May 16 Q&A - Follow-up Q&A between BPC and Interested Parties

#	Interested Party	BPC Question:	Response:
1	PMSA	Is it correct that PMSA's request for a decrease in the number of pilots is primarily driven by financial considerations?	*We are prepared to submit a response by EOB June 12, 2019 per the BPC schedule and are happy to receive any additional questions the BPC may have.*
2	PMSA	Has the PMSA recommended an increase in the number of pilots to the BPC in the last 10 years?	*Same as above*
3	PMSA	Does PMSA agree that avoiding delays for vessels awaiting an available pilot is an appropriate goal for the BPC?	*Same as above*
4	PMSA	What is your understanding of "board-on-arrival" service as that term is used by PSP?	*Same as above*
5	PMSA	When you describe the current ordering system for pilots as already being an appointment system, were you suggesting the current system permits pilots to control vessel arrival and departure times?	*Same as above*
6	PMSA	With respect to pilot scheduling, does the PMSA and its members prefer a system that allows the vessel to select its departure or arrival time? Alternatively, would PMSA prefer a system by which pilots pre-determine arrival and departure time slots, leaving vessels to select the next available time?	*Same as above*
7	PMSA	Would PMSA prefer an appointment system that maximizes pilot efficiency by requiring each vessel that misses its scheduled time to re-order a pilot or otherwise move to the end of the queue?	*Same as above*
8	PMSA	Rather than licensing additional pilots, would PMSA prefer that pilots delay vessels when there is no on-duty rested pilot?	*Same as above*
9	PMSA	What safety factors did the PMSA address in its suggestion that the number of pilot licenses should be reduced?	*Same as above*
10	PMSA	What does PMSA consider a "bona fide emergency" as that term is used in PMSA's submission?	*Same as above*
11	PMSA	Would having insufficient pilots to provide service without delays constitute an emergency?	*Same as above*
12	PMSA	If there is always a delay between raising the number of licenses and the time it takes to license a pilot (14-18 months), is there any set of circumstances that constitutes a true emergency?	*Same as above*
13	PMSA	PMSA states in its submission that "PSP report[s] that pilots take two weeks of vacation each year mostly on duty days meaning duty says stood would be 168 and not 182." What/who is the source of that statement what precisely was said by that source?	*Same as above*
14	PMSA	You state that 2018 was an anomalous year and argue it should not have been used in NASA's analysis. What was anomalous about 2018 and how in your opinion would that impact NASA's linear regression analysis?	*Same as above*
15	PSP	When a dispatcher is preparing to call in a pilot on respite, is there a system in place for who they call first and it what order after that?	*Yes, the dispatchers create lists of pilots not in rotation (the "call list") and have information regarding the pilots' rest based on the pilot's last assignment. Once it is determined there is a need for a callback (this often occurs 24 hours in advance when the anticipated number and timing of orders exceeds the expected rested on-duty pilots) the dispatcher first emails all pilots to notify them of the coming need and then starts calling pilots to find out who will and will not be available. The dispatcher then calls the pilots on the list sequentially until a pilot is reached who is available to accept the callback. Both pilots who accept or refuse callbacks are moved to the bottom of the list (maintaining the order of rotation). The dispatcher then continues down the same list to find a pilot for the next necessary callback. If a pilot is not license-qualified to accept an assignment, that pilot remains at the top of the list until offered a callback for which the pilot is qualified.*
16	PSP	How can there be 15,000 change orders compared to 7,325 assignments in 2018?	*The magnitude of order time changes is the result of unpredictability in vessel arrival and departure times that causes shipping agents to make frequent changes to the order time.* *As requested at the BPC meeting in May, more precise information regarding the number of order time changes has been obtained from PSP's dispatch system, the Coe System. This information will be submitted on June 12.*
		REGARDING PSP SUBMITTAL PREPARED BY BLAIR FASSBURG	
