

TWP ARCS-1 Site RESET VISIT-10M Report

*Manus: 26 March – 7 April 2000
PNG NWS Momote Station, Manus Province and
PNG NWS Headquarters, Port Moresby
Papua New Guinea*

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1.0 INTRODUCTION:

The main goals of the TWP Operations RESET-10M Visit (routine) to ARCS-1 at Momote Airport on Manus, PNG were the following; 1) Instrument changeout, comparison, calibration 2) repair EVE, and 3) repair MACS. Details of the RESET visit planning are found in Attachment 3.

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 put together by the RESET-10M members based on the actual visit, daily reports.

2.0 TWP OPERATIONS / RESET MANAGEMENT:

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

Routine RESET 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.

Nonroutine RESET visits are intended for technical nonroutine tasks such as emergency repairs, retrofits, and/or the addition of new instruments.

The work on a 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-10 Manus Members:

- Fred Helsel – Lead,/Daily Reporting, 26 March to 7 April 2000
- Bill Porch, 26 March to 7 April 2000
- Bill Kornke, 26 March to 7 April 2000

PNG On-Site Observers:

- Francis Anuma – OIC
- Mary John
- Hymson Waffi
- James Pepa

- Elizah Gareitz

3.0 RESET PREPARATION:

Preparation for RESET visits requires a long lead-time to arrange reservations, visas, inoculations, medication, documentation, procedures, and training plans. Close coordination well before the departure date with AIS/ATOSS, instrument mentors, and shipping personnel is critical. Prioritization and task rejection is a difficult and important part of RESET visit preparation.

4.0 MANUS TASKS PERFORMED:

A. Perform Audit-In: (Helsel)

27Mar:

- Completed.

B. Perform Calibration (MWR, Ceil, MPL, T/RH, Anemometer, ORG and ZENO Loggers): (Helsel/Porch/Kornke)

(Configuration upload from BBSS, MWR, Ceilometer, Loggers, etc. before starting). Instrument change out (NET, Radiometers). Comparison testing (Radiometers-before/after, MFRSR-next trip). Comparison of two additional PIRs. Comparison using 3 NIPs instead of Cavity.

26Mar:

- Helsel set up some hyperterm connections for Porch. One was made for each serial instrument so that with a few clicks of the mouse access to configurations and data for each instrument.
- Porch set up a work area for cal and did the final unpacking and hookup of the required cal instruments -- logger, DVM, voltage source, etc.
- Kornke installed the twin NIP mount on the tracker and two fresh NIPS.

27Mar:

- Installed calibrated radiometer suite; it is operating on the cal stand. This consists of two PIR's, two PSP's and two NIP's.
- The cal logger configuration coefficients were modified to support the new radiometers. The new configuration file was downloaded to a disk. It will then be sent to Cornwall and <ftp.arm.gov/pub/www/incoming/reset10>. A question of the most current PSP coefficients needs to be addressed by Chris C. (Porch/Kornke)
- Calibrated the cal logger with the voltage and resistance standards and documented per Porch and program documentation requirements using Porch's documented guidelines. (Porch/Kornke)
- Installed the freshly calibrated cal logger in the field with instruments connected; it is currently taking data. (Kornke)

28Mar:

- Switched the GNDRAD at about 10 AM local time yesterday. Have not yet replaced the net radiometer. The cal logger underwent some configuration

changes in the morning but was collecting radiometer data for most of the day. As mentioned above, it was a perfect day for it. We did find a conflict with one of the NIPS. Seems we have a NIP with no updated coefficient and a serial number, which is not listed. Porch has a call into Chris Cornwall for clarification.

- All SKYstand instruments were periodically checked for proper solar alignment and shading. Later in the day we downloaded the sky, ground, and SMET data. It will be sent to Chris Cornwall for analysis and will also be sent to the ARM ftp site R10 folder.
- Porch and Kornke unpacked the stored spare loggers for calibration. When we tried to start the spare Sky logger it went into an infinite boot-up loop. Zirzow and Kornke observed this very same type of failure during the RESET-8 upgrades. Kornke has some spare logger parts and will attempt the repair first thing tomorrow.

