

## Marine Oil Transfer Spills & Inattention

### OVERVIEW

Inattention is the most cited, immediate cause and contributing factor to oil spills occurring in Washington state. Why inattention occurs - despite the enhanced crew training requirements and oil-spill prevention efforts of the last two decades - can be debated, but awareness of the issue is critical. Numerous countermeasures are available to address the larger problem of inattention, even if the root cause is uncertain.

Ecology's Spills Program investigates oil spills that have occurred in Washington state to determine immediate cause and contributing factors. Since 1999, 129 oil spills and incidents involving commercial vessels have received a higher level of investigative effort. Of the 129 incidents, 126 of these had at least an immediate cause attributed to them using the Pacific States/British Columbia Oil Spill Task Force Data Dictionary.

'Inattention' is the most frequently cited, immediate cause for cases involving oil transfer spills. It is also the most frequently cited contributing factor. A May 2012 report, issued by the U.S. Coast Guard, found in its analysis of U.S. commercial vessel oil spills that "... inattention and procedural errors were the most frequently reported human factors." The Coast Guard also found that more than half of non-casualty oil spills (spills resulting from activities like routine oil transfers) sampled had inattention as the immediate cause.<sup>1</sup>

### WHY THIS MATTERS

The Washington state Legislature directed Ecology to establish a "zero spills" goal. Ecology investigates vessel incidents to determine what went wrong, why, and what can be done to prevent incidents from reoccurring. Ecology inspects oil transfer operations to help ensure transfer personnel remain vigilant, but safe oil transfers require the focused attention of personnel at all times.

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<sup>1</sup> <http://www.americanwaterways.com/sites/default/files/legacy/index/20120507HumanErrorandNearMiss.pdf>



Figure 1 - Sorbent pads recovering diesel oil (pink) spilled as the result of inattention.



Figure 2 - Oil spilled on deck also spilled to the Columbia River. The Ecology investigator cited inattention as a contributing factor.

The Data Dictionary defines inattention as "... loss of attention, not paying attention; the failure to detect, attend to, or be aware of critical or significant information. Includes loss of focus due to external influences such as computer devices or mobile phones."<sup>2</sup> This definition is broad, but examination of oil-transfer spills where inattention is found revealed a number of different inattentive behaviors.



Figure 3 - Result of inattention during a bunkering operation at anchor.

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<sup>2</sup> The 2014 Data Dictionary update has revised "Inattention" to "Inattention/Distraction."  
[http://oilspilltaskforce.org/wp-content/uploads/2013/08/Data-Dictionary-Revised-2014\\_FINAL.pdf](http://oilspilltaskforce.org/wp-content/uploads/2013/08/Data-Dictionary-Revised-2014_FINAL.pdf)



The following table describes examples of inattention observed through investigations of oil-transfer spills, provides a real example, and suggests measures that can be taken to prevent or counter the inattention described.

<b>Description</b>	<b>Example</b>	<b>Potential Preventive Measures</b>
Not paying attention because of automation, over-reliance.	Chief Engineer did not monitor fuel level during the fueling operation, opting instead to rely on a level-activated float switch intended as an overfill protection mechanism.	<ul style="list-style-type: none"> <li>• Unless automated systems provide independent two-level protection, have been regularly tested and maintained, and are verified as 'on,' do not assume they'll do the job for you.</li> <li>• Distinguish between a system that is there to act as a safety back-up, and one that is designed and maintained (as described above) to operate regularly on its own.</li> </ul>
Not checking system status before use.	Chief Engineer did not check the fuel system valve alignment prior to the start of the transfer.	<ul style="list-style-type: none"> <li>• Check and double check all valve alignments.</li> <li>• Follow written procedures for checking system status before use.</li> <li>• Never assume that a system is the way you left it the last time you used it.</li> <li>• Have two crew members check the status of system components before starting safety-critical operations.</li> </ul>
Ignoring or not using information.	Oil spilled from a tank which was not designated to receive oil. Tank soundings in the tank which was supposed to receive oil should have alerted Chief Engineer to the fact that the oil was going somewhere else.	<ul style="list-style-type: none"> <li>• All system tanks should be monitored, even inactive tanks.</li> <li>• If you collect information for a purpose, use it to help you detect and fix problems before they become severe.</li> <li>• Always check the planned oil transfer rate against the observed rate and shut down to investigate if they don't match.</li> </ul>
Ignoring a known problem or hazard/complacency.	Deck rover watch did not regularly check the bunkering station on the opposite side of the ship for over an hour, despite the fact that the station was known to leak and the Chief Engineer's practice was to check it every 15 to 30 minutes.	<ul style="list-style-type: none"> <li>• Fix known equipment problems before using the equipment.</li> <li>• If there's a critical task related to a known problem or hazard, ensure the task is included on checklists and that required periodic inspections or checks are logged.</li> <li>• Log books should regularly be reviewed to ensure checks/inspections are done as required.</li> </ul>
Was not told/did not	A Third Engineer pumped	<ul style="list-style-type: none"> <li>• Require notification/coordination</li> </ul>

ask, so was not aware.	engine room waste oil to an already full cargo oil slop tank.	between deck and engineering crew regarding oil transfers. <ul style="list-style-type: none"> <li>• Pre-transfer training for involved crew members.</li> <li>• Face-to-face pre-transfer conference between persons-in-charge of the deliverer and receiver.</li> </ul>
Distracted or busy with other tasks.	Tankerman did not keep adequate track of an oil tank level during loading while he was completing paperwork in the office.	<ul style="list-style-type: none"> <li>• Personnel involved in oil transfers should be directed to focus on the safety of the transfer above all other tasks or assignments.</li> <li>• Paperwork demanding sustained mental focus that does not contribute to safety, should not be worked on until all oil transfer activities are shut down and tank levels are verified as stable.</li> </ul>

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