

June 12, 2019

Commissioner Sheri Tonn, Chair
Washington State Board of Pilotage Commissioners
2901 Third Ave., Ste. 500
Seattle, WA 98121

RE: PMSA Rebuttal to Puget Sound Pilots' Request for Additional Pilots

Dear Chair Tonn and Board Members,

Thank you for the opportunity to submit this Rebuttal to the Puget Sound Pilots' request to dramatically increase the number of licenses granted by the Board of Pilotage Commissioners. As always, PMSA fully supports appropriate safety improvements to state pilotage -- including fatigue management -- however, we do not agree with the extreme proposals put forth by PSP in its submission with respect to the number of pilots. PSP has failed to prove its case in its submissions, and PMSA asks that the Board take no action on this matter at this time.

PSP is the moving party in these proceedings, asking to commence a hearing for setting the number of pilot licensees. PSP then submitted arguments for additional pilots to which this response is directed. PSP carries a burden of convincing the Board of the necessity to increase the number of pilots. PMSA has not requested a change in the number of pilots licensed, nor is PMSA recommending a new, specific number of pilots.

In addition, PSP procured and has presented a report from NASA as the primary basis, and nearly sole piece of evidence, to support the PSP submission. This Rebuttal reviews the NASA report and the PSP cover submission, and finds that the NASA report is limited in scope, inconsistent, confusing, fails to consider many key factors, and inexplicably advocates for a specific number of licensed pilots. This PSP-procured report differs significantly and materially from the NASA/SJSU fatigue study recently prepared for the California state Board of Pilot Commissioners which addressed a broad array of fatigue factors and made numerous potential recommendations to address fatigue and did not create a methodology for, and certainly did not advocate for, any specific change in the number of licensed pilots.

PMSA respectfully requests that the BPC reject the PSP-requested change in the number of pilots and instead focus on filling empty license slots with working pilots. Concurrently, BPC should continue to conduct its Fatigue Management Committee meetings to address questions and limitations of the PSP-procured NASA report and focus on mandates in the RCW.

PMSA submits this Rebuttal, as it did with its original submission in this matter, consistent with the Board's suggested calendar for participation by interested parties and in response to PSP's written submission and the testimony at recent Board meetings on this topic. In addition, this Rebuttal includes responses to written questions submitted to us during the interim between

meetings on this topic (**Attachment A**). This Rebuttal is also accompanied by a list of page by page comments on the PSP submission (**Attachment B**).

PSP's submission fails to address key issues such as improving pilot availability by filling currently available license slots and reviewing policies that undermine pilot availability rather than simply changing the number of pilots authorized. PSP's submission ignores BPC staff data which indicates that, with the pace of licensing versus retirements, it will likely be the end of this year or early next year before a full complement of pilots authorized by the BPC can be achieved. And thus far in 2019, the Marine Exchange reports a noticeable decrease in vessel moves translating to 140 fewer pilotage assignments compared to 2018. This rate of decrease represents an annualized reduction of 336 assignments or 2.3 pilots. This marked reduction in shipping and assignments are relevant continuing trends, as mentioned in our initial submittal, but not considered in PSP's submission.

PSP has not addressed the shipping updates by PMSA and the Northwest Seaport Alliance at monthly BPC meetings which have noted a short-lived surge ahead of publicly announced tariff deadlines with China. Cargo volumes are predictably decreasing after the surge and there is great uncertainty about how long this will last. The main reason we aren't at even lower traffic levels is the increase in car carriers and the impact of two additional weekly services added in April of 2018 which added 208 assignments to offset other reductions in the past 12 months.

PSP has not demonstrated sufficient evidence to support its claims with respect to the number of pilots, has ignored current data and market trends in its submission, and fails to address many of the pilot optimization and efficiency factors that need to be considered by the BPC when setting the number of pilots, including, but not limited to: options around dispatch, watch-standing, comp day management, vacation policies, lifestyle pilots, pilot ordering, and lead time for planning and dispatch.

There is ample opportunity for the BPC to systematically identify and assess all the relevant factors before setting the number of pilots again. Performing an analysis of how to optimize pilot operations per the RCW is appropriate prior to deciding what an optimal number of pilots should be – and there is ample time to do so.

PSP Contracted and Paid for the NASA Report Privately

To state the obvious, PSP is the interested party that contracted with NASA to do a study based on a private and undisclosed scope of work. This study was funded privately by PSP with ratepayer dollars, and not by the BPC with public funds.

Despite numerous requests, the scope of work for the development and finalization of the NASA report has not been made available. PSP's assertions that Chair Tonn's letter of August 10, 2018, served as their scope of work is incorrect and inconsistent with the utilization of the report during this setting of the number of pilots proceeding, and Chair Tonn so stated in public. Chair Tonn's letter conveyed a simple data request in order to back up requested changes to the RCW

regarding fatigue. Her letter was independent of the PSP request for a change in the number of pilots, which did not occur until early in 2019.

There is no clear reason why PSP is keeping the NASA scope of work secretive. It is clear from the work-product supplied by NASA that a primary focus of the report was not to analyze possible fatigue management strategies but on how to use fatigue metrics to justify increasing the number of pilots. This report seems to be based on a narrow charge intended to create a study which ignores many relevant factors to the question of setting the number of pilots and regarding fatigue management generally.

By mathematical definition, optimizing pilot operations per statutory mandate would require that all involved factors must be addressed, not just setting an “optimal” number of pilots. Yet, PSP’s request and the NASA report ignore these other factors and statutory mandates.

Without having access to the scope of work, we cannot know why the NASA report’s models and recommendations are based on a limited and skewed data set, was not replicated by testing on other years without the anomalies of 2018, uses non-validated assumptions, and completely avoids any assessment or criticism of relevant workforce management issues (dispatch, watchstanding, comp day management, etc.). The report uses skewed examples and depends on short abnormal trends as a baseline for a predictive model used to make their recommendations. We also cannot know why the NASA report does not include numerous other findings with respect to ways to improve pilot fatigue management other than increasing the number of pilots.

The approach taken by NASA is, unfortunately, more advocacy than science, speculative, misleading, and lacking academic rigor. We will point out several of the many problems with the NASA study below and as well as a more detailed listing in **Attachment B**.

PSP Relies Almost Exclusively on 2018 Pilot Assignment Data - An Anomalous Year

Chair Tonn’s July 20, 2018 open letter to shipping companies and agents conveys a temporary and unprecedented shortage of pilots in 2018:

Puget Sound Pilots is temporarily experiencing an unprecedented shortage of pilots due to pilot retirements, medical issues, and trainees not ready to be licensed from the pilot training program. The data is clear. There is a gap in pilot availability and pilotage needs. (Attachment C)

PSP agreed in a document dated July 12, 2018.

*“Puget Sound Pilots are (is) operating with the **lowest number of pilots available for duty in recent memory**. Today 46 pilots including the president are available. Four pilots are unfit for duty, two of which are on major medical. One of the four may return very soon. Another one of the four will likely go on major medical for up to 56 weeks. Ed Marmol will stop moving ships next month. This could bring the number of pilots*

available to move ships down to 44 pilots depending on when one of the pilots on major medical returns.” (Attachment D)

Given that the authorized number of licensed pilots was and is 52, this PSP communication indicates that PSP was down 6 pilots, and potentially up to 8 licensed pilots, as of last July.

We agree with BPC that this was “unprecedented” and with PSP that this was the “lowest number of pilots in recent memory”. In fact, we could not identify any other similar year in the decades of data we reviewed. Therefore, using “unprecedented” and “temporary” conditions experienced in 2018 as a baseline for construction of a workload and rest model for setting the number of pilots just doesn’t make sense.

However, these “unprecedented” and “temporary” factors are the conditions upon which PSP now asks the BPC to rely on when setting the number of pilots. PSP had apparently limited the NASA study scope to a 12-month timeframe which included most or all of 2018.

The May 2019 BPC correspondence from Chair Tonn to PMSA listing questions asked why PMSA thought 2018 should be considered an anomaly (also asked at a BPC meeting by Commissioner Anthony). In addition to the clear unprecedented conditions described above, there are many factors which support this conclusion, including the fact that pilots in the past performed much higher workloads by design without any documented significant delay or call back issues.

The following are based on BPC staff reports, correspondence and statements at BPC and FMC meetings:

- PSP had fewer pilots available for dispatch per day/month/year than ever before.
- Pilot utilization was extremely uneven with the 30 most productive pilots averaging 167.5 assignments while the remainder of the pilot corps averaged only 104 assignments and one fully available pilot performing just 90 assignments. This range and distribution are an anomaly and indicate potential significant inefficiencies and infer there is no “minimum” work rule.
- PSP introduced the “lifestyle” pilot – a pilot that apparently does not take call backs.
- PSP President stated they can’t tell pilots when they can take comp days; so comp days taken on the same day and/or on peak days will increase chances of creating more delays and call backs.
- There was a spike in Not Fit For Duty days (520) compared to past years.
- PSP reported numerous meetings with a large growth in some discretionary internal meetings. Attending meetings on duty days can create delays and call backs.

While PMSA is not recommending a specific workload at this time, recent history demonstrates that PSP has previously been able to manage and spread out assignments and rest without any reported issues and without the need for significantly increased pilot licenses.

- Comp Day Anomaly in 2018 Per PSP: PSP also reported accruing 97 comp days in June 2018. This one-month anomaly is based in part on unfilled licenses, the unavailability of several licensed pilots, and peak cruise ship season. Based on historical data, not considered by the NASA report, this is a very high number for one-month representing an annualized rate of a plus 1,180 accrued comp days. Why so many comp days?

We note that on pages 9-10 of the PSP submission, that they call out several instances where they were short pilots. The reasons given started with less than the full duty section scheduled to be available reduced even further by medical, meetings and multiple pilots taking comp days on the same day (comp days can produce call backs if not managed).

In one instance 6 pilots took a day off while 2 others were at meetings. And, all of this during cruise ship high workload months. A normal competitive service organization (service business, Coast Guard, police, fire, utility, etc.) would have better procedures to ensure efficient utilization and coverage.

When 2018 is compared to other years such as the 5-year period from 1997 to 2001, we find that accrued comp days actually “decreased” by 346. This timeframe was when the TAL was 149, and in two of those years pilot ship movement assignments averaged over 150. Yet, NASA did not look at that timeframe nor other comp day reduction years to identify how they were reduced and what the realities were relating to assignment distribution and rest periods. Perhaps they didn’t do this because the scope was limited to 2018.

The 2018 comp day anomaly is highlighted when one compares it to a March 21, 2012 PSP letter to Chair Dudley (**Attachment E**) which reported that pilots averaged 152 assignments in 2011, which is very similar to 2018, but that pilots averaged only one call back every two months. This is a much lower call back frequency than in 2018. Why? PMSA recommends the BPC compare and contrast 2018 with 2011 and other similar workload years to better understand how call backs were minimized compared to anomalies experienced in 2018.

