

**STAFF REPORT ON SAN FRANCISCO BAR PILOTS’
FATIGUE RISK MANAGEMENT SYSTEM**

June 12, 2024

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1.0 OVERVIEW

In accordance with the statutory requirements set out in Harbors and Navigation Code 1196.5, the Board of Pilot Commissioners (Board) entered into a contract with the San Jose State University Research Foundation (SJSURF) and NASA’s Ames Research Center to conduct a fatigue study. Following the completion of this study, California Code of Regulations Title 7, Section 218.1 (Attachment 1) was promulgated on April 1, 2024. These regulations require the San Francisco Bar Pilots (SFBP) to prepare a Fatigue Risk Management System (FRMS) (Attachment 2) and submit it to the Board for approval. This report analyzes the SFBP FRMS and explains its regulatory compliance.

2.0 STATUTES

Harbors and Navigation Code (hereinafter referred to as the Code) 1196.5 (a) sets out that “The board shall contract with an independent entity to conduct a study of the effects of work and rest periods on psychological ability and safety for pilots. The study shall evaluate sleep- and human-related factors for pilots, and shall include information and recommendations on how to prevent pilot fatigue and ensure the safe operation of vessels.”

Code 1196.5. (b) requires the Board the duty to promulgate regulations: “The board shall, based on the results of, and recommendations contained in, the study, promulgate regulations for pilots establishing requirements for adequate rest periods intended to prevent pilot fatigue.”

3.0 REGULATIONS

Based on the responsibilities assigned to the Board in Code 1196.5 (b), new Fatigue Risk Management regulations became effective on April 1, 2024. These regulations may be found in California Code of Regulations (hereinafter referred to as CCR) Title 7, Section 218.1.

a. Duty of Port Agent to Prepare and Submit FRMS, Including Restrictions on Work Hours and Rest Periods

CCR 218.1 (b) specifies in part that: “The Port Agent shall prepare and submit to the Board for review and approval a fatigue risk management system. The FRMS proposed by the Port Agent shall be developed to ensure that the operations of the pilots support effective rest opportunities and fatigue mitigation measures.”

Furthermore, CCR 218.1 (b) also requires: “The FRMS shall include the specific restrictions on work hours and rest periods mandated by this section. The FRMS shall also include the additional elements specified in this section.”

b. Definition of a “Rest Opportunity”

CCR 218.1 (d) specifies in part that: “The FRMS shall set forth the definition of rest opportunity, which shall be subject to Board approval.”

c. Mandatory Elements that Port Agent Must Include the FRMS

CCR 218.1 (i) sets out six elements that must be contained in the Fatigue Risk Management System:

“The Port Agent shall include the following elements in the FRMS:

- (1) A plan regarding assignment of pilots that minimizes disruption of their recovery rest periods.
- (2) Minimum advance notice to the Port Agent by those ordering pilot services, thereby increasing the predictability of pilot schedules.
- (3) A plan to use various measures to increase the number of pilots available to provide pilotage at any given time.
- (4) A plan to educate pilots on the importance of reporting fatigue and pausing their availability for assignment when they are significantly fatigued.
- (5) Measures to mitigate pilot fatigue occasioned by long-distance travel to and from mandated training. The Port Agent shall consider:
 - (A) Delaying a pilot's return to piloting assignments following travel.
 - (B) A travel mode that would minimize the number of travel segments, minimize total travel time, and enhance rest opportunities.
- (6) Any other elements that the Port Agent believes will further the objective of preventing pilot fatigue and thereby ensuring the safe operation of vessels.”

d. Duty of Port Agent to Submit FRMS on Regular Basis

CCR 218.1 (j) specifies when the Port Agent must submit copies of the FRMS for approval: “The Port Agent shall submit the FRMS to the Board for review and reapproval one year after the initial approval, every 24 months thereafter, and whenever the Port Agent makes substantive changes to the FRMS.”

e. Duty of Board to Review and Approve FRMS

Section 218.1 (j) also specifies the Board’s responsibilities with respect to approval: “If the Board determines that the FRMS complies with the provisions of this section, it shall approve the FRMS. Concerning the mandatory elements required by subsection (i), the Board shall approve each element if it determines that the element is reasonably designed to contribute to the prevention of pilot fatigue. Any future proposed change in the FRMS shall be approved by the Board if the Board determines that the proposed change is reasonably designed to contribute to the prevention of pilot fatigue.”

