



MEMORANDUM

To: Jim Merrill, Mazen Wahbeh, and John Kinsey

From: Patrick S. Lowry

Date: January 13, 2008

SUBJECT: A Defective Culture

I was as frustrated as any of us this last week for our team's inability to correctly verify the alignment of the Deck Plate Mock-up section. As such, I began to do what we do best on this project. I started going back through my e-mails to show that I wasn't the only person to blame and look for someone else to "throw under the bus" along with myself. Thankfully, I stopped and tried to analyze why the culture on our project supports this type of reaction. Great organizations use negative incidents to learn, grow, and become more united and cohesive. Why can't we do the same?

Background

On December 9, 2007, Dave McClary and I went to the shop floor to investigate a report by Alfredo that showed misalignment of the closed ribs at the bolt holes. We inspected the misalignment at the weld of worst rib using Alfredo's data. Our inspection showed the misalignment was within tolerance. After observing that the assembly control lines of the two panels were reasonably aligned, I asked Bruce Berger to measure the distance between the assembly control lines and each weld of the closed ribs on each panel.

I first read Bruce's data at the airport in Shanghai-Pudong awaiting my flight back to California. I was surprised to see that three of the welds appeared to be out contract compliance; however, the data showed these were different welds than I had looked at myself. I forwarded the email to Chengwen and Keith D. as a heads up and discussed the issue with Chengwen over the phone. Unfortunately, I took no further action at that time.

System Check:

- 1) I should have responded back to Dave or Bruce to follow-up with the misalignment data.
- 2) I did not include Jim or John in my email. We have no system in place to ensure on-site Principals are included on all emails.
- 3) Bruce's data should have been documented in an incident report, which would automatically get a higher level of review. A system is in place here, the problem is our staff were influence to quit writing NCRs or incidents reports.
- 4) A Task Leader was not involved. As we have discussed, we need to have the TLs more intimately involved on the shop floor.
- 5) The inspectors were not aware of importance of the alignment check. Until Chengwen notified me that the splice plates were already installed, no one had even checked the alignment.

The next time I even thought about this issue was around December 26th. I re-forwarded him the email but can't recall any specific discussion.



System Check:

- 6) Chengwen was completely overwhelmed during the period around Christmas and New Year.
- 7) Chengwen was being tasked by both Jim and myself while he tried to get everything done.
- 8) We have intentionally hired young motivated engineers with little to no experience in Steel fabrication.
- 9) Without a Senior Engineer or Principal Engineer in China, our junior engineers don't have anyone to go to for help, mentorship, or to re-evaluate priorities.
- 10) I received many phone calls late at night from Chengwen during this period, I admittedly became frustrated and impatient with him as he tried to do his best.
- 11) I did not include Dave or John in my email back to Chengwen

On December 28, I was frustrated with the lack of NCRs or Incident Reports that I have received on the project. As such, I sent an email to Dave and John (cc to Jim, Ady, and Chengwen) summarizing all of the Incident Reports that I think our staff should have written related to the Weld Trials and the Deck Plate Mock-up. I included the misalignment (Berger's data) as incident #5 under the mock up and annotated that it still needed to be verified.

On January 3, I received an update from Chengwen related to the Weld Trials and the Deck Plate Mock-up. I interpreted his update to mean that ABF and us agreed on that welds were misaligned. He re-stated that Berger's data showed the 6mm, 6mm, and 9 mm misalignment.

On January 6, I received a correction to Chengwen's earlier update. Chengwen corrected his earlier report to say that "it should be ... that misalignments of weld #2, #7 and #9 are 6mm, 6mm and 9mm, respectively."