17	PSP	Page 5) Though a very important point, it's deemphasized in a parenthetical "no rest rule violations were identified in a review of data for 2018 and 2019". **Please explain** then the graph on p34 of NASA report that shows approximately 200 instances of <=8 hrs rest which would have been noncompliant starting in 2018 and the additional approximately 640 instances of 8 to 10 hrs rest which would have been noncompliant in 2019. Are these possibly all harbor shifts?	*PSP agrees it is an important point that there were no identified rest rule violations in 2018 and 2019 as it shows the Pilots' dedication to safety rule compliance. PSP is committed to complying with rest rules and works with its dispatchers to proactively avoid situations where pilots might not obtain rest in adherence with the rules.* *The circumstances identified on page 34 of the NASA report, in which pilots had less than 8 hours of rest prior to an assignment, are understood to include situations where a pilot performed a repo followed by a rest period followed by an assignment. The same was true in circumstances were a pilot performed an assignment followed by a repo. Other circumstances include multiple harbor shifts.* *It is also important to note that prior to October 2018, when the Board of Pilotage Commissioners ("BPC") adopted its 10-hour rest policy, to which the pilots have vigorously adhered, the BPC rest rule, WAC 363-116-081, required seven hours of rest after an assignment of seven hours. PSP policies have been more stringent and require greater rest and define "assignment time" more broadly than does the BPC. However, NASA's rest period analysis defined assignment differently than either PSP or the BPC. Page 4 of the NASA report includes the definition applied by NASA: "a duty period including vessel movements, repositions, upgrades, meetings and training." Thus, NASA identified circumstances when BPC rules and PSP policies may allow for insufficient rest when considering best practices for fatigue management.*
18	PSP	Page 7) Are the 161 cancelled movements in 2018 included in the 7324 assignments for the year?	*Yes, all of the cancelled movements were included in assignments for the year in the analysis on page 7 of PSP's submission. As noted during the meeting on May 16, 2019, the cancellations included in the assignment number are not cancellations for which advance notice was given. These represent situations in which a pilot was assigned to the vessel, taking the pilot out of rotation and using pilot resources. Each of these cancellations required pilots to perform work in anticipation of an assignment, which includes preparation and frequently includes travel.*
19	PSP	Page 9) 2 Efficiency, port competitiveness and reducing delays) iii Illustrations of delay causation) Watch* = Pilots schedule to be on-watch, including pilots on major medical **Does that also include the President?**	*I understand your question to ask whether the number of pilots stated to be standing watch in the examples of delays include the President of PSP. Although the President only takes assignments on a sporadic basis due to his high workload, he is included in a watch group of five pilots. In this case, the President's watch group was on-duty on July 20, but on respite during the July 7, August 6 and August 24 examples.*

20	PSP	There were 21 or 22 pilots scheduled to be on-watch, including pilots on major medical, in the four examples of days with a delay or delays. I understand this should be 5 of the 11 groups on watch. With 51 pilots and 11 groups, an average group size is 4.6. Indeed, we are told each group is 4 to 5 pilots. 5x4.6 = 23.2. **But why then mostly only 21? Are groups arranged together such that you could get 4 of 5 groups only have 4, not 5 pilots? Are there groups with less than 4 pilots?**	*In 2018, there were 11 watch groups that typically consisted of five groups of five pilots each, four groups of four pilots, and one group of three pilots (to which a fourth pilot is now being added). Those numbers within each watch group fluctuated at times briefly due to retirements and the licensing of new pilots.* *The watch calendar, included on page 19 of PSP's submission, reflects that there are 11 different combinations of watch groups that work together. Because of those different combinations, the total number of on-duty pilots varied between 21 and 23 pilots in 2018.* *This explanation obviously raises the question of why PSP does not split all pilots into two equal groups. If there were only two watch groups of one-half the total pilots in each group, the individual pilots would work and spend time with only one half of the pilots in PSP. Instead, PSP found that using 11 watch groups varies the individual pilots on watch, which exposes limited level pilots to a greater number of experienced pilots. This promotes safety and offers educational opportunities through job-related discussions at the pilot station.* *Additionally, although PSP could also reorganize the pilots in each watch group in a way that would provide greater consistency in the number on-duty pilots, not all on-duty pilots are available to take assignments. PSP's actual practice considers the President and pilots on major medical to promote dual goals of: (1) maximizing the number of pilots taking assignments each duty period; and (2) ensuring there is a reasonable mix of pilot license levels during each duty period. PSP believes that by taking those factors into account it achieves greater consistency across duty periods in the number of on-duty pilots taking assignments.*
