

**MINIMUM QUALITY CONTROL STANDARDS MQCS-V  
(VERSION 5, JUNE 2004)**

**NOTE** See specification for quality control Indicators  $Q_1$  to  $Q_{29}$  at the end of this appendix

$\Delta$  = space (ASCII 32)

<b>Element</b>	<b>Error</b>	<b>Action</b>
1	$i_T \neq 3 - 5, \Delta$	Correct manually otherwise $\Delta$
2	AAAA $\neq$ valid year	Correct manually otherwise reject
3	MM $\neq$ 01 - 12	Correct manually otherwise reject
4	YY $\neq$ valid day of month	Correct manually otherwise reject
5	GG $\neq$ 00 - 23	Correct manually otherwise reject
6	$Q_c \neq 1, 3, 5, 7$ $Q_c = \Delta$	Correct manually and $Q_{20} = 5$ , otherwise $Q_{20} = 4$ $Q_{20} = 2$
7	$L_a L_a L_a \neq 000-900$ $L_a L_a L_a = \Delta\Delta\Delta$	Correct manually and $Q_{20} = 5$ , otherwise $Q_{20} = 4$ $Q_{20} = 2$
8	$L_o L_o L_o L_o \neq 0000-1800$ $L_o L_o L_o L_o = \Delta\Delta\Delta\Delta$ $L_a L_a L_a = L_o L_o L_o L_o = \Delta\Delta\Delta(\Delta)$	Correct manually and $Q_{20} = 5$ , otherwise $Q_{20} = 4$ $Q_{20} = 2$ Correct manually otherwise reject

**Time sequence checks**

Change in latitude  $> 0.7^\circ/\text{hr}$  Correct manually otherwise  $Q_{20} = 3$   
 Change in longitude  $> 0.7^\circ/\text{hr}$  when lat. 00-39.9 Correct manually otherwise  $Q_{20} = 3$   
 Change in longitude  $> 1.0^\circ/\text{hr}$  when lat. 40-49.9 Correct manually otherwise  $Q_{20} = 3$   
 Change in longitude  $> 1.4^\circ/\text{hr}$  when lat. 50-59.9 Correct manually otherwise  $Q_{20} = 3$   
 Change in longitude  $> 2.0^\circ/\text{hr}$  when lat. 60-69.9 Correct manually otherwise  $Q_{20} = 3$   
 Change in longitude  $> 2.7^\circ/\text{hr}$  when lat. 70-79.9 Correct manually otherwise  $Q_{20} = 3$

9		No checking
10	$h \neq 0-9$ $h = \Delta$	Correct manually and $Q_1 = 5$ , otherwise $Q_1 = 4$ $Q_1 = 9$
11	$VV \neq 90-99$ $VV = \Delta\Delta$	Correct manually and $Q_2 = 5$ , otherwise $Q_2 = 4$ $Q_2 = 9$
12	$N \neq 0-9, \Delta$ $N < N_h$	Correct manually and $Q_3 = 5$ , otherwise $Q_3 = 4$ Correct manually and $Q_3 = 5$ , otherwise $Q_3 = 2$
13	$dd \neq 00-36, 99$ $dd = \Delta\Delta$ <u>dd versus ff</u> $dd = 00, ff \neq 00$  $dd \neq 00, ff = 00$	Correct manually and $Q_4 = 5$ , otherwise $Q_4 = 4$ $Q_4 = 9$  Correct manually and $Q_4$ or $Q_5 = 5$ otherwise $Q_4 = Q_5 = 2$  Correct manually and $Q_4$ or $Q_5 = 5$ otherwise $Q_4 = Q_5 = 2$