System Check:

- 12) Chengwen did not include Dave or John in his email update on the Deck Plate Mock-up
- 13) I assumed incorrectly that our staff verified the misalignment when I received Chengwen's updates.
- 14) Again, the lack of real-time incident reports being written by staff resulted in this issue lingering out there.
- 15) With Dave and John both out of the net during the holidays, we didn't have anyone technically experienced taking the lead on issues in China.
- 16) There were eleven days between the Blue Tag meeting and when I asked for the incident reports to be written. Our current procedures call for incident reports (NCRs) to be written within 24 hours. If our staff would have written the incident reports in the before the Blue Tag meeting, the incorrect misalignment data would have been identified.
- 17) Due to the demands of us trying to appease Construction's every need, our staff, including ourselves, have become "reactive" and we are not proactively trying to solve problems.

Recommendations

System Checks # 1, 2, 11, and 12 all deal with email communications that did not include personnel that could have clarified the misalignment confusion. There have also been many other instances lately where the key members of our team were not included in correspondence. This is a common occurrence in China when Jim is the only person from our team included on emails from Pete or Jason.

- 1) Ensure all Principals and Dave McClary are included on all correspondence related to NCRs or issues involving Team China management.
- 2) Jim should forward all emails from Team China management to Principals.

System Checks #3, 14, and 16 revolve around how our staff has gradually grown hesitant to document NCRs or Incident Reports. While this tendency has taken one of the SMRs most important tools away to identify



issues on the shop floor, perhaps the biggest concern here is the liability that this tendency poses for MACTEC. We must get back to documenting incidents within 24 hours of the issue being identified.

- 3) Require all Incident Reports to be written before staff gets back to their hotel room or residence. If staff can't complete the report on the boat or bus ride, staff will need to work overtime at their hotel room completing the incident report.

System Checks #4, 5, 16, and 17 are related to our Task Leaders not being able to do their job on the shop floor. Perhaps a bigger system flaw here is that Jim typically asks John to respond to letters, issues, or other demands from Team China management. John uses his key staff to do most of the heavy lifting because they have the most technical knowledge. This needs to change in order to insulate our Task Leaders from hot action items so they can stay on the shop floor.

- 4) Task Leaders should be off-limits to any and all tasks. No exceptions until we get a handle on things.
- 5) ISMRs should be the ones being tasked with action items, data analysis, presentation of data, or responding Team China demands.
- 6) Jim should go to the lead SMR to generate responses or products requested by Team China management. This will free up John to manage technical staff.
- 7) We all must be realistic with Team China management so they do not grow to expect unrealistic timelines and turnaround times.

System Checks #6-10 and 13 are consequences of the lack of a full time presence by Mazen and myself in China. We all know the logistical and financial issues related to getting Mazen and I to China full-time. However, without the lead SMR being in China full-time, we will need to manage our expectations of our engineering staff. The bottom line, in my opinion, is we can't currently meet the expectations of our clients with our organization in China. Jim doesn't have the time nor the desire to train and mentor our young engineers in China. He also rarely meets with the engineers to update them on what issues were discussed during meetings or assist them in prioritize the items they are working on. Our technicians don't respect our engineers due to the technical naiveté. Mazen and I can only do so much from Stateside due to the difficulties in the time zone difference. I don't know how to fix this one.

- 8) Investigate moving Mazen and/or myself to China full-time.
- 9) Put a system in place that allows Jim to easily update Engineering staff of the issues being discussed with Team China management.
- 10) Create a bi-weekly opportunity for Jim to meet with staff for them to explain what they are working on to prioritize tasks.
- 11) Principals should meet together in China to investigate how to solve this organization problem

Conclusion

I think it is fair to say that we can't all continue to function like we have been on this project. We have all waited for this project to arrive and take off. Now that we are here, our team has not been able to perform like we all know it can. Perhaps the biggest problem of all is the inability of the culture on our project to help us identify what systems we need to put in place to be successful. We must stop looking for people to blame and then letting our clients know who the "culprit" was. This only drives wedges between our engineering staff and technician staff.

Mazen suggested that we all might be available to meet in China on January 22. I recommend we make that a priority.
