

**DARWIN (ARCS-3) INSTALLATION REPORT**  
**(04Feb to 22Mar)**

**Installers at Darwin:**

- Terry Stiles, BOM
- Rex Pearson, BOM
- Troy Culgan, BOM
- John Glowacki, BOM
- Monty Apple, LANL
- Bill Kornke, LANL
- Brad Perkins, LANL
- Vic Morris, PNNL
- Ron Reed, SGP
- Dick Eagan, ANL
- Chance Younkin, PNNL
- Kevin Widener, PNNL
- Jim Mather, PNNL
- David Reass, LANL
- Francis Anuma, PNG NWS
- Nic Duburiya, Nauru IED

**Darwin tasks:**

**1. Unpack Transportainers, general van work                      Apple/BOM**

06Feb

- Met with AC Maintenance man on U-van AC - unit working ok.

08Feb

- Equipment moved from BOM office to site vans.
- Unpacking and inventory continuing.

11Feb

- I-van: Just inside the personnel door and towards the bottom of the floor, the outlet had water dripping from it. The outlet is GFI protected (at the breaker) and the breaker was tripped. The breaker is number 4 and is labeled as "4X Ext Recep". It is 120VAC. The cover was removed and some water drained out.
- E-van: Upon arrival at the site, noticed an 8" x 14" pool of water on the floor approximately 20 inches from the door. While working in the E-van a hard rain commenced and water began streaming down the inside of the door (the door was shut). It appears that the water once inside the door, soaks into the wood floor and travels under the floor tiles eventually coming to the surface between tiles.  
If you secure the black latches on the door, the rain does not get in. The door seals have probably been so compressed during shipping (door latches applied) that when the latches are not applied the seal no longer

keeps out the rain. The door seal should be replaced. We might want to consider putting in a few drain holes under the door to allow any water that get in to drain out. We also might want to give the floor a few months to dry out and then apply a bead of caulk where the gap exists between the floor and the plywood in order to prevent any further moisture from flowing into the plywood from the door area.

12Feb

- D-van table moved to BOM Temp Office to make room for Equipment racks.

14Feb

- Diesel Generator serviced by Hastings Deering (oil added, batteries installed). Generator runtime 5 hrs.
- Diesel Genset Muffler installed on roof of U-van.
- X-van AC installation completed except for circuit breaker installation in U-van.
- Discussions about water getting into the vans via the external power door. Looking at making an angled bracket to replace the hinged door.

18Feb

- Genset muffler bolt down completed.
- U-Van Genset area cleaned by Glowacki (looks good).
- Diesel fuel ordered.

19Feb

- D, I van dehumidifiers installed
- Earthing for X-Van, MDF (comm. distribution frame in D-Van), sky and smet logger completed

20Feb

- All dehumidifiers permanently installed except for U-Van (waiting on a power point (AU outlet))

21Feb

- Genset diesel fuel delivered today; we'll test-run (grid power outage simulation) tomorrow.
- All dehumidifiers will have to have a drain installed. We've discussed a feed thru fitting penetrating the side of the van. It's the best way.
- Bard AC unit outside drain lines installed, no more condensate running on slab.

22Feb

- Got the Genset started up and tested; had to connect the internal tank lines, prime. Did a grid power outage simulation by opening the service disconnect? The Genset power transfer went smoothly except for white smoke from the stack. I shut down the Genset and took it off 'Auto'. Hastings-Deering will come out next week for an evaluation.

2Mar

- Site will be powered down tomorrow for a short period so that BK can work on U-Van Transfer switch.

## **2. Phone line/Internet**

06Feb

- Worked with Telstra for Telephone line installation

07Feb

- Meeting with NDC/Telstra re Fiber installation for Internet connection and equipment rack.
- Telephone cable terminated in E-van.

08Feb

- Telephone cabling completed in I-van.
- Conversations with Optus on Data Service.

15Feb

- Phone service to site now. D & E vans hooked up with phone. Numbers are:
  - Telephone 618-8984-4515
  - Fax 618-8984-4525
  - ADaM Internet dial out 8984-4818.

18Feb

- Phone and Internet sharing connections installed.

21Feb

- Telco/Inet fiber optic rack installed. Electrician hardwired power as required (plug/outlet not allowed)

22Feb

- Telstra came out today to get the high-speed fiber connection installed. Completed at the site but some work continuing out at the street junction.

25Feb

- Site Telephone cabling completed

26Feb

- Fiber Tunnel under highway from main to site completed.
- Temporary Site Telephone Cable Removed

27Feb

- Fiber for site Internet connection is physically run to the site.

4Mar

- Internet connection established!
- **Phone line/Internet task completed.**

### **3. Set up spares shelves, shipping area          Apple/BOM**

04Feb

- Discussed spares and re-supply storage locations/shelving. Picked up 7 shelving units.
- Pearson arranged for AC unit to be installed in recently purchased cargo container where spares and re-supply will be stored.

05Feb

- Pearson arranged Electrical for X-van AC and Lighting
- Apple assembled 7 metal shelving units for X-van storage
- Apple obtained Blackwoods catalog on CD (for ordering engineering supplies).

