



Regional Specialised Monitoring Centre (RSMC) Report

Sarah North

SOT-V, 18-22 May 2009, Geneva, Switzerland





RSMC Report

RSMC Exeter is the WMO designated lead centre for monitoring the quality of surface marine data

- **Monthly statistics are produced for ships, buoys, and other marine platforms comparing observations with Met Office's global model background forecast fields for each variable**
 - **Since 2005 these monitoring stats have been available on the Met Office website**

<http://www.metoffice.gov.uk/research/nwp/observations/monitoring/index.html>

(Password protection was recently introduced - just follow online instructions to obtain login id and password)

- **Detailed monitoring lists are also sent to WMO on a 6 monthly basis**
 - **Statistics related to suspect VOS are extracted by WMO and sent to national VOS focal points, requesting corrective action to be taken**



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Monitoring of Surface Marine Data

The Met Office shares in WMO co-ordinated monitoring of the Global Observing System, by acting as lead centre for monitoring the quality of surface marine observations. This encompasses observations from [ships](#), [drifting buoys](#), moored buoys and other fixed marine platforms. One of the tasks as lead centre is to compile the [Biannual Report on the Quality of Marine Surface Observations](#).

The Met Office also holds a monitoring role in the international [Voluntary Observing Ships \(VOS\)](#) scheme and is the Real-Time Monitoring Centre for the international [Voluntary Observing Ships Climate \(VOS-Clim\)](#) Project which aims to provide a high-quality subset of marine meteorological data to support global climate studies. Tables of monitoring statistics for the individual ships in the VOS fleets (as listed in WMO's "[Pub 47](#)" document) and overall timeliness data are now produced by the Met Office each month and can be found via the links below.

[VOS Monthly Monitoring Reports](#)

[VOS Time of Receipt Statistics](#)

[Monthly Drifting Buoy Monitoring Statistics](#)

[Biannual Report on the Quality of Marine Surface Observations](#)



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Met Office Observation Monitoring web site

Pub47 VOS Suspects for Mar 2009

To view the suspect threshold for each variable and statistic, hover your cursor over the relevant column. Please note that the bias and standard deviation statistics listed below exclude observations having gross errors.

PRESSURE (hPa)							
CTRY CODE	SHIP NAME	CALL SIGN	TOTAL	GE (%)	BIAS	SD	Graph
CA	ALGOPORT	VCDT	161	100	0.0	0.0	QC plot
CA	GRIFFON	CGDS	143	100	0.0	0.0	QC plot
CA	SAMUEL RISLEY	CG2960	226	100	0.0	0.0	QC plot
DE	ARIAKE	DCAY2	42	0	4.4	1.1	QC plot
GB	Barbet Arrow	C6QF6	28	0	4.4	0.7	QC plot
IN	Ankaleshwar	ATSJ	25	0	4.1	0.9	QC plot
NL	NICKERIE	PJJL	79	0	-4.2	1.3	QC plot
RU	ANATOLY KOLESNICHENKO	UINM	26	0	5.1	1.0	QC plot
RU	BORIS SYROMYATNIKOV	UCUF	111	2	4.4	4.1	QC plot
US	ALBEMARLE ISLAND	C6LU3	46	0	4.5	1.0	QC plot
US	APL VIRGINIA	A8HA3	43	0	7.5	1.0	QC plot
US	HUGO N	HPNV	73	10	-9.7	4.0	QC plot
US	LNG CAPRICORN	V7BW8	49	0	7.1	3.2	QC plot
US	NORTHERN VICTOR	WCZ6534	33	9	-7.0	5.4	QC plot
US	NORWEGIAN PEARL	C6VG7	68	0	-5.6	1.0	QC plot
US	RYNDAM	PHFV	75	0	-4.1	1.3	QC plot
US	VISION OF THE SEAS	C6SE8	21	0	-5.3	0.7	QC plot

