National Climatic Data Center

DATA DOCUMENTATION

FOR

DATASET 6213 (DSI-6213)

Radiosonde Replacement System - 1 second BUFR

May 11, 2007

National Climatic Data Center
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Table of Contents

Topic	Page Number
1. Abstract	3
2. Element Names and Definitions:	3
3. Start Date	21
4. Stop Date	21
5. Coverage	21
6. How to order data	21
7. Archiving Data Center.	21
8. Technical Contact	21
9. Known Uncorrected Problems	21
10. Quality Statement	21
11. Essential Companion Data Sets	21
12. References	21

1. Abstract: These data are BUFR (Binary Universal Form for the Representation of meteorological data format) files of upper air data generated by Radiosonde Replacement System (RRS) XP computers at National Weather Service offices. There is one BUFR file per balloon flight and each file contains of seven datasets: one administrative dataset, five high-resolution datasets, and one levels dataset.

In order to decode/access data elements it is necessary to have software which calls a special library of FORTRAN subroutines to decode each dataset. The current BUFR decoder program is called bufr_1_05.f. If a BUFR file is to be read in a UNIX environment, it is necessary to convert the file from a DOS compatible file to a UNIX compatible file using program unixbufr.f.

2. Element Names and Definitions:

Dataset #1: Administrative Data (NC002019)

The following are the 96 administrative/metadata elements:

Field	Description/Units
1. RRS Data Significance	Code Table 9-21, Parent/WFO Site
2. Short ICAO Location Identifier	Alphabetic
3. RRS Data Significance	Code Table 9-21, RRS obs site
4. Short ICAO Location Identifier	Alphabetic
5. WMO Block Number	Numeric
6. WMO Station Number	Numeric
7. WBAN Number	Numeric
8. Radiosonde Type	Code Table 9-1
9. Short Station or Site Name	Alphabetic
10. Radiosonde Observer	Alphabetic
11. Software Version Number	Alpha-numeric
12. No. of Archive Recomputes	Numeric
13. Radiosonde Ascension Number	Numeric
14. Radiosonde Release Number	Numeric
15. Radiosonde Serial Number	Numeric
16. Operating Radio Frequency	Numeric in HZ
17. Ground Receiving System	Code Table 9-5
18. Tracking Technique	Code Table 9-6
19. Release Pt Pressure Correction	Numeric, Pascal
20. Orientation Correction, Azimuth	Degrees
21. Orientation Correction, Elev.	Degrees
22. Pressure Sensor Type	Code Table 9-2
23. Temperature Sensor Type	Code Table 9-3
24. Humidity Sensor Type	Code Table 9-4
25. Radiosonde Configuration	Code Table 9-10c
26. Balloon Shelter Type	Code Table 9-8

27.	Balloon Manufacturer	Code Table 9-9
28.	Balloon Type	Code Table 9-10a
29.	Balloon Lot Number	Alpha-numeric
30.	Balloon Gas Type	Code Table 9-10b
31.	Balloon Gas Amount Used	Kilograms
32.	Balloon Flight Train Length	Meters
33.	Balloon Weight	Kilograms
34.	Data Significance	Code Table 9-21, balloon mfg. date
35.	Year	Year, numeric
36.	Month	Month, numeric
37.	Day	Day, numeric
38.	Data Significance	Code Table 9-21, Ball. Launch date
39.	Year	Year (2000 -)
40.	Month	Month (1 – 12)
41.	Day	Day (1 – 31)
42.	Hour	Hour (0 – 23)
43.	Minute	Minute (0- 59)
44.	Second	Second (0.00 – 59.99)
45.	Latitude (High Accuracy)	0.00001 Degrees, S = -, N = +
46.	Longitude (High Accuracy)	0.00001 Degrees, W = -, E = +
47.	Station Elevation	Meters, Barometer Location
48.	Height	Meters
49.	Data Significance	Code Table 9-21, Sfc. Obs Displacement
50.	Bearing or Azimuth	Degrees
51.	Horizonal Distance	Meters
52.	Vertical Distance	Meters
53.	Data Significance	Code Table 9-21, Sfc Observation
54.	Surface Wea. Observing Equip.	Code Table 9-7
55.	Pressure	Pascals
56.	Surface Wea. Observing Equip.	Code Table 9-7
57.	Relative Humidity	Percent
58	Surface Wea. Observing Equip.	Code Table 9-7
59.	Wind Direction	Degrees
60.	Wind Speed	M/S
61.	Surface Wea. Observing Equip.	Code Table 9-7
62.	Temperature/Dry Bulb	Degrees K
63.	Time Period or Displacement	Hours
64.	Dry Bulb Temperature	Degrees K
65.	Time Period or Displacement	Hours
66.	Surface Wea. Observing Equip.	Code Table 9-7
67.	Dew-Point Temperature	Degrees K
68.	Wet Bulb Temperature	Degrees K
69.	Cloud Type	BUFR Code Table
70.	Cloud Type	BUFR Code Table
71.	Cloud Type	BUFR Code Table
72.	Cloud Amount	BUFR Code Table

