RADNET	1	7410	7410	abs limit
flt67/b67.r03.bin	SWD	1	6761	6761	abs limit
flt67/b67.r05.bin	RA	1	11154	11154	dropouts
flt67/b67.r05.bin	W	1	11154	11154	Haar var
flt67/b67.r05.bin	PS	1	11154	11154	dropouts
flt67/b67.r05.bin	SWD	1	11154	11154	abs limit
flt67/b67.r05.bin	RADNET	1	11154	11154	abs limit
flt67/b67.r06.bin	RA	1	8816	8816	dropouts
flt67/b67.r06.bin	SWD	1	8816	8816	abs limit
flt67/b67.r06.bin	RADNET	1	8816	8816	abs limit
flt67/b67.r07.bin	RA	1	9773	9773	dropouts
flt67/b67.r07.bin	SWD	1	9773	9773	abs limit
flt67/b67.r07.bin	SWR	1	9773	9773	abs limit
flt67/b67.r07.bin	RADNET	1	9773	9773	abs limit
flt67/b67.r08.bin	RADNET	1	8785	8785	abs limit
flt67/b67.r09.bin	RADNET	1	10518	10518	abs limit
flt67/b67.r10.bin	RA	1	9032	9032	dropouts
flt67/b67.r11.bin	RA	1	9660	9660	dropouts
flt67/b67.r11.bin	RADNET	1	9660	9660	abs limit
flt67/b67.r12.bin	RA	1	9127	9127	dropouts
flt67/b67.r12.bin	RADNET	1	9127	9127	abs limit

flt67/b67.r18.bin	RADNET	1	8922	8922	abs limit
flt67/b67.r19.bin	RA	1	10105	10105	dropouts
flt67/b67.r19.bin	W	1	10105	10105	Haar var
flt67/b67.r20.bin	RADNET	1	9211	9211	abs limit
flt73/b73.r13.bin	PT	1	1580	1580	kurtosis
flt73/b73.r13.bin	TA	1	1580	1580	kurtosis
flt73/b73.r16.bin	SB	1	2136	2136	Spike
flt74/b74.r03.bin	RA	1	1212	1212	dropouts
flt74/b74.r11.bin	RA	1	20468	20468	dropouts
flt75/b75.r01.bin	RA	1	21762	21762	dropouts
flt75/b75.r03.bin	RA	1	21566	21566	dropouts
flt75/b75.r05.bin	RA	1	21194	21194	dropouts
flt76/b76.r15.bin	RA	1	8290	8290	dropouts
flt77/b77.r14.bin	CO2	1	5365	5365	kurtosis
flt79/b79.r37.bin	SC	1	1506	1506	Spike
flt80/b80.r25.bin	SC	1	1686	1686	Spike
flt80/b80.r25.bin	SD	1	1686	1686	Spike
flt82/b82.r16.bin	RA	1	5091	5091	dropouts
flt82/b82.r16.bin	PS	1	5091	5091	dropouts

Table 4. list of varables that where determined to be insturment problems (final qc.har in rewrite step)

Filename	Variable	Start Point	Stop Point	Total Points	Flag
flt58/b58.r01.bin	O3	1	9284	9284	resolutio
flt58/b58.r02.bin	O3	1	8663	8663	resolutio
flt58/b58.r04.bin	O3	1	8197	8197	resolutio
flt58/b58.r05.bin	O3	1	8586	8586	resolutio
flt58/b58.r06.bin	O3	1	8256	8256	resolutio
flt58/b58.r07.bin	O3	1	9343	9343	resolutio
flt58/b58.r08.bin	O3	1	8265	8265	resolutio
flt58/b58.r09.bin	O3	1	9018	9018	resolutio

flt58/b58.r14.bin	O3	1	8265	8265	resolution
flt58/b58.r15.bin	O3	1	8761	8761	resolution
flt58/b58.r16.bin	O3	1	8056	8056	resolution
flt58/b58.r17.bin	O3	1	8746	8746	resolution
flt58/b58.r18.bin	O3	1	8180	8180	resolution
flt58/b58.r19.bin	O3	1	8963	8963	resolution
flt58/b58.r20.bin	O3	1	8529	8529	resolution
flt58/b58.r21.bin	O3	1	8983	8983	resolution
flt58/b58.r23.bin	O3	1	11412	11412	resolution
flt58/b58.r24.bin	O3	1	10696	10696	resolution
flt63/b63.r03.bin	RA	6000	16730	16730	resolution
flt63/b63.r04.bin	RA	1	8100	16433	dropouts
flt77/b77.r01.bin	CO2	1648	1680	6119	Multiple
flt78/b78.r01.bin	LON	1	5799	5799	abs limits
flt78/b78.r01.bin	LAT	1	5799	5799	abs limits
flt78/b78.r02.bin	LON	1	5552	5552	abs limits
flt78/b78.r02.bin	LAT	1	5552	5552	abs limits
flt78/b78.r03.bin	LON	1	5574	5574	abs limits
flt78/b78.r03.bin	LAT	1	5574	5574	abs limits
flt78/b78.r04.bin	LON	1	5646	5646	abs limits
flt78/b78.r04.bin	LAT	1	5646	5646	abs limits
flt78/b78.r05.bin	LON	1	5818	5818	abs limits
flt78/b78.r05.bin	LAT	1	5818	5818	abs limits
flt78/b78.r06.bin	LON	1	5593	5593	abs limits
flt78/b78.r06.bin	LAT	1	5593	5593	abs limits
flt78/b78.r07.bin	LON	1	5672	5672	abs limits
flt78/b78.r07.bin	LAT	1	5672	5672	abs limits
flt78/b78.r08.bin	LON	1	5586	5586	abs limits
flt78/b78.r08.bin	LAT	1	5586	5586	abs limits
flt79/b79.r31.bin	O3	1	320	1513	kurtosis
flt79/b79.r31.bin	O3	1352	1513	1513	kurtosis