

# **DrillSafe Forum – June 2009**

## **Sydney**

# **Fatigue Management**

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# Introduction



Natural part of the daily cycle of life

Major factor in many serious accidents

- Extensive training
- Proper safety equipment
- Perfect track record of experience

Cannot compensate for fatigue

**Schlumberger**

# What is fatigue?

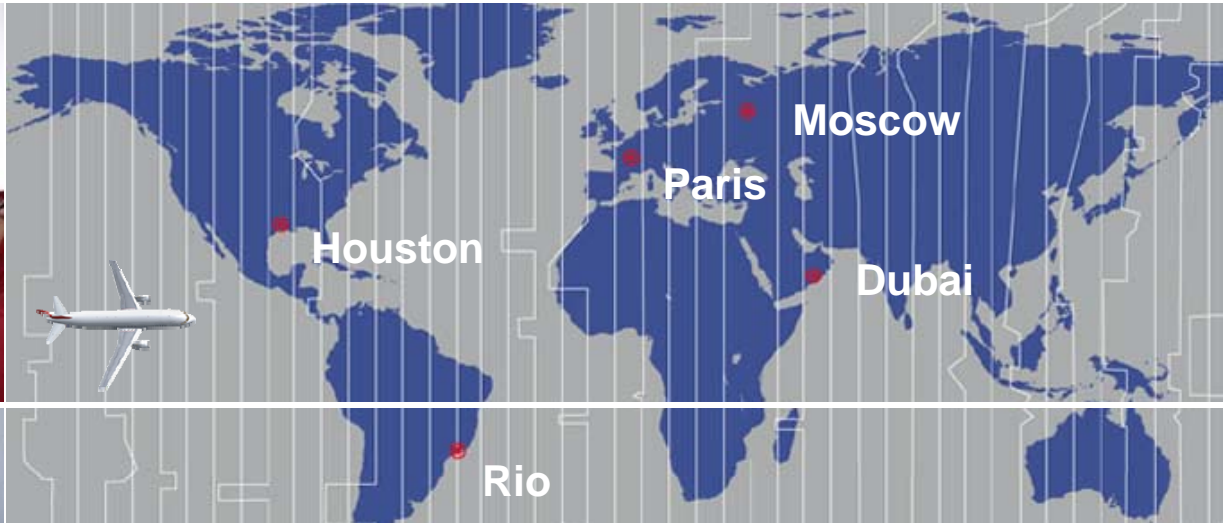


## *fa·tigue* [fuh-teeeg]

- The lack of energy resulting from prolonged, extensive mental or physical activity, or from insufficient sleep

Progressive decline in alertness and performance

# What is fatigue?



- Shift work
- Long Hours
- International or domestic travel across multiple time zones

# What is fatigue?



Falling asleep while:

- Driving
- Monitoring equipment
- Performing other vigilance tasks

Obviously a serious problem

# What is fatigue?



Adversely affect your judgment

Your physical coordination

Lead to serious incidents or crashes

# What are the signs of fatigue?



Onset of fatigue can be recognized

In ourselves and others

Signs of fatigue are largely universal

Cognitive and Physical

# What are the signs of fatigue?



- Negative mood
- Reduced communication
- Slips and lapses
- Poor memory
- Reduced attention
- Impaired problem solving
- Increased risk taking

## Cognitive

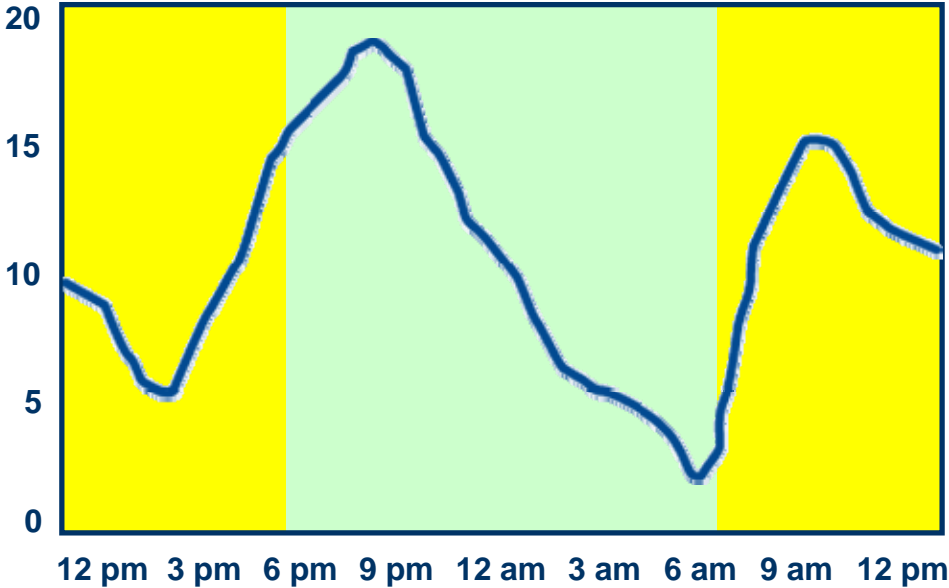


- Physical**
- Fidgeting
- Rubbing eyes
- Repeated yawning
- Staring blankly
- Blinking
- Difficulty keeping eyes open