It is a fact that higher workloads in past years produced fewer comp days – even reductions, but 2018 doesn’t fit this pattern.

Given that PSP states the ultimate conclusion of the NASA study was to provide service “without delays, manage Callbacks, and accommodate work hour rules...” (Page 2 of PSP submission) it seems prudent to better understand how this was accomplished in the past at comparable and higher workloads. For instance, there has been mention of the “three and out” rule being a difference with the past, but that was implemented in 2015 along with the 8-hour PSP policy. And, PSP is on record stating implementation of these changes was very successful and a big improvement, all without any documentation of PSP claiming that the implementation required more pilots.

PSP's submission does not include a review of these factors or consider their application to setting of the number of pilots. PMSA recommends that an evaluation might be produced by BPC staff to identify areas of focus for the BPC when evaluating efficiencies and optimal operations. Changing the number of pilots is not the only or best "solution" every time there is a delay or call back.

PSP and NASA Push Correlation Between Comp Days and Workload

PSP infers that there is a consistent correlation between comp days and workload but fails to explain why comp days decrease in some higher workload years while increasing in some lower workload years. Historically, there are many years with higher workloads, fewer call backs and reductions in accrued comp days that are not explained by a graph. Furthermore, comp day accruals are not the same as the number of call backs in a particular year. Some pilots save comp days, some use them and some burn them at the end right before they retire.

The NASA report also asserts this correlation. However, if this correlation is worth evaluating it must be done scientifically and not limited to a short window (2018) without considering all related factors. Doing so would be akin to reaching conclusions on annual ship traffic from an evaluation of only the cruise ship season while excluding the winter season.

In 2010, PSP pointed out that at 149 assignments per pilot per year, net comp day accrual was relatively flat until there was a pilot shortage per PSP in the 2004-2008 timeframe when the average assignment per pilot increased to as much as 166. PSP also acknowledges the relevancy of dispatch changes in this quote but there is no evidence that NASA even included dispatch as a "factor" to be evaluated.

PSP: "Comp Day Accrual Has Become an Indicator of Where the Target Assignment Level Should be Set" (April 2, 2010 page 6 - Attachment F)

"Comp day figures have largely validated the assignment levels set by the board at 149. As pointed out above, net comp day accrual was relatively flat from 1995 until the pilot shortage of 2004-2008. During this ten-year period, there were only 66 net days created. During the shortage when the Safe Assignment Level was exceeded by 790 jobs, we saw a net increase of 1,259 comp days. We expect this number to go down now that the shortage is over and the pilots have been able to implement dispatch changes. However, it is worthy to note that last year at 141 jobs per pilot, there were only 14 comp days created. This assignment level is also consistent with the application of the 1995 ARCO methodology to current times."

Average total comp days from 1995 to 2003 were indeed relatively flat and stable (a stated NASA report goal) averaging 2,098 at the end of each year. PSP reported adding 1,259 net comp days from 2004-2008 when average assignments per pilot/year peaked at 166. This increased the total to 3,386 in 2008.

Then accumulated comp days decreased by 563 from 2008 to 2017. This is contrary to PSP's current messaging and ignored in the NASA report. For instance, in 2011 pilots averaged only one call back every two months with a workload over 150 per pilot.

PSP Claims no Significant Fatigue Induced Incidents; Touts Success of Comp Day System

The lack of facts supporting the PSP and NASA presumptions are not a surprise when one considers other historical submissions by PSP in which they discuss fatigue incidents and the ability to move ships when requested pursuant to lead time ordering procedures by use of a comp day system.

"Our pilotage system has an excellent safety record with no significant fatigue induced incident in the recallable past. It has successfully moved ships when requested – largely by use of a comp day system that self selects non-fatigued pilots – for decades with minimum sailing delays." (April 8, 2010 page 6 -- Attachment G)

We note that NASA did not include in its report a review of accident investigations in Puget Sound involving pilot fatigue as a causative factor. There have been over 300,000 assignments the past 40 years. This is a statistically significant data set. Reviewing those investigations would allow for assessment of rest hours and the sequence and timing of assignments in order to inform fatigue management discussions today.

PSP's NASA Report Involved "Choosing" Only a Limited Set of Factors

In addition to a limited timeframe, PSP's submission rests on a NASA report which only considered a "limited set of factors" disregarding things like dispatch, pilot ordering, watchstanding, time off policies, and peak management. In other words, the NASA report admits that it does not evaluate the RCW's mandate to "optimize the operation of a safe, fully regulated, efficient and competent pilotage service...".

The NASA report states BPC was involved in determining the set of "scheduling" factors (page 15) but there is no documentation that the BPC was involved in or endorsed NASA's limited set of factors. The BPC memo of August 2018 was not a scope of work, it did not specifically set forth BPC determined factors to consider in this PSP directed and paid for study, and it was meant to guide a discussion about fatigue management not setting the number of licensed pilots.

The NASA report also states that model-building included factors in a memo from BPC to PSP on January 17, 2019. But there is no such memo per BPC staff. Instead, there was a memo on that date from the Chair to the Board which includes this statement:

"We will want to determine the theoretical number pilots needed, then analyze factors that could affect that number. We will also want to look at ways of improving system inefficiencies and uncertainties." Chair Tonn, January 2019

Neither the PSP submission, nor the NASA report upon which it relies, analyzed all of the relevant factors that could affect the number of pilots. Moreover, the PSP submission and NASA report also fail to make recommendations to improve system inefficiencies and uncertainties.

PSP Improperly Inserts UTC Processes To Limit NASA Study Factors

When questioned at a BPC meeting about why the NASA report timeframe was limited, PSP's legal counsel stated that they recommended PSP limit the study timeframe to only 12 months because that is what UTC does.

PSP's reliance on UTC practice at the BPC is improper in several ways. First, setting the number of pilots is supposed to be separate from UTC ratesetting. Setting the number of pilots is a safety and workforce optimization exercise based on factors distinct and bifurcated from ratesetting. Even prior to SSB 6519 made such a distinction formal, BPC Chair Dudley had historically pointed this separation out on numerous occasions, even after acknowledging that adding more pilots could have economic consequences for licensees through the reduce pilot shares and vice-versa. There is no statutory, regulatory, or common sense basis for the injection of UTC ratesetting processes here.

Second, SSB 6519 affirmatively reserved the determination of the number of licenses exclusively to the authority of the BPC. (RCW 88.16.035(d)) The law requires the mutual presumption of the proper execution of administrative duties consistent with bifurcation of duties under SSB 6519 between the BPC and WUTC. The BPC must take all conclusions of WUTC re rates as fair, just, reasonable, and sufficient for the provision of pilotage services, and should not then change the number of pilots to distort rates or pilot income. The WUTC must likewise take all conclusions of the BPC regarding the determination of the number of pilots as necessary to optimize the operation of a safe, fully regulated, efficient, and competent pilotage service in each district, and not set rates based on a fictitious, alternative number of pilots.

NASA Failed to Replicate Their Findings by Testing Their Model on Other Years

Another flaw in the PSP submission is that the NASA report fails to replicate their conclusions by testing their model and assertions on a number of past years. We can speculate that perhaps the PSP scope of work didn't allow for that, but the Board can and must reasonably conclude that PSP was fully aware of their past data and submissions.

PSP knows or should have known that longer-term trends would contradict their current request's presumptions and rationales. Yet, their request here is based on what turns out to be a cherry picked data set. PSP often relies on more than 12 months in their submissions to BPC by using multiple year data analysis to identify trends in past submissions, as does PMSA and BPC Staff. BPC, PMSA and PSP all regularly use multiple year data to show trends, but PSP limits its consideration of data here and NASA did not compare and test its conclusions.

PSP Relies on NASA “Linear Regression Modeling” Which is Flawed

The NASA study relies on a “linear regression” modeling methodology to predict the number of increased pilots needed. This math tool sounds impressive, but NASA does not explain its limitations or how it needs to be used. The NASA report in the Table 4 discussion on page 39 clearly states the use of the trailing 12 dataset. We have established many anomalies in this limited dataset. Nevertheless, their recommendation ranges from 39 to 67 pilots with a recommendation of 53 plus some additional pilots thrown into the mix for various reasons like future unspecified work hour rule changes.

The Board must consider how much of a change there would be in the calculated beta coefficients, the associated confidence intervals and the p-values if other years had been used to build this model including years with similar workload and reduced comp days. Yet, NASA didn't do this, so they don't discuss it, and PSP has submitted no such evidence.

NASA Study Assessed Fewer Pilots Available Than PSP Claimed to Have

NASA's study indicted only 46.82 pilots were available on average (23.41 times 2). PSP on page 5 of their submission stated the average number of available pilots was 47.86. Both are very low – as noted above an “unprecedented” factor - perhaps the lowest on record and certainly the lowest dating back to at least the 80's. Using a low number skews the picture compared to other years but NASA used an even lower number than what PSP lists in its own submission without reconciling the two.

Perhaps adding the missing 4 available pilots authorized by the BPC would have dramatically changed the NASA assessment. PSP's submission stated that had the full complement of 51 (plus one) been available, the assignment level would have averaged 143.6 or 1.4 below the BPC set TAL. NASA did not analyze that scenario, nor did PSP in its submission.

PSP Analysis Indicates Full Utilization in 2018 Would Have Required 51 Pilots

PSP offered their perspective on utilization rates (PSP Submission Page 12). They equated assignments, repos, meetings and training each to a full “work day” – they did not account for more than one of these things happening on a single day. As a result, PSP reported that 47.86, the average number of available pilots in 2018, worked 6% more than the 181 days of duty. Applying simple math to PSP's methodology indicates that in order to achieve 100% utilization, the number of available pilots would have had to average 50.86 (9,206 total work days divided by 50.86 = 181 work days each).

PMSA disagrees that any meeting of any length of any subject equals a repo which equals a ship assignment. The PSP analysis provides a different perspective and coincidentally concludes that the number of available pilots needed is equal to the actual number of working pilots authorized by the BPC.

Minimum Rest Period Was Not In the Model - NASA Makes Recommendation Anyway

On page 41, NASA stated that minimum rest hours were not a significant predictor in the model. NASA then states there were 1386 instances where pilots received less than 10 hours off following an assignment adding up to 2595 hours (1hr 52 min average) and equivalent to 2 pilots.¹

This is very inconsistent with PSP's estimate in recent fatigue management discussions when they estimated that 500 assignments would be affected by changing the 8-hour rule to a 10-hour rule (Carlson, 2019). PSP also stated that many of these instances involved only a short time (minutes to 10's of minutes) so assignments like a grain ship shift would simply adjust but that PSP avoided delaying assignments like cruise or container ships.

