

**ARM Manus Research Station  
RESET Visit 18M Report**

Visit Duration: 19 February – 02 March 2003

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

## **CONTENTS**

### **A. Introduction**

### **B. TWP Operations Management and Reset Visits**

### **C. Tasks Performed**

1. Replace SMET logger w/ spare & notify Apple
2. VSAT: Replace LNB "F" w/ LNB "N" & send "F" to Hughes
3. Install MMCR Up/Down Converter
4. Replace Laptops for Observer, BBSS, MWR, SAM, Vceil w/ software, configuration, CPCC & documentation
5. SDL install & training
6. Identify/paint diesel fuel storage tanks
7. Observer Training
8. Red mark site drawings & update electronic drawings onsite
9. Clean out transportainer – white & red storage vans
10. Remove unused components from vans
11. Pack MPL supports – handcarry to Nauru
12. Troubleshoot Goes H&S stream, files to Wallops (Wilcox)
13. Record images of systems for TWP Office image library
14. Install scanner and train Observers
15. E-mail training w/ Pearse
16. Complete inventory (ask Andrea)
17. Do documented maintenance to determine Brusag condition – if time
18. Remove Brusag from Skystand & move K&Z from cal stand to Skystand
19. Check Grnrad IRT lens
20. Check/change out logger to instrument cables
21. Maintenance Checklist
22. H2 Generator Maintenance & tutorial
23. AWS overview w/ Culgan
24. Enter correct anemometer coefficients in Zeno logger
25. Check & realign Anemometer base
26. Change out both Anemometers??
27. Check DC power system (loggers)
28. Install WSI night shading
29. Inspect Genset, change fuel filters
30. Safety Inspection checklist items
31. Web Cam?
32. Install data line in existing conduit for TSI
33. Assess possibility of installing an electric (or manual) pump for old site well hand pump
34. Misc.

### **D. Supplies/equipment needed for future**

### **E. Equipment that should be shipped out after RESET 18**

## **A. Introduction**

The main goals of the TWP Operations RESET18-M Visit (routine) to ARCS-1 at Momote Airport on Manus, PNG were the following: 1) Install new SDL system 2) Document site configuration 3) Replace instrument laptops.

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-18M 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**

- Bill Kornke – Team Leader
- David Reass - Reporter

## C. Tasks Performed

### 1. Replace SMET logger with spare and notify Mather.

21 Feb

- SMET logger replaced with spare and configuration file updated.

25Feb

- Changed logger output format to include two decimal places.

01 Mar

- Purged and filled both Skyrad and SMET loggers.

### 2. VSAT: Replace LNB "F" with LNB "N" and send "F" to Hughes.

23 Feb

- LNB has not arrived please locate.

24 Feb

- Rex had Troy check the system settings - we changed the necessary and the thing is working - logged in and all worked fine. BTW the serial port was set for RS485 so also changed that to RS232 so not sure which solved the problem but its going...

### 3. Install MMCR Up/Down Converter – if it arrives from Darwin in time. Send replaced unit to SGP.

22 Feb

- Checked with Pearse and is apparently in POM.

26 Feb

- Installed new CUDC at 11:30UTC. Please have mentor review data.

27 Feb

- Cal procedure for CUDC attempted however encountered problems. Kornke has sent details to Widener. Will continue to troubleshoot tomorrow.

28 Feb

- Kornke continued calibration of MMCR CUDC. He has forwarded information to Widener and will respond to any additional requests in the morning.

### 4. Replace Laptops for Observer (send home), BBSS, MWR, SAM, and VCEIL w/ software, configuration, CPCC, and documentation.

23 Feb

- Troy changed out observer's laptop and encountered several problems. Will let him explain details of the current set up and the problems he encountered.

## **25 Feb**

- Changed out Ceilometer laptop serial# 78-APFK6) at and installed new laptop (serial # 1101329). Attempted to swap MWR laptop but ran into problems when FTP comm. failed to retrieve data from instrument. Awaiting more information from mentor.

## **26 Feb**

- No luck with core PC. Placed original v-ceil and MWR laptops back online. Encountered far too many errors to make it worthwhile. Have focused efforts on MMCR CUDC. Will continue to look into CORE PC if time permits.