73.	Height of Base of Cloud	BUFR Code Table
74.	Present Weather	BUFR Code Table
75.	Present Weather	BUFR Code Table
76.	Data Significance	Code Table 9-21, Flt Level Termination
77.	Flight Duration	Minutes
78.	Flight Duration	Seconds
79.	Latitude (High Accuracy)	0.00001 Degrees, S = -, N = +
80.	Longitude (High Accuracy)	0.00001 Degrees, W = -, E = +
81.	Year	Year (2000 -)
82.	Month	Month (1 – 12)
83.	Day	Day (1 – 31)
84.	Hour	Hour (0 – 23)
85.	Minute	Minute (0 – 59)
86.	Second	Second (0.00 – 59.99)
87.	Flight Level Pressure Correction	Code Table 9-11
88.	Pressure	Pascals
89.	Relative Humidity	Percent
90.	Solar and Infrared Radiation Correction	Code Table 9-13
91.	Dry Bulb Temperature	Degrees K
92.	Geopotential Height	Meters
93.	Level Significance for Sounding	Code Table 9-18
94.	Reason for Termination	Code Table 9-17
95.	Level Significance for Sounding	Code Table 9-18
96.	Reason for Termination	Code Table 9-17

Dataset #2: Raw PTU Data (NC002020)

These data are reported every 1 to 2 seconds of the flight and are not interpolated or smoothed. For each level the following 36 data elements are encoded.

Field	Description/Units
1. WMO Block Number	Numeric
2. WMO Station Number	Numeric
3. WBAN Number	Numeric
4. Radiosonde Type	Code Table 9-1
5. Data Significance	Code Table 9-21
6. Year	Year (2000 -)
7. Month	Month (1 – 12)
8. Day	Day (1 – 31)
9. Hour	Hour (0 - 23)
10. Minute	Minute (0 – 59)
11. Second	Second (0 – 59)
12. Latitude (High Accuracy)	0.00001, S = -, N = +
13. Longitude (High Accuracy)	0.00001, W = -, E = +
14. Station Elevation (Barometer Location)	Meters
15. Height	Meters
16. Data Significance	Code Table 9-21
17. Year	Year (2000 -)
18. Month	Month (1 – 12)
19. Day	Day (1 – 31)
20. Hour	Hour (0 - 23)
21. Minute	Minute (0 – 59)
22. Second	Second (0.00 – 59.99)
23. Flight Level Pressure Correction	Code Table 9-11
24. Pressure	Pascals
25. Data Percent Confidence	Percent
26. Data Quality-Mark Indicator	Code Table 9-19
27. Data Quality-Check Indicator	Code Table 9-20
28. Raw Relative Humidity	Percent
29. Data Percent Confidence	Percent
30. Data Quality-Mark Indicator	Code Table 9-19
31. Data Quality-Check Indicator	Code Table 9-20
32. Solar and Infrared Radiation Correction	Code Table 9-13
33. Dry Bulb Temperature	Degrees K
34. Data Percent Confidence	Percent
35. Data Quality-Mark Indicator	Code Table 9-19
36. Data Quality-Check Indicator	Code Table 9-20

Dataset #3: Raw GPS "unsmoothed radiosonde" data (NC002021)

These data are reported every 1 to 2 seconds of the flight and are not smoothed. For each level the following 38 data elements are encoded.