29Mar:

- Most of the morning was spent repairing the spare ZENO SKYRAD logger. The power conditioner/battery charger box had a bad DC-dc converter. The bypassed box and the logger works fine. Since this is a liability, I propose we eliminate the kludge and a potential source of failure. We verified the supply voltage between 11 and 15VDC during calibration and it does not effect the data.
- The spare sky logger was calibrated with the voltage and resistance standards and documented per Porch and program documentation requirements using Porch's documented guidelines. We plan to connect it to the current SKYRAD instruments while we perform a cal on the fielded sky logger. -Porch/Kornke
- The calibration box had to be modified with Impulse connector cables. We still have a mix of Seacon and Impulse connectors that causes confusion and extra work. The Seacon upgrade should be a priority for R11. (Kornke)
- Collected more logger data and sent it to Chris C.
- Also collected MFRSR and MWR data. (Porch)
- It is difficult for Porch to get ADaM to produce raw MFRSR files through (this is a Koontz issue; not a Brooks problem). The MFRSR level was checked, and it was unlevel (bubble like a thin crescent moon outside circle on top of head). Heater seems to working OK. The NETCDF files for Jim Barnard to look are placed on <ftp.arm.gov/pub/www/incoming/reset10>.

30Mar:

- The spare Sky logger was packed into its shipping container and stored back in the red van after calibration and downloading its configuration. Porch completed the calibration of the GNDRAD logger. It was taken out of the field for a brief time around 10:00 am. During the calibration Bill Porch discovered a 5% offset on the IRT channel using the voltage standard as the signal source. We will be sending the data and configuration to Dick Hart for analysis.
- Porch entered calibration form data into Excel.
- We switched the radiometers to what we hope is their final position (we haven't switched in the GNDRAD yet, but I don't think that will make much difference).

- We sent Daily Logger data to Cornwall.

31Mar:

- Old radiometers replaced with newly calibrated ones that were running on the cal stand.
- MWR cal parameters documented. Sent a completed MWR Cal Check form to Morris. Basically it says that the instrument is level and the noise diode temperatures are steady. However, I thought they used to be a lot higher and the 23 Ghz lower than the 31 Ghz.
- Completed the electrical logger calibrations today on the SKYRAD and GNDRAD. Everything went really good, thanks to Bill Kornke, who understands both grounding and power (sent completed cal forms for the cal logger, the spare SKYRAD, and the SKYRAD, GNDRAD to Hart). The only measurement out of tolerance was the GNDRAD and spare SKYRAD IRT. When we put in 500 mV only 497 mV came out. When we put 1000 mV in, only 994 to 996 was measured by the logger. Should we try to increase the cal factor (25) by 5% to compensate, change something else, or note the difference and do nothing (hoping that someday the metadata system will accommodate something like this)?
- Sent a picture of the MFRSR bubble. It was unlevel, so I leveled it. I noticed that the Manus observer Mary said afterward the bubble was off. I will check with Mary tomorrow to see if she meant after I leveled it or before. Current MFRSR Netcdf files were sent to [ftp.arm.gov/pub/www/incoming/RESET10](ftp://ftp.arm.gov/pub/www/incoming/RESET10) under MFRSR. I'm work with YESDAS Manager, but haven't figured it out yet.
- Sent the new SKY and CAL configurations to Cornwall.

01Apr:

- Porch talked to Mary today and she was looking at the stand level that was way off. He showed her how to level it with the bubble on top. There is no level at Manus, so she took Porches. (Somebody owes him a level.)
- While the SMET tower was down, Porch and Kornke performed an anemometer calibration. Both wind direction and speed calibration were performed.
- Kornke provided power for the spare SMET logger for cal and new barometer test.
- Porch corrected SMET logger WIND1 coefficients that were incorrect.
- Porch completed the Ceilometer calibration.
- Kornke transferred data to [ftp.arm.gov](ftp://ftp.arm.gov) as well as radiometer data to Chris Cornwall.

