

**ARM Manus Research Station
RESET Visit 15M Report**

Visit Duration: 02 May 2002 – 16 May 2002

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

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A. Introduction

The main goals of the TWP Operations RESET15-M Visit (routine) to ARCS-1 at Momote Airport on Manus, PNG were the following: 1) MPL Shade Mechanism 2) WSI Software upgrade 3) WSI night light pollution 4) BBSS transition from RS80 to RS90 sondes and 5) H2 Generator Maintenance.

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-15M 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.

Reset Members

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

C. Tasks Performed

1. Replace MPL Shade Assembly

08May

- Replaced, Water timer for MPL set at local time; set to 1145 activate, duration 45min. Pictures of set up sent for review.
- Mentor reviewed pictures and verified set up was correct. The mentor requested that the sun sensor needed to be moved all the way up to the top of tube. This would allow for maximum flexibility for the MPL green beam.
- Located spare Laser Power supply for MPL (WD27985 s/n 3778)
- MPL sun sensor is as far up the tube with the cable provided, unable to lengthen cable.
- Mentor reports that the cable length will have to do for now. He will make an extension cable. The sensor will have to be moved up eventually, but says we can rely on the timer for now.

2. I-Van water leak repair

3. X-Van water leak repair

4. Fix Outfitter SAT Phone

03May

- Set to auto answer, unit repaired

5. WSI software upgrade from Tooman

- RUNWSI6M implemented

6. WSI night pollution shade work

07May

- Work done and images Sent

12May

- Additional work done and images sent.

7. WSI Occultor

07May

- Completed

8. Remove NET from Grndrad Stand

02May

- Removed

9. Install Zeno Logger Caps (Observers)

- Completed post RESET 14

10. Install Fiber Optics for Ceilomete

07May

- MWR = 34 meters Ceilo = 19meters

11. Remove MFRSR Bubble Level

- Completed RESET 14

12. Laptop Configuration Inventory

04May

- Completed

13. Wire outside phone ringer

16May

- Attempted however too much noise from 60hz power is on the line

14. Get Pearse Laptop/Email working

08May

- Kevin Luana assisted (Dick was happy)

15. Mark up ARCS-1 Drawing Book

10May

- Completed

16. Install hose and hand pump for new diesel tank

- Not available

17. Site power load map, balancing, esp. Phase A

10May

- Completed

18. Install breather pipe for diesel tank for filling

19. Train Observers on the use of the new RS90 sondes. Demonstrate launch.

09 May

- Attempted launch of RS-90 sonde unsuccessful, digicora failed to read tape.

10May

- Observers Trained on the correct use of RS 90 sondes.

12May

- Another successful RS-90 sonde launch.

20. Assemble new Skyrad stand stairs for both stands

12May

- In Progress/ to be completed by observers

21. Routine Maintenance tasks

a) BBSS

05May

- Change-Out UPS Batteries: completed
- Inspect bolts holding Antenna to Van: completed

06May

- Inspect Exterior Cables Going to Antenna: completed

b) Ceilometer

04May

- Inspect Glass/Check for Nests: completed

c) Dataloggers

07May

- Pressure check: completed

d) Diesel Generator

07May

- Check diesel tank fuel gage operation Checked
- Change out Fuel Tank Gage: Nil on hand (2 ¼ inch fitting)!
- Change out Fuel Gage Cover Changed

09May

- Test generator 12v batteries with Hydrometer: Not available, unable to purchase locally!

e) H2 Generator maintenance: Tri-annually (Culgan)

03May

- Change out sensor cell in Gas Analyzer: completed
- Check water level in storage tank: completed
- Change out internal battery in Gas Analyzer: completed
- Change out Velcro Strap Sonde Retainer in RBL: completed
- Cylinder wall brackets, earth stake clamp and flexible earth cable with clamp installed; reference Grant Jeffery electrolyser report 05-10 September 2001.
- Hydrogen gas leak repaired.