Field	Description/Units
1. WMO Block Number	Numeric
2. WMO Station Number	Numeric
3. WBAN Number	Numeric
4. Radiosonde Type	Code Table 9-1
5. Data Significance	Code Table 9-21
6. Year	Year (2000 -)
7. Month	Month (1 – 12)
8. Day	Day (1 – 31)
9. Hour	Hour (0 - 23)
10. Minute	Minute (0 – 59)
11. Second	Second (0.00 – 59.99)
12. Latitude (High Accuracy)	0.00001, S = -, N = +
13. Longitude (High Accuracy)	0.00001, W = -, E = +
14. Station Elevation (Barometer Location)	Meters
15. Height	Meters
16. Data Significance	Code Table 9-21
17. Year	Year (2000 -)
18. Month	Month (1 – 12)
19. Day	Day (1 – 31)
20. Hour	Hour (0 - 23)
21. Minute	Minute (0 – 59)
22. Second	Second (0.00 – 59.99)
23. GPS Latitude	0.00001, S = -, N = +
24. Data Quality-Mark Indicator	Code Table 9-19
25. Data Quality-Check Indicator	Code Table 9-20
26. GPS Longitude (High Accuracy)	0.00001, W = -, E = +
27. Data Quality-Mark Indicator	Code Table 9-19
28. Data Quality-Check Indicator	Code Table 9-20
29. GPS Height	Meters, above mean sea level
30. Data Quality-Mark Indicator	Code Table 9-19
31. Data Quality-Check Indicator	Code Table 9-20
32. GPS u wind component	M/S
33. Data Quality-Mark Indicator	Code Table 9-19
34. Data Quality-Check Indicator	Code Table 9-20
35. GPS v wind component	M/S
36. Data Quality-Mark Indicator	Code Table 9-19
37. Data Quality-Check Indicator	Code Table 9-20
38. Data Percent Confidence	Percent

Dataset #4: Raw GPS "smoothed wind" data (NC002022)

These data are reported every 1 to 2 seconds of the flight and are not smoothed. For each level the following 38 data elements are encoded.

Field	Description/Units
1. WMO Block Number	Numeric
2. WMO Station Number	Numeric
3. WBAN Number	Numeric
4. Radiosonde Type	Code Table 9-1
5. Data Significance	Code Table 9-21
6. Year	Year (2000 -)
7. Month	Month (1 – 12)
8. Day	Day (1 – 31)
9. Hour	Hour (0 - 23)
10. Minute	Minute (0 – 59)
11. Second	Second (0.00 – 59.99)
12. Latitude (High Accuracy)	0.00001, S = -, N = +
13. Longitude (High Accuracy)	0.00001, W = -, E = +
14. Station Elevation (Barometer Location)	Meters
15. Height	Meters
16. Data Significance	Code Table 9-21
17. Year	Year (2000 -)
18. Month	Month (1 – 12)
19. Day	Day (1 – 31)
20. Hour	Hour (0 - 23)
21. Minute	Minute (0 – 59)
22. Second	Second (0.00 – 59.99)
23. GPS Latitude	0.00001, S = -, N = +
24. Data Quality-Mark Indicator	Code Table 9-19
25. Data Quality-Check Indicator	Code Table 9-20
26. GPS Longitude (High Accuracy)	0.00001, W = -, E = +
27. Data Quality-Mark Indicator	Code Table 9-19
28. Data Quality-Check Indicator	Code Table 9-20
29. GPS Height	Meters, above mean sea level
30. Data Quality-Mark Indicator	Code Table 9-19
31. Data Quality-Check Indicator	Code Table 9-20
32. GPS u wind component	M/S
33. Data Quality-Mark Indicator	Code Table 9-19
34. Data Quality-Check Indicator	Code Table 9-20
35. GPS v wind component	M/S
36. Data Quality-Mark Indicator	Code Table 9-19
37. Data Quality-Check Indicator	Code Table 9-20
38. Data Percent Confidence	Percent