02Apr:

- Porch monitored radiometer performance. He completed calibration of the IRT, ORG, and barometers.
- Porch and Kornke removed the GNDRAD PIR and PSP and installed the newly calibrated ones at ~02:00GMT. Corroded HW was replaced (bolts, nuts, etc). The new PIR and PSP were back online at ~0400GMT.
- All team members downloaded instrument data for the mentors at [ftp.arm.gov](ftp://ftp.arm.gov).
- Found that WIND1 (High Anemometer) was 40 degrees off in how it was anchored to the alignment collar. Looked like the collar was installed 40

degrees off that compensated for this offset, therefore there was not flag in the GOES.

03Apr:

- The MET temperature and relative humidity were calibrated today. The canopy was placed near the MET tower. Kornke and Porch performed RH comparisons with the chilled mirror after setting up a work area. The chilled mirror will take data overnight to eliminate effects of heating from the sun.
- Porch corrected coefficient entry errors for the SKYRAD. Final Instrument forms and configurations were sent to Chris Cornwall for final determination.

04Apr:

- The chilled mirror data looked good this morning. We re-entered new temperature coefficients to bring the temperature to the exact temp of the cal standard. We set up the improved water bath for this procedure. It is Porch's determination that we have completed calibration tasks with the exception of the spare SMET logger, although, we did do a temperature cal on it. We can't seem to talk to the barometer that we just installed but have messages to Dick Hart and Jeff Z. for advice.

05Apr:

- Calibration is complete except for the spare SMET, which has a nonworking barometer.

06Apr:

- SMET barometer communicates with the logger.
- Jeff Zirzow made a tremendous effort to provide the "fix" on the spare barometer/logger communication problem by duplicate integration at ATOSS. We will try to get it to work first thing in the morning, but our plane leaves at 11:20a local. (Kornke)

07Apr:

- The spare barometer is fixed; task completed. (Kornke)

C. *Repair Shaded PIR Ventilator: (Kornke)*

26Mar:

- Kornke installed the ventilators for the cal radiometers. We verified the non-operating ventilator fan, reported in the daily rounds, on the PIR-D. Kornke replaced the fan and put the PIR-D back online. It was determined, after close inspection, that all the ventilators require refurbishing. The currently operating fans are noisy (dry bearings) and the ventilator HW is corroding. Our plan is to install the new ventilators that we recently bought and return the worst of the existing lot for HW upgrades and reconditioning at ATOSS.

27Mar:

- We found was that the new ventilators have factory-fused fans. Both fuses had blown; this also happened at ATOSS. Replacing them requires complete disassembly of the ventilator and removal of the radiometer head. Since the power distribution box provides circuit protection via fuses, they will be removed.

D. Correct Anemometer Configuration: (Porch)

01Apr:

- Corrected SMET logger WIND1 coefficients that that were incorrect.

E. Make Backup Copy of Artecon: (Helsel)

01Apr:

- The Artecon does not take the data tape; spits out cartridge.

06Apr:

- The drive still does not accept a tape.
[Please edit the report I just sent to include the Artecon tape drive and the SMET barometer as not completed. (Kornke)]

F. Repair EVE: (Helsel)

26Mar:

- Looked at ADaM since we were notified that it was not working. ADaM was reporting properly but found no obvious errors, ingest working properly. GOES transmission status was also OK. We powered "OFF" Eve.

27Mar:

- Installed the new motherboard on Eve and got a misaligned monitor display re-adjusted. Eve started up but had problems finding the system disks. Will get the boot parameters from EVE3.

28Mar:

- Started Eve but the display is misaligned and the vertical and horizontal frequencies don't match ADaM. The monitors were swapped and it doesn't appear to be a monitor problem. We suspect the on-board graphics configuration or HW. There is still the option of just installing the ATOSS box, but at any rate Eve isn't acting properly and Helsel is pursuing all options.

29Mar:

- Re-installed the original EVE1; it now works. Apparently there was a loose connection that required complete disassembly and re-assembly of the box.

G. Perform WSI Maintenance:

31Mar:

- Installed RunWSI.exe upgrade.

H. Repair H2 Generator Water Pump: (Helsel)

27Mar:

- The H2 generator is not putting out current, and therefore is not producing H2. The observers are using Helium.

28Mar:

- The H2 generator switches current to "standby" when there is stored H2

present, thereby shutting off production. The problem appears fixed at the moment.

