

Field Research Facility
Daniel A. Freer
Cape Fear Service trip Report
6-10-02 thru 6-14-02

6-10 Loaded Carryall and left pier at 11:30, Arrived Hampton Inn Southport 19:30

6-11 07:00 Met with Keith.

Oak Island Shore Station

Familiarization with IBM computer, modem, UPS, Power supply, Dehumidifier, and Junction box. Since the unit had previously been disabled by lightning and the RS-422 board replaced in the PC, I checked out the transorbs and polyphaser. Everything checked out good, but I was concerned that the SO cable that runs from the junction box down to the PC tub runs right across the armor cable. I added some transorbs on the SO cable side of the terminal box (see new Oak Island junction box wiring diagram). Also the existing transorbs were replaced with those indicated in the new drawing.

Suspense items for Oak Shore:

1. Reroute the SO cable so it doesn't touch and cut right across the armor cable.
2. Measure PWR+ to PWR- and to Com RTN, Measure these points to armor. Compare with Bald head. Measure while instrument is sending data.
3. Post new wiring diagram on inside of junction box

Bald Head Shore Station

Power supply was set at 27.5 VDC. Reset to 50 VDC

Junction box had missing and incorrect transorbs, causing some strange voltage variations when ADCP was transmitting. I.e. PWR+ to PWR- = +49.9vdc, PWR+ to COM RTN = 26 to 30 VDC, PWR- to COM RTN = -19 to 22vdc. Changed transorbs as per new Bald Head wiring diagram, and now PWR+ to PWR- = +49.9, PWR+ to COM RTN = 47.1, PWR- to COM RTN = -1.07.

Comments: This RS-422 communication link is set to 4800 baud because higher speeds caused communication errors. After replacing the transorbs the RS-422 signal looks very healthy, see scope picture below, so when time permits we could try faster interface speeds. However 4800 does give enough speed so that no data is lost so maybe leave well enough alone.

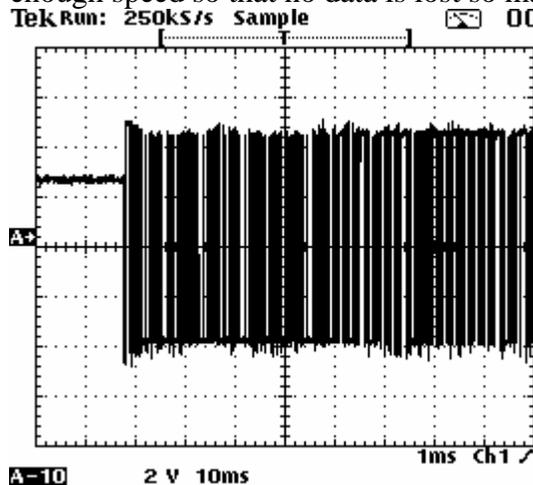


Figure 1, Bald Head RS-422 from ADCP TD+ base

(center gradical is Ground baseline)

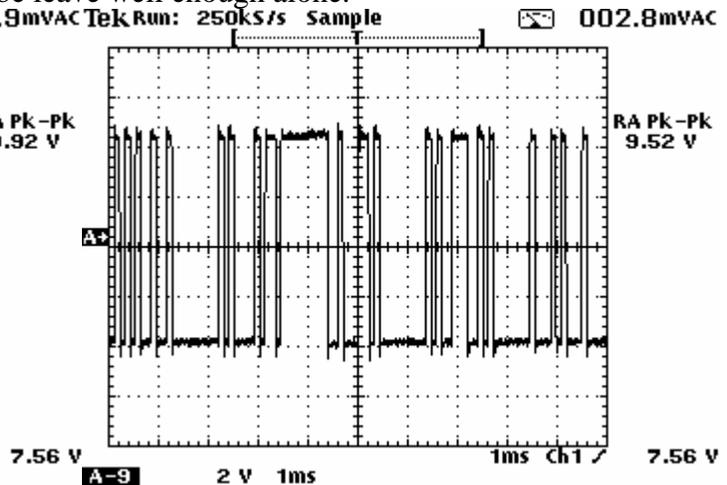


Figure 2, Bald Head RS-422 ADCP TD at 1msec time

Returned to hotel at 20:30 met with Ray and Trap.