# What are the causes of fatigue?

## Circadian rhythms



Peak Alertness

Slightly Impaired

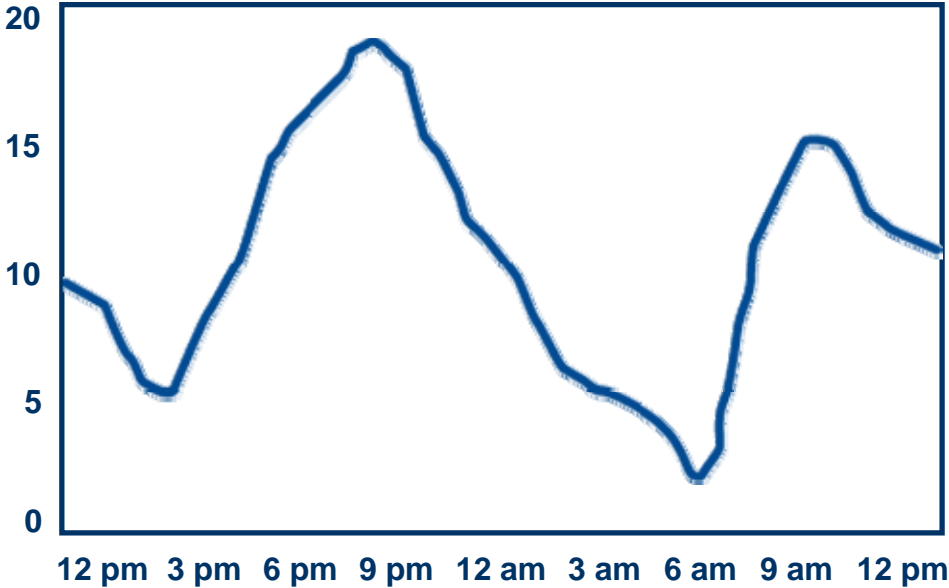
Reduced Alertness

Dangerously Drowsy



# What are the causes of fatigue?

## Circadian rhythms



Peak Alertness

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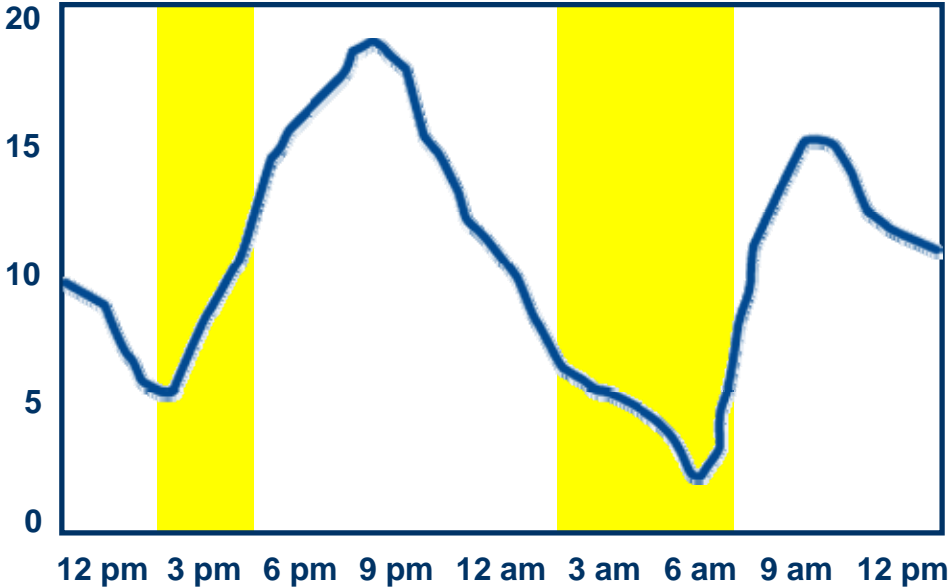
■ Poor performance

■ Reduced alertness

■ Increased likelihood and frequency of accidents and mistakes in judgment

# What are the causes of fatigue?

## Circadian rhythms



Peak Alertness

Slightly Impaired

Reduced Alertness

Dangerously Drowsy

Two periods of maximum sleepiness each day:

■ 2 a.m. - 6 a.m

■ 2 p.m. - 4 p.m

# What are the causes of fatigue?



At times of day when fatigue would not normally be a problem:

- Disrupted schedules
- Unusually long periods of sustained work
- Create a dangerous level of fatigue

# Issues for the service hand

- Long travel hours, short duration jobs, off the rig!
- Many do not work to a fixed schedule on the rig
- Unwillingness to have additional people on board
- Short time before arrival on the rig and starting a job
- Late call out, driving to the job, expected to start immediately
- Don't always get the best room – too hot, too cold....
- Sharing rooms with people on different schedules
- It's amazing how many jobs start at 02:00!

# Why is alertness critical to safety?



## Alertness:

- A state of readiness to respond
- Gives us the ability to recognize hazards
- Take appropriate actions to manage them

# Why is alertness critical to safety?



Time of day

Length of time since you last had a period of consolidated sleep

Duration and quality of that sleep

Effects of sleep deprivation are cumulative

Shaving an hour or two from proper sleep, day after day

**Schlumberger**

Like going with no sleep at

# Why is alertness critical to safety?



Periodic break in your work schedule is also critical

Too many consecutive days



Can begin to affect alertness

Even if you have been getting a normal amount of sleep

# How do we manage fatigue?



Practical countermeasures for fatigue:

- Taking a pre-work nap
- Avoiding vigilance tasks during times of low alertness
- Varying your job routine
- Taking breaks
- Adjusting the work environment
- Managing your nutritional intake

# How do we manage fatigue?



- Right and responsibility of every person to **stop the job** for any quality, health, safety or environmental hazard.

# Summary



Recognize the importance of understanding fatigue

Recognizing its causes and symptoms

Taking effective steps to prevent its consequences

Fatigue can affect every aspect of our business and private lives

Managing it successfully is a shared responsibility