

<p><b>Meeting Date:</b>  <b>February 26, 2019</b></p>	<p><b>Board of Pilot Commissioners for the Bays of San Francisco, San Pablo, and Suisun 660 Davis Street, San Francisco, CA 94111</b></p> <p><b>PILOT FITNESS COMMITTEE MEETING MINUTES</b></p>	<p><b>Page 1 of 8</b></p>
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**Committee Members Present:**

Knute Michael Miller, Committee Chair and Past Board President  
Dave Connolly, Board Vice President  
Robert Kosnik, MD  
Captain Einar Nyborg, Commissioner and San Francisco Bar Pilot  
Brigadier General (Ret.) Chester L. Ward, MD

**Committee Members Absent:**

None

**Staff Present:**

Allen Garfinkle, Executive Director  
Roma Cristia-Plant, Assistant Director  
Dennis Eagan, Board Counsel  
Luis Cruz, Associate Governmental Program Analyst  
Alethea Wong, Administrative Assistant II

**Public Present:**

Raymond Paetzold, San Francisco Bar Pilots (SFBP) Business Director-General Counsel; Captains David Cvitanovic and David McCloy SFBP.

**OPEN MEETING**

**1. Call to order and roll call. (Committee Chair Miller)**

Committee Chair Miller called the meeting to order at 9:41 a.m. Associate Governmental Program Analyst Cruz called the roll and confirmed a quorum.

**2. Approval of the minutes of the Committee meeting held on January 17, 2019. (Committee Chair Miller)**

Committee members were presented with the draft minutes from the Committee meeting held January 17, 2019. Commissioner Nyborg requested minor non-substantive edits to the draft minutes.

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**MOTION:** Vice President Connolly moved to approve the draft minutes of the meeting held on January 17, 2019, as amended. Commissioner Nyborg seconded the motion.

**VOTE:** Yes: Miller, Connolly, Kosnik, and Nyborg.  
No: None.  
Abstain: Ward.

**ACTION:** The motion was approved.

**3. Report on the pilot and trainee fitness determination process involving the Division of Occupational & Environmental Medicine at the University of California, San Francisco Campus. (Executive Director Garfinkle)**

Executive Director Garfinkle reported that the pilot and trainee fitness determination process involving the Division of Occupational & Environmental Medicine at the University of California, San Francisco Campus (UCSF) continues to work well. He noted that he has received positive feedback from Board licensees concerning the fitness determination process, and that UCSF staff continue to provide great support. Dr. Kosnik concurred. There was no further discussion.

**4. Continue the review and discussion of the July 2018 San Francisco Bar Pilot Fatigue Study produced by San Jose State University Research Foundation and the National Aeronautics and Space Administration, the identification of key recommendations appropriate for incorporation into regulations, and the development of a fatigue risk management policy. Possible recommendation to the Board to approve a fatigue risk management policy, and an outline of potential fatigue risk management regulations. (Committee members and staff)**

Committee Chair Miller began review and discussion of the Committee’s preliminary discussions of the San Francisco Bar Pilot Fatigue Study recommendations.

Study Recommendation #1: Interventions intended to prevent or manage fatigue should be introduced as part of an overall Fatigue Risk Management System (FRMS), some elements of which are already in place.

Committee Chair Miller proposed that the Board, by way of regulation, direct the SFBP to develop and document an FRMS that would address the following elements:

- I. Education (pilots, trainees, others as appropriate).
- II. Environment (engineering controls to consider in the sleep environment, in the pilot vessel environment, behavior controls to consider).
- III. Work Readiness and Fatigue Reporting (administrative).

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IV. Other Elements (wellness program, sleep disorders, commuting, duty hours, sleep strategies, sustainability).

Committee Chair Miller noted that elements I-IV were borrowed from a guide entitled “Developing A Fatigue Risk Management Plan, A Guide for Towing Vessel Operators,” published by The American Waterways Operators.

Commissioner Nyborg stated that there has been some discussion among the pilots to develop an FRMS for Committee review. He stated that the SFBP intends to develop an FRMS that is comprehensive and short in length.

Board Counsel Eagan stated that there are various approaches to regulation development on this topic. Chair Miller stated that he envisioned an interactive and collaborative regulation development process involving various stakeholders and the Board’s Rules and Regulation Committee. Vice President Connolly stated that the Board should end up with enforceable rules.

Dr. Kosnik opined that the proposed elements (I-IV) should contain more specificity, and suggested that the Board should include in an FRMS a requirement for data tracking and for periodic reporting to the Board. Committee Chair Miller explored the possibility of enhancing the list of SFBP reportable items to the Board by way of the annual required report described in Title 7 California Code of Regulations (7 CCR), §237(d), or the requirement of a monthly Port Agent report, but noted that it is also important not to over burden the SFBP with reporting information that the Board does not need.