21	PSP	Examples 1 and 2 show that more than 1 assignment can be done per day by a single pilot. On July 7, ten (10) Call back jobs were done by 8 pilots. On July 20, eleven (11) call back jobs were done by 6 pilots. Presumably, that's 5 pilots who did 2 jobs and 1 pilot who did 1. This ties to the estimate of duty day utilization rate. Page 12) i. Duty day utilization rate **An assignment ≠ repo ≠ meeting ≠ training ≠ 1 day ????**	*While the question being asked is not entirely clear, we will assume this question is intended to raise the question of why in PSP's pilot utilization analysis are assignments, repos, meetings and trainings are treated as one "day." The answer is that any metric that focuses solely on assignments and does not consider all of the work activities performed by pilots is neither valid in assessing pilot work nor safe from a fatigue management perspective. The latter point is probably the most important here, and the reason these work activities can be fairly treated similarly in looking at pilot workloads.* *Addressing your fist point, it is correct that pilots can, in theory, perform more than one assignment in a single day. In the case of the callback jobs discussed in the question, each repo is considered one callback job, and a subsequent vessel assignment is considered a separate callback job1, and pilots are sometimes able to perform a repo and an assignment in a single day. Additionally, pilots can perform multiple harbor shifts in a single day, which is why in the referenced discussion on page 12 of PSP's submission, pilots working multiple harbor shifts were credited with only one assignment each. The total assignments relied upon in the calculation was thus 6,808 rather than 7,324.* *Another situation in which pilots work more than one assignment in a single day exists when a pilot works two overnight assignments in a row. In that circumstance, two assignments are spread over three calendar days, with two taking some part of a single day. This variable schedule, discussed on page 26 of NASA's Puget Sound Pilot Fatigue Study Report, Exhibit 1, is part of nearly every calendar day, making it difficult to quantify what should constitute a single work day. For purposes of pilot utilization, one day can be considered the work that can safely be performed between two rest periods regardless of the calendar day on which they were worked.* *Dr. Czeisler recommended that the BPC limit work episodes to 12 consecutive hours during the daytime, and 8 consecutive hours if more than one of the work hours occurs between 24:00 and 06:00.2 Dr. Czeisler also recommended that no pilot begin a pilotage assignment if the expected time of completion, including return travel, would cause the pilot's work episode to exceed the maximum allowed work duration. Although these recommendations have not been fully adopted by the BPC, they support that repos, meetings and training be considered in evaluating when rest is required.* *Additionally, each repo, meeting and training is a work event of sufficient duration that rest is likely required both before and after before the pilot should be considered rested for an assignment.* *For example, outbound repos to the pilot station, including time to prepare and reach the ferry, take approximately six hours. Because pilots at the pilot station are not given time to prepare, repos to Seattle take less time: between three and three and a half hour. In 2018, the average repo time was four hours and 36 minutes. If each repo was immediately followed by an assignment, pilots could regularly exceed the maximum work hours recommended by Dr. Czeisler and thus each repo should be considered a work shift or "day" when assessing pilot workload.