Therefore, the NASA report presumes that the number of instances was nearly 3 times what PSP has said, and the NASA report is based on an average of 1 hour 52 minutes each. Those presumptions or conclusions do not make any sense. For this to be factual, virtually all instances of a pilot having rested 8 hours but not 10 hours would be short by essentially the 2 hour maximum with virtually no distribution at all amongst the 1 minute to 1 hour 59 minute range. The basis for recommending 2 more pilots for the 10-hour rule is not credible.

NASA Recommends adding 4 Pilots for Compensation Day Coverage – Based on What?

On page 42, NASA recommends adding 4 pilots for comp day coverage, but based solely on their presumption that 1,210 call backs is normal or reasonable. This is contrary to the historical proof that call backs and comp day accrual can be reduced at TAL (or greater) workloads.

In fact, by comparison, in 2011 workload was over 150 and pilots averaged only one call back every other month for 316 for the entire year.. The 2018 per pilot workload was comparable to 2011 which had 896 fewer call backs. That is a very significant difference. Yet, NASA still used 2018 as the baseline for their model and recommendations.

PSP & NASA Throw in Two More Pilots to Cover Future Work Hour Restrictions

On page 42, NASA just throws in an additional 2 pilots for good measure. They justified it by alluding to "future work hour restrictions that could not be modeled". This is arbitrary. There is no factual basis asserted for this, PSP submits no evidence or argument to justify this request, and it is an reflection of an exercise in pure speculation which the BPC must avoid.

¹ We note that PSP doubled this to 4 pilots; another inconsistency between PSP and NASA (see footnote 14 of PSP's submission).

PSP's NASA Study to Set the Number of Pilots is Fundamentally and Materially Different than the NASA Fatigue Study Completed for the State of California's Board of Pilot Commissioners

The differences between the NASA study performed for PSP and the one performed for California state Board of Pilot Commissioners are stark. Both reports address pilotage and fatigue yet they differ dramatically, fundamentally, and materially on things like definitions, fatigue management, and final recommendations.

While the scope of work for the PSP NASA report has not yet been disclosed, we are aware of many differences in recommendations between the two studies because the scope for the California study was negotiated with the state Board publicly after an RFP, supported by PMSA. The California pilot fatigue study was described as follows ("San Francisco Bar Pilot Fatigue Study" July 2018, Preface, pg. 2):

This study examines the effect of work and rest periods on physiological and psychological ability and safety for maritime pilots licensed by the Board of Pilot Commissioners (BOPC) for the Bays of San Francisco, San Pablo, and Suisun. It contains the key deliverables specified in the "Pilot Fatigue Study Request for Proposals (RFP)" issued by the BOPC in 2016. That document stated:

Key deliverables will be recommendations to the Board with respect to:

- 1. How to prevent pilot fatigue and ensure safety, taking into account operational considerations and the need to facilitate safe but ongoing waterborne commerce on the waters under the Board's jurisdiction.*
- 2. Fatigue mitigation/management systems.*
- 3. Recommendations from which the Board can promulgate regulations intended to prevent pilot fatigue.*

This study was conducted by staff of the San Jose State University Research Foundation (SJSURF) based at NASA Ames Research Center, in collaboration with Dr. Erin Flynn-Evans of the NASA Ames Fatigue Countermeasures Laboratory. The work was performed under contractual agreement 15M900007 between BOPC and SJSURF.

The California study made no reference to setting of the number of pilots in its scope, as it was purely focused on issues regarding fatigue.

Other differences were fundamental, such as definitions commonly used in the pilotage world. In NASA's fatigue report in California, meetings were not included as part of a pilot's workload. In PSP's report, meetings featured prominently in the definition of "assignment". PSP's definition of assignment also differs from the WA BPC definition which focuses on piloting.

Finally, the California study ended up making 19 recommendations to address potential improvements to fatigue management. Of those 19, only one addressed the number of pilots, and even that recommendation did not solely advocate for an increase in the number of pilots licensed – rather it recommended “solutions to increase the number of Bar Pilots *available on the board at any given time*” and suggested that this might be achieved through consideration of optimization methods such as “reducing the amount of ‘other duties’ performed by Bar Pilots” or “increasing the number of Bar Pilot licenses.” (Study, Recommendations, pp. 79-80)

Contrasting the comprehensive recommendations of the publicly-funded and managed NASA study in California with PSP’s privately-contracted for NASA report which has exclusively focused on the need to dramatically increase the number of pilots, only serves to demonstrate that PSP has not submitted a proposal which fully complies with the RCW.

Skewed Pilot Workload Example Further Demonstrates NASA Report Limitations

On page 25 of the PSP-commissioned NASA report, NASA inserts 20-week graphs to show the watch schedule for a single pilot and the days that individual pilot actually worked. But they did not use an “average” over a number of pilots and instead chose a pilot timeline with a workload level that if applied for one year would only require 39 working pilots – that is a skewed representation. It seems NASA (or PSP) chose to use an exception to prove “their” rule or in this case workload picture.

Here are the specifics: NASA selected a pilot that did 71 ship assignments in the 20 weeks graphed. On an annualized basis, that would be 187 assignments or 71 assignments over what they recommend in this report and 42 assignments over the TAL. NASA did not call this fact out leaving the reader only this description: “An example of the watch schedule for a single pilot is shown in Figure 7.”

This example leads readers to inaccurate conclusions. NASA should not have concluded it was academically credible to use such an example without explicitly identifying and treating it as an atypical pilot workload while also not showing the other extreme and normalized workloads over time. There is no academically credible explanation for this.

Lastly, PSP includes comparisons with other pilotage grounds; please see PMSA Comments on our May 6, 2019 submission. There are significant differences between most pilotage grounds so Long Beach JPS pilots doing over 40 assignments each a month is more comparable to Fraser River in the PSP example than to say the BC pilots that travel as much as 930 miles to an assignment.

PSP Positions are Inconsistent – Here are Just a Few Examples

Example 1: PSP makes the following statement claiming efficiency and economies will be destroyed if there are too many pilots (reducing workload to less than 149 assignments per pilot per year).

“Licensing trainees when they complete training – even if they are not needed – will largely destroy this efficiency and deny the board and industry the economies made available by the board’s reduction of the number of pilots to 54.”

PSP: May 11, 2010 (Attachment H)

Example 2: PSP repeatedly complains about finding pilots for peak days but years ago they were explicitly asked: Does the 2-watch system create problems for “staffing to the peak?”

PSP Answer: *“Except during the pilot shortage of 2004 to 2008 caused by an inadequate number of pilots being licensed, there have not been problems staffing to the peaks.”*

PSP: March 9, 2009 (Attachment I)

An academically credible approach would have included a review on workload, TAL and number of pilots in past years to find out why staffing to the peak was not a problem then but is reported to be a problem now.

Example 3: Does PSP consider some meetings discretionary? The answer is yes but PSP doesn’t list meetings that way in their activity reports.

“ In 2005, PSP stopped training and discretionary committee meetings in the summer.”

PSP: March 9, 2009 (Attachment I)

Note: There are now a very high number of meetings held on Tuesdays (see NASA report and discussion below) and a significant number listed as UTC. Do these meetings lead to shortages and call backs? Did NASA consider all meetings to be equal to each other and to a ship assignment? Is If so, based on what criteria? Did they find BPC criteria equating any and all meetings to a ship assignments? The answer appears to be “No”.

Example 4: PSP implements cruise ship round trips and touts success in eliminating accrual of comp days during peak cruise season. Now PSP seeks to eliminate this. **(Attachment J)**

PSP: Now that the pilot shortage appears to be over, we have been able to implement some changes to the dispatch system that we believe will reduce the need to hire comp time pilots to sustainable levels. In July of 2009, PSP started dispatching pilots to round trips on incoming cruise ships... Under the arrangement, a pilot bings the ship to Seattle arriving early in the morning. The ship provides a quiet stateroom free from the noise and confusion... (We have had very little difficulty with this and have only had to pull one pilot off the ship due to inability to get quiet rest). The pilot then gets proper rest on board and takes the ship out late in the afternoon. ... this change essentially eliminated the accrual of comp time day liability for the remainder of the summer of 2009.

NASA states that pilots can't get good rest doing this. The rest hour rule is set at 10 in order to get 8 good hours of rest. There is no commute from the bridge to the stateroom and back to the bridge so there is plenty of time to get 8 hours of good rest on the cruise ship (specifics available from the cruise sector and Commissioner Krombeen).

Yet, this safe and efficient evolution is now being eliminated and will likely increase comp days and repos as well per past assessments by PSP.

Example 5: PSP uses TAL to reduce pilots twice in 3 months – no mention of call back or delay or fatigue issues. (**Attachment K**)

PSP requested another decrease in the number of pilots months after the BPC reduced pilots in November of 2014. Just three months later, PSP sought another decrease in the number of pilots to 53 using a TAL of 145. There was no discussion of fatigue issues, comp day accruals or delays. Now, at similar workloads, a sky is falling picture is being painted.

So PSP wanted to reduce pilots and claimed efficiencies and economies would be destroyed with too many pilots but now they want to increase the number of pilots by 22%. They registered zero concerns about delays, call backs or fatigue in these submittals. So what exactly is driving their position now?

Example 6: PSP is inconsistent in reporting the average length of an assignment.

PSP reported bridge time plus travel increased 35% since 2015 (see page 5 of PMSA May 6, 2019 submission). That would require travel time to increase 225%.

PSP Claims Pilots On-Call Half the Year- But Data Reveals a Different Story

PSP continues to state they come from the maritime world where a half time on and half time off rotation is the norm. Ship crew rotations typically follow this model where half time on is on-board ship (not just in the area) and on-watch for navigation officers means actual bridge time as dictated by watch schedules. Recall that BPC defines on day of duty time equates to on day of service. Pilots claim to be on duty 181 days a year (178 plus 3 during cruise weekends). We are not sure why the half year isn't 182.5 which would be another 75 duty days per year.

We also know that all pilots claim a full day of duty on transition Tuesday's even though less than half of that number are actually needed to pilot ships that day (see assignment and dispatch records, NASA report). This claimed extra day per watch cycle then apparently justifies 14 days of vacation on duty days effectively reducing pilot duty days to 168 per year and that is before considering other reasons a pilot might be unavailable for assignment on a duty day. PSP and NASA both point to an annual number of meetings including the significant number held on transition Tuesdays when most pilots are listed as being on duty but not piloting. This double counting is then used to justify a request for more pilots.