06Feb

- Installed shelving in X-van and stocked shelves with equipment from boxes.
- Electrical installation commenced in X-van.

11Feb

- Inventory and equipment organization.

14Feb

- Shelving signs laminated for Spares and Re-supply storage locations.

#### **4. Inventory equipment at site (with form)**

**Apple/BOM**

07Feb

- Began verification of equipment s/n's, inventory, and filling in Maestas' sheets.

14Feb

- Finished inventory of instruments and sent completed "help sheets" to Maestas.
- **Task completed.**

#### **5. Review and purchase safety equipment**

**Apple/BOM**

04Feb

- Picked up kneepads and hearing protection with John.
- John arranged for water cooler rental/delivery to Darwin site.

07Feb

- Purchased office equipment and Fire Extinguishers.

08Feb

- Fire extinguishers installed in all vans.

12Feb

- Purchased phones and first aid kits.
- Rex obtained "CHEMWATCH", a chemical database & management system program. The CD has MSDS sheets on it.
- **Task completed.**

#### **6. Set up E-Van/Ops bldg for visitors**

**Apple/BOM**

05Feb

- Glowacki put water Cooler installed in Temp Office.

06Feb

- Began Office set up in Temp Office demountable.
- Office chairs ordered, purchased sun block.

08Feb

- Office chairs delivered.

11Feb

- Picked up additional office equipment.

14Feb

- Data disks purchased for Brad.
- Soldering supplies, doormats, and printer cables purchased.

- NetComm Smart I-Share 56 arrived (shared access for 4 people via 1 phone line & 1 ISP account).
- Traced location of temporary phone service in Met Bureau office. Will be running temp service to ARCS site tomorrow - as Telstra will not be able to get it done in the short term.

15Feb

- All in one (Fax, Copier, Printer, Scanner) set up in BOM Temp Office and capable of handling 4 PC's.

18Feb

- Wooden shelving installed in E-Van per Apple's request.

13Mar

- Shelving for the BOM temporary office was purchased and assembled.
- **Task completed.**

## 7. Establish site procedures

Apple/BOM

04Feb

- Reviewed ES&H briefing and made changes with Rex
- Went over shipping procedures with Rex and John. Troy is on leave until next week.

14Feb

- Went over shipping/receiving procedures with Troy and John.

20Feb

- Stiles is working out the site security gate issues so US personnel can work hassle-free

21Feb

- Site security access won't have an effect until next week. Right now we can come and go as we please, 24/7.

11Mar

- Emergency contact numbers posted.

12Mar

- The Darwin site safety procedure for electric storms was reviewed with the BOM and amended.
- **Task completed.**

## 8. Install stands

BOM

05Feb

- Glowacki produced some of drawing set for Mast Head cross arm
- Glowacki worked on drawing for gndrad instrument arm.

11Feb

- Completed the design and drawings for the gndrad cross arm and took drawings to a job shop for fabrication.
- Took TRH cross arm in to job shop in order to have bracket made for SMET Tower adaptation.
- Tightened up bolts on Skyrad and Cal stand.

12Feb

- TRH cross arm mounted to Met Tower using new bracket.

13Feb

- Cable work on TRH cross arm.
- **Task completed** (except for TSI stand).

### **9. Pull fiber runs**

**Kornke/BOM**

04Feb

- Fiber pulls complete.

13Feb

- Conversation with NDC on Fiber runs.

14Feb

- More meetings with NDC over Fiber installation.

18Feb

- Fiber tech nearing completion of site-wide fiber comms.

### **10. Set fiber junction boxes**

**Kornke/BOM**

05Feb

- Pearson did fiber Optic in E-van terminated and commenced termination in D-van.
- Glowacki installed Fiber Termination Box at SMET

06Feb

- Fiber Optic termination completed in D-van and started in I-van.

07Feb

- Fiber Optic termination completed in I-van.

14Feb

- Fiber Optic termination adjacent to ADaM Rack partially completed.

15Feb

- Fiber Optic termination continuing at SMET.

25Feb

- Fiber termination at SMET tower completed
- Fiber termination at MWR tower completed
- Fiber termination box placed at former CIMEL location for possible future instrument location

26Feb

- Fiber termination to TSI Completed
- Fiber loss measurements in all VANS completed. Field loss measurements tomorrow.

27Feb

- Fiber field-testing completed.

### **11. AC Power**

05Feb

- Pearson commenced AC power wiring to SMET and Skyrad stands

06Feb

- 240 VAC completed at Skyrad stand.
- Requested Electrical installation of 2; 240 VAC Australian in each van.

07Feb

- Electrical installation in X-van, complete except for circuit breaker.
- Installation of X-van split type AC unit almost completed (need circuit breaker for power install completion and piping to outside of van).
- 110VAC UPS wiring to SMET Tower completed (awaiting connectors from Kornke - funny US type).