## **28 Feb**

- Got new observers laptop set up to print, send/check e-mail from Franco's Daltron OIC account, loaded address books and useful documents, verified operation of observer e-mail accounts, and set up hyper term operation for WMO capture text from Digicora. Will continue to monitor...

## **01 Mar**

- Made adjustments to observer laptop WMO hyper term interface with Digicora. Verified that data was successfully retrieved during morning flight.

## **5. SDL install/training**

### **27 Feb**

- SDL version 2.1.1 installed and observers trained on new software. Observers have now been instructed to no longer fax daily rounds but to use new software. Today's rounds sent using software...

### **28 Feb**

- Followed instructions from Brad Perkins and removed David Akias name from the software.

## **6. Identify/Paint Diesel Fuel Storage Tanks: 1 for primary tank, 2 for secondary tank**

### **27 Feb**

- Purchased spray paint and Franco made a stencil and labeled the tanks to correspond with the daily rounds (1 for primary tank, 2 for secondary tank).

## **7. Observer training**

a) Sonde training

### **21 Feb**

- Franco covered Sonde launch and associated procedures with Reass.
- b) IRT gold mirror cleaning training

### **27 Feb**

- Procedure has been reviewed with observers. Procedure is posted in E-Van for reference.

c) Reass walk thru rounds w/Observers

**27 Feb**

- Reviewed rounds with observers. Found problem with reference two the shaded PIR's on the Skystand so we labeled them 1, and 2.
- d) Procedures CD change – destroy old one.

**24 Feb**

- New operations manual CD version 6 given to observers and destroyed version 5.

### **8. Red mark site drawings and update electronic drwgs onsite.**

**23 Feb**

- Began marking up drawings for future revision.

**24 Feb**

- Continuing with changes to drawing book.

**26 Feb**

- Continued site drawing mark ups.

### **9. Clean out transportainer – white and red storage vans**

**21 Feb**

- Cleaned out x-van and got rid of tons of junk.

**22 Feb**

- Began clean up and organization of white-van.

**01 Mar**

- Finished drawing bookmark ups.

### **10. Remove unused components from vans (enclosures, etc) (I, U, D, E ARCS)**

### **11. Pack MPL supports, hand carry to Nauru**

**01 Mar**

- Supports have been packed and will be hand carried to Darwin due to travel changes.

### **12. Troubleshoot GOES H&S stream, files to Wallops (Wilcox).**

**21 Feb**

- Troubleshooting of GOES in progress. Received upload error message in ZOC “can't upload file”.

**21 Feb**

- Guy Wilcox reported he was able to FTP to Sam at Manus so the serv-U settings must be ok.

## **22 Feb**

- Performed in depth troubleshooting and adjusted x-mitter window time as it was off by 30 seconds. Corrected Vitel system clock and now seeing text message being transmitted on the hour + 20 min. The GOES transmission is working fine. It looks like the corrected timing and the program change that Guy did fixed it. The forward transmission power self-test is still a mystery since we still get 0 Watts. The self-test probably only tests the internal circuitry and does not actually output. We really need to get a VITEL1004 manual on the site since I'm really just doing trial and error diagnostics. I'll try to dial in to Wallops since I can read the Platform ID off the VITEL, no guarantee though. There is a fair amount of missing data in the message that I'm sure can be fixed remotely.

## **13. Record images of systems for TWPPO image library**

### **14. Install scanner and train Observers**

#### **23 Feb**

- Scanner installed by Troy.

### **15. Email training with Pearse**

#### **20 Feb**

- Troy worked with Dick Pearse on clearing laptop errors and working with e-mail.

### **16. Complete inventory (ask Andrea)**

#### **22 Feb**

- Began inventory checks.

#### **27 Feb**

- Continued inventory checks.

### **17. Do documented maintenance to determine Brusag condition – if time**

#### **21 Feb**

- Recommend that Brusag will need to be shipped in order to be refurbished.

#### **28 Feb**

- Packed for shipment to SGP.

### **18. Remove Brusag from Skystand and move K&Z from cal stand to Skystand**

#### **21 Feb**

- Brusag Tracker removed from Skystand. K&Z tracker was installed on Skystand and appears to be tracking properly. Please have instrument mentor verify data.

#### **22 Feb**

- Removed remaining Brusag wiring and removed power control board from Skystand.

#### **24 Feb**

- Brusag tracker disassembled for shipment to SGP.
- Mentor Peter Gotseff said it looks like nothing changed on the Manus Skyrad data after the tracker move.