<b>Element</b>	<b>Error</b>	<b>Action</b>
14	$i_w \neq 0, 1, 3, 4$	Correct manually, otherwise $Q_5 = Q_{29} = 4$
15	$ff > 80$ knots $ff = \Delta\Delta$	Correct manually and $Q_5 = 5$ , otherwise $Q_5 = 3$ $Q_5 = 9$
16	$s_n \neq 0, 1$	Correct manually, otherwise $Q_6 = 4$
17	$TTT = \Delta\Delta\Delta$ If $-25 > TTT > 40$ then when Lat. $< 45.0$ $TTT < -25$ $TTT > 40$ when Lat. $\square 45.0$ $TTT < -25$ $TTT > 40$	$Q_6 = 9$ $Q_6 = 4$ $Q_6 = 3$ $Q_6 = 3$ $Q_6 = 4$
<b>TTT versus humidity parameters</b>		
	$TTT < WB$ (wet bulb) $TTT < DP$ (dew point)	Correct manually and $Q_6 = 5$ , otherwise $Q_6=Q_{19}= 2$ Correct manually and $Q_6 = Q_7 = 5$ , otherwise $Q_6 = Q_7 = 2$
18	$s_t \neq 0, 1, 2, 5, 6, 7$	Correct manually, otherwise $Q_7 = 4$
19	$DP > WB$ $DP > TTT$ $WB = DP = \Delta\Delta\Delta$	Correct manually and $Q_7 = 5$ , otherwise $Q_7=Q_{19} = 2$ Correct manually and $Q_7 = 5$ , otherwise $Q_7 = Q_6 = 2$ $Q_7 = Q_{19} = 9$
20	$930 > PPPP > 1050$ hPa $870 > PPPP > 1070$ hPa $PPPP = \Delta\Delta\Delta\Delta$	Correct manually and $Q_8 = 5$ , otherwise $Q_8 = 3$ Correct manually and $Q_8 = 5$ , otherwise $Q_8 = 4$ $Q_8 = 9$
21	$ww = 22-24, 26, 36-39, 48,$ $49, 56, 57, 66-79, 83-88$ $93-94$ and latitude $< 20^\circ$ if $i_x = 7$ : $w_a w_a = 24 - 25, 35, 47-48,$ $54-56, 64-68, 70-78, 85-87$ and latitude $< 20^\circ$	Correct manually and $Q_9 = 5$ , otherwise $Q_9 = 4$ Correct manually and $Q_9 = 5$ , otherwise $Q_9 = 3$ Correct manually and $Q_9 = 5$ , otherwise $Q_9 = 4$
22, 23	$W_1$ or $W_2 = 7$ and latitude $< 20^\circ$ $W_1 < W_2$ $W_1 = W_2 = ww = \Delta\Delta\Delta\Delta$	Correct manually and $Q_9 = 5$ , otherwise $Q_9 = 4$ Correct manually and $Q_9 = 5$ , otherwise $Q_9 = 2$ $Q_9 = 9$
24-27	$N = 0$ , and $N_h C_L C_M C_H \neq 0000$ $N = \Delta$ , and $N_h C_L C_M C_H \neq \Delta\Delta\Delta\Delta$ $N = 9$ , and not ( $N_h = 9$ and $C_L C_M C_H \neq \Delta\Delta\Delta$ $N = \Delta$ , and $N_h C_L C_M C_H = \Delta\Delta\Delta\Delta$	Correct manually and $Q_3 = 5$ , otherwise $Q_3 = 2$ Correct manually and $Q_3 = 5$ , otherwise $Q_3 = 2$ Correct manually and $Q_3 = 5$ , otherwise $Q_3 = 2$ $Q_3 = 9$
28	$s_n \neq 0, 1$	Correct manually otherwise $Q_{10} = 4$
29	$T_w T_w T_w = \Delta\Delta\Delta$ if $-2.0 > T_w T_w T_w > 37.0$ then when Lat. $< 45.0$ $T_w T_w T_w < -2.0$ $T_w T_w T_w > 37.0$ when Lat. $\geq 45.0$ $T_w T_w T_w < -2.0$ $T_w T_w T_w > 37.0$	$Q_{10} = 9$ $Q_{10} = 5$ , otherwise $Q_{10} = 4$ Control manually and $Q_{10} = 5$ , otherwise $Q_{10} = 3$ Control manually and $Q_{10} = 5$ , otherwise $Q_{10} = 3$ Control manually and $Q_{10} = 5$ , otherwise $Q_{10} = 4$