I. Upgrade DC Power – Phase I: (Helsel)

[Phase II at RESET-11]

26Mar:

- Installed the DC power distribution box and removed the old one. He also relocated the MFRSR control box so that now easy access is available to power, communication, and the MFRSR.

J. Train Observers:

[Windows, phone manager, emergency shutoffs, Digicora manual entry, BB light timer]

29Mar:

- Elizah arrived today. He is very motivated, inquisitive, and generally knowledgeable. Himsum has also been training with Mary.

30Mar:

- Mary has worked with Himsum, the new observer. He also helped with the van-grounding activities.
-

06Apr:

- All tasks completed except for Observers Windows Tutorial.

K. Install Phone “Manager” Box: (Kornke/Helsel)

01Apr:

- Helsel ran all the cabling for the phone manager and straightened out/replaced some of the existing phone wiring. Planning to do some local testing (dialing in from the hotel) before the final test with ATOSS, LANL and PNNL.

02Apr:

- The phone manager passed preliminary testing. Of course we can only do this from local phones. Our final test plan includes dial-in's from PNNL, ANL, LANL and ATOSS. We will commence final testing when everyone returns to work on Monday. Participants will tentatively include Koontz, Eagan, Morrison, and Meyer.

03Apr:

- Fred created a plan to test the Phone Manager from the four labs in the States, to both the phone/fax and ADaM modem, and send it to people at each site.

04Apr:

- Testing of the Phone Manager from stateside provided mixed results. PNL and

ANL (Annette and Dick Eagan) were able to dial in via modem. We received a fax from ANL and, later, from LANL (Clif). We will do further testing for consistency and reliability and request that all participants dial-in on a daily basis until we leave on the April 7 (your Thurs). (Helsel)

L. Post "Use ONLY for Fire or Emergency" Signs: (Helsel/Porch/Kornke)

31Mar:

- Emergency stop signs installed.

04Apr:

- We began some of the small misc. tasks, e.g., warning signs in power boxes, cleanup and organization, etc.

M. Install Balloon Barn Light Timer: (Helsel)

30Mar:

- Completed the balloon barn timer installation.

N. Repair RBL Light: (Helsel)

29Mar:

- Repaired the H2 RBL station lighting; It had a bad timer.

O. Install Artecon Patch: (Kornke)

01Apr:

- Artecon patch completed (date is approximate).

06Apr:

- ALL, the drive still rejects a tape; the patch was installed.

P. Perform Grid Power Supply Diagnostics (Balance AC Loads): (Kornke)

06Apr:

- Completed all tasks.

Q. Check Ceilometer Firmware Version Number: (Porch/Kornke)

27Mar:

- Completed Ceilometer configuration download.

R. Check Future Power Upgrades (Ceilometer Power Feed; DC Power Supply Terminal): (Kornke)

06Apr:

- Completed all tasks.

S. Audit Laptop/PC: (Helsel)

03Apr:

- Laptop audit sent to TWPPPO and ATOSS.

T. Upgrade Lightning Protection: (Kornke)

29Mar:

- Talked with Francis earlier about coordinating in the afternoon on the lightening protection task. There was quite a crew of people. I laid out all the steps for installing the grounding grid. They modified and added some trenches and driven all the grounding rods. Tomorrow I will instruct them in the use of the exothermic welding process. I gave them the lightening protection design document so they will understand the technical details.

30Mar:

- The grounding system for all the Vans (U, E, D, I, and ISS) is complete. I have to give credit to Francis, Elizah, and Himsum for taking on this project and knocking it out. The exothermic welding generated much interest in the area, and I counted at least eight people taking turns at participating and observing. At the end of the day they had part of the trench backfilled and were starting operations at the MET tower. I gave instruction, provided QA, and checked to see that they were working in a safe manner. I took before and after pictures.

31Mar:

- Completed the SMET tower lightening dissipater and grounding.

01Apr:

- The MET tower was dropped at ~0:00 hour GMT for installation of the anemometer cable connectors and the lightening surge protection. The tower was tipped up at the end of the day, ~07:00GMT.
- The fiber cable we intended to install was too short. That will have to be next time.

02Apr:

- Elizah drove a new ground rod for the SKYRAD stand and CadWelded a 2/0 copper cable with lug to the rod. He also installed 3" PVC conduit as well as ½" PVC conduit in the open trenches to support future upgrades.