15Feb

- X-van AC power completed. X-van is now air-conditioned and has lights.
- Dual outlet 240VAC Australian power receptacles installed in E, D, I and X vans.
- 240-110 Volt transformer wired up for BOM Temp Office.
- A broken conduit elbow on the Clary UPS in the D-van was replaced.

26Feb

- 110 Volt Power to MWR Completed and Tested

**12. Set DC power boxes at Skyrad, SMET stands** **Kornke/BOM**

07Feb

- 28VDC distribution to Skyrad stand is completed.

15Feb

- 24-12vdc converters for SMET logger installed.

25Feb

- Progress on SMET tower DC Power and data logger cabling

**13. Initial install of ACCESS I/O devices** **Kornke/BOM**

14Feb

- Mounting brackets for ACCESS enclosures fabricated.

15Feb

- Access enclosures installed in D, E, I, and U vans.

18Feb

- Built ACCESS cables for the D-Van.

19Feb

- E-Van ACCESS cabling completed; still two more vans to go

20Feb

- D-Van I/O devices for ACCESS are hooked up. We're trying to get D-Van activities finished in time for Eagan&Co.

21Feb

- E-Van ACCESS I/O device hookup near completion.

**14. Set and hook up Zeno loggers** **Kornke/BOM**

12Feb

- Data logger bolted to concrete base at SMET Tower.
- Data logger bolted to concrete base at Skyrad Stand.

21Feb

- Logger power and comm. connections (logger cables) in progress.

27Feb

- Troy is making cables for ZENO loggers.
- 1Mar
- Troy continues to work on this. There are problems with the IRT power feed. The 12 to 24 volt converter has failed. This also runs the UVB. Troy and Rex have a plan to workaroud this by using the direct 24v feed from the SKYRAD stand to power the IRT. Note this is an unconditioned supply. This shouldn't be a problem.
  - Troy was able to talk to the logger.
  - David should bring the logger that is TWP in case we need a spare.
- 4Mar
- All pre-existing problems have been resolved.
  - 12 to 24v DC converter were swapped from Cal Logger to power IRT.
  - UVB cable was hooked to 12V system. UVB will run 12V.
  - Logger will be installed tomorrow
- 5Mar
- Skyrad Logger Installed
- 12Mar
- GNRAD logger arrived from states and was installed. Serial # 1063, WD 327956
  - SMET logger installed.
  - Configuration files will be sent tomorrow.
- 13Mar
- Jim reviewed data and found that UVB, IRT, Thermisters were running out of tolerance. This alerted us that the Skyrad logger was operating incorrectly (see urgent needs).
- 14Mar
- We have attempted to switch the best available logger to the Skyrad. Troy is still working on the logger that apparently has several issues. Jim Mather would like to set up a call to discuss the logger problems, as this is a showstopper.
- 15Mar
- A Gndrad logger was repaired and installed. Currently the logger is collecting data. See report from Troy.
  - Skyrad logger has been working ok pending UVB and PIR problems.
  - Skyrad short wave instrument data looks good to Mather.
- 18Mar
- Skyrad logger problems continue to be investigated.
- 19Mar
- The GNRAD logger was grounded.
  - The SMET logger was grounded. Data is now being collected and processed.
  - The Skyrad logger was grounded.
- 20Mar
- A wiring fault in the Skyrad logger was found and repaired. The UVB is now working correctly.



22Mar

- Rex worked on the data drop out problem for the SMET logger.

### **15. Set and hook up (K&Z) tracker**

**Kornke/BOM**

06Feb

- Touched base with FR Engineering (interface plate) and Darwin Powder Coaters (painting base plate and pedestal) ref Kipp & Zonen Mounting hardware.

07Feb

- Collected pieces for K&Z Tracker mounting (powder coating and machining of interface plate).

12Feb

- Worked on mounting and electrical for K&Z Tracker.

13Feb

- 110 VAC UPS wiring for Kipp & Zonen is complete.
- Assembled Kipp & Zonen on Skyrad. Needs modification for easterly rotation. Instrument plate overhangs walkway (safety concern).

14Feb

- Continuing work/drawing on K&Z mounting plate to allow full rotation past the east alignment point.

19Feb

- K&Z ready for mounting; should be set tomorrow

20Feb

- K&Z mounted, need to do gearbox mod and, if we get some clearing, we can take a laptop out and start it up.

21Feb

- K&Z gearbox mod completed; Glowacki setting parameters; should be tracking by tomorrow.

27Feb

- Tracker is running subject to final alignment. Radiometers haven't been installed yet.

### **16. Complete ACCESS I/O device installation**

**Kornke/BOM**

18Feb

- ACCESS PLC mounted in D-van.

23Feb

- Built voltage dividers for the Genset battery and DC power system batteries.
- Started U-Van ACCESS wiring runs.

24Feb

- Made cables for the E-Van ACCESS

25Feb

- Kornke Finished up E-VAN ACCESS

26Feb

- E-VAN ACCESS wiring/installation completed. U-VAN ACCESS wiring installation underway.