<b>Element</b>	<b>Error</b>	<b>Action</b>
30	Indicator $\neq$ 0-7, $\Delta$	Correct manually, otherwise $\Delta$
31	Indicator $\neq$ 0-9, $\Delta$	Correct manually, otherwise $\Delta$
32	$20 < P_W P_W < 30$	$Q_{11} = 3$
	$P_W P_W \geq 30$ and $\neq 99$	$Q_{11} = 4$
	$P_W P_W = \Delta\Delta$	$Q_{11} = 9$
33	$35 < H_W H_W < 50$	$Q_{12} = 3$
	$H_W H_W \geq 50$	$Q_{12} = 4$
	$H_W H_W = \Delta\Delta$	$Q_{12} = 9$
34	$d_{W1} d_{W1} \neq 00-36, 99$	Correct manually and $Q_{13} = 5$ , otherwise $Q_{13} = 4$
	$swell_1 = swell_2 = \Delta$	$Q_{13} = 9$
35	$25 < P_{W1} P_{W1} < 30$	$Q_{13} = 3$
	$P_{W1} P_{W1} \geq 30$ and $\neq 99$	$Q_{13} = 4$
36	$35 < H_{W1} H_{W1} < 50$	$Q_{13} = 3$
	$H_{W1} H_{W1} \geq 50$	$Q_{13} = 4$
37	$I_S \neq 1-5, \Delta$	Correct manually, otherwise $\Delta$
38	$E_S E_S \neq 00-99, \Delta\Delta$	Correct manually, otherwise $\Delta\Delta$
39	$R_S \neq 0-4, \Delta$	Correct manually, otherwise $\Delta$
40	Source $\neq$ 0-6	Correct manually, otherwise $\Delta$
41	Platform $\neq$ 0-9	Correct manually, otherwise $\Delta$
42	No call sign	Insert manually, mandatory entry
43	No country code	Insert manually
44	No Quality Control	
45	$Q \neq 0-6, 9$	Correct manually, otherwise $\Delta$
46	$i_X \neq 1-7$	Correct manually, otherwise $\Delta$
47	$i_R = 0-2$ and $RRR = 000, \Delta\Delta\Delta$	Correct manually, otherwise $Q_{14} = 4$
	$i_R = 3$ and $RRR \neq \Delta\Delta\Delta$	Correct manually, otherwise $Q_{14} = 2$
	$i_R = 4$ and $RRR \neq \Delta\Delta\Delta$	Correct manually, otherwise $Q_{14} = 2$
	$i_R \neq 0-4$	Correct manually, otherwise $Q_{14} = 4$
48	$RRR \neq 001-999$ and $i_R = 1, 2$	Correct manually and $Q_{14} = 5$ , otherwise $Q_{14} = 2$
49	$t_R \neq 0-9, \Delta$	Correct manually and $Q_{14} = 5$ , otherwise $Q_{14} = 4$
50	$s_W \neq 0, 1, 2, 5, 6, 7$	Correct manually, otherwise $Q_{19} = 4$
51	$WB < DP$	Correct manually and $Q_{19} = 5$ , otherwise $Q_{19}=Q_7=2$
	$WB = \Delta\Delta\Delta$ $Q_{19} = 9$	
	$WB > TTT$	Correct manually and $Q_{19} = 5$ , otherwise $Q_{19}=Q_6 = 2$
52	$a \neq 0-8$	Correct manually and $Q_{15} = 5$ , otherwise $Q_{15} = 4$
	$a = 4$ and $ppp \neq 000$	Correct manually and $Q_{15}$ or $Q_{16} = 5$ , otherwise $Q_{15}=Q_{16}=2$
	$a = 1,2,3,6,7,8$ and $ppp=000$	Correct manually and $Q_{15}$ or $Q_{16} = 5$ , otherwise $Q_{15}=Q_{16} = 2$
	$a = \Delta$	$Q_{15} = 9$
53	$250 \geq ppp > 150$	Correct manually and $Q_{16} = 5$ , otherwise $Q_{16} = 3$
	$ppp > 250$	Correct manually and $Q_{16} = 5$ otherwise $Q_{16} = 4$
	$ppp = \Delta\Delta\Delta$	$Q_{16} = 9$
54	$D_s \neq 0-9$	Correct manually and $Q_{17} = 5$ , otherwise $Q_{17} = 4$
	$D_s = \Delta$	$Q_{17} = 9$
55	$v_s \neq 0-9$	Correct manually and $Q_{18} = 5$ , otherwise $Q_{18} = 4$
	$v_s = \Delta$	$Q_{18} = 9$
56	$d_{W2} d_{W2} \neq 00-36, 99, \Delta\Delta$	Correct manually and $Q_{13} = 5$ , otherwise $Q_{13} = 4$
57	$25 < P_{W2} P_{W2} < 30$	$Q_{13} = 3$
	$P_{W2} P_{W2} \geq 30$ and $\neq 99$	$Q_{13} = 4$
58	$35 < H_{W2} H_{W2} < 50$	$Q_{13} = 3$
	$H_{W2} H_{W2} \geq 50$	$Q_{13} = 4$
59	$c_i \neq 0-9, \Delta$	Correct manually, otherwise $\Delta$
60	$S_i \neq 0-9, \Delta$	Correct manually, otherwise $\Delta$