04Apr:

- Elizah completed installation of PVC conduit for future upgrades.

U. Troubleshoot MACS/COMS with Reynolds/Edwards: (Helsel)

29Mar:

- Worked with Reynolds and Edwards via phone with no success. Another session is planned for tomorrow.

30Mar:

- Talked with Reynolds about 8:00 AM local time for the latest MACS/COMS fix. It was another attempt to sync the timing. Current H&S indicates "No Status Report". We won't know if that's an improvement until tomorrow.

V. Install Proper WSI Power Feed: (Kornke/Helsel)

02Apr:

- Completed the WSI power upgrades. The WSI was powered down at ~04:00GMT for the power upgrade. The desiccant cartridge and corrosion preventer were also installed. Since the cooler was powered-down for awhile, the WSI case heated up; upon power-up the temperature status went "RED." This is due to thermal lag and will probably be OK in a few hours or less.

W. *Photograph D-Van Interior for Future ACCESS Upgrade: (Kornke)*

06Apr:

- Helsel completed.

X. *Photograph Observers: (Kornke)*

03Apr:

- Began a photo session

04Apr:

- Observer photos in progress.

06Apr:

- Completed all tasks.

Y. *Remove and Recycle Old, Stored ADaM Equipment (ADaM, EVE, Rack, Hubs, Linebacker, etc.): (Kornke)*

06Apr:

- Old ADaM equipment was recycled. Removed old racks from red/brown van; same was then organized and cleaned.

Z. *Send SDL MAC to ATOSS: (Helsel)*

06Apr:

- Boxed all shipments and prepared paperwork for Dick Pearse.

AA. *Perform GENSET Maintenance with Hastings Deering (Raycore Filters, Test for Water, etc.): (Kornke/Helsel)*

27Mar:

- The GENSET fuel tank top has severe rust due to ponding water. It requires immediate attention. At the currently estimated rate of oxidation, it may breach the outer wall in one year. It is my understanding that the tank is double-walled.

28Mar:

- We are going to have the new NWS technicians scrape and paint the GENSET fuel tank top if we can find suitable marine grade paint. We should have the observers brush standing water off the tank as a daily round task. This will probably delay the need for immediate attention.

03Apr:

- The mechanic from Hastings-Deering showed up today at ~0500GMT. He changed the air filter. He will require some additional materials for maintenance, e.g., used oil container and a hose for flushing the radiator. Fred will install a hose bib by the H2 generator shower after buying some parts (hopefully) in town tomorrow.
- Fred checked for water in the fuel tank. The test was positive. We determined that the water is lying in a depression at the bottom of the tank. We will talk to Mark Alcala about it upon return. We also determined that only the bottom and sides are double-walled and that the severely rusted top will need periodic checking and maintenance since it is only single thickness (~1/8 inch). We took down S/N for the tank. (Helsel/Kornke)

04Apr;

- Located the proper plumbing fittings in town this morning. It only took three stops and the right terminology, i.e., a hose bib/spigot is known as a water tap on Manus. Installed the "water tap" on the H2 shower feed.
- The mechanic from Hastings-Deering completed work. Nindie took a sample of the old oil for lab analysis. He replaced deteriorated coolant hoses and removed and cleaned the radiator. The radiator had significant oil grime from spilled oil when filling. He cleaned other suspected oil-leakage areas but was certain it was from the oil filler tube. We will inspect for other sources during RESETS. The mechanic leaves tomorrow.

05Apr:

- Rust removed and fuel tank repainted. (Kornke)
- Raycor filters changed and new covers installed. (Kornke)

BB. Re-label Logger Connectors: (Kornke)

29Mar:

- Tagged the ZENO logger cables.

CC. Visit Local School: (Helsel/Porch/Kornke)

05Mar:

- Reviewed our lesson plan for the school visit last night after the dinner party so it was late.
- The school visit went very well. There was education as well as humor. Inquisitive students during the balloon launch surrounded Bill Porch. We all had a good time. We volunteered to fix the SPARCE station next time (reconnect the anemometer).