2Mar

- BK finished up U-Van Access Wiring

### **17. Install New SDS (or ADaM-3)**

**Eagan, Reed**

11Feb

- Cleaned out D-van. Received ADaM Rack and got it into the D-van. Will need to remove either the workbench or bench seat in order to get the rack into its designated space as it is too wide to fit between the two.

22Feb

- D-Van cleaned up and ready for pending SDS install.

25Feb

- ARCS-3 Router installed into SDS rack. Router operating system software updated.

26Feb

- SDS NTP server antennae mounting bracket welded and drilled.
- All SDS equipment installed and cabled in rack. Artecon enclosures had to be straightened and reassembled to fit in rack (bent during shipping)
- Dick Eagan decided on network architecture for site.

27Feb

- Ron Reed has delivered two 36 gig drives at Monty's request.
- Eagan continues to configure site data network router and router filters.
- The SDS NTP (Network Time Protocol) server is running.
- Site data network IP addresses and machine names assigned. Information follows. Names given are consistent with ARM-Wide standardization efforts. As noted we don't have some of these instruments.

28Feb

- All computers in data system are jump-started and running.
- Networking equipment from Telstra is installed. We expect to be on the network tomorrow. Waiting on for Telstra to configure router at their end.
- The Rocket Port is configured and ready. This device is what the serial instrument plug-in to. They will no longer plug in to the terminal server.

1Mar

- Optus came and tested data circuit from NTU to their hub in Sydney and will be programming their routers. Hopefully we will have Internet service early next week.
- Ordered Ethernet to fiber converters and hubs from Black Box. Due to arrive Monday.
- R1 is set up.
- Network for R1 is set up
- Diagnosing routing problems and minor problems with system configuration.
- Ron configured the Collections computer. It is ready to go.

2Mar

- Set up IP address for SAM laptop.
- Testing router filter

- Collections configured then shut off so they wouldn't try to collect data. They will be enabled once we have necessary network hardware in I-VAN. This should arrive early next week.
- Repaired Power Supply to removable drive in DS2 (formerly known as EVE)

4Mar

- Internet connection established!
- Initial set of router filters installed.
- NFS Utilities updated on NFS File Server

5Mar

- Parts from Black Box arrived. Networking into I-Van enabled.
- Fixed power in DS2 removable drives.
- Latest updates of SDS software released.
- Chance reviewed SDS software documents, requested revisions, more updates to follow.
- Chance reviewed TWP's Hard Disk swap procedure, marked up a revision, and sent to TWPPPO for review.
- VCEIL, MWR, WSI and MMCR are on network. Minor exception is MMCR Solaris machine (we need a password, Kevin has requested this).
- Debugged router. Filters are working. FTP works in and out. Site Transfer should work.
- Ceilometer and MWR FTP collections enabled.

6Mar

- Received Ethernet card and terminal server.
- Terminal server is configured. It will be used for access to data system console ports. These will be connected tomorrow.
- Rocket port is configured and working. No serial instrument data to test at this time.
- Continue to test the NFS server. It ran ok today.
- Collections for MWR, WSI and VCEIL are underway.
- Fixed a bug in the H&S (Health and Status) web pages for viewing logs. They can be viewed while created. Released including updated documentation.

7Mar

- BOM Network Card installed. BOM Network is up. This is a good thing. Dial-up connections were very flaky today. This report was sent connected to the BOM network.
- Collecting MFRSR data.
- Eagan started work on installation drawings.
- Updated kernel on NFS server. Currently testing.
- Made a new kick start CD to reflect updates.

8Mar

- All networks up and running
- Installed BOM computer
- Hooked up console ports for DS1, DS2, NFS and Collector.

- Router filter still needs some work. Eagan can complete this from the states.
- Everyone has access they need with proper filters.
- Skyrad is connected and talking. Waiting on Bit Drivers to install rest of serial instruments.
- All NFS problems appear to be solved.

12Mar

- Connection to Skyrad, Gndrad, and SMET was established.
- Collection/Ingest was enabled. We are now getting data on the collection/ingest system and the H&S collection status is green.
- Troy was able to install bit drivers for the data loggers.
- Jim manually enabled data collection. We will continue to monitor.

13Mar

- Connection to Skyrad, Gndrad, and SMET was established.
- Collection/Ingest was enabled. We are now getting data on the collection/ingest system.
- The H&S collection status is green.
- Troy was able to install bit drivers for the data loggers.
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14Mar

- Jim Mather is working on data plotting software.

15Mar

- Jim Mather is working on data plotting software.

21Mar

- 6 hard drives at Darwin now labeled:  
 Red A, S/N 245-1254-0098  
 Red B, S/N 245-1424-0111  
 Red C, S/N 245-2159-0083  
 Green A, S/N 245-2159-0071- Currently Installed in Slot A 10% Capacity  
 Green B, S/N 245-2159-0073- Currently Installed in Slot B 10% Capacity  
 Green C, S/N 245-2159-0078

**18. Set and hook up radiometers on Skyrad stand      Morris/BOM**

13Feb

- Replaced Ventilator fan on one unit not working.
- Modified all ventilators with longer cables and removed fuses.
- Installed Global PSP.
- Diffuse PSP ready to be mounted on tracker.
- 2 PIR's ready to be mounted on tracker.
- Connectors for UVB and PIR's are missing.
- Need Eppley standoffs for PSP's - Chris Cornwall is the contact on this.