### **19. Check Grnrad IRT lens.**

**20 Feb**

- The lens appears to be damaged (inside), corrosion, water damage, pitting. Comparison with black body revealed a 10 deg C difference. Attached picture shows damage to optical coating on the internal side of the lens. Awaiting instruction from mentor. Kornke trained Reass on retrieval of logger data via local connection.

### **20. Check/change out logger to instrument cables (Kornke)**

**22 Feb**

- Preliminary checks made and found that several cables will require repair.

### **21. Maintenance Checklist**

**24 Feb**

- Began tasks on maintenance checklist.

**25 Feb**

- Swapped MMCR UPS battery.

### **22. H2 Generator Maintenance and tutorial (BOM)?**

**20 Feb**

- Troy reviewed H2 generator operation and maintenance procedures with Kornke/Reass. Observed balloon release with observers.

### **23. AWS overview with Culgan**

**20 Feb**

- Troy reviewed AWS system, associated instruments, and MET console with Reass/Kornke.

### **24. Enter correct anemometer coefficients in Zeno logger**

**27 Feb**

- Changed slope/intercept on WND1 from 0.09702/0.34 to 0.09763/0.3

### **25. Check and realign Anemometer base**

### **26. Change out both Anemometers??**

### **27. Check DC power system (loggers)**

**21 Feb**



- DC power system checked out and is functioning correctly.

### **28. Install WSI night shading**

**20 Feb**

- Kornke reviewed operation and did hands on training with the WSI.

**21 Feb**

- WSI night shading checked. Image still partially saturated due to light coming from hydrogen storage building however shade previously constructed by observers successful in shading major airport light. Will investigate possibilities of shading.

### **29. Inspect Genset, change fuel filters**

**22 Feb**

- Found that the GENSET fuel tank gauge sight glass (threaded section) was cracked causing the gauge to read incorrectly. Replaced with spare sight glass.

### **30. Safety Inspection checklist items**

- Install combination smoke/CO alarms for the Y-Van and X-Van.
- Test and enable hardwired smoke alarms from I, D, E, U, Genset Vans
- Check defibulator

**20 Feb**

- Defibulator located in the I-Van. System check completed, battery power is fine.

### **31. Web Cam?**

### **32. Install data line in existing conduit for TSI (ask BOM or Obs)**

**Feb 24**

- Not enough fiber onsite to make data connection. Please order 150ft 2-pair 62.5-125um-type ofnr for comm. run. Please order some tape measures that have both metric and imperial units.

### **33. Assess possibility of installing an electric (or manual) pump for old site well hand pump**

**Feb 24**

- We are unable to repair the hand pump however Franco will speak with local expertise and investigate repair possibilities.

### **34. Misc:**

**20 Feb**

- Charged iridium phone and placed call to states to check for proper operation. The unit functioned properly and will be carried by the RESET team while on island.
- Observers assisted Paul Johnson with removing ISS van and components. Troy spoke with Dick Pearse regarding shipments. Dick will look into them on completion of log ship customs clearance.

**21 Feb**

- Troy checked Ceilometer bit drivers and fiber connections.

**22 Feb**

- Received boxes from D. Pearse including laptops and drawing books still awaiting UDC that he claims is in POM.

**25 Feb**

- Troy Culgan left for POM today.

**27 Feb**

- Kenmore Daikin AC Tech left the site today. Kornke interviewed possible shipping assistant for Dick Pearse.

**28 Feb**

- Kenmore Daikin AC Tech departed for LAE.

**24 Mar**

- The GOES antennas are in their original Config. So nothing should change as far as S/Ns, etc. VITEL xmitter hooked up to original antenna. DCP antenna installed at the site but no DCP GOES xmitter hooked up to it – B. Kornke.

**Supplies/equipment needed for future:**

- VITEL1004 manual for GOES Transmitter.
- 150ft 2-pair 62.5-125um-type ofnr for comm. run to TSI.
- Tape measures that have both metric and imperial units.
- Diesel Genset fuel tank sight gage cover
- Diesel Genset fuel tank gage for spare.
- Electric or manual pump for old site well.

**Equipment that should be shipped out after Reset 18:**

- Brusag shipped to Darwin for refurbishment.
- Gndrad IRT shipped to SGP for lens replacement and calibration