



## Fatigue Management Program Data Analysis Project

### **Puget Sound Pilots Background**

The Puget Sound Pilots (PSP) mission is to ensure against the loss of lives, loss of or damage to property and vessels, and to protect the marine environment by maintaining efficient and competent pilotage service on our State's inland waters within the Puget Sound Pilotage District. In executing this mission, PSP provides ship pilotage services on behalf of Washington state, as required. Currently, 52 pilots are authorized by the Washington Board of Pilotage Commissioners (BPC) to service the 7,000+ sq mi Puget Sound Pilotage District (PSPD) which includes 14 major ports. To accomplish this, PSP operates from two dispatch hubs, the Port Angeles Pilot Station (PAPS), which operates much like a fire station, and the Seattle office where PSP dispatch, executive and administrative staff operate from.

### **FMP Data Analysis Project**

PSP established a Fatigue Management Program (FMP) subsequent to the NTSB report on the Eagle Etome incident that was a catalyst for increased awareness of the affects of fatigue in the marine pilotage industry. This led to further research and education in sleep science, circadian rhythm and misalignment, cumulative affect of fatigue on individuals and ultimately PSPs own FMP. In addition, the BPC Fatigue Management Committee (FMC) is addressing 4 measures recommended by Dr. Czeisler, a Harvard a sleep science and fatigue management expert. During the next year or two I expect other recommendations will be on the table. In an on-going effort to better manage and mitigate pilot fatigue, PSP is seeking more in depth analysis by enlisting a consultant to model a number of measures for possible impact and implications, using proprietary operations data and other information.

### **Scope of Work**

1. Source data will be provided from PSP operating system (Coe System) in csv/excel format.
2. Consultant to review and fully understand rules and regulations related to current PSP dispatch rules, including pilot repositioning (repos) and fatigue management.
3. Consultant to develop a database, based on PSP original data and subsequent updates to data, with modeling capability that can be readily and easily accessed and updated by PSP members and/or employees, as designated by PSP.
4. Capability to import/upload PSP monthly data files (Coe system and possible others) into the consultant database/model to incorporate most current data into the model and produce the updated information we need.
5. Model should enable ongoing data processing capability to adapt to additional or modified fatigue management measures and/or changes to other rules and regulations.
6. Capability to model changes in the target assignment level (TAL) and number of pilots.

**Dr. Czeisler Measures (BPC FMC Measures in bold text)**

1. **Identify each time a pilot has less than 10 hours rest between assignments for assignments that last less than 12 hours.**
2. **Identify each time a pilot has less than 12 hours rest for assignments that last 12 hours or more.**
3. **Identify each time a pilot works more than 15 days continuously.**
4. **Identify each time a pilot has worked 3 consecutive assignments between the hours of 0100 and 0459.**
5. Identify each time a pilot assignment exceeds 12 hours between the hours of 0600 and 0000.
  - a. *Multiple harbor shifts need to be addressed here, this would also include Port Angeles. When a pilot performs multiple harbor shifts we consider the duration of time to be call time first assignment to check in time last assignment.*
  - b. *Identify the number of times a pilot assignment exceeds 12 hours when performing multiple harbor shifts.*
6. Identify each time a pilot assignment exceeds 8 consecutive hours if more than one of the hours is between 0000 and 0600.
7. Identify the number of times pilots exceed 60 hours on assignment during any running 7-day interval.
8. Identify the number of times there is a running 7-day period where pilots have not received a 24-hour break. This break needs to occur within the 7-day interval. If it does not then a 34-hour break is needed.
9. Identify the number of times any pilot failed to obtain 60 consecutive hours off, within a running 30 day period. The 60 hours off must include 3 nights between the hours of 0000 and 0600 (I expect this to be zero or maybe 1 or 2 times).

**Sample “What if?” Questions Model Should Answer**

1. What if the rest interval between assignments changed from 8 hours to 10 hours?
2. What if you excluded intra-port assignments (harbor shifts) from the 10 hour rest interval?
3. What if we had real time land travel between points during peak congestions periods?
4. What if every time a pilot exceeded 12 hours assignment time, the pilot got 12 hours rest?
5. What if the annual target assignment level changed from 145 to 143, how many pilots needed?
6. How many times in the past year did a pilot have less than 10 hours rest between assignments?

**Other Information**

1. PSP will supply flat file (csv/excel) information extracted from our Coe operating system.
2. PSP will supply relevant state pilotage statutes (RCW), administrative code (WAC) and PSP bylaws and operating rules for reference in developing the data model.
3. PSP will have proprietary ownership of database created by consultant for PSP and any distribution or uses by other parties is strictly prohibited without the express written consent of the PSP Executive Director or President. Any infringement of this requirement will be pursued to the full extent of the law.
4. PSP requires consultant be available, upon request, to give written or public testimony should data need to be substantiated in a public process or public hearing.
5. PSP requires a schedule of rates and charges along with a total project estimate
6. Services are to be billed monthly. Payment terms are 30 days from receipt of invoice.