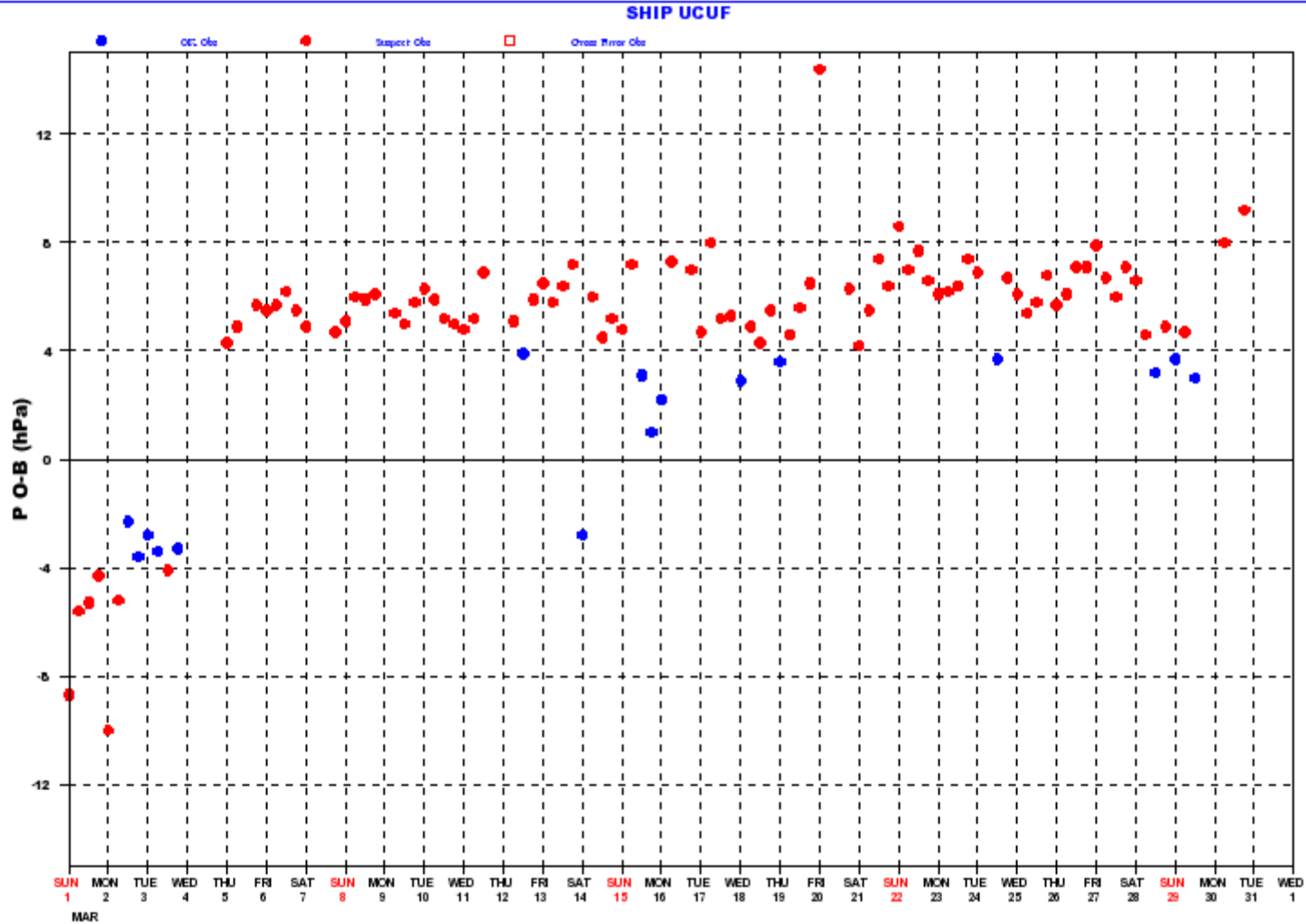
TEMPERATURE (deg C)							
CTRY CODE	SHIP NAME	CALL SIGN	TOTAL	GE (%)	BIAS	SD	Graph
		TBWAA07	45	0	7.1	3.1	QC plot
DE	CMA CGM YLANG	DDPH	23	0	4.3	3.2	QC plot