Commissioner Nyborg stated he was inclined to include as many fatigue mitigation requirements into an FRMS rather than in regulations, opining that there would be more flexibility for amendments to an FRMS than regulations as the mitigation measures are implemented and the pilot work evolves.

Study Recommendation #2: A limit on the duration of work periods is advisable. The current Bar Pilot Association policy (a limit of 12 hours) appears to be appropriate

Commissioner Nyborg explained that a 12-hour work period is doable for bay jobs, but not every night. He stated that 14-hour work periods may be possible given the pilot had the opportunity for sufficient rest. He noted that the ability to rest aboard the pilot station boat varies from pilot to pilot, and that foul weather may inhibit rest opportunities. He stated that an important goal for the Board should be to extend rest periods.

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Board Counsel Eagan inquired if hard work hour limits would be problematic for the pilots. Commissioner Nyborg responded he would prefer hard stops on rest periods, with reporting past 14 hours of work., and reporting of less than 12 hours of rest.

Dr. Kosnik agreed that the Committee should allow for flexibility within an FRMS to help address issues which may have no clear solution. He stated that increased SFBP reporting could be used in a preliminary trial period of an FRMS. He also stated that it might be useful to keep duty hours in an FRMS, and rest hours in the regulations.

Board Counsel Eagan noted that the Board’s statutes require regulations that mitigate pilot fatigue, not just regulate rest periods, and that the Board should address both hours of rest and work.

Study Recommendation #3: The maximum duration of a night work period without a rest opportunity should be less than the allowable duration of a daytime work period.

Commissioner Nyborg noted that researchers defined the circadian rhythm low point as the time period between 0200 to 0600, and that the SFBP considers night work between the time period between midnight to 0600, and that the SFBP’s scheduling software has a function to count nighttime work hours. He suggested that an FRMS should clearly state the difference between night work and day work, with the expectation that pilots will work shorter nights and longer days. Board Counsel Eagan stated that regulations could state that night work periods are shorter than day work periods and allow an FRMS to address the details of work periods.

Study Recommendation #4: A limit to the number of consecutive night shifts is advisable. A limit of two consecutive night shifts would be most desirable; however, a limit of three consecutive night shifts may be more practical.

Board Counsel Eagan stated that night work periods and other details of the night work should be included in an FRMS.

Commissioner Nyborg reminded the Committee that if a pilot is moved up in the work assignment rotation to provide another pilot a break from consecutive night shifts, the promoted pilot may start work with inadequate rest.

Study Recommendation #5: The BOPC should explore the reasons for the early morning peak in arrivals and consider options to distribute arrivals more evenly thought the 24-hour day.

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Captain McCloy confirmed for Committee Chair Miller that the U.S. Coast Guard receives the ship's Notice of Arrival, and that there is a 6-hour leeway given on both sides of scheduled time of arrival. Captain Cvitanovic noted that 7 CCR §219(d) states that, "A pilot on board a cruising pilot boat shall always take inbound vessels which desire the services of a pilot in their order of arrival." Executive Director Garfinkle stated that the Board may want to reevaluate regulations, which due to forthcoming FRMS rules, may be outdated or obsolete. Executive Director Garfinkle stated that in his experience in foreign ports, pilot arrival times were dictated by the various pilot organizations, which produced minimal burden to the ship awaiting the pilot.

Study Recommendation #6: The BOPC should consider whether a change to the minimum advance notice required when ordering a pilot would help to increase the predictability of pilot schedules.

Commissioner Nyborg reiterated that the SFBP policy requiring an 8-hour lead time when ordering a pilot at night greatly improved the predictability of assignments and provides for rest opportunities for pilots. Board Counsel Eagan stated that the Board could adopt a regulation that requires no pilot shall be assigned to a vessel without 8 hours' notice.

The Committee briefly discussed the timing of ship arrivals and sailings. Commissioner Nyborg noted pilots need flexibility in pilot assignment time.

Study Recommendation #7: The BOPC should consider whether technological solutions (such as software applications) could enable the timing of piloting assignments to be predicted with greater accuracy.

The Committee acknowledged that the SFBP are the subject matter experts concerning the latest technological advancements for piloting. There was no further discussion.

Study Recommendation #8: The BOPC should consider whether pilots who are on-call for 14 days should be provided with a rest break at or around the mid-point of the 14-day period. A midpoint break of at least 24 hours may be appropriate. If such a break does not occur naturally due to the movement of the board, it may be feasible to delay the pilot's BoB [bottom of the board] time to achieve this.

Committee Chair Miller recalled historical research affirming the need for a "reset" rest period for pilots on a 14-day work period at or around the midpoint, and that the reset rest period to include a sleep period during night hours. He noted that the study considered a 24-hour rest break but did not address when sleep should occur.