14Feb

- PIR connectors. Spec'd and ordered locally.

25Feb

- IRT installed in new enclosure. New IRT enclosure installed on SKYRAD stand.

26Feb

- IRT lead (power?) installation progress.

4Mar

- Vic determined what Radiometer cables we have. He has determined what cables need to be built. We have parts. Cables will be built tomorrow.

5Mar

- All instruments installed. All are collecting data. Listing with serial numbers and configurations follows.
- UVB S/N 2870
- PSPG S/N 31293F3, See urgent need re: configuration.
- Tracker
  - PIRG S/N 31305F3, Configuration  $3.70 \times 10^{-6}$  270270
  - PIRD S/N 31300F3, Configuration  $3.47 \times 10^{-6}$  288185
  - B/W D S/N 33386, Configuration  $9.02 \times 10^{-6}$  110864.74
  - NIP S/N 31875E6, Configuration  $8.47 \times 10^{-6}$  118063.75

6Mar

- We got the PSPG numbers and configuration files you wanted. Nobody was here to report the numbers at end of day. I am attaching the configuration file

20Mar

- A wiring fault in the logger was found and repaired. The UVB is now working correctly.

### **19. Set and hook up MFRSR on Skyrad stand**

**Morris/BOM**

13Feb

- Need 7 Pin MFRSR motor connector (2 ea). Contact is John Schmelzer.

19Feb

- MFRSR logger board mounted

20Feb

- MFRSR installed (completed).

28Feb

- Troy built MFRSR logger to Bit Driver cable (see urgent needs).
- Vic spoke with John Schmelzer about wrong MFRSR stand. John will try to get a stand to Chance before his departure tomorrow (doubtful), or may ship one down to David. There is also a slight chance that the Australian BOM may have one as John provided a number of MFRSR's to them for a study in the 90's.

1Mar

- Vic and Troy found an "equatorial" mounting stand at the old Met station on the RAAF base. MFRSR is installed. Will be aligned with next solar noon.

- Contacted Australian source for Impulse connectors. They are very expensive. Researching cost of connectors from U.S. now. We'll advise purchase from U.S when we know.

2Mar

- Vic was able to make solar noon check.

4Mar

- We swapped newer band motor onto old 1996 stand. Unit re-leveled.

7Mar

- SKYRAD MFRSR is operating and collecting data since 0400 GMT today. Still need to perform solar alignment. If we have sun in the morning.

8Mar

- MFRSR band motor was not working properly and was replaced.
- Final adjustments to band.
- This completes MFRSR installation

19Mar

- A cable was replaced between the MFRSR and the logger to try and repair the missing channel. This seems to have solved some problems but has created others, the original cable has been reinstalled.

21Mar

- Sensor to logger board cable was replaced. The original logger board and head were re-installed. The instrument is now appears to be operating correctly. Data will be sent for review tomorrow.

22Mar

- Bit driver on MFRSR failed and caused the instrument to drop out over night. The driver was replaced with a spare, and additional spares were ordered.

## **20. Set and hook up met instruments on SMET**

**Morris/BOM**

14Feb

- Manufactured a stand for the ORG. Ready for installation.

13Mar

- ORG: A pedestal was set and a trench dug.
- Conduit was run between ORG and the communications pit.
- ORG: The instrument post was then mounted on the concrete pedestal.

14Mar

- ORG is mounted and is awaiting the correct plug.

15Mar

- Jim Mather has compared temperature data between ARCS3 and the BOM site next door, and found that ARCS temperatures are 1C high compared to that of BOM
- ORG was powered up by wiring the cable directly to the instrument.

## **21. Set and hook up grnrd rads on SMET tower**

**Morris/BOM**

5Mar

- Seacon cable modification in progress.

- Still waiting on the cross tower.
- 6Mar
- The cross tower arrived. We are still waiting on a mounting plate.
  - Completed GNDRAD logger connector modifications (remove impulse, install seacon).
  - Removed RS422 interface
  - Tested OK
- 7Mar
- Cross-tower arrived and installed at end of day.
  - Instruments will be installed tomorrow morning.
- 8Mar
- GNDRAD Instruments were installed on the boom
  - SMET instruments installed on the tower
  - Loggers configured but not collecting yet.
  - PIR s/n 30168F3, Cal Coeff. 252525 watts per meter squared per volt
  - PSP s/n 29914F3, Cal Coeff. 124180 watts per meter squared per volt
  - IRT s/n 864, Scale Vector is 25.0 Celsius/Volt, offset 50 Celsius
  - Anemometers: High Body s/n 49706, Prop no 76830, Scale Factor for wind speed is .09656 m per second per hertz, Offset .35 meters per second. Scale factor and offset for wind direction 142 degrees per volt. 0 offset.
  - Low Body s/n 49704, Prop no 76815, Scale Factor for wind speed is .09656 m per second per hertz, Offset .42 meters per second. Scale factor and offset for wind direction 142 degrees per volt. 0 offset
  - TR/H probe. Get cal figures from BOM if you don't already have them. This was installed before we got here (I think).
  - NETRAD was not installed
- 11Mar
- SMET GNDRAD tower wiring is in progress. This includes installation of lightning protection.
- 12Mar
- SMET GNDRAD tower wiring is in progress. This includes installation of lightning protection.
- 18Mar
- Gndrad seems to be working except for the IRT (will be investigated this week).
- 19Mar
- Work was done on the IRT to try and resolve inaccuracy with the readings.
  - The MET tower mast was lowered and wires were re-tensioned on the cross arm of the mast.
- 20Mar
- A safer more sturdy pull down rope for the MET tower is being constructed.
- 21Mar