Suspense Items Bald Head:

1. Build PC-to-PC network cable and test transfer files to/from two PC's
2. Using PC-to-PC network cable offload data from Bald Head PC
3. If 1 and 2 above don't work use the PC's USB port to connect and external CD burner to offload the data.

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Loaded boats at *Coast Guard station* then went to *OI shore* station.

Divers retrieved OI ADCP and cable. Ray came ashore in *Zodiac* and took me out to splice the cable while he and divers went to retrieve other instruments from the mound.

Ray and divers returned with new ADCP for OI. Diver had trouble attaching armor to pod because it is about three foot short of reaching the pod. Pulled cable with *Zodiac* and dive boat to get slack.

Best diver could do was chain the armor strain relief to the eyebolt inside the pod. Lacks just 6 inches from being long enough to shackle the armor strain relief to the eyebolt. Splice and 50 foot of SO are inside the pod. There is a Kellam strain relief on the SO near the splice. The Kellam is shackled to the eyebolt. The rest of the SO is coiled and cable tied inside the pod.

Keith on shore started collection, Flash card #1 doesn't pass test. Means this gage only has one 220 MB memory stick working.

Started collection program, gage is communicating correctly to shore.

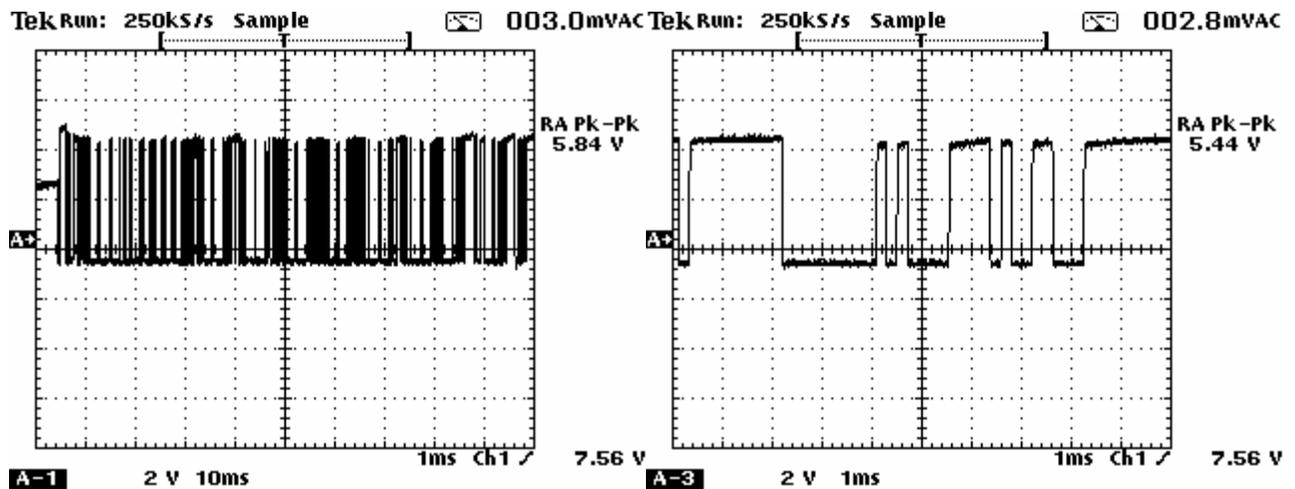


Figure 3, Oak Island RS-422 signal from ADCP

Figure 4, Oak Island RS-422 signal from ADCP 1msec

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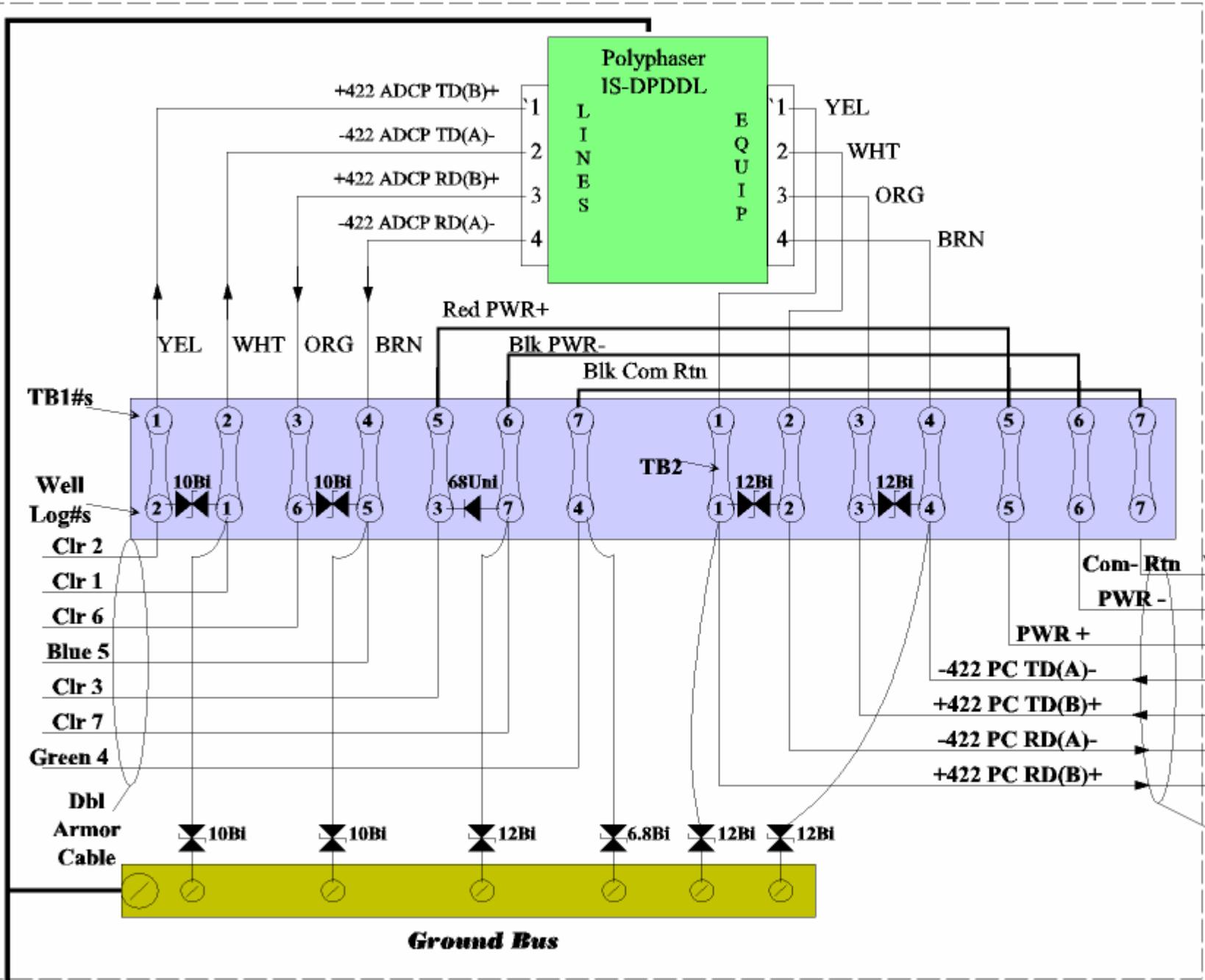
At hotel training with Trap and Keith

- Downloaded ADCP's, LISST and Sontek
- Deploy procedure training for ADCP's and Sontek

Suspense items:

- Download from company web sites the latest software to interact with the LISST, ADCP's and Sontek.
- Return ADCP removed from Oak Island to RDI for cal upgrades and service.
- Order, via EHI pressure port orifices for ADCP's
- Order o-rings for OBS connectors (If John Dowling hasn't already sent them)
- Do we have Sontek batteries?
- Run Sontek, LISST and ADCP for test deployments and to check out gages.