04May

- Electrolyser maintenance complete.

f) HVAC

05May

- Change out all ac unit filters: completed

g) IRT

04May

- Corrosion Check: completed
- Check Lens: completed

h) MFRSR

04May

- Check Level: completed
- Check Alignment N-S: completed

i) MMCR maintenance list (on CD of RESET Manual)

06May

- Check operation of 12VDC Fan for Lotech MUX 488/64: completed
- Check Operation of Antenna Heater Element : completed
- Check operation of Antenna Heater Blower: completed
- Check Radome Fabric: completed
- Clean Receiver/modulator Interface: completed
- Clean Computer filters (foam): completed
- Check Antenna Heater, Inlet, port Viewing Window: completed

- Check Radian Receiver Fan and Clean Filter: Unserviceable
- Check TWT inline desiccant: completed
- Clean TWT Amplifier Air Filter: completed
- Clean 4mm Tape Drives: completed
- Change out Antenna Heater Filters: completed
- Change out Fan for Radian Receiver: 12VDC fan replaced
- Change out TWTA Desiccant: completed

j) MWR

04May

- Rust Checks on Mounting Bolts: completed
- Replace Teflon Window: completed
- Change out heater/fan assembly: installed new model.
- Check air flow: completed
- Check Heater Operation: completed
- Check Instrument for Level: completed
- Moisture Sensor Adjust: completed

k) NIP

04May

- Visual Check: completed

l) Phone Mgr

- Phone Mgr: Not in Use at Manus!

m) PIR/PSP

n) **05May**

- Check Ventilator Operation and Screen: completed

o) Sat Phone

p) **06May**

- Check antenna and connections for rust: Connections Ok.

q) SMET

04May

- Check TRH Fan for operation: completed
- Check ORG mounting pipe for rusting: completed

06May

- Visually Check Tower for Animal Nests on Anemometer: completed
- Drop Tower and Check Anemometer: completed

r) Power

05May

- Water Level Check in Logger Box Batteries (Outside E-van)- Checked Ok

s) Tracker, K&Z

06May

- Grease (use Aero Shell #17 grease) Azimuth & Zenith worm gear drives: completed

t) Vans

04May

- U-Van air conditioner failure.

06May

- Inspect Vans for Rust: Suggest Pressure Clean Vans
- Check Dehumidifier Operation/Draining: Replaced D-Van de-humidifier
- Change out CO sensing module: Nighthawk units do not require module!
- Install dehumidifier in U-van workroom: Completed RESET 14!

09May

- Change out CO/Smoke Alarm Batteries – 9V: Completed
- U-Van Battery Terminal Replaced: completed
- U-Van temp alarm found as AC unit was icing up stopping air flow from fan into U-Van. The unit was turned unit off returned to service.

u) WSI – manual maintenance and address corroded filter on outside box.

07May

- Check Coolant Flow: ok
- Check for Cloudy Coolant in lines: ok
- Check for Corrosion: Corrosion evident around Air conditioner: checked
- Check both Sealants to Verify Seal 4 months: checked
- Check to See If N2 Charge Is Needed: checked
- Check metal filter in Blue Box: checked
- Check heater operation: checked
- Oil the coolant pump Bearings n/a
- Service AC's on White and Blue Boxes white box AC noisy
- Change Out Desiccant Cylinder in White Box changed
- Change out metal screen filter in White Box cleaned
- Change out Dehumidifier Anti-Corrosion Cartridge changed
- Calibrate Occulter: calibration check complete
- Calibrate Electronic Stops and Limit Switches: Calibration check Complete
- Verify settings after maintenance (FS=2.8, Focus = infinity): Verified

22. Secure MPL telescope

- RESET 17M

23. Talk to car dealer about how to “lease” a vehicle

09May

- Received quote – Details to Monty Apple

24. Ship back equipment

25. Audit Out

13May

- Completed

26. Spares inventory (Maestas directed)

27. UPS Inventory (Apple Form)

09May

- Completed, Note: Adam and MMCR UPS have a battery alarm indication, operational effect at this time is nil as both UPS units are supported by the

individual Van UPS unit. APC model 350U, s/n NBO 122212048 installed as SAM backup

D. Future RESET Visits

- Finish all uncompleted tasks (review the task summary).
- Clean BBSS tape reader following procedure (it was suggested that this should be done at each RESET visit).
- DIESEL TANK: Pad lock needed as well as electric pump.
- I-Van contains no apparent leak however Van has rotten wood in the floor
- Vans need to be pressured cleaned to remove plant growth.

Config files from Rad Loggers, MFRSR, Ceil, MWR, etc(w/Porch)

31May

- Observer Laptop has MS Office VER4.2C, Licensed to Ackerman.

a) Replacement records

02Jun

- Task complete./ Culgan, Kornke

b) Relabel faded labels

02Jun

- Label media unsuitable for outdoor use./ Kornke

D. Future RESET Visits

- Fiber optics for Ceilometer and MWR.
- Sno-coat or other roof sealant for Y van.
- Material to make stringers for new steps on SKyStand and CalStand; tread material can be purchased locally.
- Massive cleanout of the brown van. I've already done some but much more needs to be done. John Glowacki is good at this sort of thing and he inventories everything.