

### How to prevent personal watercraft ("wet bike") accidents based on analytic investigations

Accidents occurred during the use of popular floating leisure boats such as banana boats and biscuits caused casualties (deaths or injuries) to more than 100 people in the last 10 years.

Other common accidents are of people who fell overboard from the rear end of wet bikes, which have been causing damages on internal organs due to strong jet flow almost every year, causing more than 10 casualties including deaths.

### How to prevent accidents while riding on a floating leisure boat

Causes of many accidents are moving too close to other boats or obstacles while riding, or excessive speed.

- Consider the length of the towing line and the size of the floating leisure boat, and ride while keeping enough distance from obstacles.
- Ride at a speed described in the operation manual of the floating leisure boat, and slow down enough to safely make a turn or sail over swells.
- The act of approaching a floating leisure boat and making a turn to splash is a dangerous maneuvering, which may cause death or injury to others. This is a violation of rules that apply to small pleasure boat operators!
- While towing, have an appropriate person watch the surroundings all the time, and do not approach toward other boats.
- Have a person who watches the condition of the floating leisure boat onboard.
- Do not approach toward a boat towing a floating leisure boat.

### How to prevent accidents caused by jet flow

- The captain must read through operation manuals and warning labels to understand the risks of causing injuries due to jet flow, and explain as such.
- Before starting or increasing speed, give a signal to co-riders, and make sure that the co-riders assumed a posture that can prevent falling off.
- Slow down enough to safely make a turn or sail over swells when riding with co-riders.
- Instruct co-riders to wear a wet suit bottom or the like.
- Be aware of the high risk of riding on the rear end of a 3-person watercraft, such as falling off and causing injuries.

Jet flow accidents are caused by jet flow hitting the body of a person who fell off from the rear end of the bike when the primary rider started the bike or increased speed or made a turn or sailed over swells.

### Follow the rules and ride safely.



Do not drink.



Do not create danger to others.



Do not let unqualified operate.



Do not ride dangerously.



Put on a life jacket.

[Some examples of the accidents actually took place]



Towing a couch-shape floating leisure boat with a towing line in a length of 18 m, the captain move toward oyster rafts as close as 15 m and then attempted to make a turn, which created a centrifugal force causing crash the floating leisure boat with the oyster rafts.



- The captain's understanding was that the speed was at around 30 km/h, the floating leisure boat could follow his boat.



While operating a floating leisure boat, the captain attempted to turn at a speed of 40 to 50 km/h, which created a centrifugal force to flip over the round-shape floating leisure boat, resulting in causing serious injuries to passengers.



- It was the first time for the captain to operate a round-shape floating leisure boat.



While making an attempt to cause splashes towards other boats, the captain moved the boat too close to a banana boat pulled by other boat and crashed. The accident caused death and injuries to many passengers including children.



- The captain did not think that the causing splashes towards others was a dangerous maneuvering.
- The captain was drinking alcohol, but did not get drunk, and did not think he was under influence.



Due to oscillation caused by sailing over swells at a speed of 60 km/h, a co-rider on the rear end of the bike fell off and strong jet flow hit the aperture in the lower extremity causing damages on internal organs.



- The captain did not read operation manuals, and lacked understanding of danger of jet flow.
- The co-rider was not wearing appropriate gear such as a wet suit bottom.
- The captain was drinking alcohol before starting operation of the boat.

\*The photographic images are not relevant to the descriptions.



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<https://jtsb.mlit.go.jp/hazardmap/mobile/index.html> (Mobile→)