- Gndrad IRT cable was replaced when fault was found. The instrument is now reporting correctly

## **22. Send instrument data to mentors in USA**

**Morris, Mather**

## **23. Complete ACCESS/SAM install**

**Kornke/BOM**

4Mar

- Installation Completed.
- Integration underway

5Mar

- Installed, Laptop integrated.
- Acceptance testing underway

6Mar - SAM

- The SAM computer was configured so as to not need GOES.
- The computer configurations were modified to remove any references to ARCS2 (or ARCS anything for that matter).
- Verified that SAM computer is producing a file every hour. Tomorrow will start sending this file to the data system so that it can be shipped to the states.
- Something to note. Chance found some interesting comments in the SAM software about how the software will fail if it is launched on the first day of the month (or first week of the year if previous year started on a Sunday... I kid you not!). This is now documented in samstart.doc, which is on the SAM computer desktop.

6Mar - ACCESS

- TTuned ACCESS I/O. Most values are real, several devices missing (T/RH, V Current, Transducers) that will be shipped from LANL when Kornke returns.
- Generally system is "good to go"

7Mar - SAM

- Fixed a few problems with data system software so that it can receive SAM data files.
- Verified that a configuration file is missing. Chance will build this tomorrow. Completion of this task tomorrow should enable us to view SAM info in the QC link of the H&S web pages.
- Plan to have H&S training tomorrow.

8Mar

- SAM is working, reporting to H&S page.
- Chance trained David and Res on H&S.

## **24. Set and hook up Ceil to collect data on PC**

**Morris/BOM**

19Feb

- Trenching dug for Ceilometer power and comms.

20Feb

- Ceilometer installed (completed)

21Feb



- Ceilometer software running on BOM laptop. Ceilometer is taking measurements (clouds@~1km)

27Feb

- VCEIL is collecting data. Start time ~ 0530 GMT

20Mar

- The Ceilometer instrument was grounded.
- The Ceilometer laptop was restored to working order.

## **25. Set and hook up MWR to collect data on PC Morris/BOM**

18Feb

- MWR power and comm. installed, few cleanup details left.

19Feb

- MWR instrument mounting in progress

20Feb

- MWR mounting rails installed

26Feb

- MWR new heater/blower assembly installed
- MWR dielectric window replaced

27Feb

- MWR is collecting data. Start time ~ 0145 GMT. It is currently running in tip mode trying to derive its current calibration.

4Mar

- Temporary Power to Heater/Blower Assembly
- Impulse connector, part XSE-3CCP, ordered thru Australian distributor

7Mar

- Vic found a problem with the new blower assembly rain detector. It puts out a much smaller signal than the existing MWR software expects. Therefore the data is not being properly flagged for rain.

8Mar

- Vic found a problem with the new blower assembly rain detector. It puts out a much smaller signal than the existing MWR software expects. Therefore the data is not being properly flagged for rain. This is configurable in the configuration file. Vic and David determined proper threshold and set it. Wet window flag is operable.

13Mar

- All of the instruments are now collecting/ingesting and reporting except for the MWR. MWR ftp set up was checked with no apparent errors.
- Ron Reed remotely logged in and forced a collection and was unable to transfer data. Vic Morris will talk with Ron Reed to correct problem.

14Mar

- The MWR data directory was changed per the instructions of Vic Morris. The MWR is now collecting and ingesting data.

## **26. Set and hook up WSI Kornke/BOM**

14Feb

- WSI white box appears to have internal shipping damage (mainly from G-force). Clutch controller broke loose, banged around in compartment, and bent some coolant heat exchanger fins which can be straightened. WSI coolant reservoir cracked (Took unit in to plastics shop and new unit will be fabricated in 1-2 days). WSI coolant lines damaged. Replacement lines will be acquired locally. At this time we don't know the extent of the damage. Conducting close inspection.
- WSI cable routed under platform.
- Anchor system for WSI tie downs installed.

15Feb

- Conduit for WSI cabling installed.

18Feb

- Found WSI GPS antenna; having pipe stand fab'd to mount to I-Van.

19Feb

- WSI replacement coolant reservoir backs from fabricators; we now have all necessary part for startup.

