



**BUFFALO MARINE SERVICE, INC.**

Leading the way and dedicated to exceeding expectations

## Crew Endurance Management – Battling Distractions



**Tom Marian**

# Overview

- The proliferation of TVs, Cell phones, Laptops, Wireless connections.
- Distractions are tightly controlled in the operational environment (wheelhouse & tank barges).
- Enhancing creature comforts to bolster retention can pose problems.
- The dilemma of lack of self discipline during off time.
- Stressing the necessity of anchor sleep.

## CEMS Review & “Groundtruthing”



Current fleet of push boats outfitted with Shades, new lights;

Focus on diet & exercise;

Underscoring the importance of rest;

Internal ventilation/temperature audits;

**Stressing the effects of FATIGUE.**

## CEMS Off Watch Survey

*Off watch hours on cell, watching TV, video games, laptop. What is impact on Anchor Sleep?*

### **Key Measurements:**

- **Hours of Interrupted Sleep**
- **Total Hours of Sleep in 24 hr cycle**
- **Well Rested ?**

### **Results:**

- **Eliminate Outliers (Too many hrs in day)**
- **79% Well Rested (60)**
- **81% of those NOT Well Rested (13) indicated 4 hrs or less uninterrupted sleep.**
- **Noise in general (non specific) as cause of problem.....but also tended to watch more TV while off watch (2 hrs or more).**

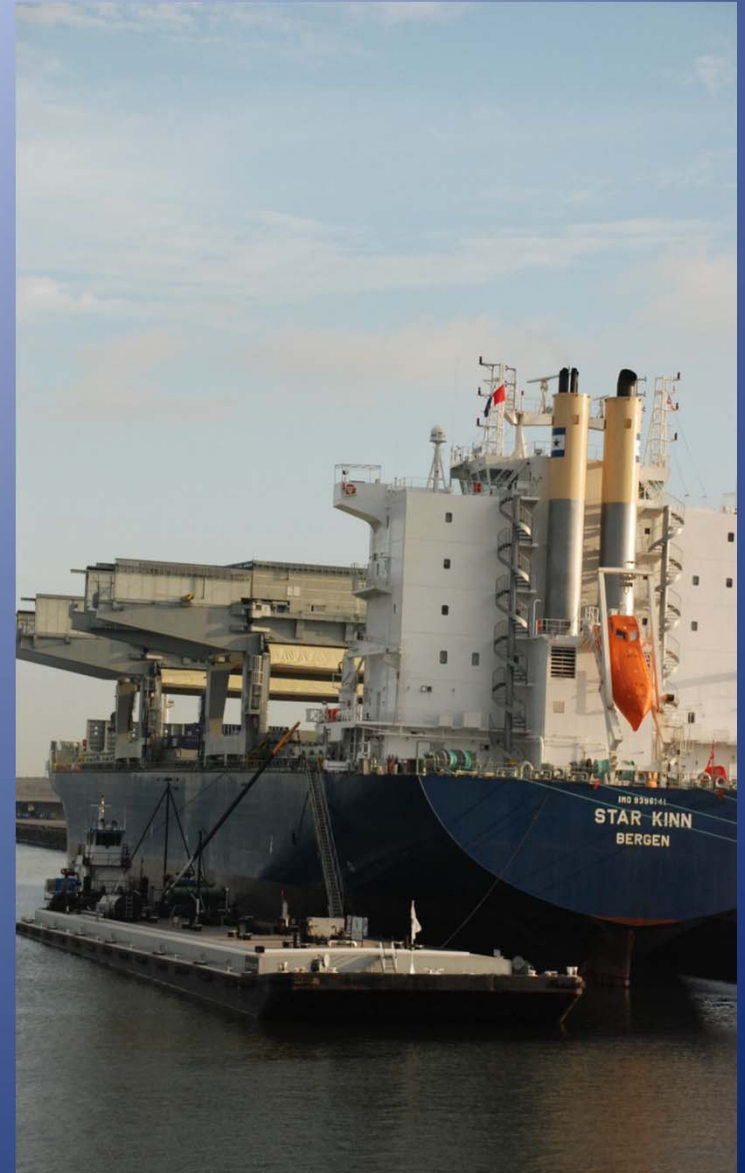


## Survey Details – Assessing the Comments

90% of surveys identified non-equipment, Non-ops noise as a “sleep interrupter” (loud talking, people inconsiderate, noisily entering bunks, slamming doors, loud TV, **lack of common courtesy**)

*Other activity that contributed to fatigue* (Room temp, building tows, weather, inexperienced wheelman, late relief)

Old Salt Factor – “Just the way it is”  
Correlation between those comments & Individuals that were well rested with 4 hours or less of uninterrupted sleep.



## Survey Feedback to Crews



BE COURTEOUS!

If workers, visitors on vessel inform them that others may be sleeping in the middle of the day.

Anchor Sleep more important than video games & Netflix.

Deckhands are not on the boat to hibernate.

Leave problems at home.....?

Reinforce the basics.

**FATIGUE is root of many misjudgments.**

## *Addressing Fatigue from the keel up – M/V SAN BROOKLYN*

**Additional Insulation between decks  
& bulkheads.**

**Engine spaces (Generators) set aft  
& behind additional bulk head.**

**Vessel stiffened with extra longitudinals  
& transverses.**

**Enhanced Engine Room Ventilation.**

**Extra Zoning & individual temperature  
Controls in sleeping areas.**

**Larger mattresses.**

**Greater attention to Propeller dynamics**



## *M/V SAN BROOKLYN - Insulation*



## M/V SAN BROOKLYN Crew Feedback

75% LESS NOISE THROUGHOUT LIVING SPACES

½ THE VIBRATION OF OTHER PUSHBOATS

ENGINE ROOM VERY COMFORTABLE

INSULATION SUBSTANTIALLY DAMPENS GALLEY NOISE

OUTSIDE NOISE SIGNIFICANTLY LOWER

SLEEPING AREAS VERY COMFORTABLE (TEMP & BEDS)



Do You Consider Yourself Well Rested After Your Primary Sleep Period? **YES**



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