Dataset #5: Processed pressure, temperature, humidity (PTU) Data (NC002023)

These data are arrived at by applying normalization, correction, smoothing, outlier removal, and data plausibility checks to the raw PTU data provided by the radiosonde. The data are reported at the normalized interval – once a second. For each level the following 47 data elements are encoded.

Field	Description/Units
1. WMO Block Number	Numeric
2. WMO Station Number	Numeric
3. WBAN Number	Numeric
4. Radiosonde Type	Code Table 9-1
5. Data Significance	Code Table 9-21
6. Year	Year (2000 -)
7. Month	Month (1 – 12)
8. Day	Day (1 – 31)
9. Hour	Hour (0 - 23)
10. Minute	Minute (0 – 59)
11. Second	Second (0.00 – 59.99)
12. Latitude (High Accuracy)	0.00001, S = -, N = +
13. Longitude (High Accuracy)	0.00001, W = -, E = +
14. Station Elevation (Barometer Location)	Meters
15. Height	Meters
16. Data Significance	Code Table 9-21
17. Year	Year (2000 -)
18. Month	Month (1 – 12)
19. Day	Day (1 – 31)
20. Hour	Hour (0 - 23)
21. Minute	Minute (0 – 59)
22. Second	Second (0.00 – 59.99)
23. Flight Level Pressure Correction	Code Table 9-11
24. Pressure	Pascals
25. Data Quality-Mark Indicator	Code Table 9-19
26. Data Quality-Check Indicator	Code Table 9-20
27. Flight Level Pressure Correction (smoothed)	Code Table 9-11
28. Smoothed Pressure	Pascals
29. Data Quality-Mark Indicator	Code Table 9-19
30. Data Quality-Check Indicator	Code Table 9-20
31. Corrected Relative Humidity	Percent
32. Data Quality-Mark Indicator	Code Table 9-19
33. Data Quality-Check Indicator	Code Table 9-20
34. Solar & Infrared Radiation Correction (Uncorrected Temperature)	Code Table 9-13
35. Dry Bulb Temperature (Uncorrected)	Degrees K
36. Data Quality-Mark Indicator	Code Table 9-19
37. Data Quality-Check Indicator	Code Table 9-20

38. Solar & Infrared Radiation Correction (Corrected Temperature)	Code Table 9-13
39. Dry Bulb Temperature (Corrected)	Degrees K
40. Data Quality-Mark Indicator	Code Table 9-19
41. Data Quality-Check Indicator	Code Table 9-20
42. Derived Dew Point Temperature	Degrees K
43. Data Quality-Mark Indicator	Code Table 9-19
44. Data Quality-Check Indicator	Code Table 9-20
45. Derived Geopotential Height	Meters
46. Data Quality-Mark Indicator	Code Table 9-19
47. Data Quality-Check Indicator	Code Table 9-20

Dataset #6: Processed u & v winds and position data (NC002024)

These data are arrived at by applying normalization, correction, smoothing, outlier removal, and data plausibility checks to the raw GPS "smoothed wind" data provided by the radiosonde. Note that this GPS-derived wind and position data may drop out at times during the flight, but the pressure-derived geopotential height may still be available, and vice versa.