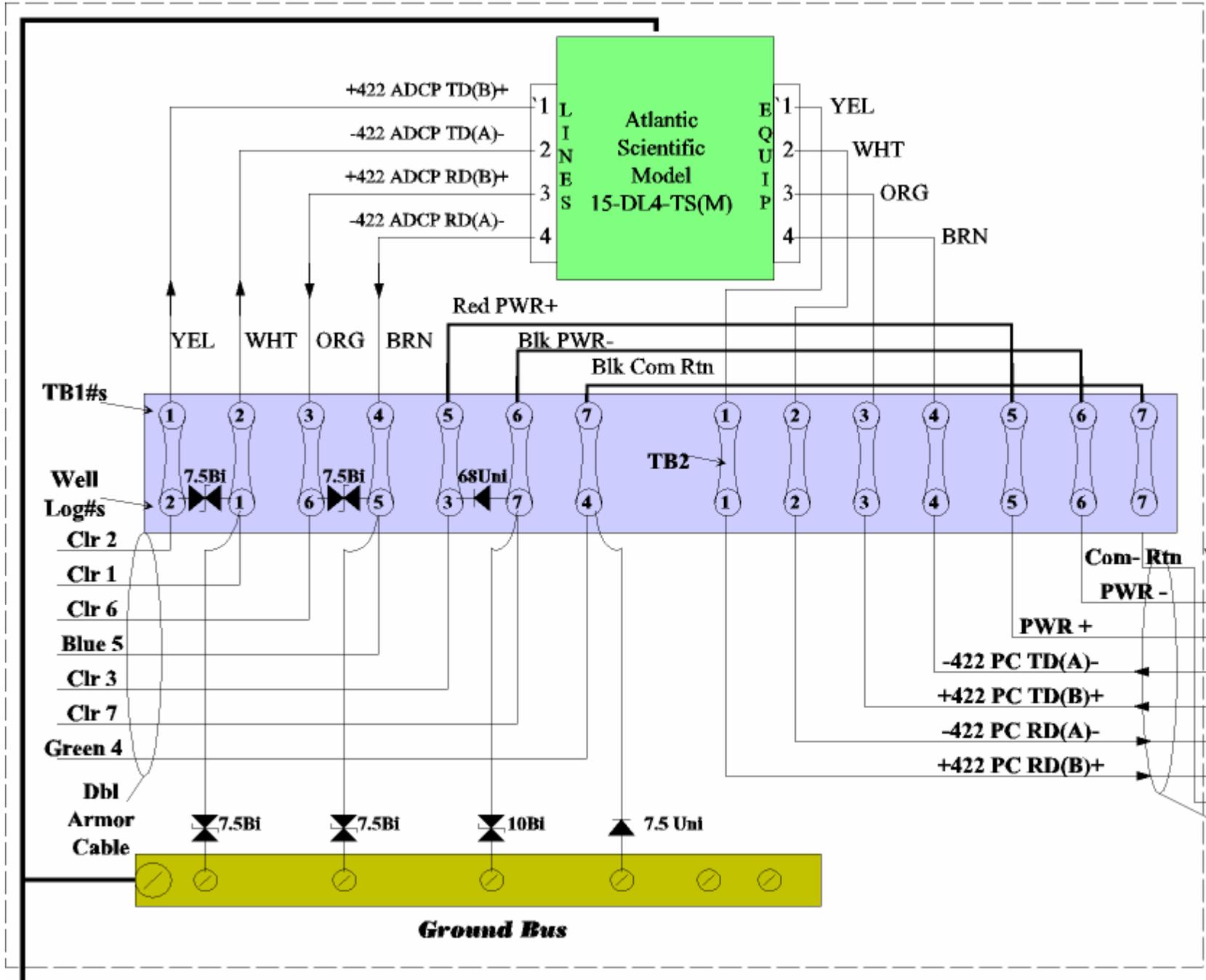
Oak Island Shore Junction Box



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Oak Islands Shore Box	
Chief Scientist H. C. Miller	Drawn By Dan Freer
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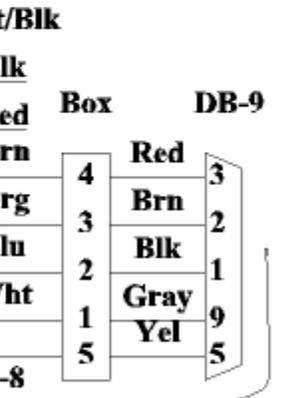
Wiring Diagram

Bald Head Shore Junction Box



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Chief Scientist H. C. Miller	Drawn By Dan Freer

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To RS-422 B&B board P/N

in IBM PC

Wiring Diagram