METSERVICE

A world of valuable information

Julie Fletcher

Manager Marine Observations

Expectations and Standards

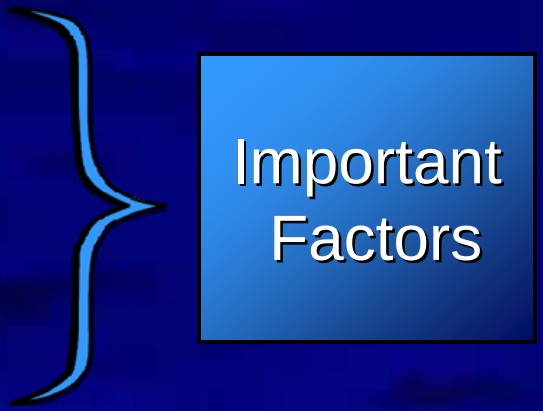
Perspective from service with small VOS Programme

- What makes a VOS programme successful?
- What makes an effective PMO?

- Look at some practical areas to show where PMO work can make a difference

Presentation Outline

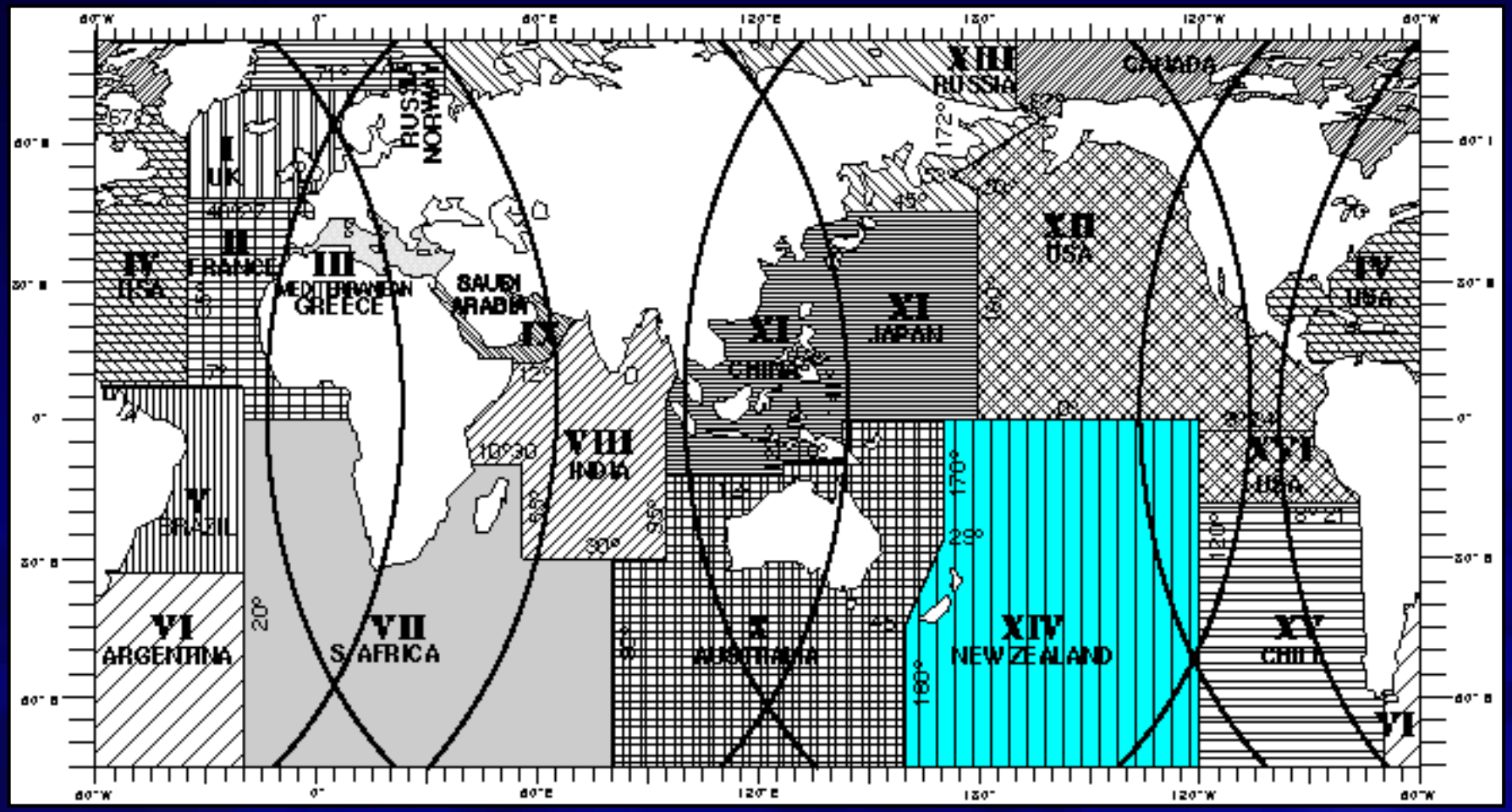
- MetService NZ VOS Programme
- Visiting
- Recruitment
- Barometer Comparisons
- Performance Monitoring
- Summary