Field	Description/Units
1. WMO Block Number	Numeric
2. WMO Station Number	Numeric
3. WBAN Number	Numeric
4. Radiosonde Type	Code Table 9-1
5. Data Significance	Code Table 9-21
6. Year	Year (2000 -)
7. Month	Month (1 – 12)
8. Day	Day (1 – 31)
9. Hour	Hour (0 - 23)
10. Minute	Minute (0 – 59)
11. Second	Second (0.00 – 59.99)
12. Latitude (High Accuracy)	0.00001, S = -, N = +
13. Longitude (High Accuracy)	0.00001, W = -, E = +
14. Station Elevation (Barometer Location)	Meters
15. Height	Meters
16. Data Significance	Code Table 9-21
17. Year	Year (2000 -)
18. Month	Month (1 – 12)
19. Day	Day (1 – 31)
20. Hour	Hour (0 - 23)
21. Minute	Minute (0 – 59)
22. Second	Second (0 – 59)
23. GPS Latitude	0.00001, S = -, N = +
24. Data Quality-Mark Indicator	Code Table 9-19
25. Data Quality-Check Indicator	Code Table 9-20
26. GPS Longitude (High Accuracy)	0.00001, W = -, E = +
27. Data Quality-Mark Indicator	Code Table 9-19
28. Data Quality-Check Indicator	Code Table 9-20
29. GPS Height	Meters, above mean sea level
30. Data Quality-Mark Indicator	Code Table 9-19
31. Data Quality-Check Indicator	Code Table 9-20
32. GPS u wind component	M/S
33. Data Quality-Mark Indicator	Code Table 9-19
34. Data Quality-Check Indicator	Code Table 9-20
35. GPS v wind component	M/S
36. Data Quality-Mark Indicator	Code Table 9-19
37. Data Quality-Check Indicator	Code Table 9-20

Dataset #7: Levels Data (NC002025)

These data represent the Mandatory, Significant, and other special winds and PTU levels selected from the Processed PTU and Processed Winds data.

Field	Description/Units
1. WMO Block Number	Numeric
2. WMO Station Number	Numeric
3. WBAN Number	Numeric
4. Radiosonde Type	Code Table 9-1
5. Data Significance	Code Table 9-21
6. Year	Year (2000 -)
7. Month	Month (1 – 12)
8. Day	Day (1 – 31)
9. Hour	Hour (0 - 23)
10. Minute	Minute (0 – 59)
11. Second	Second (0.00 – 59.99)
12. Latitude (High Accuracy)	0.00001, S = -, N = +
13. Longitude (High Accuracy)	0.00001, W = -, E = +
14. Station Elevation (Barometer Location)	Meters
15. Height	Meters
16. Data Significance	Code Table 9-21
17. Year	Year (2000 -)
18. Month	Month (1 – 12)
19. Day	Day (1 – 31)
20. Hour	Hour (0 - 23)
21. Minute	Minute (0 – 59)
22. Second	Second (0.00 – 59.99)
23. Level Significance	Code Table 9-18
24. Flight Level Pressure Correction	Code Table 9-11
25. Pressure	Pascals
26. Relative Humidity	0.1 %
27. Solar & Infrared Radiation Correction	Code Table 9-13
28. Dry Bulb Temperature	Degrees K
29. Dew Point Temperature	Degrees K
30. Geopotential Height	Meters, above MSL
31. Geometric Height	Meters, above MSL
32. Wind Speed	0.1 M/S
33. Wind Direction	Degrees

Table 9-1: Radiosonde type (existing 0-02-011, C-2, `RATP`)

Code	Meaning
0-50	Defined or Reserved
51	VIZ-B2 (USA)
52	Vaisala RS80-57H
53-86	Defined or Reserved
87	Sippican Mark IIA with chip thermistor, pressure
88-254	Defined or Reserved
255	Missing value

Table 9-2: Type of pressure sensor (new 0-02-095, `PSENS`)

Code	Meaning
0	Capacitance aneroid
1	Derived from GPS
2	Resistive strain gauge
3-29	Reserved
30	Other
31	Missing value

Table 9-3: Type of temperature sensor (new 0-02-096, `TSENS`)

Code	Meaning
0	Rod thermistor
1	Bead thermistor
2	Capacitance bead
3-29	Reserved
30	Other
31	Missing value

Table 9-4: Type of humidity sensor (new 0-02-097, `RHSENS`)

Code	Meaning
0	VIZ Mark II Carbon Hygristor
1	VIZ B2 Hygristor
2	Vaisala A-Humicap
3	Vaisala H-Humicap