* *Meetings, which are vital to the continued operation of PSP, are actually more time consuming than repos. Although the point raised in Question 7, below, is stated to be supposition, meetings actually take far more than ¼ day, on average. Excluding out-of-town meetings requiring an overnight stay (which are significantly longer), there were 462 meetings in 2018. The average meeting time, including return travel, was 6.3 hours, while the median meeting duration was 6.4 hours. This excludes the time required to travel to each meeting, which has not been historically recorded. Thus, the total time worked by pilots attending meetings likely exceeds 7 hours each. Consequently, each fairly constitutes a day of work within the pilot utilization analysis.* *Most training sessions for pilots constitute a full work day and frequently require out-of-town travel during which the pilot is unavailable to take assignments. Thus, they too should constitute a work shift or "day."* *In this context, there are few times a pilot should work an assignment and then attend a meeting or training without an additional rest period, or vice versa, because each meeting and trainings are time consuming and require additional travel both before. Because best safety practices thus reduce the number of these work episodes that can be combined into one 12 or 8 hour period, each can and should be fairly treated as a "day."*
22	PSP	NASA p30 "average… 9.4 hrs per work period" from call time (Start) to check-in time (end). Add 10 hours to rest, and then can round up to a day per assignment. Fine. **But, do we have data to account for repositions, meetings, and trainings as also each a day?**	*Yes, as discussed in response to Question 5, PSP has data to account for repos, meetings and trainings, and believes each should be fairly treated as a day for purposes of this analysis.*

23	PSP	Supposition… If roughly counted, a reposition was 1/3 of a day, a meeting was ¼ a day, and training was still a full day; then by the summed "work days" in 2018 would be 7742 (less than the 9206 when added all weighted equal to a day). Then proceeding with the same calculations to divide by average No. of Pilots and Duty Days, the utilization rate is 89%. Supposition… Given the approximation that an assignment equates a day, the TAL of 145 means a utilization rate of 145 / 181 duty days = 80% (noting that excludes meetings, trainings, and repos) **Question… how should travel time, repo time, meeting time, and training time each be counted – in recognition of different levels of effort/ attention/ fatigue inducence (did I just make up that term?) and risk compared to bridge time?**	*From a fatigue management perspective, all time that a person spends awake contributes to fatigue through homeostatic sleep pressure, including time spent piloting on board vessels, travel time, repo time, meeting time and training time.4 This phenomenon may be observed throughout the fatigue experts' recommendations. Dr. Czeisler recommended that for purposes of determining maximum work periods, "[e]ach work episode should, by definition, begin from the time that a pilot is ordered by and assigned to a vessel and will include preparation time, transit time to and from the vessel, time between pilotage assignments and any other compensated work performed by the pilot, whether or not it is related to pilotage, until such time as a mandatory rest break is begun."5 He further recommended that the period between work shifts (i.e., the rest period) should exclude transportation to/from a vessel and administrative pilotage work.6 Extrapolating from his opinions, all time spent awake and working must be considered in determining when rest should be required. Dr. Flynn-Evans has made similar statements, supporting that all time awake is important in assessing fatigue.* *As addressed in response to question 5, above, the questioner was correct to be uncertain about the time required to perform repos, meetings and repos. Due to both the travel and actual time involved, and relevant rest requirements, each should be considered to be far more closely related to being a "day" for purposes of pilot utilization. As a result, the actual pilot utilization rate has been far above the TAL when considering all necessary work a pilot performs.*
24	PSP	Is it only ten hours after the check-in time, that a pilot can be called for either a repo or an assignment?	*It is unclear from the question whether the questioning Commissioner is asking about best practices, BPC policy, or House Bill 1647, which adopted a ten hour rest period. House Bill 1647 is silent on this issue due to the lack of definition of "assignment." Because Dr. Czeisler recommended that mandatory rest periods be free from transportation and for the reasons discussed in response to Question 7,7 PSP currently applies the ten hour rest period to the time following check-in before either a repos or an assignment.*