<b>Element</b>	<b>Error</b>	<b>Action</b>
61	$b_i \neq 0-9, \Delta$	Correct manually, otherwise $\Delta$
62	$D_i \neq 0-9, \Delta$	Correct manually, otherwise $\Delta$
63	$z_i \neq 0-9, \Delta$	Correct manually, otherwise $\Delta$
86	Minimum Quality Control Standards (MQCS) version identification	1= MQCS-I (Original version, Feb. 1989) CMM-X 2= MQCS-II (Version 2, March 1997) CMM-XII 3= MQCS-III (Version 3, April 2000) SGMC-VIII 4= MQCS-IV (Version 4, June 2001) JCOMM-I 5= MQCS-V (Version 5, July 2004) ETMC-I
87	HDG $\neq$ 000-360 HDG = $\Delta\Delta\Delta$	Correct manually and $Q_{22} = 5$ , otherwise $Q_{22} = 4$ $Q_{22} = 9$
88	COG $\neq$ 000-360 COG = $\Delta\Delta\Delta$	Correct manually and $Q_{23} = 5$ , otherwise $Q_{23} = 4$ $Q_{23} = 9$
89	SOG $\neq$ 00 - 99 SOG = $\Delta\Delta$ SOG > 33	Correct manually and $Q_{24} = 5$ , otherwise $Q_{24} = 4$ $Q_{24} = 9$ Correct manually and $Q_{24} = 5$ , otherwise $Q_{24} = 3$
90	SLL $\neq$ 00-99 SLL = $\Delta\Delta$ SLL > 32	Correct manually and $Q_{25} = 5$ , otherwise $Q_{25} = 4$ $Q_{25} = 9$ Correct manually and $Q_{25} = 5$ , otherwise $Q_{25} = 3$
91	$s_L \neq 0,1$ $S_L = \Delta$ hh $\neq$ 00 – 99 hh = $\Delta\Delta$ hh $\geq$ 13 hh < -01	Correct manually and $Q_{26} = 5$ , otherwise $Q_{26} = 4$ $Q_{26} = 9$ Correct manually and $Q_{27} = 5$ , otherwise $Q_{27} = 4$ $Q_{27} = 9$ Correct manually and $Q_{27} = 5$ , otherwise $Q_{27} = 3$ Correct manually and $Q_{27} = 5$ , otherwise $Q_{27} = 4$
92	RWD $\neq$ 000 - 360, 999 RWD = $\Delta\Delta\Delta$	Correct manually and $Q_{28} = 5$ , otherwise $Q_{28} = 4$ $Q_{28} = 9$
93	RWS $\neq$ 000 - 999 RWS = $\Delta\Delta\Delta$ RWS > 110 kts	Correct manually and $Q_{29} = 5$ , otherwise $Q_{29} = 4$ $Q_{29} = 9$ Correct manually and $Q_{29} = 5$ , otherwise $Q_{29} = 3$
<b>RWD versus RWS</b>		
	RWD = 000, RWS $\neq$ 000	Correct manually and $Q_{28}$ or $Q_{29} = 5$ , otherwise $Q_{28} = Q_{29} = 2$
	RWD $\neq$ 000, RWS = 000	Correct manually and $Q_{28}$ or $Q_{29} = 5$ , otherwise $Q_{28} = Q_{29} = 2$

**Specifications for quality control Indicators Q<sub>1</sub> to Q<sub>29</sub>**

- 0 No quality control (QC) has been performed on this element
  - 1 QC has been performed; element appears to be correct
  - 2 QC has been performed; element appears to be inconsistent with other elements
  - 3 QC has been performed; element appears to be doubtful
  - 4 QC has been performed; element appears to be erroneous
  - 5 The value has been changed as a result of QC
  - 6 reserved for GCC
  - 7 reserved for GCC
  - 8 Reserve
  - 9 The value of the element is missing
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