If each licensed pilot was available for dispatch half the year then there would be 24 to 25 pilots available each day at current pilot numbers. That is not the case. Based on BPC staff reports, it is more common to have 10% to 20% of on duty pilots NOT available for ship assignments each day. The NASA report stated that available pilots would be reduced by 2-3 per day just due to vacations. This is mathematically inconsistent with claims of each pilot stands watch 181 days each year. Doubling up on transition Tuesdays and then taking 14 duty days off is a primary cause of call backs and delays as is vacations on top off too many comp days taken on the same day. We recommend the BPC address this issue.

Recall that the average number of assignments each day is 20 including cancelations and multiple harbor shift assignments. If 25 pilots were actually available for dispatch each day at current workloads, the number of call backs needed would be virtually eliminated most days. Accrued comp days would be burned and overall reduced. The NASA study did not assess this "factor" but seemed to simply accept the current system as described by PSP.

PSP Unsuccessfully Proposed 3 "Repos" Should Equal One Pilot Workday in 2010, Now They Seek Full One-to-One "Repo" for Workday

"Because of the increasingly uneven nature of ship traffic calling here and a large increase in the number of licensesin 1994 there were 870 repos. In 2009, there were 1,633. ... assuming that three repos equals a workday, this is an additional 254 work days per year over what prevailed in 1995."

PSP: February 11, 2010 (Attachment L)

This "three for one" equivalency was never adopted in the RCW, the WAC or by the BPC in its methodologies. Nevertheless, PSP and the NASA Study now list one repo as if it is equal to one full workday. The PSP submission once again attempts to equate repos and any type of meeting or training with a duty day, work day or actual pilotage assignment. Also, there was zero examination of how to reduce or minimize repos.

PSP's statement above begs the question of why repos have doubled and what can be done to minimize repos and why did PSP consider three repos to be equal to a day. One can envision several ways to reduce and minimize repos but that clearly was not part of the PSP submission or the NASA report.

PSP Claims Traffic Unpredictable But They Board on Demand – What are the Facts?

There is a level of predictability via advance notice of arrival, pilot ordering and ship schedules like cruise, Tote, Matson, Westwood and others. Not every ship has the schedule changes of a grain ship or tankers, especially containerhips plying waters where they strive to meet their schedules for terminal call windows and shoreside labor and some are in tight windows (like

Tote and Matson). There is also real time tracking up to days ahead of time for those arriving from sea.

Pilot orders are made ahead of time per the pilot ordering procedures which all agents are familiar with so the “board on arrival or on demand” language used does not make sense to anyone that orders or uses a pilot.

While schedules may vary, traffic is not as unpredictable as PSP or NASA describe it. There are many in the maritime industry who must effectively plan around ship movements (tugs, marine terminals, agents, inspectors, fueling barges, etc.).

In addition, NASA-identified peak job times, peak meeting days and peak repos days. This data can and should be used to plan pilot availability. However, PSP continues to claim that other than cruise ship schedules pilot demand is too unpredictable.

Meetings, NFFD, Education, Training, Upgrades and Other Activities

PSP has reported these activities for a number of years including during numerous processes for setting the number of pilots by the BPC. In other words, because the BPC was fully aware of these activities when they made number of pilot decisions in the past, the presence of meetings and other activities are built into the current baseline of workload along with other factors like rest hours.

The BPC has numerous documents from PSP summarizing meetings attended along with repos, training, sickness/injury, upgrade trips and so on. We note that there has never been a documented decision by the BPC to equate all of these activities with an actual pilotage assignment but there is plenty of documented evidence that the BPC was made aware of these activities. We are also not aware that the BPC has ever conducted an audit of all these activities.

Conclusion

PSP, as the moving party, has not provided sufficiently valid arguments to justify granting their request. Simply put, they have not demonstrated a need to increase the number of pilot licenses and once again are overreaching using cherry picked data and examples to try to make their case. Frankly, we were surprised that NASA didn't identify the skewed nature of the data and timeline provided to them by PSP.

Board of Pilotage Commissioners
PMSA Rebuttal to PSP Request for Additional Pilots
June 12, 2019
Page 16

One thing is clear: there is no emergency to increase the number of empty license slots. Even PSP calculates that full utilization including meetings, repos, training and assignments would have required 51 working pilots in 2018. And, we are on pace to decrease assignments by 2.4 pilots in 2019 likely leading the BPC to consider a reduction in pilots later this year.

We recommend the Board focus on filling existing pilot license slots with working pilots while engaging in further study as determined by the Board and not based on interested party directed studies with non-disclosed scope of work agreements.

Thank you for the opportunity to comment.

Sincerely,



Captain Mike Moore
Vice President

Attachment A

BPC Chair Tonn sent PMSA a letter on May 22, 2019 relaying BPC questions regarding the PMSA submission. We have provided written answers to questions for PMSA here:

1. Is it correct that PMSA's request for a decrease in the number of pilots is primarily driven by financial considerations?

No, we fully support the entirety of the Pilotage Act.

2. Has the PMSA recommended an increase in the number of pilots to the BPC in the last 10 years?

All PMSA submissions to the BPC are public records. Our positions are clearly set forth in each of them.

3. Does PMSA agree that avoiding delays for vessels awaiting an available pilot is an appropriate goal for the BPC?

Yes along with statutory mandates to optimize pilot service including but not limited to optimized watchstanding, dispatch, vacation and comp day policies, meeting categorization and policies, ordering rules, minimization of travel and repos, maximization of multiple harbor shift days in compliance with rest rules, leveraging opportunities like cruise ship round trips and so on. Matching a rested available pilot to arriving and departing vessels without delays is achievable by many different approaches.

4. What is your understanding of "board-on-arrival" service as that term is used by PSP?

This is not a RCW, WAC or BPC term. It is a PSP term and it is not an accurate description of the current requirement to place orders well ahead of time per PSP policy.

5. 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?

We did not describe it as an appointment system but instead responded to PSP constantly referring to the BC appointment system. As for ordering – BC pilots are a service provider and asked to meet the ship when it chooses to arrive - not the other way around. The BC system requires ordering lead times (like in Puget Sound): 12 hour lead time North coast. 10 hour lead time South coast and while these are the minimum ordering times, many agents order a pilot much further in advance. For example, as of June 5th there were 159 orders out to June 13th. In BC there are terminal "berthing windows" and vessels might decide to head south first if they're too late for their "berth window".

6. 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?

PMSA and its members prefer that a compulsory pilotage ground provide competent, rested pilots to all arriving and departing vessels without delays.

7. 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?

PMSA and its members prefer that a compulsory pilotage ground provide competent, rested pilots to all arriving and departing vessels without delays.

8. Rather than licensing additional pilots, would PMSA prefer that pilots delay vessels when there is no on-duty rested pilot?

PMSA and its members prefer that a compulsory pilotage ground provide competent, rested pilots to all arriving and departing vessels without delays.

9. What safety factors did the PMSA address in its suggestion that the number of pilot licenses should be reduced?

PMSA didn't recommend a reduction in the number of pilot licenses.

10. What does PMSA consider a "bona fide emergency" as that term is used in PMSA's submission?

That should be defined by BPC. An example would be the BPC Chair open letter to industry in July 2018 describing a temporary emergency that was based on an unprecedented shortage of pilots due to pilot retirements, medical issues, and trainees not ready to be licensed from the pilot training program.

11. Would having insufficient pilots to provide service without delays constitute an emergency?

Again the BPC is the entity to define a pilotage emergency. A logical first question would be to define insufficient pilots – does that include when the on duty available number of pilots is reduced to 13 on a particular day as highlighted in the PSP submission? The logical next question would be to identify and assess the policies and conditions that created such a condition.

12. 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?

Again BPC has to make that determination and the BPC must manage the training and licensing pace the best they can to have trainees ready to license when there are openings. There is a communication from the previous BPC Chair describing that is acceptable to temporarily exceed the number of pilots authorized when a candidate is ready for licensing

and there are pending retirements on the horizon; PSP objected stating: "Licensing trainees when they complete training – even if they are not needed – will largely destroy this efficiency and deny the board and industry the economies made available by the board's reduction of the number of pilots to 54."

13. PMSA states in its submission that "PSP report[s] that pilots take two weeks of vacation each year mostly on duty days meaning duty days stood would be 168 and not 182." What/who is the source of that statement what precisely was said by that source?

The source is PSP data and PSP and NASA descriptions and simple math. PSP states 178 days of duty plus 3 in the summer for a total of 181 so using that number it would be 181 minus 14 days of vacation during duty days equaling 167. Pilots all claim a full 24 hours of duty on transition Tuesdays thereby creating a double counting situation that apparently is used to validate vacation policies. The actual dispatch records of offgoing and oncoming pilots reveals that each section does not stand a full day of dispatch ready duty on transition Tuesdays. A number of pilots in each section could completely take transition Tuesday days off and shift that duty day to another day but instead all pilots count it as a duty day knowing only some of them will move ships and then they all still take 14 duty days off.

14. 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?

See the numerous examples in our rebuttal which highlights statements from PSP and BPC Chair describing the "unprecedented" condition and the "lowest number of pilots available for duty in recent memory".

Attachment B: PMSA Comments on PSP Submission and Enclosed NASA Report

June 12, 2019

The below list while extensive is not comprehensive. It is provided here as a set of examples to augment points made in our response letter outlining why the NASA report chartered by PSP is inadequate to be relied upon by the State of Washington via the BPC to make pilotage oversight decisions regarding the number of pilots.

Glossary Flaws, Gaps, Inconsistencies, Establishing Non-BPC, RCW or WAC Definitions

Assignment: NASA definition includes “any” meeting whether discretionary or not and even PSP has admitted there are discretionary meetings per communication to the BPC. Also, including all meetings regardless of meeting length and equating it an actual pilotage assignment is wrong by the application of any common sense evaluation. NASA also equates all repositions to be equal to a workday which is flawed. Even PSP has documented their view equating 3 repos to be one day (not a BPC determination). And, NASA provides no explanation of why repos have essentially doubled from years ago even though we now have fewer assignments and more tools and data to better predictable shipping. Did PSP provide this definition? We wouldn’t know because we never saw how the scope of work was developed. This expanded definition greatly skews the model and results.

Work period/duration: NASA includes call time but has BPC, the RCW or WAC ever defined what this is? How much variance is there in “call time”. How does this relate to transporation and bridge time?

Off-Watch: states the 13-day period during which a pilot is not avialble for pilotage. Not true. All pilots do not stand a full 24 hours on transition Tuesday’s so this should be 14 days off and 14 days on (per data tracking of individual pilots from individual pilot assignments submitted to the BPC). Additionally, off duty pilots are available on a limited basis via the call back dynamic.

Trailing 12 months: indicated October 2017 to September 2018, but at an FMC meeting, they also considered calendar year 2018, yet is unclear if the model was soley built on the trailing 12 months or the calendar year.