MetService NZ Marine Network at 1/7/03

- **8** Drifting Buoys
- Total NZ VOS = **50**

36 Selected | **6** Supplementary | **8** Auxiliary


I
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VOS Management

- All Ship visits
- Recruitment of VOS ships
- All correspondence with ships, WMO, etc
- Maintenance of VOS database
- Assistance to foreign VOS
- Monitoring of Ship OBs
- QC + follow up action

Changing Marine Industry

- Time of enormous change
- Less stable VOS
- VOS numbers are volatile
- Increase in FOC ships
- More after hours ship visiting
- Improved communications

Programme Overview

- Know whole process
- Unique overview
- Problem areas identified
- Focus on important issues

Important Factors

- RealTime access to GTS SHIP OBs
- Benefits of preparedness
- Constant monitoring of OBs and follow up visits to ships are crucial
- Providing ships with clear instructions
- It’s about being pro-active

Steering Strategies

- Number of ships in VOS not important - it's the number that report that count
- Coded OBs are worthless if they are not received at the Forecasting Office
- Doesn't matter which country a ship reports for, so long as it reports.

Ship Visits

- Visits to NZ VOS
- Visits to Foreign VOS

What makes an effective visit?

NZ VOS - Before Visit

Preparation is the key

- Prioritise ships to visit
- Read notes on last visit
- Check for OBs receipt & print OBs to show ship
- Check OBs quality

Be informed ready to target any problem areas

Ship reports from 0000Z 19-MAY-2003 to 0400Z 05-JUN-2003

ELXD4 19004 99085 31526 41497 71413 10285 20250 40112 51020 70262 85878
22234 00302 20201 314// 40402 80260=

ELXD4 19064 99092 31535 41497 61313 10294 20262 40090 50009 70221 8487/
22233 00305 20201 316// 40402 80270=

ELXD4 19124 99105 31548 41397 81519 10275 20257 40117 51012 72525 8521/
22233 00303 20201 316// 40402 80262=

ELXD4 19184 99114 31554 41497 41419 10278 20240 40118 54002 70251 842//
22234 00296 80250=

ELXD4 20004 99130 31566 41497 31419 10275 20227 40129 58017 70121 83101
22234 00297 20201 314// 40503 80242=

ELXD4 20064 99141 31573 41497 21513 10283 20215 40114 57018 70210 822//
22234 00295 20201 315// 40402 80235=

ELXD4 20124 99155 31586 41496 31413 10265 20224 40127 51002 70210 83100
22233 00300 314// 4//// 80237=

ELXD4 20184 99168 31595 41498 51213 10258 20212 40119 56010 70300 85100
22233 00289 80227=

During Visit

Purpose of visit - to thank for OBs, to encourage, to train, to check instruments, to issue supplies

