



*M*anaging Fatigue

PRACTICAL GUIDE FOR PIPELINERS



The header features a central clock with a sunburst behind it, set against a background of orange and red halftone patterns. Two diagonal lines with white arrows point upwards from the bottom center towards the top corners. The left line has blue dots, and the right line has white dots. The clock shows a time of approximately 1:50.

Fatigue Mitigation: Implications of Control Room Management Rule

Charles Alday



Objectives

- Review “fatigue” statements in Rule.
- Consider if fatigue is a problem.
- Explain some ways to mitigate fatigue.
- Provide opinions on the implications.

Fatigue Statements in Rule

- “Each operator must implement methods to **prevent** controller fatigue that could inhibit a controller’s ability to carry out the roles and responsibilities defined by the operator.”

Fatigue Statements in Rule

- “Establish shift lengths and schedule rotations that provide...time... to achieve **eight hours of continuous sleep.**”
- “**Educate** controller and...supervisor in **fatigue mitigation strategies** and how **off-duty activities contribute** to fatigue.”
- “Train controller and supervisor to **recognize** and mitigate the **effects of fatigue.**”

Fatigue Statements in Rule

- “Implement **additional measures** to monitor for fatigue when a **single controller** on duty.”
- “**Establish a maximum limits** on controller hours-of-service.” *Allows exceptions for emergency*

Is Fatigue a Problem?

- Americans average 6.7 hours of sleep per night - National Sleep Foundation(NSF) poll.
- 29% fell asleep or got very sleepy at work.
- 36% have fallen asleep or nodded off while driving.
- 70% have some type of sleep problem.
- As a result,



Is Fatigue a Problem – Shiftwork?

- Shiftworkers sleep less than 6 hours per day on workdays – (NSF) poll.
- Only 37% of shiftworkers say their schedule allows them time for adequate sleep.
- 48% of shiftworkers have driven drowsy in the past month.
- 49% of shiftworkers work more hours per week than non shiftworkers.

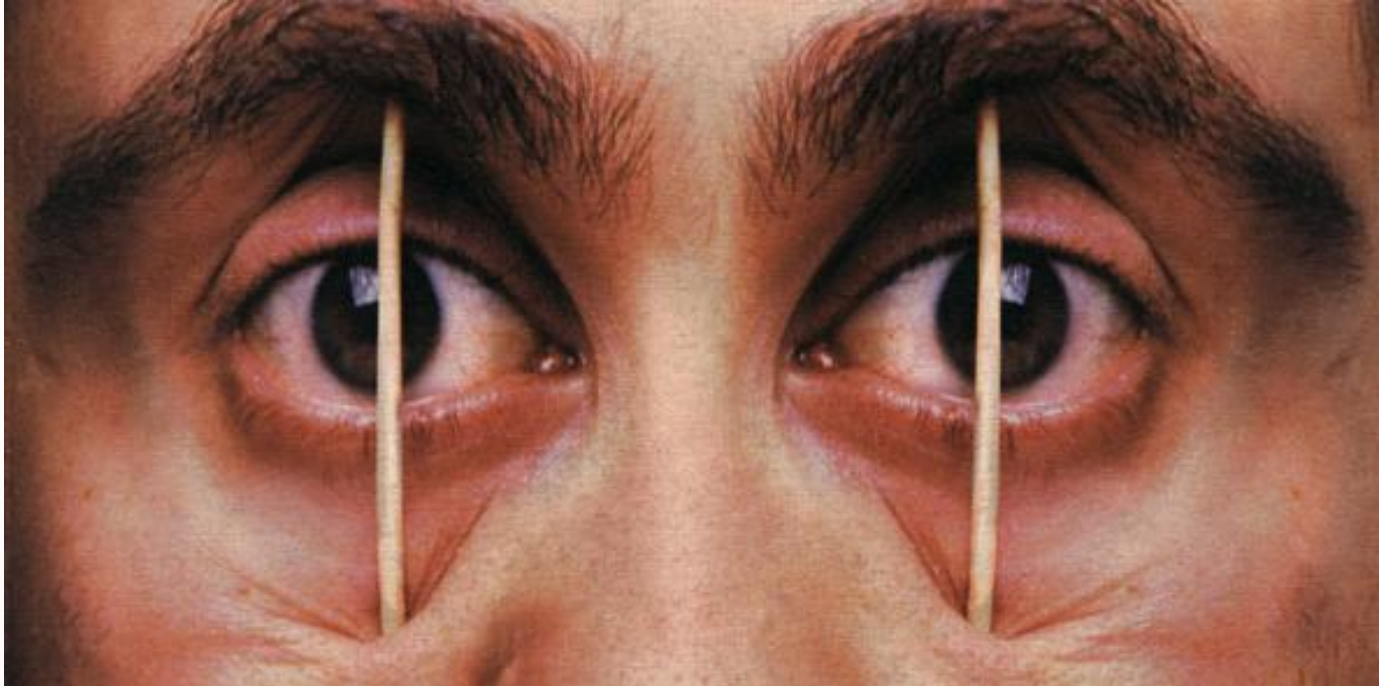
Is Fatigue a Problem – Pipelines?

- NTSB thinks so: *Most Wanted List*.
- Congress thinks so: *2006 PIPES Act*.
- PHMSA thinks so: *Proposed Rule*.
- API issued *Recommended Practice*.
- Shift workers think so: *HF Assessments*.
- Pipeliners who work overtime or respond to call outs think so: *HF Assessments*.
- Fatigue contributes to errors: *My opinion*.

Fatigue Mitigation

- **Sleep about 8 hours** almost every night.
- Other tools and techniques can help mitigate fatigue.
- Ultimately, the quantity and quality of sleep is what matters.

Fatigue Mitigation Strategy – Not a Good Strategy



Expectations for Controllers

- Statements from job postings:
 - Work on rotating 12-hour shifts every day of the year.
 - Includes nights, weekends, holidays, and overtime.
 - Maintain a high level of mental alertness.

Expectations for Controllers

- Statements from job postings:
 - Maintain a high level of attention to detail for extended periods of time.
 - Flawless operation of SCADA system, multi-tasking, high level of concentration and the ability to remain focused under highly stressful situations.

Expectations for Controllers

- Statements from job postings:
 - Ability to adapt and respond in changing situations.
 - Work in a fast-paced environment, process work rapidly, set priorities, work under pressure.
 - Must be extremely detail-oriented.

Implications of Rule for You

- Use a “scientific” approach:
 - Current shift, staffing levels, commute time, health issues that current employees may have.
 - Risk-management approach to preventing fatigue.
 - Good research and information in other industries and from other countries.
- Learn differences between acute, chronic, and/or cognitive fatigue.

Implications of Rule for You

- Evaluate the policies for vacation relief, unexpected absences, and other overtime.
 - Those who are “off” need to be allowed off time.
- Provide ongoing (more than one time) education about fatigue, shiftwork, the importance of sleep, workload.

Implications of Rule for You

- Sleep is what matters:
 - Hours of sleep in the last 24 hours,
 - Hours of sleep in the last 48 hours,
 - Hours awake before coming to work.
- The amount of sleep is dual responsibility:
 - Employer has to provide opportunity for 8 hours, taking commute time into account.
 - Employee has to take advantage of opportunity, by creating and using a good sleep environment.

What Is Next?

- It is ultimately about sleep!
- Acknowledge that fatigue is an issue.
- Some companies may have to increase staffing levels.
- Some companies may need to choose a different shift schedule.
- All companies will have to assess, design, develop, implement, and evaluate a plan.



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