BUFR TABLES RELATIVE TO SECTION 3

BUFR/CREX Table B - *Classification of elements*

F	X	Class	Comments
0	00	BUFR/CREX table entries	
0	01	Identification	Identifies origin and type of data
0	02	Instrumentation	Defines instrument types used
0	03	Reserved	
0	04	Location (time)	Defines time and time derivatives
0	05	Location (horizontal - 1)	Defines geographical position, including horizontal derivatives, in association with Class 06 (first dimension of horizontal space)
0	06	Location (horizontal - 2)	Defines geographical position, including horizontal derivatives, in association with Class 05 (second dimension of horizontal space)
0	07	Location (vertical)	Defines height, altitude, pressure level, including vertical derivatives of position
0	08	Significance qualifiers	Defines special character of data
0	09	Reserved	
0	10	Non-coordinate location (vertical)	Height, altitude, pressure and derivatives observed or measured, *not* defined as a vertical location
0	11	Wind and turbulence	Wind speed, direction, etc.
0	12	Temperature	
0	13	Hydrographic and hydrological elements	Humidity, rainfall, snowfall, etc.
0	14	Radiation and radiance	
0	15	Physical/chemical constituents	
0	19	Synoptic features	
0	20	Observed phenomena	Defines present/past weather, special phenomena, etc.
0	21	Radar data	
0	22	Oceanographic elements	
0	23	Dispersal and transport	
0	24	Radiological elements	
0	25	Processing information	
0	26	Non-coordinate location (time)	Defines time and time derivatives that are not coordinates
0	27	Non-coordinate location (horizontal - 1)	Defines geographical positions, in conjunction with Class 28, that are not coordinates
0	28	Non-coordinate location (horizontal - 2)	Defines geographical positions, in conjunction with Class 27, that are not coordinates
0	29	Map data	
0	30	Image	
0	31*	Data description operator qualifiers	Elements used in conjunction with data description operators
0	33	Quality information	
0	35	Data monitoring information	
0	40	Satellite data	

* This class does not exist in CREX.

(continued)

(BUFR/CREX Table B - continued)

Notes:

(1) Where a code table or flag table is appropriate, “code table” or “flag table”, respectively is entered in the UNITS column.

(2) The code tables and flag tables associated with Table B are numbered to correspond with the F, X and Y part of the table reference.

(3) To encode values into BUFR, the data (with units as specified in the UNIT column) must be multiplied by 10 to the power SCALE. Then subtract the REFERENCE VALUE to give the coded value found in Section 4 of the BUFR message. For example, a measured latitude is –45.76 degrees. The coarse accuracy descriptor is 0 05 002 and the encoded value is $-45.76 \times 10^2 - (-9000) = 4424$.

(4) Where UNITS are given as CCITT IA5, data shall be coded as character data left justified within the field width indicated using CCITT International Alphabet No. 5, and blank filled to the full field width indicated.

(5) Classes 48 to 63 are reserved for local use; all other classes are reserved for future development.

(6) Entries 192 to 255 within all classes are reserved for local use.

(7) The use of local descriptors, as defined in Notes 5 and 6, in messages intended for non-local or international exchange is strongly discouraged. They should be kept to the barest minimum possible and must also be by-passed by the use of descriptor 2 06 YYY.

(8) First-order statistics are included in Table B only when they are produced, as such, by the observing system.

(9) In all flag tables within the BUFR specification, bits are numbered from 1 to N from the most significant to least significant within a data of N bits, i.e. bit No.1 is the leftmost and bit No. N is the rightmost bit within the data width. The bit No. N (least significant bit) is set to 1 only if all the bits are set to 1 within the data width of the flag table to represent a missing value.

Class 00 - BUFR/CREX* table entries

TABLE REFERENCE F* X Y	ELEMENT NAME	BUFR				CREX		
		UNIT	SCALE	REFERENCE VALUE	DATA WIDTH (Bits)	UNIT	SCALE	DATA WIDTH (Characters)
0 00 001	Table A: entry	CCITT IA5	0	0	24	Character	0	3
0 00 002	Table A: data category description, line 1	CCITT IA5	0	0	256	Character	0	32
0 00 003	Table A: data category description, line 2	CCITT IA5	0	0	256	Character	0	32
0 00 004	BUFR/CREX Master table (see Note 1)	CCITT IA5	0	0	16	Character	0	2
0 00 005	BUFR/CREX edition number	CCITT IA5	0	0	24	Character	0	3
0 00 006	BUFR Master table version number (see Note 2)	CCITT IA5	0	0	16	Character	0	2
0 00 007	CREX Master table version number (see Note 3)	CCITT IA5	0	0	16	Character	0	2
0 00 008	BUFR Local table version number (see Note 4)	CCITT IA5	0	0	16	Character	0	2
0 00 010	F descriptor to be added or defined	CCITT IA5	0	0	8	Character	0	1
0 00 011	X descriptor to be added or defined	CCITT IA5	0	0	16	Character	0	2
0 00 012	Y descriptor to be added or defined	CCITT IA5	0	0	24	Character	0	3
0 00 013	Element name, line 1	CCITT IA5	0	0	256	Character	0	32
0 00 014	Element name, line 2	CCITT IA5	0	0	256	Character	0	32
0 00 015	Units name	CCITT IA5	0	0	192	Character	0	24
0 00 016	Units scale sign	CCITT IA5	0	0	8	Character	0	1
0 00 017	Units scale	CCITT IA5	0	0	24	Character	0	3
0 00 018	Units reference sign	CCITT IA5	0	0	8	Character	0	1
0 00 019	Units reference value	CCITT IA5	0	0	80	Character	0	10
0 00 020	Element data width	CCITT IA5	0	0	24	Character	0	3
0 00 024	Code figure	CCITT IA5	0	0	64	Character	0	8
0 00 025	Code figure meaning	CCITT IA5	0	0	496	Character	0	62

(continued)

(Class 00 - continued)

TABLE REFERENCE F* X Y	ELEMENT NAME	BUFR				CREX		
		UNIT	SCALE	REFERENCE VALUE	DATA WIDTH (Bits)	UNIT	SCALE	DATA WIDTH (Characters)
0 00 026	Bit number	CCITT IA5	0	0	48	Character	0	6
0 00 027	Bit number meaning	CCITT IA5	0	0	496	Character	0	62
0 00 030	Descriptor defining sequence	CCITT IA5	0	0	48	Character	0	6

* For CREX descriptors F = B, not 0.

Notes:

(1) Master tables are described in Note 2 to Section 1 of the BUFR regulations (part of the regulation entitled "Specifications of octet contents").

(2) BUFR master table version numbers are described in Notes 2 and 4 to Section 1.

(3) CREX master table version numbers are described in Note 5 to Section 1 of CREX regulations.

(4) For local table version number, see last part of Note 2 to Section 1 of BUFR regulations.

Editorial note: With respect to the latest entries in the BUFR/CREX Table B, see:
http://www.wmo.int/pages/prog/www/WMOCodes/WMO306_vI2/LatestVERSION/LatestVERSION.html