- Visit Master - discuss OBs programme, forecasts, voyage, marine industry
- On Bridge - check instruments, stationery
- Ask to see OBs book - discuss coding with duty officer
- Show OBs listing & discuss any coding errors
- View transmission format on hard copy of telex messages

OBs Transmission Format

BBXX ZMJK 22063 99410 31754 41699 70119
10125 20094 40012 52001 71522 878// 22214
00150 20102 318// 40502 80109

OUT.015 Page 1 UTC Time: 03-05-10 18:04:33

BBXX OVZB2 10181 99335 31645 41395 83007 10171 20145 40135 56007
78127 89/// 22275 00210 80156=

OUT.015

REPORT.525 Page 1 UTC Time: 03-05-10 18:06:13

OUT.015 : Transmission successful

LES 222 Destination 0 File OUT.015
Reference number 241421

REPORT.525

After Visit

- Record details of visit in VOS database
- Follow up on any issues
- Advise by Email, or mail supplies

Some Pointers

- Remember SHIPs are doing us a favour - thank and encourage them to ensure continued Obs
- Credibility - PMO is the interface between MetService & Marine industry
- Visits provide intelligence on changes in industry
- Discretion required with info learned

Visits to Foreign VOS - Why?

- Requested by overseas PMO
- To thank/encourage OBs same as national VOS
- Foreign VOS make OBs in local waters & deserve support
- Some ships never return to country of recruitment and rely on local PMO for assistance

Be Prepared

- Know the status of the ship to be visited (WMO 47)
- If callsign known - check for OBs receipt and print a listing to take to the ship

On Board

- Same as national VOS
- Support, thank, encourage, discuss value of their OBs
- If ship unknown - ask if doing OBs?
  Look at logbook and transmission format
- Discuss any coding problems

After Visit

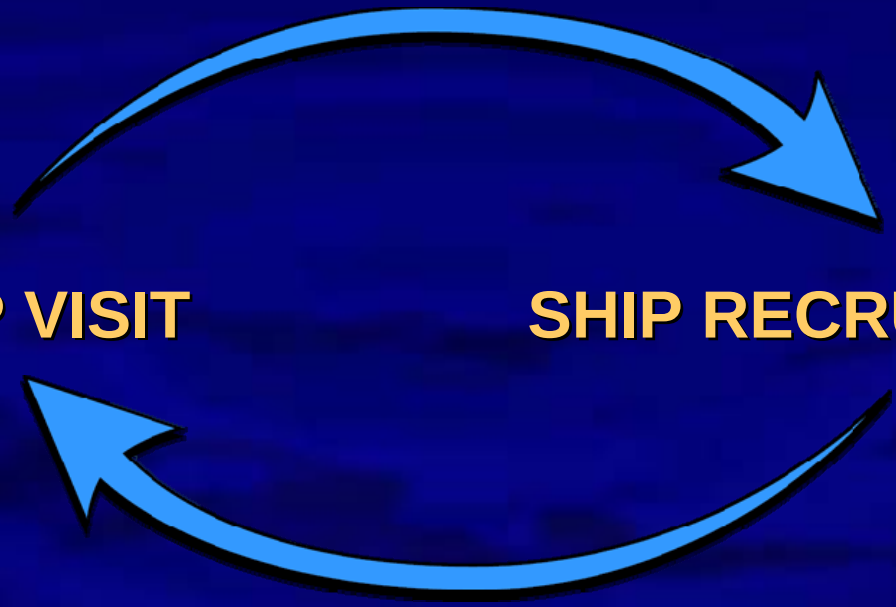
- Knowing the callsign, check for OBs
- Advise ship of OBs receipt
- If not received follow up with ship until OBs are received
- Advise overseas Met Service of visit details

Visits to Foreign VOS are Rewarding

- Many ships have not had a visit for a long time
- They are pleased when PMO shows interest in them
- A list of their OBs shows the system works

These visits prove to ships that doing OBs is worthwhile & keeps them reporting

Ship Visit & Ship Recruitment



Ship Recruitment

- Which ships to target?
- Seek permission from Shipping Company

Satisfy local requirements
- charter length, route, interest, communications

Recruitment Day

- Install instruments
- Training on coding, and instrument operation
- Paperwork & metadata

After Recruitment

- Await arrival of first OBs - get Forecaster comment
- Advise Ship OBs received, comment on quality

FOLLOW UP is Important

Initial feedback encourages ship
and prevents bad coding habits being perpetuated.