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Example of QC plot for pressure



2009



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Monthly Monitoring Criteria

GROSS ERROR (GE) LIMIT	: 15 hPa	(pressure)
	: 25 ms-1	(vector wind)
	: 15 °C	(air temperature)
	: 50%	(relative humidity)
	: 10 °C	(sea surface temperature)

SELECTION CRITERIA : NOBS \geq 20 , and one or more of the following:

Bias \geq	4 hPa	(pressure)
\geq	5 ms-1	(wind speed)
\geq	30 degrees	(direction)
\geq	4 °C	(air temperature)
\geq	15%	(relative humidity)
\geq	3 °C	(SST)
Standard devn (SD) \geq	6 hPa	(pressure)
\geq	80 degrees	(direction)
\geq	6 °C	(air temperature)
\geq	25%	(relative humidity)
\geq	5 °C	(SST)
%GE \geq	25	



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Monthly Monitoring Statistics

- **The Met Office also produces monthly monitoring statistics for a number of national VOS fleets**
- **To maintain ship lists we use the online E-SURFMAR metadata, as it is more up to date than the WMO Pub47 list, although the latter is still used for the VOS fleets not in the E-SURFMAR database (non-European & non-Australasian)**
 - **could the WMO Pub 47 updates for all VOS be included in the E-SURFMAR metadata, to make this the definitive up to date list of ships?**



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Monthly Monitoring Statistics (cont.)

- The JCOMMOPS SOT, VOS & PMO mailing lists are e-mailed when new monthly suspect lists are posted on the Met Office web site
- Monthly suspect lists also emailed directly to some VOS operating countries and focal points
 - Therefore important to keep the Focal Point & JCOMMOPS mailing lists up to date
- Time of receipt statistics available on Met Office web site at

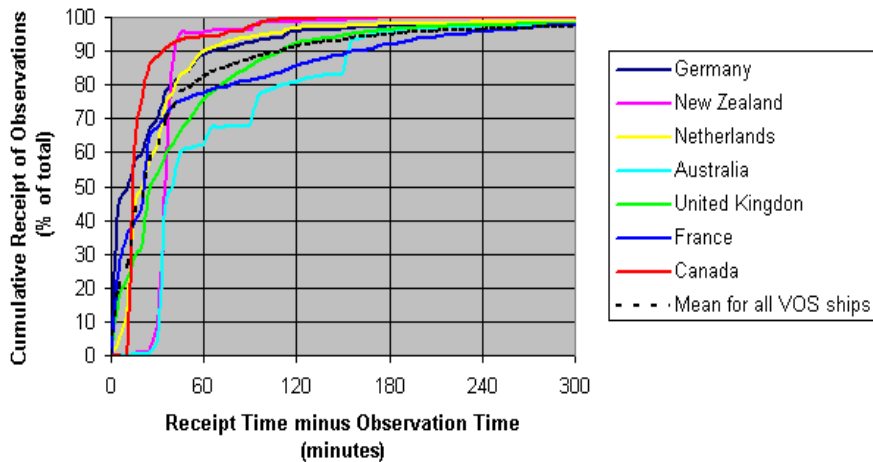
<http://www.metoffice.gov.uk/research/nwp/observations/monitoring/marine/TOR/index.html>



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Observation Monitoring Web site - Timeliness

