

**Name of project:** QR Code Scanner for Work Rest Hours compliance

**When was the project started?**

Project was started in Jan 2016

**When was it completed?**

Project completed in June 2017 with fleet wide rollout across 620 vessels

***Identify key companies, suppliers and contributors who collaborated with your company on this project. What were their roles? (Note that the shipping company and its primary technology partners involved in the project will all be recognized at the award presentation.)***

Anglo-Eastern Ship Management – Hong Kong Office (Group – QHSE),  
Anglo-Eastern Ship Management (Tankers) – Singapore Office (QHSE),  
Anglo-Eastern Ship Management – Mumbai Office (QHSE back office, Training and Monitoring), and  
OceanManager Inc. (Technology Partner)

***Briefly summarize the project in less than 350 words. State the problem and describe the solutions you implemented. What results were achieved? Make sure you include metrics to justify your claim. Describe the key enabling technologies. How did it advance the state-of-the art in ship and fleet optimization?***

Anglo-Eastern deployed the software for Work Rest Record keeping per the latest requirements and compliance with ILO, STCW, MLC 2006, 33CFR, OPA90. 46USC. The challenges were to

- increase adoption
- ensure that vessels were able to easily do record keeping
- reduce administrative burden
- effective shore based monitoring and reducing Non-compliance
- forewarn users proactively when likely to cause non-compliance of rest hours requirements

Solution: A software application that can be deployed for sign-in/sign-off similar to shore based security system without the overheads of issuing ID cards and replacements of hardware equipment installation. The software uses the QR Code to encode the crew data and print using existing printing capabilities. The QR Code reader was enabled through web cam attached to the existing computers that read the QR code and allowed the crew to be identified. Data collected was recorded and fed to the work rest software. The key features of the software are

- convenient location at Bridge / Radio room, Cargo Control Room / Ship's Office, Engine Control Room
- Crew can simply sign-in/off and log hours. The system knows every time it clocks whether it's a sign-in/off. Any missed entries can be made by the crew
- The software provides messages if the crew is in Non - Compliance at time of entry and advises rest to avoid NC proactively
- The ship time and Universal Time Co-ordinate (UTC) is reconciled

Metric –

- The time to record and file monthly data has reduced 80-85% with each crew member recording and managing their own hours
- The regularity of record keeping has increased and shore based monitoring cell have seen 60% reduction in delayed filing
- The Non-compliance events have reduced by 50% as crew members consult with the Master / Chief Engineer and take adequate / compensated rest.

The above project has

- continued to advance safety with easy compliance with work rest regulations
- Allow the Master to review and monitor work/rest hours and allow for planning on a continuous basis
- The crew has simpler understanding of the importance of rest and fatigue management and take ownership of compliance
- The shore based monitoring has been able to bring detentions due to work/rest hours to NIL.

Key Technologies – Imaging, Data Encoding, Windows Desktop and Microsoft .NET framework