Dealing with Rejection

- It is a Voluntary programme
- Accept that not all ships are interested
- Don’t take it personally
- Try again after a period of time

MSL Pressure

What is required?

Accurate reliable MSL coded pressure in SHIP OB

Used for:

- National Weather Forecasting
- Global Model input
- Climatology

NZ VOS Barometers

All ships supplied with calibrated barometers at recruitment

Barometer types:

- Precision Aneroid Barometer
- Fuess Aneroid Barometer
- PMO Transfer Standard is Vaisala PTB220AD

DECREASE PRESSURE READING
INCREASE PRESSURE READING
READ OR CHANGE FROM TO
mb

1000
980
1020
960
1040
940
1060
920
1080
mbar

VAISALA
1012.61 1012.58
1012.63 1012.60
CL
ENT

On Board Ship

- PAB installed with MSL correction card hung beside it
- Fuess Aneroid set to MSL (using average height of eye) with calibration label stating Nil error to MSL
- PMO barometer comparison results recorded

PRECISION ANEROID BAROMETER CORRECTION TABLES

TABLE A

P.A.B. CALIBRATION

Ser.No. A437

Cal. Ref. A437/10

Signed [signature]

Date 4.6.2003

Barometer reading (hPa)	Correction (@ 20°C (hPa)
1050	+0.2
1040	+0.3
1030	+0.2
1020	+0.2
1010	+0.1
1000	+0.1
990	+0.1
980	+0.1
970	+0.1
960	+0.1
950	+0.1

INSTRUCTIONS

1. TO OBTAIN PRESSURE AT LEVEL OF BAROMETER
   Add (Algebraically) the TABLE A Correction to the Barometer Reading.
2. TO OBTAIN SEA LEVEL PRESSURE
   (a) Estimate the height of the barometer above sea level to the nearest metre.
   (b) From TABLE B obtain the correction using the appropriate height and air temperature column.
   (c) Add this value (b) to the barometer level pressure to obtain the sea level pressure in hectopascals (hPa).

TABLE B — BAROMETER CORRECTION TO MEAN SEA LEVEL

Air Temp °C	Height of Barometer above Sea Level (metres)																								
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
-10	1.3	1.4	1.5	1.6	1.8	1.9	2.0	2.2	2.4	2.5	2.6	2.7	2.8	2.9	3.1	3.2	3.3	3.5	3.7	3.8	3.9	4.0	4.1	4.2	4.4
0	1.3	1.4	1.5	1.6	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.7	2.8	3.0	3.1	3.2	3.3	3.6	3.7	3.8	3.9	4.0	4.1	4.3
+10	1.2	1.3	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.9	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.8	3.9	4.1
20	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.4	3.5	3.6	3.7	3.8	4.0
30	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.6	3.7	3.8

1000
980
1020
960
1040
940
1060
920
1080
R FUESS
DATE
20/6/03
TOTAL CORRECTIONS
NIL
PORT
Wgtn
BARO No.
1237
REMARKS
to MSL
MET. 600
J. Fletcher
N.Z. METEOROLOGICAL SERVICE

Barometer Use

- Officers trained to use MSL table with PAB
  - without it AP too low
- Differences between barometer types and settings explained to officers
- If bridge is air conditioned
  - open bridge door before reading barometer