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Commissioner Nyborg stated that approximately 30% of current pilots work 14-day work periods. He stated that working 14-day work periods enable pilots to live further away, and that this work schedule is longstanding and important to maintain. He stated that a 24-hour rest period usually occurs organically during a pilot’s 14-day work period. Captain McCloy added that a pilot needs a night off if working several nights in a row. The Committee agreed that this recommendation should be incorporated into an FRMS.

Study Recommendation #9: The BOPC should consider ways to minimize advancing shift rotation. An advancing shift rotation occurs when each work period in a series has a start time earlier than that of the preceding work period.

Commissioner Nyborg stated that an advancing shift rotation may be preferable, depending on the situation. The Committee agreed that this recommendation should be incorporated into an FRMS.

Study Recommendation #10: There should be a Minimum Rest Period (MRP) between work periods. The current Bar Pilot Association policy (12-hour MRP) appears to be appropriate.

Commissioner Nyborg stated he welcomed “hard stops” on 10-hour MRPs. He stated a “hard stop” requiring 12-hour MRPs may pose a larger impact to the shipping industry. The Committee agreed that this recommendation should be incorporated into the FRMS.

Study Recommendation #11: Minimum Rest Period (MRP) exceptions should be monitored to ensure that no individual pilot is disproportionately burdened with MRP exceptions.

Committee Chair Miller stated he believed that MRP exceptions are monitored by the SFBP’s dispatch system, and that this study recommendation could be best handled in an FRMS.

Study Recommendation #12: The Committee should consider whether an extended rest period is needed following an MRP exception.

The Committee agreed that this recommendation should be incorporated into an FRMS.

Study Recommendation #13: Recalls of pilots from an off-call period should be managed to minimize disruption of their recovery rest prior to the start of their next on-call.

The Committee agreed that this recommendation should be incorporated into an FRMS.

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Study Recommendation #14: Pilots should receive an appropriate recovery period after awakening, before boarding a ship. A longer recovery period will be needed when the awakening occurs during the circadian low, or when the pilot has been asleep for more than 30 minutes.

The Committee agreed that this recommendation should be incorporated into an FRMS.

Study Recommendation #15: The BOPC should receive information on the number of Bar Pilots available on the Board.

The Committee agreed that this recommendation should be incorporated into an FRMS.

Study Recommendation #16: Implement solutions to increase the number of Bar Pilots available on the board at any given time. Approaches could include reducing the amount of “other duties” performed by Bar Pilots, or increasing the number of Bar Pilot Licensees.

Commissioner Nyborg noted that pilots have more and more non-piloting duties, including performing operations pilot duties, being a member of the Pilot Evaluation Committee, being a member of 6 different SFBP association business committees, and working on the development and administration of the Pilot Trainee Training Program selection examinations. It was noted that the Board has the authority, following hearings, to adjust the number of authorize pilot licenses.

Study Recommendation #17: Implement a system to enable pilots to report fatigue and remove themselves from the roster without consequences when they are significantly fatigued. It will be necessary to address the cultural barriers that could prevent such a system from working.

The Committee agreed that this recommendation should be incorporated into an FRMS.

Study Recommendation #18: Provide pilots with educational material on the effective use of caffeine, and other aspects of good sleep hygiene.

Study Recommendation #19: Provide advice to pilots on how to improve their home sleeping environments. This could include educational material for families on how they can contribute to Bar Pilot rest and alertness.

The Committee reviewed supplemental information about caffeine and fatigue causes and countermeasures, provided by Dr. Flynn-Evans and Kevin Gregory of the National Aeronautics and Space Administration.

The Committee discussed the Board trainees and to the applicability of an FRMS to trainees. Commissioner Nyborg noted that trainees are not responsible for the ship while training, and

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that trainees are not bound to the work requirements of SFBP's pilot assignment rules. Board Counsel Eagan stated that although there is some flexibility for different treatment between BOPC-licensees and trainees, trainees should be addressed in the FRMS. Executive Director Garfinkle opined that the FRMS rules should apply to trainees. He added that fatigue mitigation information could be included within the Board's trainee training manual.

The Committee reviewed an excerpt from a circular produced by the U.S Department of Transportation, Federal Aviation Administration concerning fatigue mitigation strategies used among aviation pilots.

Committee Chair Miller inquired if the Committee should update its Preliminary Discussion document, dated February 26, 2019, and present the document to the Board for review. However, Board Counsel Eagan suggested that the Committee continue to refine the document in draft form.

**5. Public comments on matters not on the agenda.**

There were no comments from the public.

**6. Schedule the next Committee meeting, and proposals for the next Committee meeting agenda.**

The Committee did not schedule a date for the next meeting. There were no proposals for the next Committee meeting agenda.

**7. Adjournment.**

Committee Chair Miller, without objection, adjourned the meeting at 12:29 p.m.

Submitted by:



Allen Garfinkle, Executive Director