25	PSP	When a pilot gets repo'd, does it basically equate to their call–in time for the next job?	*We assume "call-in time" refers to the "call time," or the time at which a pilot is assigned to a vessel assignment or outbound repo. The short answer is no. The pilot is not assigned to a vessel movement until after the repo is completed, so the repo is not the "call-time" for a subsequent assignment. There is typically a multiple hour delay or rest period before the next assignment following a repositioning. For example, on page 33 of the Puget Sound Pilot Fatigue Study Report, NASA depicts in Figure 15 a round trip cruise operation. On Day 6 of the pilot's schedule, the pilot performed an outbound repo that was followed by a rest period, with the next assignment commencing hours later.*
26	PSP	Does repo-time not count at all currently towards "assignment time"?	*No, under the current BPC rule, WAC 363-116-081, repo time has not been counted toward "assignment time." PSP recommends that the BPC consider what intervals should be included in assignment time in the rulemaking for which notice was issued June 3, 2019.*
27	PSP	Page 19) Watch systems 1 cycle = 2 weeks = 14 days "After 10 cycles of this watch system, a pilot will have worked 150 days on-duty and 130 off-duty". Understood that it should instead read: "After 10 cycles…worked 75 days on-duty and 65 days off-duty" **Is a pilot on ETO available for a call-back?**	*Thank you for pointing out the potentially confusing explanation of duty days in PSP's submission. Following 11 watch periods, each pilot will have worked five on-duty periods, five off-duty periods, and one ETO period. The total of duty days during the five on-duty periods in that time is 75 days, with 65 days of respite.* *PSP does not distinguish between Earned Time Off and respite for purposes of callbacks. Each pilot has earned his or her time off duty, regardless of name, and may choose whether or not to take callbacks during that period.*
28	PSP	Can a pilot designate any ETO time or off-duty time as "vacation" (like listed in the activity report) such that they are not available for a call-back? And, if not designated as "vacation", is the pilot available to be called and asked to take an optional call-back?	*The use of the term "vacation" is a misnomer that resulted from the need for a short-hand way to describe the scheduled off-duty period that follows the 5th on-duty period in the duty cycle differently from respite. Earned Time Off is a component of the day-for-day watch system that is treated no differently from respite. Because they are no different in treatment, it is the pilot's right to choose whether to refuse or accept callbacks during that time. Some pilots frequently work during ETO while others might accept fewer or no callbacks during that period. There is no official designation of "on vacation" within PSP's dispatch system.*
		REGARDING NASA REPORT	
29	PSP	P25) In the "as worked" watch rotation on the right hand side of Figure 7, in week 16, should the two grey boxes on Th and S also be black boxes, like the one on W, indicating that these two vessel moves were actually call-backs??	*PSP does not have direct personal knowledge of the answers to these questions, they have been provided to Dr. Erin Flynn-Evans, PhD. Dr. Flynn-Evans does not have unlimited resources to dedicate to this project and has been unable to commit time to answering the questions posed due to her busy schedule. She has confirmed she will be attending the BPC regular meeting on July 18, 2019 and will be available to answer Commissioner's questions about the Puget Sound Pilot Fatigue Study Report on that date.*
30	PSP	P36) Earned Time Off and Compensation Time **Please explain why here a group is estimated at between 2 and 3 pilots, not 4 to 5, like it was by PSP p9**	*Same as above*
31	PSP	Please explain the derivation of 0.055 as the multiplier needed to account for pilots on ETO. After doubling the daily estimate, 1/11 (0.091) seems more like the right multiplier to account for an additional (an eleventh) group?	*Same as above*
		REGARDING LINEAR REGRESSION MODELS	
32	PSP	Are these models (Tables 2, 5, 6, 7) based on the baseline data with ~47 active pilots? p38 "there were only the equivalent of 47 pilots available for work throughout the year (i.e. 23.41 *2)." Where 23.41 is the total predicted in Table 4, the baseline case… 23.41 x 2 ≈ 47.	*Same as above*
33	PSP	P37) If 4 additional pilots, then bank of net comp days would stabilize after about 2 years. **Is that an appropriate interpretation? Was 2 years determined as a goal period of time to substantially reduce the bank of accrued days? If so – how? why? Why not 4, 6, or more years? Is the light gray line the scenario, with 4 extra pilots, the one selected for the final Model (Tables 6 and 7)?**	*Same as above*
