ARM Manus Research Station
RESET Visit 16M Report

Visit Duration: 14 October – 25 October 2002

Papua New Guinea National Weather Service Momote Station, Manus Province
and
Papua New Guinea National Weather Service Headquarters, Port Moresby

CONTENTS

A. Introduction

The main goals of the TWP Operations RESET16-M Visit (routine) to ARCS-1 at Momote Airport on Manus, PNG were the following: 1) Instrument calibration and comparison 2) MMCR repair 3) MPL replacement.

This Report is organized according to the planned tasks or work units performed during the RESET Visit. Within these work units the activities accomplished are arranged chronologically. Most of the information was out together by the RESET-16M members based on the actual visit, daily reports.

B. TWP Operations Management and RESET Visits

Once an ARCS Site is established, TWP Operations maintains the site and performs data reporting. TWP Operations also coordinated equipment retrofits at the established sites; accomplished by local NWS site personnel, routine RESET visits, and non-routine RESET visits.

Routine RESET Visits
Routine visits are scheduled on approximately six-month intervals and are focused mainly on routine maintenance, instrument calibration, instrument replacement, and training. A formal audit-in is performed upon arrival and audit-out before departure.

Non-Routine RESET Visits
Non-routine visits are intended for technical non-routine tasks such as emergency repairs, retrofits, and/or the addition of new instruments.

The work on the RESET visit is performed by the RESET team, but often in close coordination with the local on-site Observers. The team holds a daily, morning tasking meeting at the site using the proposed RESET visit, tasking schedule. After each day's work, the team meets to summarize work activities and an assigned team member writes a "Daily Report" and e-mails the report to TWP personnel in the U.S. Because of time-zone differences, necessary calls to instrument mentors in the U.S. are done in the morning.

Reset Members

- Troy Culgan (BOM)
- John Glowacki (BOM)

C. Tasks Performed

1. Audit in – get all Config files before calibration starts.

14Oct

- Audit in complete, Config files obtained, information transferred to FTP site: /reset/reset16m/

2. Rad, Spare Rad, Cal Rad logger electronic Calibration.

14 Oct

- Electronic calibration Spare Skyrad logger (ser no; 037 WD25940) complete

15 Oct

- Electronic calibration Skyrad logger (ser no: 039 WD25945) complete
- Electronic calibration Gndrad logger (ser no: 038 WD25944) complete
- Calibration documentation will be placed on FTP site when a reliable connection is available

17 Oct

- Calibration documentation placed on FTP site

25Oct

- Packed up the spare Rad logger for shipment to Darwin for testing

3. Radiometer Comparison testing

15 Oct

- Comparison radiometer in place and commenced logging data, details to Bill Porch

16 Oct

- Data collected will attempt to FTP data
- Gndrad radiometers inverted at 0635 UTC 16 Oct

17 Oct

- Comparison data to FTP site

19 Oct

- Comparison data to FTP site
- Instrument change out on sky/cal logger, information to Bill Porch

20 Oct

- Comparison Data to FTP site

21 Oct

- Comparison data to FTP site

22 Oct

- Changed to old calibration settings for PIR's on cal stand. Comparison data to FTP site.

24 Oct

- Checks as directed by Bill Porch

4. Radiometer change out

23 Oct

- PIRD change out complete at 00:23 UTC (sample data to FTP site)
- Instrument change out form to FTP site

24 Oct

- PSPG, NIP changed out, instrument change form to follow

25 Oct

- Skyrad PIRG, Gndrad PIRDN and Gndrad PSPDN changed out
- Instrument change forms to FTP site

5. Replace MFRSR head & logger board

20 Oct

- MFRSR head & logger board change out complete
- Replacement form and Config to FTP site

- Data to FTP site

23 Oct

- Indications are problem rectified, sensor now working

6. Replace UVB

18 Oct

- UVB replaced at 01:40 UTC (ser no old: 1900 ser no new: 2866) replacement form to ftp site

25Oct

- Removed the UVB from the Skyrad stand as it was causing interference to the Skyrad logger. Packed for shipment to Darwin for testing.

7. Replace T/RH probe & fan (calibrate before & after).

16 Oct

- T/RH Probe replaced, instrument change out form to follow
- Low Anemometer replaced, instrument change out form to follow

17 Oct

- Aspirator fan replaced

18 Oct

- Instrument change out forms to FTP site

8. SMET and Spare SMET Logger Calibration

16 Oct

- SMET logger Calibration complete

17 Oct

- Spare Smet Calibration check complete

9. Calibrate Barometer in SMET Logger

16 Oct

- Barometer serial number P0830004 calibration check complete

17 Oct

- Spare SMET Barometer serial number V0220002 calibration check complete

18 Oct

- BBSS Barometer serial number 694560 calibration check complete

20 Oct

- Barometer Cal form to ftp site

10. Construct TSI stand.

- Completed RESET 15

11. Logger EPROM 185…1.4 version upgrades (PIF 991124.2)

14 Oct

- Spare Skyrad Logger (ser no: 037 WD25940) upgrade complete

15 Oct

- Skyrad logger (ser no: 039 WD25945) upgrade complete
- Gndrad logger (ser no: 038 WD25944) upgrade complete
- Smet logger (ser no:024 WD 25947) upgrade complete
- Spare Smet (ser no: 033 WD 25948) upgrade complete