22Feb

- Replumbed the WSI, all new hoses, flushed cooling system w/ mild detergent, black gunk in all parts of the cooling system, gone now, system seems to be working OK

23Feb

- Installed the WSI camera, applied sealant.

24Feb

- Mounted GPS antenna on I-Van

26Feb

- Progress on WSI regulator nitrogen pump

27Feb

- WSI Occulter calibration in progress. Note significant troubleshooting due to rough shipment was required. Kornke found an ICU in the controller totally loose.

28Feb

- Occulter is aligned
- WSI Coolant acquired and installed
- Nitrogen bottle gas
- Dome replaced
- New Desiccant
- General check out/overhaul
- Kornke expects it to be on-line at end of day

1Mar

- Bill and Rex worked on the Occulter most of day. After some runtime we find it is OK at 0 and 180 degrees, but mid-span it is off 10-15 degrees.
- Otherwise WSI is taking data as we are getting images.

2Mar

- ARC Travel measured as requested by J. Shields. Looked OK. Kornke to submit detailed report to MPL. The Occulter is still offset.

4Mar

- More adjustments. Appears to be working OK.
- 6Mar
- Working on getting the data system ready so that MPL can download the data. If they urgently need it we can probably email or ftp it to them.

11Mar

- Bracing installed for the WSI stand.

## **27. Install TSI**

18Feb

- TSI power and comm. installed, few cleanup details left.

26Feb02

- 110 Volt Power to TSI Completed and Tested

## **28. Install Laptops w/CPCC**

**Perkins/BOM**

25Feb

- CorePC installations underway

26Feb

- Base CorePC installations completed.
- MWR Laptop CorePC configured

28Feb

- Vic and Brad spoke with Connor about our CorePC and VC-View software questions. Brad also spoke with Bill Porch about VC-View.

1Mar

- Got feedback from Flynn on VC-View questions. Tried his suggestions but it didn't appear to fix the problem. Will troubleshoot more tomorrow.

2Mar

- More troubleshooting on VC-View raw data location. Sent screenshots and .ini file to Flynn and Porch for feedback.
- MWR and VCEIL laptops were powered down in preparation for site power shutdown tomorrow (See GENSET)

4Mar

- Determined we had old version of V-Ceil in CopePC. Version 3 installer download, installed and CorePC updated accordingly.
- New V-Ceil software is running. File transfer is still questionable.

5Mar

- File transfer problems resolved. No change in settings required. Previous report of continued problems after software upgrade was premature.
- Applied revised C:\Custom\Path\Prepend\SAVE\_CFG.BAT file on all CPCC computers per Connor Flynn.
- Spare VCEIL computer configured.
- CorePC computer locations and CPCC info documented in System Component Inventory system.

6Mar

- File transfer problems resolved. No change in settings required. Previous report of continued problems after software upgrade was premature.

- Applied revised C:\Custom\Path\Prepend\SAVE\_CFG.BAT file on all CPCC computers per Connor Flynn.
- Spare VCEIL computer configured.
- CorePC computer locations and CPCC info documented in System Component Inventory system.

8Mar

- The observer laptop won't boot. This isn't a problem. BOM techs can use their PCs.
- A spare laptop has SDL installed.

### **29. Install new SDL on Observer Laptop**

**Perkins**

Feb 28

- Development progress.
- Successfully sent test SDL messages to TWPPO.

1Mar

- Continued Development.

2Mar

- Continued Development.

4Mar

- Continued Development

7Mar

- Testing and bug fixes. Plan to release tomorrow.
- David Reass trained on use of software. Refresher tomorrow.
- Brief user guide authored that BOM and Observers can use for basic tasks. More complete documentation to follow.

8Mar

- Beta Version released. Wasn't able to release stand-alone executable as planned. Will finish this up and release from the states.
- Delivered user guide to Reass.
- Installed on Reass, Pearson and one other laptop. Note Observer laptop won't boot.
- More details to follow when Brad returns home.
- As is, system can send Rounds and is suitable for training.

### **30. Train Observers on new SDL**

**Perkins**

12Mar

- The SDL system was tested and found to be operational. The daily rounds were successfully transferred to the LANL ftp site, and the correct daily rounds message was e-mailed.

18Mar

- Two groups of BOM observers were successfully trained on the Darwin daily rounds, including the new SDS GUI, site safety plan, and the SDL.

20Mar

- Nick and Francis were trained on the new SDS including the new HD swap procedure.

### **31. Install MMCR**

**Widener/BOM**

4Mar

- Upper rack mounted to roof
- All equipment mounted in racks
- Currently wiring equipment

5Mar

- Kevin bought an additional Monitor and Mouse to workaround problems with shared KVM switch.
- Continued wiring.
- Preparation for Antennae installation tomorrow.
- Installed Traveling Wave Tube Amplifier.

6Mar

- Antenna mounted.
- All instruments are in rack, powered up, and appear to be working.
- Currently troubleshooting some file transfer problems.