		REGARDING MODELING REST RESTRICTIONS	
34	PSP	Tables 4 – 7, above the Total, show three (3) rows understood to be reflective of rest restrictions: • > 60 h work/week • < 60 h rest 30 days • MHS > 13 h In the two Final Models (Tables 6 and 7) these rows are zeroed out, presumably indicating no violations of the rest rules. **Is that correct? Was it the overall objective (or one of the objectives) of the modelling to find the configuration of variables (call backs and comp days) that achieved these zeros? Is that how you knew you were done? Had reached a "final" model?**	*Same as above*
35	PSP	Please define these rules. How is "work" defined? How is "rest" defined? Please also give their current standing as implemented by PSP? For instance, I understand MHS = multiple harbor shifts, and these work periods, as per the latest updated WAC, are not to exceed 13 hours in duration. This rule has already been implemented, as of October, 2018, correct?	*Same as above*

36	PSP	Why were these three (3) rules the ones predicted?	*Same as above*
37	PSP	Why was the minimum rest rule not modeled? Sorry – I didn't quite follow the explanation on the bottom of p41.	*Same as above*
38	PSP	On P5 of PSP report, it says "no rest rule violations were identified in a review of data for 2018 and 2019". On p34 of the NASA report, in Figure 16 on Rest period duration, it looks like there are about ~200 instances of <= 8 and ~~640 instances of between 8 and <= 10 hours. On p41 of the NASA report, it says "There were 1386 instances where pilots received less than 10 hours off following an assignment (including back-to-back callback assignments)." **Please explain how these numbers (no violations, ~200+640 ≈ 840, and 1386) all relate – as they sort of seem to describe the same value, but are all very different quantities.**	*Same as above*
39	PSP	Are Table 6 and 7 not directly comparable to see the effect of the implementation of the rest rules in October 2018 (after the trailing 12 dataset ended and with three months (thru Dec) left to go on the CY dataset), bc the number of call backs set was also different, from 0.5 in Table 6 to 1.0 in Table 7?	*Same as above*
40	PSP	Intuitively, one might expect the number of predicted pilots to go UP (like by 2??) based on more restrictions for rest. BUT, Table 7 predicts slightly less pilots (26.33 in Table 7 vs 26.67 in Table 6). Is this likely due the additional 0.5 callbacks allowed per day (from 0.5 to 1.0)?	*Same as above*
		REGARDING FINAL MODEL	
41	PSP	p40) In the caption for Table 6, these are referred to as "the expected per day values were set to reflect changes to pilot operations aimed at minimized fatigue". A**re those changes just callbacks set to 0.5 and comp days set to 4.00?**	*Same as above*
42	PSP	p42) **Besides for varying the number of callbacks and comp days, were there any other variables varied in the modeling?** Asked another way - Besides for callbacks and comp days, were the other "adjustments made based on fatigue risk management recommendations" as in from the excerpt copied below. "The projected number of pilots needed to fulfill staffing requirements while also minimizing fatiguing work shifts is presented in Table 8. This projection includes the estimates from the linear regression model with adjustments made based on fatigue risk management recommendations. This model also includes the projected number of pilots needed to reduce the bank of compensation time accrued by the pilots and two pilots in rotation to cover future work hour restrictions that could not be modeled." "projected number of pilots needed to reduce the bank of compensation time accrued by the pilots" – **was that 4?**	*Same as above*
43	PSP	"This model also includes… future work hour restrictions that could not be modeled." = 2 … Sounds contradictory. **Do you mean that "This model Table 8 includes…"**	*Same as above*
44	PSP	By "future work hour restrictions" do you mean the minimum rest rule?	*Same as above*
45	PSP	How you say "recommendations" here – are those totally separate from the recommendations given the following section 6, pp42- 45?	*Same as above*
46	PSP	Table 8) • Is the justification/reference for the 4 projected pilots for "compensation day coverage" the section back by on 37? And/or twice the additional ~2 that were modeled in the Final Model? In which case, aren't the 4 pilots for "compensation day coverage" already included in the Final Model? and then already included in the "Linear regression estimate" of 53 (26.33 x 2 ≈ 53) • What was "Additional work hour reduction coverage" that projected the 2 additional pilots? Where does this come from?	*Same as above*