4	Capacitance sensor
5	Vaisala RS90
6	Sippican Mark IIA Carbon Hygristor
7-29	Reserved
30	Other
31	Missing value

Table 9-5: Radiosonde ground receiving system (new 0-02-066, RGRSY)

Code	Meaning
0	TRS-2000
1	IMS-1500C
2-61	Reserved
62	Other
63	Missing value

Table 9-6: Tracking technique (existing 0-02-014, C-7, TTSS)

Code	Meaning
0	No windfinding
1	Automatic with auxiliary optical direction finding
2	Automatic with auxiliary radio direction finding
3	Automatic with auxiliary ranging
4	Not used
5	Automatic with multiple VLF-Omega signals
6	Automatic with cross chain Loran-C
7	Automatic with auxiliary wind profiler
8	Automatic satellite navigation (GPS)
9-18	Reserved
19	Tracking technique not specified
20-126	ASAP technique/status entries
127	Missing value

Table 9-7: Type of surface observing equipment (new 0-02-115, SFEQP)

Code	Meaning
0	PDB
1	RSOIS

2	ASOS
3	Psychrometer
4	F420
5-29	Reserved
30	Other
31	Missing value

Table 9-8: Type of balloon shelter (new 0-02-083, `BSHEL`)

Code	Meaning
0	High bay
1	Low bay
2	BILS
3	Roof-top BILS
4-13	Reserved
14	Other
15	Missing value

Table 9-9: Balloon manufacturer (new 0-02-080, `BMFGR`)

Code	Meaning
0	Kaysam
1	Totex
2	KKS
3-61	Reserved
62	Other
63	Missing value

Table 9-10a: Type of balloon (new 0-02-081, `BTYPE`)

Code	Meaning
0	GP26
1	GP28
2	GP30
3	HM26
4	HM28
5	HM30
6	SV16

7-29	Reserved
30	Other
31	Missing value

Table 9-10b: Type of gas used in balloon (new 0-02-084, `BGTYP`)

Code	Meaning
0	Hydrogen
1	Helium
2	Natural Gas
3-14	Reserved
15	Missing value

Table 9-10c: Radiosonde configuration (new 0-02-016, `RCONF`)

Bit	Meaning
1	Train regulator
2	Light unit
3	Parachute
4	Rooftop release
All 5	Missing value

Table 9-11: Pressure Corrections (new 0-25-069, `FLPC`)

Bit	Meaning
1	Smoothed
2	Baseline adjusted
3	Normalized time interval
4	Outlier checked
5	Plausibility checked
6	Consistency checked
7	Interpolated
All 8	Missing value

Table 9-12: Height Corrections (unused, undefined)

Code	Meaning

TBD	TBD

Table 9-13: Temperature Corrections (existing 0-02-013, `SIRC`)

Code	Meaning
0	No correction
1-3	CIMO
4	Solar and infrared corrected by radiosonde system
5	Solar corrected by radiosonde system
6-7	corrected as specified by country
8-14	Reserved
15	Missing value

Table 9-14: Relative Humidity Corrections (unused, undefined)

Code	Meaning
TBD	TBD

Table 9-15: Dewpoint Corrections (unused, undefined)

Code	Meaning
TBD	TBD

Table 9-16: Wind Corrections (unused, undefined)

Code	Meaning
TBD	TBD

Table 9-17: Reason for termination (new 0-35-035, `RTERM`)

Code	Meaning
0	Reserved
1	Balloon burst
2	Balloon forced down by icing
3	Leaking or floating balloon
4	Weak or fading signal

5	Battery failure
6	Ground equipment failure
7	Signal interference
8	Radiosonde failure
9	Excessive missing data frames
10	Reserved
11	Excessive missing temperature
12	Excessive missing pressure
13	User terminated
14-29	Reserved
30	Other
31	Missing value

Table 9-18: RRS flight level significance (new 0-08-040, `LEVSIG`)