NASA did not include a copy of or an analysis of the PSP Fatigue Management Program (FMP) that PSP referred to as recently as March 29, 2019 in a letter to Chair Tonn (Appendix A stated that PSP established a FMP subsequent to the NTSB report on the 2010 Eagle Etome indident).

Pg 7: NASA states that on average there are more than 7,000 pilot driven ship movements per year in Puget Sound. This is not accurate as the actual number of pilot driven ship transits is less than that once cancelations and second pilot assignments are subtracted from total assignments.

Pg 7: Puget Sound does not include 7,000 square miles of waterway. It is only a fraction of that area and much of it is simply the eastern end of the SJDF between the pilot boarding area (technically not Puget Sound by definition) and the San Juan Islands. Clearly, NASA did not do any actual independent analysis of the size the waterways used in the Puget Sound pilotage district.

Attachment B: PMSA Comments on PSP Submission and Enclosed NASA Report

June 12, 2019

Pg 7: NASA describes a model of service based on a pilot being dispatched “upon arrival” or as requested for departure. The reality is pilots are ordered ahead of time consistent with pilot ordering procedures which involve up to 24 hours lead time; often orders are placed with much longer lead time than this all the way up to orders for cruise ship piloting months ahead of time. NASA does not address lead times ahead of dispatch which allowing is relevant to fatigue management as a pilot can better plan rest, travel and preparation. This is a huge miss.

Pg 7: NASA states ... half of the licensed pilots are scheduled for 15 consecutive days at a time. The data does not indicate “any” days where half the licensed pilots were on duty available for assignment. Furthermore, pilots are not on call for 15 consecutive days. They are counting a full day (24 hours) coming on watch on Tuesday’s and a full day (24 hours) coming off watch and neither of those things happen.

Pg 7: NASA indicates a pilot may be called to board a vessel at any time of the day or night but fail to mention the lead time notification before the assignment which allows for dispatch and personal choice management.

Pg 8: the goal of the study was to evaluate one year.. identify potential areas of concern, to recommend work hour changes and to determine how many pilots should be licensed in order to continue board-on-arrival service while minimizing the impact of fatigue.

Pg 8: There is mention of NTSB investigations but no analysis of Puget Sound piloting accidents where fatigue was found to be a cause. With more than 300,000 piloted transits over the past 40 years here, why not look at that data set to draw conclusions about the outcomes produced by the levels of fatigue experienced by pilots here under this system at various workloads.

Pg 15: NASA refers to FAA but the citation isn’t the hours of service rules: FAA part 121 section 117 isn’t it; NASA must have meant Part 117 and here is a rule summary: The new rules **limit** pilots to a **maximum** of **60 hours** of flight duty per week, defined as 168 consecutive **hours**. In any consecutive 28-day period, a pilot cannot exceed 290 **hours**, of which no more than 100 can be flight time. During 365 consecutive days, pilots cannot exceed 1,000 flight time **hours**. <https://www.ecfr.gov/cgi-bin/text-idx?SID=26a81ddf4c00f1ead0370bb29c786364&mc=true&node=pt14.3.117&rgn=div5#se14.3.117.111> Airline pilots must make faster decisions and mistake outcomes are magnified due to speed and precious cargo (passengers).

Pg 15: NASA states they used dispatch data to generate a predictive model to estimate the number of pilots needed to provide “board-on-arrival” service. What dispatch data? Why not use advance notice of arrivals, pilot ordering and ship schedule data along with actual piloting days/times to identify peaks and busy days to allow better pilot availability planning. For example transition Tuesdays are NOT as busy as several other days but the system currently is described as making all pilots available that entire 24 hours so 52 available for less than 20 assignments (not efficient).

Pg 15: The Chair Tonn Letter for August 10, 2018 was not a scope of work letter.

Attachment B: PMSA Comments on PSP Submission and Enclosed NASA Report
June 12, 2019

Pg 15-16: NASA lists some additional factors but does not mention lifestyle pilots, call back and comp day management to limit comp day creation of more call backs, vacation “policy” or variance of workload demand by day and season but do include PSP admin requirements from PSP memo to BPC January 17, 2019.

Pg 16: look at calendar year to evaluate the 10 hour rest period beginning mid-October 2018; Captain Ivan Carlson said 500 assignments would be impacted (from a minute to 1 hr 59 minutes each) but NASA findings were much greater. Did NASA evaluate the last three months in an attempt to measure the impact; if so those three months had a 70% spike of pilots doing 5 or less assignments which would skew the data as more pilots were not available for dispatch.

Pg 16: NASA states comparing the trailing 12 months of Oct 2017 to Sept 2018 to the calendar year 2018 allowed them to evaluate “these changes” – indicating more than one change; what were all the changes? They were not listed or described.

Pg 18: Linear regression model to “estimate” the number of pilots required to “handle” all work assignments apparently dependent upon input of PSP regarding meetings etc.

Pg 18: The NASA model allowed for intuitive inputs by PSP to estimate a variety of hypothetical changes but specifics are not provided so there is no way of evaluating this element of the model.

Pg 18: Fatigue risk management review presented to the BPC in Table 2. When? I sent a question to BPC Staff regarding their recollection of a Table 2 presentation but there was no recall of it. NASA limited the predictor factors and did not include factors like lead time ahead of each type of assignment so proper fatigue management decisions can be made.

Pg 18: NASA states these predictors were screened to confirm a linear relationship to staffing levels (where is the detail on this screening?). NASA states that predictors at $p < 0.20$ were considered significant but didn’t explain this particular threshold.

Pg 18: NASA used an example highlighting the impact of callbacks on pilot staffing needs and estimates for the number of callbacks per day. But, using skewed data from 2018 where the callback frequency was extraordinarily high due to a set of anomalous circumstances including too many pilots taking comp days and vacation on the same day distorts the results: skewed data in and skewed results out.

Pg 18: NASA states that approximately half the pilots are scheduled to work most days (define work). The actual data demonstrates the available pilots on duty each day are less than half the pilots and this ends up generating call backs particularly when too many pilots take vacation and comp days at the same time; this is a big issue where pilots claim to be on call half the year but are not.

Attachment B: PMSA Comments on PSP Submission and Enclosed NASA Report

June 12, 2019

Pg 18: NASA recommends adding more pilots to deal with accrued callbacks (comp days) and hypothetical work hour changes but where is the detail and backup on this recommendation?

Pg 19: NASA included pilots attending meetings in the same list as a vessel move or callback but they are not the same. They also did not define whether a meeting was essential, discretionary or the length of the meeting. So presumably, in NASA's view, a one hour meeting to brainstorm UTC tariff strategy is the equivalent of piloting a tanker under tug escort to Cherry Point.

Pg 20: Figure 3 seems to indicate no pilot did over 180 ship assignments and all but one were much lower than that. The 2018 data shows a pilot completing 223 assignments and the most productive 30 pilots averaging 167.5 which is very different than what this figure shows in the trailing 12 months (if that is what this is).

Pg 20: NASA states there were 25.3 assignments on an average day yet there were only 20 "piloting assignments". NASA expands the definition of assignment to include repos, meetings etc. PSP in the past has attempted to equate 3 repos to one day (insert citations) but this was never codified. Now NASA under PSP scope of study, equates one repo to one ship movement assignment.

Pg 24: NASA again states that pilots complete watch schedules of 15 days on with 13 days off (really it is 14 and 14 on average and this needs to be corrected) and NASA states that this schedule has the potential to cause fatigue issues but they don't explain how nor do they recommend or evaluate alternative watch schedules; why?

Pg 25: NASA provides an example of a pilot work schedule over 20 weeks. But they did not use the "average" pilot. Their example uses a pilot that did 71 ship assignments (not meetings or comp days) in 20 weeks. On an annualized basis, that would be 187 assignments or 71 assignments over what they recommend in this report and 42 over the TAL. This kind of cherry picking skews the study.

Pg 30: NASA describes a work period beginning with getting called and the job time as the time the pilot board the vessel. Does this mean if a pilot is called 16 hours before a "job" that those hours are considered work? If so, then when the PSP President selected pilots to move the Shell Oil Rig and let them know days in advance that all that advance notice was considered work? All the numbers on page 30 are skewed away from actual piloting work and more towards non-piloting time.

Attachment C



STATE OF WASHINGTON
BOARD OF PILOTAGE COMMISSIONERS

2901 Third Avenue, Suite 500 | Seattle, Washington 98121 | (206) 515-3904 | www.pilotage.wa.gov

Sheri J Tonn
Chair

July 20, 2018

Ned Kiley
Vice Chair

OPEN LETTER TO SHIPPING COMPANIES AND AGENTS

Chuck Adams
Commissioner

Mike Anthony
Commissioner

Re: Occasional and Temporary Vessel Delays

Eleanor Kirtley
Commissioner

Dear Shippers and Agents,

Phil Morrell
Commissioner

Puget Sound Pilots is temporarily experiencing an unprecedented shortage of pilots due to pilot retirements, medical issues, and trainees not ready to be licensed from the pilot training program. The data is clear. There is a gap in pilot availability and pilotage needs.

John Scragg
Commissioner

We anticipate there may be occasional and temporary delays through the rest of the summer and into the fall. We trust you realize that safety is our number one priority. Possible delays for vessels and their schedules will be assessed on an individual basis with a goal of minimizing impacts as much as possible. PSP dispatchers will work to manage this as best they can.

Grant Stewart
Commissioner

Sara Thompson
Commissioner

Feel free to reach out to us if you have concerns and, thank you for your understanding.

Sheri J. Tonn, Chair
Board of Pilotage Commissioners

cc: Mike Moore, PMSA
Eric vonBrandenfels, PSP
Lou Paulsen, NWSA
Board of Pilotage Commissioners

Attachment D



Dr. Sheri Jeanne Tonn, Chair
STATE OF WASHINGTON
BOARD OF PILOTAGE COMMISSIONERS
2901 Third Avenue, Suite 500
Seattle, Washington 98121
TonnS@wsdot.wa.gov
(206) 515-3904

VIA ELECTRONIC MAIL

7/12/2018

Dear Chairwoman Tonn,

Per your attached request, Puget Sound Pilots is submitting this memo in support of our request regarding adding the pilotage shortage to the agenda of the July 17, 2018 public meeting of the Board of Pilotage Commissioners.

Puget Sound Pilots are experiencing a higher number of jobs (June 699). Traffic volume is expected to remain high through the cruise season ending in October.

Puget Sound Pilots are operating with the lowest number of pilots available for duty in recent memory. Today 46 pilots including the president are available. Four pilots are unfit for duty, two of which are on major medical. One of the four may return very soon. Another one of the four will likely go on major medical for up to 6 weeks. Ed Marmol will stop moving ships next month. This could bring the number of pilots available to move ships down to 44 pilots depending on when one of the pilots on major medical returns.

