

SUBSTANCE USE: AN EMERGING SAFETY ISSUE

Substance use in the marine and rail industries is an emerging safety issue on the Watchlist. Impairment from drugs or alcohol can compromise safety-critical tasks and endanger people, property, and the environment. While investigations have linked substance use to occurrences, the lack of consistent testing and reliable data suggests the problem is more widespread.

The situation

Substance use, particularly alcohol and cannabis, is common in Canada and poses serious safety risks in safety-sensitive industries, including transportation.

While the risks are present in all modes of transportation, substance use has been identified as an emerging issue in marine and rail operations. Impairment slows reaction times, reduces judgment, and undermines decision making, increasing the likelihood of errors, accidents, and fatalities. In safety-critical roles, the effects of substance use—impaired coordination, reduced alertness, and poor judgment—can have devastating consequences for people, property, and the environment.

A national study conducted by the Canadian Centre on Substance Use and Addiction found that 20% of workers in safety-sensitive positions reported consuming alcohol or other drugs two hours before or during work or were hungover or felt high at work. Further, between 21% and 40% of workers and managers believed that substance use was an issue in their workplace.¹

While no comprehensive transportation industry dataset exists, substance use has been identified or suspected in several Transportation Safety Board (TSB) marine and rail investigations and one rail investigation raised it as a safety concern.² Inconsistent post-occurrence testing across the transportation industry and reliance on self-reporting suggest that these cases represent only a fraction of the true problem.

Marine sector

TSB investigations have linked substance use to multiple marine occurrences:

- M22A0052 – *Mucktown Girl*
- M21A0065 – *Tyhawk*
- M21C0214 – *Suvak*
- M19A0090 – Unnamed and unregistered fishing vessel
- M06W0052 – *Queen of the North*

¹ McIlwaine, S., Meister, S., Barker, B., Dassieu, L., Noorbakhsh, S., Panesar, B., and Beirness, D. (2025). Workplaces and substance use: Safety-sensitive positions (Brief). Ottawa, Ont.: Canadian Centre on Substance Use and Addiction. <https://www.ccsa.ca/sites/default/files/2025-07/Research-Brief-Safety-Sensitive-Positions-en.pdf>

² TSB Rail Investigation Report R21H0114.



Industry forums, including the Canadian Marine Advisory Council and provincial fishing safety meetings, consistently highlight substance use as a leading safety issue.

Despite this, Canada has no consistent requirements for drug and alcohol testing in the marine industry. While many operators enforce zero-tolerance policies, substance use—especially in the fishing industry—is often normalized. This acceptance, combined with limited testing and incomplete data, obscures the true extent of the problem.

The operating environment on board vessels requires constant vigilance, coordination, and quick reaction times. Crewmembers regularly face hazards such as moving machinery, heavy gear, and unpredictable sea conditions. Substance use, whether recreational or as self-medication for chronic pain, fatigue, addiction, or other issues, can impair reaction time, cognition, and judgment, increasing the risk of injury or death.

Public health advocates and marine safety organizations have begun to raise awareness of substance use in the industry, but initiatives remain limited and inconsistent.

Next steps

The TSB will monitor the issue of substance use in the marine industry to determine if it should be elevated to a Watchlist issue. Examples of potential actions to mitigate the issue include:

- Adoption of a framework for consistent testing, education, and awareness in the maritime industry
- Systematic collection of data to assess the prevalence and impacts of substance use at sea
- Development of safety programs to address the factors influencing substance use, such as fatigue, chronic pain, and mental health challenges
- Implementation of public-health-based measures to control, reduce, or eliminate impairment aboard vessels

Rail sector

TSB investigations have identified risks related to substance use in multiple rail occurrences:

- [R21H0114](#): With no mandated alcohol-free period prior to duty, employees may perform safety-critical functions while under the influence of alcohol.
- [R20H0130](#): Without random drug and alcohol testing, impairment among employees in railway safety-critical positions may go undetected, increasing the risk of an accident.
- [R10V0038](#): Without a requirement to conduct timely post-accident testing for drug and alcohol use (when warranted), there is an increased risk of inconclusive test results.
- [R95T0152](#): Alcohol affects performance and may have played a role in the locomotive engineer's decision to operate the switching assignment at a speed that proved to be unsafe in the circumstances.



Industry consultations have indicated that actual substance use is higher than what the TSB observes directly through its investigations. This reinforces the urgency for preventive measures to address the risks identified by the TSB and improve overall railway safety.

In addition to alcohol, the use of drugs has also been noted in the rail industry. However, they are harder to detect as signs are more subtle and may vary by substance and resemble fatigue or stress. Testing for impairment may also be less reliable, especially for cannabis.

Unlike in aviation, rules and regulations in the railway industry do not prescribe a time period prohibiting the consumption of alcohol and cannabis before assuming duties. Instead, employees are expected to self-assess and determine if the effects of consumption have sufficiently diminished to be fit for duty. Employees may not accurately self-assess, and therefore could subjectively perceive that they have recovered despite the continued effects of impairment on cognitive performance.

This is in contrast to the *Canadian Aviation Regulations*, that stipulate, in part, that no person shall act as a crew member of an aircraft within 12 hours after consuming an alcoholic beverage or as an air traffic controller or a flight service specialist within 8 hours after consuming alcohol. Transport Canada policy also requires flight crews and air traffic controllers to discontinue cannabis use at least 28 days before assuming duties³. These time prohibition periods allow for the elimination of substances and, as such, they reduce the risk that a person will assume safety-critical duties while under their influence.

While operators have implemented post-occurrence testing policies, this information is not shared with the TSB unless it investigates. As a result, the TSB has limited information about the prevalence of substance use.

Next steps

The TSB will monitor the issue of substance use in the rail industry to determine if it should be elevated to a Watchlist issue. Examples of potential actions to mitigate the issue include:

- Extending existing rules to apply to all railway employees, not solely those in safety-critical roles.
- Establishing mandatory pre-duty prohibition periods for alcohol and drug use.
- Implementing enhanced impairment testing protocols.
- Systematically tracking impairment occurrences to support prevention and risk-reduction strategies.

³ Transport Canada (2019), Staff Instruction (SI) 404-002 – Civil Aviation Medicine Cannabis Policy. Available at https://www.tc.gc.ca/eng/civilaviation/opssvs/managementservices-referencecentre-documents-400_series-404-002-13919.html