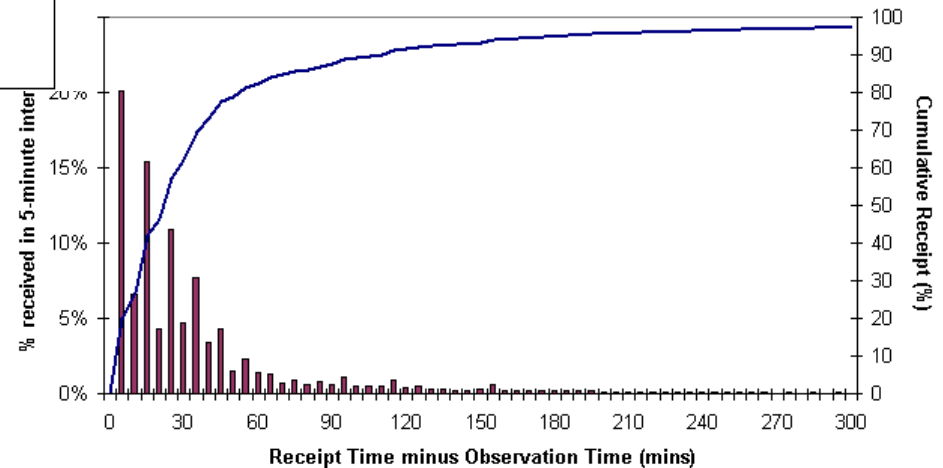
Timeliness of Receipt for ship observations from national VOS fleets for March 2009



Timeliness of VOS observations received at the Met Office (UK), March 2009

- 84% received within 60 mins

All VOS Ships - March 2009





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Pub47 Time of Receipt Statistics by COUNTRY for March

COUNTRY	Ships	Observations	Average (Obs/Ships)	N<30 mins	N<60 mins	N<120 mins	N>360 mins	%<30 mins	%<60 mins	%<120 mins	%>360 mins	Average (R-O) (mins)
AU	72	4886	67.9	261	3060	3950	76	5%	63%	81%	2%	75.0
CA	25	3670	146.8	3249	3458	3660	0	89%	94%	100%	0%	20.4
DE	496	20994	42.3	14863	18713	20121	151	71%	89%	96%	1%	30.4
DK	2	619	309.5	556	613	615	2	90%	99%	99%	0%	17.5
EU	6	191	31.8	103	157	186	4	54%	82%	97%	2%	44.6
FR	45	12747	283.3	8664	9905	10916	169	68%	78%	86%	1%	56.5
GB	218	15407	70.7	8282	11670	14247	242	54%	76%	92%	2%	54.9
GR	6	133	22.2	45	124	131	0	34%	93%	98%	0%	38.0
HK	24	493	20.5	202	379	478	3	41%	77%	97%	1%	47.2
IE	2	393	196.5	348	384	389	0	89%	98%	99%	0%	17.4
IL	5	108	21.6	97	103	106	1	90%	95%	98%	1%	14.4
IN	24	270	11.2	26	171	213	8	10%	63%	79%	3%	79.6
IS	5	239	47.8	187	214	232	1	78%	90%	97%	0%	24.9
JP	13	534	41.1	394	473	483	28	74%	89%	90%	5%	106.4
MY	13	155	11.9	1	106	151	2	1%	68%	97%	1%	76.9
NL	171	7029	41.1	4446	6330	6804	95	63%	90%	97%	1%	40.6
NO	13	6053	465.6	5887	6022	6037	8	97%	99%	100%	0%	14.0
NZ	28	1399	50.0	165	1337	1383	2	12%	96%	99%	0%	37.5
RU	81	2499	30.9	882	1779	2048	190	35%	71%	82%	8%	95.9
SE	25	832	33.3	432	771	786	42	52%	93%	94%	5%	84.3
US	401	18714	46.7	12781	15687	17024	700	68%	84%	91%	4%	59.5
Total	1675	97365	58.1	61871	81456	89960	1724	64%	84%	92%	2%	47.7



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Change to monitoring stats

The VOS monthly monitoring stats on the Met Office web site have been modified since SOT-IV to remove the country identifier from ships with unique masked call signs (the ship name is also omitted).