In addition, in June, pilots were called back from respite 140 times to move ships and used 43 "Bank days"; accruing 97 comp days on the books.

In exhausting all efforts within our control, we have been able to avoid delays with the exception of one Evergreen ship (4-hours) when there was no on duty rested pilot available nor was there a pilot on respite available to be called back to work a comp day. During the pilot shortage, we anticipate a heightened risk of vessel delays and other risks, especially during the peak season for vessel traffic.

Given the circumstances, we requested to discuss this agenda item with the intent of a collective solution for communicating this issue to all stake-holders.

Thank you for putting this on the agenda.

Captain Eric vonBrandenfels
President
Puget Sound Pilots

CC: Jaimie Bever, BPC Executive Director
Linda Styrk, PSP Executive Director

Attachment: email titled *Re: BPC - Meeting Notice and Agenda - Correction Requested*

Attachment E



PUGET SOUND PILOTS
Protecting your waterways since 1935

ORIGINAL

March 21, 2012

Captain Harry Dudley, Chair
Board of Pilotage Commissioners
2901 Third Ave. Suite 500
Seattle, WA 98121

Re: WAC 363-116-065 Proceeding

Dear Chairman Dudley:

This letter contains PSP's submission of data for consideration of the board in setting the number of pilots under WAC 363-116-065. A copy of the WAC is attached.

In the early part of 2010, the board undertook an extensive (spread over many months) analysis under the WAC and followed a two-step process in setting the number of pilots: determine a Target Assignment Level and divide that number into the anticipated traffic (adding one for the president). The board set the TAL at 145 in April 2010 and put the number of pilots at 54.¹ It simply divided 2009 traffic of 7,669 assignments by 145 and added one for the president. As traffic continued to decline, the board reconsidered and reduced the number of pilots at its September, 2010 meeting to the current level of 52. PSP now has 51 licensed pilots.

Given the stabilization of traffic in 2010, its slight increase in 2011, its very slight increase so far in 2012, and the continuing increase in non-shipboard demands on pilots, it now appears that the number of licenses should be increased.

¹ The TAL had been 149 since it was last set in 1995. From 1995 to 2010, increases in continuing education, board activities, safety committees, Coast Guard meetings, repositions, health problems and the board's license upgrade requirements had added the equivalent of 15 extra days of work to each pilot's workload.

Here are the recent trends in traffic²:

PSP TRAFFIC VOLUME - 2008 to 2012														
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	Diff. From Prior Year
2008	665	648	648	625	785	743	760	698	649	677	679	601	8,173	
2009	667	557	660	592	679	671	703	702	638	662	602	536	7,669	-6.17%
2010	570	593	614	582	665	654	668	667	611	588	591	536	7,388	-4.32%
2011	611	568	615	564	666	689	749	716	624	588	588	634	7,616	-3.79%
2012	630	571											1201	-1.80%

2011 traffic followed an interesting pattern. Except for the transitory bulge in tanker traffic in the summer months (about 150 jobs), ship traffic was flat through November. As we have discussed at earlier board meetings, December showed a dramatic increase over the prior December of almost 100 assignments. The reasons for this are not clear. Through February of this year, we have 22 more assignments than last year – an increase of 1.8%.

The 7,616 assignments in 2011 indicate a pilot corps of 52.5 watch standing pilots plus the president. If we disregard the summer tanker bulge (it has since disappeared), the target number becomes 51.5 watch standing pilots. Even a slight increase in container, bulk, auto, tanker or cruise ships would move this number toward 52. Adding the president brings the desired number of licenses to 53.

No one can foresee the future, but here is what we think will happen in 2012:

- Bulk traffic should remain strong;
- Auto traffic should continue at its current elevated level;
- Container traffic should maintain its 2011 increases over 2010 (up 95 assignments);
- Tanker traffic is unknown. The BP fire has slowed traffic, and if the summer bulge is disregarded; 2011 traffic was lower than 2010 which was lower than 2009;
- Cruise traffic will have 6 additional calls in 2012 resulting in 12 more assignments;

² These numbers do not include license upgrade trips required by the board. There were 144 of them in 2011.

- Responsibilities of pilots other than direct ship navigation will continue to grow in 2012:
 - Various board activities and tasks will involve a substantial increased commitment of volunteer time from pilots. Unfortunately, because this often involves the board and its consultants, we are not able to schedule these activities at times of reduced traffic so as to minimize comp days. These activities include;
 - 2012 Pilot Exam including input on exam questions, validation, simulator development and testing;
 - 2012 Train the Trainer class and other changes to the training program process;
 - Two lawsuits against the board requiring pilot subpoenas, testimony and prep work (these have already started);
 - Board required license upgrade trips are not included in the 7,616 assignments for 2011. There were approximately 144 such trips in 2011 and we expect 96 of these trips in 2012;
 - New PPUs and educational programs – this is a major issue that will be addressed by the board and the pilots throughout 2012 and will consume a considerable amount of pilot time;
 - Travel time continues to increase as the Puget Sound surface transportation system deteriorates and is impacted by major construction projects;
- The NTSB and Coast Guard will continue their focus on pilot fatigue as a safety issue. Scrutiny and tightening of rest rules could increase pressure to license more pilots.

2011 Data

We would like to correct any misimpressions that might have been created by PMSA's February 8, 2012 letter to the board on the NTSB Fatigue Management Issues. Despite being written three weeks after submission by PSP of 2011 financial data, PMSA chose to submit out-of-date 2010 numbers in that letter.

Here is what actually happened in 2011:

Number of Assignments	7,616
Number of licensed pilots (not counting the President)	51.58
Number of Licensed pilots unavailable for assignments due to pending retirement	.37
Number of licensed pilots unavailable for assignments due to medical restrictions	1.06
Number of pilots actually available	50.15
Assignments completed per licensed pilot	148
Variation from TAL	+1.8%
Assignments completed per available pilot	152
Variation from TAL	+4.8%
Average Bridge Hours not including license upgrade trips ³	751.5
Average Bridge Hours including license upgrade trips	765.3
Times that a rested on-duty pilot was not available when needed	316
Off duty pilots called back to work (comp time pilots hired)	316
Ship Delays	14
Ships Delays in total hours	7

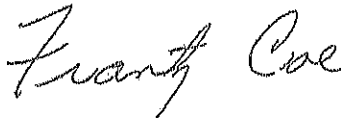
³ Due to the size of our district, the unevenness of traffic, the large amounts of time devoted to surface travel and repositioning's, and the scope of pilot activities that are not on board a ship, bridge hours are not a reliable statistic to use in fatigue analysis. Nonetheless in its 1995 submission on number of pilots, ARCO Marine suggested 722 hours was a good general benchmark to use in this district.

Seattle, WA 98121
Re: WAC 363-116-065 Proceeding
March 21, 2012
Page 5

If we can provide further information, please let us know.

Sincerely,

PUGET SOUND PILOTS

A handwritten signature in cursive script that reads "Frantz A. Coe". The signature is written in black ink and is positioned above the typed name and title.

Capt. Frantz A. Coe
President

WAC 363-116-065

Number of pilots.

- (1) The board will, from time to time, set the number of pilots to be licensed in each pilotage district of the state that is best calculated to optimize the operation of a safe, fully regulated, efficient, and competent pilotage service. This determination will be made by the board at meetings for which the agenda lists this issue as a topic for resolution. In addition, the board shall plan ahead to ensure, to the extent possible, that pilot trainees enter the training program set forth in WAC 363-116-070 so that they complete the training program in a timely manner.
- (2) In setting the number of pilots and making decisions as to when to hold an examination and admit applicants to the training program, the board may consider factors which include, but are not limited to, the following:
 - (a) Policy of the state to ensure safety of persons, vessels, property and the environment by providing competent, efficient and regulated pilotage for vessels;
 - (b) The importance of the maritime industry to the state balanced by the potential hazards presented by the navigation of vessels requiring pilots;
 - (c) The lead time necessary to select and train new pilots;
 - (d) Regional maritime economic outlook, including without limitation: Current economic trends in the industry, fluctuations in the number of calls, the types of assignments, the size of vessels, the cyclical nature of the traffic and whether traffic is increasing or decreasing and the need to minimize shipping delays;
 - (e) Workload, assignment preparation and rest needs of pilots;
 - (f) Trends in size of piloted vessels;
 - (g) Time lost to injury and illness;
 - (h) Anticipated retirements;
 - (i) Administrative responsibilities, continuing education and training requirements consistent with the policy of chapter 58.16 RCW; and
 - (j) Surface transportation and travel time consumed in pilots getting to and from assignments.

Attachment F

- PMSA's Own Analysis Shows Why Averages are Meaningless.

The proof of why use of a methodology based on averages would cripple a fatigue prevention program is contained in PMSA's own analysis. It asserts that pilots could have done their 141 jobs last year in only 82 days. This is 1.7 jobs per day. To reach this result, the only rest rule used by PMSA is the state's seven-hour rest rule; it uses fictitious travel times that completely disregard the deterioration of our surface transportation system, provides no time for post 9/11 security measures, and allows no time for job preparation. PMSA also misrepresents the 2009 average bridge time of 4.92 hours per assignment by asserting that this average does not include cancellations. It does. The average bridge time for ships that actually move as planned is longer than 4.92 hours.

- A Fatigue Prevention System for Pilots Cannot Repeatedly Dispatch Pilots with Minimum Rest.

As we saw during the worst part of the recent pilot shortage, a system does not protect against fatigue if pilots are repeatedly dispatched upon minimum rest. Any system that does so is dangerous in the extreme. Just because we got away with it during the pilot shortage – the peak of which saw 166 jobs per pilot in 2005 (only 7 higher than now suggested by PMSA) does not mean it was consistent with the public protections envisioned in the Pilotage Act. It should also be pointed out that 491 net comp days were created in 2005 at this assignment level.

- Comp Day Accrual Has Become an Indicator of Where the Target Assignment Level Should be Set.

Comp day figures have largely validated the assignment levels set by the board at 149. As pointed out above, net comp day accrual was relatively flat from 1995 until the pilot shortage of 2004-2008. During this ten-year period, there were only 66 net days created. During the shortage, when the Safe Assignment Level was exceeded by 790 jobs, we saw a net increase of 1,259 comp days. We expect this number to go down now that the shortage is over and the pilots have been able to implement dispatch changes. However, it is worthy to note that last year at 141 jobs per pilot, there were only 14 comp days created. This assignment level is also consistent with application of the 1995 ARCO methodology to current times.