7Mar

- Antenna feed through plate modified and mounted.
- Antenna leveled.
- Wave-guide hookups in progress.
- Data system is collecting data.
- Hopefully transmitting tomorrow

8Mar

- Radar is installed, but is not transmitting properly. Kevin will troubleshoot this tomorrow.
- Wave guide hookups completed
- The Calibration Kit arrived

11Mar

- Antenna heater installed and operational.

12Mar

- Installed TR switch temperature sensor.
- Installation is now complete! System will be monitored tomorrow.

13Mar

- MMCR heater assembly continually operated and melted junction box that connects assembly to radar antenna. Widener is investigating cause of failure and will have a spare shipped.
- Kevin is now working to calibrate the various modes of operation.

### **32. Install H&S on Internet**

**Eagan**

### **33. Inventory Site equipment, systems**

**Reass/BOM**

### **34. Mark up "As-Built" drawing set**

**Reass /BOM**

20Feb

- Received site drawings from GHT

**35. Review Technical Manuals w/BOM**

**Reass /BOM**

**13Mar**

- The SDS portion observer daily rounds checklist was completely revised, and then reviewed with the BOM and Jim Mather.

**36. Establish Cyclone response plan**

**Pearson**

**37. Train BOM Observers (weekday and after hours)**

**Anuma, Duburiya**

**12Mar**

- The observer daily rounds checklist was partially revised.

**19Mar**

- Two groups of BOM observers were successfully trained on the Darwin daily rounds, including the new SDS GUI, site safety plan, and the SDL. Training for the BOM observers is now complete.

**38. Other**

**13Feb**

- Gravel placed between Skyrad and Cal stand, and by Met tower.

**19Feb**

- NT Fire Dept inspected site and passed

**20Feb**

- Some progress on ARCS/Met Station interconnect conduit

**27Feb**

- ARCS-3 Network Information  
27-Feb-2002

As reported by Dick Eagan to Brad Perkins

Net mask 255.255.255.128  
 Broadcast 198.129.82.127  
 Router 198.129.82.65

DNS twp.arm.gov

Machine IP Address Name

-----  
 MPLHR 198.129.82.3 mplhr-twpc3.twp.arm.gov  
 VCEIL 198.129.82.4 vceil-twpc3.twp.arm.gov  
 MMCR 198.129.82.5 mmcr-twpc3.twp.arm.gov  
 MMCR Buffer 198.129.82.6 mmcrbuffer-twpc3.twp.arm.gov  
 MPL 198.129.82.8 mpl-twpc3.twp.arm.gov  
 TSI 198.129.82.9 tsi-twpc3.twp.arm.gov  
 MWR 198.129.82.12 mwr-twpc3.twp.arm.gov  
 WSI 198.129.82.16 wsi-twpc3.twp.arm.gov  
 WSI Buffer 198.129.82.17 wsibuffer-twpc3.twp.arm.gov  
 MW RP \* 198.129.82.22 mwrp-twpc3.twp.arm.gov

RP1 \* 198.129.82.34 rp1-twpc3.twp.arm.gov  
RP2 \* 198.129.82.35 rp2-twpc3.twp.arm.gov  
NTP 198.129.82.74 ntp-twpc3.twp.arm.gov  
AERI tbd tbd

\* - These instruments not at ARCS-3

28Feb

- Two-way radios purchased for van-to-field and long distance field-to-field communications.
- The security gate was fixed today. Don't know if this is progress or not as getting in to the site can be delayed at times.
- Site grass mowed

1Mar

- Rex was looking at ways to put a safety rail on the SKYRAD stand for BOM Observer ES&H Requirements.

2Mar

- Misc. wiring issues (smoke alarms etc.)

4Mar

- Kevin Widener and Chance Younkin received site ES&H briefing
- Rex and Troy spent a great part of the day addressing problems with the BOM's Profiler.

7Mar

- David Reass briefed and given site tour
- BOM's server arrived. This will allow transfer of BOM Met data to ARM.
- Brad provided David with various computer support assistance today.

8Mar

- Remainder of old BOM fencing removed.

11Mar

- Additional fiber to RS232 converters ordered.
- Travel arrangements for Nick completed.
- BOM office cleaned.

13Mar

- Supplies for cleaning the Rad domes and optics were purchased.

14Mar

- A label maker was purchased in order to clarify systems for the weekend observer.
- A station with supplies for cleaning the Rad domes and optics was established in the I-Van.

15Mar

- Installation system acceptance plan was updated.

18Mar

- Nick and Franco completed the required visitor ES&H briefing.

19Mar

- Nick and Francis were given a tour of the regional forecasting center.

21Mar

- The D-Van was cleaned.
- External drainage systems for the de-humidifiers were installed in each van. Outside plumbing will be installed tomorrow.

22Mar

- Instruments were clearly labeled for weekend observers.
- Outside plumbing for the de-humidifiers was installed.

### **39. Audit out**

**Reass/BOM**

21Mar

- Audit out form was completed.

### **40. Start ARCS-3 Operations**

01Apr

- Operations (as limited as it may be) started today!