PRECISION ANEROID BAROMETER CORRECTION TABLES

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P.A.B. CALIBRATION

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Signed J Bourne

Date 4.6.2003

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0	1.3	1.4	1.5	1.6	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.7	2.8	3.0	3.1	3.2	3.3	3.6	3.7	3.8	3.9	4.0	4.1	4.3
+10	1.2	1.3	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.9	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.8	3.9	4.1
20	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.4	3.5	3.6	3.7	3.8	4.0
30	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.6	3.7	3.8

Common Errors in Coded Pressure

- AP too low - not using table with PAB?
- AP too high - over pressurised by AC?
- AP too high - using wrong height above MSL?
- AP inaccurate - not using calibrated barometer?
- AP inaccurate - coding errors

Barometer Comparisons on Foreign VOS Ships

Find out the Barometer Type and Setting before making the comparison

- Is it a PAB with MSL Correction Table?
- Is it an Aneroid set to MSL?
- Is it an Aneroid set to station level and used with a MSL correction table?

Comparison

Must compare like with like

- After comparison, calibration label issued must not be ambiguous
- Ship's Officer must understand how any correction is to be applied

DATE	TOTAL CORRECTIONS
20/6/03	NIL
PORT Wgtn	
BARO No. 1237	REMARKS to MSL

MET. 600 J. Fletcher

N.Z. METEOROLOGICAL SERVICE

DATE	TOTAL CORRECTIONS
20/6/03	Use Tables A & B to obtain
PORT Wgtn	
BARO No. 439	REMARKS MSL pressure

MET. 600 J. Fletcher

N.Z. METEOROLOGICAL SERVICE

DECREASE ▼ INCREASE
mb
DATE
20/6/03
TOTAL CORRECTIONS
Use Tables
A+B to
obtain
PORT
Wgtn
BARO No.
439
REMARKS
MSL pressure
MET. 820 J. Fletcher
N.Z. METEOROLOGICAL SERVICE

1000
980
1020
960
1040
940
1060
920
1080
DATE
6-6-03
TOTAL CORRECTIONS
NIL
PORT
Wgtn
BARO No.
H2883
REMARKS
to MSL
MET. SVC
J. Fletcher
N.Z. METEOROLOGICAL SERVICE (22m)

Performance Monitoring

Why monitor?

- Monitoring Real Time SHIP data enables errors to be identified and corrected ensuring that Forecasters and Forecast Models are presented with the most accurate data.

What to Monitor

- RECEIPT OF OBs
- QUALITY OF OBs

Concentrate on quality not quantity

Monitoring Receipt of OBs

Checking receipt of Obs from National VOS shows health of programme

- Monthly check for receipt of all callsigns in NZ VOS
- Follow up ships identified as sending few or no OBs

Reasons for Few or Missing OBs

- Callsign change
- Transmission to wrong station
- Error in transmission format or coding
- Obs programme has lapsed
- Ship is in port or dry dock
- Ship has been sold or scrapped

Following up Missing OBs

Contact Ship

- If sending OBs - check callsign and transmission format to find reason for the non-delivery
- If OBs lapsed encourage restart
- If ship sold try to recover met instruments

Monitoring OBs Quality

Tools:

- PMO access to Real Time GTS SHIP OBs
- Automated computer QC - manual editing
- Forecaster & Data Entry feedback
- Daily summary of OBs with coding errors
- UKMO monthly Monitoring Stats
- WMO 6 monthly Monitoring Stats

Fixing Errors in OBs

- Visit or Email ships with persistent errors
- Be tactful
- Enlist assistance of overseas Met Service for ships that are unknown or can’t be contacted
- Monitor new recruits to stop bad coding habits forming

Summary of Key Factors which make PMO Effective

- Visiting
  - Preparedness, Access to realtime GTS OBs
- Recruitment
  - Follow up
- Baro comparisons
  - Determining baro setting, unambiguous labels
- Performance Monitoring
  - Constant checking

PMO Role

- Is unique
- Work is interesting and varied
- Job is challenging

PMOs efforts directly impact on the quality
& quantity of OBs from Ships

WE CAN MAKE A DIFFERENCE!