DD. Change Fax Machine Name from "Zirzow" to "ARCS-1": (Helsel)

30Mar:

- Changed the fax machine address from Zirzow to ARCS1.

EE. Organize, Barcode, and Perform Inventory of Supply Shelf: (??)

04Apr:

- Began some of the Helsel/Porch/Kornke small misc. tasks, e.g., warning signs in power boxes, clean up and organization.
- All vans were straightened and cleaned.

FF. Retag Faded Labels: (Porch)**05Apr:**

- Completed retagging.

GG. Hand-Carry Label Maker to Nauru from Manus:**HH. Other:****26Mar:**

- Everyone is in good health. We arrived ~9:00 AM; the weather is bright and sunny but turned to rain later. Two new Observers arrived with us today.
- The GENSET was running but shutoff when grid power returned about an hour later. The site was very clean and orderly and the observers busy at task. They did a very nice job on the trenching.
- All of us then proceeded to unpack the boxes stored in the ISS van. It looks like everything arrived OK.
- Helsel also removed some nonstructural fiberglass from the stand that was an obvious tripping hazard.

29Mar:

- Westpac Bank checks require 14-day waiting period to cash in the Lorengau PNG BC Bank.

30Mar:

- Helsel installed the ISS radar upgrade for Johnston.
- Helsel met with Dick Pearse today at ~1:30 PM to arrange for payment of the telephone bill. The site phone turned OFF today at ~11 AM (all times local).
- The MFRSR died around 1 PM local. I found a blown fuse. Helsel and I recalculated the load and found the fuse was too small. We replaced the 2Amp with a 7Amp. We are going to re-evaluate the load requirements for all devices on the power distribution box. (Kornke)
- The spare SMET logger was disassembled and is ready for barometer replacement, but that won't be complete 'until tomorrow. (Kornke)
- Replaced burned-out light bulbs in U-Van and ISS Van.

31Mar:

- Barometer installed in the spare MET logger.

03Apr:

- The ISS Van is rat infested. We'll try to set some traps to see if they're getting in. The smell is really bad inside the van. There are rat droppings in various places around the site.

04Apr:

- Helsel tells me the ISS van always smelled like that. We do have rats running around outside in the evening. [Monty Apple, please order some snakes from Australia. Cats would be better, but I can't seem to find any cats at the local animal shelter.] (Kornke)
- All ATOSS-bound items are packed and ready for shipment. (Helsel)

07Apr:

- Fred called at 11:30 MDT to update me as to where RESET personnel are. Fred is in Brisbane, B. Porch went on to Sydney, and B. Kornke went up to Cairns to do some water sports/relaxing.
- In Manus, just before RESET left, Fred mentioned that the screen did show the disk at 81% full (even after swap-out), so he did a reboot and that may be the reason that EVE took-over.
- After Fred saw the report on the low RH value from the SMET, the SMET TRH sensor was found laying loose in the filter cap and this possibly was the reason for the low RH readings. The sensor was reinstalled and now the RH is back up between 67 and 77%.

II. Perform Audit-Out: (Porch/Observers)

06Apr:

- Audit-out completed.

5.0 FUTURE RESET VISIT:

The following items should be considered for inclusion in the task planning for the upcoming RESET visits:

- Porch requests that we have a complete MFRSR manual on-site.
- The power conditioner/battery charger box had a bad DC-dc converter. I bypassed the box and the logger works fine. Since this is a liability, I propose we eliminate the kludge and a potential source of failure.
- We still have a mix of Seacon and Impulse connectors that causes confusion and extra work. The Seacon upgrade should be a priority for R11.
- There is no sensor head level (MFRSR – Porch) at Manus, need to purchase and ship one, as well as replace Porch's.
- The fiber cable we intended to install turned out to be too short; plan to correct next trip.
- Fred checked for water in the fuel tank. The test was positive. We determined that the water is lying in a depression at the bottom of the tank. We will talk to Mark Alcalá about it upon return.
- Sites Supply needs:
 - Duct tape.
 - S.S. threaded rod 1/4 to 1/2 for field fabrications and mountings.
 - Amp crimp lugs, blue, red, yellow, mostly spade type from #4 to 1/4".
 - More 8 ft. grounding rods.
- Observer laptop should be a ghosted model.
- Need to organize supplies and clean out Vans.