Attachment G

adopted in 1995. The safety margins that have been created work very well and it is difficult to imagine any circumstances under which the board would want to reduce them. Indeed, all indications are that they are in need of strengthening given the changes that have occurred since they were last set in 1995.

Our pilotage system has an excellent safety record with no significant fatigue induced incident in the recallable past. It has successfully moved ships when requested – largely by use of a comp day system that self selects non-fatigued pilots – for decades with minimum sailing delays. It does so efficiently with the lowest pilotage rates of any comparable port on the West Coast.

Since receiving PMSA's proposal on Monday of this week, we have been able to complete a cursory review. We must point out that the board established a schedule for written submissions on this issue at its January, 2010 meeting. It provided that *"that data the stakeholders believe is necessary to enable the Board to set the number of pilots be submitted to the Board by the February meeting with clarifications due fourteen business days prior to the March meeting."* At the February meeting, PSP presented the type of evidence required by WAC 363-116-065 and PMSA submitted economic information about shipping trends.

In January, the board set this issue for decision in the March meeting. At that meeting, industry representatives suggested leaving the number of pilots at 57. Despite this schedule of submissions, PMSA has now filed a last-minute letter, that would radically and dangerously change the way that the board has protected against fatigued pilots and kept ships moving. PMSA's blatant attempt to have this issue resolved by an ill-conceived eleventh hour letter should be rejected.

Nonetheless, we would like to point out a few things about this submission in the brief time available before Thursday's meeting:

- The Board's Methodology on Target Assignment Levels Has Successfully Protected the People of Washington from Fatigue Related Losses for Decades.

The board and the PSP rest rules have successfully protected the people of Washington from any significant fatigue related accidents since the board first set the Safe Assignment Level at 149 in 1995. The system developed then, which was based on historical job levels and bridge time analysis, resulted in a target number that has served well to protect against fatigue and, until the pilot shortage of 2004 – 2008, kept ships moving without undue accrual of comp days.

Attachment H

From: Harry Dudley [<mailto:captaindudley@cablespeed.com>]
Sent: Tuesday, May 11, 2010 12:11 PM
To: Doug Coburn; Richard McCurdy; Ned Kiley; Chuck Adams; Pat Hannigan; Norm Davis; Larson, Peggy; Elsie Hulsizer; Lee, Craig W; Guy Bowman; Shawna Erickson; Richard McCurdy
Cc: Gary Nelson; Captain Andy Coe; Walter Tabler; Mike Moore
Subject: Number of Pilots

In their answer to Elsie's questions, PSP makes the following statement:

The chair has indicated that the board might exceed the number of pilots authorized in the recent WAC 363-116-065 proceeding by issuing licenses to trainees when they finish the training program irrespective of whether they are needed. ... Licensing trainees when they complete training – even if they are not needed – will largely destroy this efficiency and deny the board and industry the economies made available by the board's reduction of the number of pilots to 54.

I believe that I have made it abundantly clear that, when I suggested that the Board could, from time-to-time, issue a license to a qualified trainee at a time when doing so would create more licensed pilots than the number set by the Board per WAC 363-116-065, doing so would only be for VERY SHORT PERIODS such as when a pilot is due to retire just a short time after a trainee is ready to be licensed. Doing this avoids having to create elaborate schemes to ensure that the trainee keeps fully up to speed on pilotage skills and to pay the trainee a stipend during such an extended training period. Doing that kind of thing will NOT "...destroy this efficiency..." if it is carefully managed. If anything, it would most likely increase the efficiency of pilotage since it would allow a pilot to be licensed and thus set the clock regarding license restrictions ticking.

RCW 88.16.035(1)(d) makes it clear that in setting the number of pilots to be licensed, the Board should be looking to optimize safety, efficiency and competency. Having a fully ready trainee languish while waiting a couple of months for an active pilot to retire does not improve any of those. Paragraph (i) of that same Section makes it clear that the Board is to provide for efficient and competent pilotage service and to do whatever is reasonable and necessary to ensure that. Having more pilots than the number considered to be "optimum" for short periods of time may be an option that would help accomplish those goals.

We have consistently failed to meet the number of pilots set by the Board for long periods of time without changing the number. Exceeding the number for short periods should be no more of a problem. If any Board member feels that we should never exceed the number, even for short periods, then we can always temporarily change the number (remember, the Board can set the number "from time to time" as long as we put it on the agenda). If the TEC is recommending that a trainee is ready to be licensed and the most efficient course of action is to go ahead and license that trainee even if doing so would create more licensed pilots than the number then set (as the "optimum") by the Board, the Board can put the issue on the agenda for the same meeting at which the issue of licensure is scheduled and, if it is deemed the best course of action, temporarily change the number. I personally do not think that is necessary as long as the overage in pilots is short, but it could be done if the Board prefers that method.

Creating inefficient processes just to avoid a short-term excess of pilots is not in keeping with the legislative mandate set for the Board.

We can discuss in more detail at the meeting. If you have comments now, remember, do not hit "Reply All."

Harry

PSP Response to Questions on Setting the Number of Pilots

March 9, 2009

years or a total of 16 pilot-years (2,920 duty days) that would be needed just to bring staffing up to the Safe Assignment Level. In comparison, because the comp day system adds pilots when they are needed, it only created 1,259 comp days (6.9 pilot-years) during this same period. This is a minimum savings to industry of 9.1 pilot years of compensation (approximately \$3,640,000 @ \$400,000 per pilot per year) during this time period. The actual savings will be greater for two reasons. First, to eliminate comp days the board would actually have had to license more pilots than the Safe Assignment Level. Secondly, many of the comp days earned during this period will be used by pilots to take days off before they retire. When a comp day is used before a pilot stops moving ships, industry is never asked to pay for it. No one recommends a return to the hectic days of the pilot shortage, but it does give a graphic demonstration of how the comp days system saves industry money.

On the service front, the comp days system does everything possible to get a properly rested off-duty pilot to handle a ship at the exact time ordered by industry. It minimizes the chance that a ship will be delayed.

2. Does the 2-watch system create problems for "staffing to the peak?" Has PSP considered and/or made changes to the 2-watch system? If so, what changes have been considered or made and why?

Except during the pilot shortage of 2004 to 2008 caused by an inadequate number of pilots being licensed, there have not been problems staffing to the peaks. Traffic in Puget Sound has become extremely uneven or "lumpy" and any watch system will need to hire comp time pilots on some days. This cannot be predicted or avoided.

The only traffic in Puget Sound that is predictable enough to plan for in a dispatch system is the cruise traffic (5.8% of our jobs). Cruise ships have a schedule and follow it. Container ships have schedules but do not follow them in any reliable fashion.

During the pilot shortage, PSP was hiring comp time pilots all through the year. In 2005, PSP stopped training and discretionary committee meetings in the summer. For example, our Safe Practices, Technology and Reference committees have been able to have their necessary meetings at other times of the year. Our board of directors meets every month. Those meetings are held on Tuesday, when the need for comp day pilots is very rare. Meetings relating to Pilotage Commission business, other government agencies, Coast Guard, *ad hoc* training and simulator exercises and port district driven simulator exercises are beyond our control and take place all year as well. For example, the loaded tanker escort and power/rudder failure recovery trials that had quite a few pilots

Attachment J

PSP Response to Questions on Setting the Number of Pilots

March 9, 2009

participating (mostly off duty) were in the summer. Commission business that demands volunteers sometimes suffers in the summer months.

Unlike most professions and businesses, the overwhelming majority of pilot training is done when the pilot is "off duty". In 2009 pilots were in training for 355 pilot days. 114 of these were on duty and 241 of them off duty. The only on duty training scheduled during any part of the cruise season is manned model with newly licensed pilots who are sometimes forced to go during the summer to comply with the State's requirement that they have simulator training in their first year. To help move training out of the summer, PSP developed manned model training courses with the Port Ash facility (Southern hemisphere) as Port Revel has very limited availability outside the cruise season.

Now that the pilot shortage appears to be over, we have been able to implement some changes to the dispatch system that we believe will reduce the need to hire comp time pilots to sustainable levels. In July of 2009, PSP started dispatching pilots to round trips on incoming cruise ships. (This change was discussed in 2006 but the cruise companies chose not to participate.) Under this arrangement, a pilot brings the ship to Seattle arriving early in the morning. The ship provides a quiet stateroom free from the noise and confusion associated with moving 2,000 people off the ship and another 2,000 back on. (We have had very little difficulty with this and have only had to pull one pilot off a ship due to inability to get quiet rest). The pilot then gets proper rest on board and takes the ship out late in the afternoon. This can be made to work on the cruise ships because they follow a very tight, reliable schedule and can provide suitable rest facilities.

When implemented in July of 2009, this change essentially eliminated the accrual of comp time day liability for the remainder of the summer of 2009. We expect it to be a big help in 2010 as well. However, the assignment level was 141 jobs per pilot in 2010 and we will not know the full effectiveness of this change until we get back to the Safe Assignment Level workload.

The other change that has been made is that all pilots will now work an extra three day weekend in the summer and receive non-weekend days off in the winter. Every weekend during the cruise season – except holidays when traffic is typically lighter - there will be an extra three pilots on duty. It is expected that this change will essentially eliminate accrual of comp days in the summer, but again, we will not know until we have gone through a season with workloads at the Safe Assignment Levels. It is not clear when this will happen, but we will know more after the upcoming cruise season. This rule change may result in a small increase in comp time pilots in the off season, but on balance it is hoped that it will be effective in spreading the workload.



PUGET SOUND PILOTS
Protecting Puget Sound Since 1935

Submission of PSP on the Number of Pilots to be set under WAC 363-116-065

February 19, 2015 Pilot Commission Meeting

Given the recent reduction in the number of pilotage assignments and the other factors listed in the above referenced WAC, Puget Sound Pilots respectfully requests that the Board reduce the number of authorized pilot licenses to 53 at its February 19, 2014 meeting. The last 12 months have seen 7,553 assignments which indicates 52.1 watch standing pilots at the Target Assignment Level. Adding the President brings the number of licenses to 54.

The Pilotage Act amendments in 2004 for the first time required that the board actually set the number of pilots. In response, the board enacted WAC 363-116-065 enumerating some of the factors to be considered. They include¹:

1. Safety of persons, vessels, property and the environment;
2. Importance of maritime commerce balanced by the hazards of navigation;
3. Maritime industrial trends such as:
 - a. Fluctuations in number of calls;
 - b. Types of assignments;
 - c. Size of vessels;
 - d. Cyclical nature of traffic and the current trends;
 - e. Minimization of shipping delays.
4. Workload, assignment preparation and rest needs;
5. Trends in size of piloted vessels;
6. Extent of injury and illness;
7. Administrative responsibilities, continuing education and training requirements;
and
8. Surface transportation and travel time.