12. Hook up MWR FO serial cable to bit driver interface.

20 Oct

- MWR FO serial cable to bit driver interface connection complete (note: pins 2&3 are the reverse color code to Darwin)

13. Hook up Ceilometer FO serial cable to bit driver interface.

19 Oct

- Ceilometer FO serial cable to bit driver interface connection complete.
- Ceilometer calibration check complete, calibration form on FTP site

14. Install MPL

- No MPL in install

15. Install AWS.

20 Oct

- Foundation hole dug

23 Oct

- AWS Sat phone installed

24 Oct

- AWS foundation Complete

25 Oct

- In progress

16. Install VSAT foundation and conduit.

18 Oct

- Organize with Lae Building company for foundation hole to be dug on Sunday, Lae Builders will also provide aggregate for concrete mix.
- Met with local contractor, Allan Pomat to do form work and mix /pour concrete will commence this on Monday

20 Oct

- Foundation hole dug, at least 6-8 cubic meters of aggregate delivered

21 Oct

- Local contractor, Allan Pomat and crew commenced form work preparations

22 Oct

- Continued to prep site

24 Oct

- Vsat foundation pour commenced 1930 local

25 Oct

- VSAT foundation and conduit complete

17. Change out the MMCR UPS batteries (batteries on site).

20 Oct

- Batteries cannot be found, whereabouts unknown, but they were received.

18. Check WSI shutter sticking problem, change out shutter (to be purchased?)

17 Oct

- Reference Fax from David Reass WSI shutter is on site

21 Oct

- Shutter assembly replaced

19. H2 Gen maintenance (Culgan)

21 Oct

- H2 Gen maintenance commenced

22 Oct

- H2 Gen maintenance in progress

23 Oct

- RBL maintenance complete

26Oct

- H2 Gen maintenance complete

20. Routine Maintenance tasks (see attached)

a. Air Con filter changes

16 Oct

- AC filters changed

b. Logger pressure check

21 Oct

- Logger pressure check complete (logger pressure 5psi)

c. IRT lens, mirror check

14 Oct

- Skyrad IRT lens appears to have minor scratches

19 Oct

- Skyrad IRT mirror changed, Skyrad IRT cal check complete, Gndrad IRT cal check complete, Calibration form to ftp site

d. MFRSR level, alignment check

20 Oct

- Level & alignment check completed during instrument change out

22Oct

- Rechecked MFRSR connections found sensor connection loose

e. MMCR checks

15 Oct

- MMCR checks complete

f. MPL checks

- No MPL

g. MWR checks

16 Oct

- MWR checks complete

h. Vehicle insp.

- No Vehicle

i. Logger battery fluid check

16 Oct

- These are Gel batteries, Voltage reading 6.4 Vdc per battery, Terminal corrosion cleaned, preventative measures taken

j. SAT phone check

22 Oct

- Sat phone checked, all connections OK signal strength 487

k. Tracker lubrication

20 Oct

- Tracker lubrication complete

l. Van checks

23 Oct

- Van checks complete

m. WSI checks

19 Oct

- WSI white box AC filter cradle replaced, minor corrosion evident around AC vent of white box after old cradle removed.

21 Oct

- WSI routine maintenance checks complete

n. Emergency Generator checks

17 Oct

- During grid power outage (10:00 - 11:00 Local) generator shut down, Cause would seem to be dirty Racor fuel filters, filters have been changed

o. Diesel tank gage change out

16 Oct

- All gages checked for correct operation

19 Oct

- Fuel tanks externally cleaned and painted by observers

21. Radiometer ventilator work

15 Oct

- Six ventilators serviced

17 Oct

- Reference Fax from David Reass six new fans had internal fuses removed and bug screen attached

22. Remove ventilator internal fuses on spare ventilators.

23. Change ventilator screws to isoplast type

15 Oct

- Suggest Dick Eagan hand carry from Darwin.

24. Change out all Ventilator fans

25. Observer training

26. Ship back equipment

a. Replaced radiometers to SGP (PIR, PSP, B/W, NIP, UVB, MFRSR, Anemometers, T/RH probe)
b. Spare Seacon bulkhead connectors to Darwin
c. Cal equipment to Darwin

27. Audit out Spares inventory

- Config files from Rad Loggers, MFRSR, Ceil, MWR, etc.
- Replacement records
- Re-label faded labels

28. Other

- Resolve fuel transfer problem (stuck check valve)
- Resolve shipping information (reference CAT spares)
- Replaced office landline fax/printer HP3000 (ser no SG81MF3086) with new Fax /Printer/scanner HP3200 (ser no: USBH043888) 2 spare cartridges included

29. **Misc**

18 Oct

- Replace batteries in nighthawk smoke detectors all vans

19 Oct

- CorePC information on FTP site including serial numbers

25 Oct

- Shipping clerk notified Monty Apple of SDS shipment arrival

Hand carry

1. Logger EPROM 185…
2. Isoplast screws Not Carried
3. Tools as needed
4. WSI shutter
5. MWR FO “pin out” from Darwin setup
6. Ceilometer FO “pin out” from Darwin setup