6.0 FOLLOW-UP ACTIONS:

The following actions should be taken as a result of this RESET Visit:

- Need to test the Cal Logger for NIP channels only. The Cal Logger was sent from Manus to Nauru for use during RESET-11.
- Need to get the ATOSS Cal Logger working and send it to Nauru as spare for RESET-11.
- Make a note to ARM that the Zeno Loggers have one to two minute dropouts.
- Porch needs to update the MWR Tip procedure.
- Need to PIF the anemometer setting (TOP, WIND1...need to use WIND2)
- The Anemometer alignment needs to be clearly labeled – RESET-11M,N task.
- Porch needs to PIF the Ceilometer.
- Porch needs to change the T/RH calibration procedure to require the use of a “protector”.
- Porch needs to follow-up with Hart on the RH sensor.
- Need a lightning protection ground rod for the Grnrad stand.
- Kornke needs to document with sketches for CAD drafter the lightning layout.
- Need fiber data runs from the D-Van to the Loggers. Need to ship a longer fiber cable to Manus.
- MFRSR manual to Manus.
- Need MFRSR bubble level for calibration kit.
- Need switch replacement for H2 Generator.
- Need another spare radiometer ventilator.
- Need blank floppy discs.
- Need duct tape.
- Need spare T/RH sensor with Manus connector.
- Need threaded rod for attachment of calibration ventilator to met tower.
- Crescent and allen wrench dits incomplete.
- Need new breakout box for Nauru calibration.
- Revise calibration manual (Porch).
- Could use stairs on the spare Skyrad stand.
- Need to repair the existing Skyrad stand stairs.
- Need light bulbs in the balloon barn.
- Need brighter lights in all the I, D, E Vans.

7.0 LESSONS LEARNED:

RESET members for future TWP installations and operations should consider the following observations:

- Don't send large resupply shipments unless they are tied to a RESET task or timed with a RESET Visit. We are running out of room and things get lost.

8.0 ATTACHMENTS:

Attachment 1—Audit-In/Site Conditions Report

Attachment 2—Audit-Out Report

Attachment 3—RESET-10M Tasking Plan

Attachment 1—Audit-In/Site Conditions Report (On-Line)

Attachment 2—Audit-Out Report (On-Line)

Attachment 3—RESET-10M Tasking Plan

RESET-10M

Manus Team:

RESET-10M

Team:

- Fred Helsel (Lead)
- Bill Kornke

MANUS

Priority tasks:

1. Perform Audit-In
2. Perform Calibration (MWR, Ceil, MPL, T/RH, Anemometer, ORG and ZENO Loggers)
3. Repair Shaded PIR Ventilator
4. Correct Anemometer Configuration
5. Make Backup Copy of Artecon
6. Repair EVE
7. Perform WSI Maintenance
8. Repair H2 Generator Water Pump
9. Upgrade DC Power – Phase I
10. Train Observers
11. Install Phone “Manager” Box
12. Post “Use ONLY for Fire or Emergency” Signs
13. Install Balloon Barn Light Timer
14. Repair RBL Light
15. Install Artecon Patch
16. Perform Grid Power Supply Diagnostics
17. Check Ceilometer Firmware Version Number
18. Check Future Power Upgrades
19. Audit Laptop/PC
20. Upgrade Lightning Protection
21. Troubleshoot MACS/COMS
22. Install Proper WSI Power Feed
23. Photograph D-Van Interior for Future ACCESS Upgrade
24. Photograph Observers
25. Remove and Recycle Old, Stored ADaM Equipment (ADaM, EVE, Rack, Hubs, Linebacker, etc.)
26. Send SDL MAC to ATOSS
27. Perform GENSET Maintenance with Hastings Deering (Raycore Filters, Test for Water, etc.)
28. Re-label Logger Connectors
29. Visit Local School

30. Change Fax Machine Name from "Zirzow" to "ARCS-1"
31. Organize, Barcode, and Perform Inventory of Supply Shelf
32. Retag Faded Labels
33. Hand-Carry Label Maker to Nauru from Manus
34. Other
35. Perform Audit-Out