4.0 SFBP’S REGULATORY REQUIREMENTS

Regulatory Requirement	Governing Regulation	Summary of SFBP Response	SFBP FRMS Section/Page
Prepare and Submit an FRMS to the Board within 60 days	CCR 218.1 (b) and (j)	<ul style="list-style-type: none"> FRMS was submitted to the Board on May 30, 2024. 	<ul style="list-style-type: none"> Not Applicable
Specific Restrictions on Work Hours and Rest Periods	CCR 218.1 (b)	<ul style="list-style-type: none"> FRMS references the SFBP’s policies on work and rest periods, and work-to-rest ratios. 	<ul style="list-style-type: none"> 3.3 Work Hours, page 7
Definition of Rest Opportunity	CCR 218.1 (d)	<ul style="list-style-type: none"> FRMS includes the SFBP’s policies on work-to-rest ratios. Additionally, FRMS defines the physical characteristics of the sleep/rest environment on the pilot boats. 	<ul style="list-style-type: none"> 3.3 Work Hours, page 7 3.6 Workplace Environment, page 10
Plan to Minimize Disruption during Recovery Rest Periods	CCR 218.1 (i) (1)	<ul style="list-style-type: none"> FRMS references the SFBP’s guidelines related to voluntary recalls and proximity of interrupted rest periods to the next regular work rotation. 	<ul style="list-style-type: none"> 3.2.3 Assignment of Off-Watch Pilots, page 6
Advance Notice to the Port Agent by those Ordering Services	CCR 218.1 (i) (2)	<ul style="list-style-type: none"> FRMS includes the SFBP’s minimum advance notice requirements. 	<ul style="list-style-type: none"> 3.3 Work Hours, page 8
Increase Availability of Pilots	CCR 218.1 (i) (3)	<ul style="list-style-type: none"> FRMS emphasizes that having enough qualified pilots is essential for meeting operational needs and is the primary strategy for fatigue management. 	<ul style="list-style-type: none"> 3.2.1 Adequate Pilot Power, page 6 3.2.2 Pilot Power Analysis, page 6
Pilot Education on Fatigue	CCR 218.1 (i) (4)	<ul style="list-style-type: none"> FRMS includes information related to the fatigue and sleep training as mandated by CCR Title 7, Section 215. 	<ul style="list-style-type: none"> 3.4 Fatigue and Sleep Training, page 8

Regulatory Requirement	Governing Regulation	Summary of SFBP Response	SFBP FRMS Section/Page
Mitigate Pilot Fatigue after Traveling for Training	CCR 218.1 (i) (5) (A) and (B)	<ul style="list-style-type: none"> FRMS includes actions that SFBP might take related to training related to travel, including planning to minimize travel time, enhance rest opportunities, and delaying a pilot's return to work after travel. 	<ul style="list-style-type: none"> 3.1 Fatigue Risk Assessments, page 5
Other Actions Identified by Port Agent	CCR 218.1 (i) (6)	<ul style="list-style-type: none"> FRMS includes approach to fatigue detection, including implementation of countermeasures and corrective actions. SFBP has committed to continuous improvement of the FRMS. Clarification of roles and responsibilities at SFBP related to fatigue management. 	<ul style="list-style-type: none"> 3.7 Fatigue Monitoring, page 10 4. Work Hours, page 13 5. Roles, page 14

5.0 CONCLUSIONS AND STAFF RECOMMENDATION

The staff recommends that the Board accept the San Francisco Bar Pilots' Fatigue Risk Management System.

REPORT ATTACHMENTS

Attachment 1: *California Code of Regulations, Title 7, Section 218.1: Fatigue Risk Management*

Attachment 2: *San Francisco Bar Pilots Fatigue Risk Management System (May 30, 2024)*

Attachment 3: *Cover Letter from Port Agent to President, Board of Pilot Commissioners (May 30, 2024)*