The Board set a Target Assignment Level (TAL) at 145 and the number of pilots at 54 at its April 2010 meeting after months of consideration. Since that time, the number of pilots has fluctuated with ship traffic. Since reaching its peak of 55, it was last changed in November, 2014 when it was reduced to 54 pilots.

¹ A copy of the WAC is attached



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Since 2013, the Board has been changing the number of pilots on a more frequent basis than in earlier years. The board has more closely applied the TAL to the number of assignments. As a result, the workload in 2014 was closer to the TAL than it has been since 2003. Pilots in 2014 only fell 85 assignments short of being exactly on the TAL – one half of a pilot. Here is a history of the data since 2003:

	Assignments	Change from Prior Year	Number of Licenses Indicated by SAL/TAL	Actual Number of licenses (Including President)	Assignments per watch standing pilot	Number of Jobs worked in Excess of the SAL/TAL
2003	7,338		50.2	50.5	148.2	-38
2004	7,604	3.6%	52.0	50.8	152.7	184
2005	8,260	8.6%	56.4	50.9	165.5	825
2006	8,372	1.4%	57.2	52.8	161.6	654
2007	8,315	-0.7%	56.8	53.7	157.8	463
2008	8,173	-1.7%	55.9	54.2	153.6	246
2009	7,669	-6.2%	52.5	55.6	140.5	-466
2010	7,338	-4.3%	51.6	55.4	134.9	-550
2011	7,614	3.8%	53.5	52.6	147.6	132
2012	7,765	2.0%	54.6	51.9	152.6	385
2013	7,813	0.6%	54.9	53.1	150.0	259
2014	7,615	-2.5%	53.5	54.1	143.4	-85

Here is traffic for the past 10 years:

MONTHLY TRAFFIC VOLUME 2015														Diff. From Prior Year
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
2005	661	604	656	579	723	734	725	770	766	714	657	671	8,260	
2006	674	656	658	654	728	787	752	795	751	684	667	666	8,372	1.36%
2007	682	643	680	663	717	754	777	735	701	678	666	629	8,315	-0.68%
2008	665	643	648	625	785	743	760	698	649	677	679	601	8,173	-1.71%
2009	667	557	660	592	679	671	703	702	638	662	602	536	7,669	-6.17%
2010	570	593	614	582	665	654	668	667	611	588	591	535	7,338	-4.32%
2011	611	568	615	564	668	689	749	716	624	588	588	634	7,614	3.76%
2012	630	571	596	604	656	745	728	721	660	629	599	626	7,765	1.98%
2013	659	578	621	559	662	679	715	705	657	680	644	652	7,811	0.59%
2014	639	583	623	630	671	690	663	685	597	638	592	604	7,615	-2.51%
2015	577													



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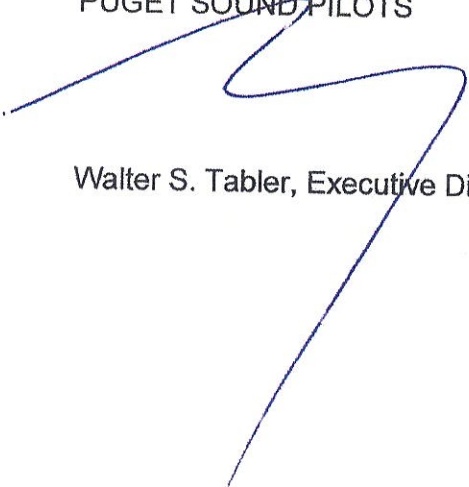
The breakdown of this traffic by ship type is shown on the attached traffic breakdowns for 2015 and January Of 2015. It appears that the decline in assignments that started last July, is continuing.

Part of this is the current disruption in the container trade which may or may not be temporary. However, there is also a marked decline in the tanker trade as well which promises to be more long term. Declines in the price of oil and the opening of more rail facilities at the refineries appears to be reducing this traffic.

The pilots ask that the Board continue this pattern of changing the number of licenses when the assignment levels indicate and again reduce the number of licenses by one, down to 53.

Respectfully Submitted,

PUGET SOUND PILOTS



Walter S. Tabler, Executive Director

WAC 363-116-065 Number of Pilots

(1) The board will, from time to time, set the number of pilots to be licensed in each pilotage district of the state that is best calculated to optimize the operation of a safe, fully regulated, efficient, and competent pilotage service. This determination will be made by the board at meetings for which the agenda lists this issue as a topic for resolution. In addition, the board shall plan ahead to ensure, to the extent possible, that pilot trainees enter the training program set forth in WAC 363-116-078 so that they complete the training program in a timely manner.

(2) In setting the number of pilots and making decisions as to when to hold an examination and admit applicants to the training program, the board may consider factors which include, but are not limited to, the following:

(a) Policy of the state to ensure safety of persons, vessels, property and the environment by providing competent, efficient and regulated pilotage for vessels;

(b) The importance of the maritime industry to the state balanced by the potential hazards presented by the navigation of vessels requiring pilots;

(c) The lead time necessary to select and train new pilots;

(d) Regional maritime economic outlook, including without limitation: Current economic trends in the industry, fluctuations in the number of calls, the types of assignments, the size of vessels, the cyclical nature of the traffic and whether traffic is increasing or decreasing and the need to minimize shipping delays;

(e) Workload, assignment preparation and rest needs of pilots;

(f) Trends in size of piloted vessels;

(g) Time lost to injury and illness;

(h) Anticipated retirements;

(i) Administrative responsibilities, continuing education and training requirements consistent with the policy of chapter 88.16 RCW; and

(j) Surface transportation and travel time consumed in pilots getting to and from assignments.

**Puget Sound Pilots
Traffic Breakdown By Vessel Type**

Vessel / Year	Jobs Average	Total	Diff # to 2013	Diff % to 2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BULKER																
2012	85	1020			91	106	116	106	89	70	91	69	66	67	67	82
2013	76	915			95	82	91	52	64	58	51	64	48	111	104	95
2014	87	1052	137	15.00%	93	113	92	112	67	73	79	66	48	93	126	90
CAR CARRIER																
2012	45	544			43	44	45	43	45	53	46	52	39	43	44	47
2013	44	532			40	43	42	47	42	44	43	42	46	45	50	48
2014	43	524	-8	-1.50%	51	39	47	48	43	46	41	41	29	43	44	52
CONTAINER																
2012	234	2817			239	207	231	223	234	229	233	249	234	263	243	232
2013	241	2893			257	229	228	241	245	246	244	247	239	245	245	227
2014	233	2802	-91	-3.10%	252	212	239	242	257	227	240	236	218	242	206	231
GENERAL*																
2012	27	331			15	15	28	25	32	81	26	23	15	35	14	22
2013	26	317			11	16	18	28	28	24	38	33	39	26	13	43
2014	20	249	-68	-21.00%	17	8	18	18	28	28	14	30	19	33	11	25
PASSENGER																
2012	34	410			1	1	0	2	55	95	100	89	67	0	0	0
2013	31	377			1	5	0	0	59	89	80	84	59	0	0	0
2014	30	369	-8	-2.10%	1	1	0	0	61	85	82	85	54	0	0	0
RO-RO																
2012	20	248			17	21	25	19	21	21	20	22	24	17	20	21
2013	21	260			17	19	26	22	23	21	22	26	18	24	21	21
2014	21	262	2	0.77%	21	20	23	22	23	20	25	19	27	23	18	21
TANKER																
2012	188	2264			214	165	132	171	170	184	206	212	208	191	205	206
2013	200	2407			225	174	203	167	191	192	230	200	200	218	201	206
2014	187	2251	-156	-6.50%	195	177	198	179	185	202	177	201	197	191	176	173
Totals		7509	-192	-2.49%		570	617	621	664	681	658	678	592	625	581	592

*Includes Naval, Other, Reefer

**Puget Sound Pilots
Traffic Breakdown By Vessel Type**

Vessel / Year	Jobs Average	Total	Diff # to 2014	Diff % to 2014	Jan
BULKER					
2013	95	95			95
2014	93	93			93
2015	102	102	9	9.68%	102
CAR CARRIER					
2013	40	40			40
2014	51	51			51
2015	35	35	-16	-31.00%	35
CONTAINER					
2013	257	257			257
2014	252	252			252
2015	219	219	-33	-13.00%	219
GENERAL*					
2013	11	11			11
2014	17	17			17
2015	27	27	10	58.80%	27
PASSENGER					
2013	1	1			1
2014	1	1			1
2015	1	1			1
RO-RO					
2013	17	17			17
2014	21	21			21
2015	18	18	-3	-14.00%	18
TANKER					
2013	225	225			225
2014	195	195			195
2015	164	164	-31	-16.00%	164
Totals		566	-64	**.**%*	

*Includes Naval, Other, Reefer

Attachment L



PUGET SOUND PILOTS

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were be on duty and half off. We do not have a record of the time the pilots devoted to non scheduled TEC issues, but it is extensive.

On a regular basis, the rank and file pilots now:

- Participate in development of exam questions;
- Participate in development and testing of simulator exercises; and
- Have a much more active and demanding role in the training including providing feedback to the TEC about the training experience and the training program, debriefing and evaluating trainees after training trips.

Pilot Safety and Security Responsibilities. One of the major changes implemented since the *Exxon Valdez*, and *Cosco Busan* oil spills and the 9/11 attack is the increased role of pilots in safety and security. For example, in January of this year, all pilots attended a half day session (on two separate days) at the Pier 37 Coast Guard station on security issues. More of these sessions are to follow. PSP has two new standing committees (created in 2007) – Safe Practices and Technology as well as a revitalized Reference Committee charged with researching and disseminating the latest technical information on terminals, dredging and construction projects, channel clearances, least depths and other issues. These committees are essential to maintaining the safety margins that the board demands.

The pilots also participate in a wider array of simulator exercises, education curriculum development and safety meetings with NOAA, VTS and other branches of the Coast Guard. In 2009, in addition to the actions of the President, there were 61 days of pilot participation in these safety and security related meetings. None of this was taking place in 1995.

Repositioning of Pilots. Because of the increasingly uneven nature of ship traffic calling here and a large increase in the number of license restricted pilots, there has been dramatic increase in the number of Pilot Repositions (Repos) since 1996. A repo is needed when a pilot is “on the wrong end” and has to travel to be in position for the next assignment, e.g. a pilot takes a ship to Port Angeles but is needed back in Tacoma for his next job. In 1994 there were 870 repos. In 2009, there were 1,633. Air travel to Port Angeles is not reliable enough to be counted on and the repo trip to or from the station is typically a 2 hour car ride plus the ferry. This averages 3 to 4 hours. Assuming that three repos equals a workday, this is an additional 254 work days per year over what prevailed in 1995.