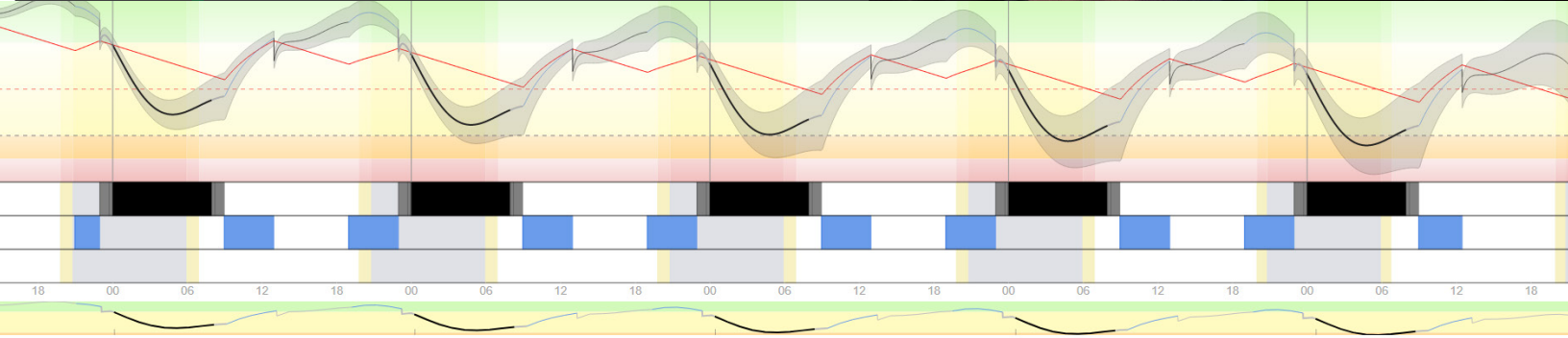




# FRMS

## SHIFT WORK



### **SAFTE-FAST CONSOLE** DESKTOP SOLUTION

Fully customizable, this solution is ideally suited for fatigue analysis of thousands of schedules at once, from planning, day-of and historical as well as incident/accident analysis. It can be used to support multiple different industry and employee groups within an organization. It includes reporting and data analytic features.



### **WebSFC** WEB SOLUTION

An online FRMS application hosted on the Amazon Web Services (AWS) platform, WebSFC is a full-service solution that includes system monitoring, security and server performance. An intuitive user interface includes many of the same features as the SAFTE-FAST Console, including reporting and data analytic features.



### **REAL TIME** API SOLUTION

Real Time is a fully integrated API solution providing validated SAFTE-FAST performance metrics in third-party scheduling systems. Real Time enables crew scheduling staff to perform on-the-fly instant fatigue analysis to support their operational scheduling decisions.



### **CONSULTING** FATIGUE MANAGEMENT EXPERTISE

Our experienced and knowledgeable team of scientific experts provide comprehensive fatigue risk management tools and services. Let us help your organization implement fatigue policies and guidelines for your workforce.

Fatigue Risk Management Solutions

[www.saftefast.com](http://www.saftefast.com)

[info@saftefast.com](mailto:info@saftefast.com)

The Science of Performance at Work

## The Fatigue Problem

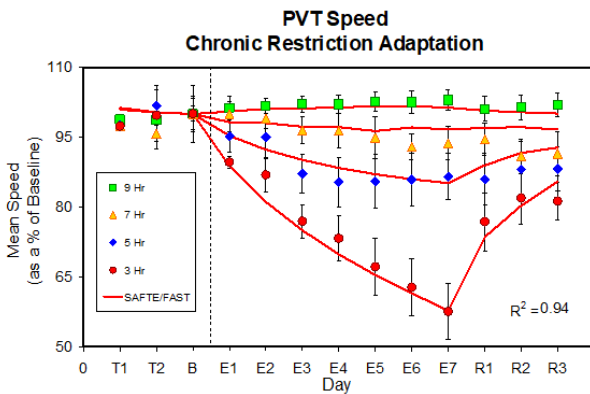
Most people underestimate how fatigued they are and how impaired they are by fatigue. Factors that impact our state of fatigue stem from our work schedule (shift length and start and end times), time of day (night shifts) and Sleep Debt.

Fatigue Factors in SAFTE-FAST include:

- Time of Day
- Sleep in the past 24-hours
- Continuous Hours Awake
- Cumulative Sleep Debt
- Phase

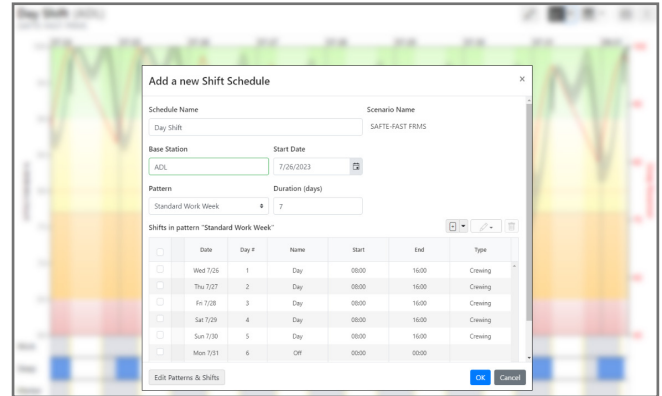
All factors interact simultaneously in non-linear relationships. SAFTE-FAST simulates physiology and estimates the level of degradation in performance providing an estimate of operational fatigue risk.

## Chronic Restriction Adaptation Comparison



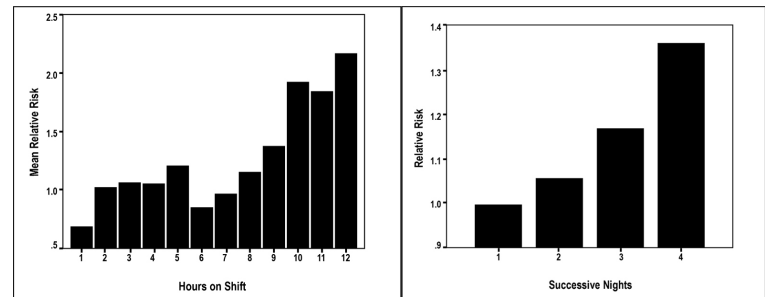
The chart above compares actual PVT results against SAFTE-FAST predictions during sleep restrictions and the subsequent recovery period. The results demonstrate that SAFTE-FAST incorporates the long-term homeostatic sleep process and slow recovery from prolonged sleep restriction. - *Patterns of performance degradation and restoration during sleep restriction and subsequent recovery: a sleep dose-response study. Journal of Sleep Research, 12, 1-12.*

## Shift Rotation Modeling



SAFTE-FAST's easy-to-use Shift Pattern Builder quickly models shift work rotations for fatigue analysis. Critical times during shifts are configurable and included in dozens of critical KPI and SPI metrics. Create custom workload rules which can be incorporated with the NASA Task Load Index (TLX) scale to assess the impact of workload against performance levels.

## Risk of Accident on Shift



The risk of an accident increases significantly when shifts are longer than 9 hours. A 12-hour shift has more than double the risk of an 8-hour shift. Risk of incident or accident also increases when schedules have successive night shifts. Specifically, fatigue related impairment increases between midnight and 6am, with sleepiness being greatest through the Window of Circadian Low (WOCL) from 2am to 6am. - *Shift work, safety and productivity. Occupational Medicine (Oxford). 53(2):95-101. Folkard S. Tucker P. (2003)*