- are these lists satisfactory or should the masked call-sign be replaced with the original call-sign (and the country identifier reinstated) ?

Biannual monitoring

Detailed monitoring lists are also sent to WMO on a 6 monthly basis.

Statistics related to suspect VOS are extracted by WMO and sent to national VOS focal points, requesting corrective action to be taken.

- Are these lists being used ?



RSMC Report

Call Sign Masking

'SHIP' masked call signs (*Japan + US*)

- Met Office gets real call sign data from JMA server by ftp
- but not yet routed into MetDB (staff shortage + security issues)
- therefore 'SHIP' data not yet monitored

Unique masked call signs (*Europe + Australia*)

- work required to use JCOMMOPS lookup table & include masked call-signs in statistics

(RSMC still prefers the Unique masked call sign system)



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VOS Ranking Scheme

- **The RSMC has recently set up a scheme for ranking the UK VOS fleet in terms of quality, quantity and timeliness of reports from each ship, to assist in presenting awards to the best performing ships.**
 - **is this scheme (detailed in Appendix E) suitable for wider use amongst other VOS fleets?**
 - **if so, are the parameters set at appropriate values?**
 - **should global VOS performance rankings be put on Met Office web site?**



VOSCLim Real Time Monitoring Centre Report

SOT-V, 18-22 May 2009, Geneva, Switzerland

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Met Office

RTMC Report

Real Time Monitoring Centre (RTMC)

In accordance with its Terms of Reference the RTMC....

- **extracts ship observation reports from the GTS**
- **associates the observed variables (pressure, air temp, humidity, wind speed, wind direction & SST) with co-located model field values and compiles it into BUFR data sets**
- **transfers the BUFR data sets to Data Assembly Centre via GTS and also (since 2007) puts a copy of the data on Met Office external FTP server in case of problems with GTS**
- **provides monitoring statistics for observed variables**



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RTMC Report

The RTMC produces monthly monitoring statistics

(put on FTP server for DAC to retrieve for adding to VOSCLIM website)

- for all project ships
- for ships identified as 'Suspect' vs criteria for 6 variables
(continue to include only ship reports made over model sea points when deciding on 'Suspect' list)

The RTMC requires

- Email addresses/Contact details for national focal points to be kept up to date on project website
- Call Sign details on project website to be kept up to date
(ideally any changes notified to both DAC and RTMC)
- A clear uniform strategy for Masked Call Signs to be developed



RTMC Report

Monitoring Criteria for 'Suspect' ships:

(a) VOSCLim

(b) VOS

Variable	(a)	(a)	(a)
	Mean o-b	Std Dev o-b	Gross error
	limit	limit	limit
Pressure (hPa)	2.5	5.0	15.0
Wind Speed (m/s)	5.0	10.0	25.0
Wind Direction (°)	30.0	60.0	150.0
Air Temp. (° C)	2.0	4.0	10.0
Rel. Humidity (%)	12.0	20.0	50.0
Sea surf Temp (°C)	2.0	4.0	10.0

Variable	(b)	(b)	(b)
	Mean o-b	Std. Dev. o-b	Gross error
	limit	limit	limit
Pressure (hPa)	4.0	6.0	15.0
Wind Speed (m/s)	5.0	-	25.0
Wind Direction (°)	30.0	80.0	-
Air Temp. (° C)	4.0	6.0	15.0
Rel. Humidity (%)	15.0	25.0	50.0
Sea surf Temp (°C)	3.0	5.0	10.0



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Future monitoring

- **Should the RSMC apply the tighter VOSClm monitoring criteria to all VOS ships in future?**
- **Will the VOSClm ship list be maintained in future?**
- **Should statistics be put on VOSClm website, or just let users access RSMC (Met Office) web site containing stats for all ships?**



Questions