Code	Meaning
0	High resolution data sample
1	Within 20 hPa of surface
2	Pressure less than 10 hPa (i.e., 9, 8, 7, etc.) when no other reason applies
3	Base pressure level for stability index
4	Begin doubtful temperature, height data
5	Begin missing data (all elements)
6	Begin missing RH data
7	Begin missing temperature data
8	Highest level reached before balloon descent because of icing or turbulence
9	End doubtful temperature, height data
10	End missing data (all elements)
11	End missing RH data
12	End missing temperature data
13	Zero degrees C crossing(s) for RADAT
14	Standard pressure level
15	Operator added level
16	Operator deleted level
17	Balloon re-ascended beyond previous highest ascent level
18	Significant RH level (per WMO criteria)
19	RH level selection terminated

20	Surface level
21	Significant temperature level (per WMO criteria)
22	Mandatory temperature level
23	Flight termination level
24	Tropopause(s)
25	Aircraft report
26	Interpolated (generated) level
27	Mandatory wind level
28	Significant wind level
29	Maximum wind level
30	Incremental wind level (fixed regional)
31	Incremental height level (generated)
32	Wind termination level
33	Pressure 100 to 110 hPa, when no other reason applies
34-39	Reserved
40	Significant thermodynamic level (inversion)
41	Significant RH level (per NCDC criteria)
42	Significant temperature level (per NCDC)
43	Begin missing wind data
44	End missing wind data
45-61	Reserved
62	Other
63	Missing value

Table 9-19: RRS Data Quality-Check Mark, maps to Manual/Automatic Quality Control (existing 0-33-035, `MAQC`)

Code	Meaning	RRS
0	Automatic QC passed; not manually checked	0
1	Automatic QC passed; manual QC passed	
2	Automatic QC passed; manual QC deleted	4
3	Automatic QC failed; not manually checked	2
4	Automatic QC failed; manual QC deleted	6
5	Automatic QC failed; manual QC re-inserted	
6	Automatic QC questionable; not manually checked	1
7	Automatic QC questionable; manual QC deleted	5
8	Manual QC failed	
9-14	Reserved	
15	Missing value	3,7

Table 9-20: RRS Data Quality-Check Indicator (new 0-33-015, `QCCHEK`)

Code	Meaning
0	Passed all checks
1	Missing-data check
2	Descending/reascending balloon check
3	Data plausibility check (above limits)
4	Data plausibility check (below limits)
5	Superadiabatic lapse rate check
6	Limiting angles check
7	Ascension rate check
8	Excessive change from previous flight
9	Balloon overhead check
10	Wind speed check
11	Wind direction check
12	Dependency check
13	Data valid but modified
14	Data outlier check
15-62	Reserved
63	Missing value

Supplemental Table used

Table 9-21: RRS data significance (new 0-08-041, `DATSIG`)

Code	Meaning
0	parent site
1	observation site
2	Balloon manufacture date
3	Balloon launch point
4	Surface observation
5	Surface observation displacement from launch point
6	Flight level observation
7	Flight level termination point
8-30	Reserved
31	Missing value

3. **Start Date:** 2005. Start dates will vary by station.

4. **Stop Date:** Ongoing.

5. **Coverage:** Global Coverage

a. Southernmost Latitude: 90S
b. Northernmost Latitude: 90N
c. Westernmost Longitude: 180W
d. Easternmost Longitude: 180E

6. **How to Order Data:**

Ask NCDC's Climate Services about the cost of obtaining this data set.
Phone: 828-271-4800
FAX: 828-271-4876
E-mail: **NCDC.Orders@noaa.gov**

7. **Archiving Data Center:**

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, NC 28801-5001
Phone: (828) 271-4800

8. **Technical Contact:**

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, NC 28801-5001
Phone: (828) 271-4800

9. **Known Uncorrected Problems:** None.

10. **Quality Statement:** NCDC has performed no quality control.

11. **Essential Companion Datasets:** None.

12. **References:** Chapter 9 – Data Products and Data Archiving of the *Radiosonde Replacement System Requirements Documentation.*